

## Construction Job Safety/Hazard Analysis

**Job #:** \_\_\_\_\_

**Location/Description:** \_\_\_\_\_

**Owner:** \_\_\_\_\_

<b>Recommended/Require Personal Protective Equipment For This Job:</b>		<b>Special Hazards:</b>
<b>Sequence of Basic Job Activity</b>	<b>Potential Hazards/Accidents</b>	<b>Recommended Safe Job Procedures Analysis-Preventive Action</b>
<b>Box Culvert Construction</b>		
<i>Back Fill Around Culvert</i>	Employee Injury ( Falling Loads, Excavation Hazards, Equipment Operations, Etc.)	<ul style="list-style-type: none"> <li>Employee training in backfill safety procedures</li> <li>Qualified equipment operators</li> <li>No employees allowed under the loads</li> <li>Good supervision of employees in excavation</li> <li>Excavation protection as required by the depth of the excavation</li> </ul>
<i>Backfill Excavations</i>	Employee Injury ( Falling Loads, Excavation Hazards, Equipment Operations, Etc.)	<ul style="list-style-type: none"> <li>Employee training in backfill safety procedures</li> <li>Qualified equipment operators</li> <li>No employees allowed under the loads</li> <li>Good supervision of employees in excavation</li> <li>Excavation protection as required by the depth of the excavation</li> </ul>
<i>Equipment Delivery</i>	Damage In Transit  Traffic Accidents At Site Damage To Equipment Unloading Injury To Employees Unloading	<ul style="list-style-type: none"> <li>A prearranged route for delivery will be made.</li> <li>Equipment will be properly secured during transit. Exhaust will be taped if needed</li> <li>Cargo will be protected against theft with prearranged rest stops.</li> <li>The traffic controls above will be followed and equipment deliveries will be scheduled for low traffic times if possible</li> <li>Permission from local authority to close road if needed</li> <li>The equipment will only be unloaded by qualified operator in the designated loading area.</li> <li>A spotter will be used to assist the operator and keep the area clear of vehicles or persons.</li> </ul>
<i>Form Covers</i>	Employee Injuries ( Cuts, Power Equipment, Contusions, Lifting, Eye Injuries, Etc.) Employee Hazard ( Fall	<ul style="list-style-type: none"> <li>Employee fall protection will be provided thru guarding of the work platforms where possible. Personal Fall Arrest Systems will be used where needed.</li> <li>Power tools to cut form work will be guarded and proper electrical protection provided including grounding</li> </ul>

	Protection, Power Tools, Rebar, Lifting, Etc.	<ul style="list-style-type: none"> <li>• Rebar will be properly capped if there is any fall potential from overhead work</li> <li>• Employees will be trained in proper lifting methods and lifting equipment used for heavy loads.</li> <li>• Employees will be kept clear of overhead loads</li> <li>• Personal Protective Equipment including hard hats, glasses, gloves, eye protection etc. As needed</li> <li>• Train employees in proper lifting methods</li> <li>• Inspection of power tools including electrical cords and guards for equipment such as saws</li> </ul>
<b>Form Walls</b>	Employee Hazard ( Fall Protection, Power Tools, Rebar, Lifting, Etc.)	<ul style="list-style-type: none"> <li>• Employee fall protection will be provided thru guarding of the work platforms where possible, Personal Fall Arrest Systems will be used where needed.</li> <li>• Power tools to cut form work will be guarded and proper electrical protection provided including grounding</li> <li>• Rebar will be properly capped if there is any fall potential from overhead work</li> <li>• Employees will be trained in proper lifting methods and lifting equipment used for heavy loads.</li> <li>• Employees will be kept clear of overhead loads</li> </ul>
<b>Form Work For Footing And Bottom</b>	Employee Injuries ( Cuts, Power Equipment, Contusions, Lifting, Eye Injuries, Etc.)	<ul style="list-style-type: none"> <li>• Personal Protective Equipment including hard hats, glasses, gloves, eye protection , etc. As needed</li> <li>• Train employees in proper lifting methods</li> <li>• Inspection of power tools including electrical cords and guards for equipment such as saws</li> </ul>
<b>Heavy Equipment Use</b>	Damage To Other Equipment Damage To Materials Injuries To Employees	<ul style="list-style-type: none"> <li>• Equipment will be equipped with warning devices such as back up alarms or ATB devices</li> <li>• Only qualified and designated operator will use equipment</li> <li>• Maintain clearance from overhead wires</li> <li>• Equipment will be matched to the intended loads for weight, size, etc.</li> <li>• Employees will be kept clear of loads and equipment during operations</li> <li>• Employees involved with equipment operations will be provided proper protective equipment .</li> <li>• Excavation and fall protection safety standards will be followed to meet OSHA guidelines</li> </ul>
<b>Material Handling</b>	Damage To Material Employee Injuries Damaged Equipment	<ul style="list-style-type: none"> <li>• The material will be unloaded and stored in a designated area .clear of the worksite on site traffic flow</li> <li>• Storage area will be evaluated for natural loss potential such as flooding</li> <li>• Proper fire protection will be provided</li> <li>• Only proper material handling equipment with qualified operators will used to move materials</li> <li>• Equipment including rigging will be inspected daily.</li> <li>• Employees will be kept clear of equipment and loads during lifting</li> <li>• Equipment use will include proper outriggers, mudsills, swing radius protection , etc.</li> </ul>

<b><i>Material Storage</i></b>	Theft And Vandalism On Site Traffic Housekeeping	<ul style="list-style-type: none"> <li>• The storage area will be secured with fence if required</li> <li>• Materials will be delivered as needed to reduce site storage time</li> <li>• The storage will be arraigned out of the flow of site traffic</li> <li>• The storage area will maintain proper housekeeping including removal of nails from forms</li> <li>• Scrap will be removed and combustibles kept to a minimum.</li> </ul>
<b><i>Pour Covers</i></b>	Fall Hazards, Concrete Exposure	<ul style="list-style-type: none"> <li>• Employee fall protection will be provided thru guarding of the work platforms with guard rails where possible</li> <li>• Personal Fall Arrest Systems will be used where needed.</li> <li>• Employee training in concrete safety, PPE to reduce concrete exposure to eye, skin, etc.</li> <li>• Employees will be kept clear of overhead loads</li> <li>• Spotter for the concrete delivery vehicles</li> <li>• Maintain clearance from overhead wires</li> </ul>
<b><i>Pour Footings</i></b>	Employee Injury ( Vibration Tools, Floats, Concrete Exposure, Etc. ) Traffic Controls	<ul style="list-style-type: none"> <li>• Employee training in concrete safety, PPE to reduce concrete exposure to eye, skin, etc.</li> <li>• Proper material handling training</li> <li>• Inspection of tools</li> <li>• Equip power floats with dead man controls</li> <li>• Spotter for concrete delivery vehicles</li> <li>• Maintain clearance from overhead wires</li> </ul>
<b><i>Pour Walls</i></b>	Fall Hazards, Concrete Exposure, Overhead Loads, Etc.	<ul style="list-style-type: none"> <li>• Employee fall protection will be provided thru guarding of the work platforms where possible. Personal Fall Arrest Systems will be used where needed.</li> <li>• Employee training in concrete safety, PPE to reduce concrete exposure to eye, skin, etc.</li> <li>• Employees will be kept clear of overhead loads</li> <li>• Spotter for concrete delivery vehicles</li> <li>• Maintain clearance from overhead wires</li> </ul>
<b><i>Remove Equipment And Materials From Site</i></b>	Traffic Hazards Equipment And Material Loading Injury To Employees Unloading	<ul style="list-style-type: none"> <li>• The traffic controls above will be followed and equipment removal will be scheduled for low traffic times if possible</li> <li>• Permission from local authority to close road if needed</li> <li>• The equipment will only be loaded by qualified operator in the designated loading area.</li> <li>• A spotter will be used to assist the operator and keep the area clear of vehicles or persons.</li> </ul>
<b><i>Site Excavation</i></b>	Blasting Damage Utility Damage Injury To Employees Equipment Damage Environmental Damage	<ul style="list-style-type: none"> <li>• Blasting controls will be followed as needed including pre-blast surveys, vibration monitoring, licensed blaster, proper blasting logs, approved storage of explosives, approved transportation of explosives, vehicle and pedestrian traffic controls during blast, etc.</li> <li>• The utilities will be prelocated an protected as previously covered</li> <li>• Employees will be trained in blasting safety procedures, a designated competent person for excavation, soil classifications made, protection by sloping, shoring or other approved methods used where needed, proper access to and from excavations, excavations will be barricaded to protect against traffic</li> </ul>

