Appendix C
Hazard Assessment and Trench Entry and Authorization Form for regularly scheduled and emergency trenching activities

Date Prepared: ____________ Location: ________________________ Time: ____________

Approximate Temperature (degrees F): ___________ Weather Conditions: ________________

Project Name: ___________________________________________________________________

Competent UC Irvine Employee: _____________________________________________________

Supervisor Name: ___________________________________________________________________

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Depth =</th>
<th>Top = W</th>
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<thead>
<tr>
<th>Soil Type</th>
<th>Tested?</th>
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<tbody>
<tr>
<td>Solid rock (most stable)</td>
<td></td>
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<tr>
<td>Average soil</td>
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<tr>
<td>Fill material</td>
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<tr>
<td>Loose sand</td>
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Hazard Identification

UC Irvine’s written Injury and Illness Prevention Program (IIPP) meets all Cal/OSHA requirements. Includes identification of trenching and excavation hazards on the site, regular inspections, accident investigation, and correction of hazardous conditions.

Before the job commences, consider the purpose of the job, the activities it involves, and the hazards it presents. What has to be done? Who has to perform the job and how will it be performed?

Break down a specific job into a series of steps and identify all the potential hazards employees may encounter while performing the job.
Decide what actions or procedures (develop revised task procedures, obtain personal protective equipment, provide safety guards or safety devices, provide job specific training, engineer the hazards out, etc…) are necessary to eliminate or minimize the hazards that could lead to an accident or injury.

**Notification**

The EH&S Department has been notified in a timely fashion, of any trenching or excavating job and whether any UC Irvine employees will enter the space. EH&S will subsequently notify Cal/OSHA of these trenching activities occurring on campus.

Sloping or benching for excavations greater than 20 feet deep follow Cal/OSHA specifications or was designed by a professional engineer.

**Competent Person**

A “Competent Person” is on site to identify hazards.

Competent Person’s Name:

If the Competent Person finds evidence of a hazard, employees are immediately removed from the dangerous area.

No UC Irvine employee is allowed to enter a trench or excavation unless the Competent Person is on site.

The Competent Person has knowledge of testing procedures for hazardous atmospheres.

The Competent Person has knowledge of soil classification, has classified the soil, and has determined the appropriate type of cave-in protection and required slope.

**Protective Systems**

Workers are protected from cave-ins in all excavations by an adequately designed protective system. (Not necessary if excavation made in stable rock, or if less than 5 feet deep and no potential for cave-in.)

Work is done only in areas protected by sloping and benching, a support system, a shield system, etc.

Installation of the support system is closely coordinated with excavation of the trench.
Material and equipment used for protective systems are the right size, in good condition, and free of defects. □

Members of support systems are securely connected together and are not subjected to loads beyond their capacity. □

Workers are protected from cave-ins, structural collapse, or accidentally being hit during installation and removal of the support system. □

Removal of shoring or other protective systems starts at the bottom of the excavation. Members are released slowly so structural failures will be noticed. □

Backfilling progresses with the removal of support systems from excavations. □

Employees are instructed not to climb on shoring or bracing. □

**Inspections**

The Competent Person inspects (a) every day before work, (b) after every rainstorm, and (c) as needed, for evidence of possible cave-ins, failure of systems, hazardous atmospheres, etc. □

There is no accumulated water in trenches or excavations where employees work, unless special precautions are taken. Water is removed safely and monitored by the Competent Person. The Competent Person is aware of the water table and natural drainage. □

There are no tension cracks, sloughing (small cave-ins), or bulging in trench walls or in the ground near trenches or excavation. □

There is no bending, buckling, or shoring in the trench or excavation. (If there is any damage, call a registered professional engineer.) □

There has been no change in weather affecting soil moisture since the last inspection conducted by the Competent Person. □

A lookout person is standing by at all times while employees are physically in the trench. □

