



CRANES AND HOISTING OPERATIONS

Planning, Setup, Inspection, Rigging and Controlled Lifting

POLICY STANDARD

Every lift must remain within the crane's rated capacity and approved configuration. Qualified personnel must plan the work, verify ground and equipment conditions, control the lift area, maintain clear communication, and stop whenever safety is uncertain.

PHEIFER BROTHERS CONSTRUCTION CO., INC.

Effective August 23, 2026 | Revision 1

Table of Contents

SECTION	TOPIC	PAGE
1	Purpose, Scope and Responsibilities	3
2	Personnel Qualifications and Lift Planning	4
3	Ground Conditions, Setup and Assembly/Disassembly	5
4	Power-Line Safety	6
5	Crane Inspections and Documentation	7
6	Wire Rope Inspection and Removal	8
7	Load Charts, Safety Devices and Operational Aids	9
8	Rigging, Signals and Load Control	10
9	Lift-Zone Control and Safe Operation	11
10	Critical, Multiple-Crane and Personnel Lifts	12
11	Bridge, Marine, Pile-Driving and Traffic Operations	13
12	Maintenance, Severe Service and Emergencies	14
13	Training, Records and Stop Work	15
14	Test Your Knowledge	16

USE OF THIS POLICY

This policy establishes minimum company expectations and is not all-inclusive. OSHA Subpart CC, manufacturer procedures/load charts, engineered lift plans, project specifications and equipment-specific requirements control when they are more protective.

Primary Regulatory References

- 29 CFR 1926 Subpart CC - Cranes and Derricks in Construction
- 1926.1412 - Inspections and 1926.1413 - Wire rope inspections
- 1926.1427 - Operator training, certification and evaluation
- 1926.1428 - Signal-person qualifications
- 1926.1431 - Hoisting personnel; 1926.1432 - Multiple-crane lifts; 1926.1437 - Cranes on barges

Official standards: www.osha.gov/laws-regs/regulations/standardnumber/1926/1926SubpartCC

1. Purpose, Scope and Responsibilities

Purpose and Scope

This policy applies to mobile cranes, crawler cranes, lattice/telescopic boom cranes, derricks, articulating/knuckle-boom cranes when covered by Subpart CC, dedicated pile drivers, cranes on barges, personnel platforms, multi-crane lifts and related hoisting/rigging used in Pheifer Brothers heavy-highway and bridge construction.

Management / Project Management

- Provide compliant equipment, qualified personnel, inspections, maintenance and engineering support.
- Coordinate controlling-entity duties for firm, drained, graded ground and known underground hazards.
- Identify lifts requiring a written critical/multiple-crane/personnel/marine plan.
- Maintain operator, signal-person, inspection and repair documentation.

Competent / Qualified Persons

- The assembly/disassembly (A/D) director controls A/D and verifies procedures, crew understanding and configuration.
- The lift director/competent person coordinates setup, lift zone, communication and stop-work decisions.
- Qualified persons perform required annual, post-assembly, repair/modification, severe-service and technical inspections/designs.
- Qualified riggers select/inspect rigging and perform rigging work requiring that qualification.

Operator, Foreman and Crew

- Operators complete required inspections, operate within certification/evaluation and manufacturer limits, and have authority to stop.
- Foremen verify current inspections/plans/qualifications and coordinate traffic, water, utilities and simultaneous work.
- Signal persons provide only signals for which they are qualified; employees obey exclusion zones and never enter beneath suspended loads.

OPERATOR STOP AUTHORITY

The operator must stop and refuse a lift when safety is in question. No schedule, production demand or supervisor instruction overrides that decision.

2. Personnel Qualifications and Lift Planning

Operator Requirements

- Operators must be trained, certified/licensed where Subpart CC requires, and evaluated by Pheifer Brothers for the equipment operated.
- Certification alone does not establish site/equipment competence; the employer evaluation must be documented and available at the worksite.
- Operators-in-training work only under required trainer supervision and within permitted limits.
- Operate only equipment/configurations for which the operator is authorized and physically/mentally fit.