		<ul style="list-style-type: none"><li>• Equipment will maintain a safe distance from the excavation edges</li><li>• Topographical surveys will be made and protection provided from water run off that could cause pollution.</li></ul>
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<b><i>Study Site Conditions For Hazards</i></b>	Damage To Existing Utility Line Or Damage To Existing Structures Potential Electrical Shock, Fire, Or Water Damage	<ul style="list-style-type: none"> <li>• Locate the utilities thru the local 1-call service or utility companies</li> <li>• If located utilities present exposure work with the agencies to have them rerouted, shut down, protected, etc.</li> <li>• Insure that all operators are aware of the utility locations and established clearance distances</li> </ul>
<b><i>Traffic Controls</i></b>	Vehicle Accidents Employee Injuries	<ul style="list-style-type: none"> <li>• Traffic controls will be arraigned to meet uniform manual standards including signs, warnings, etc.</li> <li>• Barricades will be used to protect the site area and employees if needed</li> <li>• Flagmen will be provided and trained in the proper procedures for the job hazards including communications, duties, etc.</li> </ul>
<b><i>Wreck Forms</i></b>	Fall Hazards, Nail Punctures, Muscles Strains, Cuts, Contusions, Etc.	<ul style="list-style-type: none"> <li>• Personal Fall Arrest Systems will be used where needed.</li> <li>• Personal Protective Equipment including hard hats, glasses, gloves, eye protection etc. As needed</li> <li>• The area will maintain proper housekeeping including removal of nails from forms</li> <li>• Scrap will be removed and combustibles kept to a minimum</li> </ul>
<b>Carpentry</b>		
<b><i>Materials &amp; Equipment</i></b>	Equipment Storage	<ul style="list-style-type: none"> <li>• Equipment storage will be prearranged for the phase of the job and proper protection will be provided. All equipment will be locked at nights with key controls in place.</li> <li>• Smaller equipment will be locked in trailers or removed from the site to reduce theft potential.</li> </ul>
<b><i>Deliver Materials &amp; Equipment</i></b>	Material Unloading ( Back Strains, Cuts From Sharp Objects) Material Storage  Traffic Controls Overhead Wires  Unloading Equipment	<ul style="list-style-type: none"> <li>• Provide materials handling equipment where needed.</li> <li>• Use of proper lifting methods</li> <li>• Gloves used while unloading materials</li> <li>• Material Storage areas will be arranged prior to delivery to avoid traffic conflicts and provide secure storage at the site.</li> <li>• Materials stored on site will be limited to those that are necessary for the current work.</li> <li>• Traffic controls will be set to Uniform traffic control standards including warning signs, trained flagmen and other controls during loading, unloading or crossing of roads.</li> <li>• Equipment will be kept a safe distance from overhead wires.</li> <li>• Equipment off loading will be done by qualified operators with all other personnel cleared from the area. Spotters for unloading will be provided.</li> </ul>
<b><i>Finishing Work</i></b>	Sharp Edges Hardware Installation	<ul style="list-style-type: none"> <li>• Check completed work for sharp edges and correct when found.</li> <li>• Check all hardware for proper fit, sharp edges, proper closing, etc.</li> </ul>
<b><i>Forming</i></b>	Electrical Shock	<ul style="list-style-type: none"> <li>• Proper grounding and inspection of all portable tools or extension cords.</li> </ul>

	<p>Scaffolding</p> <p>Muscle Strains Contusions, Cuts Collapse Falls</p> <p>Noise Cuts Strains</p>	<ul style="list-style-type: none"> <li>• Ensure GFCI on temporary wiring.</li> <li>• Ground all portable electrical generators over 5 kw.</li> <li>• If scaffold are used for duct erection follow these guidelines:</li> <li>• Follow manufactured instructions on setup and use of scaffolds.</li> <li>• Proper anchoring procedures</li> <li>• Secure scaffold footing, base and adjusting screws if needed</li> <li>• Proper planking of platform</li> <li>• Guard rails or other fall protection</li> <li>• Barricade or protected area below scaffold</li> <li>• Regular inspections and maintenance of scaffolding, ladders, hoist and ropes</li> </ul> <ul style="list-style-type: none"> <li>• If ladders are used, use only approved ladders and secure ladders from slippage.</li> <li>• If using bucket lifts follow manufactures instruction, properly train operators and use personal fall protection.</li> <li>• Train employees in proper lifting techniques.</li> <li>• Provide materials handling equipment.</li> <li>• Provide properly protected tools such as guarding of saws.</li> <li>• Provide PPE to reduce cuts and contusions</li> <li>• Adequately brace all construction and secure Trusses against the wind.</li> <li>• Use proper equipment for hoisting the materials and inspect equipment daily.</li> <li>• Require barricades or covers for roof, wall, floor or other openings.</li> </ul> <ul style="list-style-type: none"> <li>• Where ear plugs where needed</li> <li>• Where protective gloves</li> </ul> <p>Proper lifting techniques</p>
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<b><i>Housekeeping</i></b>	Flammable Adhesives Or Liquids Access To Site Debris Accumulation Storage Of Combustibles Temporary Heat	<ul style="list-style-type: none"> <li>• Keep flammable liquids in approved containers.</li> <li>• Use no-flammable adhesives or liquids where possible.</li> <li>• Keep easily accessible ladders, stairways or ramps to site</li> <li>• Provide adequate exits for the work areas</li> <li>• Arrange site for easy access and safe maneuvering of materials</li> <li>• Keep site clean of sawdust, wood scrap and debris</li> <li>• Store combustibles well away from the structure.</li> <li>• Use only approved liquid fired heaters with safety fuel shut off devices</li> </ul>
<b><i>Pre-Job Planning</i></b>	Study The Job Hazards, Electrical Exposures Etc.	<ul style="list-style-type: none"> <li>• Study the job site to determine hazards, exposures or unusual conditions.</li> <li>• Locate and mark electrical utility lines/electrical power equipment prior to starting work</li> </ul>
<b>Construction Inspection And Materials Sampling At The Following Operations</b>		
<b><i>Asphalt Hot Mix Plants &amp; Placement Operations</i></b>  <b><i>Bituminous Chip Seal Projects</i></b>  <b><i>Rock Crushing Plants &amp; Placement Operations</i></b>  <b><i>Concrete Plants &amp; Placement Operations</i></b>	Personnel Or Equipment Hit By Construction Equipment Or Public Motor Vehicles  Burns From Hot Materials  Falling Objects And Electrical Shock & Machinery  Back Injury From Lifting Heavy Samples  Noise  Dust	<ul style="list-style-type: none"> <li>• Be alert and think safety for yourself and for other individuals</li> <li>• Wear florescent vests</li> <li>• Park FS vehicle in areas designated by the contractor</li> <li>• Ensure that all construction equipment has OSHA approved back up alarms that are operational</li> <li>• Wear gloves to protect hands and leather boots to protect feet. Require the contractor to take samples from his equipment, except when demonstrating correct sampling procedure</li> <li>• Wear approved non conductive hard hat. Be aware of electrical cables and moving machinery and mechanisms that pose hazards</li> <li>• Obtain assistance with samples that are too heavy, or put large samples into multiple containers such that each one weighs less.</li> <li>• Wear approved ear plugs</li> <li>• Wear approved protective mask</li> </ul>
<b><i>Working On Or Adjacent To A Road Surface.</i></b>	Personnel Or Equipment Hit By Passing Motor Vehicles Or Construction Equipment	<ul style="list-style-type: none"> <li>• Be alert and think safety for yourself and other individuals</li> <li>• Set up temporary signs and florescent cones to warn vehicles of the work site hazard. When possible select sample sites on tangents where good sight distance exists</li> <li>• Wear florescent vest and hard hat</li> <li>• Utilize FS vehicle as a shield from oncoming traffic as often as practical</li> </ul>

