

INDEPENDENT ENGINEER SUPERVISION OF WORKS

WEEKLY REPORT CW 50

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WEEKLY REPORT

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1 INTRODUCTION

1.1 PURPOSE

This document is issued on basis of the Independent Engineer Services contract signed between IPSA Institute, Government of Montenegro and Žičara Kotor - Lovćen Ltd. Podgorica, number 8854 (IPSA Institute), as a report on monitoring and supervision of works on construction of the Kotor – Lovćen Ropeway, on weekly level.

1.2 SCOPE

Overview of site activities is presented for each day of the current week.

2 ACTIVITIES PERFORMED DURING THE WEEK 50/22 (12.12.-18.12.)

2.1 MONDAY

- Bottom station building: Installation of the ground slab reinforcement inside the garage. Preparation of the ditch for the rain water dewatering system inside the garage. Backfilling and compaction inside the main building.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: Assembly of the tower.
- Tower W3: Pre-assembly activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: No activities.
- Tower W9: No activities.
- Tower W10: No activities.
- Tower W11: Preparation of the approach road.
- Tower S12: Excavations for the foundation.
- Tower S13: No activities.
- Tower S14: No activities.
- Tower S15: Preparation of the platform for the assembly.
- Tower S16: No activities.
- Tower S17: No activities.
- Tower S18: No activities.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: Placement of formwork and reinforcement for the ground floor slab of the administrative building and installation of reinforcement for the strip foundations (the upper part).

2.2 TUESDAY

- Bottom station building: Installation of reinforcement for the ground slab inside the garage. Installation of the rain water dewatering system pipes. Casting of the ground floor slab inside the main building. Backfilling.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: No activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: No activities.

- Tower W9: No activities.
- Tower W10: No activities.
- Tower W11: Preparation of the approach road.
- Tower S12: Excavations for the foundation.
- Tower S13: No activities.
- Tower S14: No activities.
- Tower S15: Preparation of the platform for the assembly.
- Tower S16: No activities.
- Tower S17: No activities.
- Tower S18: Assembly of the tower.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: Casting of the ground floor slab in the administrative building (lower part).

2.3 WEDNESDAY

- Bottom station building: Installation of reinforcement for the ground slab inside the garage. Casting of the ground floor slab between the axes B and H inside the main building.
- Bottom station: No activities.
- Tower R1: Pre-assembly activities.
- Tower S2: No activities.
- Tower W3: Pre-assembly activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: No activities.
- Tower W9: No activities.
- Tower W10: No activities.
- Tower W11: Preparation of the approach road.
- Tower S12: Excavations for the foundation.
- Tower S13: No activities.
- Tower S14: No activities.
- Tower S15: Preparation of the platform for the assembly.
- Tower S16: No activities.
- Tower S17: No activities.
- Tower S18: No activities.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: No activities.

2.4 THURSDAY

- Bottom station building: Further works on the installation of formwork and reinforcement for the basement walls of the main building. Installation of reinforcement for the ground slab inside the garage.

- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: No activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: Installation of the grounding system.
- Tower W9: Installation of the grounding system.
- Tower W10: No activities.
- Tower W11: Preparation of the approach road.
- Tower S12: Excavations for the foundation. Placement of the gravel underlay.
- Tower S13: No activities.
- Tower S14: Preparation of the platform for the assembly.
- Tower S15: Preparation of the platform for the assembly.
- Tower S16: No activities.
- Tower S17: Assembly of the tower.
- Tower S18: No activities.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: Further works on the ground floor slab of the administrative building.

2.5 FRIDAY

- Bottom station building: Placement of formwork and reinforcement for the basement walls of the main building (axis G). Installation of reinforcement for the ground slab inside the garage.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: No activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: Pre-assembly activities.
- Tower S8: No activities.
- Tower W9: Pre-assembly activities.
- Tower W10: No activities.
- Tower W11: Preparation of the approach.
- Tower S12: No activities.
- Tower S13: No activities.
- Tower S14: Preparation of the platform for the assembly.
- Tower S15: Preparation of the platform for the assembly.
- Tower S16: No activities.
- Tower S17: No activities.

- Tower S18: No activities.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: No activities.

