

CONSTRUCTION SAFETY MANUAL

Eastern Illinois University

CONSTRUCTION SAFETY MANUAL

To be used by all General Contractors and Sub Contractors

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QUICK PICK BY TOPIC REFERENCE PAGE

HOT WORK PERMITS

[Hot Work Form.pdf](#)

- BEFORE STARTING WORK, CONTACT ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT TO ACQUIRE AUTHORIZATION OF WORK.
- HOT WORK REQUIRES A FIRE WATCH TO BE PRESENT BEFORE WORK BEGINS, DURING, AND AFTER THE WORK HAS BEEN COMPLETED UNTIL THE FIRE AND SMOKE DETECTION SYSTEM HAS BEEN ACTIVATED.
- AFTER HOT WORK HAS BEEN COMPLETED, CONTACT THE ELECTRICAL SHOP TO RE- ACTIVATE THE BUILDING DETECTION SYSTEM

CONFINE SPACE ENTRY

- CONFINED SPACE IS AN AREA THAT POSES A DANGER TO EMPLOYEES. SEVERAL AREAS ON CAMPUS HAVE BEEN IDENTIFIED. CHECK THE SECTION ON CONFINED SPACE FOR SPECIFIC AREAS.
- BEFORE ENTERING A CONFINED SPACE, THE COMPANY = S SUPERVISOR SHALL VERIFY THAT THE SPACE TO BE ENTERED MEETS ALL CONFINED SPACE REQUIREMENTS.
- USE THE CONFINED SPACE ENTRY FORM PROVIDED IN THIS MANUAL

LOCK OUT AND TAG OUT

- NOTIFY THE FACILITY PLANNING AND MANAGEMENT DEPT. OF EQUIPMENT AND SYSTEMS THAT NEED TO BE REMOVED FROM SERVICE
- ISOLATE EQUIPMENT AND RELEASE ALL STORED ENERGY
- VERIFY THAT EQUIPMENT AND SYSTEMS WERE SHUT DOWN PROPERLY BY OPERATING SWITCHES, THEN RETURN CONTROL TO NEUTRAL OR OFF POSITION. AFTER EQUIPMENT AND SYSTEMS ARE ISOLATED, HANG A DO NOT OPERATE @ TAGS AND LOCKS.
- RELEASING OF EQUIPMENT AND SYSTEMS: FIRST CHECK SURROUNDING IS FOR PARTS, TOOLS AND OTHER OBSTRUCTIONS THAT COULD INTERFERE WITH OPERATION. CHECK TO SEE IF THE JOB IS DONE!
- NOTIFY THE FACILITY PLANNING AND MANAGEMENT DEPT. FOR REMOVAL OF TAG AND LOCK OUT.
- *REMEMBER MORE THAN ONE CRAFT MAY BE WORKING ON THE SAME EQUIPMENT OR SYSTEM.*

TRENCHING EXCAVATION

[Trenching Form.pdf](#)

- BEFORE TRENCHING YOUR COMPANY = S SUPERVISOR MUST ASSURE SAFE GUARDS AND PROTECTIONS ARE IN PLACE.
- USE THE TRENCHING CHECKLIST IN THIS MANUAL
- PUT UP BARRIER FENCE TO PROTECT YOUR JOB SITE

EMERGENCY PHONE NUMBERS

- FIRE, MEDICAL, RESCUE ASSISTANCE CALL 911
- ENVIRONMENTAL HEALTH AND SAFETY DEPT. 581-7068
- FACILITIES PLANNING AND MANAGEMENT DEPT. 581-2179

5-11 Hot work-- Cutting, Welding and Heat Sources

- Hot work permits.

[Hot work Form.pdf](#)

- Definitions:

Hot work is the process of using torches, welders or any other heat or sparking equipment to perform construction and maintenance activities.

Hot Work Permit is a system to manage the risk of having an open flame or heat sources present in a building. The Hot Work Permit program's objective is to notify departments and personnel that an unusual hazard is about to be conducted and special precautions should be taken.

