



**SAFE PEOPLE.
SAFE LOADS.
SAFE JOBSITES.
STRONGER
TOMORROWS.**

CONSTRUCTION EQUIPMENT & MATERIALS TRANSPORT / LOADING **SAFETY HANDBOOK**

FEDERAL COMPLIANCE | OPERATIONAL SAFETY | RISK REDUCTION



SAFE TRANSPORT. SAFE LOADING. SAFER JOBSITES.



PEOPLE
TRAINED
PREPARED
PROTECTED



EQUIPMENT
PROPERLY LOADED
SECURELY TRANSPORTED
SAFELY OPERATED



MATERIALS
SECURED
STABLE
COMPLIANT



JOBSITES
SAFER OPERATIONS
STRONGER COMMUNITIES
A BRIGHTER TOMORROW

NIBA | SAFETY RESOURCE



CONSTRUCTION EQUIPMENT & MATERIALS TRANSPORT & LOADING SAFETY HANDBOOK

HEAVY EQUIPMENT • FLATBEDS • LOWBOYS • MATERIALS • LOADING / UNLOADING

Federal Compliance • OSHA Construction Safety • FMCSA/DOT Cargo Securement • Risk Reduction

SAFE PEOPLE • SECURE LOADS • SAFE TRANSPORT

Prepared for _____

Effective Date _____

Revision 1.0 | September 2026

Independent safety resource. Employers must verify applicability to each vehicle, route, jobsite, cargo type, state-plan OSHA program, and contract requirement.

Document Control and Legal Notice

This handbook is designed for U.S. operations that load, unload, secure, transport, deliver, stage, and handle construction equipment and construction materials. It uses the same controlled-document, section/chapter/checklist structure as the supplied NIBA handbook.

Regulatory Boundary

OSHA construction standards govern covered employee hazards at construction workplaces. FMCSA/DOT rules govern covered commercial motor vehicle operations and cargo securement in interstate commerce, with state adoption and intrastate rules potentially adding requirements. This handbook does not treat every pickup, trailer, driver, or load as federally regulated; applicability must be documented.

Core Applicability

- 29 CFR Part 1926 for construction workplaces, including Subparts H, O, CC and other applicable subparts.
- 49 CFR Parts 390–396 for covered motor carriers, drivers, vehicles, inspections, hours of service and cargo securement.
- 49 CFR 393.100–393.136 for cargo securement, including commodity-specific rules for heavy vehicles/equipment, concrete pipe, dressed lumber and other listed cargo.
- State-plan OSHA, state DOT, oversize/overweight permit, route, escort and traffic requirements where applicable.

Emergency Contacts

Emergency: 911

Safety Manager: _____

Dispatch / Fleet: _____

Jobsite Superintendent: _____

Roadside Assistance: _____

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Leadership, Regulatory Applicability & Planning

Chapters 1–4

Section Overview

Establishes the management system used before any construction-equipment or material move begins. It defines regulatory applicability, planning, responsibilities, competent-person involvement, hazard assessment, communication, and stop-work authority.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

SAFETY POLICY & MANAGEMENT COMMITMENT

Chapter Overview. Establishes executive and supervisory accountability for safe loading, securement, transport, delivery and unloading.

SAFETY IS OUR CORE VALUE

Purpose

Prevent injuries, crashes, dropped loads, equipment damage and public harm through a documented safety-management system.

- Assign accountable managers and supervisors.
- Provide suitable trucks, trailers, securement devices, PPE and training.
- Never allow schedule pressure to override safe loading or securement.

Hazard Correction

Recognized hazards must be corrected promptly and unsafe equipment controlled.

- Use tagging, lockout, removal from service or equivalent controls as appropriate.
- Track corrective actions to closure.

Worker Participation

Drivers, operators and ground personnel must be able to report hazards and near misses.

- Use pre-job briefings and post-job debriefs.
- Protect good-faith reporting and stop-work decisions.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Purpose	☐ Verified ☐ Action Needed
Hazard Correction	☐ Verified ☐ Action Needed
Worker Participation	☐ Verified ☐ Action Needed

Required Records

- Signed policy
- Safety meeting records
- Corrective-action log
- Employee acknowledgments

Key Federal / Technical References

- [OSHA 1926.20 — General Safety and Health Provisions](#)

OSHA / DOT / FMCSA APPLICABILITY

Chapter Overview. Defines how the company determines which workplace, motor-carrier, driver, vehicle and cargo rules apply.

SAFETY IS OUR CORE VALUE

OSHA Construction Coverage

Apply Part 1926 to covered construction work and associated loading/unloading hazards.

- Identify applicable subparts by task, not by company label alone.
- Check state-plan requirements.

FMCSA / DOT Coverage

Document whether each vehicle and trip is subject to federal motor-carrier rules.

- Record GVWR/GCWR, actual configuration and interstate/intrastate status.
- Map CDL, medical qualification, HOS, inspection and maintenance obligations where applicable.

Cargo-Specific Rules

Determine whether a commodity-specific securement rule supersedes or supplements general securement requirements.

