 Marathon Petroleum Company LP	SAFE WORK INSTRUCTION				HS-SWI-021
SALT LAKE REFINERY	Excavation and Trenching				Page 1 of 18
RESPONSIBLE DEPT.	CONTENT STEWARD		APPROVED BY		
Environment, Safety, & Security (ESS)	Safety Supervisor		ESS Manager		
ORIGINAL ISSUE:	1/21/2011	LATEST REVISION:	10/28/20	NEXT REVIEW:	10/28/23

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1.0 INTRODUCTION

1.1 Purpose

- 1.1.1 The purpose of this Safe Work Instruction is to establish processes which will protect employees, contractors, communities, pipelines, utilities, and the environment from injury, and/or damage during trenching/excavation operations. This procedure will establish the steps necessary to identify underground and overhead utilities containing hazardous energy, utilize system(s) to prevent cave-in, to prevent vehicle/unauthorized person entry, ensure that work performed in the excavation is done in a safe manner.

1.2 Scope

- 1.2.1 The scope of this Safe Work Instruction applies to all excavations performed within the Salt Lake City Refinery and includes:
- Permit requirements
 - Excavation requirements
 - Non – entry excavations
 - Excavations involving entry
 - Horizontal Directional Drilling
 - Response to emergency events

1.3 References

The following sections describe references used to generate this Safe Work Instruction.

Government Regulations

- 29 CFR 1926 Subpart P Excavations
- 29 CFR 1910.146 Permit Required Confined Spaces

1.4 Tools and Templates

- HS-FRM-013 Excavation and Trenching Permit

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2.0 DEFINITIONS

The following terms and definitions are used in this Safety Practice.

Table 1 Terms and Definitions

Term	Definition
Benching	A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels
Competent Person	Capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
ECM	Environmental Compliance Manager
Entry: Confined Space	Action which in itself may require a person to place their head below the plane of the excavation and/or the body to pass through an opening into a confined space. Entry includes work activity in the confined space and occurs as soon as the head or body breaks the plane of the opening. This action will require a confined space permit.
Equipment Operator	Operator of equipment used to move, dig and lift sand, gravel, or earth in loading and excavation of materials. The Equipment Operator must be qualified to operate equipment and be able to provide documentation when requested.
Excavation	Man-made cut, cavity, trench, or depression made in the earth's surface formed by earth removal by any means, including Vac truck, Driving rods, etc.
Hazardous Atmosphere	Atmosphere which may cause death, injury, or illness by being explosive, flammable, poisonous, oxygen deficient, toxic, or otherwise harmful.
HDD	Horizontal Directional Drilling.
Protective Systems	Method of protecting employees from cave-ins from material that could fall or roll from the excavation face or the collapse of an adjacent structure. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection
Registered Professional Engineer	Professional engineer registered in the state where the work is to be performed. An engineer registered in any state is classified as a "Registered Professional Engineer."
Shield	Structure that is able to withstand the forces imposed by a cave-in, protecting the employee. Usually referred to as trench boxes or trench shields.
Sloping	Method of cave-in protection achieved by the sides of the excavation being inclined away from the excavation to prevent cave in. Varies with conditions.
Spotter	A person designated to monitor earthmoving processes and pay close attention to the presence of underground utilities and any surface hindrances that may be encountered.
Trench	Narrow excavation made below the surface with the depth generally greater than the width. The width is generally not more than 15 feet measured at the bottom.

