STANDARD OF KAZAKHTELECOM JSC

OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR WORK ON OVERHEAD LINES

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Preface

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1 Area of application

1.1 These Rules on Occupational Safety and Health (hereinafter - OSH) Regulations for work on Overhead Lines (hereinafter - OCL) of Kazakhtelecom JSC (hereinafter - Rules) contain the safety and health protection requirements to be met/complyed with when working on OCL.

1.2 Compliance with the requirements of these Rules is mandatory for Kazakhtelecom JSC's branches and structural subdivisions servicing OCL line facilities .

1.3 Responsibility for compliance with the Rules rests with the management of Kazakhtelecom JSC's affiliated branches and their structural divisions.

2 Regulatory references

The following regulatory reference documents have been used in the development of this Regulation:

Labor Code of the Republic of Kazakhstan.

Rules and terms of training, briefing and knowledge tests on safety and health protection of employees, approved by the authorised state body of the Republic of Kazakhstan.

Safety rules for the operation of electrical installations of consumers of the Republic of Kazakhstan, approved by the authorised state body of the Republic of Kazakhstan.

Rules of industrial safety in the operation of hoisting machinery, approved by the authorised state body of the Republic of Kazakhstan.

GOST 12.2.061-81 Occupational safety standards system (OSSS). Industrial equipment. General safety requirements for workplaces, interstate standard.

GOST 12.2.003-91 Occupational safety standards system (OSSS). Industrial equipment. General safety requirements, interstate standard.

GOST 12.3.009-76 (ST SEV 3518-81) Occupational safety standards system. Loading-unloading works. General safety requirements.

GOST 12.3.033-84 Occupational Safety Standards System (OSSS). Construction machinery. General safety requirements for operation, Group T58, interstate standard.

GOST 12.4.026-2002 Safety colours, safety signs and signal markings. General technical conditions and procedure of application.

3 Terms and definitions

The following terms with their respective definitions shall be used in these Regulations:

3.1 **Occupational safety:** The state of employees' protection provided by a set of measures that eliminate the impact of harmful and (or) hazardous production factors on employees in the course of their work activities.

3.2 **Safe working conditions:** Working conditions in which the levels of exposure of employees to occupational factors do not exceed the established standards.

3.3 **Occupational safety and health:** System for providing safety of life and health of employees during their work activities, which includes legal, socio-economic, organisational and technical, sanitary and epidemiological, therapeutic and preventive, rehabilitation and other measures and means;

3.4 **Security zone of telecommunications networks:** A land plot located along the communication line and around communication facilities with vegetation and buildings located on it.

3.5 **Personal protective equipment:** Equipment designed to protect employees from the effects of harmful and(or) hazardous production factors, including special clothing;

3.6 **Technical Safety and Health Inspector:** Employees' representative who performs internal safety and health control;

3.7 **Workplace:** A place of permanent or temporary location of an employee while performing his/her job duties in the course of his/her work activities;

4 Designations and abbreviations

The following abbreviations shall be used in these Regulations:

JSC - Joint Stock Company;
SL - subscriber line;;
OSH - Occupational Safety and Health;
OCL - overhead communication lines;
RPS - remote power supply;
CESE - Communication Equipment Switching Equipment;
LTW/LTS –Linear-technical workshop/Linear-technical section;
TL - transmission lines;
SR - safety regulations;
TOR - technical operation rules;
EIR - Electrical Installations Regulations;
TOC LN - Technical Operation Centre of Local Networks.

5 General regulations

5.1 These Regulations shall regulate the implementation of occupational safety and health requirements during the works on construction and operation of overhead communication lines.

5.2 On the basis of these Rules and in accordance with the Rules for development and approval of occupational safety and health instructions, the employer, taking into account local conditions and specifics of production, shall prepare instructions on OSH for specific jobs and types of work in the branches.

5.3 Responsibilities of the persons responsible for safe working practices shall be determined by the management in accordance with the requirements of the Labor Code of the Republic of Kazakhstan.

5.4 Work heads (heads of structural units and responsible employees) appointed by a written order of the head of the Company's branch shall be personally present during the works with increased hazard, monitor and provide compliance with occupational safety requirements (An indicative list of sites and works with increased hazard on overhead lines is presented in Annex A to the Regulations).

5.5 The workplace, its equipment and equipment, depending on the technological processes used, shall be completed in accordance with the requirements of GOST 12.2.061, GOST 12.2.003.

5.6 Organizational and technical measures to provide electrical safety shall be implemented in accordance with the requirements of the applicable Technical Operation Rules (TOR), Safety Regulations (SR) and the Rules for Electrical Installations Regulations (EIR).

5.7 Electrical installations and electrical equipment used during maintenance and repair of OCL are regulated by the requirements of the current Electrical Installations Regulations.

5.8 It is prohibited to conduct work on OCL at wind speeds of 12-15 m/s or more, when thin branches and dry tree limbs are broken, during snowstorms, and at temperatures below the limits established by the local authorities.

As an exception, work may be conducted at temperatures below the specified limit:

1) for emergency response (at least two specialists), with a written order from the General Director of the branch;

2) with breaks for warming - in this case, the work head shall provide means for warming (campfires, tents, etc.) to the employees in the immediate vicinity of the site. Heating breaks are counted as working time.

If necessary, shift work can be organised instead of breaks.

5.9 It is prohibited to work on the OCL during thunderstorms or when thunderstorms are approaching.

5.10 When working away from populated areas, the management shall provide the employees with a place for heating and rest, food, a first aid kit with medicines and drinking water.

5.11 Installation and operation of hoisting machines and mechanisms shall be conducted in accordance with the Rules for the design and safe operation of hoisting cranes approved by the authorised state body of the Republic of Kazakhstan.

Operation of hoists (towers) to move people with tools and materials is regulated by the Rules for the Construction and Safe Operation of Hoists (towers) approved by the authorised state body of the Republic of Kazakhstan.

An employee shall undergo additional targeted training before conducting work conducted from a mobile lift basket.

6 Requirements for production equipment, tools and appliances

6.1 General regulation

6.1.1 Tools and appliances shall be positioned at the workplace so as to prevent them from rolling or falling.

6.1.2 When carrying or transporting tools and appliances, their sharp parts shall be covered with covers or in any other manner that prevents the possibility of injury to employees.

6.1.3 Provide that the equipment, tools and appliances used are in good working order before work. For example, crowbars shall only be used straight, with their ends retracted and sharpened. Hammers, sledgehammers, axes, etc. shall be placed correctly on the handles and metal shall not be split at the edges.

6.1.4 Lifting equipment and auxiliary devices (hoists, jacks, winches, blocks, ropes, cables etc.) appropriate in their capacity for the loads to be lifted shall be used for rigging work. All lifting appliances are labelled with the load limit and the date of the next test. Auxiliary equipment shall be stamped.

6.2 Locksmithing tools

6.2.1 Sledgehammers and hammers with strikers having a smooth, slightly convex surface without slashes, chipping, potholes, cracks and burrs shall be used.

6.2.2 Handles of hammers, chisels and other percussion tools are made of dry, hard and ductile wood (dogwood, beech, mountain ash, hornbeam, birch, etc.) without knots and slants, with a smooth surface and are wedged with brushed steel wedges. Handles made of soft and coarse woods (spruce, pine, etc.) are not permitted. The handles are made straight and shall have an oval shape in cross-section.

The handle is slightly thicker at the free end to prevent the handle from escaping of the hand when the tool is swung or struck. The axis of the handle is

perpendicular to the longitudinal axis of the tool. The wedges for securing the tool to the handle are made of mild steel.

6.2.3 Handles fitted to the sharpened tail ends of tools shall be manufactured with banding rings.

6.2.4 It is allowed to use percussion tools (chisels, chisels, bits, punches, etc.) with a smooth back end without cracks, burrs, burrs and bevels; its working end shall be undamaged.

6.2.5 The chisel shall be at least 150 mm long and 60-70 mm long. The edge of the chisel is sharpened at an angle of 65-70 degrees so that the cutting edge is straight or slightly convex. The side edges of the chisel shall not have any sharp ribs where the hand grips them.

6.2.6 When chopping metal with a chisel or other hand-held tool, employees shall wear cotton gloves and safety glasses with unbreakable lenses.

When hitting wedges or chisels with a sledgehammer, wedge holders with a handle at least 0.7 m long are used.

6.2.7 Only screwdrivers of the required size may be used so that the blade fitsinto the slot of the screw head without play.

6.2.8 Spanners shall be matched to the size of nuts and bolt heads. The parallelism of the spanners' jaws shall be checked. Working surfaces of wrenches shall be free of chamfers, and handles shall be free of burrs.

6.2.9 It is forbidden:

1) unscrew and tighten nuts and bolts by extending spanners with other spanners, pipes, etc;

2) use spacers if there is a gap between the surfaces of the spanner jaws and the heads of the bolts and nuts.

6.3 Electrical tools and portable electric lights

6.3.1 The operation of power tools, hand-held electric machines and portable electric lights shall be conducted in accordance with the Regulations for the Operation of Consumers' Electrical Installations and the Safety Regulations for the Operation of Consumers' Electrical Installations.

The use of power tools from lean-to ladders is prohibited.

