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SUPPLYING OVER FLOW WATER FROM RIVER FROM ARJUNWAD TO SOLAPUR THROUGH CANAL, AQUEDUCT AND TUNNEL.

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Abstract: -

Flood is one of the big problems in Sangli and Kolhapur district. In Kolhapur and Sangli district there are losses of life, public property and government property. At the same time another problem is there in Solapur district. i.e., It is affected by drought. To provide solution for these three districts, we are making this project as a solution on these problems. So, the project is **"Supplying overflow water from river through canal, tunnels & aqueduct."**

Introduction: -

Flood is a natural phenomenon, which occurs due to prolonged high intensity of rain. A flood is an overflow of water that submerges land that is usually dry. In the sense of "flowing water", the word may also be applied to the inflow of the tide. Floods are an area of study of the discipline hydrology and are of significant concern in agriculture, civil engineering and public health.

Losses due to flooding in Kolhapur and Sangli were **₹700 crore**. Electricity infrastructure worth ₹1,200 crore has been damaged, while damage to roads and bridges was over ₹1,500 crore. Crops across 338,000 hectares have been damaged in western Maharashtra and Konkan

Floods are often caused by heavy rainfall, a storm surge from a tropical cyclone or tsunami in coastal areas. ... River floods are caused when consistent rain or forces a river to exceed capacity.

So, we can reduce the risk of flood with

Supplying the over flow of water from river through canal

We use irrigation system for that,

1. Types of Irrigation

1.1 Surface irrigation.

1.2 Lift irrigation.

1.2 Surface irrigation:

The term "surface irrigation" refers to systems that deliver water to crops using a gravity-fed, overland flow of water. Surface irrigation conveyance and distribution systems are among the first engineering innovations of humans, dating back to more than 6,000 years ago. Three major types of surface irrigation are level basin, furrow, and border strip. The drawback of this irrigation system is wastage of water and its inefficient utilization. Where is surface irrigation used?

1.1Surface Irrigation

1.2 Lift irrigation:

Lift irrigation farming in India: The lift irrigation system is generally defined as the lifting of water from perennial sources of rivers with heavy capacity electric pumps and then distributed through the pipeline to nearby fields within its area in the flood plains of the river. Lift irrigation uses Lift Irrigation Systems. for transporting water from low levels to higher levels with the help of Water pumps & Pipes that are produces by kothari Group irrigation.

2. Pump House & Moter Pumps:

The pump-house will vary, depending on the type of pump used, the materials available and the capacity of the system. In general, the pump base should be built of concrete. Pre-cast concrete slabs are suitable for floors and walls of a cheap but efficient pump-house.

3. Moter Pump:

They are used for a variety of purposes. Pump is a mechanical device used to raise or move fluids using suction or pressure. The most common example of a pump is the windmill or a watermill to pump water. Motor is an electro-mechanical device that converts electrical energy into mechanical energy.

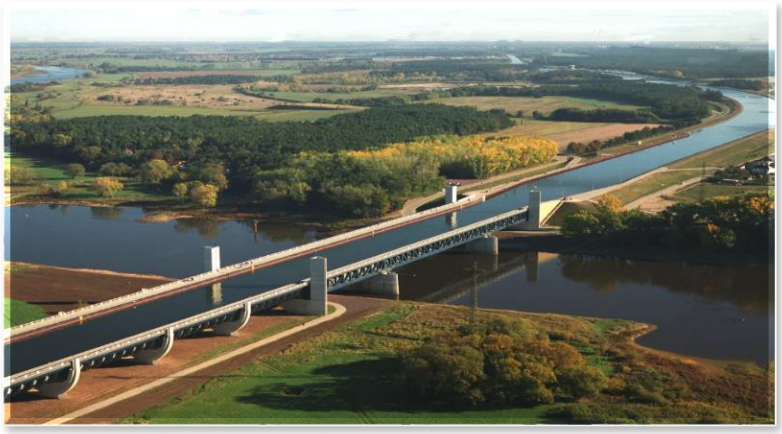
We are use the motor pumps for lifting and supply the water.

4. Gravity Canal:

Gravity or flow irrigation is the type of irrigation in which water is available at a higher level as to enable supply to the land by gravity flow. In flow irrigation water is supplied to the fields though the canals off taking from head works.

5. Aqueduct:

Aqueduct: An aqueduct is a structure in which the canal flows over the drainage and the flow of the drainage below is open channel flow. An aqueduct is similar to an ordinary, the canal is taken over the drainage instead of a road.



What is syphon in irrigation?

Siphon tubes are a basic implement used in irrigation to transfer water over a barrier (such as the bank of a raised irrigation canal), using the siphon principle. At the simplest they consist of a pipe with no working parts.

6. Tunnel:

A drainage tunnel, called an emissary in ancient contexts, is a tunnel or channel created to drain water, often from a stagnant or variable-depth body of water. It typically leads to a lower stream or river, or to a location where a pumping station can be economically run. What are the three types of tunnels?