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3.0 PRACTICES

3.1 Excavation Permit Requirements

- 3.1.1 An Excavation Permit (see Appendix D) and Safe Work Permit must be requested for any excavation or any method of creating a depression in the earth's surface by means of soil removal at any depth prior to the start of work. Drawings shall be reviewed with personnel conducting the excavation before beginning work. This includes verifying the existence of any other assets in the vicinity. The Permit Receiver must review plot plans or request the use of a line finder device to identify underground utilities or obstructions and must visit the job site to determine whether overhead utilities are present in the immediate area and if other equipment must be protected.
- 3.1.2 The Permit Receiver and Competent Person complete the Excavation Permit (Appendix D); inspects the excavation to ensure the excavation is dug in accordance with the permit requirements; and, that the excavation work complies with the stipulated controls and safeguards. Each day at beginning of work and after each rainstorm event before work recommences the competent person re-inspects the excavation and signs on the back of the permit in the Daily Excavation Inspection Section.
- 3.1.3 The permit receiver follows all permit requirements and, if permit conditions change and become unsafe, voids the permit.
- 3.1.4 Before an Excavation Permit is valid, it must have the Competent Person and Permit Receiver signatures. These signatures signify that the Competent Person Permit Receiver have thoroughly reviewed the proposed excavation work and that the receiver will comply with all conditions required by the permit. There must also be a Safe Work Permit with the Excavation Permit for any excavation work to begin.
- 3.1.5 The Excavation Permit will be posted as follows:
 - 3.1.2.1 The Excavation Permit is posted at the job site for ready access and reference of anyone viewing and auditing the Excavation Permit and work practices. No excavation work is to start until the permit is posted at the job site with the Safe Work Permit.
 - 3.1.2.2 The Excavation Permit will be retained by the party performing the excavation work between shifts. If the permit is lost a new excavation permit shall be written before work continues.
 - 3.1.2.3 Once the excavation work is complete the Excavation Permit shall be returned to the Owning Department by the party performing the excavation and submitted with the last Safe Work Permit associated with the excavation work.
- 3.1.6 When an excavation is found to have conditions, which do not comply with those, listed on the permit, or when conditions in the excavation change sufficiently that work in the excavation is unsafe, the permit must be revoked and further work activity in

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the excavation stopped. Before work in the excavation can resume, the site must be made safe for this work activity and a new Excavation Permit issued.

3.2 Excavation Requirements

- 3.2.1 The first step shall be to initiate the Excavation Permit and Safe Work Permit. Then complete the initial general information to include:
 - 3.2.1.1 Location of excavation
 - 3.2.1.2 Description of work to be done
 - 3.2.1.3 Equipment to be used
 - 3.2.1.4 Type of permits required (hot work, confined space, etc.)
 - 3.2.1.5 Complete the initiation of the 811 One Call/Dig Alert System for line locates, if appropriate.
- 3.2.2 A review of the work details, job site, and permit conditions shall be completed by the Competent Person, Permit Receiver and Owning Department Representative. After this review of the job site, the remaining information on Safe Work Permit and Excavation Permit forms shall be completed. Atmospheric testing and any hazardous material SDS forms shall be attached to the permit to work, as well as a confined space permit, if required.
- 3.2.3 When applicable, all required permits from government or regulatory agencies having any type of jurisdiction over the excavation site shall be obtained. This includes the confirmation number given after the 811 One Call/Dig Alert systems have been activated. If there shall be any adverse effect on traffic in the area, arrangements must be made to obtain any and all required city, state or local permits required to close roads and reroute/detour traffic.
- 3.2.4 All available maps, plans, and/or drawings for buried conduits, cables and piping running within the vicinity of the excavation site must be reviewed by the Competent Person and Permit Receiver prior to beginning excavation.
- 3.2.5 If appropriate, other pipeline owners and /or utility companies must be contacted within customary local response times (48-72 hours) prior to the start of excavation either through direct contact or the local One Call/Dig Alert system (811), advised on the proposed work, and a request made to establish locations of underground installations, as well as have above ground and underground obstructions identified and marked. In the event location cannot be confirmed within the allotted time frame, excavation operations may proceed with approval from the Responsible, Competent Person and Owning Department provided they do so using extra caution, detection equipment if available, or some acceptable means to locate underground installations.

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3.3 Facilities

Identification and Marking

- 3.3.1 When located or exposed, all abandoned facilities are treated as live facilities.
- 3.3.2 Facility locators match markings to the existing and expected surface conditions. Markings may include one or any combination of the following: paint, chalk, flags, stakes, brushes, or offsets. All marks extend a reasonable distance beyond the bounds of the requested area.
- 3.3.3 Multiple facilities in the same trench are marked individually and with corridor markers.
- 3.3.4 Typically, the number of lines marked on the surface equals the number of lines buried below. In circumstances where the total number of lines buried in the same trench by a single facility owner/operator may not be readily known, a corridor marker will be used. The corridor marker indicates the width of the facility.

