

## Case Study



# Drainage System Design

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Development of  
Conceptual and  
Detailed Design



# Drainage System Design

## About Client

The client is a North American based engineering firm specializing in international planning, design, and construction management. The company has been providing full-service, multidisciplinary engineering services for projects across the globe and was among the first to do so in US

## Challenges

### ● ● Scope



The scope of the project involved development of Conceptual & Detailed Design of drainage system that included Hydrology, Hydraulic Calculation, Network Analysis & 3D Modeling of Pipe Network, Substructure, Infiltration Trench/ Soak away, Open Drain Channel, Detention & Retention Pond, Swale & Culverts. Civil3D, Storm Cad, Sewer Gems, Flow Master, Culvert Master & Manual calculation Spread Sheets were to be used.

## Solutions

The TAAL Tech team started with analysis of Topographical, Geotechnical, Hydrological, utility services data for Catchment area identification and planning. This was followed by finalizing the Design Criteria viz. Return Period, rainfall intensity etc. Hydrology and Hydraulic analysis was carried out next to develop the drainage Plan & Profile based on Road geometry and placing of Inlet structures based on catchment area & Inlet Capacity. The team then proceeded to design of Sustainable Structures viz. Infiltration trench, Detention/Retention Ponds, Swale and design of Major and Minor Culverts, Swales and other drainage elements based on calculated discharge. The entire design was analyzed for any form of clash and Clash Detection Report was generated. The team finally generated the 2D Conceptual Drawing and Shop Drawings, Standard Drawings.

## Benefits

### ●● Results



The domain expertise exhibited by the team helped in quick turnaround time of the complete Drainage System Design along with the Drainage Design Report, Network Model and Technical Specifications.

The client was able to leverage the reduced cost of providing a fairly complex design service with good quality