- Heavy equipment ≥10,000 lb is addressed by §393.130.
- Concrete pipe and dressed lumber have separate commodity-specific sections.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
OSHA Construction Coverage	☐ Verified ☐ Action Needed
FMCSA / DOT Coverage	☐ Verified ☐ Action Needed
Cargo-Specific Rules	☐ Verified ☐ Action Needed

Required Records

- Regulatory applicability matrix
- Vehicle and trailer specification register
- Cargo classification guide
- Annual compliance review

Key Federal / Technical References

- [OSHA 29 CFR 1926 Subpart O](#)
- [FMCSA Cargo Securement Rules](#)

PRE-JOB TRANSPORT & LOADING PLANNING

Chapter Overview. Requires a documented plan for equipment, route, site, trailer, loading method, securement and unloading.

SAFETY IS OUR CORE VALUE

Equipment / Material Data

Know dimensions, operating weight, center of gravity, attachments and manufacturer transport points.

- Verify weight from reliable documentation where possible.
- Include attachments, fluids, counterweights and accessories.

Trailer / Route Suitability

Match capacity, deck geometry, ramps and route to the load.

- Check GVWR/GAWR/tire ratings and deck capacity.
- Identify bridge, height, width, weight and permit constraints.

Site Conditions

Evaluate grade, surface, overhead clearance, traffic and pedestrian exposure.

- Select a level, stable loading area.
- Establish exclusion zones before movement begins.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Equipment / Material Data	☐ Verified ☐ Action Needed
Trailer / Route Suitability	☐ Verified ☐ Action Needed
Site Conditions	☐ Verified ☐ Action Needed

Required Records

- Pre-job plan
- Route/permit review
- Equipment weight/dimension record
- Jobsite hazard assessment

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)
- [OSHA 29 CFR 1926 Subpart O](#)

ROLES, COMPETENCY & STOP-WORK AUTHORITY

Chapter Overview. Defines qualifications and communication for drivers, equipment operators, spotters, riggers and supervisors.

SAFETY IS OUR CORE VALUE

Competency

Assign only trained and authorized personnel to operate vehicles, equipment, cranes, forklifts or rigging systems.

- Verify task-specific training.
- Document practical evaluations where appropriate.

Communication

Use agreed hand signals, radios or other reliable methods.

- Only one designated signal person directs a maneuver unless emergency stop is required.
- Stop if communication is lost.

Stop-Work

Any worker may stop the move for unstable ground, damaged gear, unclear signals, people in the zone or other imminent hazards.

- Reset the plan before restarting.
- Document significant deviations.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Competency	☐ Verified ☐ Action Needed
Communication	☐ Verified ☐ Action Needed
Stop-Work	☐ Verified ☐ Action Needed

Required Records

- Training records
- Operator authorizations
- Pre-task briefing
- Spotter/signal-person designation

Key Federal / Technical References

- [OSHA 29 CFR 1926 Subpart O](#)

Drivers, Vehicles, Trailers & Roadworthiness

Chapters 5–9

Section Overview

Covers the driver and transport platform: qualification, vehicle/trailer selection, inspections, critical mechanical systems, fatigue, and road conduct. The objective is to ensure the load is placed on a roadworthy combination with sufficient capacity and a qualified driver.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

DRIVER QUALIFICATION & FITNESS FOR DUTY

Chapter Overview. Addresses licensing, CDL/medical requirements when applicable, authorization and fitness for duty.

SAFETY IS OUR CORE VALUE

Qualification

Verify the license class, endorsements and restrictions appropriate to the combination.

- Apply Part 391 qualification requirements when applicable.
- Apply CDL requirements under Part 383 when thresholds and vehicle type require them.

Fitness for Duty

Drivers must not operate when fatigue, illness, alcohol, drugs or impairing medication makes operation unsafe.

- Provide an escalation process.
- Do not pressure a driver to operate when unfit.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Qualification	☐ Verified ☐ Action Needed
Fitness for Duty	☐ Verified ☐ Action Needed

Required Records

- Driver qualification file
- License/CDL checks
- Medical certificate records when applicable
- Road evaluation

Key Federal / Technical References

- [FMCSA Driver Qualification](#)

TRUCK, TRACTOR & TRAILER SELECTION

Chapter Overview. Matches power unit, trailer and configuration to equipment/material dimensions and weight.

SAFETY IS OUR CORE VALUE

Capacity

Do not exceed manufacturer ratings or legal axle/vehicle limits.

- Verify GVWR, GAWR, GCWR, tire ratings and trailer payload.
- Account for trailer tare weight.

Trailer Type

Select lowboy, step-deck, flatbed, tag trailer or other design appropriate to the load.

- Confirm ramp angle and ground clearance.
- Confirm anchor-point capacity and location.

Compatibility

Confirm hitch, fifth wheel, kingpin, pintle, safety chains and electrical/air connections are compatible.

- Inspect coupling before movement.
- Use manufacturer-approved components.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Capacity	☐ Verified ☐ Action Needed
Trailer Type	☐ Verified ☐ Action Needed
Compatibility	☐ Verified ☐ Action Needed

Required Records

- Equipment/trailer match record
- Weight ticket when used
- Coupling inspection

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)

PRE-TRIP / POST-TRIP INSPECTION & DEFECT CONTROL

Chapter Overview. Creates a disciplined inspection and defect-correction process for covered CMVs and company equipment.

SAFETY IS OUR CORE VALUE

Vehicle Condition

Do not dispatch a vehicle or trailer with a safety-critical defect.

- Inspect brakes, steering, tires, wheels, lights, coupling devices, suspension and securement anchor points.
- Remove unsafe units from service.

Documentation

Keep required inspection, maintenance and qualification records.