	Back Injury From Lifting Heavy Samples	<ul style="list-style-type: none"> <li>• Require the contractor to take samples from his equipment, except when demonstrating correct sampling procedure</li> <li>• Ensure that all construction equipment has OSHA approved back up alarms that are operational</li> <li>• Obtain assistance with samples that are too heavy, or put large samples into multiple containers such that each one weighs less.</li> </ul>
<b>Driving</b>		
<i>A Vehicle</i>	Fatigue	<ul style="list-style-type: none"> <li>• Follow established work/rest guidelines, a 12 hour work day is the maximum allowed for any activity (non-emergency), of which only 10 hours may be spent driving. When driving, stop for a break at least every 2 hours or as needed. Take short breaks from driving or take a short nap in the vehicle when fatigue or falling asleep appears to be a hazard.</li> <li>• Drive defensively. Take defensive driver refresher training course every 3 years.</li> <li>•</li> </ul>
	Accidents	
<i>Emergency Evacuation Procedures</i>	Accident/Injury	<ul style="list-style-type: none"> <li>• The Emergency Evacuation Procedure will include all items listed on the back of the JHA Instruction form. Communication with emergency personnel will be done by radio or cell phone if ground line phones are not available.</li> <li>•</li> </ul>
<i>Stopping And Exiting Vehicle</i>	Rapidly Approaching Vehicles, Posing A Threat To Personnel And Public. Risk Of Injury And/Or Collision	<ul style="list-style-type: none"> <li>• Park vehicles in location so as to not impede traffic. Use emergency flashers to alert oncoming vehicular traffic. Remain alert at all times as to the traffic outside the vehicle. Use rear view mirrors to ascertain vehicles approaching from behind. (Maintain clean mirrors and windows). Before opening doors, turn head around to view road in blind spot of vehicle. Exit with caution. Wear Fluorescent Orange Vests when outside the vehicle. Avoid stopping on blind corners if possible. When possible, have the passenger exit the vehicle to collect the information. After task is completed, proceed when safe</li> </ul>
<i>Prevent Vehicle Break-Downs And Or Emergency Stopping</i>	Potential Traffic Obstruction	<ul style="list-style-type: none"> <li>• Ensure vehicle is in proper functioning condition prior to leaving the office. Walk around vehicle and check tires, engine fluid levels, lights, etc and immediately report any problems that need professional servicing.</li> </ul>
<i>Vehicle Fires</i>	Life Threatening, Severe Burn Hazard	<ul style="list-style-type: none"> <li>• Primary concern is the safety of personnel. Get out and get away from vehicle. Use extreme caution in suppressing this type of fire because of highly flammable fluids. Vehicles shall be equipped with fire extinguishers</li> </ul>
<b>General Field</b>		
	Animal Bites	<ul style="list-style-type: none"> <li>• Wear proper clothing. Do not approach animals. Use caution and composure when encountering animals.</li> </ul>
	Ankle Injuries	<ul style="list-style-type: none"> <li>• Wear proper field boots with ankle height of at least 4 inches.</li> </ul>

Asbestos	<ul style="list-style-type: none"> <li>Do not enter any abatement area until clean air samples have been documented. Carry a fitted respirator in case of an emergency.</li> </ul>
Blasting	<ul style="list-style-type: none"> <li>Keep out of blasting zones unless authorized and escorted by a qualified person. Know evacuation plans and procedures.</li> </ul>
Compressive Foot Injuries	<ul style="list-style-type: none"> <li>Wear appropriate safety shoes/boots that meet ANSI Z 41.</li> </ul>
Concrete Placing Operations	<ul style="list-style-type: none"> <li>Wear proper clothing, gloves, and eye protection.</li> </ul>
Cutting/Grinding/Chipping/ Sawing	<ul style="list-style-type: none"> <li>Wear appropriate protecting clothing, gloves, and eye protection. Ensure all saws are guarded properly and all airline joints are correct and are properly secured.</li> </ul>
Drowning	<ul style="list-style-type: none"> <li>Wear life vest, know where life saving equipment is located.</li> </ul>
Electrical Shock	<ul style="list-style-type: none"> <li>Ensure equipment is properly maintained and grounded and has GFCI protection. Ensure all extension cords are the correct type and are protected from damage.</li> </ul>
Electrical Shock	<ul style="list-style-type: none"> <li>Ensure equipment is properly maintained and grounded and has GFCI protection. Ensure all cords and equipment are protected from damage.</li> </ul>
Entanglement In Lines	<ul style="list-style-type: none"> <li>Inspect all lines before use. Remove/replace worn or damaged lines immediately. Avoid pinch points and stay clear of lines under strain.</li> </ul>
Entanglement In Moving Machinery	<ul style="list-style-type: none"> <li>All points requiring lubrication during operation shall have fittings so located or guarded as to be accessible without hazardous exposure and all moving parts shall be guarded when exposed to contact.</li> </ul>
Exposure To Hazardous Wastes	<ul style="list-style-type: none"> <li>Wear appropriate level of protective clothing and equipment. Be knowledgeable of procedures to follow when on hazardous waste sites. Maintain certification in accordance with 29 CFR 1910.120.</li> </ul>
Exposure To The Elements	<ul style="list-style-type: none"> <li>Wear proper clothing. Be aware of exposure duration and limit duration if necessary. Be knowledgeable of the symptoms of exposure related illnesses.</li> </ul>
Exposure To The Elements	<ul style="list-style-type: none"> <li>Wear proper clothing. Be aware of exposure duration and limit duration if necessary. Be knowledgeable of the symptoms of exposure related illnesses.</li> </ul>
Eye Injuries	<ul style="list-style-type: none"> <li>Wear appropriate eye protection as necessary.</li> </ul>
Falling On Slippery Or Rugged Terrain	<ul style="list-style-type: none"> <li>Wear proper field boots and be observant of terrain. Use</li> <li>Safety lines when necessary.</li> </ul>
Fire And Explosion	<ul style="list-style-type: none"> <li>Use good housekeeping practices. Ensure proper segregation and ventilation of materials/chemicals. Be knowledgeable of fire fighting equipment and techniques.</li> </ul>
Hand Injuries	<ul style="list-style-type: none"> <li>Wear appropriate gloves.</li> </ul>
Head Injuries	<ul style="list-style-type: none"> <li>Wear hard hat when exposed to overhead hazards. Hard hats are required to be worn at all times when in Hard Hat Areas.</li> </ul>
Insect Bites And Stings	<ul style="list-style-type: none"> <li>Knowledge and avoidance of such insects. Caution and knowledge of any allergies to such bites or stings. Do not wear perfume or cologne. Know where to obtain first aid.</li> </ul>
Lifting	<ul style="list-style-type: none"> <li>Use proper lifting techniques. Get assistance when necessary. When lifting, keep the load close to the body and lift with the legs.</li> </ul>
Moving Equipment	<ul style="list-style-type: none"> <li>Keep alert and out of the way of heavy equipment.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Wear proper hearing protection devices.</li> </ul>

<p>Poisonous Plants Slips/Trips/Falls Slips/Trips/Falls</p>	<ul style="list-style-type: none"> <li>• Knowledge and avoidance of such plants. Wash after contact.</li> <li>• Use good housekeeping practices. Be observant of walking/working surfaces.</li> <li>• Wear proper footwear. Maintain good housekeeping. Remove grease and oil from working surfaces. Stumbling hazards will be painted yellow and slippery deck areas will be coated with an anti-skid surface.</li> </ul>
<p>Snake Bites Trenches/Excavations</p>	<ul style="list-style-type: none"> <li>• Wear proper field boots or snake chaps. Do not harass/kill snakes.</li> <li>• Stay out of unsupported trenches. All trenches/excavation shall be evaluated and shored accordingly. Ensure barriers/barricades are provided to prevent equipment, vehicles, and pedestrians from accidentally falling into a excavation or trench. Be familiar with egress points and evacuation plan.</li> </ul>
<p>Vessel Damage/Sinking</p>	<ul style="list-style-type: none"> <li>• Obey navigation rules and weather warnings. Be familiar with all emergency evacuation procedures.</li> </ul>
<p>Welding Burns/Flash</p>	<ul style="list-style-type: none"> <li>• Avoid welding operations. When exposure is unavoidable, wear proper clothing, gloves, and eye protection.</li> </ul>
<p>Working Around Suspended Loads</p>	<ul style="list-style-type: none"> <li>• Do not enter an area within the radius of swing when there is a suspended load. Obey posted warning signs. Be alert for and obey verbal instructions from the designated signal person. Ensure that proper equipment and procedures are being used by persons conducting the lift.</li> </ul>
<p>Working In Confined Spaces</p>	<ul style="list-style-type: none"> <li>• Know signs and symptoms of oxygen deficient and poisonous/explosive gases. Have available and use, when necessary, respirator gas mask and/or portable air supply. Know and understand rescue and evacuation procedures.</li> </ul>

