Occupational hazard accidents

Type	Category	Cases	Overview
Occupational hazard accidents	Flying / Falling objects	Case1	At the spoil disposal site, after completing the cleaning of the catch basin during cleanup operations, workers were installing concrete covers on the catch basin. At that time, one of the two lifting hooks used for the sling came loose on the victim's side, causing the concrete cover to fall from a height of 15 cm onto the victim's right foot (not wearing safety shoes), resulting in injury (fracture of the distal phalanx of the right third toe). Furthermore, the contractor failed to immediately report the accident to the relevant authorities and the client as required. [The accident occurred in fiscal year 2024, but measures were implemented in fiscal year 2025.]
	Falls / Slips	Case2	While dismantling the formwork for a sluice gate, the victim attempted to assist another worker who was not scheduled for that task. He climbed over the stopper at the edge of the work platform and moved outside the designated work passageway. The formwork panel he touched collapsed, causing him to fall from a height of 3.4 meters and sustain injuries.
	Traffic accident (road)	Case3	During tunnel warning system construction, while a 4-ton dump truck exited the alternating traffic lane following a signal from a traffic controller, the chase vehicle (a light truck) rear-ended the 4-ton dump truck.

■Case1:Occupational accidents（construction workers）【Flying / Falling objects】

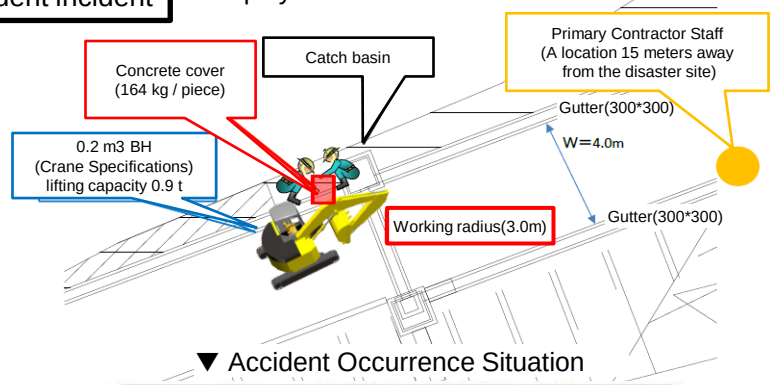
Chugoku Regional Development Bureau
Planning Department

Accident overview

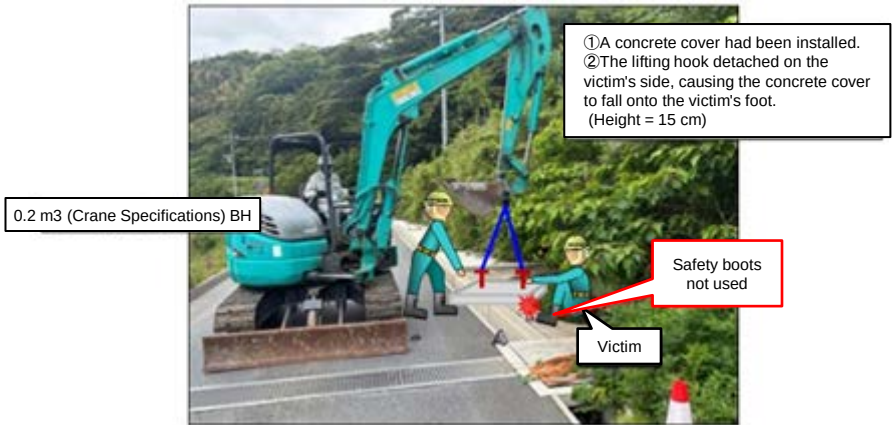
At the spoil disposal site, after completing the cleaning of the catch basin during cleanup operations, workers were installing concrete covers on the catch basin. At that time, one of the two lifting hooks used for the sling came loose on the victim's side, causing the concrete cover to fall from a height of 15 cm onto the victim's right foot (not wearing safety shoes), resulting in injury (fracture of the distal phalanx of the right third toe).

Accident incident

▼Deployment in the Event of an Accident

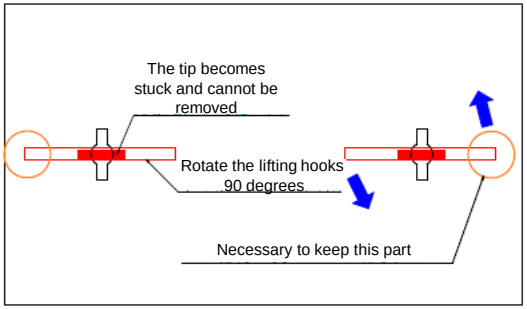


▼ Accident Occurrence Situation

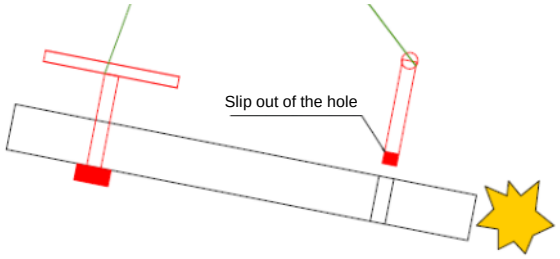


▼Causes of the Accident

When lifting, rotate the lifting hooks 90 degrees.



*When tension is applied to the belt sling for lifting, a force causes the lifting hooks to rotate in the direction of the arrow, causing it to return to the inserted state. Therefore, you must hold the area marked with the circle to prevent it from rotating.



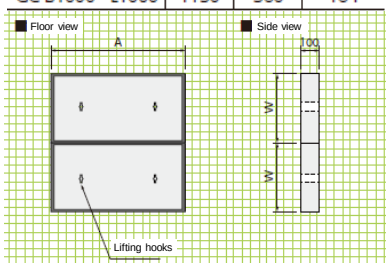
Because it wasn't held securely, the hanging hook rotated and one side came loose.