3.4 Utility Locating

- 3.4.1 When locating electromagnetically, active/conductive locating is preferable to passive/inductive locating.
- 3.4.2 The preferred method of actively applying a signal onto a facility is to use direct connection. Direct connection is the process of connecting a direct lead from the transmitter to the target facility and connecting a ground lead from the transmitter to a ground point to complete a circuit. This process provides the strongest signal on the line and is less likely to "bleed over" to adjacent facilities than other methods of applying a signal.
- 3.4.3 The least preferred method is induction or broadcast mode on a transmitter. This usually results in a weak signal that will "bleed over" to any conductor in the area.
- 3.4.4 In cases where non-conductive utilities cannot be located using electromagnetic means, radar-based methods such as ground penetrating radar and associated technologies can be used to determine the location of such utilities.

3.5 Tolerance Zones

- 3.5.1 When excavation is to take place within the specified tolerance zone, the excavator exercises such reasonable care as may be necessary for the protection of any underground facility in or near the excavation area. Methods to consider, based on certain climate or geographical conditions, include hand digging when practical (pot holing), soft digging, vacuum excavation methods, pneumatic hand tools, other mechanical methods with the approval of the facility owner/operator, or other technical methods that may be developed. Hand digging, and non-invasive methods are not required for pavement removal.
- 3.5.2 Owner/Operators of Buried Services may jointly establish utility locating and Excavation practices within the Tolerance Zone, which may include hand-digging, potholing, vacuum Excavation, hydro Excavation, pneumatic hand-tools and/or mechanical methods. Agreements within the Tolerance Zone shall not supersede the Refinery requirement to maintain 24 inches from any side of the Buried Service, and greater distances when

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required by applicable law while excavating using heavy equipment.

3.6 General Safe Work Practices

- 3.6.1 The following additional requirements must be met if they apply to the excavation:
- 3.6.2.1 Workers exposed to vehicular traffic shall have reflective warning vest or suitable safety garments which meet local standards;
 - 3.6.2.2 Surface and overhead obstructions will be guarded, removed, or supported to safeguard workers;
 - 3.6.2.3 Spoils shall be a minimum 2 feet away from the excavation opening;
 - 3.6.2.4 Excavations beneath the level of adjacent foundations, retaining walls, or other structures (including sidewalks) shall be approved by a registered engineer who verifies that the work will not undermine the structures;
 - 3.6.2.5 Barricades, stop logs, spotters using hand or mechanical signals must be utilized to warn against mobile equipment operating close to the excavation area; Barriers must be provided at all remotely located excavations. Physical barriers with standard railings may need to be provided in some circumstances. Portable lighting should be considered where there is poor illumination;
 - 3.6.2.6 Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard, guard rails shall be provided;
 - 3.6.2.7 Proper means of access/egress shall be established in accordance with 29 CFR 1926.651 (c). Said means of egress shall allow for the employee to egress in an upright position (walking);
 - 3.6.2.8 Ladders, ramps or other means of egress shall be provided in all excavations 4 ft or greater in depth. These means of egress shall be no further than 25 feet from the worker and extend at least 3 ft above excavation;
 - 3.6.2.9 If excavating within eight feet of the centerline of railroad tracks (nine feet on curves) the competent person must notify Railroad owning company.

3.7 Non-Entry Excavations

- 3.7.1 Excavations not involving entry may begin and continue until completed under the following conditions:
- 3.7.2.1 While the excavation is open, all underground installations must be protected, supported or removed.
 - 3.7.2.2 No workers are permitted under loads handled by mechanical equipment. Personnel shall remain clear of any loading/unloading operations.