5-11.2 Notifications will need to be given to the Facility Planning and Management's Electric shop and Work Control to notify the building's coordinator. Upon notification they will disable the building's central fire alarm. It is very important to release the area upon completion of the work so the fire alarm system is operational for balance of the day.

5-11.3 The Electric shop will notify the CCOM 911 that the building's fire alarm and smoke detector system is out of service for the reason for the interruption. Work Control shall give notification to the Building's Building Coordinator.

5-11.4 The FPM or contractor's employees shall clear away all combustibles and cover any combustible materials that cannot be relocated. After the site preparation is completed then the Hot Work may be started. A second employee should be present to monitor the work and recognize when welding sparks or any other hot materials are landing in an area where a fire may be started. Fire watch personnel are authorized to stop work when a fire hazard condition exists. The fire watch activity shall be continued for 30 minutes after the Hot Work has been completed. FPM's Electric shop must be notified that Hot Work has been completed before the person on fire watch maybe released

5-11.5 FPM Electric shop is called after work is completed and prior to 3:00 PM to reactivate alarm system and notify CCOM 911 that the fire alarm system is back in service.

5-11.6 Continual outage of Fire Alarm system over night or several days shall require an Outage Planning Sheet to be circulated, notification to CCOM 911 requesting building surveillance by University Police Department, notification to the Building's Building Coordinator.

CONFINED SPACE ENTRY WORK POLICY

20.1 Introduction

20.1.1 Before Facility Planning and Management (FPM) and Contractors' personnel are permitted to enter a confined space at Eastern Illinois University, safe working conditions shall be ensured by instruction to employees and by the use of procedures which require positive protection against unsafe atmospheric conditions, toxic materials, fires, inadvertent operation of system, electrical shock and other safety hazards. Preplanning is extremely important in confined space entry work.

20.2 Purpose

20.2.1 The purpose of this standard is to specify the precautions that shall be taken to ensure the safe conditions are provided and maintained when personnel must work in a confined space.

20.3 Definitions

20.3.1 *Confined Space* - A space that:

20.3.1.1 Is large enough and so configured that an employee can bodily enter and perform assigned work; and

20.3.1.2 has limited or restricted means for entry and exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that limit means of entry); and

20.3.1.3 is not designed for continuous employee occupancy.

20.3.2 *Confined Space Entry Permit (CSEP)* - Permit initiated by the person responsible for total work of the workers who will enter the confined space. The CSEP provides information on the responsibilities and precautions that the responsible supervisor shall take to provide a safe environment for the workers in the

confined space. It also provides information that the person monitoring the confined space atmosphere shall take to ensure that the atmosphere is safe to work in. At the bottom of the CSEP is an area where the responsible supervisor and the person who monitors the confined space atmosphere shall sign their names stating that all necessary preparations have been taken.

20.3.3 Safety Attendant - A person stationed outside the confined space and assigned the responsibility of maintaining communications with personnel working in a confined space and initiating emergency action when required.

20.3.4 Lower Explosive Limit (LEL) - The lower limit of flammability of a gas or vapor at ordinary ambient temperature expressed in a percentage of the gas/vapor in air by volume.

20.3.5 Threshold Limit Value (TLV) - The time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be exposed without adverse effect. The TLV is measured as parts of the vapor or gas per one million parts of air by volume (ppm) or as approximate milligrams of particulate per cubic meter of air (mg/m³).

20.3.6 Hot Work - The process of joining together two pieces of metal (welding, brazing) or the breaking apart of metal into two pieces (cutting) by means of extreme heat or spark producing equipment.

20.3.7 Hazardous Material - A material which, under normal conditions, may be considered to be toxic, flammable, combustible, reactive or unstable.

20.3.8 Toxic - The potential harmful effects of a material on biologic functions.

20.3.9 Reactive Material - Material which can enter into a chemical reaction with other materials.

20.3.10 Unstable Material - Material which will vigorously polymerize, decompose, condense, or become self reactive and undergo violent chemical changes.

