

# EXCAVATIONS

	<h2>Job Safety Analysis</h2>
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JSA Title : EXCAVATIONS	Job/Work Task: Excavation by Mechanical Means	
JSA Control No: 0001-2015	Revision #: 1	Original Date: 9/16/15
Department: Civil Construction	Complex:	Last Approval Date: 9/16/15
Equipment Type: Mechanical Equipment	Safety Director Reviewer/Approver: <i>Sean Erlenbeck</i>	

Tools, Equipment, Interfaces, or Job Aids needed to perform this Job/Work Task	Upgraded PPE needed to address Potential Risks identified in this JSA
Excavator-Back Hoe - Skid Steer - Mini Skid Steer (Dingo)	Hard Hat-Safety Glasses-Reflective Vests-Hearing Protection-Steel Toed Boot/Composite Work Boots-Work Gloves - Work Gloves

### Reviewers

Reviewer Name	Position	Date Approved
Dave Ruzich	Safety Coordinator	
Sean Erlenbeck	Director Safety & Health	
	Contractor/Superintendent	

### Development Team

Development Team Member Name	Primary Contact	Position
Dave Ruzich		Safety Coordinator
Sean Erlenbeck		Director Safety & Health
		Project Manager
		Contractor Superintendent

# EXCAVATIONS

#	<b>Job Steps</b> <i>List key and critical job steps</i>	<b>Potential Risks</b> <i>Identify potential risks (safety, process safety, environmental, reliability, and business inefficiencies).</i>	<b>Critical Actions</b> <i>Explain critical actions to prevent/ manage potential risks.</i>
1	Attain underground drawings and excavation permit	<ul style="list-style-type: none"> <li>If underground utilities, footings, or foundations are not identified they may be damaged during excavation, causing property damage, personal injury, or accidentally shutting down vital plant processes causing potential shut down of unit or units.</li> <li><i>(In 2011 Near Miss Incident Locates were inaccurate or insufficient. Pipeline or Utility information provides you with an indication of where they believe the utilities are. Which is not a definite. They do not give you the degree of information which is required to properly perform excavations. In this case 3<sup>rd</sup> party surveyor was off and due to the alertness of the Brieser employee's they followed proper procedures and permits to find the exact location after the surveyor showed up.) (Which was 14 ft. off)</i></li> </ul>	<ul style="list-style-type: none"> <li>Job foreman attains and understands drawings identifying underground structures in the excavation location including sewers, oily water and storm water, firewater, service water, potable water, electrical, product lines, and/or natural gas mains, pipelines, etc., foundations and footings and share this information with all employees on job during pre-job planning and toolbox meetings, to ensure excavations will not damage under-ground utilities or lines or affect the stability of any surrounding buildings, vessels, or structures</li> <li>Fill out Excavation permit, If Blind Dig (Auger or pile driving) Get necessary signatures on permit. Only Blind Digs Require Signatures. <u><i>Refer to Brieser Construction Safety Manual Section 24 Excavation &amp; Trenching</i></u></li> </ul>
2	Set up machinery for Excavation	<ul style="list-style-type: none"> <li>If machinery is not set up with enough clearance to nearby piping, plant equipment, structures, overhead obstacles the equipment may strike the equipment causing personal injury, damage to equipment, and possible unit upset. This may cause plant interruptions, shut downs, explosion, injury or death</li> <li>If the area around the machinery is not properly barricaded to keep other people and equipment out of the area, personal injury or equipment damage may occur. <i>(Recently at another facility a worker was fatally</i></li> </ul>	<ul style="list-style-type: none"> <li>Walk down job before entering work area with equipment. Use Tape measure and drawings to assure Height hazards and swing radius hazards are eliminated.</li> <li>Use proper barricading to assure others cannot enter work area without permission.</li> </ul>