<b>HVAC</b>		
<b><i>Assembly Of Duct Work</i></b>	Noise Cuts Strains	<ul style="list-style-type: none"> <li>• Wear ear plugs where needed</li> <li>• Wear protective gloves</li> <li>• Proper lifting techniques</li> </ul>
<b><i>Deliver Materials &amp; Equipment</i></b>	Equipment Storage  Material Unloading ( Back Strains, Cuts From Sharp Objects) Material Storage  Traffic Controls Overhead Wires  Unloading Equipment	<ul style="list-style-type: none"> <li>• Equipment storage will be prearranged for the phase of the job and proper protection will be provided.</li> <li>• All equipment will be locked at nights with key controls in place.</li> <li>• Smaller equipment will be locked in trailers or removed from the site to reduce theft potential</li> <li>• Provide materials handling equipment where needed.</li> <li>• Use of proper lifting methods</li> <li>• Gloves used while unloading ductwork</li> <li>• Material Storage areas will be arranged prior to delivery to avoid traffic conflicts and provide secure storage at the site.</li> <li>• Materials stored on site will be limited to those that are necessary for the current work.</li> <li>• The traffic controls will be set to Uniform Traffic Control standards including warning signs, trained flagmen and other controls during loading, unloading or crossing of roads.</li> <li>• Equipment will be kept a safe distance from overhead wires</li> <li>• The equipment off loading will be conducted by qualified operators with all other personnel cleared from the area.</li> <li>• Spotters for unloading will be provided.</li> </ul>
<b><i>Ductwork Pre-Job Planning</i></b>	Study The Job Hazards, Electrical Exposures Etc.	<ul style="list-style-type: none"> <li>• Study the job site to determine hazards, exposures or unusual conditions.</li> <li>• Locate and mark electrical utility lines/electrical power equipment prior to starting work</li> </ul>
<b><i>Finishing Work</i></b>	Sharp Edges Open Ends	<ul style="list-style-type: none"> <li>• Check completed work for sharp edges and correct when found</li> <li>• Wrap the open ends of duct daily before leaving the site</li> </ul>
<b><i>Hanging Duct</i></b>	Electrical Shock Scaffolding	<ul style="list-style-type: none"> <li>• Proper grounding and inspection of all portable tools or extension cords.</li> <li>• Ensure GFCI on temporary wiring.</li> <li>• Ground all portable electrical generators over 5 kw.</li> <li>• If scaffold are used for duct erection follow these guidelines:</li> <li>• Follow manufactured instructions on setup and use of scaffolds.</li> <li>• Proper anchoring procedures</li> <li>• Secure scaffold footing, base and adjusting screws if needed</li> <li>• Proper planking of platform</li> <li>• Guard rails or other fall protection</li> <li>• Barricade or protected area below scaffold</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Regular inspections and maintenance of scaffolding, ladders, hoist and ropes</li></ul> |
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	Muscle Strains Contusions, Cuts Collapse Falls	<ul style="list-style-type: none"> <li>• Train employees in proper lifting techniques.</li> <li>• Provide materials handling equipment.</li> <li>• Provide properly protected tools such as guarding of saws.</li> <li>• Provide PPE to reduce cuts and contusions</li> <li>• Adequately secure all ducts and secure against falling.</li> <li>• Use proper equipment for hoisting the ductwork and inspect equipment daily.</li> <li>• Require barricades or covers for roof, wall, floor or other openings.</li> <li>• Use only approved ladders and secure ladders from slippage.</li> <li>• If using bucket lifts follow manufactures instruction, properly train operators and use personal fall protection.</li> </ul>
<b>Housekeeping</b>	Flammable Adhesives Or Liquids Access To Site Debris Accumulation Storage Of Combustibles Temporary Heat	<ul style="list-style-type: none"> <li>• Keep flammable liquids in approved containers.</li> <li>• Use no-flammable adhesives or liquids where possible.</li> <li>• Keep easily accessible ladders, stairways or ramps to site</li> <li>• Provide adequate exits for the work areas</li> <li>• Arrange site for easy access and safe maneuvering of materials</li> <li>• Keep site clean of scrap and debris</li> <li>• Store combustibles well away from the structure.</li> <li>• Use only approved liquid fired heaters with safety fuel shut off devices</li> </ul>
<b>Lifting/Moving Of Materials</b>	Possible Back Strains	<ul style="list-style-type: none"> <li>• Material will be unloaded off the crew trucks. A minimum of two employees will be unloading material. We have trained employees on proper lifting techniques. If needed, employees are instructed to get assistance from another worker to lift or carry material. We instruct and require employees to follow all company guidelines.</li> </ul>
<b>Masonry Construction</b>		
<b>Cutting Rebar</b>	Flying Debris, Sharp Edges	<ul style="list-style-type: none"> <li>• Wear eye protection &amp; gloves, always make sure rebar caps or other protection is in place.</li> </ul>
<b>Deliver Materials &amp; Equipment</b>	Equipment Storage  Material Unloading ( Back Strains, Cuts From Sharp Objects) Material Storage  Traffic Controls Overhead Wires	<ul style="list-style-type: none"> <li>• Equipment storage will be prearranged for the phase of the job and proper protection will be provided.</li> <li>• All equipment will be locked at nights with key controls in place.</li> <li>• Smaller equipment will be locked in trailers or removed from the site to reduce theft potential</li> <li>• Provide materials handling equipment where needed.</li> <li>• Use of proper lifting methods ( back straight, knees bent, load centered)</li> <li>• Gloves used while unloading ductwork</li> <li>• Material Storage areas will be arranged prior to delivery to avoid traffic conflicts and provide secure storage at the site.</li> <li>• Materials stored on site will be limited to those that are necessary for the current work.</li> <li>• The Traffic controls will be set to Uniform Traffic Control standards including warning signs, trained flagmen and other controls during loading , unloading or crossing of roads.</li> <li>• Equipment will be kept a safe distance from overhead wires</li> </ul>

	Unloading Equipment	<ul style="list-style-type: none"> <li>• The equipment off loading will be conducted by qualified operators with all other personnel cleared from the area.</li> <li>• Spotters for unloading will be provided.</li> </ul>
<b>Loading Blocks</b>	Forklift Hazards - Lifting Too Heavy A Load, Stability Of Forklifts, Etc.  Stacking Blocks, Wall Stability	<ul style="list-style-type: none"> <li>• Ensure that the lift is adequate for the loads, make sure the load is evenly balanced.</li> <li>• Watch for soft areas, open holes, etc. That may affect stability.</li> <li>• Watch for people and other equipment</li> <li>• Vehicle inspection and maintenance.</li> <li>• Make sure blocks are not stacked above people, make sure the scaffolding is adequate.</li> <li>• Keep material stacks level and low</li> <li>• Adequately brace walls to prevent overturning.</li> <li>• Masonry wall will have a limited access zone equal to height of wall and 4 feet opposite the scaffold side.</li> </ul>
<b>Masonry Sawing</b>	Flying Chips, Dust, Noise	<ul style="list-style-type: none"> <li>• Eye protection, hearing protection, saw guards.</li> </ul>
<b>Mixing Mortar &amp; Grout</b>	Splashing, Skin Contact, Vibrating Mortar Improper Mixture	<ul style="list-style-type: none"> <li>• Require wearing of safety glasses, goggles, gloves, etc. Always wash skin after contact.</li> <li>• Test concrete mixture, store bagged cement &amp; lime in temperature and humidity controlled areas</li> <li>• Mix mortar and concrete outside when possible, ensure proper ventilation</li> </ul>
<b>Pre-Job Planning</b>	Study The Job Hazards, L Exposures Etc.	<ul style="list-style-type: none"> <li>• Study the job site to determine hazards, exposures or unusual conditions.</li> <li>• Locate and mark electrical utility lines/electrical power equipment prior to starting work</li> </ul>
<b>Scaffold Erection</b>	Fall Hazards, Scaffold Safety Boards  Public Access Safety	<ul style="list-style-type: none"> <li>• Use all braces, pins, ladders for access, guardrails and toe boards</li> <li>• Use approved scaffold boards. Properly anchor scaffold. Use mudsills for soft surfaces. Follow manufactures recommendations on erection .</li> <li>• Use adjusting screws for uneven surfaces.</li> <li>• Regular inspections of scaffolds</li> <li>• Protect passerby's from falling materials by wire mesh and remove loose debris</li> <li>• Use planking above sidewalks to protect public from dropped objects.</li> </ul>
<b>Stacking Blocks</b>	Back Strains, Muscle Strains, Etc.	<ul style="list-style-type: none"> <li>• Lift with legs and back, center load, make sure you have proper footing, get assistance when required,</li> </ul>
<b>Tearing Down The Scaffold</b>	Falls, Falling Objects, Etc.	<ul style="list-style-type: none"> <li>• Ensure dismantling is done under supervision of a competent person.</li> <li>• Maintain a safe platform for workers during disassembly.</li> <li>• Use safe procedures when lowering scaffold sections</li> </ul>
<b>Material Storage</b>	Leaks Fire Injuries	<ul style="list-style-type: none"> <li>• Make sure all fuel and chemicals are properly labeled and stored in a designated area that is marked and proper signs are posted. Have the msds available in case a worker is injured or comes in contact with any</li> <li>• Hazardous materials</li> </ul>
<b>Mixing Grout</b>	Skin Contact With Grout,	<ul style="list-style-type: none"> <li>• All employees are required to wear proper protective clothing while mixing, pouring and working</li> </ul>

