International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 04 | Apr 2019 www.irjet.net p-ISSN: 2395-0072

Study of Conventional Drainage System

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Abstract - *The conventional drainage system, it is concept that solves the problems related to the waste water or flood water, sewage, etc. Which is provide the perfect solution to tackle the waste water through using different methods of management. Due to this we can reuse of this waste water for different purposes like agriculture, plants etc. This will also solve the problems on formation of potholes and pounds which damages the road surface and unsafe for transportation use. Disposal of waste water in an important process for our hydrological cycle.*

Key Words: drainage, waste water, road surface, pot holes, sewage.

1. INTRODUCTION

Conventional road surface drainage deals with the drainage of storm water runoff from the road surface and the surfaces adjacent to the road formation. Several elements can be used to intercept or capture this runoff and facilities its safe discharge to an appropriate receiving location. But the conventional road drainage system does not seem to be the perfect solution for road drainage and poses some problems.

The purpose of this paper is to study the conventional road drainage systems and to come up with an alternative approach for the same specifically for residential road, as usually road drainage system in residential been selected is not provide on residential in roads due to area restriction which results on coagulation of water on road surface creates an unsafe condition for it creates pot holes and damages the surface of road.

Drainage system are provided on road with the sealed joints to get the runoff coefficients which gives the better idea to find solution to waste water and land zoning. Erosion and sedimentation of road surface is due to improper management of drainage system. It should lead the excessive water in pavement and sub pavement and also failure of roads.

1.1 Conventional Drainage System: Conventional drainage system, it is system to maintain the objective of flood control, waste water, storm water, sewage, etc. in urban cities.

It is achieved to maintain the environment efficiency throughout each season by controlling flood water, waste water and effective rise in the runoff volume and velocity of water as well the flow peaks.

1.2 Types of Conventional Drainage System:

1.2.1Surface Drainage:

The open drainage usually used to discharge the waste water into drains to through the runoff it passes channel to channel towards treatment plant or agriculture purpose.

Fig.1- Open Drain

1.2.2 Sub-Surface Drainage:

It used to discharge the waste water and flood water through pipes into different formation to the treatment plant or agriculture use. It is also used in under-ground drainage system.

A) Culverts: It is structure may be made of pipe, reinforced concrete or steel material which collects and allow to flow through one side to another side passing similar obstruction.
B) Interceptor drain: It allows to collect the water and through channel and remove subsurface or surface water within permeable soil it flows across an impermeable soil layer.
C) Ground water pumps: These types of pumps are provided in ground to dewatering the subsurface and surface waste water easily throughout in channels.
D) Liner drainage channel: Linear drainage channels can be precast or formed in situ. They are set flush with the surface and contain a drainage conduit beneath the surface into which the surface water enters through slots or gratings. When used on shallow gradients they are prone to maintenance difficulties.

E) Gullies: The gully can be provided in the edge of the road pavement in which waste water and flood water can be through easily. It will access the sewage disposals to the drainage channel.

Fig.2- Culvert

Fig.3- Underground pipe Drain

Fig.4 Line Drainage Channel

Fig.5 Side entry Gully

1.3Problems on conventional Drainage System:

A) Contamination by faulty sewage
B) Excess sedimentation
C) Climate condition
D) Population
E) Unsettled ground profile
F) Invert and outer slopes.
G) Faulty land surveying.

The improper alignment of roads, solid waste disposals are leads to improper management of drainage system. Improper design which also affect the drain system. Different types of faulty soil survey and soil properties is also important factor in design failure.

3. CONCLUSIONS:

The problems occurring due to improper management and conditions give us a need to reform the conventional drainage system. It also helps us to identify the methods to follow perfect management to get better outcomes.

The problems should overcome due to perfect application on conventional drainage system. The drainage lines designed with perfect reference of data should be used to give better outcome. Avoiding the mistakes in management of road drainage system is used to correct them under the different government, act. Otherwise it will help to find the better path to find correct method or management to get good results in conventional drainage system.

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