- Use consistent defect reporting.
- Close repairs before release when required.

Securement Recheck

Inspect cargo and securement before departure and at required intervals when Part 392.9 applies.

- Confirm tiedowns remain tight and cargo has not shifted.
- Recheck after load settling or significant events.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Vehicle Condition	☐ Verified ☐ Action Needed
Documentation	☐ Verified ☐ Action Needed
Securement Recheck	☐ Verified ☐ Action Needed

Required Records

- Pre-trip checklist
- DVIR when required/applicable
- Repair orders
- Securement inspection log

Key Federal / Technical References

- [49 CFR Part 396 — Inspection, Repair and Maintenance](#)
- [49 CFR 392.9 — Inspection of Cargo](#)

BRAKES, TIRES, COUPLING, LIGHTING & ROADWORTHINESS

Chapter Overview. Focuses on systems whose failure can cause separation, loss of control or roadside violations.

SAFETY IS OUR CORE VALUE

Vehicle Condition

Do not dispatch a vehicle or trailer with a safety-critical defect.

- Inspect brakes, steering, tires, wheels, lights, coupling devices, suspension and securement anchor points.
- Remove unsafe units from service.

Documentation

Keep required inspection, maintenance and qualification records.

- Use consistent defect reporting.
- Close repairs before release when required.

Coupling Security

Verify fifth-wheel, pintle/hitch, kingpin, safety chains/cables and locking devices.

- Perform a positive coupling check.
- Secure landing gear, ramps and removable components.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Vehicle Condition	☐ Verified ☐ Action Needed
Documentation	☐ Verified ☐ Action Needed
Coupling Security	☐ Verified ☐ Action Needed

Required Records

- Mechanical inspection
- Maintenance history
- Defect and repair log

Key Federal / Technical References

- [49 CFR Part 393 — Parts and Accessories Necessary for Safe Operation](#)

HOURS OF SERVICE, FATIGUE & DISTRACTED DRIVING

Chapter Overview. Controls fatigue and in-cab distraction during construction hauling.

SAFETY IS OUR CORE VALUE

Hours of Service

Apply Part 395 when the operation is covered.

- Maintain records of duty status or permitted time records as applicable.
- Plan loading delays into schedules.

Fatigue

Drivers must stop when too fatigued to operate safely.

- Encourage early reporting.
- Provide safe parking/relief procedures.

Distraction

Do not manipulate handheld devices while driving.

- Set navigation before movement.
- Use hands-free systems only when lawful and safe.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Hours of Service	☐ Verified ☐ Action Needed
Fatigue	☐ Verified ☐ Action Needed
Distraction	☐ Verified ☐ Action Needed

Required Records

- HOS records when applicable
- Fatigue reports
- Driver policy acknowledgments

Key Federal / Technical References

- [49 CFR Part 395 — Hours of Service](#)

Loading, Unloading & Equipment Movement

Chapters 10–16

Section Overview

Controls the highest-risk moments of the move: positioning, ramps, self-propelled equipment, backing, cranes, rigging and powered material handling. It emphasizes exclusion zones, competent operators, stable surfaces and keeping workers clear of line-of-fire and suspended-load hazards.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

LOADING-ZONE SETUP & EXCLUSION AREAS

Chapter Overview. Establishes a controlled loading/unloading zone before equipment or materials move.

SAFETY IS OUR CORE VALUE

Surface / Grade

Use a stable surface with adequate bearing capacity and minimal slope.

- Avoid soft shoulders, voids and unstable edges.
- Chock or stabilize as needed.

Exclusion Zone

Keep nonessential personnel out of the travel, swing, crush and fall zones.

- Use cones, barricades or spotters.
- Plan pedestrian routes.

Traffic Interface

Separate loading activity from public and jobsite traffic where practical.

- Use high-visibility apparel where exposed to vehicular traffic.
- Coordinate with site traffic-control plans.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Surface / Grade	☐ Verified ☐ Action Needed
Exclusion Zone	☐ Verified ☐ Action Needed
Traffic Interface	☐ Verified ☐ Action Needed

Required Records

- Loading-zone inspection
- Pre-task briefing
- Traffic-control record

Key Federal / Technical References

- [OSHA 29 CFR 1926 Subpart O](#)

RAMPS, LOWBOYS, TILT DECKS & DETACHABLE GOOSENECKS

Chapter Overview. Addresses trailer setup and safe transitions onto and off transport decks.

SAFETY IS OUR CORE VALUE

Ramp Capacity

Use ramps rated for the equipment and configuration.

- Inspect for cracks, deformation, contamination and secure attachment.
- Keep tracks/tires aligned with ramp surfaces.

Deck Preparation

Clean mud, ice, oil and loose debris from traction surfaces.

- Lower and secure deck systems per manufacturer instructions.
- Confirm trailer stability before loading.

Approach / Descent

Use low speed and straight alignment whenever practical.

- Avoid abrupt steering or braking on ramps.
- Use a spotter when visibility or clearance is restricted.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Ramp Capacity	☐ Verified ☐ Action Needed
Deck Preparation	☐ Verified ☐ Action Needed
Approach / Descent	☐ Verified ☐ Action Needed

Required Records

- Ramp/deck inspection
- Trailer setup checklist
- Operator briefing

Key Federal / Technical References

- [OSHA 29 CFR 1926 Subpart O](#)

LOADING / UNLOADING SELF-PROPELLED EQUIPMENT

Chapter Overview. Provides a repeatable method for moving loaders, excavators, dozers, skid steers and similar machines onto/off trailers.