	<p>Employees Mixing And Pouring Grout Can Come In Contact With Material. Grout Can Dry The Skin, Cause Skin Irritation And Grout Dust Can Irritate Eyes And Upper Respiratory System.</p>	<p>with grout as necessary. The protective clothing could include gloves, long pants, proper work shoes/boots, eye protection, if needed approved NIOSH respirator for dust particles. Foreman's truck will have a supply of water on hand if need to rinse hands, face, etc.</p>
<p><b>Field Office</b></p>	<p>Cutting Tools Electrical Shock  Eye Strain  Falling Off Of Furniture File Cabinets/Shelves  Lifting  Neck/Shoulder Fatigue  Office Machinery Slips/Trips/Falls  Walking Wrist Strain</p>	<ul style="list-style-type: none"> <li>• Cut in the direction away from hands and body.</li> <li>• Do not reconfigure wiring in systems furniture panels. Ensure equipment is properly maintained and grounded. Protect electrical cords from damage by using cord covers. Do not overload outlets.</li> <li>• Ensure proper lighting. Ensure computer monitor and document copy stand are at approximately the same height and distance. Reduce computer screen glare by installing anti-glare/anti-static screens.</li> <li>• Use a step stool. Do not use climb on furniture.</li> <li>• To avoid tipping, fill the bottom file first. Do not open more than one drawer at a time. Place heavy objects in the bottom shelves/drawers.</li> <li>• Use proper lifting techniques. Get assistance when necessary. When lifting, keep the load close to the body and lift with the legs.</li> <li>• Ensure video display terminals are properly adjusted so that the top of the screen is slightly below eye level and the screen is between 18 and 28 inches away. Document or copy holders should be at the same height and distance and the screen.</li> <li>• Do not wear loose clothing or jewelry. Be cautious when making mylar copies (hot).</li> <li>• Use good housekeeping practices. Secure tripping hazards (cords) to floor. Do not leave file drawers open when unattended.</li> <li>• Be alert of walking surface, wear flat shoes with a non-skid sole.</li> <li>• Ensure computer keyboards are adjusted so that the elbows are at a 90-degree angle and arms and hands are parallel to the floor. Use wrist rests or other supports so that wrists are maintained in a neutral position.</li> </ul>

<b>Over All Job Check</b>	Excessive Dust Traffic Control Public Safety	<ul style="list-style-type: none"> <li>• Make sure dust control is taken care off and water trucks, hoses etc are operational follow all job specifications for traffic control review these specs with workers public safety is always top priority walk or ride job site periodically each day for any exposure that might effect the public</li> </ul>
<b>Concrete</b>		
<i>Pour Concrete</i>	Moving Concrete Trucks Splashing Of Concrete	<ul style="list-style-type: none"> <li>• Make sure workers are aware of pouring in</li> <li>• Process, trucks have audible back up alarms</li> <li>• Make sure everyone is wearing proper</li> <li>• Eye protection, and rubber boots, gloves if</li> <li>• Needed</li> </ul>
<i>Set Forms</i>	Hand Tools	<ul style="list-style-type: none"> <li>• Check to make sure all tools are equipped with the proper safety devices, check saws and grounding and cords</li> </ul>
<b>Sheet Pile</b>		

<b><i>Cutting Pile Sheets</i></b>	Flame Cutting Of Steel Pile	<ul style="list-style-type: none"> <li>• Follow recommended operating procedures for operating cutting torch</li> <li>• Check for and remove flammable material from the area</li> <li>• Use proper PPE</li> <li>• Secure and store gas cylinders</li> <li>• Have fire extinguisher available</li> </ul>
<b><i>Deliver Equipment To Site</i></b>	Fuel Storage	<ul style="list-style-type: none"> <li>• There will be no on site fuel storage. Fuel trucks will be arraigned for deliveries as needed.</li> <li>• If fuel storage is required properly grounded, diked and marked storage tanks will be used.</li> <li>• MSDS will be provided for fuel</li> </ul>
<b><i>Deliver Equipment To Site</i></b>	<p>Injury Or Damage While Unloading Equipment</p> <p>Traffic Accidents At Site During Delivery</p> <p>Vandalism Or Theft Of Equipment</p>	<ul style="list-style-type: none"> <li>• Equipment will be unloaded by experienced operators following established procedures.</li> <li>• All other personnel will be cleared form the unloading area</li> <li>• Arrange for a safe loading area at the site that is out of the flow of traffic.</li> <li>• Use side roads or less traveled streets where possible.</li> <li>• If traffic must be stopped due to trailer size, etc. Get local permission and establish traffic controls (signs, flagmen , etc.)</li> <li>• Equipment will be stored in a secured area.</li> <li>• All equipment will be locked at the end of working day with proper key controls.</li> <li>• Operator's cabs and fuel intakes will be locked where available.</li> <li>• Smaller equipment will be removed daily or locked insecure storage trailers</li> <li>• Security will be arraigned if theft or vandalism problems arise</li> </ul>
<b><i>Driving Pile</i></b>	Driving The Sheets	<ul style="list-style-type: none"> <li>• Follow recommended procedures for operating pile hammer</li> <li>• Allow only qualified operators</li> <li>• Inspect equipment before using</li> <li>• Have fire extinguishers ready when fueling</li> <li>• Keep hands and feet clear of moving parts of hammer</li> </ul>
<b><i>Locate Pre-Existing Utilities Or Existing Structures</i></b>	<p>Damage To Existing Utility Service.</p> <p>Possible Electrical Shock, Fire Or Water Damage From Utilities</p>	<ul style="list-style-type: none"> <li>• Locate existing utilities using 1-CALL, &amp; Check plans for underground lines</li> <li>• If located utilities present exposure work with agencies to have them reroute, shut down, etc.</li> <li>• Insure that all operators are aware of utility locations and establish clearance distance</li> </ul>
<b><i>Removing Equipment From Site</i></b>	Traffic At Site While Loading	<ul style="list-style-type: none"> <li>• Traffic controls as outlined above including flagmen and signs,</li> </ul>
<b><i>Pile For</i></b>	Handling Pile	<ul style="list-style-type: none"> <li>• Use proper personal protective equipment including gloves when handling</li> </ul>