▼Equipment

【 Belt sling 】

【 Lifting hooks 】
Leased from a vendor

Title	Size (mm)		Wright (kg)
	A	W	
GC-B1000 - L1000	1130	560	164



【 Catch basin cover 】

Cause of accident

- The handling procedures for the lifting hooks were not sufficiently communicated.
- The victim held a slinging qualification but lacked experience in civil engineering work and did not fully understand the use of the lifting hooks.
- Protective gear (safety boots) was not worn.
- The victim's medical diagnosis results were not adequately verified.

Contractor's preventive measures

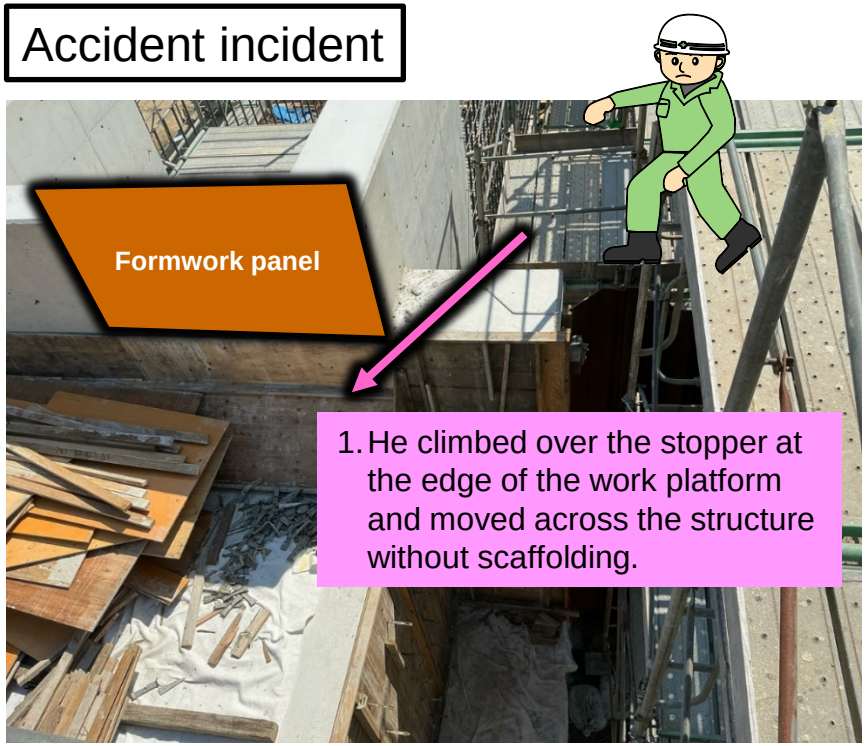
- Use actual lifting hooks for verification, and the prime contractor's staff shall ensure all relevant personnel are informed.
- If during new entrant training it is confirmed that an individual has limited experience, hold a meeting involving site staff and the subcontractor's chief engineer to determine the work tasks they will perform.
- After KY activities, conduct finger-pointing confirmation for each subcontractor to verify that all personnel are wearing appropriate protective gear. The prime contractor's confirmation shall be performed after KY activities and during safety inspections.
- For accident reporting, the prime contractor's employee must accompany the injured party to the hospital, thoroughly confirm the diagnosis, and act according to the “Emergency Response System and Procedures” outlined in the construction plan. The client must be notified immediately upon accompanying the injured party to the hospital. Subcontractors must be informed during monthly safety training sessions.

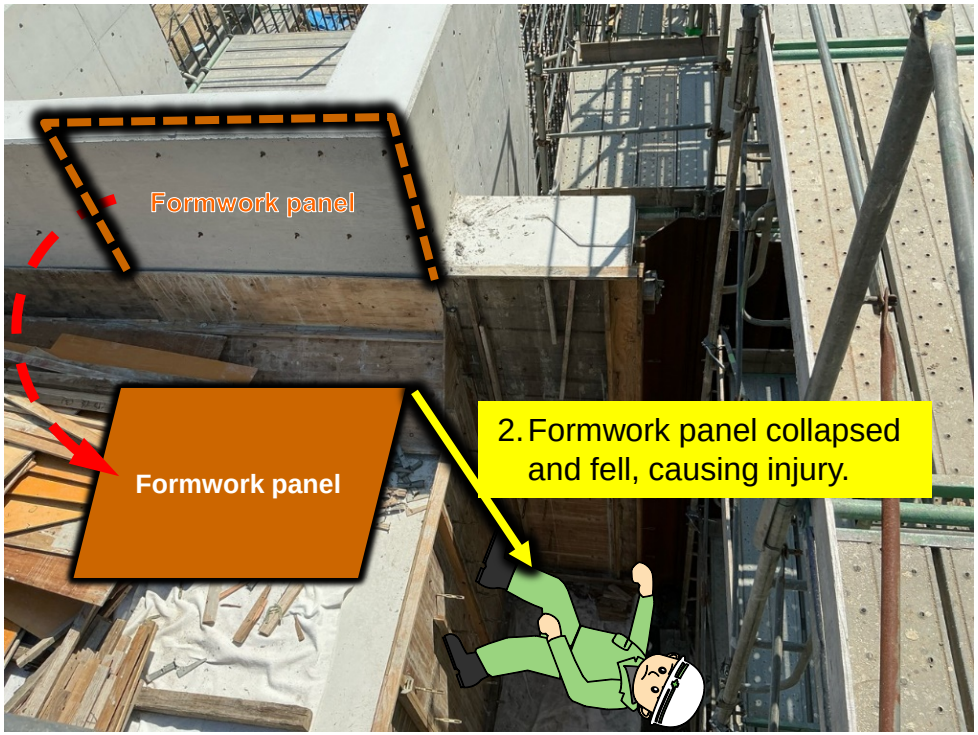
■Case2:Occupational accidents（construction workers） 【Falls / Slips】

MLIT Ministry of Land, Infrastructure and Transport
Chugoku Regional Development Bureau
Planning Department

Accident overview	While dismantling the formwork for a sluice gate, the victim attempted to assist another worker who was not scheduled for that task. He climbed over the stopper at the edge of the work platform and moved outside the designated work passageway. The formwork panel he touched collapsed, causing him to fall from a height of 3.4 meters and sustain injuries.