For such work, use scaffolding or ladders with overhead platforms with guardrails.

6.3.2 Tools with insulating handles are stored indoors on shelves or racks. They shall not come into contact with heating appliances and shall be protected against the effects of sunlight, moisture, acid vapours, alkalis and other aggressive substances.

6.3.3 Tools with insulating handles shall be delivered to the workplace under conditions to provide that they are serviceable and usable, i.e. free from dirt, moisture and mechanical damage.

6.3.4 Tools with insulating handles shall be tested in accordance with the requirements of the Regulations on the Use of Protective Equipment Used in Electrical Installations.

6.3.5 When using tools with insulating handles it is forbidden:

1) work with tools with loose dielectric sheaths or coatings on the handles, with blistering, delaminations, cracks, cavities and other damage;
2) hold it by its stops or lugs to prevent your fingers from slipping towards the metal parts.

6.3.6 Portable electric lights are designed for live operation:

1) in hazardous areas - not higher than 42 V;
2) in extremely hazardous rooms and outdoors - no more than 12 V.

6.4 Requirements for portable ladders

6.4.1 Wooden portable ladders are made from seasoned, dry, knot-free softwood lumber. All parts of the ladders have a smooth, knurled surface.

6.4.2 Extensible ladders are fitted with locking devices to prevent them from spontaneously extending while working on them.

6.4.3 The steps of ladders and stepladders are cut into their struts. The distance between the steps shall not be more than 0.25 m and not less than 0.15 m.

6.4.4 Ladder struts are fastened with tie bolts with a diameter of at least 8 mm every 2 m and under the top and bottom rungs.

6.4.5 The bottom ends of portable ladders installed on the ground are provided with sharp-edged shackles and, when used on smooth and rough floors (parquet, tile, concrete, etc.), with shoes made of rubber or other non-slip material. If necessary, special hooks shall be attached to the upper ends of ladders.

6.4.6 Longitudinal cracks in the steps and stringer no longer than 100 mm in length and no more than 5 mm in depth are permitted, provided their location is not a risk of weakening the stringer and steps. Cross cracks are not allowed. It is also not allowed to fill cracks or fractures by caulking, gluing or any other means.

6.4.7 Ladders with cracked, burrs or sharp edges that have not been statistically tested shall not be used.

6.4.8 The stays shall be fixed firmly to the stringer without any play. In case of abrasion, the rubber parts shall be replaced and the blunted studs shall be sharpened.

6.4.9 All portable ladders and stepladders shall be subject to static load testing after manufacture and major repairs as well as periodically during use.

After manufacture or repair, the ladder is suspended vertically and each stringer of the ladder is loaded alternately with a tensile force of 2000 N (200 kgf), then a load of 1250 N (125 kgf) is alternately applied for 1 minute parallel to the stringer to the middle of each rung. Ladders are tested for bending by applying a vertical load of 1250 N (125 kgf) to the middle rung of the ladder located at an angle of 45 degrees to the horizontal plane.

If damage is detected on the steps and their tie-in points in the stringer after the load has been removed, or if the condition of the steps on examination is questionable, the faults detected during the test shall be rectified and the test shall be repeated in its entirety.

6.4.10 Portable ladders and step ladders can be industrial made, non-insulated light metal and insulated metal and plastic ladders. Technical parameters shall comply with GOST 26887-86.

6.4.11 Periodic test periods for metal and metal-plastic ladders (step-ladders) are set at least once every 12 months, for wooden ladders and step-ladders once every 6 months.

6.4.12 All ladders in service shall have an inventory number, date of the next test, and shop (section) belonging: for wooden and metal ladders - on strings, for rope ladders - on tags attached to them.

6.4.13 The length of the ladder shall be selected so as to provide the possibility of working while standing on the step, which is at least 1 m from the upper end of the ladder. The length of the ladder shall not exceed 5 m.

6.4.14 If the length of the ladder is insufficient, support structures made of crates, drums, etc., or use lean-to ladders at an angle of more than 75 degrees without additional securing of the top of the ladder, are prohibited.

6.4.15 When working in high-traffic areas, another person shall hold the ladder to prevent it from falling as a result of accidental jolts, when the top of the ladder cannot be securely fastened, or when working at heights in excess of 3 metres.

6.4.16 The ladder shall be positioned against the wall so that it will not tip over when gates, doors or windows in the vicinity are opened.

6.4.17 When ladders are installed against entrance doors, an employee shall be assigned to protect the ladder from being bumped.

6.4.18 When using a ladder for pruning work, the use of a ladder belt is mandatory. The belt chain shall be attached to the tree trunk.

6.4.19 Do not work on the ladder:

1) move the ladder with the employee on it;
2) put tools on the steps (the tools shall be in the employee's bag);
3) to use mechanised tools (e.g. pneumatic or electric hammer for piercing holes), to tension wires, to support heavy parts at height, etc;
4) installing cable couplings.

7 Safety and health regulations for the construction and operation of overhead line poles

7.1 Earthworks

7.1.1 Earthworks during the reconstruction or repair of pillar linear structures are conducted only according to approved drawings. The drawings shall

indicate all underground structures located along the CL route or crossing it within the working area.

7.1.2 Excavation work is allowed only if there is a written permission from the relevant authorized bodies.

When repairing and installing a new support in place of an old support, approval and permission is not necessary.

When excavating in the area of underground utilities, permission to excavate is only granted with the written permission of the organisation responsible for the operation of these utilities. The permit shall be accompanied by a plan (diagram) indicating the location and depth of the utilities.

Prior to the commencement of works, a representative of the organisation responsible for the operation of utilities shall be summoned, potholed and signs indicating the location of these underground utilities shall be erected.

7.1.3 When excavating on the roadway, the organization conducting the work shall draw up and agree with the local/territorial authority a scheme of fencing the work site and placing of road signs indicating the type of work and the timing of its execution. In case of an accident, work may be conducted without approval and approval of schemes, but with notification of local/territorial authorities about the place and time of work.

7.1.4 When digging pits in cities and towns, fencing with warning signs (posters, signs) shall be installed around the work site at traffic and pedestrian areas.

7.1.5 Excavation works in the area of active underground utilities shall be performed under the direct supervision of the operations head, and in the protected area of live cables or active gas pipelines, in addition, under the supervision of electric or gas utility employees.

7.1.6 If during the digging of the pit the pipeline or cable is found in the place not specified in the plan (scheme), the work shall be immediately stopped until the arrival of the representatives of the organisation to which the underground facility belongs.

7.1.7 When digging pits manually in weak soil, the pit walls shall be reinforced with planks at least 40 mm thick and spaced from the depth:

1) 1.0 m - in sandy soils, including gravel soils;
2) 1.25 m - in loamy sandy soils;
3) 1.5 m - in loamy, clayey and dry loess soils.

After installing the post, the spacers shall be removed gradually, starting from the bottom and pouring soil into the hole, which shall be tamped down after 20-30 cm.

In the case of quicksand and wet loess soils, where it is hazardous to remove the spacers because of the possibility of collapse, the holes shall be filled in without dismantling the fasteners.

7.1.8 Digging holes with explosives is only conducted by a team, which shall include a qualified blasting engineer.

7.2 Installing and replacing supports

7.2.1 The installation and replacement of supports with the help of drilling and crane machines shall be conducted in accordance with the requirements of GOST 12.3.033 "Construction machinery. General Safety Requirements".

7.2.2 When installing the supports using the "falling boom" before starting to lift the support, the works head shall check the serviceability of the cable, reliability of attachment of blocks or winch, correct installation of the boom "legs" and reliability of attachment of the cable to the support, as well as make sure that at the moment of the boom dropping there are no people between the support, boom and blocks or winch. When lifting, make sure that the support does not sway.

7.2.3 When manually installing and replacing wooden supports, the head provides that the number of employees required is determined by the size and weight of the support.

Employees under the age of 18 and women are not allowed to carry poles by hand.

7.2.4 When erecting and replacing supports on embankments and slopes, the number of employees is increased against the usual norms depending on local conditions; in addition, measures are taken to prevent the poles from rolling away (holding them in place with ropes and other devices).

7.2.5 When lifting poles manually, horns shall be used. The slingshot may only be used as an auxiliary means for guiding the lifted support to the pit, for removing the sling, rope, etc.

Technical specifications for gaffes and horns are given in Annex E to the Regulation.

Note - Handles for gaffers and horns shall be 2.5 to 4.5 m long with a diameter of at least 5 cm and be made of dry, strong wood without large limbs or burrs. Employees shall be positioned on both sides of the support when lifting it.

It is forbidden:

1) stand under the support to be lifted;
2) stand at the end of the slingshot or gaff at the chest or abdomen.

7.2.6 Masts and complex supports shall be kept in the lifting plane by means of ropes or secure ropes attached to the tops of the supports while standing at a distance of 1.5 lengths of the support from the place of installation.

7.2.7 It is prohibited to install reinforced concrete supports manually without the use of machinery.

7.2.8 Reinforced-concrete supports are restrained from swinging during lifting by means of straps (ropes, ropes) attached at the top of the support. It is allowed to remove the ropes after the tower is fully installed.