<b><i>Driving</i></b>	Hoisting Materials	<ul style="list-style-type: none"> <li>• Keep hands and feet clear when lifting or setting down pile</li> <li>• Keep unnecessary personnel from area</li> <li>• Barricade swing radius of crane</li> <li>• Check rigging prior to lifting</li> <li>• Do not swing loads over workers</li> </ul>
<b><i>Set Pile For Driving</i></b>	Injury Or Equipment Damage While Loading	<ul style="list-style-type: none"> <li>• Loading will be done by qualified operators in a safe area.</li> <li>• All equipment will be properly secured from moving during transport.</li> </ul>
<b><i>Welding Pile</i></b>	Welding Of Piles	<ul style="list-style-type: none"> <li>• Follow recommended procedures for operating welding machines</li> <li>• Check and remove flammable material from the welding area</li> <li>• Use proper PPE including goggles, gloves, sleeves, etc.</li> <li>• Inspect and maintain welding equipment and leads</li> </ul>
<b><i>Working Above Grade</i></b>	Fall Exposures	<ul style="list-style-type: none"> <li>• Handrails on all stairs, scaffolds and elevated platforms</li> <li>• 100% tie off when working in unprotected area</li> <li>• Provide continuous safety cable for full length of leads</li> <li>• When climbing leads use full body harness attached to wire rope grab mounted on safety cable</li> </ul>
<b>Site Clearing</b>		
<b><i>Locate Pre-Existing Utilities Or Existing Structures</i></b>	<p>Damage To Existing Utility Service.</p> <p>Possible Electrical Shock, Fire Or Water Damage From Utilities</p>	<ul style="list-style-type: none"> <li>• Locate existing utilities using 1-CALL,</li> <li>• If located utilities present exposure work with agencies to have them reroute, shut down, etc.</li> <li>• Insure that all operators are aware of utility locations and establish clearance distance</li> </ul>
<b><i>Clear Existing Shrubs &amp; Trees</i></b>	<p>Equipment Or Operator Injury Due To Equipment Failure Or Operator Error</p> <p>Equipment Striking Employees Or Other In Area</p> <p>Falling Off Equipment</p> <p>Riders On Equipment</p> <p>Trees Or Shrubs Injuring Operator Or Employee</p>	<ul style="list-style-type: none"> <li>• All operators will be qualified and equipment is on preventative maintenance schedule with daily inspections</li> <li>• Only experience and qualified operators will be allowed to operate equipment.</li> <li>• All heavy equipment will be equipped with audible reverse warning alarms</li> <li>• Spotters will be used if equipment must be used in areas where employees presents a danger.</li> <li>• Operators will be alert for others at all times.</li> <li>• All equipment will be equipped with proper stairs and rails</li> <li>• No riders on equipment at any time</li> <li>• Operators will be protected in enclosed operator environment will roll protection</li> <li>• Growth will be removed in direction away from operators or other employees.</li> <li>• Employees will stand away from any trees being removed until they are on ground.</li> </ul>
<b><i>Deliver</i></b>	Fuel Storage	<ul style="list-style-type: none"> <li>• There will be no on site fuel storage. Fuel trucks will be arraigned for deliveries as needed.</li> </ul>

<p><b><i>Equipment To Site</i></b></p>	<p>Injury Or Damage While Unloading Equipment Traffic Accidents At Site During Delivery</p> <p>Vandalism Or Theft Of Equipment</p>	<ul style="list-style-type: none"> <li>• If fuel storage is required properly grounded, diked and marked storage tanks will be used.</li> <li>• MSDS will be provided for fuel</li> <li>• Equipment will be unloaded by experienced operators following established procedures.</li> <li>• All other personnel will be cleared form the unloading area</li> <li>• Arrange for a safe loading area at the site that is out of the flow of traffic.</li> <li>• Use side roads or less traveled streets where possible.</li> <li>• If traffic must be stopped due to trailer size, etc. Get local permission and establish traffic controls (signs, flagmen , etc.)</li> <li>• Equipment will be stored in a secured area.</li> <li>• All equipment will be locked at the end of working day with proper key controls.</li> <li>• Operators cabs and fuel intakes will be locked where available.</li> <li>• Smaller equipment will be removed daily or locked insecure storage trailers</li> <li>• Security will be arraigned if theft or vandalism problems arise</li> </ul>
<p><b><i>Locate Pre-Existing Utilities Or Existing Structures</i></b></p>	<p>Damage To Existing Utility Service.</p> <p>Possible Electrical Shock, Fire Or Water Damage From Utilities</p>	<ul style="list-style-type: none"> <li>• Locate existing utilities using 1-CALL, &amp; Check plans for underground lines</li> <li>• If located utilities present exposure work with agencies to have them reroute, shut down, etc.</li> <li>• Insure that all operators are aware of utility locations and establish clearance distance</li> </ul>
<p><b><i>Remove Shrubs &amp; Debris From Site</i></b></p>	<p>Employee Injury While Loading Debris (Muscle Strains, Snakes, Bees, Other Equipment Etc.)</p> <p>Fire Damage From Burning Of Debris</p> <p>Traffic Accidents While Hauling Debris Falling Materials</p>	<ul style="list-style-type: none"> <li>• Trees, shrubs or other debris will be loaded into dumps by equipment with no employees allowed in the danger area during loading</li> <li>• Employees will war proper gloves, eye protection or other protective equipment..</li> <li>• Proper manual lifting methods will be used. (Bend knees, straight back, etc.)</li> <li>• Areas will be checked for snakes, bee hives or other pest problems</li> <li>• No burning will be allowed on site unless approved by local regulations.</li> <li>• If burning is conducted it will be away from other structures, equipment or combustibles.</li> <li>• A fire watch will be provided during all burning operations.</li> <li>• Traffic will be controlled using signs and flagmen to allow trucks to enter and exit sites safely.</li> <li>• Street will be kept clear of excess mud that could contribute to accidents</li> <li>• Trucks will be loaded below top of side rails with no rock or material hanging materials</li> </ul>
<p><b><i>Removing Equipment From Site</i></b></p>	<p>Injury Or Equipment Damage While Loading</p> <p>Traffic At Site While Loading</p>	<ul style="list-style-type: none"> <li>• Loading will be done by qualified operators in a safe area.</li> <li>• All equipment will be properly secured from moving during transport.</li> <li>• Traffic controls as outlined above including flagmen and signs,</li> </ul>

<p><b><i>Site Clearing Clear Existing Shrubs &amp; Trees</i></b></p>	<p>Equipment Or Operator Injury Due To Equipment Failure Or Operator Error</p> <p>Equipment Striking Employees Or Other In Area</p> <p>Trees Or Shrubs Injuring Operator Or Employee</p>	<ul style="list-style-type: none"> <li>• All operators will be qualified and equipment is on preventative maintenance schedule with daily inspections</li> <li>• Only experience and qualified operators will be allowed to operate equipment.</li> <li>• All heavy equipment will be equipped with audible reverse warning alarms</li> <li>• Spotters will be used if equipment must be used in areas where employees presents a danger</li> <li>• Operators will be protected in enclosed operator environment will roll protection</li> <li>• Growth will be removed in direction away from operators or other employees</li> </ul>
<p><b>Sprinkler Fire Protection</b></p>		
<p><b><i>Deliver Materials &amp; Equipment</i></b></p>	<p>Equipment Storage</p> <p>Material Unloading ( Back Strains, Cuts From Sharp Objects)</p> <p>Material Storage</p> <p>Traffic Controls</p> <p>Overhead Wires</p>	<ul style="list-style-type: none"> <li>• Equipment storage will be prearranged for the phase of the job and proper protection will be provided.</li> <li>• All equipment will be locked at nights with key controls in place.</li> <li>• Smaller equipment will be locked in trailers or removed from the site to reduce theft potential</li> <li>• Provide materials handling equipment where needed.</li> <li>• Use proper lifting methods</li> <li>• Use gloves while unloading ductwork</li> <li>• Material Storage areas will be arranged prior to delivery to avoid traffic conflicts and provide secure storage at the site.</li> <li>• Materials stored on site will be limited to those that are necessary for the current work.</li> <li>• Traffic controls will be set to Uniform traffic control standards including warning signs, trained flagmen and other controls during loading, unloading or crossing of roads.</li> <li>• Equipment will be kept a safe distance from overhead wires</li> </ul>
<p><b><i>Protection Housekeeping</i></b></p>	<p>Flammable Adhesives Or Liquids</p> <p>Access To Site</p> <p>Debris Accumulation</p> <p>Storage Of Combustibles</p> <p>Temporary Heat</p>	<ul style="list-style-type: none"> <li>• Keep flammable liquids in approved containers.</li> <li>• Use no-flammable adhesives or liquids where possible.</li> <li>• Keep easily accessible ladders, stairways or ramps to site</li> <li>• Provide adequate exits for the work areas</li> <li>• Arrange site for easy access and safe maneuvering of materials</li> <li>• Keep site clean of scrap and debris</li> <li>• Store combustibles well away from the structure.</li> </ul>
<p><b><i>Install New Lines &amp; Riser</i></b></p>	<p>Trench Collapse</p> <p>Access In &amp; Out Of Trench's</p> <p>Water In Trench</p> <p>Tools Or Equipment Falling In Trench</p> <p>Fumes From Welding Or Gluing Of Pipes Or Other</p>	<ul style="list-style-type: none"> <li>• A competent person will be designated to determine soil types and conditions.</li> <li>• Trench protection such as shoring, sloping or trench boxes will be used to protected against collapse.</li> <li>• Trench protection for depths over 5 feet will be determined by soil types &amp; conditions.</li> <li>• No employee will work in trenches 5' or greater in depth without proper trench protection</li> <li>• Ladders will be provided with a max. Of 25' travel distance</li> <li>• Proper walkways over excavations greater than 6' will be provided.</li> </ul>