Accident incident





Cause of accident	①Because the work was performed without reporting or confirming it with the prime contractor.	Contractor's preventive measures	①When making changes to scheduled work or adding additional work, ensure that the prime contractor is notified. The prime contractor shall create work instruction procedures for the changed or added work, and then have all workers involved reconfirm the work procedures and conduct hazard prediction activities.

■Case3:Occupational accidents（construction workers） 【Traffic accident（road）】

Chugoku Regional Development Bureau
Planning Department

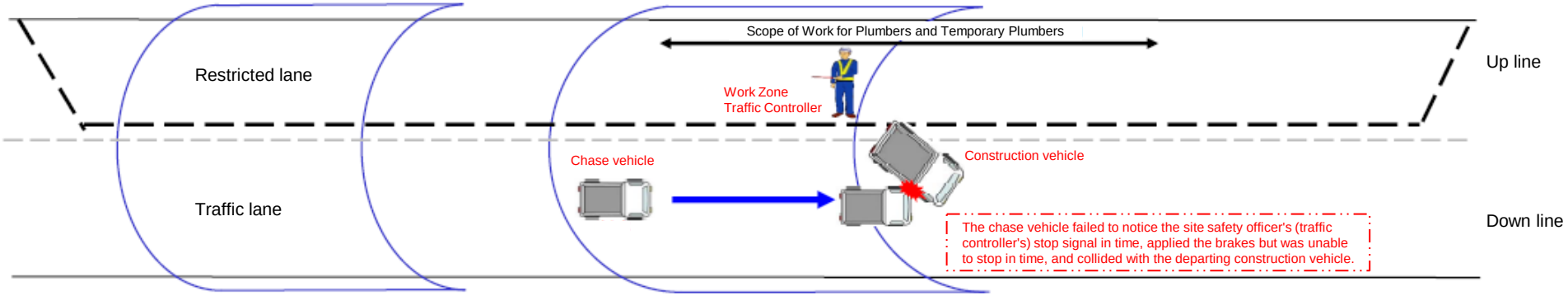
Accident overview	During tunnel warning system construction, while a 4-ton dump truck exited the alternating traffic lane following a signal from a traffic controller, the chase vehicle (a light truck) rear-ended the 4-ton dump truck.

Situation at the time of accident

The chase vehicle (a light truck)

The construction vehicle (4-ton dump truck)

Alternating traffic control zone (Up Line) 21：00 ～ 6：00



Cause of accident	① Specific communication methods and signals for construction vehicles entering and exiting the restricted lane by the work zone traffic controller and the chase vehicle driver had not been established. ② Communication points during entry and exit for work within the restricted zone during KY activities were ambiguous, relying solely on verbal communication, and had not been effectively communicated to workers and controllers.

Contractor's preventive measures	Establish specific communication methods and signals for construction vehicles entering and exiting the restricted zone, and ensure all relevant personnel are fully informed. ● Clarify the communication structure and signals for the control team. (Strictly prohibit entry/exit of construction vehicles until contact is established with the follow-up vehicle) ● Always confirm the follow-up vehicle has stopped before allowing vehicles to exit. ● Ensure workers carry documentation outlining site rules. ● Communicate entry/exit procedures from the restricted zone and vehicle positioning (entry/exit points).

Public hazard accidents

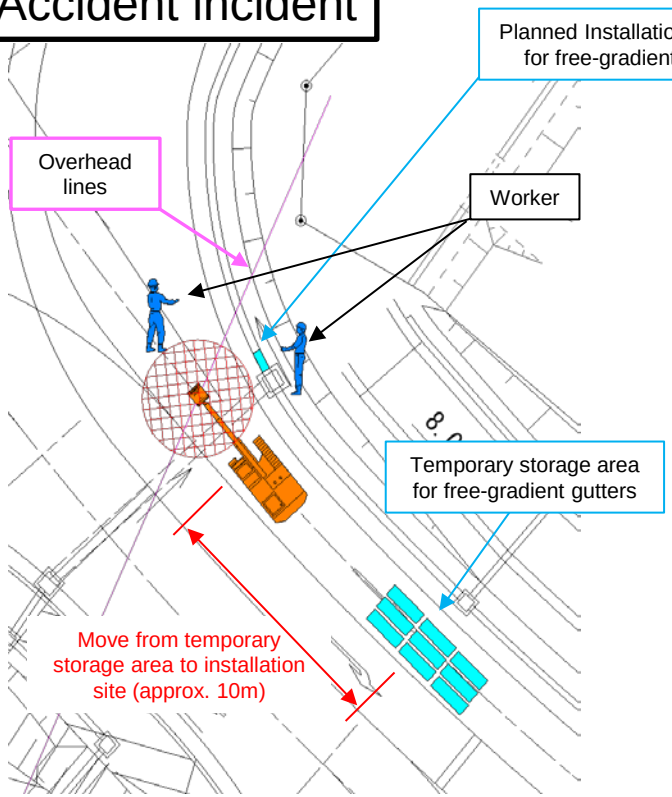
Type	Category	Cases	Overview
Public hazard accidents	Overhead line damage	Case1	During drainage structure construction for road improvement construction, When the backhoe lifted and swung the free-gradient gutter, its arm contacted overhead wires (NTT) and the bundling hangers used to prevent wire detachment. The detachment of the bundling hangers caused the overhead wires (NTT) to lose support, causing them to sag approximately 1 meter.
		Case2	During preparatory construction for the test embankment, after completing the subgrade leveling, unauthorized grading work was performed, resulting in the backhoe boom severing one overhead line (telecommunications line, carrying 49 circuits).
		Case3	During tidying-up operations, a curb was being lifted and rotated using a mobile crane (backhoe with crane, 0.45m³ class). The backhoe arm came into contact with an NTT messenger wire (H=5.8m) located overhead, severing the messenger wire. The resulting vibration caused a Chugoku Electric Power cable to become entangled. The messenger wire fell onto the roadway, striking two general vehicles traveling on the national highway and causing scrape damage to the vehicles.。
	Personal injury accident	Case4	During bridge repair construction, while pedestrian walkways were restricted for the removal of expansion joints, a bicycle entered the work site. The cyclist fell over the uneven surface created by the removed expansion joint and sustained injuries.
	Facility damage	Case5	While loading As shells onto a dump truck, a backhoe's boom struck and damaged a pedestrian signal luminaire fixture during a swing maneuver.
	Others	Case6	During bridge inspection operations, when the boom of the bridge inspection vehicle was activated, the cover at the tip of the third boom made contact with the main girder of the bridge. This resulted in damage to the cover at the boom tip and left contact marks on the main girder.