There are three basic types of tunnel construction in common use: Cut-and-cover tunnel, constructed in a shallow trench and then covered over; Bored tunnel, constructed in situ, without removing the ground above. There are also Conveyance Tunnels and Traffic Tunnels.

Working Methodology: -

- Construction of wall across the river for screening water.
- Collection of water from screening to Tank(150'X80X150).
- Provided 1m dia. of Pipes from that tank to pump house.
- Construction of pump house, in this pump house total 10 to 12 pumps of 1000 to 1200 hp motor pumps are required.
- Provide 0.5m dia. pipe from each pump, then combine 5 pipes to one single tank and other 5 pipes to next tank.
- Construct simple gravity canal for supply of water from these two tanks.

- When RL is increased and Gravity canal not going to work at that point Excavate the 2-meter dia. of tunnel for water supply and provide 1m dia pipe in that tunnel.
- Provide vertical 0.5m dia. of pipes for receiving water from tunnel through 2 pumps of 500 hp
- Construct small storage of water tank for collecting water and supply that to second pump house.
- Construction pump house: in this pump house total 6 pumps 600 to 800 hp motors are provided.
- And then provide 0.5m dia. pipes for water supply to aqueduct.
- Construct of aqueduct: because, how we move on to Solapur, there RL is too much increase. So this aqueduct construct from Bolwad to nearby to Malewadi is required.
- Then again construct or excavate the 2-meter dia. of tunnel form aqueduct to Erandoli city.
- Then we again lifting water from tunnel through pipes with helps to 800 hp pumps of 2 motor pumps.
- Construct small storage of water tank for collect water and supply to third pump house.
- Then in Erandoli construct pump house: total 6 pumps of 600 to 800 hp motor pumps.
- Supplying water through 0.5m dia. pipes to aqueduct.
- Again, construct aqueduct from Kamadwadi to nearby Salagare city.
- And then construct gravity canal for supply water from to Salagare.
- Then we provide 2 pipes of 1m dia. and 0.5m dia pipe for each 1m pipe.
- In salagare city we provide electric city generator.
- Then again, we construct aqueduct from khilegaon to Dhabalpur,
  Then again construct or excavate the 2-meter dia. of tunnel form aqueduct to 3 km.
- Then provide 0.5m of dia. pipes for liftingh the water from tunnel with 2 pumps of 620hp motor pumps and water storage in storage tank. (There is total 4 pumps of 620hp).
- Construct the pump house.

- Then supply the water from storage tank to aqueduct with 4 pumps of 800hp motor pumps into 0.5m dia. pipes (There is total 8 pump).
- Construct Aqueduct on height 12m.
- Excavate the 2-meter dia. of tunnel for water supply.
- Then again provide 0.5m of dia. pipes for sucks the water from tunnel with 2 pumps of 620hp motor pumps and water storage in storage tank. (There is total 4 pumps of 620hp).
- Then supply the water from storage tank to aqueduct with 4 pumps of 800hp motor pumps into 0.5m dia. pipes (There is total 8 pump).
- Construct Aqueduct on height 12m.
- And when on hilly area not too much increase the RL then there excavate for the tunnel from Aqueduct to passing through to hilly another side of hilly.
- And supply the water through 1m dia. pipes from Jath (hilly area) to Solapur.
- Ther in Solapur construct the storage tank for collect water.
- Then construct the sub-canals for distribute water.