20.3.11 Flammable Liquid - Liquid having a flash point below 100 degrees Fahrenheit.

20.3.12 Combustible Liquid - Liquid having a flash point at or above 100 degrees Fahrenheit.

20.3.13 Shall - Denotes a mandatory requirement.

20.3.14 Should - A recommendation that is sound safety and health practice; it does not denote a mandatory requirement.

20.3.15 Qualified Person - A person who by reason of training, education, and experience is knowledgeable in the operation to be performed and is competent to judge the hazards involved.

20.3.16 Blinding/Blanking - Inserting a solid barrier across the open end of a pipe leading into or out of the confined space and securing the barrier in such a way to prevent leakage of material into the confined space.

20.3.17 Double Block and Bleed - A method used to isolate a confined space from a line, duct, or pipe by physically closing two-in-line valves on a piping system and opening a vented-to-atmosphere valve between them.

20.4 Responsibilities

20.4.1 Safety of employees shall be the number one responsibility of the supervisor whenever employees must enter a confined space.

20.4.2 The Associate Vice President to Facilities and/or his designee, where appropriate, are responsible for implementing this standard.

20.4.3 The Safety Officer shall be responsible for administering this standard. Each supervisor effected by the standard will be responsible for coordinating training in accordance with the standard.

20.4.4 The supervisor is responsible for functionally complying with this standard.

20.4.5 All supervisors and employees are responsible for complying with the requirements in this standard.

20.5 Training

20.5.1 All personnel and their supervisors shall be properly trained in confined space entry safety and rescue procedures before being allowed to enter a confined space. Training shall include a minimum of the following:

20.5.2 A. Proper use of air monitoring equipment

B. Proper use and setup of ventilation equipment

C. Proper use and setup of fall protection/arrest and retrieval equipment

D. Proper isolation procedures (Lockout/Tagout)

E. Summoning rescue and other emergency response

F. Proper use of communication equipment

G. Proper use of respiratory protection equipment

H. How to recognize probable air contaminant overexposure symptoms to themselves and coworkers.

20.5.3 Training shall be repeated to maintain an acceptable level of personnel competence as required by the type of work.

20.5.4 All training shall be coordinated through the Environmental Health and Safety office.

20.6 Confined Space Identification

20.6.1 A sign stating "CAUTION--CONFINED SPACE--ENTER BY PERMIT ONLY" shall be posted in the immediate vicinity of all know confined spaces.

20.6.1.1 This section by no means indicates that every space has been identified. Continued surveillance by supervision for unidentified confined spaces shall be an ongoing process.

20.6.1.2 If an employee discovers an area he/she believes to be a confined space, the employee's supervisor and the Safety Officer shall be contacted before entry is allowed.

Appropriate signs shall be placed in the vicinity if the area is determined to be a confined space and the provisions of the standard shall then be followed.

20.6.2 A list and map of all known confined spaces should be maintained by the Safety Officer. A copy to the list and map as well as all updates shall be made available to Department of Environmental Health and Safety.

20.6.3 Manholes will not normally be identified with a sign but shall still be considered to be confined spaces. The provisions of this standard shall be in effect when a manhole is entered.

20.7 Permit Requirements

20.7.1 A Confined Space Entry Permit (CSEP) must be obtained and completed in its entirety prior to entry into confined spaces.

20.7.2 The supervisor responsible for the entire work of the employees in the confined space shall complete the CSEP. THE supervisor shall assign the CSEP a number and enter the number and any other pertinent information into the Department's Confined Space Entry Log book. The log book shall be kept at all times in the department.

20.7.2.1 Whenever possible, the CSEP should be initiated on the day shift when safety personnel are on site to provide consultation and assistance.

20.7.2.2 The hot work portion of the CSEP shall be filled in when hot work is to be performed, as outlined in the Special; Requirements section.

20.7.3 The name of the contact person shall be written on the "Notified" line at the bottom of the CSEP.

20.7.4 The time limit of the CSEP shall not exceed the time required to complete the assigned task or job identified on the CSEP.

20.7.4.1 When another shift of workers is to continue work in the confined space, the CSEP will transfer to the new group provided no new hazards are created by the work.

20.7.4.2 The new responsible supervisor and the old responsible supervisor shall arrange for the transfer of the CSEP and any confined space equipment being used.