SAFETY IS OUR CORE VALUE

Pre-Move Inspection

Inspect machine controls, brakes, steering, tires/tracks and attachment condition.

- Use seat belts where required/provided.
- Secure doors, panels and loose items.

Movement

Maintain low speed and controlled alignment.

- Keep personnel clear of pinch/crush zones.
- Use spotters for blind areas.

Transport Position

Place equipment to support legal weight distribution and securement.

- Lower attachments when required and practicable.
- Apply parking brake and other manufacturer transport controls.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Pre-Move Inspection	☐ Verified ☐ Action Needed
Movement	☐ Verified ☐ Action Needed
Transport Position	☐ Verified ☐ Action Needed

Required Records

- Machine inspection
- Loading checklist
- Weight-distribution record

Key Federal / Technical References

- [OSHA 1926.602 — Material Handling Equipment](#)
- [49 CFR 393.130 — Heavy Vehicles, Equipment and Machinery](#)

SPOTTERS, BACKING & BLIND AREAS

Chapter Overview. Controls struck-by hazards during low-speed maneuvers.

SAFETY IS OUR CORE VALUE

Backing Controls

For covered off-highway construction vehicles with obstructed rear view, use an audible reverse alarm or an observer as required by 1926.601.

- Establish eye contact before movement.
- Stop immediately if the spotter disappears from view.

Spotter Position

Spotters stay out of the vehicle path and crush zones.

- Use a single primary spotter.
- Wear high-visibility apparel as appropriate.

Communication

Use standardized hand signals/radio language.

- No movement on ambiguous signal.
- Anyone may give an emergency stop signal.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Backing Controls	☐ Verified ☐ Action Needed
Spotter Position	☐ Verified ☐ Action Needed
Communication	☐ Verified ☐ Action Needed

Required Records

- Spotter training
- Backing observation checklist
- Near-miss reports

Key Federal / Technical References

- [OSHA 1926.601 — Motor Vehicles](#)

CRANES, HOISTING & SUSPENDED LOADS

Chapter Overview. Addresses cranes and derricks used to load/unload construction materials or equipment.

SAFETY IS OUR CORE VALUE

Planning

Apply Subpart CC when crane/derrick construction activities are covered.

- Verify operator qualification/certification requirements.
- Assess setup, ground conditions, radius, capacity and power-line hazards.

Fall Zone

Minimize employee exposure to suspended loads.

- Use hoisting routes that reduce exposure.
- Allow only necessary employees in the fall zone under the conditions permitted by the standard.

Signals / Rigging

Use qualified signal persons and riggers when required.

- Confirm load weight and rigging capacity.
- Use tag lines when appropriate and safe.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Planning	☐ Verified ☐ Action Needed
Fall Zone	☐ Verified ☐ Action Needed
Signals / Rigging	☐ Verified ☐ Action Needed

Required Records

- Lift plan
- Operator documentation
- Rigging inspection
- Signal-person documentation

Key Federal / Technical References

- [OSHA 1926 Subpart CC — Cranes and Derricks](#)
- [OSHA 1926.1425 — Keeping Clear of the Load](#)

RIGGING, SLINGS, CHAINS & BELOW-THE-HOOK HARDWARE

Chapter Overview. Requires inspection, identification and capacity control for rigging used in material handling.

SAFETY IS OUR CORE VALUE

Inspection

Inspect rigging before use each shift and as necessary during use.

- Remove defective gear from service.
- Do not use unidentified rigging where required markings are missing.

Capacity

Do not exceed recommended safe working load.

- Consider hitch configuration and sling angles.
- Protect slings from damaging edges.

Storage

Store rigging to prevent damage and deterioration.

- Keep chains and slings off contaminated surfaces.
- Segregate rejected gear.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Inspection	☐ Verified ☐ Action Needed
Capacity	☐ Verified ☐ Action Needed
Storage	☐ Verified ☐ Action Needed

Required Records

- Rigging inspection log
- Removal-from-service record
- Rigging inventory

Key Federal / Technical References

- [OSHA 1926.251 — Rigging Equipment](#)

FORKLIFTS, TELEHANDLERS & MATERIAL-HANDLING EQUIPMENT

Chapter Overview. Controls powered equipment used to load pallets, bundles and jobsite materials.

SAFETY IS OUR CORE VALUE

Rated Capacity

Do not exceed posted rated capacity.

- Account for attachments and load center.
- Keep capacity markings legible.

Operator Training

Use trained/authorized operators.

- Conduct equipment-specific familiarization.
- Evaluate practical performance.

Load Handling

Keep loads stable, controlled and within visibility limits.

- Travel with load positioned safely.
- Keep pedestrians separated from operating zones.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Rated Capacity	☐ Verified ☐ Action Needed
Operator Training	☐ Verified ☐ Action Needed
Load Handling	☐ Verified ☐ Action Needed

Required Records

- Operator training
- Equipment inspection
- Attachment/capacity records

Key Federal / Technical References

- [OSHA 1926.602 — Material Handling Equipment](#)
- [OSHA Powered Industrial Trucks](#)

Cargo Securement & Construction Materials

Chapters 17–23

Section Overview

Builds the cargo-securement system from the general FMCSA performance rules through commodity-specific requirements. It covers heavy construction machinery, attachments, structural and bulk materials, tiedown working-load limits, blocking/bracing, load distribution and dimensional controls.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

GENERAL CARGO SECUREMENT SYSTEM

Chapter Overview. Establishes the baseline FMCSA securement principles for construction cargo.