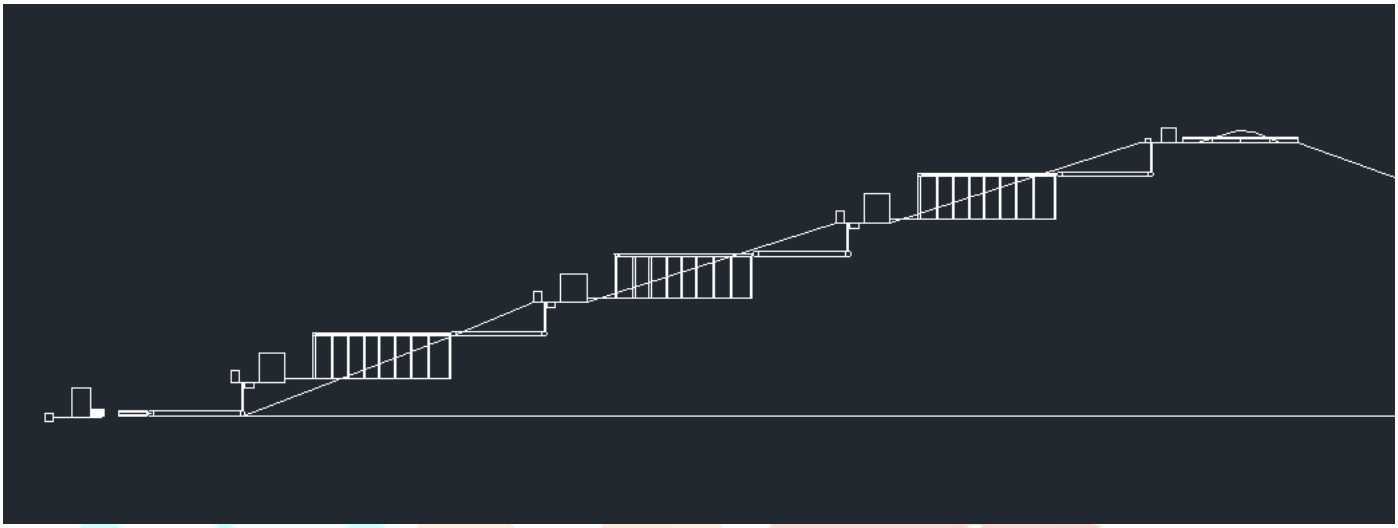
Design / Drawing / Development: -

1.Auto cad

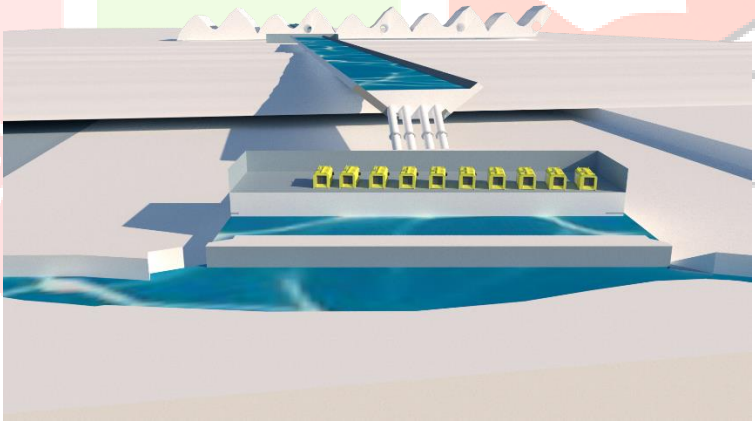
2.Sketch up

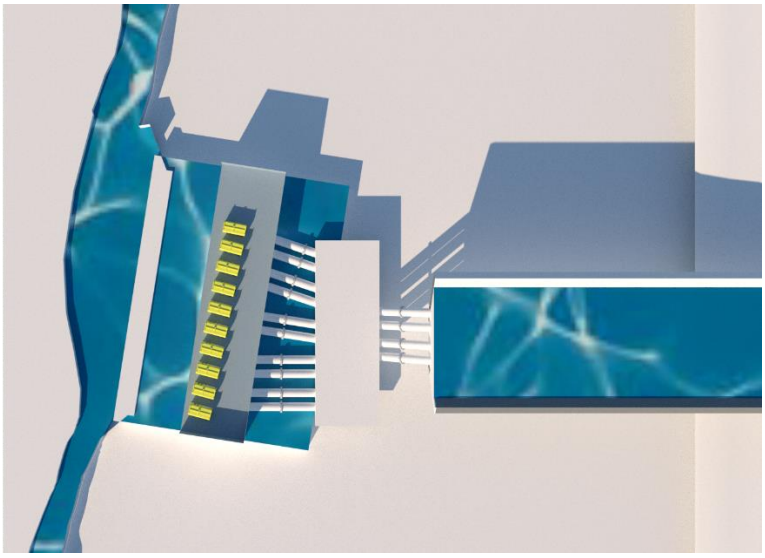
Are was used for Design & Drawing.

1. Auto cad :



2. SketchUp :





Conclusion:

This project is selected to give solution for, there is in Kolhapur and in sangli flood was come in every year and there is too much losses of government of maharashtra and public estate. According to preliminary estimates, losses to public and private properties are over ₹4,000 crore ($53,88,00,000). Losses due to flooding in Kolhapur and Sangli are ₹700 crore ($94,290,000). Electricity infrastructure worth ₹1,200 crore ($ 16,16,40,000) has been damaged, while damage to roads and bridges is over ₹1,500 crore ($202,050,000). Crops across 338,000 hectares have been damaged in western Maharashtra and Konkan

And another reason of this project is, in Solapur district there is drought area are there Solapur district is the most affected, with 250 villages and 1,613 hamlets and small villages facing drought. At least 5,65,794 people are affected by drought in Solapur.

So, this project is for reduce the risk of flood of water supply with help of pumps, canal, aqueduct, tunnel and pipes to reduce the drought area into Solapur. And we cost of this project is converted in to - this this flood losses and damaged drought area of farmers.

And there is only supplying the over flow of water from river and only in rainy season and when need of water for farm in Solapur district.

Future Scope: -

Scope of this project is study and reduce the risk of flood in sangli and Kolhapur district.

1. To study reasons of flooding in Krishna River basin and how to overcome.
2. Reduce the risk of flood
3. To find solutions to reduce the impact of flooding in Krishna River basin.
4. To reduce the losses of lives and infrastructures.

To ensure continuity of socio-economic activities.

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