7.2.9 Before digging the hole for the new support, the old support is reinforced with slings or gaffers.

7.2.10 The support shall be replaced with a hand winch by at least two employees. The winch with rope shall be securely fastened at the bottom of the

pole. The weight of the pole to be lifted shall not exceed the winch's lifting capacity.

Do not remove the dog from the ratchet wheel when lowering the old support with the hand winch.

7.2.11 Climb the newly installed tower only after the pit has been backfilled and the ground has been compacted. When laying wires from the replaced tower to the newly installed tower, the rigger shall secure both claws and chain of the belt to the new tower; the tops of the old and new towers shall be temporarily fastened with clamps.

7.2.12 When replacing the corner pole, loosen the wire ties on the pylons adjacent to the corner pole. The poles following them, where the wires remain unbonded, shall be temporarily reinforced with supports or straps. The corner tower to be replaced shall be secured at the top with one or two temporary braces. The old support can only be excavated and removed after the wires have been transferred to the new support. If it is not possible for an employee to move the wires on the corner pole, the wires shall be pulled by other employees with the help of blocks.

7.2.13 When replacing the intermediate semi-anchor pole, dig a hole at a distance of 0.7 - 0.8 m from the old pole on the side opposite to the supports. Raise the main pillars of the new support by means of blocks, half-fill the pit and compact it. The main pillars are then reinforced with girders or horns, the supports are lifted one after the other using girders and attached to the pillars. Once the wires have been secured to the new pole, the old pole is dismantled and lowered to the ground, having previously secured it with wipers or horns.

7.2.14 It is forbidden to stand under the support when it is lifted or lowered to the ground. The safety zone, closer to which unauthorised persons are not allowed, is the length of the pole plus 2 m.

7.2.15 It is forbidden to leave the poles or unfastened wires during long breaks (lunch, end of working day, etc.).

7.2.16 When installing or replacing attachments and when installing supports, measures shall be taken to prevent the support from falling, shifting sideways or lowering arbitrarily.

7.2.17 When the supports or straps are replaced on a corner, cable, termination, etc. support, it shall be previously reinforced with a temporary strapping to the side opposite to the support or in the direction of the strapping.

7.2.18 Wooden supports not impregnated with septic (creosote etc.) shall be reinforced with reinforced concrete attachments. It is prohibited to install non-impregnated supports without reinforced concrete bails.

7.3 Working on the supports

7.3.1 Before starting work on the line, the works head (foreman) checks the reliability and mechanical strength of the supports in the area to be repaired. Unreliable supports shall be reinforced before the electricians are lifted onto them.

Before climbing on the tower, make sure that it is strong, that the tower is securely fastened to the annex and that the annex is mechanically sound; if necessary, reinforce the tower with horns or gaffers. If the tower is equipped with a lightning rod that is not protected by a batten, check that it is not under tension.

7.3.2 Do not climb onto a support that is tilted away from the vertical until it has been levelled and anchored in the ground. The support shall be levelled by means of the pulling mechanism and the pull rod, which is secured without climbing on the support.

7.3.3 Before starting work on the support, check that

1) For the harness: fastening of the sickle and stirrup, serviceability of the teeth (spikes), straps and clasps;
2) For the safety belt: serviceability of the carabiner, integrity of the lashing straps and chain links, availability of the chain cover.

7.3.4 Lifting to a support, work on a support, regardless of the height of the lift, shall be conducted after the safety harness has been secured to the support with a sling and the claws have been secured in a stable position.

Do not climb up and work on the support:

1) without claws and belts or on claws not firmly attached to the legs with tie straps and thongs, with the belt sling unfastened;
2) two employees at the same time.

7.3.5 When working on poles impregnated with oil antiseptics, overall shall be worn.

7.3.6 After climbing on the OCL support, use indicators to make sure that the load-bearing cable and metal parts are not under tension.

7.3.7 It is forbidden to dig up the support, straighten it, remove the clamps from the old attachment or install a new attachment to the support on which the employee is standing.

7.3.8 It is forbidden to stay in the immediate vicinity of the tower when working on it.

7.3.9 On cable, lead-in and control towers as well as towers on which spark and gas-filled arresters are installed, the current leads (grounding rods) that do not have a break shall be closed along the entire length of the tower with a wooden batten so that the employee cannot touch the current lead with his claws when he is on the tower.

7.3.10 Before working on bridge brackets mounted on the trusses of a railway or highway bridge and equipped with a platform, the safety belt chain shall be secured to the bridge bracket when stepping onto the platform. If there is no platform, the employee shall first tie himself with a safety rope to the bridge structure and only then proceed to the bracket and climb onto it. The rope shall be of sufficient length to allow the employee to move freely from top to bottom on the trestle. In addition to the safety rope, the employee shall be secured by the chain of the safety harness to the bridge bracket. The work shall be conducted in the presence of a second person, who shall secure the employee.

7.3.11 Cable supports shall be equipped with cable platforms, fenced by railings, lightning protection and earthing. Platforms shall not touch the earthing descent, lightning conductor. The earthing resistance shall be checked twice a year (summer and winter).

7.3.12 Hanging cables from ladders is prohibited.

7.3.13 Work on angled supports

7.3.13.1 When working on an angle support with a traverse profile, position yourself on the outside of the angle in relation to the wires on which you are working. Before commencing work, check that the insulators are firmly attached to the pins of the wire in relation to which the employee will be positioned on the inside of the angle. Damaged insulators shall be removed from the hooks and pins while wearing gloves.

7.3.13.2 On a corner post with hook-and-loop profile, work from the outside of the corner formed by the wires.

7.3.14 Lifting loads on a support

7.3.14.1 Lift fittings, wires, etc. onto the support with a rope and after the employee is firmly and safely anchored to the support. Tie the required objects to the middle of the rope, the other end of the rope is held by a employee standing below, who keeps the lifted objects from swinging.

7.3.14.2 It is forbidden to lift wires, beams, transformers and other heavy objects when climbing the tower.

7.3.14.3 Lifting loads weighing more than 15 kg shall be done with the use of a pulley. It is allowed to loosen the holding rope after the load is securely fastened to the support.

7.3.14.4 The blowtorch or heated cable mass shall be placed on the cable support in a bucket. It is only permitted to remove the bulb or the kettle with the cable mass from the bucket while wearing gloves, when the bucket is securely positioned on the cable platform.

7.3.15 Suspending cables

7.3.15.1 Before uncoiling the cable along the line within the protection zone, bushes and tree branches that hinder uncoiling and suspension of the cable shall be removed.

7.3.15.2 Uncoiling shall be done with gloves and safety glasses.

7.3.15.3 When unwinding, make sure that the cable is not twisted and does not form rings or get caught on any object. When releasing the hooked cable which has formed a corner, the employee shall be on the outside of the corner.

7.3.15.4 When the cable is suspended across roads, streets, crossings etc., the uncoiled cable is lifted and temporarily secured at a height that does not interfere with traffic. If it is not possible to raise the cable to the required height, a guard shall be posted for the duration of cable suspension and the traffic shall be suspended. A guard shall also be posted when the cable is unwound.

7.3.15.5 When the cable is suspended in populated areas and at road intersections, warning signs "road works" are installed on both sides to warn

drivers of vehicles and pedestrians (on sidewalks) to meet traffic at a distance of 15-20 m from the place of work. In case of poor visibility, additional light signals are installed. Before starting the work on the roadway, local/territorial authorities are informed about the place and time of the work.

It is forbidden for persons to remain in the vicinity of the tensioned cable.

7.3.15.6 Suspension of the cable through the railroad bed shall be agreed with the railway administration.

It is forbidden to work while trains are passing.

If the cable cannot be raised to the required height when a train is approaching, it shall be cut quickly at both transition poles.

7.3.15.7 When a cable is suspended on the top traverse or on the first and second hook profile points of OCL supports with overhead crossings with power lines in any span, the supporting cables of suspended cables shall be earthed from both sides of the work site.

7.3.15.8 When suspension work is temporarily interrupted, cables not secured to the bracket shall be fixed to the pole in the prescribed dimensions in relation to the ground. If there is a coil of cable, it shall also be secured to the tower in case of work interruption.

7.3.15.9 When the cable is suspended from the ground, the support wire with the cable attached to it is lifted by means of blocks securely fastened to the tower.

7.3.15.10 Suspension of cable from a truck-mounted tower shall be performed in accordance with GOST 12.3.033.

7.4 Dismantling lines

7.4.1 The dismantling of supports and cables shall be conducted in accordance with the technological chart or the work design in the presence of the works head.

7.4.2 In order to prevent a employee from falling with the support before removing wires and cables, the support is reinforced on three or four sides with a slingshot (the slingshot can only be used as an auxiliary tool). The next two supports are also strengthened in the same way. If the tower is supported with attachments, check that the tower is securely fastened to the attachment point.

7.4.3 It is forbidden to cut all cables from two or more adjacent supports at the same time, as well as to cut all cables from one side of the support.

7.4.4 Cables suspended in the span of the crossing over the overhead contact lines of land-based electric transport or 380 / 220 V power lines shall be removed with the overhead contact or power line disconnected and grounded at the place of work. When crossing electrified railways, it is only permitted to dismantle communication cables in the span of the crossings after the overhead line has been de-energised. Work shall be conducted wearing dielectric gloves and galoshes. The wire to be dismantled shall be earthed.