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- 3.7.2.3 Any damaged structures or equipment shall be evaluated by the Competent Person and removed from service if deemed unsafe.
- 3.7.2.4 Any accumulations of water which could be deemed hazardous to the operation must be removed and the source controlled.
- 3.7.2.5 All work must stop, and a Refinery Representative must be notified if the soil or material being excavated appears to be contaminated with hydrocarbons or other chemicals. The Refinery Representative shall inform the Environmental Compliance Manager (ECM) or the Health & Safety Department of such findings, and soil shall be sampled and handled as hazardous waste if required. Additional PPE may also be required before attempting sampling or remediation.
- 3.7.2.6 Gas testing may be required although entry is not being made. For example, when working ISBL or in pipe alley locations where there is potential for LEL. Continuous monitoring may be required.
- 3.7.2 When the excavation is known to be within 4 feet of pipelines and/or conduits the precise location of the pipelines/ conduits shall be identified by the means of hand digging, Vacuum/Hydro-excavation or probing the final 3 feet. Once located, the use of power equipment may be authorized after the following measures have been met:
 - 3.7.2.1 A representative or owner of the pipeline or conduit has been notified and is present or declined to be present,
 - 3.7.2.2 The electrical conduit is safely encased in concrete; (often red in color) and
 - 3.7.2.3 The Owning Department Rep and Permit Receiver authorize the work to continue.
- 3.7.3 Core sampling or Geotech sampling must maintain at least 6 feet of clearance from known buried piping.

3.8 Excavations Involving Entry

- 3.8.1 If an employee is expected to enter an excavated site, the Competent Person shall test and classify the soil conditions unless otherwise noted on the permit as meeting the conditions of Class C soil and entered on the Excavation Permit as such.
- 3.8.2 Excavations 4 feet or greater in depth, footing excavations, bell bottom pier holes or other confined excavations shall require the completion of a confined space entry permit.
- 3.8.3 Prior to entry daily tests for Hazardous Atmospheres will be taken. If hydrocarbon is present testing for benzene will also be taken. The tests are to be taken at normal grade level and progress to the bottom of the trench or excavation. Gas test results must be recorded on the permit.
- 3.8.4 Additional manual testing should be performed as conditions warrant. If the LEL reading is greater than 10% then the permit

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must be revoked, and the Owning Department Representative notified.

- 3.8.5 Where the excavation is 4 feet or greater in depth, and an oxygen deficient (less than 19.5%) or a hazardous atmosphere could reasonably be expected to exist, atmospheric testing shall be completed and documented on the confined space permit.
- 3.8.6 If an excavation is taking place ISBL, pipe alleys, or in tank dikes then a hot work permit must be in place. The permit must be attached to the other permits at the job location.
- 3.8.7 If conditions meet the criteria of a confined space, a confined space permit shall be completed, and an approved rescue plan shall be in place prior to entry.
- 3.8.8 The competent person shall classify soils by both visual and manual methods per Attachment A, at which point the need for shoring, benching and /or sloping shall be determined.
- 3.8.9 The Competent Person shall determine if adequate employee protection is provided by sloping, benching, or by mechanical means. If the excavation is greater than 20 feet in depth, the protection must be designed by a registered engineer.
- 3.8.10 The Competent Person, upon determining the soil class shall utilize the guidance in Appendix B to determine the requirements for sloping and shoring of the excavation site. The Competent Person shall also ensure that shoring design has been certified by a registered engineer when required by the standards.
- 3.8.11 Steps shall be taken to reduce the exposure to hazardous atmospheres, oxygen deficient atmospheres, and/or flammable atmospheres by the use of approved respirators, or ventilation of the excavation, using Portable Air Testing Equipment. Continuous monitoring of the excavation may be required to verify safe atmospheric conditions.
- 3.8.12 An adequate means of egress, such as a ladder, shall be provided and located so as to require no more than 25 feet of lateral travel. The ladder shall be secured and must extend at least 3 feet above ground level.
- 3.8.13 The project may be exempted from the requirements for Shoring, benching and sloping if:
 - 3.8.13.1 The excavation is less than 5 feet deep and there is no potential for cave in; or
 - 3.8.13.2 The excavation is made entirely in stable rock that has no potential for collapse.
 - 3.8.13.3 This exemption is only given upon certification from a Competent Person that all precautions have been taken to eliminate the risk to the employees regarding cave in, and in accordance with Federal, State, and local regulations.