2.6 SATURDAY

- Bottom station building: Placement of formwork and reinforcement for the basement walls of the main building (axis G). Installation of reinforcement for the ground slab inside the garage. Installation of anchors for steel columns in the central part of the garage.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: Assembly of the tower.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: Preparation of the platform for the assembly.
- Tower S8: Preparation of the platform for the assembly.
- Tower W9: Installation of the grounding system.
- Tower W10: Installation of the grounding system.
- Tower W11: Preparation of the approach road.
- Tower S12: No activities.
- Tower S13: No activities.
- Tower S14: Preparation of the platform for the assembly.
- Tower S15: No activities.
- Tower S16: No activities.
- Tower S17: No activities.
- Tower S18: No activities.
- Tower S19: No activities.
- Top station: Backfilling.
- Top station building: No activities.

2.7 SUNDAY

- Bottom station building: No activities.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: No activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: No activities.

- Tower W9: No activities.
- Tower W10: No activities.
- Tower W11: No activities.
- Tower S12: No activities.
- Tower S13: No activities.
- Tower S14: No activities.
- Tower S15: No activities.
- Tower S16: No activities.
- Tower S17: No activities.
- Tower S18: No activities.
- Tower S19: No activities.
- Top station: No activities.
- Top station building: No activities.

2.8 CURRENT STATUS OF WORKS ON THE GONDOLA LIFT

OVERVIEW OF THE CIVIL WORKS AND THE ASSEMBLY PROGRESS ON THE GONDOLA LIFT

T1: Approaches

T2: Excavations and arrangement of the bottom of the pit

T3: Construction of foundation slab

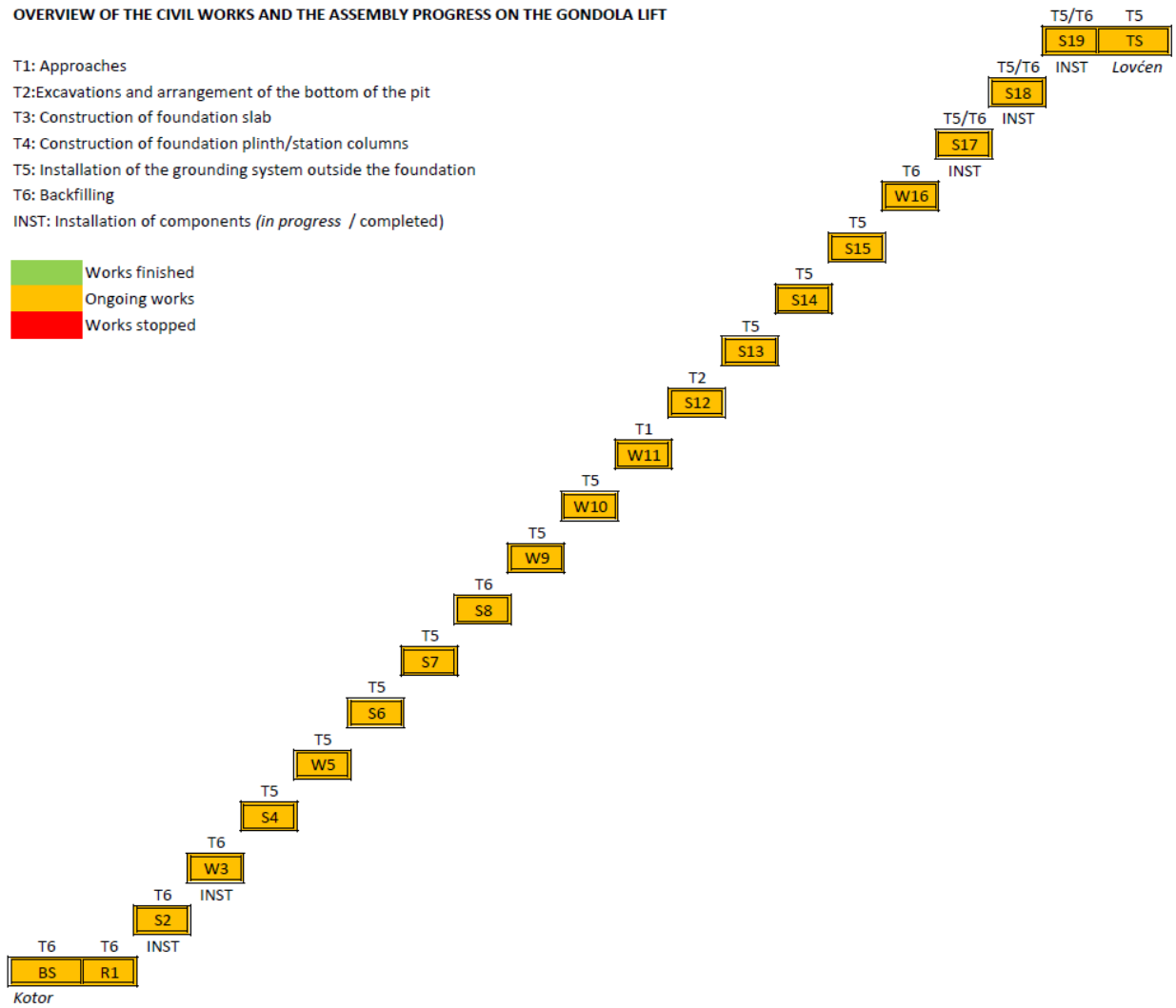
T4: Construction of foundation plinth/station columns