■Case1:Public accidents（construction workers）【Overhead line damage】

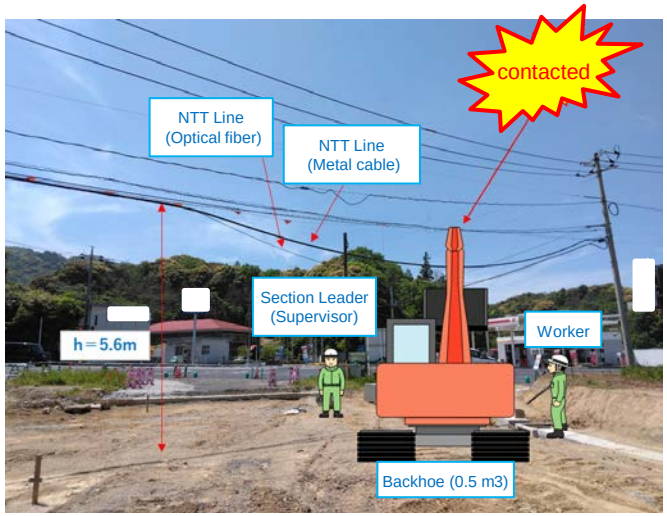
Chugoku Regional Development Bureau
Planning Department

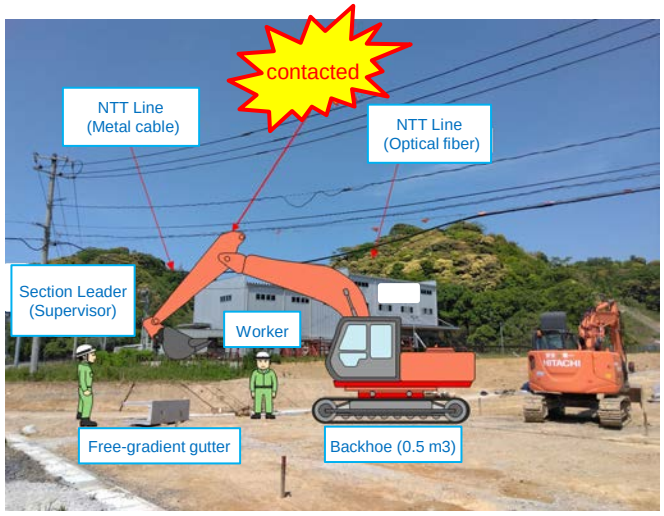
Accident overview	During drainage structure construction for road improvement construction, When the backhoe lifted and swung the free-gradient gutter, its arm contacted overhead lines (NTT) and the bundling hangers used to prevent wire detachment. The detachment of the bundling hangers caused the overhead lines (NTT) to lose support, causing them to sag approximately 1 meter.

Accident incident

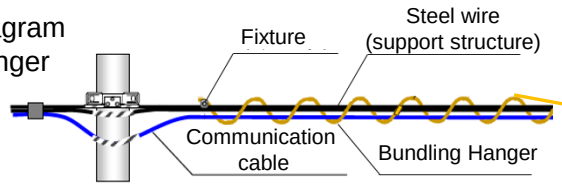


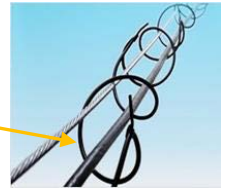
< The backhoe arm came into contact with overhead lines >





Conceptual Diagram of Bundling Hanger





Cause of accident	① Despite being aware of overhead wires at the work site, no height restriction measures using gates were implemented before or after the lines. ② Despite the need to minimize heavy machinery operations beneath overhead lines, unnecessary work was performed. ③ The supervisor designated in the construction plan failed to verify the overhead lines.
Contractor's preventive Measures	① Install fencing with height restrictions (H=5m, W=8m) via gates and warning signs, caution flags, etc., at intervals of 3m before and after overhead lines. ② To minimize work under overhead lines where contact is possible, gutter cutting operations shall be performed at temporary storage areas away from overhead lines. ③ Assign dedicated supervisors to prevent contact or cutting accidents involving overhead lines, which are obstacles.