Signal Persons and Qualified Riggers

- Use a qualified signal person whenever required, including when the operator cannot fully see the load path/landing or site-specific safety concerns require one.
- Signal-person qualification requires documented written/oral and practical assessment for each signaling type used; documentation is available onsite.
- Use qualified riggers during A/D and whenever workers are required to be qualified riggers under Subpart CC.
- The lift director identifies rigging complexity and assigns personnel with the knowledge needed for the load and method.

Pre-Lift Planning

- Identify load weight, center of gravity, dimensions, pick/landing points and rigging weight.
- Verify crane make/model, configuration, boom/jib, counterweight, parts of line, radius and capacity from the correct load chart.
- Evaluate ground, underground hazards, outriggers/mats, level, tail-swing, access and travel path.
- Identify power lines, traffic, water, structures, workers, weather, visibility and communication method.
- Define lift zone, load path, tag-line/control method, landing/support and emergency/abort actions.
- Conduct a pre-lift briefing for non-routine, critical, multiple-crane, personnel, blind, power-line or complex bridge lifts.

KNOW THE LOAD

Do not rely on estimates when an incorrect weight could affect capacity. Use drawings, shipping records, calculations, scale data or another reliable method.

3. Ground Conditions, Setup and Assembly/Disassembly

Ground and Supporting Conditions

- Set up only on ground firm, drained and graded enough, with supporting materials as needed, to meet manufacturer support/level requirements.
- Identify voids, utilities, culverts, trenches, embankments, cofferdams, recently backfilled areas, bridge decks and underground hazards.
- Use mats/cribbing sized and arranged for expected outrigger/track loads; fully support floats/pads.
- Deploy outriggers/stabilizers per the applicable load chart and manufacturer instructions; verify locking/pinning.
- Check level before use, after each move/setup and whenever settling or condition change is observed.
- Barricade/control the counterweight and tail-swing area.

Assembly / Disassembly

- Use manufacturer procedures or employer procedures meeting Subpart CC under an A/D director.
- Review tasks, hazards, member support, pin removal, boom movement, assist-crane loads and crew positions before work.
- Prevent unintended dangerous movement and confirm components are adequately supported before pins/bolts are removed.
- Keep employees out of pinch/crush zones and under suspended boom/jib sections unless the standard's limited exception and controls apply.
- After assembly, a qualified person inspects configuration before use.
- Do not modify equipment/configuration without required manufacturer or registered-professional-engineer approval.

Moving and Traveling

- Follow manufacturer travel limits for boom, load, grade, wind and outriggers.
- Use a spotter where clearance/view is restricted; control public/internal traffic.
- Secure hooks/blocks and prevent load/boom movement during travel.
- Reassess ground and level after repositioning.

GROUND FAILURE IS A LIFT FAILURE

Outrigger mats do not make unknown soil safe. Resolve voids, utilities, fill and edge-loading concerns before setup.

4. Power-Line Safety

Work-Zone Assessment

- Before operations, define the crane work zone and determine whether any equipment part, load line, load or rigging could come within 20 feet of a power line at maximum working radius.
- Assume every line energized and uninsulated unless the utility owner/operator provides the confirmations required by OSHA.
- Preferred method: utility deenergizes and visibly grounds the line at the worksite.
- If using 20-foot or Table A clearance, implement all required planning, boundaries and encroachment-prevention measures.
- Table A minimums include: up to 50 kV - 10 feet; over 50 to 200 kV - 15 feet; over 200 to 350 kV - 20 feet. Obtain voltage and use the full table for higher voltages.

Encroachment Controls

- Hold a planning meeting with operator and affected crew.
- Erect visible warning line/barricade/sign line at the applicable distance.
- Use at least one required prevention measure, such as trained dedicated spotter, proximity alarm, range warning/limiting device or insulating link, as applicable.
- Dedicated spotter maintains continuous communication and uses a visual aid to judge clearance.
- Use nonconductive tag lines where tag lines are used near power lines.
- Follow separate stricter requirements when operating closer than Table A or during A/D/travel.

Electrical Contact

- Operator stays in cab unless fire/explosion or another emergency requires exit; avoid simultaneous contact with crane and ground.
- Crew stays away from crane, load, rigging and energized ground zone; warn others and call 911/utility.
- If forced to exit, follow trained emergency evacuation method to avoid step/touch potential.
- Do not resume until the utility confirms safe status and required equipment inspection is complete.