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3.9 Horizontal Directional Drilling (HDD)

- 3.9.1 This type of drilling will generally be done by a skilled contractor hired by the Refinery. However, the requirements of this Standard covering the responsibilities of the Competent person shall be observed at all times.
- 3.9.2 Horizontal drilling presents its own unique set of hazards and requirements which must be considered when planning an HDD. The following are a few of the main items to be considered:
 - 3.9.2.1 Buried electrical cables, which can cause serious injury or electrocution;
 - 3.9.2.2 Fluid or gas carrying pipes, which may carry toxic or flammable and/or explosive gases or liquids;
 - 3.9.2.3 Fiber optic cables, which if cut can create serious communications disruptions; and
 - 3.9.2.4 Low pressure sewage and storm water lines.
- 3.9.3 The requirements of this Standard shall also govern HDD when identifying the responsibilities of the Permit Receiver and Competent person(s).
- 3.9.4 HDD line locates cannot be exempted under the 48 hour notification requirement from One-Call/Dig Alert. All pipelines, conduit, fiber optic cables, etc. must be identified and marked before any drilling can take place. The job site surface shall be evaluated by the Competent Person, contractor, and locator /utility service to identify possible underground hazards.
- 3.9.5 Safe work practices must include but are not limited to isolation, control, or removal of immediate hazards, and hazards identified during the drilling process.
- 3.9.6 As with all other types of excavation and trenching operations it is important for the Competent Person to:
 - 3.9.6.1 Make periodic daily inspections of the work site
 - 3.9.6.2 Have a full understanding of the scope of the operation
 - 3.9.6.3 Review all documentation regarding the job to ensure they are complete and accurate
 - 3.9.6.4 Ensure that all locates have been completed as required by this Standard, state and local laws, and in accordance with the policies of local utilities.

3.10 Response to Emergency Events

- 3.10.1 During any type of excavation or drilling project emergency, a response plan must be in place and followed to minimize the effects of the incident.
- 3.10.2 In the event of an unintended line strike:
 - 3.10.2.1 Stop work and shut down all equipment,
 - 3.10.2.2 Stay clear of material or energy in line,
 - 3.10.2.3 Notify Owning Department and Refinery Representatives of line strike.

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- 3.10.3 Any lines not noted/marked on maps, during locate, or located during the excavation shall be marked and reported to the responsible local or state authority, if appropriate.
 - 3.10.4 The Refinery Representative shall be notified in the event of an accidental release. Proper state and local authorities, federal authorities, and hazmat responders, shall be notified by the Health & Safety Department.
-

4.0 TRAINING

4.1 Training

-
- 4.1.1 All persons performing or working in an area of open excavation must be trained on this Safe Work Instruction. Those personnel must also be trained on safe work permits, air monitoring, and be familiar with 29 CFR 1926.650-652 through the study of this Instruction.
 - 4.1.2 Excavation which involves workers entering the excavation requires a Competent Person on site; this person shall complete an approved "Competent Person" training program designed to instruct workers on planning, conducting, monitoring, and overseeing excavation operations. Additionally, this individual must be trained in soil condition classification and be able to recognize the safety and health impacts of excavation operations, and such certifications must be maintained in a current status.
 - 4.1.3 Personnel trained in CPR/First Aid and bloodborne pathogens safety must be on site; based on conditions and location.
 - 4.1.4 This standard shall require individuals meet DOT operator qualifications (OQ) where applicable.
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5.0 PROGRAM REVIEW

5.1 Auditing

Audits are required on an as needed basis or every 5 years.

5.2 Procedure Review

The Safety Practice will be reviewed every **3 years**.