	Hazardous Atmospheres  Welding Exposures	<ul style="list-style-type: none"><li>• Tools, equipment and excavated materials will be stored at least 2' from the trench edge.</li><li>• Testing will be conducted for hazardous atmospheres or where oxygen deficiency exist.</li><li>• If water conditions exist it will be removed from the trench where accumulated and conditions evaluated.</li><li>• Welding will be controlled including proper storage of compressed gas cylinders</li><li>• Welding will be restricted near flammable or before lines are purged</li></ul>
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<b><i>Underground Water Supply</i></b>	Excavation Of Trench	<ul style="list-style-type: none"> <li>• Surface encumbrances will be located and removed or supported.</li> <li>• Nearby structures will be supported for stability</li> <li>• Remove dirt and debris from streets or sidewalks.</li> <li>• Controls for dust from site conditions</li> <li>• Any excavation over 20' deep will be approved by a PE</li> <li>• Equipment will be kept away from the edges of the excavation.</li> <li>• Equipment will have rollover protection</li> </ul>
<b><i>Installing Overhead Lines</i></b>	Using Ladders  Using Lifts Moving Lifts Into People/Objects On Ground Falling Out Of Lift Basket	<ul style="list-style-type: none"> <li>• Ladders will be inspected for damage and unsafe ladders will be removed</li> <li>• Ladders will be placed at a 4-1 pitch</li> <li>• No metal ladders will be used near electrical lines</li> <li>• All lifts will be operated following manufactures standards</li> <li>• Lifts will be inspected daily prior to use.</li> <li>• All lifts will have proper guard rails</li> <li>• Full body harness and lanyards will be required when in basket.</li> <li>• Never use ladders for additional height in basket</li> </ul>
<b><i>Lifting Materials</i></b>	Falling Material Wire Ropes & Slings	<ul style="list-style-type: none"> <li>• Only qualified operators will be allowed to use lifts</li> <li>• Lifts will be operated per mfg. Instructions</li> <li>• Wire ropes, slings or other lifting equipment will be inspected daily for safety</li> <li>• Defective gear will be removed from service</li> </ul>
<b><i>Pre-Job Planning</i></b>	Study The Job Hazards, Electrical Exposures Etc.	<ul style="list-style-type: none"> <li>• Study job site to determine hazards, exposures or unusual conditions.</li> <li>• Locate and mark electrical utility lines/electrical power equipment prior to starting work</li> </ul>
<b><i>Removing Equipment From Site</i></b>	Injury Or Equipment Damage While Loading  Traffic At Site While Loading	<ul style="list-style-type: none"> <li>• Loading will be done by qualified operators in a safe area.</li> <li>• All equipment will be properly secured from moving during transport.</li> <li>• Traffic controls as outlined above including flagmen and signs,</li> </ul>
<b><i>Welding &amp; Portable Generators</i></b>	Electrical Shock Burns, Eye Injuries, Etc. Compressed Gases Install Grounding For Tools Worn Or Damaged Welding & Electrical Cables	<ul style="list-style-type: none"> <li>• Use GFCI breakers on all generators</li> <li>• Ground all equipment during use</li> <li>• Use proper PPE including gloves, face shields, etc.</li> <li>• Secure gas cylinders and use backflow preventors for Oxygen/ Acetylene torches</li> <li>• Inspect and repair damaged cables</li> <li>• Protect cables from damage</li> </ul>
<b>Steel Erection</b>		
<b><i>Crane Hazards</i></b>	Tipping Crane Hit By Swinging Crane	<ul style="list-style-type: none"> <li>• Make sure outriggers are out &amp; secure</li> <li>• Use Outrigger pads</li> </ul>

	Signal Errors Swinging Uncontrolled Loads Crane Failure Overloading Crane Two Blocking The Load	<ul style="list-style-type: none"><li>• Level crane properly on solid ground</li><li>• Clear area around swing radius</li><li>• Only one designated signalman at any time</li><li>• Review and use standard crane signals</li><li>• Use tag lines</li><li>• Use only trained &amp; experienced operators</li><li>• Inspect crane and rigging regularly</li><li>• Always confirm the weight of load and check charts and radius</li><li>• Secure loads from shifting with proper chokers</li></ul>
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<p><b><i>Deliver Materials &amp; Equipment</i></b></p>	<p>Equipment Storage</p> <p>Material Unloading ( Back Strains, Cuts From Sharp Objects) Material Storage</p> <p>Traffic Controls Overhead Wires</p> <p>Unloading Equipment</p>	<ul style="list-style-type: none"> <li>• Equipment storage will be prearranged for the phase of the job and proper protection will be provided.</li> <li>• All equipment will be locked at nights with key controls in place.</li> <li>• Smaller equipment will be locked in trailers or removed from the site to reduce theft potential.</li> <li>• Provide materials handling equipment where needed.</li> <li>• Check route for adequate clearance/weight limits</li> <li>• Use of proper lifting methods</li> <li>• Gloves used while unloading steel</li> <li>• Keep hands and feet clear of rigging</li> <li>• Material Storage areas will be arranged prior to delivery to avoid traffic conflicts and provide secure storage at the site.</li> <li>• Materials stored on site will be limited to those that are necessary for the current work.</li> <li>• Traffic controls will be set to Uniform Traffic Control standards including warning signs, trained flagmen and other controls during loading, unloading or crossing of roads.</li> <li>• Equipment will be kept a safe distance from overhead wires</li> <li>• Equipment off loading will be done by qualified operators with all other personnel cleared from the area.</li> <li>• Spotters for unloading will be provided.</li> </ul>
<p><b><i>Erecting Steel</i></b></p>	<p>Fall Protection</p> <p>Falling Objects</p> <p>Landing Load</p>	<ul style="list-style-type: none"> <li>• Use full body harness with shock absorbing lanyard</li> <li>• Tie off to secure location</li> <li>• Do not ride the load</li> <li>• Provide anti-fall device on vertical ladders</li> <li>• Wear hard hats</li> <li>• Flag or protect area under the load.</li> <li>• No one allowed under load</li> <li>• Do not send up loose materials</li> <li>• Keep hands &amp; feet out of the way</li> <li>• Work from secure platform or scaffold</li> <li>• Make sure temporary gear is secure</li> <li>• Supply adequate temporary supports to brace components installed</li> </ul>
<p><b><i>Housekeeping</i></b></p>	<p>Trip Hazards Debris, Scrap, Etc.</p>	<ul style="list-style-type: none"> <li>• Remove any trip hazards</li> <li>• Keep work area clean and remove debris, scrap or trash material.</li> <li>• Keep cord out of walkways</li> <li>• Remove flammable or combustibles where possible</li> <li>• Limit flammables to one day supply</li> </ul>

