

SUVERY ENGINEERING REPORT

WATER RESOURCE ENGINEERING

KHALWA MICRO LIFT IRRIGATION SCHEME SURVEY REPORT

NAME OF WORK

Execution of Khalwa Micro Lift *Irrigation* Scheme on “Turnkey” basis comprising of lifting of 11.22 cumecs water for irrigation in 35,000 hectares from Submergence of ISP reservoir for providing water with Micro-irrigation up to 2.5-hectare chak with residual head of 23 meters at 2.5-hectare chak.



PREPARED BY

PHANS4 CONSULTING PVT LTD

INTRODUCTION

Execution of Khalwa Micro Lift Irrigation Scheme on “Turnkey” basis comprising of lifting of 11.22 cumecs water for irrigation in 35,000 hectares from Submergence of ISP reservoir for providing water with Micro-irrigation up to 2.5-hectare chak with residual head of 23 meters at 2.5-hectare chak. This includes work of survey, planning, design, drawing, estimation, Land acquisition/purchase, preparation and obtaining all statutory clearance, shifting and reinstallation of existing H.T. and L.T. electrical lines, Telephones lines, water supply lines etc. execution and installation of electric lines from M.P.P.K.V.V.C.L. substation to various pumping stations with all clearances from statutory authorities. Supply, installation and testing of suitable pumps and motor with related electrical components including regulation and control of complete system by SCADA, construction of pump houses, control rooms, rising mains, gravity mains, break pressure tanks and all inline structures including road crossing of highway and other roads, pipe line etc. with all clearances from the respective authorities, supplying and fixing of miscellaneous accessories of pump houses, rising mains etc. construction of underground piped main canal and distribution network up to 2.5 ha. chak for culturable command area, construction of residential and non-residential buildings with approach roads, internal roads at the pump house locations, preparation of all relevant documents for constitution of Water User Association of command area including establishment of Farm Services Centre, Farmer Field Schools and Demonstration sites and all other miscellaneous works related to entire system as directed by Engineer-In-charge during construction. Power consumption (including all types of power) in the whole system should not exceed 31.04 MW at the time of commissioning and 32 MW in 15 years lifetime, Commissioning of the entire system and operation and maintenance of complete commissioned system for 60 months.

SURVEY ENGINEERING SCOPE

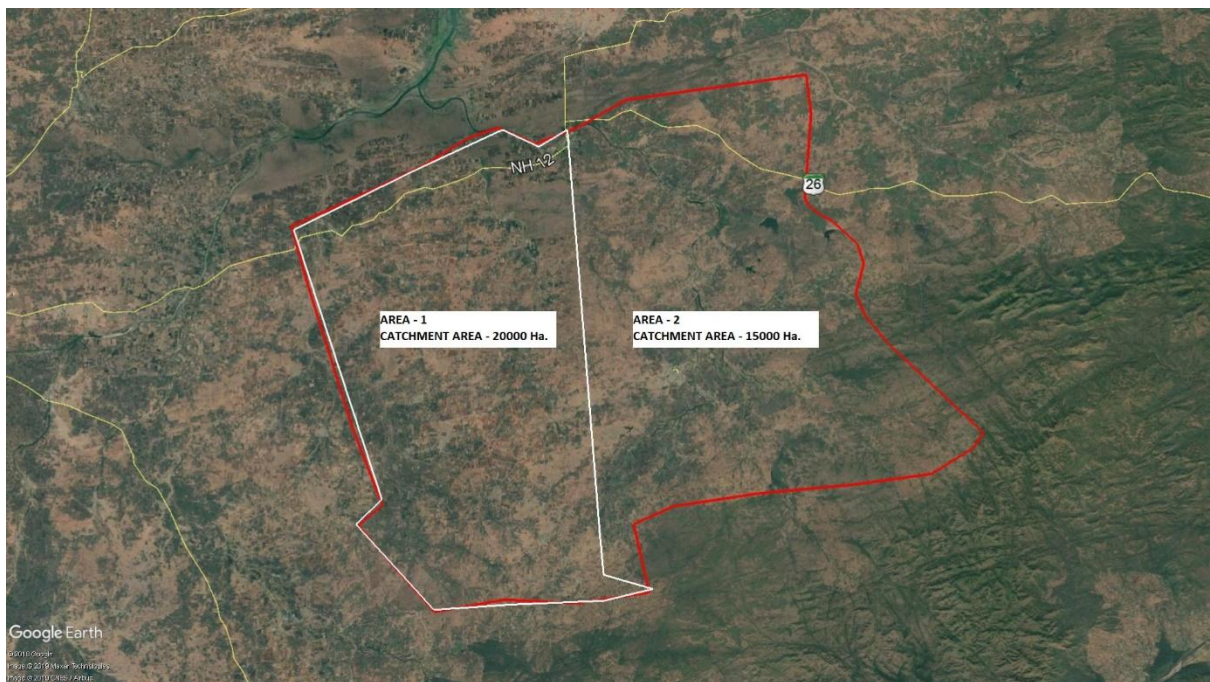
DPR for Surveying and Investigation of topographical survey using DGPS and Total Station for the lift irrigation water supply and preparation of GIS mapping for precision which may be used for feasibility and detailed engineering and other works like