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6.0 REVIEW AND REVISION HISTORY

Table 2 Revision History

Revision	Date	Change Author	Reason for Change
1	1/21/2011	--	Original Issue
2	5/01/2014	--	Revised
3	04/01/2016	--	Updated to the new SWI format
4	5/01/2018	A. Verga	Updated to include Two sections regarding "Facilities Identification and Marking", and, "Utility Locating". These two additions were driven to close IMPACT Action Item 9579.
5	10/28/2020	Tyson Martin	Update format. Requirement to stay 6' away from known lines during Geotech sampling Per Intalex Rec#194386. Requirement for drawing to be reviewed before conducting excavation per PSA 16-23. Addition of Equipment Operator and Spotter to definitions per PSA 16-23. Update of permit to require daily inspection of excavation by competent person.

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7.0 APPENDIX A SOIL CLASSIFICATION TYPE

This attachment provides general descriptions of each soil type. Soil types must be determined by a Competent Person based on one visual and one manual test. Visual and manual testing requirements can be found in OSHA 29 CFR 1926 Subpart P Attachment A.

Soil Types

Type A Soil is cohesive, with an unconfined compressive strength of 1.5 tons/ft² (tsf) or greater. Type A soils include clay, silty clay, sandy clay, clay loam, caliche and hardpan. However, no soil can be a Type A soil if any of the following soil conditions apply:

- is fissured
- is subject to vibration
- has been previously disturbed
- is a layered system in which layers dip into the excavation at a slope of 4 horizontal to 1 vertical or greater.
- contains other factors which classify it as a less stable material.

Given this criteria, Type A soil is unlikely to ever be encountered.

Type B Soil is cohesive soil with an unconfined compressive strength greater than .5 tsf, but less than 1.5 tsf. Type B soils include angular gravel (crushed rock), silt, silt loam and sandy loam.

Type B soils include:

- soils previously disturbed, except when determined to be Type C soils
- soils subjected to vibration and fissures
- dry rock which is not stable
- layered systems in which layers dip into an excavation on a slope less than 4 horizontal to 1 vertical, but only if the material would otherwise be classified as a Type B soil.

A large number of excavations will be dug in Type B soils.

Type C Soil is cohesive soil with an unconfined compressive strength of .5 tsf or less or granular soils including:

- submerged soil or soil from which water is freely seeping
- submerged rock that is not stable
- layered systems in which the layers dip into an excavation or a slope of 4 horizontal to 1 vertical or greater.

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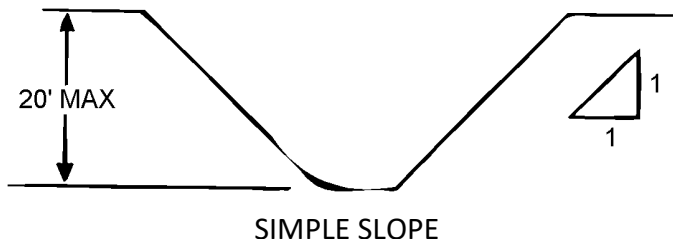
8.0 APPENDIX B SLOPING AND BENCHING SYSTEMS

This attachment contains specifications for sloping and benching to protect employees from cave-ins while working in excavations. Classify soils before using these tables.

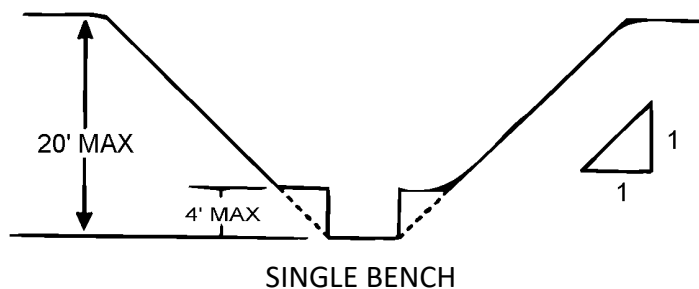
ROCK OR SOIL TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) FOR EXCAVATIONS LESS THAN 20' DEEP
Type B Soil	1:1 (45 o)
Type C Soil	1-1/2:1 (34 o)

