

MARICOPA COUNTY	JOB TITLE: Installation of Oversized Signs Using Mule Crane (one man Installation)		JSA No. 302-64-002	DATE: 09/22/04	NEW <input checked="" type="checkbox"/>
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JOB SAFETY ANALYSIS	TITLE OF PERSON WHO DOES JOB: Signing Technicians	SUPERVISOR: Kathy Baker	ANALYSIS PERFORMED BY: Roy Randez		
ORGANIZATION: Maricopa County	LOCATION: 2909 W. Durango Phx. Az. 85009	DEPARTMENT: Maricopa County Dept. of Transportation	REVIEWED BY:		
SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE			
Read operator's manual completely & attend risk management's safety training prior to attempting operation of the crane.	Careless or uninformed operator Property damage Personal injury	Read and obey all information contained in the operator's manual. Follow MCDOT's safety training instructions.			
Retrieving Sign from Sign Shop	Injury to Back Injury to Hands	Use hand truck for moving oversized signs out to your truck, Get assistance if needed. (4 ft. x 5 ft. / 4 ft. x 8 ft.) PPE: gloves, steel toe shoes			
Loading and transportation of signs to job site	Injury to Back Injury to Hands Roadway Hazard	<u>Use proper lifting techniques</u> when handling signs. Wear gloves when handling signs due to sharp edges. Transport signs in designated cabinets on truck. All oversized signs must be stored in the headache rack. (Signs have sharp edges nylon straps shall <u>not</u> be used – use chains.) PPE: gloves, steel toe shoes, vehicle safety belt			
Assess work site prior to entering work area	Truck may get stuck Damage to truck due to overgrown foliage or debris	Verify ground is stable enough to drive truck on. Avoid bumps and leaning of the truck, which may cause your loads to shift. Have any overgrown foliage and debris removed prior to entering area. PPE: hard hat, safety glasses, safety vest, steel toe shoes			

<p>Position truck in the area the sign is to be installed.</p> <p>Allow yourself room to access all your truck bins and tools needed for the installation.</p> <p>Set up safety work zone</p>	<p>Errant vehicles</p>	<p>Set-up safety work zone prior to any work started.</p> <p>Use VMS board and truck lights for additional safety.</p> <p>If a basic work zone safety set-up is not sufficient, stop the installation process and request for additional traffic control from your supervisor.</p> <p>PPE: hard hat, safety glasses, safety vest, steel toe shoes, vehicle safety belt</p>
<p>Start digging where the sign posts are to be installed</p>	<p>May damage utility lines</p> <p>Injury to hands</p> <p>Injury to back</p>	<p>Verify all blue stake markings have been completed prior to any digging.</p> <p>If all markings are not visible and the 5-day period has passed for blue stake; verify it has been reported with a no-conflict. If you are unable to verify all utilities have responded, <u>Do Not Dig!</u> Use gloves when using the posthole digger or an auger. Keep hands and feet clear of all moving parts.</p> <p>PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes</p>
<p>Assemble the telespars and anchors for the sign installation and place in the holes</p>	<p>Injury to hands</p> <p>Injury to back</p>	<p>Avoid pinching hands when placing the anchor assembly onto the Telespar. Use proper lifting techniques when standing telespar assembly.</p> <p>PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes</p>
<p>Position trucks passenger side next to anchor holes/telespar for the use of the crane.</p> <p>Truck should be no less than one foot away from hole/telespar for proper crane operation.</p>	<p>Damage to truck</p>	<p>Do a complete walk-around of your truck to be sure the work area is clear of any tools and equipment. Maneuver truck slowly so the crane lines-up with the telespar.</p> <p>PPE: safety glasses, safety vest, steel toe shoes, vehicle safety belt</p>
<p>Preparing the sign for installation</p>	<p>Injury to hands</p> <p>Injury to back</p> <p>Slip and fall</p>	<p>Before removing the sign from the headache rack, be sure the surrounding area is free and clear of any tripping hazards, use gloves to avoid hand injuries from edges of the sign and assure you have proper footing before handling the sign. Place the sign next to the truck so the crane may be used for the installation.</p> <p>PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes</p>

Prepare the truck and crane for the sign installation	Injury to hands Injury to back Slip and fall	The vehicle brake shall be set. Place the four wheel blocks under wheels to help stabilize truck when using the crane. Clear the back walkway of the truck of any tripping hazards. Connect the control cable for the crane and release the tension on the cable and detach the cable clip from the truck. Remove the support pin and raise the arm in the full upright position, replace the support pin, be sure the cotter pin is also in place. <u>Caution: once you lift the arm from the support bracket, it may rotate without warning!</u> Keep hands away from sheaves, lifting cable, pinch points and moving parts of crane. Do not divert your attention while the crane is in operation. Do not over load the crane. PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes
Crane operation	Possible equipment damage	Know the crane's lifting capacities – refer to the crane's load chart. Know the weight of the load you are lifting. Never wrap the lifting cable around the load. Always center the tip of the boom over the load to be lifted, be sure the load is well secured and properly balanced before lifting. Keep tension on lifting cables at all times. Do not shock load / bounce or swing the load. Never raise the load any higher than needed. Never stand beneath the load. Always allow the load to come to a complete stop before reversing directions. Always maintain a minimum of five wraps of lifting cable around the winch drum. Never attempt to slide, drag or pull loads across a surface. Report any unusual occurrences during the crane operation that may require maintenance or repair. PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes
Lifting the sign with the crane to mount to the telespar	Slip and fall Bodily injuries	Lower the cable and attach the clamp issued to hold signs to the cables clip and the other end to the top center of the sign. Raise the sign slowly to position next to the telespar and mount the sign using the proper hardware. Use your stepladder to reach the top of the telespar in order to secure the sign. Follow ladder safety rules at all times. If you cannot reach the top of the sign ask for assistance. You will need at least an 8-ft. ladder. Avoid installation if it is too windy. (Remember the crane unit does not have a rotation lock device). Excessive winds can cause you to slip and fall off your ladder. PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes
Set the footing for the completion of the sign installation	Injury to back Slip and fall	Verify the path is clear when retrieving cement to mix, also to the holes for the sign post footings. Be sure to use proper lifting techniques when retrieving cement bags and proper footing when using the wheel barrel. Pour the cement into the holes and verify the posts and sign are level, also verify the full assembly is to standards. Allow cement to harden. PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes

<p>Remove the clamp from the sign assembly, clear work zone area</p>	<p>Injury to hands Injury to back Slip and fall</p>	<p>Start clearing work zone area of any debris and return all tools used back to their secure location. Once the footing has had time to set, secure your ladder to one of the telespar using a rope or bungee cord for extra support. Remove the clamp from the top of the sign. (Remember your ladder safety training.) Avoid overreaching which could cause you to strain your back or slip and fall. Be aware of any additional tension or movement of the crane caused by the setting of the sign assembly. Once the clamp is removed the crane will be able to move freely, which can be a hazard in its self.</p> <p>PPE: hard hat, safety glasses, gloves, safety vest, steel toe shoes</p>
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