20 FEET TRIGGERS THE ASSESSMENT

The common 10-foot value is not the starting rule for crane planning. If the work zone could reach within 20 feet, apply OSHA's required option and controls.

5. Crane Inspections and Documentation

Inspection Schedule

WHEN	WHO / REQUIREMENT	RECORD
Each shift	Competent person begins visual inspection before the shift and completes before/during shift; reassess during operation.	Company requires documented daily form kept with crane/project records.
Monthly in service	Inspection covering each-shift items; crane may not be used if required corrective action remains.	Items/results, inspector name/signature/date; retain at least 3 months.
Annual / 12 months	Qualified person comprehensive inspection with functional testing and disassembly as needed.	Items/results, inspector name/signature/date; retain at least 12 months.
Post-assembly	Qualified person verifies manufacturer/approved configuration before use.	Document per company/project practice.
Repair/modification	Qualified person inspection and functional test before use; verify approved criteria.	Retain with equipment records.
Idle 3+ months	Qualified person monthly-type inspection before initial reuse.	Document before release.
Severe service/event	Stop; qualified person evaluates structural and affected components.	Document findings/corrective action.

Each-Shift Minimum Focus

- Controls/drives, pressurized lines/fluid, hooks/latches, wire-rope reeving/condition and electrical apparatus.
- Tires, ground/support, level, cab visibility, rails where applicable, safety devices and operational aids.
- Outriggers/mats, structural condition, leaks, alarms, brakes, load block and manufacturer checklist items.
- Competent person immediately determines whether any deficiency is a safety hazard.

Deficiencies

- Safety hazard: take equipment out of service until corrected.
- Safety-device/operational-aid deficiency: follow 1926.1415/1416; do not improvise or bypass.
- Monitored annual deficiency: include in monthly inspections as directed by the qualified person.
- Keep inspection documents available to persons performing inspections.

UPDATED RECORD CONTROL

Paper color-copy distribution is replaced by controlled records. Daily records remain accessible; monthly records are retained at least 3 months and annual records at least 12 months.

6. Wire Rope Inspection and Removal

Inspection Frequency and Coverage

- Competent person conducts shift visual inspection of accessible running rope expected to be used, including rotation-resistant rope and boom hoist rope, for apparent deficiencies.
- Monthly inspection covers the entire rope that can reasonably be inspected and is documented with the crane inspection.
- Annual comprehensive inspection by a qualified person covers the entire rope surface, subject to 1926.1413 limitations; may require opening guards or reverse bends as needed.
- Inspect after installation, severe service, shock load, suspected damage or events that could affect rope.

Conditions Requiring Evaluation

- Visible broken wires, including valley breaks and broken wires at terminations.
- Abrasion/wear, diameter reduction, corrosion, pitting, heat/electrical damage or damaged end connections.
- Kinking, crushing, unstranding, birdcaging, core protrusion, rope distortion or unequal lay.
- Improper spooling/reaving, contact with guards/structure, inadequate lubrication or defective sheaves/drums.
- For rotation-resistant and standing ropes, apply the specific 1926.1413 criteria rather than the former generic six-wire rule alone.

Action

- Competent/qualified person classifies deficiencies and follows the corrective action required by 1926.1413.
- Remove rope from service when OSHA/manufacturer removal criteria are met, or when safe continued use cannot be established.
- Do not shorten, splice, reverse or repair rope as a field substitute unless permitted and performed under applicable criteria.
- Seize/cut/dispose of removed rope so it cannot return to service; preserve relevant portions after an incident.
- Use manufacturer rope type, construction, diameter and installation criteria.

SUPERSEDES OLD TABLE

The former fixed diameter-reduction table and blanket broken-wire rule are not used as the complete decision standard. Apply current 1926.1413 criteria for the rope type and condition, plus manufacturer limits.