B-1.1 EXCAVATIONS MADE IN TYPE B SOIL

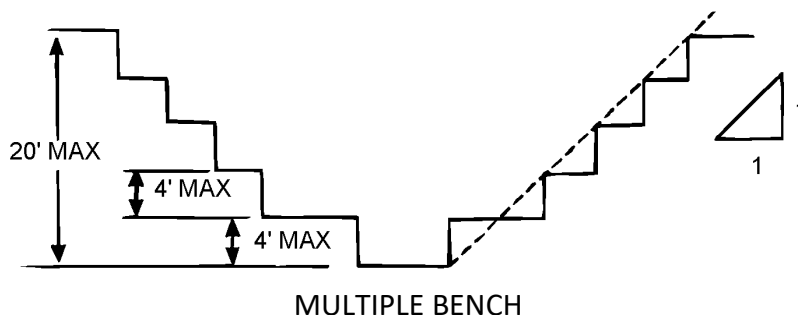
All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.



All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:



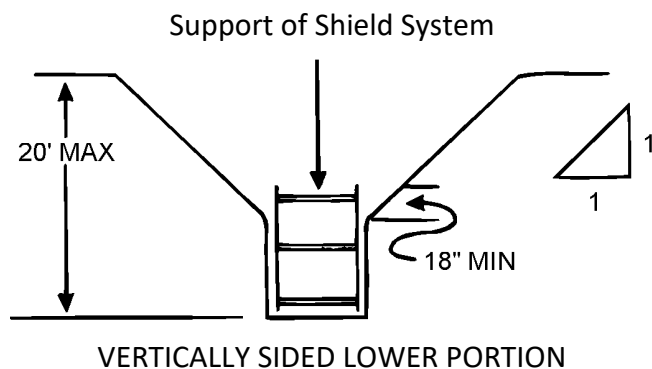
This bench allowed in cohesive soil only.



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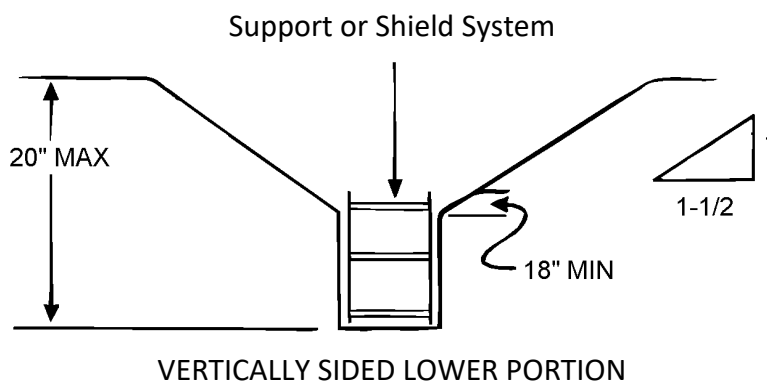
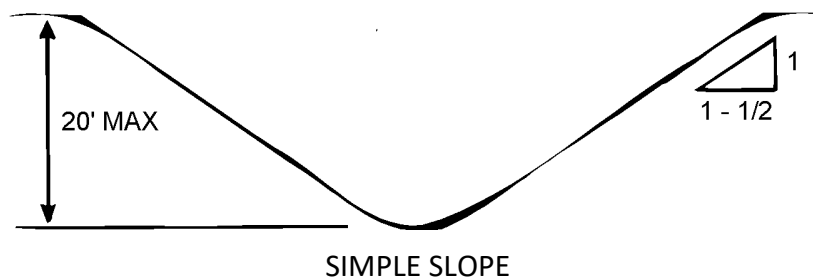
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All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the vertical side. All such excavations shall have a maximum allowable slope of 1:1.



B-1.3 EXCAVATIONS MADE IN TYPE C SOIL

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1-1/2:1.



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9.0 APPENDIX C ALUMINUM HYDRAULIC SHORING FOR TRENCHES

This attachment provides general guidelines to follow when using aluminum hydraulic shoring to protect employees working in trenches 20 feet deep or less.