7.4.5 Work at intersections with overhead lines shall be conducted in the presence of a representative of the overhead line department (district).

7.4.6 When dismantling cables suspended under the overhead line, the support cables of the dismantled line shall be short-circuited and earthed every 250 m. The supporting cables shall be shorted and earthed wearing dielectric gloves. The cables are disconnected gradually, starting with the bottom cable. The decoupled cable is cut and lowered to the ground. Work shall be conducted wearing protective goggles.

7.4.7 It is forbidden to pull and coil cables suspended in several spans at the crossing point with power lines.

7.4.8 When dismantling OCL bushings in a house, first untie the cables on insulators screwed into the wall of the building (or on insulators of the telephone entry post) and then on the entry pole. If the cable inlet crosses over the power supply wires, work shall be performed wearing dielectric gloves and galoshes. The support cable of the dismantled cable is earthed.

7.4.9 When dismantling a line affected by overhead power lines or an electrified AC railway, the support cables of the cable of the dismantled line are shorted and earthed every 250 m. The load cables shall be connected and earthed wearing dielectric gloves. Supports shall be reinforced, cables shall be grounded and cable stripping shall be commenced. The cables are disconnected gradually, starting with the bottom cable. The decoupled cable is cut and lowered to the ground. Once the cables are untied at all poles of the earthed section, they are cut at those poles where earthing is installed, then, without removing the earthing conductors, the cables are lowered to the ground and, having removed one of the earthing conductors, reeled in.

7.4.10 When sawing down the support, it is necessary to support it from the sides and side of the sawing down with gaffs or horns.

Unauthorised persons shall not approach the site within a distance of less than one and a half of the length of the tower to be sawn down.

Outside populated areas with a small number of conductors and where the supports have significantly rotted bases, it is permissible to saw down and lower the dismantled support on the ground with the cables by reinforcing adjacent supports. The cables are decoupled on the ground.

7.5 Procedures for earthing wires and cable support cable

7.5.1 Before starting work on the line the employee shall make sure that there is no extraneous voltage, then, having made sure that there is no extraneous voltage, ground and short-circuit the wire of the carrying cable on both sides.

7.5.2 First the portable earthing bar is inserted into the ground then the wire of the cable is connected. The cross-section of the flexible copper conductor of the earth electrode shall be at least 16 mm2 .

7.5.3 Earthing points shall be selected so that they are clearly visible from the workplace. Earthing and short-circuiting the wire of the carrying cable shall be

done with dielectric gloves, and the earthing conductor shall be connected to the earthing first, and then to the wires.

Earthing switches shall be driven in to a depth of at least 0.5 m.

It is forbidden to ground one conductor of the chain's carrying cable leaving the other ungrounded.

7.5.4 When removing the earthing conductor, first disconnect it from the line and then from the earthing.

7.5.5 When using a vehicle with an insulated telescopic tower, work can be conducted without earthing the conductors.

7.5.6 When suspending a cable with a carrying cable on the OCL, the cable shall be uncoiled along the line in individual sections not exceeding 250 m in length. The cable lying on the ground shall have no contact with the wires unrolled in the neighbouring sections.

7.5.7 The cable with support rope shall be lifted onto the pole with a dry rope.

7.5.8 All work on suspension and adjustment of cable with a carrying rope shall be performed wearing dielectric gloves.

8 Construction and operation of racking lines

8.1 Working on roofs

8.1.1 Work on mullion lines shall be conducted using a safety belt and dielectric galoshes or shoes with rubber soles.

8.1.2 When laying the rack line route, it is necessary to provide for safe approaches to the rack (installation of manholes, gangways, suspension of safety cables).

8.1.3 Working on a roof covered with ice or a thin layer of snow, except for flat roofs, is allowed in exceptional cases only for elimination of accidents by a team of at least two people.

8.1.4 Climb to the roof using an internal ladder and exit through the attic and a special hatch. If there is no hatch, the roof shall be accessed through the skylight.

Only buildings with no more than two storeys may be climbed onto the roof using a functioning fire escape.

8.1.5 Exit to the roofs of buildings with more than two storeys is only permitted through exit hatches.

If there are no exit hatches, the installation of racks on the roofs of buildings with more than two storeys is prohibited.

8.1.6 Before climbing onto an iron roof, use a gauge to make sure that there are no hazardous voltages on the roof.

An employee who finds hazardous voltage on the roof shall notify the building owner and the Company head.

It is prohibited to climb onto the roof when there is hazardous voltage on the roof.

It is prohibited to hold on to the roof frame of the skylight when climbing on the roof.

8.1.7 When travelling on a roof with a slope (except on roofs with internal drainage), a safety rope shall be tied to the post. The rope shall be passed through both rings of the safety harness and tied with a strong knot.

8.1.8 When installing props on sloping roofs, a safety rope shall be tied to the rafters in the attic. The props shall be installed by at least two employees. As the employee advances along the roof, a second employee on the attic will etch the rope so that it is slightly taut. Once the hole in the roof for the strut has been cut (prepared), the rope is passed through the hole and tied firmly to the attic beam. To prevent the rope being passed through the hole from chafing, a metal sleeve with bent edges is inserted into the hole.

After installing and reinforcing the bolts for attaching the rope, the rope is tied to one of the bolts, which allows the employees to be insured. When the posts are installed, the safety rope remains attached to the rafter for the duration of the work.

8.1.9 The safety harness chain can be attached to the post after it has been finally installed and secured with clamps and all straps, and the safety rope has been fed (pulled) through the skylight and secured in the attic.

8.1.10 Wires on transition poles over electric lighting network wires and over electrified railway, tram and trolleybus contact lines shall be suspended by means of a rope loop, observing all measures laid down in section 10 of the Regulations.

8.1.11 When tensioning and adjusting the wires, the blocks shall be secured to the post tube.

Do not attach the units to roof guards, chimneys or vents.

8.1.12 When working with wires suspended from poles with a dimension of 2.5 metres, detachable steps shall be used.

8.1.13 On corner posts work from the outside of the corner.

8.1.14 It is forbidden to sit on the barrier and guardrails mounted on the roofs.

8.2 Lifting materials, equipment, wires, cables

8.2.1 The wires are suspended between poles installed on different buildings using ropes, by lowering a rope to the ground from one roof and a rope from the other roof. On the ground, the ropes are tied together and lifted to the roof where the wire coil is installed; then the wire end of the coil is tied to the rope and pulled (with a little tension) to the roof of the adjacent building.

It is prohibited to throw wires or ropes from one roof to another.

When wires are suspended across the street, warning signs and guard posts are installed to warn of the need for caution.

When the wire is lifted, traffic is stopped.

8.2.2 Materials and tools shall be brought to the roof by an internal ladder through a hatch or skylight.

8.2.3 The access to the roof shall be secured with a fence. In addition to the fence, the guard posts shall be installed at the lifting point. Lifting of loads shall be performed from the yard.

8.2.4 The material lifted onto the roof shall be placed in a manner that prevents it from falling down, including from the wind. Small materials and tools shall be placed in the fitter's bag. Objects that may roll off the roof shall be secured.

8.2.5 When work on the roof is completed, the waste and all remaining material is removed from the roof.

Do not throw or sweep anything off the roof.

9 Safety and health regulations for the installation and operation of house distribution networks

9.1 Installation of the distribution network

9.1.1 Only ladders may be used when working on the outside of buildings.

Do not use crates or other objects for this purpose.

9.1.2 It is forbidden to have several employees at different heights at the same time on the same site for the installation of the distribution network.

9.1.3 Inside the building, no more than 4 m high may be worked from a ladder. When working at higher heights, scaffolding and scaffolding shall be arranged.

9.1.4 Before punching slots, furrows and openings, the walls shall be carefully inspected so as not to damage the wiring concealed in the walls.

9.1.5 When piercing holes, furrows, openings, grouts or chiselling walls of brick, stone and concrete parts of buildings, measures shall be taken to prevent persons working or staying nearby from being injured by splinters or accidentally falling tools. When drilling or piercing holes in concrete or brick walls, use gloves and safety glasses with unbreakable glasses.

9.1.6 Drill holes, make cuts in walls and ceilings in which concealed electrical wiring may be located, and conduct other work that may damage the insulation of electrical wiring and installations, after determining the location of concealed electrical wiring. A specialised appliance is used to accurately detect hidden wiring in the walls of buildings. The device shall provide accurate (± 2 cm) detection of concealed wiring.

9.1.7 Materials may only be lowered through openings or passageways if there is adequate supervision from below.

9.2 Work in the attic

9.2.1 When working in the attic, care shall be taken to avoid falling into open unprotected hatches, injury by nails sticking out in beams and boards, etc.

9.2.2 If there is no lighting in the attic, the work is conducted by the light of an electric lantern on a battery or batteries.

9.2.3 It is forbidden to use an open fire in the attic (candles, matches, etc.) and smoke.

9.2.4 Work with a blowtorch or a gas burner in the attic is prohibited.

9.2.5 Before climbing from the landing to the attic and from the attic to the roof, as well as when moving through the attic, all metal structures encountered on the way (doors, if they are covered with iron, stairs, hatches, beams, ventilation and heating structures, metal roofing, etc.) shall be checked with a low voltage indicator.

