



RESTORATION OF THE SOUTH GEDİZ DELTA WITH DERIVATION CHANNEL

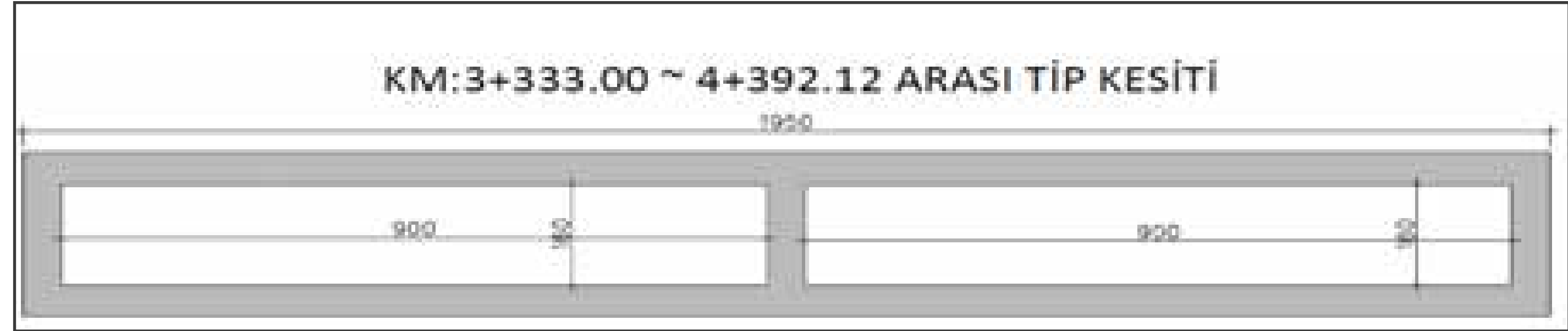
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1. Çiğli Advanced Biological Wastewater Treatment Plant

Constructed as a part of the Grand Canal Project, the Çiğli Advanced Biological Wastewater Treatment Plant, operates with a daily capacity of 604,800 m3/day. The ongoing revision works for the existing three phases of the facility will be completed in January 2024, while the construction of the fourth phase will be put into service in the summer of 2024. Once completed, the plant will reach a total capacity of 820,800 m3/day. The treated water discharged from the facility complies with the limits and standards of the Urban Wastewater Treatment Regulation and also meets the water standards suitable for ecological restoration

2. Closed-Channel

Two-chamber reinforced concrete box sections will be used between KM:3+333.00 and KM:4+392.12. The inner width of each chamber is 9m, and the inner height is 1.60m.

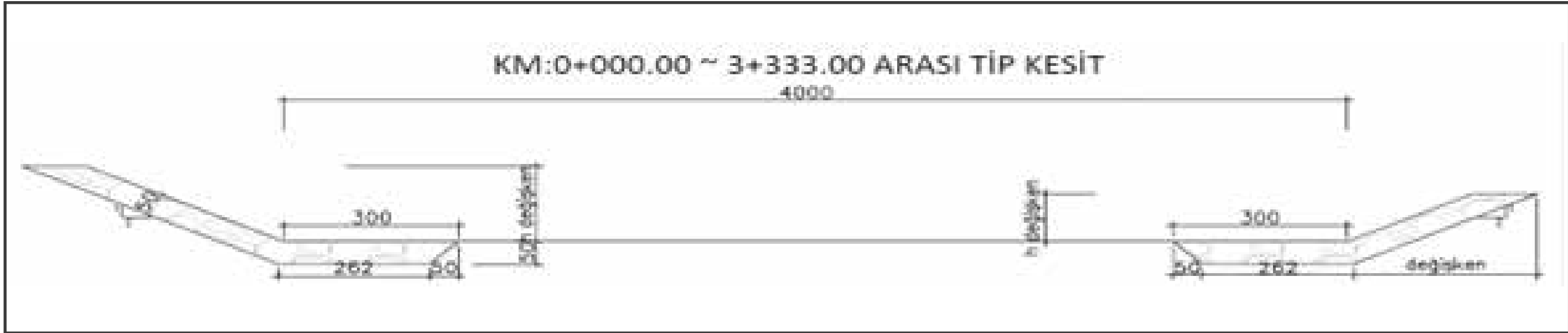


3. Open-Channel

In the trapezoidal channel bed with uncovered base, sloping sides covered with mortar stone pitching, a Manning value of 0.045 has been adopted. For the reinforced concrete channel, a Manning value of 0.014 has been adopted.



The trapezoidal channel, which starts at 0+000.00 km where it discharges into the Gediz River, continues up to 3+333.00 km (a length of 3333m). The slopes of the trapezoidal channel will be constructed with mortar stone pitching with a width of 50 cm. The channel base width is 40m. The channel height varies along the trapezoidal channel and extends up to the point where the slopes anchor to the terrain. The channel slopes are designed with a ratio of 2 horizontal to 1 vertical.



4. Capillary Channels

To ensure the Derivation Canal functions as a natural river, 7 capillary channels will be excavated along the canal. This will facilitate the spreading of the water flow into a wide area in the South Gediz Delta. As a result, areas previously under salinity pressure will receive fresh water, improving their health and condition.

5. Ecological Bridges

Three ecological bridges are planned on the Derivation Canal to facilitate the passage of fauna, particularly mammals. The tops of these bridges will be covered with material excavated from the canal, and they will be adorned with vegetation consisting of plants suitable for the region's ecosystem, giving them a natural form.

6. Aquatic Birds Breeding Area

At the point where the Derivation Canal meets with the Old Gediz Riverbed, a meander will be introduced to the canal, creating a small island within the streambed. It is anticipated that this area will particularly transform into a breeding ground for birds.

7. Channel Soil Storage Area

The soil from the excavation area where the Derivation Canal, consisting of open and closed channels, will be dug, will be utilized to cover the upper surface of the coastal embankment of Çilazmak Dalyan Restoration. Before being transferred to Çilazmak Dalyan, this valuable delta soil will be stored and protected in conical heaps using the bench terracing method.

8. Old Gediz Riverbed

In 1885, with the diversion and relocation of the bed of the Gediz River to Foça, the original bed of the Gediz River, meeting the Gulf, is referred to as "Old Gediz Riverbed." The Old Gediz Riverbed transports seawater approximately 5 kilometers inland from the sea, increasing the salinity of the region. With the Derivation Canal, freshwater inflow will be provided to this area.

9. Temporary Wetlands

The spread of freshwater into the area will be strengthened by capillary channels running south along the Derivation Canal. It is anticipated that both the water brought by these channels and the waters coming with rain will create seasonal temporary wetlands in some regions. These temporary wetlands will become important stations for many water birds.

