



EstBatLIFE project
„Improving the Pond Bat (*Myotis dasycneme*) habitats in Estonia“

Project Action A1
„Technical designs and building permits of project sites“

Deliverables:
„Technical design documentation“ and
„Construction drawings and building permits for conservation activities“

Content summary and list of documents for culvert placement in Piusa project site

Summary

As placement of culvert into Piusa cave tunnel to avoid closing of the tunnel in cave system in case of further collapse of the roof of the cave was not considered as the building work that needs to be notified, separate building note was not needed for that work. Documents needed were approval letter by Environment Board, as the cave system is part of the Piusa Nature Reserve; culvert manual with measurements and certificate on technical parameters of culvert, showing it is suitable for such tunnel; measurements of the part of the cave system where culvert is planned to be placed; tendering letter, price offers and best offer selection protocol as well as contract with builder and document on approval of the work by ELF.

Placed culvert system measurements were as follows: length 24m and inner diameter 2m. Culvert system consists of four culverts with length of 6m each that are attached together with unique locking system built already into culvert ends. Placement of culvert system took three days of work, starting with opening of the closest entrance from where there was safe enough to enter with culvert (look photo 1). Carrying culvert elements in and through the tunnel by pulling culvert with one and pushing with other small size four-wheel loader (look photos 2 and 3). After all four culvert elements were in place tunnel entrance was closed (look photo 4).



Photo 1. The opened entrance of the cave tunnel through which culvert elements were brought into the section with collapsing risk.



Photo 2. Preparation of pulling-pushing culvert elements with two small size four wheel loadres outside of the cave tunnel.



Photo 3. Pulling and pushing culvert elements with two small size four wheel loadres inside of the cave tunnel.



Photo 4. Closed entrance of the cave tunnel after the culvert system was placed.

List of delivered documents:

- EstBatLIFE Piusa turvtruubi paigaldus TVL J 100 2020 AKT.asice (08/10/2020) – Approvement document by ELF on placement work of culvert in Piusa, digitally signed by project manager, Lauri Klein and projekt manager from the side of construction company;
- EstBatLIFE Piusa turvtruubi paigaldus TVL J 100 2020 AKT.doc (08/10/2020) – Approvement document by ELF on placement work of culvert in Piusa, taken out from digitally signed container (look previous document);
- Kaitsekorralduslikke tegevuste kooskõlastamine (turvtruubi paigaldamine).asice (24/09/2020) – coordination (approvement) by Environmental Board for the placement of culvert in Piusa, sent and digitally signed by Environmental Board;
- KeA Vkiri Kaitsekorralduslikud tegevused Piusa LKA.pdf (24/09/2020) – coordination (approvement) by Environmental Board for the placement of culvert in Piusa, taken out from digitally signed container (look previous document);
- TVL J 100 2020.Piusa varinguvastaste ehitustööde leping Betoonkivi.asice (14/09/2020) – contract between of ELF and construction company, digitally signed by member of the board of ELF and member of a board of construction company;
- TVL J 100 2020.Piusa varinguvastaste ehitustööde leping Betoonkivi.docx (14/09/2020) – contract between of ELF and construction company, taken out from digitally signed container (look previous document);
- EstBatLIFE Piusa turvtruubi rajamise hanke protokoll 2020.asice (08/09/2020) – best offer selection protocol of the tendering process of culvert placement work in Piusa, digitally signed by project manager, Lauri Klein;
- EstBatLIFE Piusa turvtruubi rajamise hanke protokoll 2020.doc (20/07/2020) – best offer selection protocol of the tendering process of culvert placement work in Piusa, taken out from digitally signed container (look previous document);
- Piusa koopa truubi HP.pdf (17/07/2020) – Price offer by OÜ Kagumerk;
- Vastavusdeklar 2000mm SN8.pdf - certificate on technical parameters of culvert, showing it is suitable for such tunnel, proposed by Betoonkivi OÜ;
- krahest1112011.pdf – Krah-Pipes culvert manual with measurements proposed by Betoonkivi OÜ;
- Piusa.pdf (19/06/2020) – Price offer by Betoonkivi OÜ;
- Hinnapakumiste päring Piusa turvtruubile.pdf (09/06/2020)- Tendering letter on asking comparable price offers for culvert placement in Piusa caves;
- Varingukoha foto.pdf (02/06/2020) – a photo about the situation in cave tunnel section where culvert placement is needed, given as illustration with tendering letter;
- fragment pilvest 3.PNG (21/11/2019) – 3D model of the cave tunnel section where culvert is needed, given as illustration with tendering letter;
- Gr 2 Piusa koopad MAAALL 190911-kliendile191112.pdf;
Gr 3 Piusa koopad TOPO MAAALUSEGA 190911-kliendile191112.pdf;

Gr 5 Piusa koopad LOIKED 190911-kliendile191112.pdf (21/11/2019) – drawings of the cave tunnel system and section where culvert placement is needed;

- Lisa 2 Mõõdistatava ala ulatus.pdf (09/08/2019) – drawing of the cave tunnel section that was measured and 3D modelled at 2019 with marking of the tunnel section through which the culvert can be carried in, until the section of placement;
- Piusa varinguvastased turvatööd.jpg (17/07/2019) – Overview schema/drawing of the cave system where the culvert should be placed, given as an illustration with tendering letter.