10 Safety and health regulations for work on remotely powered lines

10.1 When remote-powered line equipment (RPS) is connected, information about the presence of remote power shall be entered on the subscriber card to the CESE.

10.2 It is the responsibility of the CESE personnel to inform the line fitter of the availability of the remote power supply before starting work.

10.3 When working on a line with a RPS on the CESE the RPS shall be switched off. In addition, to prevent the possibility of voltage being switched on by mistake, posters with the inscription: "Do not switch on! There are people working.

10.4 At the end of the work, only the person who put up the placards has the right to remove the placards and switch on the RPS voltage.

11 Occupational safety and health rules for crossing and convergence of communication lines with overhead wires of land transport and power lines

11.1 General regulations

11.1.1 Work on the intersection of communication lines with overhead contact networks of ground electric transport and power lines with voltage up to 1000 V and above 1000 V shall be performed only by a permit-to-work order. Employees having electrical safety group III (third) or higher shall be allowed to work. Work head shall have a group of electrical safety not lower than IV (fourth).

11.1.2 When constructing intersections in settlements and on carriageways, regardless of the road class, watch posts shall be set up to warn pedestrians and vehicles of the hazard by means of flags.

11.1.3 Before work, make sure that there is no extraneous voltage on the wires.

11.1.4 Check that there is no extraneous voltage on the wires using a voltage detector. Checking the absence of extraneous voltage on OCL wires with overhead crossings (approaches) to power lines, approaches to overhead contact networks of electrified railways with voltage above 1000 V, is first conducted with a high-

voltage indicator. If there is no extraneous voltage above 1000 V on the OCL wires, a low voltage indicator shall be used to check that there is no extraneous voltage below 1000 V on the CL wires.

It is forbidden to determine the presence of extraneous voltage on the conductors of CLs having crossings (convergences) with power lines above 1000 V and contact networks of electrified railways with only one low voltage indicator.

11.1.5 An employee who finds foreign voltage on the overhead line wires shall stop work, notify the works head and not start work until the damage has been repaired.

It is forbidden for OCL maintenance personnel to repair damage to the power grid.

11.1.6 Once a year, the sections of proximity and crossings of OCL with power lines are inspected to verify that they comply with technical standards. Crossings of OCL and TL that do not comply with technical standards shall be recorded as hazardous crossings and entered into the technical inspection log of line and cable structures. In accordance with Annex D to these Regulations.

The inspection results in a report and a plan to bring the hazardous crossings up to technical standards.

11.2 Intersections of OCL with land-based electric transport contact lines

11.2.1 Suspension and removal of OCL wires crossing the overhead wires of overhead lines shall be conducted with the overhead line disconnected and grounded at the site of the work.

In exceptional cases, with the agreement of the organisations concerned, it is permitted to conduct work on OCL crossing the contact line for trams and trolleybuses without removing the voltage from the contact line.

11.2.2 A representative of the overhead line shall be present at the work site, regardless of whether the overhead line has been de-energised or not.

11.2.3 Pull the wires over the overhead line that is disconnected and grounded at the work site using a dry rope.

The rope is thrown from the ground or from a truck-mounted tower over the catenary and then lifted and passed through the blocks attached to the crossing poles, the ends of the rope are tied together, resulting in a loop. The wire to be pulled is tied to the knot of the rope loop and slowly pulled across the span from pole to pole (pole to pole).

In order to avoid sagging, the wire is kept somewhat taut and attached to the rope loop every 1.5-2 m as it progresses.

The rope loop with rings is released from the attached wire after it has been fastened to the insulators of the transition supports.

11.2.4 All work on live overhead line crossings shall be conducted with insulated tools, wearing dielectric gloves and galoshes. The OCL wire to be tugged shall be earthed. Dry rope may only be thrown over an unconnected overhead line

from a truck-mounted hoist and then the work shall be conducted as described in clause 11.2.3 of the Regulation.

11.3 Crossings and convergence of OCL with power lines

11.3.1 Work on the crossing of communication lines with power lines (power grids) of 1000V and above is conducted by laying the OCL cable in the ground.

It is forbidden to suspend OCL wires over power line conductors.

11.3.2 If the wires are suspended from poles mounted on buildings, the wire to be pulled is earthed. A dry rope is lowered from the roof of the building where the wire to be tugged is placed and while standing in the basket of the truck, the rope is thrown over the power line wires. A rope loop is lowered from the roof of the opposite building. The end of the thrown rope is tied to this loop and lifted onto the roof of the first building. Tie a wire to the rope loop and use a block attached to a second post to pull the wire to the roof of the other building.

To avoid sagging, the wire is kept somewhat taut and attached to the rope loop every 1.5-2 metres as it progresses.

The rope loop with rings is only released from the attached wire once it has been attached to the wires.

11.3.3 It is forbidden to throw over OCL wires over both bare and insulated power line wires.

11.3.4 Crossing work during rain and snowfall is prohibited.

11.3.5 In case of damage to cable inserts at the intersections of OCL with overhead lines, it is allowed to make temporary connection only during elimination of the fault, and hanging overhead wires instead of the damaged cable is allowed only if the clearances stipulated by the EIR are complied with.

11.3.6 Works at existing crossings of communication lines with power lines shall be conducted only after the power line has been de-energised and the OCL wires on both sides of transition poles have been grounded at the site of the works. The possibility and time of voltage removal shall be agreed in advance with the owners of the power lines. If it is not possible to de-energise the conductors, work may be conducted without de-energising by wearing dielectric gloves and using tools with insulated grips.

In order to prevent the stretched wire from touching the power line, ropes shall be thrown over the stretched wire on both sides of the crossing line before it is lifted. The ends of the ropes shall be secured to stakes driven into the ground.

The OCL wires running under or over the power lines shall be pulled and adjusted with dielectric gloves and galoshes, and the employees directly pulling the wires shall wear canvas gloves over the dielectric gloves, which shall be shorter than the dielectric gloves.

12 Safety and health regulations for loading and unloading work and transport of goods

12.1 Handling operations and transportation of cargoes are performed in accordance with the GOST 12.3.009-76, Safety Rules for Hoisting Cranes, Safety Regulations and Industrial Hygiene Regulations for Loading and Unloading Works on Railway Transport.

12.2 Loads on vehicles shall be mounted, stowed, placed and secured so that they will not shift and fall over during transportation.

12.3 Before unloading the poles, the works head shall check the condition (stability) of their stacking on the platform and depending on this determine the method of unloading.

12.4 It is forbidden to unload from the railway platform or gondola until the train has come to a complete standstill.

Platforms (open wagons) placed for unloading are braked with shoes.

12.5 The distance between adjacent unloading platforms shall be at least 5 m. If the unloading front cannot unhitch the platforms, the unloading shall take place through one platform.

12.6 Rolling the platform manually is allowed as an exception.

It is forbidden to stand in front and pull the platform towards you. To brake the platform, shoes are placed on the rails in advance at the point where the platform stops. A four-axle platform is moved by at least eight people.

12.7 At the places of loading and unloading of the pillars, devices are provided that exclude the collapse of the pillars.

12.8 At least two employees open the sides of the platform. When unloading pillars and prefixes in a mechanized way, the work head provides that:

1) The crane's outreach was kept to a minimum, and the clearance with the electrified railway overhead wires was respected;

2) the crane vehicle was additionally secured (railway cranes were secured with rail clamps, and road cranes were placed on outrigger supports);

3) the rules for slinging loads were followed and the poles loaded with the "cap" were secured from the ladders.

4) If the weight of the "cap" does not exceed the capacity of the crane, it can be unloaded in one go without removing the wire tie. If the weight of the cap is greater than the lifting capacity of the crane, it shall be unloaded in parts with three safety posts 0.3 m above the top of the stack on each side of the stack.

12.9 During manual unloading of poles, the serviceability and reliability of loading and unloading equipment (slings, gimbals, blocks, pliers, ropes, cables, crowbars) shall be checked in advance.

12.10 It is forbidden to use planks, poles, etc. for rolling and moving poles.

12.11 It is prohibited to throw down several poles at the same time.

12.12 When loading and unloading the posts, the vehicle (tractor) shall be braked and the wheels shall be secured against rolling.

12.13 The poles shall be loaded onto the vehicle or tractor-trailer in rows with their stakes in the body having previously installed supports on the platform of the vehicle and on the trailer on the side opposite to the loading.

12.14 When loading long loads (pipes, poles) on the trailer, leave a gap between the shield installed behind the vehicle cab and the load ends, so that the load does not cling to the shield when turning and turning.

12.15 It is forbidden to lay poles without stakes.

12.16 When laying on a vehicle, wooden spacers shall be placed under the bottom row and between the rows of supports or extensions.

Manual loading and unloading of poles onto a vehicle is conducted using small tools and appliances.

12.17 It is forbidden to carry people on the platform of a vehicle loaded with poles or extensions, also on trailers to a vehicle or tractor.

12.18 When unloading poles from vehicles manually, use self-holding rollers (logs) which are attached to the side of the vehicle so that the stoppers do not prevent the poles from rolling freely to the ground.

12.19 It is forbidden:

1) roll away the poles until the unloading stops;
2) stand in front of the pole being rolled off the vehicle.

