

ACTIVITY HAZARDS ANALYSIS

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Project: EC-HMQ

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Job: Digging/Trenching/Excavations

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Risk Assessment Code(RAC):

M

E = Extremely High Risk
 H = High Risk
 M = Moderate Risk
 L = Low Risk

		P r o b a b i l i t y				
		Frequent	Likely	Occasional	Seldom	Unlikely
S e v e r i t y	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L

Recommended Protective Clothing & Equipment:

Support system for sides of excavation, Diversion of water systems

Unlikely, Catastrophic

JOB STEPS	HAZARDS	ACTIONS TO ELEMIMATE OR MINIMIZE HAZARDS	EM 385-1-1 (PARA REF)
<p>General operations – Planning, Inspections, & Testing Protective Systems – Stability of Adjacent Structures, Protection from water, Protection from Falling Materials</p>	<p>Bodily injury or death</p>	<p>Planning</p> <ol style="list-style-type: none"> 1. Call diggers hotline of NE (402) 344-3565 2. Prior to opening an excavation, underground installations shall be located and protected from damage or displacement: utility companies and other responsible authorities shall be contacted to locate and mark the locations and, if they so desire, direct or assist with the protecting the underground installations <p>Excavation Inspections and Testing</p> <ol style="list-style-type: none"> 3. When persons will be in or around excavations: the excavation, the adjacent areas, the protective systems shall be inspected daily, as needed throughout work shifts 4. If evidence of a situation which could result in possible cave-ins, slides, failure of protective systems, 	<p>Section 25</p>

hazardous atmospheres, or other hazardous condition is identified, exposed workers shall be removed from the hazard and all work in the excavation stopped until all necessary safety precautions have been implemented

5. In locations where oxygen deficiency or gaseous conditions are known or suspected, air in the excavation shall be tested prior to the start of each shift or more often if directed by the designated authority: a log of all test results shall be maintained at the work site

Protective Systems

6. The sides of all excavations in which employees are exposed to danger from moving ground shall be guarded by a support system, sloping or benching of the ground, or other equivalent means
7. Excavations less than 5 ft in depth and which a competent person examines and determines there to be no potential for cave-in do not require protective systems

Stability of Adjacent Structures

8. Except in stable rock, excavations below the level of the base of footing of any foundation or retaining wall shall not be permitted unless:
 - a. A support system, such as underpinning, is provided to ensure the stability of the structure and to protect employees involved in the excavation work or in the vicinity thereof
 - b. A registered professional engineer

has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation and that the excavation will not pose a hazard to employees

9. If the stability of adjoining buildings or walls is endangered by excavations, shoring, bracing, or underpinning designed by a qualified person shall be provided to ensure the stability of the structure and to protect employees

10. Sidewalks, pavements, and related structures shall not be undermined unless a support system is provided to protect employees and the sidewalk, pavement, or related structure

11. Where it is necessary to undercut the side of an excavation, overhanging material shall be safely supported

Protection from Water

12. Diversion ditches, dikes, or other means shall be used to prevent surface water entering an excavation and to provide good drainage of the area adjacent to the excavation

13. Employees shall not work in excavations in which there is accumulated water or in which water is accumulating unless the water hazards posed by accumulation in controlled

a. Freezing, pumping, drainage, and similar control measures shall be

planned and directed by a competent engineer: consideration shall be given to the existing moisture balances in surrounding soils and the effects on foundations and structures if it is disturbed

- b. When continuous operation of ground water control equipment is necessary, an emergency power source shall be provided: water control equipment and operations shall be monitored by a competent person to ensure proper operation

Protection from Falling Material

- 14. Employees shall be protected (by scaling, ice removal, benching, barricading, rock bolting, wire mesh, or other means) from loose rock or soil which could create a hazard by falling from the excavation wall: special attention shall be given to slopes which may be adversely affected by weather, moisture content, or vibration
- 15. Materials, such as boulders or stumps, that may slide or roll into the excavation shall be removed or made safe
- 16. Excavated materials shall be placed at least 2 ft from the edge of an excavation or shall be retained by devices which are sufficient to prevent the materials from falling into the excavation: in any case, material shall be placed at a distance to prevent excessive loading on the face of the excavation

Mobile Equipment and Motor Vehicle Precautions

17. Mobile equipment and motor vehicle precautions

- a. When vehicles or mobile equipment are utilized or allowed adjacent to an excavation, substantial stop logs or barricades shall be installed: the use of a ground guide is recommended
- b. Workers shall stand away from vehicles being loaded or unloaded to avoid being struck by spillage or falling materials
- c. Excavating or hoisting equipment shall not be allowed to raise, lower, or swing loads over personnel in the excavation without substantial overhead protection

18. Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at lower levels are adequately protected from the hazard of falling material or equipment

19. When operations approach the location of underground utilities, excavation shall progress with caution until the exact location of the utility is determined: workers shall be protected from the utility and the utility from damage or displacement

20. Employees entering excavations classified as confined spaces or which otherwise present the

		potential for emergency rescue shall wear a harness with a life-line securely attached to it	
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