20.7.4.3 The new responsible supervisor shall see that all of the requirements of this standard are being complied with prior to any work beginning in the confined space.

20.7.5 The CSEP and the record of air samples shall be posted near the opening of the confined space.

20.7.6 When a CSEP is initiated, the responsible supervisor shall ensure that there are no other CSEP's for the same confined space that could cause a potentially dangerous situation (for example: one group welding and another group using a flammable solvent).

20.7.7 Separate CSEP's are required whenever separate jobs are being performed in the same confined space.

20.7.8 When work in the confined space is complete the responsible supervisor shall take the following actions in order to terminate the CSEP:

20.7.8.1 Ensure that all personnel, tools and equipment are out of the confined space;

20.7.8.2 Close all access openings (if applicable);

20.7.8.3 Sign the "Confined Space Entry Work Terminated" line of the CSEP and return the CSEP and the Record Air Samples Sheet to the Safety Office; and

20.6.8.4 Notify the FPM department that the work in the confined spaces is completed.

20.8 Prior to Entry into a Confined Space

20.8.1 The supervisor shall have determined that entry into the confined space is necessary.

20.8.2 The supervisor shall have obtained and completed a CSEP in accordance with the Permit Requirement section.

20.8.3 The supervisor shall have determined that the workers entering the confined space have been trained in accordance with the Training Requirements section.

20.8.4 All potential hazardous energy sources shall be eliminated and the confined space shall be isolated by Lockout/Tagout, blinding/blanking, double block and bleed or other acceptable engineering practice.

20.8.5 The confined space shall be provided with forced air ventilation.

20.8.5.1 The supervisor shall furnish or approve all ventilation for the confined space.

20.8.5.2 When ventilating flammable or combustible gases/vapors, explosion proof ventilation equipment shall be used. Ventilation shall be a safe area away from open flames.

20.8.5.3 When ventilating toxic materials, they shall be ventilated into a safe area.

20.8.5.4 Oxygen shall never be used to ventilate a confined space.

20.8.5.5 Ventilation equipment shall be

returned to the Physical Plant.

20.8.5.6 The Safety Officer is available for assistance with ventilation concerns.

20.8.6 The atmosphere of the confined space shall be tested, both before and after ventilation is applied, to be certain that the following conditions are met:

20.8.6.1 There is an oxygen level of at least 19.5% but not greater than 23.5%.

20.8.6.2 There is a hydrogen sulfide level of than 10 parts per million.

20.8.6.3 There is a combustible gas/vapor mixture of less than 10% of the lower explosive limit.

20.8.6.4 The concentration of airborne combustible dust is less than it's lower flammable limit.

20.8.6.5 Exposure to an atmospheric concentration of any substance for which a dose or permissible exposure limit is published in 29 CFR 1910 Subpart G, Toxic and Hazardous Substances, or in Subpart Z, Toxic and Hazardous Substances, in excess of that dose or permissible exposure limit.

20.8.7 If the atmosphere does not fall within the acceptable range as stated above, employee(s) shall not enter the confined space.

20.9 During the Entry Period

20.9.1 The confined space shall be continuously provided with forced air ventilation when possible.

20.9.1.1 When ventilation is not possible, alternate protective measures or methods to remove air contaminants and protect occupants shall be determined by the Safety Officer.

20.9.1.2 If ventilation equipment fails, all personnel shall leave the confined space immediately and the supervisor shall be notified.

20.9.1.3 The employee in the confined space shall continuously monitor the atmosphere to be certain that it remains within acceptable limits as stated on Confined Space Form in #6 of A Prior Entry Into a Confined Space @ . If the air levels fall outside of the limits stated in #6 of Prior Entry Into a Confined Space, the employee shall immediately vacate the confined space.

20.9.1.4 A departmental safety attendant shall be on standby immediately outside of the confined space for the entire time an employee is inside. The safety attendant shall be responsible for the following:

20.9.1.5 Remaining in constant communication with the employee inside the confined space.

20.9.1.6 Keeping an accurate count of all persons entering the space.

20.9.1.7 Keeping all unauthorized persons from entering the confined space.

20.9.1.8 Monitoring activities inside and outside of the space to be certain that it is safe for entrants to remain in the confined space.

