



Facilities Management

Digging Permit & Trenching Standard

Project Name: _____

Project No.: _____

Project Description: _____

Digging Application

Supplementing the "Utah Occupational Safety & Health-Excavation Guidelines Checklist", S.U.U. has implemented these requirements to be followed to prevent accidental damage and resulting disruption to underground utilities.

No trenching or digging shall occur before the following people are contacted and their signatures obtained on this form. This does not eliminate the need to contact "Blue Stakes" if the trenching project is on or near a state or city right of way. This permit requires digging to be performed by hand within two feet of marked utility.

Blue Stakes: 1-800-662-4111. Reference number _____

Estimated start date and time. _____

Estimated completion date and time. _____

Applicant. _____ Applicant phone number. _____

Who will be digging _____

S.U.U. Approval & Contact Information:

Approved by:

Tyson Kyhl, Manager, Space Planning, Risk & Project Administration

Date

Contact Information:

Tyson Kyhl, Manager, Space Planning Office: 586-7901 Cell Phone: 590-1025

Tiger Funk, Manager, Utility Services Office: 586-7888 Cell Phone: 590-8451

Chris Gale, Manager, Grounds & Gardens Cell Phone: 559-1853

S.U.U Trenching Standards Addendum

All U.O.S.H. Guidelines are to be followed on digging projects on campus.

"Utah occupational Safety & Health Excavation Guidelines Checklist" can be obtained by calling

State of Utah-- Labor Commission Occupational Safety & Health..1-801-530-6735.

Excavating and Trenching

The estimated location of utility installations – such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work- shall be determined prior to opening an excavation. **1926.651(b)(1)**

Utility companies or owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours (unless a longer period is required by state or local law), or cannot establish the exact location of these installations, the employer may proceed, provided the employer does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used. **1926.651(b)(2)**

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. While the excavation is open, underground installations shall be protected, supported, or removed, as necessary, to safeguard employees. **1926.651(b)(3)&(4)**

Each employee in an excavation shall be protected from cave-ins by an adequate protective system except when:

Excavations are made entirely in stable rock, or excavations are less than 5 feet (1.524 meters) in depth and examination of the ground by a competent person provides no indication of a potential cave-in. **1926.652 (a)(1)(i)&(ii)**

Protective systems shall have the capacity to resist, without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system. **1926.652(a)(2)**

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or

equipment at least 2 feet (0.6096 meters) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary. **1926.6510 (2)**

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by a competent person prior to the start of work and as needed throughout the shift. Inspections shall be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated. **1926.651(k)(1)**

When a competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. **1926.651(k)(2)**

A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are 4 feet (1.2192 meters) or more in depth so as to require no more than 25 feet (7.62 meters) of lateral travel for employees. **1926.651(c)(2)**

COMPETENT PERSON CHECKLIST

Guidelines (There may be additional requirements for your circumstances)

SOILS

(YES) (NO)

Visual Observation..... [] []

Slope..... [] []

Manual Test..... [] []

Soil Classification..... [] []

(determination of soil A,B, C)

Type A means:

Cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144kPa) or greater.

Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

- (i) The soil is fissured; or
- (ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects or
- (iii) The soil has been previously disturbed; or
- (iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater, or
- (v) The material is subject to other factors that would require it to be classified as a less stable material.

Type B means:

- (i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or
- (ii) Granular cohesionless: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.
- (iii) Previously disturbed soils except those which would otherwise be classed as Type C soil.
- (iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or
- (v) Dry rock that is not stable; or
- (vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type C means:

- (i) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or
- (ii) Granular soils including gravel, sand, and loamy sand; or
- (iii) Submerged soil or soil from which water is freely seeping; or
- (iv) Submerged rock that is not stable, or
- (v) Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