- Install hydraulic shoring per manufacturer's tabulated data. Ensure that manufacturer's tabulated data is stamped by a registered professional engineer.
- Keep manufacturer's tabulated data at the excavation site while the aluminum hydraulic shoring is in the excavation.
- If no manufacturer's tabulated data exists, aluminum hydraulic shoring may be installed as directed by the Competent Person or a registered professional engineer.
- Plywood shall be 1.125 inches thick softwood, or 0.75 inch thick 14 ply arctic white birch, commonly called FINFORM.

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10.0 APPENDIX D EXCAVATION PERMIT

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PERMIT VALID: From _____ To _____

LOCATION OF EXCAVATION _____

ANTICIPATED EXCAVATION SIZE: Length _____ Width _____ Depth _____

SCOPE OF WORK _____

CHECKLIST – PREPARATION FOR EXCAVATION: Check YES No or NA	YES	NO	NA
PROTECTION OF UTILITIES:			
1. Equipment to be protected (underground and overhead): <input type="checkbox"/> Overhead electric lines <input type="checkbox"/> Buried electric lines <input type="checkbox"/> Process lines <input type="checkbox"/> Fire water lines <input type="checkbox"/> Sewer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Overhead utility lines within 10 ft of excavator swing radius? If YES, are utility lines de-energized/Isolated and locked out?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Buried lines located and marked? Identified by: <input type="checkbox"/> Plot Plans/Drawings <input type="checkbox"/> Line Finder Device	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TRAFFIC, ACCESS/EGRESS			
4. Will excavation allow for safe passage of traffic? If NO, has the Fire Dept. been notified of road closure? If excavation is at edge of RR tracks has owner been notified? If RR tracks must be closed has "blue flag/derailer" been set?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are barricades posted? What type: <input type="checkbox"/> Flagging/Tape <input type="checkbox"/> Flashing Light <input type="checkbox"/> Scaffold <input type="checkbox"/> Jersey Barriers <input type="checkbox"/> Sawhorses	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6. Access and egress: <input type="checkbox"/> Ramp(s) <input type="checkbox"/> Ladder(s) <input type="checkbox"/> Cross-over Walkway(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SAFETY WATCH/PPE			
7. Is a topside safety watch required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Special PPE: <input type="checkbox"/> Warning Vest <input type="checkbox"/> Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CAVE-IN PROTECTION			
9. Type of cave-in protection required: <input type="checkbox"/> Sloping/benching <input type="checkbox"/> Shoring <input type="checkbox"/> Shielding (Required for Entry of Excavations >5' deep)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Will excavation be more than 20 feet in depth? If YES, a Professional Engineer must design the protective system. (See attached design)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Soil Classified as: <input type="checkbox"/> Type A <input type="checkbox"/> Type B <input type="checkbox"/> Type C <input type="checkbox"/> Unclassified			
12. Any structures or utilities which could become undermined? If YES, they must be supported, shored, or cribbed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. As required, has surface water been diverted and controlled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Protective system equipment inspected and free from damage or defects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15. Is the job to be back-filled as soon as it is completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. List specific cave-in protection requirements: _____ _____			<input type="checkbox"/>
RESCUE EQUIPMENT/WORK PERMITS			
17. If rescue equipment is required, specify type: _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18. Is a Hot Work permit required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Is a Confined Space permit required? Depth > 4 feet/Worker's head expected to be below grade)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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SPECIAL PRECAUTIONS

20. Special precautions: _____

Approval Signatures

Competent Person: _____ **Date:** _____

Permit Receiver: _____ **Date:** _____

Important Note: I understand and will comply with the requirements of this permit. Persons excavating or working inside the excavation must terminate the permit and exit the excavation if conditions become unsafe, or do not meet requirements.

Daily Excavation Inspection

The Competent Person Daily Excavation Inspection must be completed by the Contractor Company Excavation Competent Person for all Excavations/Trenches prior to work and after a rainstorm or other hazard increasing occurrence. The Competent Person is to confirm that the conditions/equipment have not changed from when the checklist was completed.

Excavation Approved Y N	Reviewed Date/Time	SWP No.	Name of Excavation Competent Person (Print)	Signature of Competent Person
<input type="checkbox"/> <input type="checkbox"/>	/			
<input type="checkbox"/> <input type="checkbox"/>	/			
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