20.9.1.9 Summoning the rescue team and the Charleston Fire Department and giving an accurate description of the emergency and the location of the emergency. In addition, the safety attendant shall contact the Physical Plant and the Safety Officer as soon as possible.

20.9.1.10 When possible, perform non-entry rescue procedures by retrieving the entrant with a retrieval line or safety line (care must be taken by the safety attendant to see that the non-entry rescue procedures do not cause greater harm to the entrant than waiting for the Fire Department would likely cause). All non-entry rescue equipment must comply with Confine Space Entry Form section #3 in Special Requirements.

20.9.2 Appropriate personal protective equipment shall be supplied for and used by all employees entering a confined space including but not limited to eye, head, hand, foot, and hearing protection.

20.10 Special Requirements

20.10.1 This section is intended for those activities that require special precautions. If any of the activities described in this section are going to be done in a confined space, the requirement of this section in addition to the requirements of the previous sections shall apply.

20.10.2 Hot work

20.10.2.1 Before hot work or any other spark or flame producing operation may be performed in a confined space, the Hot Work Permit portion shall be completed.

20.10.2.2 No hot work or any other spark or flame producing operation is permitted on the interior, exterior or near the openings of a confined space which may contain toxic, flammable or explosive gases/vapors or materials until the confined space has been properly ventilated and the source of the gases/vapors or materials has been removed.

20.10.2.3 Whenever hot work is being performed in a confined space, adequate ventilation shall be provided.

20.10.2.4 Whenever hot work is being performed in a confined space, an appropriate fire extinguisher shall be located nearby.

20.10.2.5 All gas welding and cutting equipment used in confined spaces shall be pretested for leaks prior to entry into a confined space. The torch and hose shall be removed from the confined space whenever the hot work is completed or the confined space is exited.

20.10.2.6 Aerosol containers shall not be used in a confined space when hot work or any other spark-producing work is being performed. If aerosol materials must be used, all hot work and any other spark producing work must be stopped and the confined space adequately ventilated.

20.10.2.7 Compressed gas cylinders shall not be allowed inside a confined space unless authorization is given by the Safety Officer. In such cases, the shutoff valves for the cylinders should be within reach of the employee.

20.10.2.8 Fall Protection

20.10.2.9 Where the potential exists for persons or objects to fall into a confined space, warning systems or barricades shall be employed at the entrance.

20.10.2.10 Fall arresting systems shall be worn by persons entering a confined space as determined by a qualified person. (It should be noted that the presence of a ladder or rungs in a confined space does not in itself eliminate the need for a fall arresting system. The qualified person shall take into account the condition of the ladder or rungs [slippery, wet, greasy, etc.], the length of the descent, the descending persons visibility and any other condition that could reasonably be expected to cause the employee entering the confined space to fall.)

20.10.2.11 When fall protection is provided it shall consist of a full body harness with a retrieval line attached at the center of the entrants back near the shoulder level. The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

20.10.2.12 When fall protection is provided for spaces greater than five feet deep, a mechanical device meeting the requirements for Confine Space Entry.

EASTERN ILLINOIS UNIVERSITY

PHYSICAL PLANT

CONFINED SPACE

{29 CFR " 1910.146(c)}

{29 CFR " 1926.21 (b)(6)}

The following lists identify permitted, (areas requiring a permit to enter), and nonpermitted, (areas not requiring a permit to enter), spaces that employees and contractors are allowed to enter. The list is a partial list and should not be interpreted as a complete list of space that would fall under the PERMIT REQUIRED CONFINED SPACE regulation.