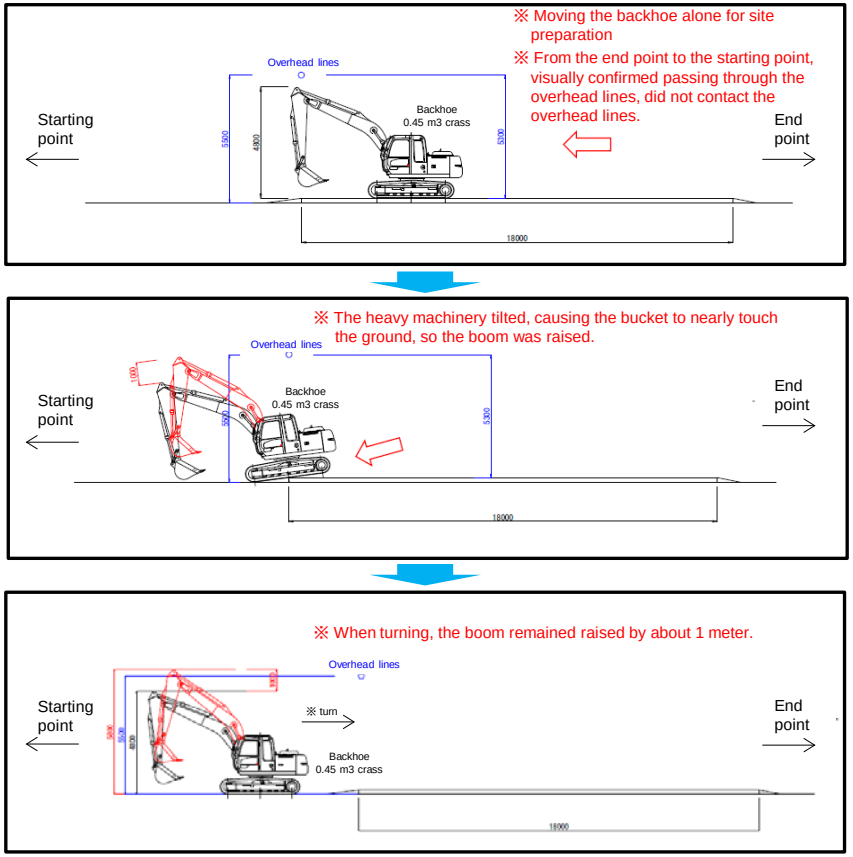
■Case2:Public accidents （construction workers）【Overhead line damage】

Chugoku Regional Development Bureau
Planning Department

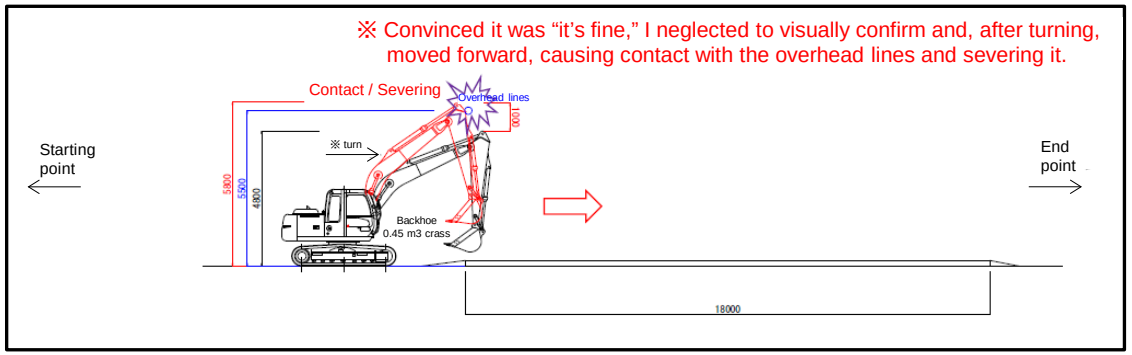
Accident overview

During preparatory construction for the test embankment, after completing the subgrade leveling, unauthorized grading work was performed, resulting in the backhoe boom severing one overhead line (telecommunications line, carrying 49 circuits).

Accident incident



The overhead line was severed, causing it to shift 6.0 meters away from its original position.



Cause of accident

- The parties involved performed unscheduled work on their own initiative.
- The operator assumed “it was fine” and neglected visual confirmation.
- The test embankment yard was located too close to overhead lines.
- Instruction and thoroughness for subcontractor workers were insufficient during work meetings and KY activities.
- The work procedure manual covered the entire subgrade embankment process, leaving procedures for each specific area unclear.
- The prime contractor's staff were occupied with other tasks, neglecting overall supervision of the site.
- The key for the 0.45m³ backhoe was taken to the site for heavy equipment inspection but remained in the possession of the responsible party, resulting in inadequate management.