SAFETY IS OUR CORE VALUE

Immobilization

Cargo must be firmly immobilized or secured by adequate vehicle structures, dunnage, shoring, tiedowns or combinations.

- Prevent forward, rearward, lateral and vertical movement as required.
- Use securement suited to cargo shape and surface.

Securement Devices

Use devices with adequate strength and condition.

- Inspect chains, binders, straps, hooks, anchor points and winches.
- Do not use damaged devices.

Aggregate Working Load Limit

Calculate required aggregate WLL under applicable rules.

- Use the rated WLL of components correctly.
- Do not assume chain size alone establishes system capacity.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Immobilization	☐ Verified ☐ Action Needed
Securement Devices	☐ Verified ☐ Action Needed
Aggregate Working Load Limit	☐ Verified ☐ Action Needed

Required Records

- Cargo securement checklist
- Tiedown inventory
- WLL verification

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)

HEAVY VEHICLES, EQUIPMENT & MACHINERY ≥10,000 LB

Chapter Overview. Applies FMCSA §393.130 to heavy wheeled or tracked construction equipment.

SAFETY IS OUR CORE VALUE

Applicability

The rule applies to heavy vehicles, equipment and machinery operating on wheels or tracks that individually weigh 10,000 lb or more.

- Examples include loaders, bulldozers, tractors and power shovels.
- Lighter equipment may be secured under permitted alternative rules.

Restraint

Use the required tiedown arrangement to prevent movement in all directions.

- Use securement points suitable for the load.
- Set brakes and other controls as required.

Accessories

Lower and secure accessory equipment when practicable; otherwise lock it in the transport position when permitted and designed for that condition.

- Secure booms, buckets, blades and similar accessories against movement.
- Secure articulated components as required.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Applicability	☐ Verified ☐ Action Needed
Restraint	☐ Verified ☐ Action Needed
Accessories	☐ Verified ☐ Action Needed

Required Records

- Heavy-equipment securement checklist
- Equipment weight record
- Securement inspection log

Key Federal / Technical References

- [49 CFR 393.130 — Heavy Vehicles, Equipment and Machinery](#)
- [FMCSA Cargo Securement Rules](#)

ATTACHMENTS, ARTICULATION & ACCESSORY SECUREMENT

Chapter Overview. Prevents movement of booms, buckets, blades, forks, counterweights and articulated sections.

SAFETY IS OUR CORE VALUE

Attachments

Treat accessory equipment as a separate movement hazard.

- Lower to deck when required/practicable.
- Use transport locks or additional restraint when raised transport is permitted.

Articulation

Secure pivoting or articulating equipment against unintended movement.

- Use manufacturer locking pins/devices.
- Do not rely solely on hydraulic pressure.

Loose Components

Remove or secure loose tools, buckets, forks, chains and parts.

- Use rated racks/containment.
- Inspect after the first movement interval.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Attachments	☐ Verified ☐ Action Needed
Articulation	☐ Verified ☐ Action Needed
Loose Components	☐ Verified ☐ Action Needed

Required Records

- Attachment checklist
- Transport-lock verification
- Loose-item inventory

Key Federal / Technical References

- [49 CFR 393.130 — Heavy Vehicles, Equipment and Machinery](#)
- [FMCSA §393.130 Guidance](#)

LUMBER, PIPE, STEEL, PALLETIZED & UNITIZED MATERIALS

Chapter Overview. Addresses common construction materials with rolling, sliding, tipping and falling hazards.

SAFETY IS OUR CORE VALUE

Commodity Identification

Determine whether commodity-specific rules apply before using general securement.

- Dressed lumber and similar building products may fall under §393.118.
- Metal coils, concrete pipe and intermodal containers have separate provisions.

Blocking / Dunnage

Use stable dunnage and blocking that will not crush, roll or shift.

- Chock cylindrical materials.
- Avoid damaged or undersized dunnage.

Unitized Loads

Confirm bands, wrapping or pallets are intact and appropriate for transport.

- Do not treat packaging as cargo securement unless it is designed/rated for that function.
- Add tiedowns/containment as required.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Commodity Identification	☐ Verified ☐ Action Needed
Blocking / Dunnage	☐ Verified ☐ Action Needed
Unitized Loads	☐ Verified ☐ Action Needed

Required Records

- Material securement checklist
- Dunnage inspection
- Commodity classification

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)

CONCRETE PIPE, PRECAST & LARGE STRUCTURAL COMPONENTS

Chapter Overview. Controls high-mass materials that can roll, slide or create concentrated loads.

SAFETY IS OUR CORE VALUE

Concrete Pipe

Apply §393.124 when transporting covered concrete pipe on flatbeds/lowboys.

- Use required blocking and tiedown arrangements.
- Prevent rolling and lateral movement.

Precast / Structural Items

Develop engineered or manufacturer-informed securement for unusual shapes.

- Protect against tipping and rotation.
- Use special-purpose vehicle provisions only when applicable.

Loading / Unloading

Keep workers out of pinch and fall zones.