PERMIT REQUIRED CONFINED SPACES

STORAGE TANKS

LIFT STATIONS

WATER TOWERS

SEWER TREATMENT PLANTS

PITS

EXCAVATIONS

SWIMMING POOLS

UNDERGROUND VAULTS

MANHOLES

SEWER

TUNNELS

PIPES AND DUCTS

GAS REGULATOR VAULTS

COOLING TOWER FACILITIES

BOILERS

SPLICE VAULTS

PROCESS VESSELS

UNDERGROUND STORAGE TANKS

SEPTIC TANKS

CONCRETE TRUCKS

CONVEYOR SYSTEMS

COAL BUNKERS

OPEN TRENCH OVER FOUR FEET DEEP

CHEMICAL STORAGE ROOM THAT HAS LIMITED VENTILATION

NON - PERMIT REQUIRED CONFINED SPACES

The following is a list of NON - PERMIT REQUIRED CONFINED SPACES and is limited to these locations. A non-permit required confined space may become a permit required confined space if conditions of the space change (i.e. performing hot work, introducing chemical in the space and other conditions).

ELECTRICAL ROOMS - that a person may enter through a regular 80" high

door way designed for people.

MACHINERY - VENT ROOMS (i.e. filter banks)

STEAM TUNNELS (UTILITY TUNNELS) - that a person may enter through a non restricted entrance and that a person may move about without restriction.

A non-permit required space must have periodic surveillance of air quality and quantity by the Physical Plant for the designation of non-permit required confined space to exist.

PERMIT REQUIRED CONFINED SPACE PHYSICAL CHARACTERISTICS

A permit required confined space is a space that has limited means of egress, (and/or) not designed for continuous employee occupancy, (and/or) having one or more of the following characteristics:

- Less than 19.5% oxygen and not over 23.5%.
- Flammable/combustible/explosive atmospheres present or able to be generated or to enter into an area. % OF L.E.L = over 10%
- Toxic atmospheres present or able to be generated or to enter into an area.

P.E.L.

Carbon Monoxide = 50 ppm

Aromatic Hydrocarbon = 10 ppm

Hydrocyanic Acid = 10 ppm

Hydrogen Sulfide = 10 ppm

Sulfur Dioxide = 5 ppm

Ammonia = 25 ppm

• Areas not protected against entry of water, gas, sand, gravel, ore, grain, coal, biological, radiation, corrosive chemicals, or any other substance which could possibly trap, suffocate, or harm a person.

- Poor ventilation

- Restricts entry for rescue purposes.
- An open - topped space over 4 feet deep.

HAZARD IDENTIFICATION

The hazard that may exist or develop during entry of a confined space include:

Oxygen deficient atmospheres Corrosive Materials

Toxic atmospheres Hot equipment

Engulfed or buried Toxic Materials

Electrocuted Drains Open

Fire and/or explosives Cleaning(chemical or water lance)

Drowning Spark Producing Operations

Falls Spiller Liquids

Crushed or Mangled Pressure Liquids

Exposure to harmful chemicals

The following is a parcial list intended to supplement the confined space drawing. If a location has not been identified, consider this space a permit required confined space

PERMIT REQUIRED - ELECTRIC

Vault

1. Two North Quad near Napoleon = s flower bed, Southwest corner
2. Two southeast side of Fine Arts Building
3. South of Fine Arts
4. Two locations Southwest corner Fine Arts, Library Quad East sidewalk
5. Two locations North Library Quad, South of Union
6. Two locations North of Coleman Hall
7. Lawson and Andrews Quad by Flag Pole
8. South Quad East sidewalk
9. Northeast side of Hampton

10. North of Carmen
11. North side of Greek 1008
12. Northwest corner of Field House next to Football Stadium
13. Between main doors of Rec Center North side and Douglas

PERMIT REQUIRED - TELEPHONE

*To enter telephone vaults follow 29 CFR " 1910.268 A Telecommunication Regulations @ *

NON PERMIT REQUIRED - TUNNEL

Steam Tunnel - Man Hole

1. South of Old Main
2. Twenty feet South of Old Main, outside Cashiers Office
3. Fine Arts Building directly South of Theater Wing
4. Two locations Northwest corner Booth Labrary
5. Two locations Klehm Hall Southwest corner
6. Carmen Hall parking lot in grassy area