Contractor’s preventive Measures

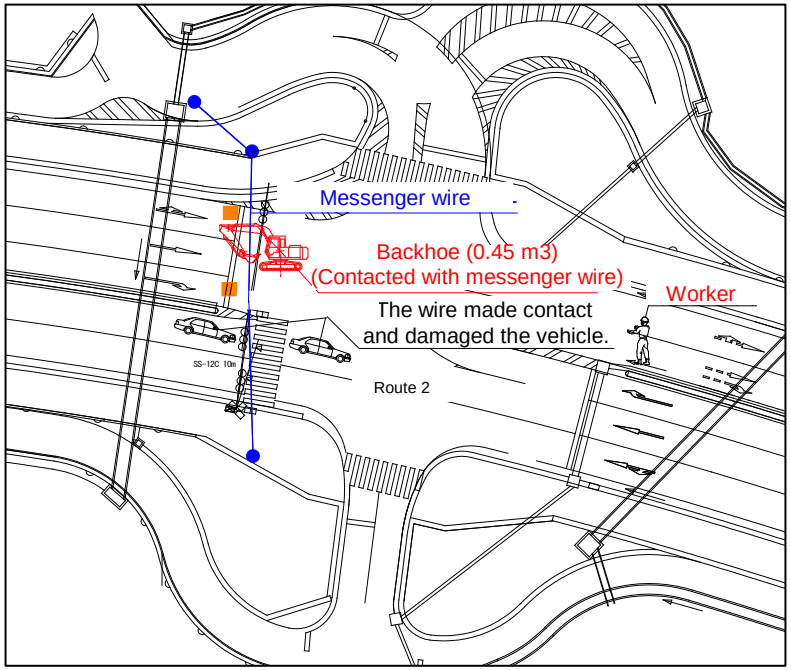
- Reinstruct and reinforce to subcontractors from the prime contractor to avoid performing unplanned work.
- Backhoe operators must visually confirm overhead lines before moving or rotating heavy machinery.
- Revise the schedule (trial excavation timing) and relocate the test fill yard.
- Revise the format for work meetings and KY activities. Modify to allow recording of work instructions and safety instructions per area. Also, clearly specify who will serve as the guide (supervisor) during KY activities to ensure thorough safety management.
- Create area-specific work procedure manuals and ensure thorough dissemination to all workers.
- Clearly define roles among prime contractor personnel and document them in the work meeting log. For specific tasks like work supervision, assign responsibilities primarily to personnel other than the supervising engineer, enabling the supervising engineer to maintain an overview of the entire site.
- After heavy equipment inspections, keys for equipment not listed in the construction plan or work procedure manuals must be returned to and managed by the foreman.

■Case3:Public accidents（construction workers）【Overhead line damage】

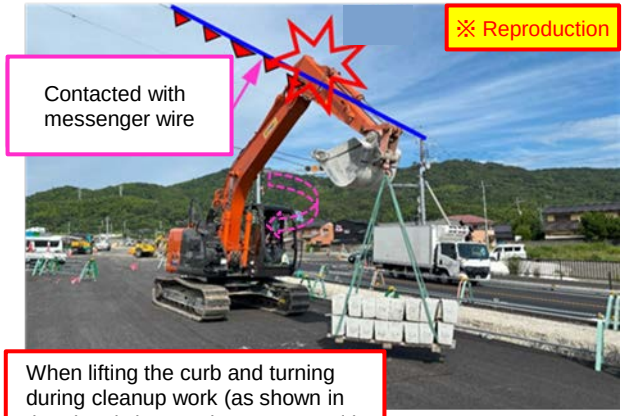
Accident overview	During tidying-up operations, a curb was being lifted and rotated using a mobile crane (backhoe with crane, 0.45m³ class). The backhoe arm came into contact with an NTT messenger wire (H=5.8m) located overhead, severing the messenger wire. The resulting vibration caused a Chugoku Electric Power cable to become entangled. The messenger wire fell onto the roadway, striking two general vehicles traveling on the national highway and causing scrape damage to the vehicles.

Accident incident

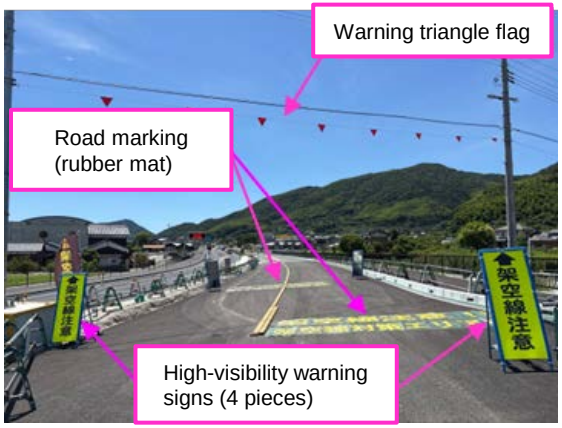
【 Floor plan 】



【 Accident scene photo 】



【 Measures to prevent recurrence 】

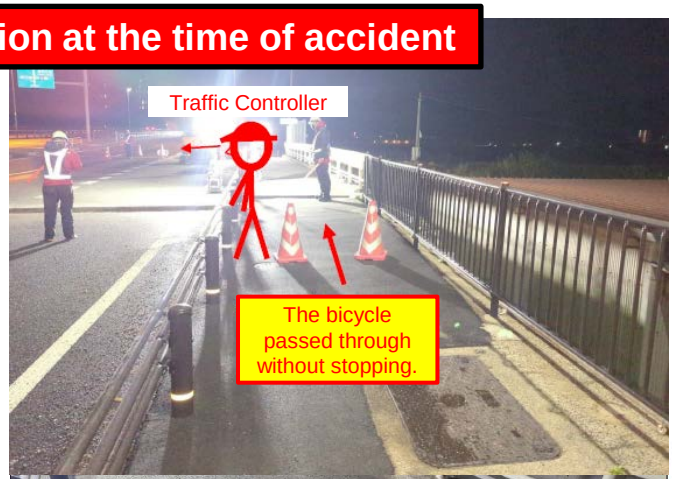


Cause of accident	● Insufficient protective measures were taken for overhead wires, and the work instructions on the day of the accident did not specify the machinery to be used. ● The supervisor was working alone while away from the heavy machinery. ● Although the presence of overhead wires was recognized, awareness of them had declined.
Contractor's preventive Measures	Install protective lines at appropriate positions relative to overhead wires, and add overhead wire countermeasures to the KY activity sheet and work procedure manual. Furthermore, for overhead wires crossing the site, designate a 5-meter zone from each end point (total 10 meters) as the "Overhead Wire Countermeasure Area." Lay rubber mats on the road surface to alert workers. and install signs at all four corners to clearly mark the area, ensuring thorough awareness among workers. Furthermore, backhoe operators must be strictly instructed to always confirm the presence of the heavy equipment guide controllers before operating. Heavy equipment guide controllers must also be strictly instructed to remain near the equipment and provide accurate guidance. These measures shall be clearly documented in the KY Activity Sheet and work procedures, shared and adhered to across the entire site to prevent recurrence.