- Use controlled lifting points.
- Do not stand between suspended/unstable components and fixed objects.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Concrete Pipe	☐ Verified ☐ Action Needed
Precast / Structural Items	☐ Verified ☐ Action Needed
Loading / Unloading	☐ Verified ☐ Action Needed

Required Records

- Pipe/precast securement checklist
- Lift plan when applicable
- Special-load plan

Key Federal / Technical References

- [49 CFR 393.124 — Concrete Pipe](#)
- [FMCSA Cargo Securement Rules](#)

WORKING LOAD LIMITS, TIEDOWNS, BLOCKING & EDGE PROTECTION

Chapter Overview. Explains how securement strength is selected and preserved.

SAFETY IS OUR CORE VALUE

WLL

Use marked/rated components and calculate system capacity under applicable FMCSA rules.

- Use the lowest-rated component where required.
- Retire damaged or illegible gear.

Tiedown Protection

Protect tiedowns from abrasion, cutting and crushing.

- Use edge protection where needed.
- Route away from hot/sharp/moving parts.

Blocking / Bracing

Use materials and structures strong enough for expected forces.

- Prevent blocks from dislodging.
- Do not use improvised weak materials.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
WLL	☐ Verified ☐ Action Needed
Tiedown Protection	☐ Verified ☐ Action Needed
Blocking / Bracing	☐ Verified ☐ Action Needed

Required Records

- Securement-device inspection
- WLL calculation sheet
- Rejected-gear log

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)

LOAD DISTRIBUTION, WEIGHT, DIMENSIONS & CLEARANCE

Chapter Overview. Prevents overloads, unstable combinations and clearance strikes.

SAFETY IS OUR CORE VALUE

Weight Distribution

Position cargo to maintain safe axle, tire, hitch and trailer loading.

- Know total and axle weights.
- Avoid excessive tongue/pin weight or rear bias.

Dimensions

Measure height, width and length when the load approaches legal limits.

- Include attachments and securement projections.
- Obtain permits/escorts where required by jurisdiction.

Clearance

Plan for bridges, wires, trees, work-zone restrictions and turning radius.

- Use route surveys for unusual loads.
- Communicate dimensions to driver and dispatcher.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Weight Distribution	☐ Verified ☐ Action Needed
Dimensions	☐ Verified ☐ Action Needed
Clearance	☐ Verified ☐ Action Needed

Required Records

- Weight/dimension sheet
- Permit file
- Route survey

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)

Jobsite, Yard & Delivery Safety

Chapters 24–29

Section Overview

Addresses the interface between transport operations and active construction sites, yards and public roads. It covers traffic control, storage, PPE, fall and walking-surface hazards, electrical clearance, fire/spill hazards and weather.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

SITE ACCESS, TRAFFIC CONTROL & WORK ZONES

Chapter Overview. Coordinates transport vehicles with jobsite traffic, workers and the public.

SAFETY IS OUR CORE VALUE

Site Entry

Obtain site instructions before entering active work areas.

- Identify one-way routes, speed limits and staging points.
- Confirm overhead/ground hazards.

Traffic Control

Follow the site traffic-control plan and applicable MUTCD requirements for public-road work zones.

- Use trained flaggers where required.
- Separate pedestrians and mobile equipment.

Delivery Positioning

Park and unload where the combination is stable and visible.

- Avoid backing when practical.
- Use spotters for restricted areas.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Site Entry	☐ Verified ☐ Action Needed
Traffic Control	☐ Verified ☐ Action Needed
Delivery Positioning	☐ Verified ☐ Action Needed

Required Records

- Site access briefing
- Traffic-control plan acknowledgment
- Delivery hazard report

Key Federal / Technical References

- [OSHA Motor Vehicle Safety — Construction](#)

MATERIAL STORAGE, STAGING & HOUSEKEEPING

Chapter Overview. Controls stored and staged construction materials before and after transport.

SAFETY IS OUR CORE VALUE

Stacking

Materials stored in tiers must be stacked, racked, blocked, interlocked or otherwise secured against sliding, falling or collapse.

- Use stable bases.
- Respect floor/load limits where applicable.

Aisles

Keep aisles and passageways clear for safe movement.

- Remove trip hazards and loose dunnage.
- Maintain emergency access.

Segregation

Separate incompatible, unstable or high-risk materials.

- Protect cylinders and chemicals as required.
- Control access to stored equipment.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Stacking	☐ Verified ☐ Action Needed
Aisles	☐ Verified ☐ Action Needed
Segregation	☐ Verified ☐ Action Needed

Required Records

- Storage inspection
- Housekeeping checklist
- Corrective-action log

Key Federal / Technical References

- [OSHA 1926.250 — General Requirements for Storage](#)

PPE, VISIBILITY, FALL & WALKING-WORKING SURFACE HAZARDS

Chapter Overview. Defines PPE and personal protection for loading/unloading and jobsite interfaces.

SAFETY IS OUR CORE VALUE

PPE Assessment

Select PPE based on task hazards.

- Typical exposures may require hard hats, eye protection, gloves, high-visibility garments, protective footwear and hearing protection.
- Train workers on limitations and care.

Falls / Access

Use safe access to trailer decks, equipment cabs and loads.

- Maintain three points of contact where appropriate.
- Do not climb on unstable cargo.

Walking Surfaces

Control mud, ice, oil, debris and uneven surfaces.