12.20 Carts and wagons with brakes (metal blocks or chains) are used for transporting poles by cart.

12.21 The unloaded poles are stacked on wooden timbers in even rows; there shall be spacers between the rows, wedged in at the outermost poles. There shall be no more than six rows in a stack.

12.22 When carrying the post by hand, the employees are arranged along the post according to their height. The post shall be carried on the same shoulders. Lifting and dropping the post is permitted simultaneously at the command of the foreman.

12.23 When carrying wooden poles manually, the number of employees is determined on the basis of a maximum load of 20 kg per employee.

12.24 Reinforced concrete poles and attachments shall only be carried using tongs or other devices.

It is forbidden to carry reinforced concrete supports and extensions on your shoulders.

12.25 When lifting transformers, machines and other equipment, the rope (rope) shall be attached to the frames, frames or parts (rings, brackets, etc.) specially designed for this purpose.

12.26 Heavy loads are moved on the stairs of buildings by means of a rope on planks laid on the steps of the stairs. Rollers shall be placed under the bases of the loads to facilitate movement.

Do not stand behind or in front of a load to be lifted or lowered.

12.27 When transporting loads on rollers, clear the path of foreign bodies and place sturdy boards on uneven areas. The ends of rollers shall not protrude more than 0.5 m from under the load. Use crowbars and jacks to push the rollers

under the load. Additional rollers shall be placed under the front part of the load to avoid tipping.

12.28 When lowering the load on an inclined plane use devices preventing the load from sliding under the action of its own gravity or its overturning.

12.29 Handling of dusty materials (cement, lime, gypsum, etc.) is performed, as a rule, by a mechanized method. Employees performing manual loading and unloading of dust-like materials shall be provided with overall, safety shoes, respirators and anti-sickness goggles. Handling operations shall be conducted wearing gloves.

13 Safety and health regulations for forestry work

13.1 The work associated with independent logging of poles (cutting, felling, skidding, hauling, stockpiling wood, etc.) shall comply with work safety requirements according to GOST 12.3.015.

13.2 Tree crown trimming shall be conducted in accordance with the requirements of the Safety Instructions for Tree Crown Trimming along communication lines and these Regulations.

13.3 Tree crown pruning can be done from an auto tower and from a ladder. The upper ends of the ladder legs shall be equipped with a device that allows the ladder to be attached to the tree trunk, e.g. metal half-rings with sharp spikes welded on the ends and in the middle.

13.4 Pruning trees using ladders or a telescopic tower shall be done by a team of at least two people. Tree crowns may be trimmed from the ground with a lopper by one employee.

13.5 When felling trees near roads and footpaths, watch outposts shall be set up to warn of the hazard.

13.6 It is forbidden to leave the cut and sagging tree crowns and branches at the end of the work.

14 Checks and inspections

14.1 The inspection of OCL supports shall be conducted in order to identify supports which do not meet the safety requirements (emergency supports).

14.2 The inspection shall be conducted in the spring before the start of the repair season, irrespective of the repair inspection. The results of the inspection shall be recorded in the inspection sheets according to Annex C of the present Regulation.

14.3 The head of the site, the head of LTW/LTS, the heads of the TOC LN responsible for the OCL operation are personally responsible for the correct record keeping, timely and qualitative conducting of the pylons control inspection.

14.4 Line maintenance personnel shall systematically monitor the condition of the supports and, if necessary, take immediate measures to reinforce or replace them.

14.5 The inspection and inspection of the OCL shall be conducted by employees having a qualification group for electrical safety at least III (third).

14.6 Emergency supports identified during the inspection shall be immediately marked around the support with a red stripe at least 5 cm wide at a height of 30 cm above the reinforced concrete bays and the letter "A", taken into account and a replacement plan, and then reinforced or replaced within a month.

14.7 On the basis of the inspection sheets, the Head of TOC LN is obliged to draw up a coded list of the damaged supports and reinforced concrete bays. With this list of available emergency supports and reinforced concrete bays the technical personnel serving the line shall be familiarized with it against personal signature on a paper carrier.

14.8 A pole is considered to be in a state of failure if the inspection reveals:

1) reinforced concrete pier (support) is damaged: cracks, chips, visible reinforcement;

2) integrity of banding, welds, bolted and riveted joints is broken, metal elements are torn off, metal is corroded;

3) the band of the reinforced concrete pylon to the wooden pylon is loose and the pylon is loose in the band during shaking;

4) the band of the reinforced-concrete pylon to the wooden pole is damaged;

5) the support is not vertical;

6) rotting of the wooden pylons is unacceptable;

7) burning and splitting of wooden parts;

8) cracks and damage on reinforced concrete supports.

14.9 It is forbidden to conduct work on the emergency pylons.

15 Determining the degree of rotting of wooden supports, piers and stanchions

15.1 Inspection along the entire length of the support is conducted by external inspection and tapping. Healthy wood is tapped with a resonant sound, rotten wood with a muffled sound. The inspection of the timber shall be conducted by means of a feeler gauge to check the rottenness of the timber.

15.2 Check the base of the support in the following sequence: excavate the support to a depth of 25-30 cm and carefully inspect the surface of the wood, and use a tapping device to determine the quality of the wood.

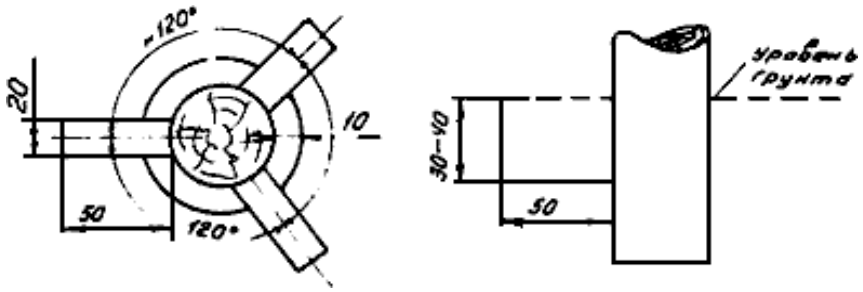

Figure 1 - Measuring the rotting depth of the support
(dimensions (cm) and position of the holes dug around the tower to determine the degree of rotting of the tower wood, below ground level)

15.3 If the support is rotten, use a feeler gauge to determine the depth of the rot. To do this, use a feeler gauge to make 3 punctures around the circumference and determine the depth of rot in centimetres. Then add the values obtained and divide the sum by 3 (number of punctures with the feeler gauge) to obtain the average rotting depth of the support.

15.4 Then measure the diameter of the support at the puncture point. From the results of the measurement, determine the climbing ability of the support by calculating the average rotting radius.

Rav = (R1 + R2 + R3) /3**,** where R1, R2, R3 **–** external rotting depth at 1, 2, 3 measurements.

Example calculation:

1) 3 punctures are made: 1 = 2 cm, 2 = 3 cm, 3 = 4 cm;
2) Rav = (R1 + R2 + R3) /3 = (2+3+4)/3 = 3 cm;

the diameter of the base of the support is measured and compared:
if Rav is more than 2.5 cm with a support diameter of 20 to 25 cm
or Rav more than 3 cm with a support diameter of 25 to 30 cm,
or Rav more than 4 cm with a support diamete of more than 30 cm,
it is forbidden to climb on this support!

15.5 In difficult terrain (mountains, marshes, etc.) and in unfavourable weather conditions (rain, snowfall), a minimum of two employees shall walk and inspect the OCL in accordance with the following requirements:

1) prior to the start of work, a target briefing will be held to familiarise employees with the specifics of working in the area;
2) employees are familiarized with the geographical scheme and features of the area, with the rules of orientation on the ground, the methods of working with a compass;
3) when walking around an unfamiliar and remote area, you shall take with you a map, compass, axe, knife, matches in a waterproof package and a supply of food for everyone. In the woods, make notches on trees so that they can be easily found;
4) all employees shall know the alarms (visible, audible) used when searching for a lost person.

Signals shall be set in advance.

Do not enter an avalanche risk area when the weather forecast is unfavourable: when it is warm, foggy, shortly after a snowfall or a heavy snowstorm.

15.6 In winter time, walking to areas remote from populated areas and public roads is allowed if necessary by a group of at least three people at a time and for a distance of up to 3 km.

15.7 When walking around, the employees shall have with them dielectric protective equipment: indicator, gloves, tools with insulating handles and warning signs or posters.

15.8 If a broken OCL is detected, touching the wires of a power line with a voltage of up to 1000 V, it is necessary:

1) take measures to prevent passing persons from coming into contact with the broken wire;

2) immediately report the wire breakage to the organisation that owns the power line and to the head of the production unit.

Do not repair the damage until contact with the power line wires has been repaired.

15.9 If a wire of an active power transmission line with a voltage of more than 1000 V is found broken and lying on the ground, it is necessary to immediately inform the organization to which the line belongs. In populated areas, it is necessary to warn the population about the hazard of approaching and touching a broken wire by installing warning signs or posters, if possible.

Do not come within 8 metres of the wire.

15.10 Night-time rounds are prohibited.

16 Accounting for emergency supports, attachments and backstops. Remedial action planning

16.1 The results of the inspection shall be entered on the form "inspection of supports", form F-KO is given in Annex C to these Regulations.