		<ul style="list-style-type: none"> <li>• Restrict smoking near flammables</li> <li>• Provide adequate fire extinguishers</li> </ul>
<b>Pre-Job Planning</b>	Study The Job Hazards , Electrical Exposures Etc.	<ul style="list-style-type: none"> <li>• Study the job site to determine hazards, exposures or unusual conditions.</li> <li>• Locate and mark electrical utility lines/electrical power equipment prior to starting work</li> </ul>
<b>Removing Equipment From Site</b>	Injury Or Equipment Damage While Loading  Traffic At Site While Loading	<ul style="list-style-type: none"> <li>• Loading will be done by qualified operators in a safe area.</li> <li>• All equipment will be properly secured from moving during transport.</li> <li>• Traffic controls as outlined above including flagmen and signs,</li> </ul>
<b>Rigging</b>	Improper Rigging	<ul style="list-style-type: none"> <li>• Inspect chokers, cables, and rigging regularly &amp; before each use</li> <li>• Use correct size and appropriate chokers, cables, shackles, lifting lugs, spreader beams, slings and straps.</li> </ul>
<b>Welding, Grinding, Cutting</b>	Air Compressors & Lines  Compressed Gas Cylinder  Install Grounding For Tools Worn Or Damaged Welding & Electrical Cables Burns, Eye Injuries, Etc. Confined Spaces	<ul style="list-style-type: none"> <li>• Use hand-offs on bull hoses</li> <li>• Use auto shutoffs for tail hoses &amp; air lines (quick disconnect)</li> <li>• Repair or replace damaged air lines</li> <li>• Provide proper storage and secure cylinders</li> <li>• Use backflow preventors on torches for Oxygen/Acetylene</li> <li>• Install ground properly with good connections</li> <li>• Use three wire electric cords</li> <li>• Use GFCI protection</li> <li>• Inspect and repair damaged cables</li> <li>• Protect cables from damage</li> <li>• Proper PPE including welding shield, gloves, aprons ( if needed ) etc.</li> <li>• Provide guards on grinders</li> <li>• Check air or hazardous atmospheres</li> <li>• Provide ventilation</li> </ul>
<b>Tie Rebar</b>	Tripping Over Steel, Puncture Wounds, Back Strain	<ul style="list-style-type: none"> <li>• Cover ends of vertical/horizontal dowels with rebar caps, review trip hazards with workers make sure employees wear gloves when working with wire and rebar review with employees proper lifting procedures - lift with the legs not the back</li> </ul>
<b>Travel</b>	Airlines Deer And Other Wildlife Dust Motor Vehicle Accidents  Reduced Visibility  Slick, Snowy, Or Icy Roads Uneven Surfaces	<ul style="list-style-type: none"> <li>• Obey safety rules on common carrier transportation.</li> <li>• Stay alert, use caution, and drive defensively.</li> <li>• Drive with windows closed.</li> <li>• Obey traffic laws. Adjust vehicle operation to road and weather conditions. Employ defensive driving techniques. Complete defensive driver training once every 4 years.</li> <li>• Ensure windows/mirrors are free from snow and ice. Drive with headlights on. Reduce speed appropriately.</li> <li>• Use studded or chained tires, reduce speed, and increase following distances.</li> <li>• Reduce speed appropriately.</li> </ul>



<b>Fall Protection</b>		
<b>Prepare work area</b>	Injuries to workers, bystanders-slips, trips, falls	<ul style="list-style-type: none"> <li>• Warn people in work area</li> <li>• Utilize barricades, signs, cones, caution tape to keep bystanders a safe distance from work area.</li> </ul>
<b>Climbing</b>	Falling, slipping	<ul style="list-style-type: none"> <li>• Always tie off with an approved body harness when working above ground.</li> <li>• For all operations above 7.5 feet, a second person trained in emergency procedures must be present within vision or voice</li> </ul>
<b>Setting forms or similar objects</b>	Falling, slipping	<ul style="list-style-type: none"> <li>• Always tie off with an approved lanyard, safety line and full body harness when working above ground</li> <li>• For all operations above 7.5 feet, a second person trained in emergency procedures must be present within vision or voice</li> </ul>
<b>Shot Crete Operations</b>		
<b>Running hose line</b>		<ul style="list-style-type: none"> <li>• Walk the sire for hazards to hose line</li> <li>• Correct any hazards</li> </ul>
<b>Securing hose line</b>		<ul style="list-style-type: none"> <li>• Employees are thoroughly trained in the provisions of securing hose line and tested on a regular basis</li> </ul>
<b>Scaffold</b>		<ul style="list-style-type: none"> <li>• Inspect all rails and planks that they adhere to all OSHA regulations</li> </ul>
<b>Shooting walls</b>		<ul style="list-style-type: none"> <li>• Use all necessary PPE</li> </ul>
<b>Nozzle man with 1500 PSI hose</b>		<ul style="list-style-type: none"> <li>• Spotter within 5 feet of nozzle man with hose in control and secure</li> </ul>
<b>Spoils</b>		<ul style="list-style-type: none"> <li>• All spoils piles are to be maintained at a safe distance away from working crews</li> </ul>
<b>Equipment</b>		<ul style="list-style-type: none"> <li>• Vehicles are to be kept at a safe distance away from work area</li> </ul>
<b>Working deeper than 5 feet</b>	Possible cave in	<ul style="list-style-type: none"> <li>• A competent person to be present at all times while employees are exposed to open excavation</li> <li>• Protective systems, shields, sloping shores in place prior to entering excavation</li> </ul>
<b>Mechanic - Maintenance/Repair Activities</b>		
	Compressive foot injuries Ankle injuries Head injuries  Eye injuries Hand injuries Electrical shock	<ul style="list-style-type: none"> <li>• Wear appropriate safety shoes/boots</li> <li>• Wear proper field boots with ankle height of at least 4 inches.</li> <li>• Wear hard hat when exposed to overhead hazards. Hard hats are required to be worn at all times when in Hard Hat Areas.</li> <li>• Wear appropriate eye protection as necessary.</li> <li>• Wear appropriate gloves as necessary.</li> <li>• Ensure equipment is properly maintained and grounded and has GFCI protection. Ensure all extension cords are the correct type and are protected from damage. Ensure equipment is locked/tagged out before any work is begun.</li> </ul>

**Mechanic - Maintenance/Repair Activities (cont'd.)**

Lifting	<ul style="list-style-type: none"><li>• Use proper lifting techniques. Get assistance when necessary. When lifting, keep the load close to the body and lift with the legs.</li></ul>
Noise	<ul style="list-style-type: none"><li>• Wear proper hearing protection devices.</li></ul>
Slips/trips/falls	<ul style="list-style-type: none"><li>• Use good housekeeping practices. Be observant of walking/working surfaces.</li></ul>
Falling on slippery or rugged terrain	<ul style="list-style-type: none"><li>• Wear proper field boots and be observant of terrain. Use safety lines when necessary.</li></ul>
Loss of extremities	<ul style="list-style-type: none"><li>• Wear clothing that will not get caught in machinery. Do not wear jewelry.</li></ul>
Working over water	<ul style="list-style-type: none"><li>• Wear lifeline and harness, and life jacket.</li></ul>
Potential fall of over 6 feet	<ul style="list-style-type: none"><li>• Use positive fall protection.</li></ul>
Fumes and dust	<ul style="list-style-type: none"><li>• Ensure proper ventilation and wear respirator if necessary.</li></ul>
Welding burns/flash	<ul style="list-style-type: none"><li>• Avoid welding operations. When exposure is unavoidable, wear proper clothing, gloves, and safety goggles.</li></ul>
Hazardous/flammable chemicals	<ul style="list-style-type: none"><li>• Obey manufacturer's handling, storage, and use recommendations. Read Material Safety Data Sheet for specific hazards before use.</li></ul>
Moving equipment	<ul style="list-style-type: none"><li>• Keep alert and out of the way of heavy equipment.</li></ul>
Snake bites	<ul style="list-style-type: none"><li>• Wear proper field boots or snake chaps. Do not harass/kill snakes.</li></ul>
Animal bites	<ul style="list-style-type: none"><li>• Wear proper clothing. Do not approach animals. Use caution and composure when encountering animals.</li></ul>
Insect bites and stings	<ul style="list-style-type: none"><li>• Knowledge and avoidance of such insects. Caution and knowledge of any allergies to such bites or stings. Do not wear perfume or cologne. Know where to obtain first aid.</li></ul>
Poisonous plants	<ul style="list-style-type: none"><li>• Knowledge and avoidance of such plants. Wash after contact.</li></ul>
Exposure to the elements	<ul style="list-style-type: none"><li>• Wear proper clothing. Be aware of exposure duration and limit duration if necessary. Be knowledgeable of the symptoms of exposure related illnesses.</li></ul>
Motor vehicle accidents	<ul style="list-style-type: none"><li>• Obey traffic laws. Adjust vehicle operation to road and weather conditions. Employ defensive driving techniques. Complete defensive driver training once every 4 years.</li></ul>
Uneven surfaces	<ul style="list-style-type: none"><li>• Reduce speed appropriately.</li></ul>
Pedestrian/Foot Traffic	<ul style="list-style-type: none"><li>• Stay alert, use caution, and drive defensively.</li></ul>
Dust	<ul style="list-style-type: none"><li>• Drive with windows closed.</li></ul>
Reduced visibility	<ul style="list-style-type: none"><li>• Ensure windows/mirrors are free from snow and ice. Drive with headlights on. Reduce speed appropriately.</li></ul>
Slick, snowy, or icy roads	<ul style="list-style-type: none"><li>• Use studded or chained tires, reduce speed, and increase following distances.</li></ul>

**All company safety policies and procedures are enforced and will be followed at all times on the job.**

**ANALYSIS MADE  
BY:**

**Project Superintendent  
Reviewed**

**Job Site Superintendent/Foreman Reviewed**

**Initial & Date:**

**Initial & Date:**

**Initial & Date:**

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