Chapter 11: Excavation Safety

Excavation Permit Form

Instructions
This form must be completed, approved, and kept with work planning and control (WPC) documentation at the work site for the duration of the described excavation operations. (See Excavation Safety: Excavation Procedures.)

Important
The conditions and hazard mitigations listed below must be included in the appropriate job safety analysis (JSA) and pre-work/tailgate briefing.

Scheduling
1) Allow 10 working days for required reviews.
2) If soil testing is required, allow an extra 2 weeks after the sampling date.
3) Permitted work must be initiated within 3 months of original submission. If it is not initiated the permit must be resubmitted to confirm in-field survey accuracy.
A Description

*Completed by the project manager (PM) or field construction manager (FCM)*

Initiated by: ___________________________ Phone: ___________________________ Date: ___________________________

PM or FCM: ___________________________ Phone: ___________________________ Service request #: ___________________________

PM or FCM: ___________________________ Phone: ___________________________ PO #: ___________________________

Competent person: ___________________________ Phone: ___________________________ Estimated start date: ___________________________

Subcontractor: ___________________________ Phone: ___________________________ Estimated end date: ___________________________

Project location *(include grid coordinates)*: ___________________________ Nearest building: ___________________________

Describe excavation purpose:

*Attach a detailed sketch or drawing* *(include location, dimensions of work to be completed, and grading plans for cut-and-fill work)*

<table>
<thead>
<tr>
<th>Maximum dimensions (feet)</th>
<th>Estimated volume of excavated material, cubic yards (yd^3)</th>
<th>As-builts, if needed, will be completed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request soil reuse as backfill?</td>
<td>Yes ☐ No ☐</td>
<td>Subcontractor</td>
</tr>
</tbody>
</table>

Will the excavation be five or more feet deep and will personnel be entering? Yes ☐ No ☐

What protective system (sloping, benching, shoring) is planned? ___________________________

Will the excavation be 20 or more feet deep? Yes ☐ No ☐

1. The protective system must be designed by a registered professional engineer.
2. A description of the system must be submitted prior to excavation.

Will soil compaction testing be needed? Yes ☐ No ☐

If yes, specify testing method: ☐ nuclear gauge (prior authorization required) ☐ sand cone test

Is the excavation within any area that is posted as any type of controlled area, radiologically controlled area, contamination area, radiation, high radiation, or radioactive material area? Yes / not sure ☐ No ☐

Is the excavation within 25 lateral feet of an underground beam line housing? (indicated by yellow on the Beam Line Map)

Within 25 lateral feet of beam housing

25 feet

25 feet

Ground level

Beam housing

Beam pipe

Is the excavation within 25 lateral feet of an underground beam line housing? Yes / not sure ☐ No ☐

Does the excavation involve a well or soil boring? Yes ☐ No ☐

1. Will the bore be near accelerator housing or is there any reason to suspect that radiological conditions may be encountered (such as tritium in groundwater)?
2. Will a drill rig be brought on-site?

Are there utilities within the excavation area (confirm after utility survey, Section D)? Yes / not sure ☐ No ☐

1. All known utilities must be located before digging.
2. Use of heavy machinery is not allowed within an *exclusion zone* (the width of the utility plus 18 inches in all directions) around the utility.
3. All utilities in the area must be de-energized/de-pressurized and locked and tagged before digging unless an exception is approved by the Infrastructure and Safety Directorate associate laboratory director.

**Important:** these hazard mitigations must be included in the JSA and pre-work/tailgate briefing for the days digging will occur.
B Radiological Review

Completed by the Radiation Protection Field Operations (RPFO) Group

- No additional RPFO requirements
- Additional requirements apply as follows:
  - A radiation generating device authorization is required prior to bringing the device onto SLAC property.
  - A radiological work permit is required and must be attached to this form during excavation operations.
  - Radioactive waste management is required. Contact Radioactive Waste Management. Allow 3-5 days for container delivery.
  - Other:
  - Call ext. ______________ for further instructions

Reviewed by (print name)  Date: __________________________

Signature

Completed by the Radiation Physics Group if excavation is or may be within 25 lateral feet of any underground beam housing.

- No special requirements apply.

- Additional requirements apply as follows:

Reviewed by (print name)  Date: __________________________

Signature
C Environmental Review

*Completed by the Environmental Protection (EP) Department*

Waste classification of excavated material:

Contact the Waste Management Group for any disposal coordination and containers by means of the [Hazardous Waste Pick Up and Disposal Form](#). Allow 3-5 days for container delivery.

Other requirements:

Reviewed by *(print name)*

Date: ____________________________

Signature: ________________________
### D Utility Drawing Review

**Completed by the facilities engineer**

The following utilities are present in the excavation area *(check all that apply)*:

- Electrical
- Storm drain
- Sanitary sewer
- Natural gas
- Compressed air
- Water
- Process piping
- Telephone
- Control cables
- Groundwater monitoring wells
- Other:

Refer to drawing number(s):

**Important:**

An in-field utility line location is required for all excavations that require a permit; a completed [Excavation Safety: Utility Line Location Results Form](#) must be attached to this form.

Updated as-builts required upon completion? Yes ☐  No ☐

__________________________

Reviewed by *(print name)*

__________________________  ____________________________

Date:  Signature

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E  ESHQ Approval
Drilling rig initial inspection required?  Yes ☐ No ☐
If yes, attach completed Excavation Safety: Mobile / Portable Drilling Rig Initial Inspection Form
I have reviewed this permit and work may proceed.

Excavation safety program manager (or designee) (print name) __________________________________________ Date: ____________________
Signature

F  Scope Change
If the scope of work changes the PM or FCM must notify the excavation safety program manager (ESPM) or designee to determine if the permit must be revised and reapproved. (Examples of a scope change include encountering unexpected conditions or an increase in the size of the excavation.)

<table>
<thead>
<tr>
<th>Change</th>
<th>Revise and Reapprove?</th>
<th>Date</th>
<th>ESPM (initial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ☐ No ☐</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes ☐ No ☐</td>
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<tr>
<td>Yes ☐ No ☐</td>
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</tbody>
</table>

G  Close Out
Completion: As-built drawings and utility line location results were verified in the field, the drawings were delivered to the excavation safety program manager, and the excavation has been completed according to the permit conditions.

PM or FCM (print name) __________________________________________ Date: ____________________
Signature

Close out: As-built drawings and utility line location results have been transmitted to the facilities engineer, as required.

Excavation safety program manager (print name) __________________________________________ Date: ____________________
Signature