PERMIT REQUIRED - SANITARY SEWER

Man Hole

1. Southeast entrance of Old Main
2. North Quad by Napoleon = s flower bed, Southwest corner
3. North Library Quad, South of Union
4. West side of Phipps Lab, Physical Science Building
5. South of Cooper in parking lot
6. South of Yorkshire
7. North of Cooper
8. North side of 1012 Greek Court

9. Greek Court 1020
10. Northwest side of Greek Court 1016

11. Northwest side of Greek Court 1017
12. South side of Greek Court 1013
13. South side of Greek Court 1009
14. South side of Greek Court 1005
15. South side of Greek Court 1001
16. Two locations between Tarble Arts and Buzzard Building
17. Southwest corner of the Field House
18. Main door of Rec Center, North side

PERMIT REQUIRED - STORM WATER

Man Hole

1. Two locations between Pemberton Hall and Old Main near Lincoln Street
2. Two locations Northwest corner Pemberton Hall
3. Northeast corner of Physical Science Building
4. South of Lumpkin Hall
5. West of Lumpkin Hall, West door
6. Between Taylor Hall Wings next to 4 th Street
7. North of Carmen Food Service
8. North of Carmen near electrical vaults
9. South side of Greek Court 1000
10. International House Lake North side
11. International House Lake West side
12. North side of Greek Court 1000
13. Two locations North side of Greek Court 1008
14. North side of Greek Court 1009
15. Two locations North side of Greek Court 1005
16. Main entrance to University Court

PERMIT REQUIRED - WATER VAULT

PERMIT REQUIRED CONFINED SPACE

Man Hole

1. Fine Arts Building Northwest corner
2. Fine Arts Building Southeast corner
3. Life Science Northwest corner
4. East side of Booth Library halfway down near sidewalk
5. In front of Greenhouse next to 7 th Street
6. Lumpkin Hall East door
7. Lawson and Andrews Quad near flagpole
8. North of Carmen Hall Ramp, North entrance
9. North of Carmen Hall next to electrical vaults

LOCKOUT OR TAGOUT PROCEDURES FOR ISOLATING MACHINES AND EQUIPMENT FROM ENERGY SOURCES

15-1 INTRODUCTION

15-1.1 This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. Lockout is the preferred method of isolating machines or equipment from energy sources. It shall be used to ensure that the machine or equipment are isolated from all potentially hazardous energy, and locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected energizing, start-up or release of stored energy could cause injury.

15-1.2 All Facility Planning and Management (FPM) and Contractors' employees shall be instructed in the safety significance of the lockout/tagout procedure.

15-2 PREPARATION FOR LOCKOUT OR TAGOUT

15-2.1 Make a survey to locate and identify all isolating devices to be certain which switch, valve or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, or others) may be involved.

15-3 SEQUENCE OF LOCKOUT OR TAGOUT SYSTEM PROCEDURE

15-3.1 Notify the Project Coordinator associated with the work being performed. Advise all affected employees that a lockout or tagout system is going to be utilized and the reason for the procedure. The Project Coordinator shall maintain a Lock out and Tag out log to track the Lock out and Tag out work. The contractor = s employees shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the potential hazards.

15-3.2 If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.). Do not shut down with side- arm type disconnect switch on unit, unless there is an emergency.

15-3.3 Operate the switch, valve, or other energy isolating device so that the equipment is isolated from its energy source. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.

15-3.4 Lockout and/or tagout the energy isolating devices with assigned individual locks or tags.

15-3.5 After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

****CAUTION: RETURN OPERATING CONTROLS TO "NEUTRAL" OR "OFF" POSITION AFTER THE TEST.****

15-3.6 The equipment is now locked or tagged out.

15-4 RESTORING MACHINE OR EQUIPMENT TO NORMAL OPERATIONS

15-4.1 After the servicing and/or maintenance is complete and equipment is ready for normal operations, check the area around the machines or equipment to ensure that no one is in danger.

15-4.2 After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Operate the circuit breaker to restore energy to the machine or equipment.

15-5 PROCEDURE INVOLVING MORE THAN ONE PERSON OR CRAFT

15-5.1 In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his or her own personal lockout device or tagout device on the energy isolating device. When an energy isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. Each employee will then use his/her own lock to secure the multiple lockout device.