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		<p><i>injured when he walked between the crane counterweight and stockpiled material).</i></p> <ul style="list-style-type: none"> <li>• If equipment in the immediate area that causes vibrations is being used, the excavation may cave in and damage equipment or injury to personnel working inside the excavation</li> <li>• If Equipment is not in good condition it may breakdown, causing property damage or possible leaks of hydraulic fluid</li> </ul>	<ul style="list-style-type: none"> <li>• Identify if nearby equipment that causes vibrations can be moved or shutoff or consider excavation stability measures.</li> <li>• Inspect machinery using (<b><i>Brieser Daily Equipment Inspection Form</i></b>). If any abnormalities are found tag out of service and notify supervision.</li> <li>• Make sure equipment is not leaking. If Incidental spillage occurs (<b><i>See: JSA for Incidental Spills &amp; Brieser Safety Manual Section 38 Prevention Spills Procedures</i></b>). Fuel equipment at secure location with underlying pavement</li> </ul>
3	Begin Excavation	<ul style="list-style-type: none"> <li>• If operator and designated Swamper/Signal person are not qualified, it can lead to hitting known underground hazards, known overhead and swing radius hazards.</li> <li>• If people stand too close to the edge of an excavation, they can fall resulting in personal injury.</li> <li>• If people are working in the excavation, the excavation may present hazards with confined spaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Verify Operators credentials must be qualified on equipment they will run. Swamper and operator must maintain eye contact at all times. If Swamper has back turned operator shall not move equipment. Swamper/Signal person will keep himself from line of fire, pinch points, and crush points by using distance and body positioning. Swamper/Signal person must wear hi-visibility vest.</li> <li>• 6' or greater excavations require use of Fall Protection (<b><i>See Brieser Safety Manual Section 22 Fall Protection Safety Procedure</i></b>)</li> <li>• 4' or greater depths require confined space permits (<b><i>See JSA on Confined Space or Brieser Safety Manual Section 18 Confined Spaces Procedures</i></b>)</li> </ul>

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		<ul style="list-style-type: none"> <li>• If spoil pile is not placed far enough away from the excavation there is a potential for it to fall into the excavation and hit or engulf people.</li> <li>• If soils from the excavation are contaminated and they are not handled correctly it could lead to contamination of other areas, personnel, and potentially cleanup costs, and or fines by local, state, or federal agencies.</li> <li>• Water accumulation in excavation if not removed may make the excavation unstable and increases the potential for workers to slip and fall as well as electrocution hazards from energized sources</li> <li>• For excavations more than 5 feet refer to confined space JSA/Procedure.</li> <li>• Excavation equipment may produce exposures exceeding 95 decibels (dBA), which may result in hearing damage if not adequately protected.</li> </ul>	<ul style="list-style-type: none"> <li>• Spoil pile will be at least 4 feet from the edge of the excavation. If soil is not suitable to be used for backfill it will be immediately removed from site and hauled to a designated area.</li> <li>• Brieser Safety Department shall be called to do a site assessment if contamination is suspected. .</li> <li>• Workers shall not work in an excavation or trench with standing water. Refer to <u><i>OSHA CFR 1926.651(h)(1), 1926.651(h)(2) and 1926.651(h)(3)</i></u> Electric pumps will be connected to a GFCI at the power source and be of sealed pump design. Air powered dewatering pump will be used if available.</li> <li>• <u><i>Refer to Brieser Construction Safety Manual Section 24 Excavation &amp; Trenching</i></u></li> <li>• Double hearing protection is required when exposures may exceed 95 decibels (dBA) work and Entry. <u><i>(See Brieser Safety Manual PPE Matrix Section 30)</i></u></li> </ul>
4	Load soil/excavated material into truck	<ul style="list-style-type: none"> <li>• Load soil/excavated material into truck</li> </ul>	<ul style="list-style-type: none"> <li>• No one will be permitted to stand next to a truck while it is being loaded. Drivers may remain in their cab if adequate overhead protection (cab) exists.</li> <li>• No one shall be under a suspended load or the swing radius of the excavator/backhoe bucket.</li> </ul>

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5	Secure tools	<ul style="list-style-type: none"> <li>• Slips, trips and falls</li>   <li>• Security</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect work/staging area.</li>   <li>• Lock equipment. Lock away tools</li> </ul>
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**I understand and agree to the conditions of this JSA**

Print name	Signature	Date	Print name	Signature	Date