7. Load Charts, Safety Devices and Operational Aids

Rated Capacity and Configuration

- Keep correct load charts, manuals, warnings and operating procedures available in the cab or at the operator station.
- Determine gross load: lifted item plus rigging, hook/block, lifting beam, attachments and other suspended weight as applicable.
- Use actual radius, boom length/angle, jib, counterweight, outrigger/track position, parts of line and operating mode.
- Never exceed rated capacity or side-load the boom; account for dynamic effects, wind, load sail area and boom deflection.
- Make a controlled test lift a few inches to verify balance, brake function, rigging and crane response before traveling/hoisting high.

Safety Devices

- Required safety devices must be operational before use; do not bypass, disable or substitute.
- Inspect crane-level indicator, boom stops, jib stops, locks, horn and other devices applicable to the equipment.
- Tag out equipment when required and control keys/starting means during repair.

Operational Aids

- Maintain boom-hoist limiting, anti-two-block, boom-angle/radius, load-indicating/rated-capacity and other required aids.
- If an aid fails, stop and follow only the temporary alternative measures and repair timeframes specifically allowed by 1926.1416 and manufacturer procedures.
- Temporary measures do not authorize personnel hoisting when 1926.1431 requires the device operational.
- Operators may not rely on an electronic aid instead of the load chart, planning and observation.

GROSS LOAD COUNTS

Rigging, lifting beams, hooks/blocks and attachments consume crane capacity. Include every suspended component in the capacity check.

8. Rigging, Signals and Load Control

Rigging Selection and Inspection

- Qualified rigger selects slings, shackles, hooks, lifting beams and hardware for load, hitch, angle, environment and center of gravity.
- Inspect before use; remove damaged, unidentified or improperly modified gear.
- Protect slings from sharp edges; use approved softeners/edge protection and rated attachment points.
- Do not exceed working load limits; account for sling-angle tension and unequal loading.
- Secure pins/latches and prevent unintended disengagement; never use makeshift bolts, wire or unapproved components.

Signals

- Use the OSHA standard hand signals unless nonstandard signals are necessary and agreed upon before operations.
- Only one designated signal person gives operational signals; anyone may give STOP or emergency stop.
- Operator and signal person agree on method, commands and responsibilities before the lift.
- Radio/voice signals use a dedicated channel where possible, clear identification and continuous communication.
- If communication is interrupted, misunderstood or lost, the operator safely stops until restored.

Load Control

- Use tag lines or other control when rotation is hazardous; use nonconductive lines near power.
- Keep hands/body out of pinch points; never wrap tag line around hand/body.
- Hoist smoothly, avoid shock loading and keep load under control.
- Land only on stable supports/cribbing; release rigging after load is secure.
- Do not drag loads sideways or use crane to pull stuck material unless specifically permitted and planned within manufacturer criteria.

STOP SIGNAL

The operator must obey a stop or emergency-stop signal from anyone. Motion resumes only after the hazard and communication are resolved.

9. Lift-Zone Control and Safe Operation

Work-Area Control

- Barricade/control the swing radius and crush zone where employees could be struck or pinned by rotating superstructure.
- Establish load path and fall zone; keep nonessential employees out.
- Do not lift over occupied work areas, public traffic or employees unless an approved plan/control prevents exposure.
- Employees stay clear of suspended loads except limited tasks allowed by 1926.1425 with required controls.
- Never stand beneath a suspended load or between a load and fixed object.

Operating Practices

- Operator remains at controls while a load is suspended, except where the standard's limited criteria are satisfied.
- Keep load controlled and avoid sudden starts/stops, side pull, two-blocking and contact with structures.
- Do not leave controls with an unsecured load; land/secure load before shutdown.
- Use controlled load lowering where required; free fall is restricted/prohibited by equipment/task provisions.
- Monitor wind, lightning, visibility, ice and manufacturer environmental limits; stop before control is lost.
- Do not operate under influence of impairment, distraction or fatigue.

Blind Lifts and Obstructed Views

- Use qualified signal person when point of operation, load travel or placement is not fully visible.
- Provide additional signal persons only under a coordinated transfer procedure.
- Use cameras as aids, not replacements for required signaling/clearance controls.
- Pause when the load leaves a signal person's effective view until responsibility is clearly transferred.