15-6 GUIDELINES FOR USING LOCKOUT OR TAGOUT SYSTEM PROCEDURE

15-6.1 All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel or property damage. Do not attempt to operate any switch, valve, or other energy isolating device when it is locked or tagged out.

15-6.2 Each FPM and Contractor's' employee shall be assigned individual locks. Each lock will have two keys, one key for the employee and one key which will be in a cabinet in his/her departmental office. Each lock will be identified in a unique manner.

15-6.3 In the event that locked out or tagged out equipment must be operated, every effort must be made to locate the person who locked his/her lock on the lockout device. The foreman or supervisor of the employee who placed his/her lock on the equipment will be notified. The supervisor will be responsible for deciding if the employee is not on the campus or cannot be located to use the spare shop key to personally unlock the lock, and notify the employee of his action as soon as possible. The employee shall have the responsibility of checking his or her lock or tag before resuming work after an absence.

**** NOTE **** Each supervisor will be responsible for instructing his/her crew in the implementation of this procedure and for its enforcement.

TRENCHING AND EXCAVATION

4-20 Trenching Excavation

4-20.1 Definitions:

Trenches-- Excavations mean a narrow hole made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the sides of the excavation to 15 feet or less the excavation is also considered to be a trench.

A competent person -- means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate them.

Shoring C means a structure such as a metal hydraulic, mechanical or timber system that supports the sides of an excavation and which is designed to prevent cave-ins.

4-20.2 Trenching and Excavation are a hazard to both the employees in the trench as well as the employees that are working around the open hole. All non-supervised open Trenching and Excavation on campus must have a fence around the perimeter of the hole. It is the responsibility of both Contractor and Facility Planning and Management (FPM) department heads to assure that excavation is protected.

4-20.3 Before entry into the trench, a competent person must fill out the A Trenching and Excavating form. @ The competent person shall inspect the trench every shift (eight hours) or if conditions change in the excavation. The competent person will fill out an inspection form on any condition found within the trench. This form will need to be kept on file for OSHA inspections.

4-20.4 Hazardous atmospheres may exist while working in a trench. The Excavation atmosphere must be checked when a hazard is present to prevent harmful exposure. If some harmful conditions exist, the excavation may only be entered as a permit required confined space.

4-20.5 Heavy equipment operating around an open trench must have a warning system for the equipment so the equipment does not fall into the hole. The warning system may be a barricade, hand or mechanical signals, or stop logs.

SEE SAMPLE TRENCHING INSPECTION FORM

TRENCHING AND EXCAVATION

[Trenching Form.pdf](#)

CHECKLIST

DATE:

SITE LOCATION

_____ # in crew _____ # in the trench _____ depth of trench

Name of Competent Person Time

*If weather has effected the work site reinspect!

Type of Soil Materials

_____ Type A (cohesive clay) Slope angle 3/4 : 1

_____ Type B (silty loam) Slope angle 1: 1 45 degrees

_____ Type C(sandy silt or clay) Slope angle 1.5 : 1 34 degrees

Type of shoring _____ Timber _____ Mechanical _____ Hydraulic

Yes/ No

_____ Trench 20 feet deep or better C Trench protection design by Professional Engineer.

_____ Adjacent structures are supported (street, sidewalks, building)

_____ Employee no farther that 25 feet from a ladder

_____ Ladders extend 3 feet above mouth of trench

_____ Spoil bank piled no closer that 2 feet of mouth of trench

_____ Mobile equipment has warning system of trench mouth locations

_____ Inspection by Competent person after rain and other changes in the trench

_____ Are employees working outside the trench shoring area

If yes move or extend the shoring area.

_____ There is reason to believe a hazardous atmosphere exists

If yes used Confined Space Entry Form

_____ Barricades are in place around trenching area

Medical, Safety, and Department Contacts

Medical Contacts:

EIU Health Services581-3013

Sarah Bush Lincoln Hospital1-800-255-2944

(In any emergency, dial 911)

Safety Contacts:

Environmental Health and Safety-Gary Hanebrink581-7068