1 Status

1.1 Update of existing policy, effective 09/02/11.

2 Purpose

2.1 To ensure the safety of the team when placing concrete and while working around the equipment used for placing and finishing concrete.

3 Applicability

3.1 This policy applies to all subsidiary companies and departments of The Cianbro Companies.

3.2 All organizations are required to comply with the provisions of this policy and procedure.

4 Definitions

4.1 Bail: The section above the bucket that the rigging attaches to, usually on laydown buckets these move when lifted by the hoisting equipment to center the load beneath the hook.

5 Policy

5.1 When placing concrete, the requirements from this policy must be followed to plan and do the work.

6 Responsibilities

6.1 The Corporate Safety Officer or designee is responsible for providing approval for the use of placing and finishing concrete under this policy.

6.2 The top Cianbro manager of the project site is responsible for implementation of this policy on the project.

6.3 Cianbro Corporate Safety is responsible to maintain this document.
7.1 Planning the Activity

7.1.1 Before concrete placement begins, a detailed activity plan must be developed and reviewed with the crew. This plan should deal with every aspect of the pour(s) from start to finish in order identifying all hazards and factors to complete the work. Some safety items to consider when planning a pour are:

- Access to the Pour
- Pour Staging and Travelways
- Fall Protection (6’ or less)
- Eye Protection
- Hand Protection
- Crane Capacity and Reach
- Electrical Power Needs and Associated Problems
- Emergency Evacuation Procedures
- Tripping Hazards
- Concrete Burns to the Skin (Prevention & Treatment)
- Placement Location Confined Space Requirements
- Weather Conditions
- Hearing Protection

Remember, our goal is to identify and eliminate hazards before the work begins.

7.2 Hazards on the Forms

The placement crew will encounter all sorts of “temporary” dangers and hazards during the pour. Some things to be considered are:

7.2.1 Form Strength
- Ability to support both the dead weight of the concrete plus the live loads of deposited concrete and crew members up on form supported staging.
- Consult a qualified engineer to assist in formwork design.

7.2.2 Access to the Pour
- Ladders, gangplanks or stairways must be provided to get crews to and from the pour areas.
- For below grade pours, ramp ways for “slip-free” access can be built or excavated. Stairs can also be built.
- Ensure that there is adequate room to exit at the end of bridge decks or elevated slabs when the finishing machine approaches.

7.2.3 Pour Stagings and Walkways
- Sufficient travel ways must be provided for crews to access all areas being poured. This will eliminate injuries due to climbing around, losing grip, slipping, falling, etc.
- Remember to consult the Cianbro Scaffold Safety Policy and Procedure for more specific information on this.

7.2.4 Trip Hazards
- Must be eliminated at the pour level. This includes cords, tools; rebar projections, imbeds, form components and any other materials.
7.2.5 Fall Protection
- Try to eliminate this hazard with staging, handrails, etc. If possible, try to eliminate the need for 100% tie off especially when pouring with crane and bucket.

7.2.6 Projections from Within the Form
- Protruding rebar, form ties or even ledge conditions can present serious hazards.
- Rebar caps shall be utilized where necessary and plywood shields shall be installed to guard against stabbing or impalement.

7.3 Personal Protection

7.3.1 Provide a "Motor Person"
- This person can carry the motor for the crew member performing the actual concrete vibrating.
- Outfit the motor person with a shoulder strap to help support the motor and to give more freedom to his/her arms and hands.

7.3.2 Rotate Jobs
- Have the "motor person" and the vibrator person switch jobs periodically. By taking turns at the different tasks, repetitive motions that lead to injury will be minimized.
- Rotate when raking, wheeling or shoveling concrete.

7.3.3 Electric Power
- Route cords away from travel ways and access ways. Be sure of the power source and use GFCI's.
- Inspect all power cords for defects and tape plug connections to keep connections dry on wet days.
- As always you need to lock out tag out when cleaning or working on the carriage of the machine so that pinch and crush points are eliminated.

7.3.4 Correct Tool Selection
- Choose the correct vibrator shaft length for the job. If the shaft and head assembly is far longer than required to reach, the work is much greater and the chance of injury and fatigue more likely.

7.3.5 Protect Those Eyes
- Concrete in the eye is a nasty situation and is very painful.
- Double eye protection is required when vibrating concrete unless it is determined that no face/eye hazard exists and supervisory approval is received.