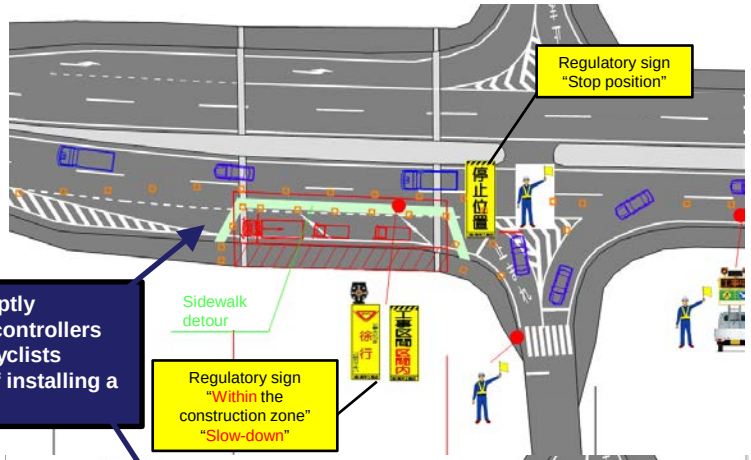
■Case4:Public accidents（construction workers）【Personal injury accident】

Accident overview	During bridge repair construction, while pedestrian walkways were restricted for the removal of expansion joints, a bicycle entered the work site. The cyclist fell over the uneven surface created by the removed expansion joint and sustained injuries.

Situation at the time of accident

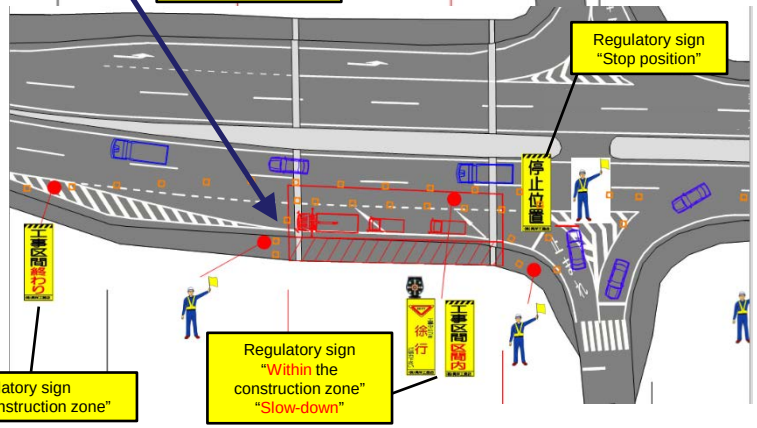


Construction planning
※Sidewalk detour available



The regulation was abruptly changed to have traffic controllers guide pedestrians and cyclists within the site instead of installing a detour route.

Construction
※No sidewalk detour
Responding to on-site guidance



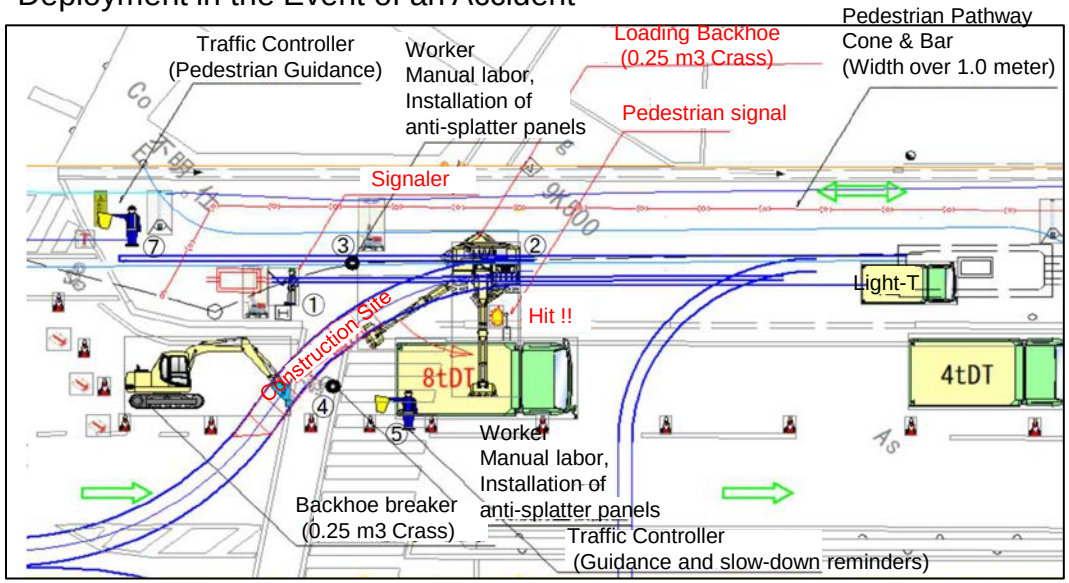
Cause of accident	① Without reporting to supervising staff, the site representative unilaterally changed the plan to implement traffic control methods differing from the original construction plan and proceeded with the work. ② No pedestrian walkway was installed. ③ No entry prevention measures using cone bars were in place. ④ No Regulatory signs visible from a distance were provided. ⑤ No Regulatory signs for sidewalk users were provided.
Contractor's preventive measures	① Strengthen the system for checking alignment between construction plans and site conditions, as well as change procedures. ② Ensure safe pedestrian walkways by separating work areas and passageways using color cones and cone bars. ③ Enclose sidewalks completely with color cones and cone bars to prevent gaps, implementing strict no-entry measures for the general public. ④ Install additional lighting to ensure visibility for traffic controllers from a distance. ⑤ Install illuminated warning signs and rotating lights to alert pedestrians and cyclists.