**Hazards – Underground, Overhead, Surface**

Underground utility installations in the area (such as electrical, phone, gas, sewage, water, and fuel lines) have been identified. □
<table>
<thead>
<tr>
<th>Checkboxes</th>
<th>Instruction</th>
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<tr>
<td></td>
<td>Utility owners have been notified at least two working days prior to the commencement of digging.</td>
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<td>While an excavation is open, underground utility lines are protected, supported, or removed, as necessary.</td>
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<td>Employees are not permitted underneath a load handled by lifting or digging equipment.</td>
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<td>No employees are permitted above others on sloped/benched faces, unless those below are protected from falling material.</td>
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<td>There is adequate protection from loose rock on the face of a trench or excavation. (Protection may include scaling to remove loose material or erection of a barricade.)</td>
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<td>Hazards from vehicle or equipment vibration have been inspected and corrected.</td>
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<td>Support systems have been installed wherever the stability of adjoining buildings, walls, or other structures is endangered by excavation operations.</td>
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<td></td>
<td>No excavation is done below the level of the base or footing of any foundation or retaining wall, unless the structure is supported.</td>
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<td>Sidewalks and roads are supported, if undermined.</td>
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<td>Spoil, tool, material, and equipment are kept at least two feet from the edge. If not, they are kept in place by retaining devices.</td>
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<td>Protection is provided from mobile equipment, which approaches the edge of an excavation. (Protection may include barricades, hand or mechanical signals, or stop logs) Wherever possible, the vehicle path grade should slope away from the excavation.</td>
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**Access to Trenches and Excavations**

Ladders, stairs, ramps, or other means of access are no more than 25 feet from any employee in a trench 4 feet or more deep.

Structural ramps, that are used solely by employees, must be designed by a Competent Person; ramps for equipment are designed by a Competent Person qualified in structural design.

Walkways or bridges with standard guardrails are provided where employees or equipment cross over excavations, which are deeper than 6 feet and wider than 30...
There are adequate barriers (warning signs, barricades, covers) to prevent unauthorized entry into a trench or excavation.

Temporary wells, pits, shafts, etc. are backfilled as soon as exploration or similar operations are completed.

Confined Spaces and Hazardous Atmospheres
Excavations may be classified as confined spaces if dangerous air contamination or oxygen deficiency exists, and it is difficult for workers to exit the space. If such a space exists, the **UC Irvine Confined Space Entry Program** must be followed before the space may be entered.

List specific space information here:

Hazardous Electrical Conditions Requiring the Use of Lockout/Tagout Procedures
Excavations may contain equipment that requires the use of lockout/tagout procedures to de-energize the energy source. If such equipment exists, follow the **UC Irvine Hazardous Energy Control and Lockout/Tagout Program** before the excavation space may be entered.

List specific space information here:

Fall Protection
Excavations may possess conditions where fall protection is required to be used in these spaces. If employees must access shoring equipment that is located at least six feet from the bottom of the excavation or trench, follow the **UC Irvine Fall Protection Program** before working in the excavation space.

List specific space information here:

Hot Work
Excavations may possess conditions where hot work is required to be performed to fix a problem. If employees must perform hot work in an excavation space, follow the **UC Irvine Hot Work Program** before commencing hot work in an excavation space.

List specific space information here:

Potential for Other Physical Hazards (Chemical, Noise, and Heat)
Excavations may possess other physical hazards that include chemical exposure, noise exposure, and excessive heat exposure to employees while working in the excavation space. Before commencing work in an excavation space, evaluate the potential for the aforementioned exposures.

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<tr>
<td>Determine if any chemicals are being used in the area where the excavation work is occurring and if present, evaluate how to control employee exposure, and the proper PPE to be used.</td>
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<tr>
<td>Determine if any significant noise sources exist where the excavation work is occurring and if present, evaluate how to control employee exposure, and the proper PPE to be used.</td>
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</tr>
<tr>
<td>Determine if any significant sources of heat exist where the excavation work is occurring and if present, evaluate how to control employee exposure, and the proper PPE to be used.</td>
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List specific space information here:

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**Personal Protective Equipment**

Hard hats, protective boots or shoes, goggles, protective clothing, and protective gloves are available and used as required by UC Irvine employees entering trenches, excavations, and confined spaces. Protective equipment is appropriate for the work being performed and provides adequate protection.

Evaluate the excavation space to determine if it is necessary to wear respiratory protection while working in the space. If it is determined that respirators are to be used, confirm that all excavation employee entrants are included in UC Irvine’s Respiratory Protection Program and if their medical examination and annual fit tests are current.

Workers exposed to vehicle traffic must wear bright orange warning garments. In rainy weather, they must wear orange or yellow raingear.

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**Housekeeping**

Adequate lighting exists when employees are working at night.

All work areas are free of tripping hazards.

Means of access and egress are kept clear at all times.