7.3.6 Guard Against Concrete Burns to the Skin
- Wear gloves to protect hands and fingers.
- Wear high top rubber boots during slab pours to protect from concrete affecting ankles and lower leg areas. You need to keep your boots taped or closed at the top so that concrete does not go into boots and cause a rash from friction or burns on your legs. This will also protect leather boots which are adversely affected by the chemicals in concrete.
- Wear face shield over safety glasses when chance of splatter exists.
- Use barrier cream on exposed skin and always wash off concrete from skin as soon as possible.

7.4 Pouring with Buckets

7.4.1 Bucket Condition
- Inspect the bucket thoroughly for cracks, breaks or defects that would adversely affect its performance prior to every pour. Pay special attention to the "Bail", the part where the hoisting equipment attaches to the bucket. As you land the bucket, the bail will come down and you need to keep fingers, hands and other body parts clear so they will not get pinched.
• **Never** weld, drill or work on the bail in any way without the manufacturer's approval.
• Keep the bucket very clean inside and out so proper visual inspection can be made.

### 7.4.2 Bucket Rigging
• Inspect wire slings and shackles used in lifting the bucket prior to every pour.
• Make sure these components are sized properly for the weight of the bucket plus its contents.
• Wire the screw pin to the shackle body to keep it from "backing out".

### 7.4.3 Pinch Points
• Every moving bail should have "bail stops" to keep the bail from slamming down on top of the bucket if suddenly released.
• Evaluate your bucket and take additional measures to prevent injury from the bail if necessary. (i.e. screens, guards).
• Be careful of the bucket jaws. Keep hands and feet back from the pinch points.
• Have only one bucket person operating the handle to avoid confusion.

### 7.4.4 Overfilling
• Train the bucket tender and ready mix drivers to avoid overfilling the bucket causing spillage onto the bucket itself.
• Once in the air, this spillage can fall off and injure crew members or damage equipment.

### 7.4.5 Bucket Handling
• Double check with crane operator regarding crane capacity and reach.
• Train all bucket handlers in landing the bucket and working with the crane operators.
• Maintain eye contact with the operator and never get behind the bucket or out of sight.
• Install handles on the bucket for tenders to guide it.
• Keep hands away from the bail and other pinch points.
• Have only one crane signal person to avoid confusion.

### 7.4.6 Watch Overhead
• Plan the crane swing route. Inform all crew members and have the crane operator sound the horn to notify crews that the bucket is being flown.
• Stay out from beneath the bucket until it is down close, then approach to handle it.
• Have an escape path planned and clear of obstructions and tripping hazards. The crew must be able to get clear of the bucket at all times.
• Maintain eye contact with the crane operator.

### 7.5 Using Other Equipment

#### 7.5.1 When "Wheeling" Concrete
• Inflate tires to proper pressure.
• Don't overfill - avoid back strains, remember to lift with your legs.
• Provide ample travel ways with good footing, clutter free.

#### 7.5.2 When Using Conveyors
• Barricade off around the machine to block thruways beneath belt area.
• Guard pinch points and moving parts.
• Use a "spotter" when moving the conveyor.
• Keep people away from the "drop chute" end.
7.5.3 When Working with Hoppers
- Never handle hoppers and tremie tubes alone, get help.
- Always be sure of the "hold" that is on a hopper and tremie before flying it overhead.
- Securely fasten hopper and tubes together before flying overhead.

7.5.4 When Using Concrete Pumps
- Inspect pump hoses and slick lines for condition. Look for weak spots that may "blow out".
- Stay clear of the discharge end of the pump hose. (Especially during a plug).
- Wear gloves to handle hoses.
- Use hose "whip check" lanyards in case of a "blow apart".
- Get help in lifting pump hoses and slick lines. Avoid back strains. If possible, use equipment to lift the hoses.
- A rope attached to the pump hose will make positioning easier.
- Never kink, fold or pinch a pump hose.

7.5.5 Bidwell or Deck Machines
- When working on deck pours in front of the machine keep hands and feet away from the carriage with the augers and rollers.
- If you have to adjust the augers or works on the carriage, when the operator stops the carriage disengage the hydraulics so augers or barrels can not turn.
- Make sure that you keep hands, feet; tools, electric cords, and water hose off of the machine rail because the operator cannot see all areas around the machine and make sure that all guards are in place.
- Operators must be aware of fall protection because of where the operator's seat is located.

7.5.6 Use this Safety Policy and Procedure in planning concrete pours and in training concrete placement crew members. Some other Safety Policy and Procedures to consult with would be:
- Fall Protection Program
- Confined Space Entry
- Scaffold Safety
- Crane Safety

8 Budget / Approval Process

8.1 It is the responsibility of each jobsite to procure and provide all materials and PPE required and provide necessary training.

9 Related Documents

9.1 Not applicable