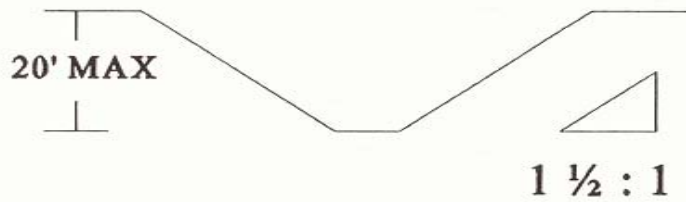
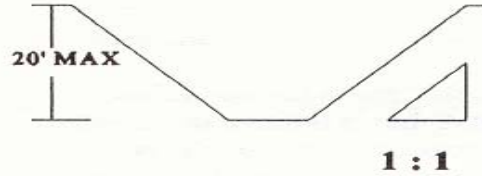
MAXIMUM ALLOWABLE SLOPES

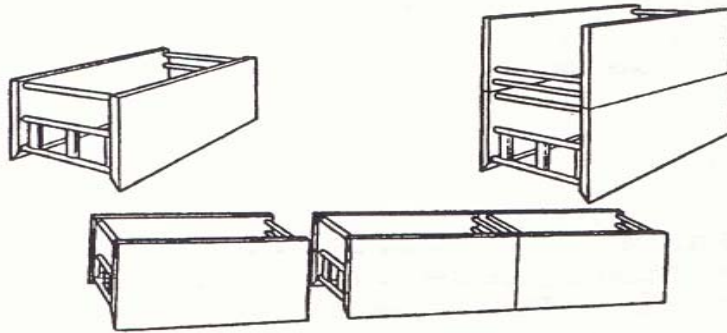
SOIL OR ROCK TYPE | MAXIMUM ALLOWABLE SLOPES (H:V)

DEEP | EXCAVATIONS LESS THAN <20 FEET

STABLE ROCK	VERTICAL (90 Deg.)
TYPE A	3/4:1 (53 Deg.)
TYPE B	1:1 (45 Deg.)
TYPE C	1 1/2:1 (34 Deg.)

Depth	3/4 : 1	1 : 1	1 1/2 : 1	
6 ft	9 ft	12 ft	18 ft	+ Bottom Width
7 ft	10 1/2 ft	14 ft	21 ft	+ Bottom Width
8 ft	12 ft	16 ft	24 ft	+ Bottom Width
9 ft	13 1/2 ft	18 ft	27 ft	+ Bottom Width
10 ft	15 ft	20 ft	30 ft	+ Bottom Width
11 ft	16 1/2 ft	22 ft	33 ft	+ Bottom Width
12 ft	18 ft	24 ft	36 ft	+ Bottom Width
13 ft	19 1/2 ft	26 ft	39 ft	+ Bottom Width
14 ft	21 ft	28 ft	42 ft	+ Bottom Width
15 ft	22 1/2 ft	30 ft	45 ft	+ Bottom Width
16 ft	24 ft	32 ft	48 ft	+ Bottom Width
17 ft	25 1/2 ft	34 ft	51 ft	+ Bottom Width
18 ft	27 ft	36 ft	54 ft	+ Bottom Width
19 ft	28 1/2 ft	38 ft	57 ft	+ Bottom Width
20 ft	30 ft	40 ft	60 ft	+ Bottom Width