- Use designated paths.
- Provide lighting where needed.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
PPE Assessment	☐ Verified ☐ Action Needed
Falls / Access	☐ Verified ☐ Action Needed
Walking Surfaces	☐ Verified ☐ Action Needed

Required Records

- PPE assessment
- PPE training
- Fall/walking-surface inspection

Key Federal / Technical References

- [OSHA Construction PPE](#)

POWER LINES, UTILITIES & ELECTRICAL CLEARANCE

Chapter Overview. Prevents contact between equipment, booms, loads and energized systems.

SAFETY IS OUR CORE VALUE

Pre-Planning

Identify overhead and underground utilities before positioning equipment.

- Treat lines as energized unless confirmed otherwise.
- Plan crane/equipment clearances.

Equipment Movement

Use spotters and physical controls when visibility is limited.

- Do not raise dump bodies, booms or attachments into unsafe clearances.
- Account for load height.

Emergency Response

If contact occurs, follow electrical emergency procedures and keep others away.

- Operator should remain in cab when safer unless fire/other hazard requires exit.
- Call utility/emergency services.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Pre-Planning	☐ Verified ☐ Action Needed
Equipment Movement	☐ Verified ☐ Action Needed
Emergency Response	☐ Verified ☐ Action Needed

Required Records

- Utility hazard assessment
- Spotter briefing
- Emergency contact record

Key Federal / Technical References

- [OSHA Electrical — Construction](#)

FUELING, FIRE PREVENTION, SPILL RESPONSE & HAZARD COMMUNICATION

Chapter Overview. Controls fuel, batteries, flammable materials and chemicals used around transport operations.

SAFETY IS OUR CORE VALUE

Fueling

Shut down and control ignition sources as required.

- Use approved containers/equipment.
- Clean up leaks promptly.

Hazard Communication

Maintain labels, SDS access and employee training for hazardous chemicals.

- Include fuels, hydraulic fluids, solvents and battery chemicals as applicable.
- Address contractor/site chemical interfaces.

Spills / Fire

Maintain appropriate extinguishers and spill response materials.

- Protect drains and waterways.
- Report releases as required.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Fueling	☐ Verified ☐ Action Needed
Hazard Communication	☐ Verified ☐ Action Needed
Spills / Fire	☐ Verified ☐ Action Needed

Required Records

- SDS inventory
- HazCom training
- Spill/fire inspection

Key Federal / Technical References

- [OSHA Hazard Communication](#)

WEATHER, HEAT, WIND & ADVERSE CONDITIONS

Chapter Overview. Requires operational adjustments when environmental conditions increase risk.

SAFETY IS OUR CORE VALUE

Wind

Stop or modify crane, lifting and high-profile load operations when wind exceeds safe limits.

- Follow manufacturer limits.
- Consider gusts and load sail area.

Heat / Cold

Provide water, rest, acclimatization and weather-appropriate controls.

- Train on heat illness symptoms.
- Plan cold-weather traction and deicing.

Visibility / Traction

Reduce or suspend operations during severe rain, lightning, snow, ice or poor visibility when necessary.

- Reassess ramps and deck traction.
- Increase stopping distance.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Wind	☐ Verified ☐ Action Needed
Heat / Cold	☐ Verified ☐ Action Needed
Visibility / Traction	☐ Verified ☐ Action Needed

Required Records

- Weather assessment
- Heat/cold plan
- Delay/stop-work record

Key Federal / Technical References

- [OSHA Heat](#)

Emergency Response, Assurance & Implementation

Chapters 30–33

Section Overview

Turns the handbook into a controlled operating system through emergency procedures, incident investigation, OSHA recordkeeping, training, audits and ready-to-use forms. The goal is demonstrable compliance and continuous improvement.

PLAN THE MOVE • CONTROL THE LOAD • PROTECT THE CREW

CRASHES, LOAD SHIFTS, BREAKDOWNS & ROADSIDE EMERGENCIES

Chapter Overview. Provides immediate controls for transport emergencies.

SAFETY IS OUR CORE VALUE

Scene Safety

Protect people first and avoid entering traffic or unstable load zones.

- Call emergency services when needed.
- Use warning devices consistent with applicable rules.

Load Shift

Do not release tiedowns or attempt recovery until load stability is assessed.

- Establish an exclusion zone.
- Use qualified recovery/rigging resources.

Breakdown

Move to a safe location when possible and secure the vehicle.

- Follow roadside warning-device rules when applicable.
- Do not perform unsafe roadside repairs.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Scene Safety	☐ Verified ☐ Action Needed
Load Shift	☐ Verified ☐ Action Needed
Breakdown	☐ Verified ☐ Action Needed

Required Records

- Emergency report
- Recovery plan
- Photos/documentation

Key Federal / Technical References

- [49 CFR 392.22 — Emergency Signals](#)

INCIDENT REPORTING, OSHA RECORDKEEPING & CORRECTIVE ACTION

Chapter Overview. Defines reporting, investigation and regulatory recordkeeping.

SAFETY IS OUR CORE VALUE

Immediate Reporting

Report injuries, crashes, dropped loads, near misses and equipment damage promptly.

- Preserve evidence when safe.
- Escalate serious events.

OSHA Reporting / Records

Apply Part 1904 recordkeeping and severe-injury reporting rules when applicable.

- Maintain OSHA 300/301/300A records where required.
- Evaluate reportability using current OSHA criteria.

Corrective Action

Investigate root causes beyond individual error.