16.2 Based on the inspection of the supports, a plan for repair and elimination of emergency supports is drawn up.

17 Safety requirements when working with personal appliances

17.1 Work related to measurements with portable devices shall be conducted by a team consisting of at least two persons, one of whom shall be appointed as a head. The foreman shall have a qualification group of electrical safety at least IV (fourth), the members of the team - at least III (third).

17.2 The work with the measuring devices on the OCL shall be conducted taking into account the conditions of the work, requirements of these Regulations, as well as the instructions of the passport and operating instructions of the device.

17.3 During the measurements, the instrument housings made of dielectric material shall be reliably isolated from the ground, and the metal housings of the instruments and transformer housings shall be grounded.

17.4 Employees shall not come close to live parts when working with the devices.

17.5 To connect portable appliances and transformers, solid and stranded wires with insulation appropriate for the voltage of the circuit being measured shall be used.

17.6 Connecting and disconnecting portable measuring instruments which require breaking an energised circuit shall be conducted with the voltage disconnected.

17.7 It is allowed to connect and disconnect measuring instruments which do not require breaking the electric circuit under voltage with insulated wires with special lugs with insulating handles. The length of the insulating handle shall not be less than 200 mm.

17.8 Measurements on the OCL pole can be conducted by one employee standing on the claws and securely fastened by the belt to the pole.

17.9 Electrical measurements of OCL poles exposed to the hazards of power lines or electrified alternating current railways shall be conducted wearing dielectric gloves and dielectric galoshes or while standing on a dielectric mat.

It is forbidden to take measurements:

1) during a thunderstorm, rain, fog, snowfall;
2) standing on a ladder;
3) from supports with open earthing slopes.

18 Requirements for professional selection

18.1 Persons under 18 years of age shall not be allowed to work in the list of industries, professions and jobs where the employment of persons under 18 years of age is prohibited.

18.2 Pre-employment and periodical medical examinations of employees shall be conducted in accordance with the lists and terms established by the health authorities.

18.3 Employees shall be allowed to work after their safety training in accordance with the applicable regulations on the training of employees in safe working practices.

18.4 When carrying heavy weights, the maximum limit for manual handling of loads on a flat and horizontal surface per person shall not exceed:

1) for adolescents aged 16 to 18 - 16 kg;
2) for men over the age of 18 - 20 kg.

18.5 It is permitted to carry materials on a stretcher for a distance of not more than 50 m along a horizontal track.

18.6 Adolescents are allowed to carry weights if it is related to their main job and takes not more than 1/3 of all their working time.

18.7 Employees with a qualification group of at least III (third) electrical safety shall be allowed to perform independent maintenance work on OCLs with circuits carrying RPS voltage.

19 Requirements for the use of protective equipment

19.1 In order to warn the employees of the possible hazard, the signal colours and safety signs according to GOST 12.4.026 shall be applied.

19.2 Employees are provided with overall, special footwear and other personal protective equipment in accordance with the current norms of issuing special clothing, special footwear and other personal protective equipment to employees at the expense of the employer and the collective agreement.

19.3 Employees shall use personal and collective protective equipment provided by the employer as intended. If an employee is found to have deliberately failed to use personal and collective protective equipment, he/she shall be suspended from work. In the event of a repeated violation, the employee shall be referred for a second OSH knowledge test.

20 Liability for breaking the rules

20.1 There is personal liability for violations of the OCL Rules:

1) Employees directly involved in maintaining the OCL and conducting construction and repair works (for violations caused by their fault);
2) Heads and employees responsible for safe working practices (for violations caused by their fault).

20.2 Violation of these Rules and job descriptions shall entail disciplinary responsibility stipulated by internal documents of Kazakhtelecom JSC and the Labor Code of the Republic of Kazakhstan, as well as administrative or criminal responsibility established by the laws of the Republic of Kazakhstan.

20.3 Control over compliance with the requirements of these Rules is conducted by the direct head of the division conducting the work and the Occupational Safety and Health Service.

Annex A

(compulsory)

Indicative list of hazardous areas and activities on overhead lines

A.1 Installation, refurbishment and repair of OCL crossings with tram and trolleybus overhead wires and electrified railways.

A.2 Construction, refurbishment and repair of OCL crossings with railway and motorway tracks.

A.3 Working in the vicinity of OCL with overhead power lines (CL) of any voltage.

A.4 Working in the zone of influence and on lines affected by power lines.

A.5 Suspension and dismantling of wires on OCL affected by electrified railways.

A.6 Installation and replacement of poles, suspension and dismantling of wires, dismantling of lines in populated areas.

A.7Working at posts installed on steep and unfenced roofs, with no manhole, gangway or rope approach near the post, on house roofs over 10 metres high and on roofs covered with ice or a thin layer of snow.

A.8Work on construction machines near power lines.

A.9Mast crossing construction, replacement of termination, angle, cable and other complex supports.

A.10 Cutting of glades and cutting, felling and carrying timber, loading and unloading poles from railway platforms and vehicles.

A.11 Loading and unloading of reinforced concrete poles and attachments.

A.12 Digging pits to install supports near power cables, pipelines and other underground utilities.

Note - the list may be supplemented depending on the situation on the ground.

Annex C
(compulsory)
Inspection sheet for supports

Form F-KO

Branch_____

Structural units _____

Workshop/Site _____

CHECKLIST

for inspection of supports

№	Date of inspection	Support No.	address	Damage	To be replaced	To be strengthened	Performance note

Contractor (Full name, position)_____

Signature _____

Annex D

(compulsory)

Form for the technical inspection log of the OCL

Branch_____

Structural units _____

Workshop/Site _____

Form for the logbook of the technical inspection of the OCL

№	Date of inspection	Who inspected (position, surname)	Object of inspection and address	Deficiencies identified	Note

Annex E

(compulsory)

Technical requirements for scaffolding, horns, gauges for rotting inspection

Technical requirements for gouges, horns, feeler gauges for inspection of supports for rotting

E.1 Manual non-mechanized tools (gaffers, horns, feelers) shall be manufactured in accordance with the technical requirements of this Regulation.

E.2 Mechanical properties of metal heads of scourers, slings and gauges shall not be lower than steel grade 40-45 according to GOST 1050.

E.3 Tapered tubes for slings and scourers shall be made of steel grade ST.3 according to GOST 380-71.

E.4 Welds shall be even, without odd inclusions, overlaps and burnt metal.

E.5 Pointed part of gaff has to be thermal treated on the length not less than 50 mm. Hardness HRC 45-50.

E.6 Metal surfaces of tools shall be smooth, without cracks, hairs, films, dents, burrs, scale, rust and other defects that reduce the strength, degrade the appearance and performance of the tool.

E.7 The joining of the component parts shall be firm.

E.8 Horns and gaffes shall withstand a load of 200 kg without changing shape.

E.9 The shape and main dimensions of hand tools shall comply with the shape and dimensions shown in figures (D.1, D.2, D.3. of this annex.