■Case5:Public accidents（construction workers）【Damage to the pedestrian signal luminaire】

Accident overview	While loading As shells onto a dump truck, a backhoe's boom struck and damaged a pedestrian signal luminaire fixture during a swing maneuver.

Situation at the time of accident

Deployment in the Event of an Accident

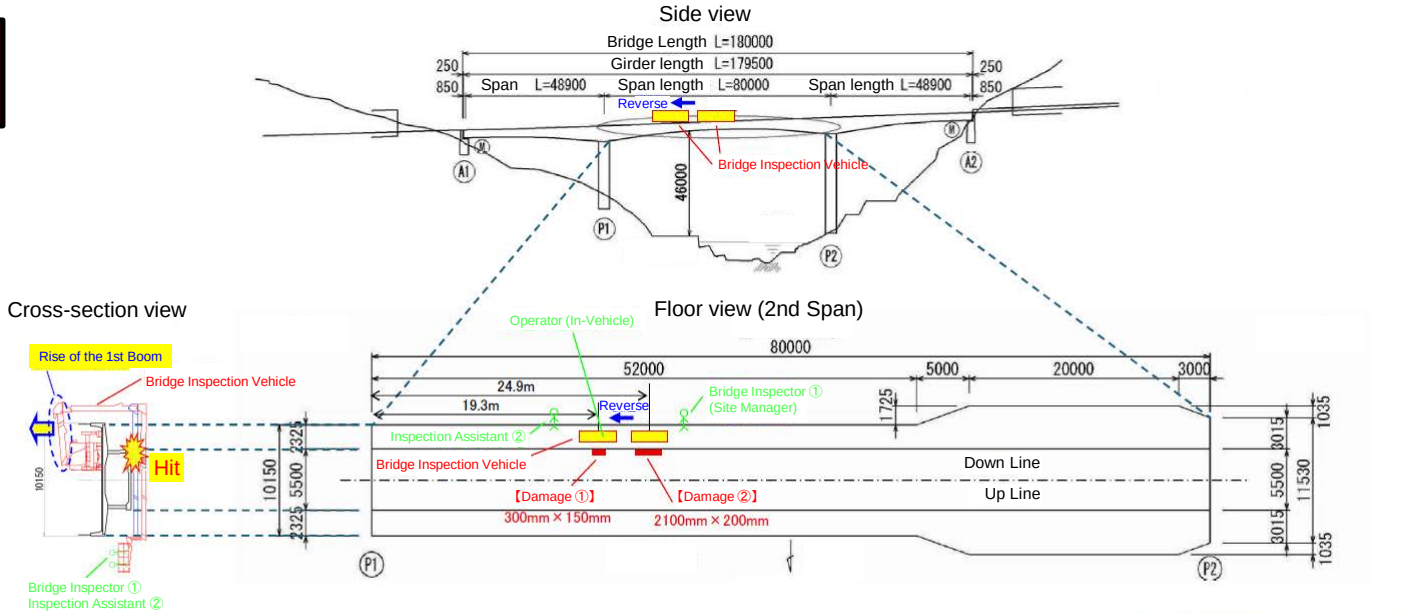


Cause of accident	Contractor's preventive Measures
① Specific construction instructions (equipment placement, monitoring procedures, etc.) were inadequate. ② The signaler looked away from the backhoe without giving the stop signal and was monitoring other work. ③ The pedestrian signal light was in the signaler's blind spot from their standing position. ④ The backhoe operator rotated the backhoe without receiving instructions from the signaler.	① When operating heavy machinery where contact with obstacles is possible, do not rotate the machinery toward obstructions or occupied structures. Create a layout diagram (work procedure manual) specifying protective measures using safety equipment. During construction, the prime contractor's internal inspector (head office staff) shall verify the layout diagram against the actual site. ② Assign a dedicated signaler. While the backhoe is operating, ensure the signaler thoroughly monitors the surrounding area and overhead space. Add instructions regarding signaling methods to the work procedure manual and enforce compliance. Conduct safety training to ensure awareness. ③ When occupied objects are in close proximity, creating blind spots from the signaler's position, assign a separate dedicated monitor to oversee the blind spot areas. ④ Add a requirement to the work procedure manual that operators must always seek the signaler's instructions before performing even the slightest swing operation of heavy machinery. Implement safety training to ensure thorough understanding.

■Case6:Public accidents （construction workers）【Others (Damage to Work vehicle & Bridge)】

Accident overview	During bridge inspection operations, when the boom of the bridge inspection vehicle was activated, the cover at the tip of the third boom made contact with the main girder of the bridge. This resulted in damage to the cover at the boom tip and left contact marks on the main girder.

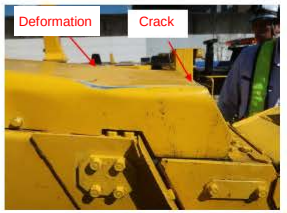
Situation at the time of accident




Inspection Status


【Damage ①】(Size:300mm*150mm)


【Damage ②】(Size:2100mm*200mm)



Damage Status to Bridge Inspection Vehicle

Cause of accident	① The 1st boom was raised.(Although we were aware that the 1st boom should not be raised or lowered as a rule, the work was performed within a limited timeframe under concentrated restrictions, and work efficiency was prioritized.) ② Verification of the clearance between the main girder and the boom was insufficient.

Contractor's preventive Measures	① During inspection work beneath girders, install a misoperation prevention cover or similar device on the control lever to prevent operation of the first boom. Carefully review the work process and establish a schedule with ample time. ② A) Before inspection, use the "Work Procedure and Condition Confirmation Sheet" to confirm and share all precautions with all on-site personnel, eliminating any lack of understanding. B) Install collision prevention sensors on the inspection vehicle to prevent contact with the bridge structure and road fixtures.