NO ONE UNDER THE LOAD

Hard hats and awareness do not make an overhead suspended load safe. Route the load and control the area to eliminate exposure.

10. Critical, Multiple-Crane and Personnel Lifts

Company Critical-Lift Planning

- A written plan is required when management/project criteria designate a lift critical, including high-capacity percentage, unusual/irreplaceable load, public/traffic exposure, complex blind lift, occupied structure, power-line proximity or severe consequence.
- Plan includes verified load/configuration/capacity, ground reactions, rigging, personnel, communication, weather limits, exclusion zone and contingency actions.
- Qualified/competent reviewers approve as company/project rules require; conduct pre-lift meeting and document significant changes.

Multiple-Crane / Tandem Lifts

- Plan by a qualified person and direct by a lift director meeting 1926.1432.
- Calculate load share through all phases, including boom deflection and unequal movement.
- Use one coordinated command structure and agreed communication.
- Avoid side loading and synchronize hoist/swing/travel; stop upon unplanned load transfer or communication loss.

Hoisting Personnel

- Prohibited unless conventional access would be more hazardous or impossible due to design/site conditions, as required by 1926.1431.
- Use a qualified-person-designed compliant personnel platform except permitted specific exceptions.
- Keep total load at or below 50 percent of rated capacity for the configuration, except proof testing.
- Complete trial lift, proof test, inspections and pre-lift meeting; use required PFAS and controlled lowering.
- Crane must be level within 1 percent and on footing a qualified person determines firm/stable; outriggers per 1926.1431.
- Stop personnel hoisting if required devices malfunction; alternative measures are not permitted.

PERSONNEL LIFTS ARE EXCEPTIONAL

A crane basket is not routine access. Use stairs, scaffold or aerial lift unless the OSHA feasibility/hazard test is met and every personnel-hoisting requirement is completed.

11. Bridge, Marine, Pile-Driving and Traffic Operations

Bridge and Structural Work

- Evaluate deck/falsework capacity, outrigger/track reactions, edge distance and underground/structural voids with appropriate engineering.
- Coordinate girder/beam picks with erection sequence, temporary bracing, wind, bearing seats, release of rigging and fall protection.
- Control loads over live traffic/water and obtain required closures/permits; establish protected delivery/staging routes.
- Prevent boom/load contact with temporary barrier, falsework, utilities and existing structure.

Floating Cranes and Land Cranes on Barges

- Comply with 1926.1437, equipment manufacturer and marine design/operating criteria.
- Verify barge capacity, stability, list/trim, freeboard, securing, boom/load charts and environmental limits.
- Account for dynamic effects, current, waves, wake, wind, tide/water level and movement of adjacent vessels.
- Inspect securing devices and barge/crane configuration; maintain PFDs, lifesaving equipment and rescue plan.
- Do not exceed permitted list/trim or operate after unexpected movement, loss of mooring or water ingress.

Dedicated Pile Drivers and Work Zones

- Follow applicable 1926.1439 requirements and Pile-Driving Policy.
- Control leads, hammer, pile, rigging, pinch zones, suspended loads and unstable piles.
- Coordinate crane/pile-driver swing and load path with public/internal traffic controls.
- Use approved lane closures/positive protection; never swing or suspend a load over uncontrolled public traffic.
- Keep rescue boat/access and emergency routes unobstructed during over-water work.

CAPACITY CHANGES ON WATER

Barge list, trim, load position and environmental movement affect crane capacity and stability. Land-based assumptions do not apply.

12. Maintenance, Severe Service and Emergencies

Maintenance and Repairs

- Qualified maintenance personnel follow manufacturer procedures and lockout/tagout requirements.
- Lower/secure boom, block elevated components, release stored energy and control keys before work.
- A qualified person inspects and function-tests repairs/adjustments affecting safe operation before use.
- Equipment modifications affecting safe operation/capacity require approval under 1926.1434.
- Nondestructive testing, including magnetic-particle inspection, is performed when required by manufacturer, qualified person, engineer or repair criteria - not as an automatic substitute for the annual comprehensive inspection.