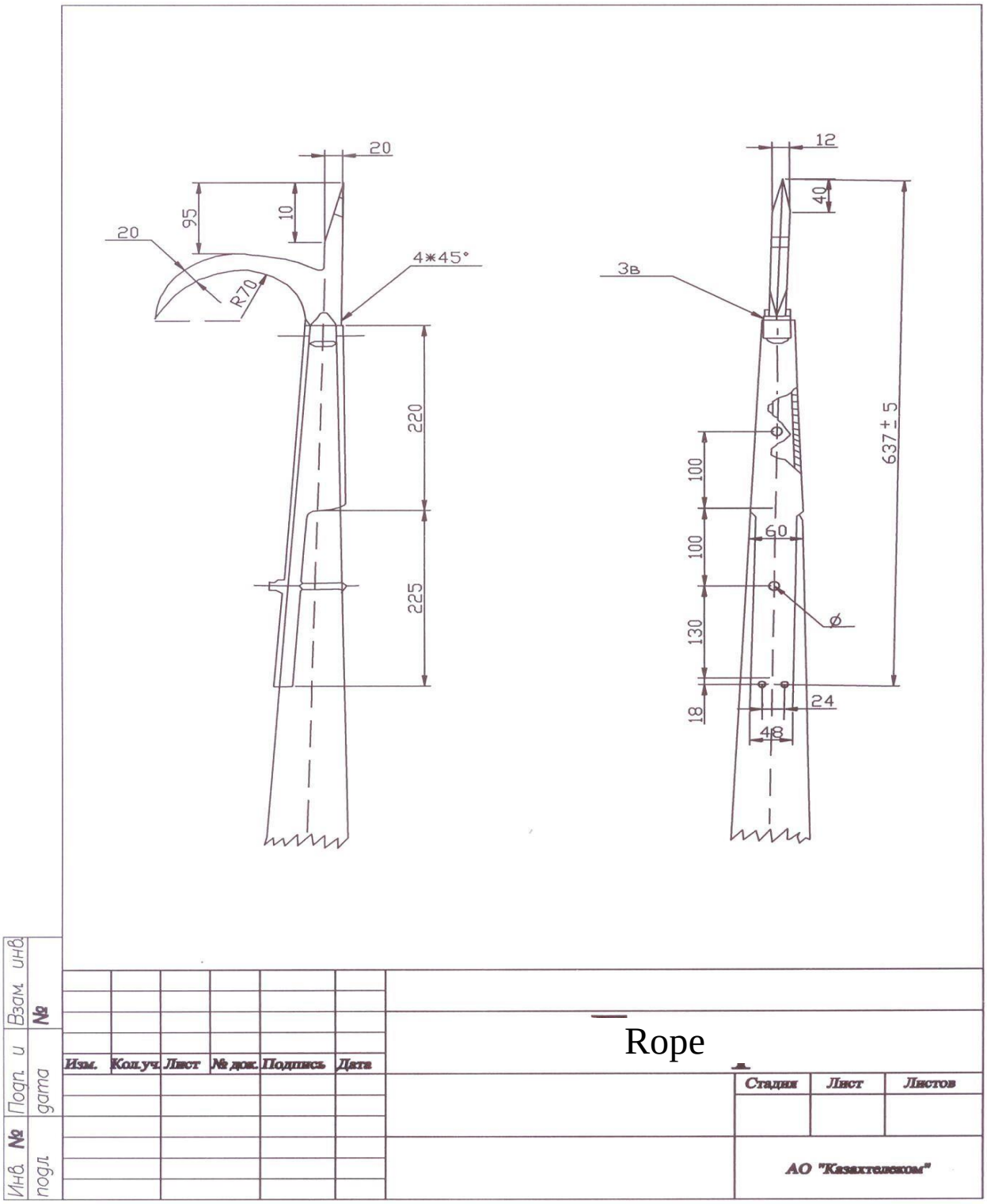

Figure D.1 - Rope

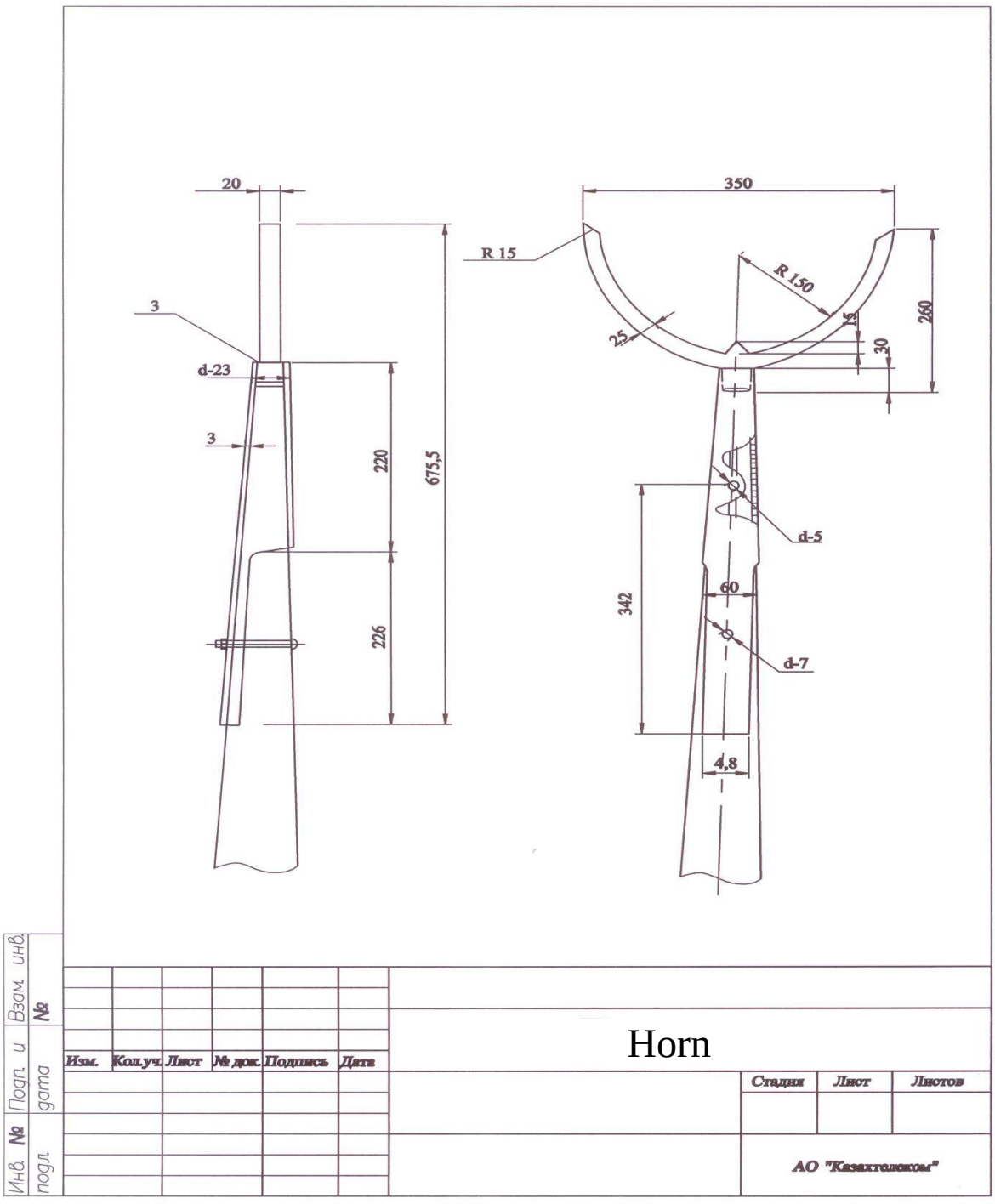

Figure D.2 - Horn

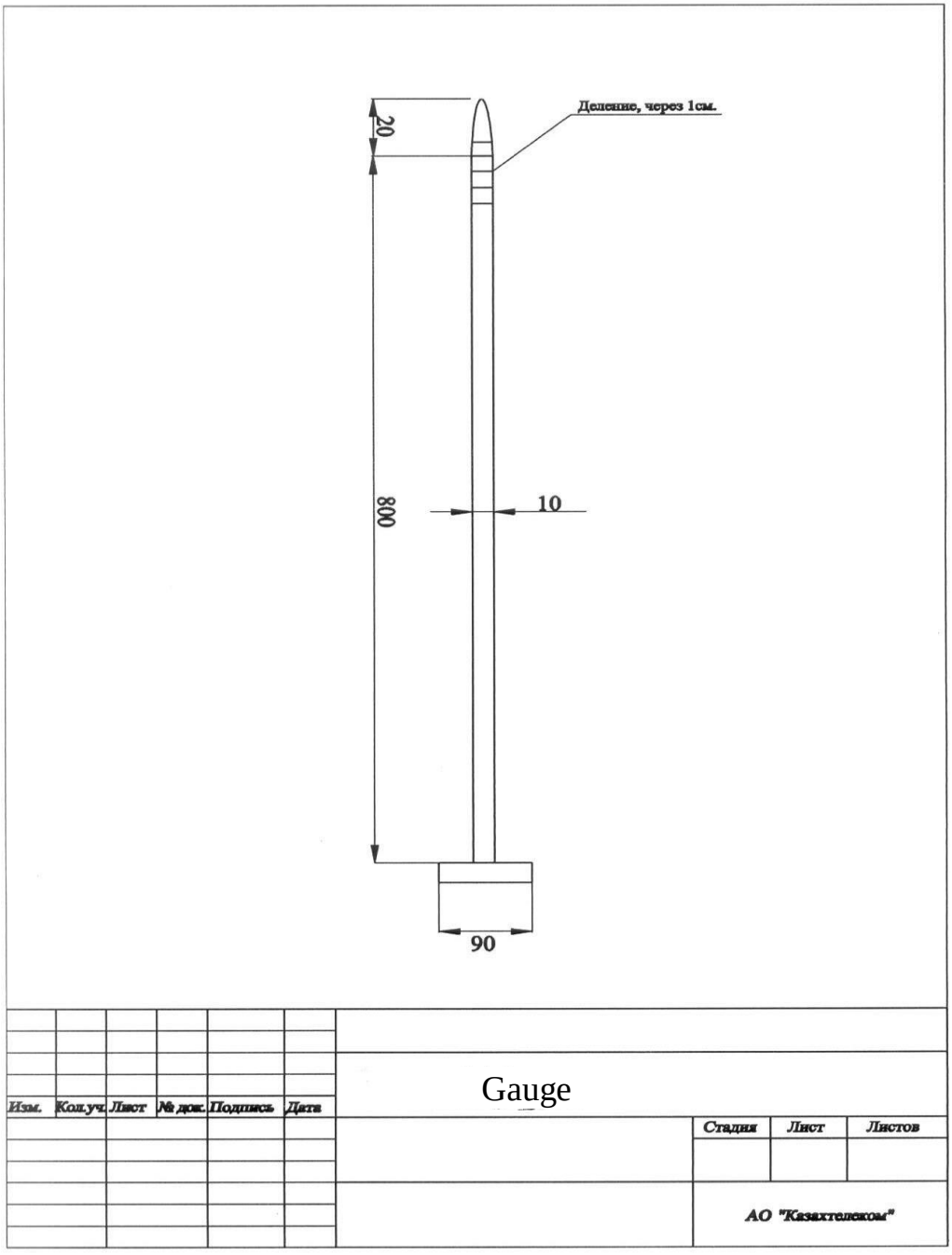

Figure D.3 - Metal feeler gauge for inspection of supports