T5: Installation of the grounding system outside the foundation

T6: Backfilling

INST: Installation of components (*in progress / completed*)

- Works finished
- Ongoing works
- Works stopped



3 ACTIVITIES PLANNED FOR THE WEEK 51/22

- Bottom station building: Installation of anchor assemblies in the garage, placement of formwork and reinforcement for the attic wall of the garage. Grouting of anchors.
- Bottom station: No activities.
- Tower R1: No activities.
- Tower S2: No activities.
- Tower W3: No activities.
- Tower S4: No activities.
- Tower W5: No activities.
- Tower S6: No activities.
- Tower S7: No activities.
- Tower S8: No activities.
- Tower W9: No activities.
- Tower W10: No activities.
- Tower W11: Excavations for the foundation. Preparation of the gravel underlay.
- Tower S12: Preparation of the gravel underlay.
- Tower S13: Works on the improvement and testing of the grounding system.
- Tower S14: Works on the improvement and testing of the grounding system.
- Tower S15: Works on the improvement and testing of the grounding system. Preparation of platform for the assembly of the tower.
- Tower S16: Assembly of the tower.
- Tower S17: Works on the improvement and testing of the grounding system.
- Tower S18: Works on the improvement and testing of the grounding system.
- Tower S19: Works on the improvement and testing of the grounding system.
- Top station: Placement of formwork and reinforcement for the lower slab of the utility installations canal.
- Top station building: Further works on the side walls of the sanitary block.

4 HSE

- Personal protective equipment is not used by all workers present on the site.
- No other HSE incidents reported.

5 NON-CONFORMITIES

- There is no time schedule for the power lines and the power sub-station construction.
- The grounding system individual resistivity test failed for towers S15, S17, S18 and S19.
- The grounding system combined resistivity test failed for towers S17 to S19.

6 REMARKS AND PROPOSALS

- The missing schedules should be submitted as soon as possible.
- The grounding system for all towers with failed tests shall be improved in order to keep its resistivity below the prescribed limits. It's up to the Designer to propose proper measures for further reduction of the resistivity.
- Mixing of bentonite with natural soil makes its application for reduction of the soil resistivity less effective. Much better results are usually achieved when the grounding rope or band is embedded in a layer of wet bentonite and then backfilled. We recommend such an approach to be considered for the improvement of the grounding system.
- There should be at least 7 days of dry weather left before the execution of the grounding system on-site tests. Tests on the wet soil trigger wrong results.

7 PHOTOS



Bottom station

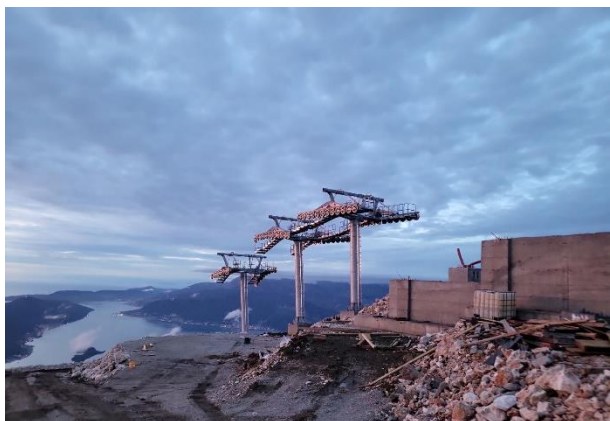


Towers S2 and S3



Tower S16





Towers S17, S18 and S19



Top station