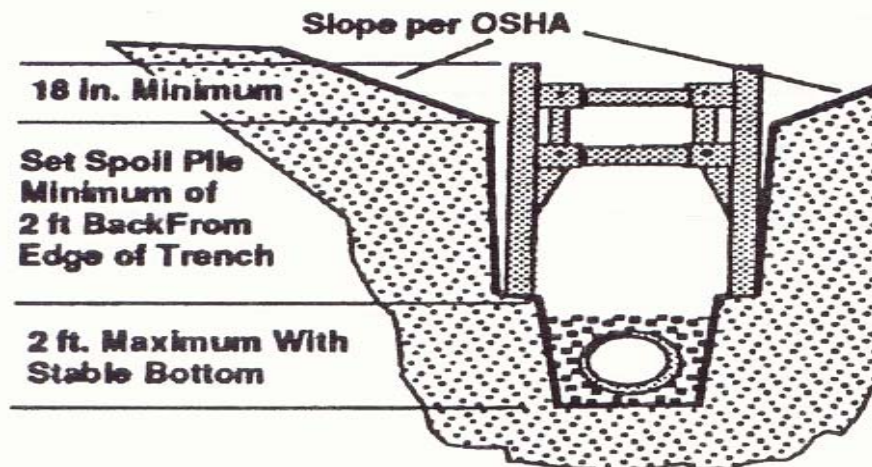
	(YES)	(NO)
Trench shoring Box.....	[]	[]
Special Engineered Design if > 20' deep..	[]	[]
Correct shore/shield.....	[]	[]
Manufacture's Tabulated Data.....	[]	[]
Protective System Inspection.....	[]	[]
Correct angle of repose (slope).....	[]	[]

ENCUMBRANCES

Above ground..... []
Below ground..... []
Surcharge loads..... []

GENERAL

Ladders/Ramps..... []
Hazardous Atmosphere..... []
Spoil Material Placement..... []
Water Accumulation..... []
Utility Location..... []



EXCAVATING REQUIREMENTS

(YES) (NO)

1. Has the daily inspection of the excavation site been made

- by the competent person?.....[] []
2. Are hard hats being worn by all personnel at all times when on the excavation site?.....[] []
3. Are personal protection equipment (eye shields, toe shields, etc.) being used when a hazard exists?.....[] []
4. Is a copy of the OSHA Trenching standard present on site (preferably located on the excavator for quick reference)?.....[] []
5. Are employees who are exposed to vehicular traffic wearing warning vests?.....[] []
6. Are employees being kept out from under suspended loads?.....[] []
7. Before opening any excavation, have efforts been made to determine if there are underground utility installations in the area?.....[] []
8. If there are underground utility installations, have utility companies been contacted before excavation was started?.....[] []
9. If underground utility installations are located, have they been protected, braced or removed to safeguard employees ?.....[] []
10. Have surface encumbrances been removed?.....[] []

11. In excavations into which employees are required to enter, have excavated or other materials been effectively stored and retained at least 2 feet or more from the edge of the excavation?.....[] []
12. Do trenches 4 – 5 feet apart or more have adequate means of exit, such as ladders or steps, located where no more than 25 feet of travel is required..... [] []
13. Has a harness and lifeline been provided whenever an employee is required to enter a confined space classification excavation?.....[] []
14. Have steps been taken to protect employees from loose rock and hazards of falling rocks?.....[] []
15. Do the walls and faces of trenches 5 feet or deeper and all excavations in which employees are exposed to danger from moving ground or a cave-in have a protective system, i.e. shoring, sloping or some other equivalent means?.....[] []
16. Is there any evidence of a possible cave-in or slide?.....[] []
17. Have guardrails been provided when employees are required to cross a walkway at an excavation site?.....[] []
18. If excavation is in a remote location, such as a well, pit or shaft, have physical barriers been provided?.....[] []
19. Have structural ramps used solely by employees been designed by a competent person?.....[] []

20. Do the structural ramps have appropriate means provided to prevent slipping and are the runways uniform in thickness?.....[] []
21. Has a barricade, stop log or hand signals been provided when equipment is required close to the excavation?.....[] []
22. Are sidewalks, pavement, etc. protected from undercuts?.....[] []
23. Have adjoining buildings, walls, etc. been braced or otherwise supported?.....[] []
24. Has the air around the excavation site been tested to make sure an oxygen deficiency or hazardous atmosphere does not exist?.....[] []
25. If hazardous atmosphere does exist, has proper Personal Protective Equipment been provided?.....[] []
26. Is water accumulation a problem?.....[] []
(If **YES**, are employees in the excavation site protected and equipment monitored by a competent person?)
27. Does the excavation interrupt the natural drainage?.....[] []
(If **YES**, has suitable means been provided to divert the water?)