Severe Service, Overload or Incident

- Stop equipment after suspected overload, shock load, collision, power-line contact, tip/near-tip, structural impact, major storm exposure or other severe condition.
- Qualified person inspects structural and affected components before continued use.
- Preserve load/operating information and damaged parts when an incident investigation requires it.
- Do not return equipment based only on an operator test if qualified inspection is required.

Emergency Actions

- Load instability: warn area, stop movement, keep people clear and lower/secure only if safe.
- Crane instability/ground failure: stop, evacuate hazard zone and do not attempt recovery without engineered/qualified plan.
- Power contact: operator remains in cab when possible; crew stays away; call 911/utility and follow trained procedures.
- Rigging/load failure: stop, provide medical response, secure scene and remove affected equipment from service.
- Severe weather: lower/secure boom/load per manufacturer and project emergency plan before limits are exceeded.

**DO NOT
TROUBLESHOOT
UNDER LOAD**

Never enter the fall/crush zone to correct rigging, cribbing or equipment while a load remains suspended or unstable.

13. Training, Records and Stop Work

Training

- Operators receive required training, certification and employer evaluation; retrain/re-evaluate when performance or equipment changes require it.
- Signal persons and riggers receive documented qualification appropriate to their functions.
- A/D crews, maintenance personnel, dedicated power-line spotters and employees in the load zone receive task-specific training.
- Crew training includes electrical-contact response, standard signals, exclusion zones, tag lines, pinch points and stop-work authority.
- Toolbox talks supplement but do not replace operator, signal-person, rigger, A/D or regulatory qualification.

Records

- Operator certification/license and employer evaluation.
- Signal-person qualification and applicable rigger/A-D documentation.
- Daily company inspection, monthly inspection retained at least 3 months, annual inspection retained at least 12 months.
- Post-assembly, repair/modification, severe-service and wire-rope findings.
- Critical/multiple-crane/personnel lift plans, trial/proof-test records and corrective actions.
- Maintenance, approved modifications, equipment manuals/load charts and incident records.

Stop-Work Conditions

- Unknown/incorrect load weight, configuration, radius or capacity; load chart unavailable.
- Ground, mats, level, outriggers or barge stability are inadequate or changing.
- Inspection overdue, safety hazard exists, required device/aid is unavailable without permitted measures, or wire rope/rigging is questionable.
- Power-line clearance/control is unresolved; signal communication is lost; unauthorized person enters lift zone.
- Wind, lightning or visibility exceeds safe limits; load becomes uncontrolled; plan conditions change.
- Required qualified person, operator, signal person, rigger, lift director or rescue arrangement is unavailable.

SAFE RESTART

The lift director/competent person and operator must agree that the hazard is corrected. Qualified-person approval is required when the standard or condition calls for it.

14. Test Your Knowledge

Circle the best answer. Review missed questions with your foreman before participating in crane or hoisting work.

1. Who may give an emergency STOP signal? A. Anyone B. Only the foreman C. Only the operator	2. How long must monthly inspection records be retained? A. One week B. At least 3 months C. Five years
3. Who performs the annual comprehensive inspection? A. Any employee B. The delivery driver C. A qualified person	4. What starts the OSHA power-line assessment? A. Potential to come within 20 feet B. Potential to come within 5 feet C. Contact with the line
5. What must happen if operator/signal communication is lost? A. Continue slowly B. Stop safely until communication is restored C. Use hand guesses	6. May employees stand beneath a suspended load? A. Yes with a hard hat B. Yes for a short time C. No
7. What is included in gross load? A. Only the lifted item B. Load plus applicable rigging, block and attachments C. Fuel only	8. Is magnetic-particle testing automatically the annual inspection? A. No - use it when applicable, in addition to required inspection B. Yes, always C. Only for tires
9. When is a crane personnel platform allowed? A. Whenever faster B. When conventional access is more hazardous or impossible and 1926.1431 is met C. For material delivery	10. What happens after suspected overload or shock loading? A. Finish the shift B. Change operators C. Stop and obtain required qualified-person inspection

EMPLOYEE: _____

DATE: _____

ANSWER KEY: 1-A | 2-B | 3-C | 4-A | 5-B | 6-C | 7-B | 8-A | 9-B | 10-C