- Address equipment, planning, supervision, training and system factors.
- Verify effectiveness.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Immediate Reporting	☐ Verified ☐ Action Needed
OSHA Reporting / Records	☐ Verified ☐ Action Needed
Corrective Action	☐ Verified ☐ Action Needed

Required Records

- Incident report
- OSHA records when applicable
- Corrective-action log
- Investigation file

Key Federal / Technical References

- [OSHA Recordkeeping](#)

TRAINING, AUDITS, DOCUMENTATION & CONTINUOUS IMPROVEMENT

Chapter Overview. Creates the competency and assurance system for the program.

SAFETY IS OUR CORE VALUE

Training

Train employees before assignment and when tasks, equipment or hazards change.

- Cover loading/unloading, securement, spotting, inspections and emergency procedures.
- Use practical demonstrations for high-risk tasks.

Audits

Conduct field observations and document compliance.

- Inspect securement quality and loading-zone controls.
- Trend recurring defects and near misses.

Management Review

Review performance at least annually and after major incidents or regulatory changes.

- Update procedures and forms.
- Communicate revisions.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Training	☐ Verified ☐ Action Needed
Audits	☐ Verified ☐ Action Needed
Management Review	☐ Verified ☐ Action Needed

Required Records

- Training matrix
- Audit records
- Annual management review
- Revision log

Key Federal / Technical References

- [OSHA Recommended Practices for Safety and Health Programs](#)

FORMS, CHECKLISTS & REGULATORY REGISTER

Chapter Overview. Provides implementation tools for daily operations and compliance evidence.

SAFETY IS OUR CORE VALUE

Forms

Use standardized forms consistently.

- Pre-job transport/loading plan.
- Truck/trailer inspection.
- Equipment loading/unloading checklist.
- Heavy-equipment securement verification.
- Material securement and WLL sheet.

Retention

Retain records according to applicable OSHA, FMCSA, company, insurance and contract requirements.

- Protect personal information.
- Maintain version control.

Regulatory Register

Review linked federal sources at least annually.

- Document review date and responsible person.
- Update state/local requirements separately.

Supervisor / Employee Verification Checklist

Verification Item	Status / Notes
Forms	☐ Verified ☐ Action Needed
Retention	☐ Verified ☐ Action Needed
Regulatory Register	☐ Verified ☐ Action Needed

Required Records

- Completed forms
- Retention schedule
- Regulatory register
- Revision history

Key Federal / Technical References

- [FMCSA Cargo Securement Rules](#)
- [OSHA 29 CFR 1926 Subpart O](#)

APPENDIX A — Pre-Job Transport & Loading Plan

Date / Project / Location _____

Equipment or Material Description _____

Weight / Dimensions / Center of Gravity _____

Truck / Tractor / Trailer _____

GVWR / GAWR / Trailer Capacity _____

Loading Method / Ramps / Crane / Forklift _____

Securement Method / Tiedowns / WLL _____

Route / Permit / Clearance Review _____

Site Conditions / Exclusion Zone _____

Driver / Operator / Spotter / Supervisor _____

APPENDIX B — Heavy Equipment Loading & Securement Checklist

- Trailer positioned on stable surface; brakes set; wheels stabilized as appropriate.
- Ramps/deck inspected and rated for equipment.
- Machine weight and dimensions verified.
- Operator authorized; seat belt used where required/provided.
- Personnel clear of travel/crush zones; spotter positioned safely.
- Equipment centered for safe axle/load distribution.
- Parking brake set; transmission/controls placed in transport condition.
- Attachments and articulated components lowered/locked/secured as applicable.
- Required tiedowns installed at suitable securement points.
- Chains/straps/binders/anchors free of defects and adequate WLL.
- Edge protection/blocking used where needed.
- Height/width/length and permits verified.
- Final 360-degree inspection completed before departure.

APPENDIX C — Construction Material Securement Checklist

- Commodity-specific rule checked before general rule.
- Material stable on deck; dunnage/blocking suitable.
- Rolling material chocked/contained.
- Tiedowns correctly routed and tensioned.
- Aggregate WLL verified.
- Sharp edges protected.
- Loose packaging/dunnage secured.
- Load within dimensional/weight limits.
- Securement reinspection plan communicated.

APPENDIX D — Regulatory Reference Register

Reference	Subject	Official Source
29 CFR 1926.20	General safety and health provisions	Official link
29 CFR 1926.250	Material storage	Official link
29 CFR 1926.251	Rigging equipment	Official link
29 CFR 1926.600–602	Construction equipment, motor vehicles and material handling	Official link
29 CFR 1926 Subpart CC	Cranes and derricks in construction	Official link
49 CFR Part 390	FMCSA general applicability/definitions	Official link
49 CFR Part 392	Driving of commercial motor vehicles	Official link
49 CFR Part 393	Parts/accessories and cargo securement	Official link
49 CFR 393.130	Heavy vehicles, equipment and machinery	Official link
49 CFR Part 396	Inspection, repair and maintenance	Official link

APPENDIX E — Employee Handbook Acknowledgment

I acknowledge receipt of the Construction Equipment & Materials Transport / Loading Safety Handbook. I understand that I am responsible for following applicable company procedures, federal/state requirements, manufacturer instructions, jobsite rules, and supervisor direction; reporting hazards and defects; and stopping work when conditions are unsafe.

Employee Name _____

Employee Signature _____

Date _____

Supervisor _____

Supervisor Signature _____