- **Site investigations**
- **Marking GCP with DGPS**
- **Marking points with Total Station**
- **Data Processing**
- **Preparation of Base Map**
- **Geo referencing**
- **Generating Satellite Imagery**
- **Preparation of contours**
- **Preparation of Topographical Maps**
- **Generating L section of Pipelines**
- **Site Inventory Reporting**
- **Coordinates of Water Bodies**
- **Preparation of Maps and Drawings**
- **L Section for Rising and Gravity Pipeline**
- **Final Documentation Reports**

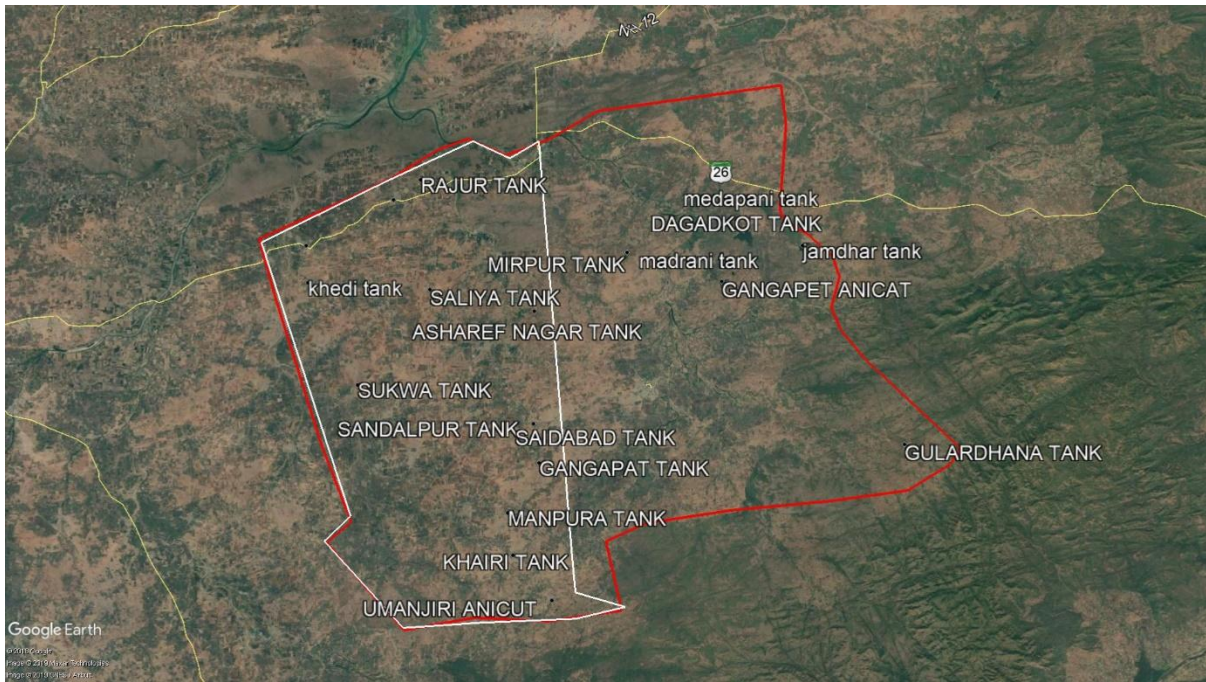
GCA OF 35,000 HA BOUNDARY



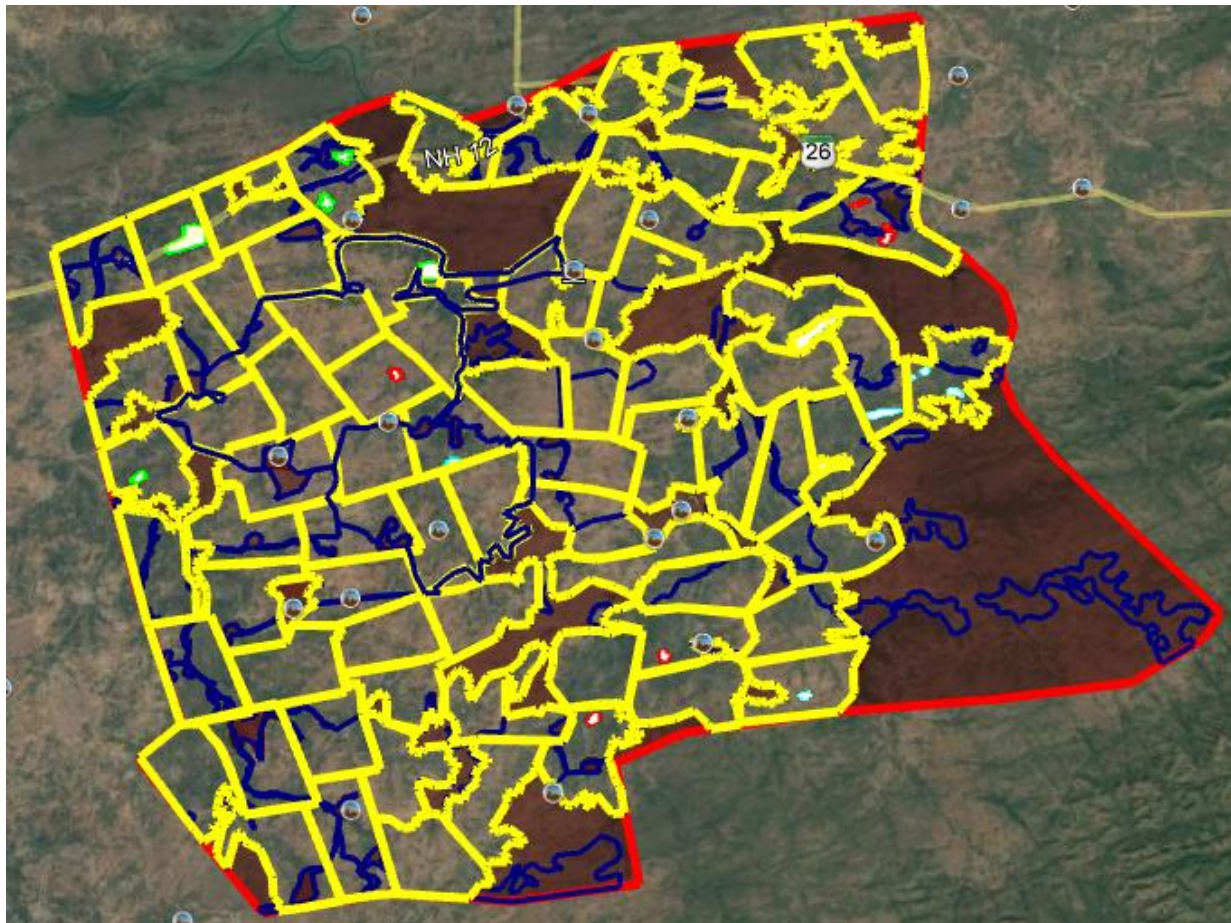
CCA BORDERS



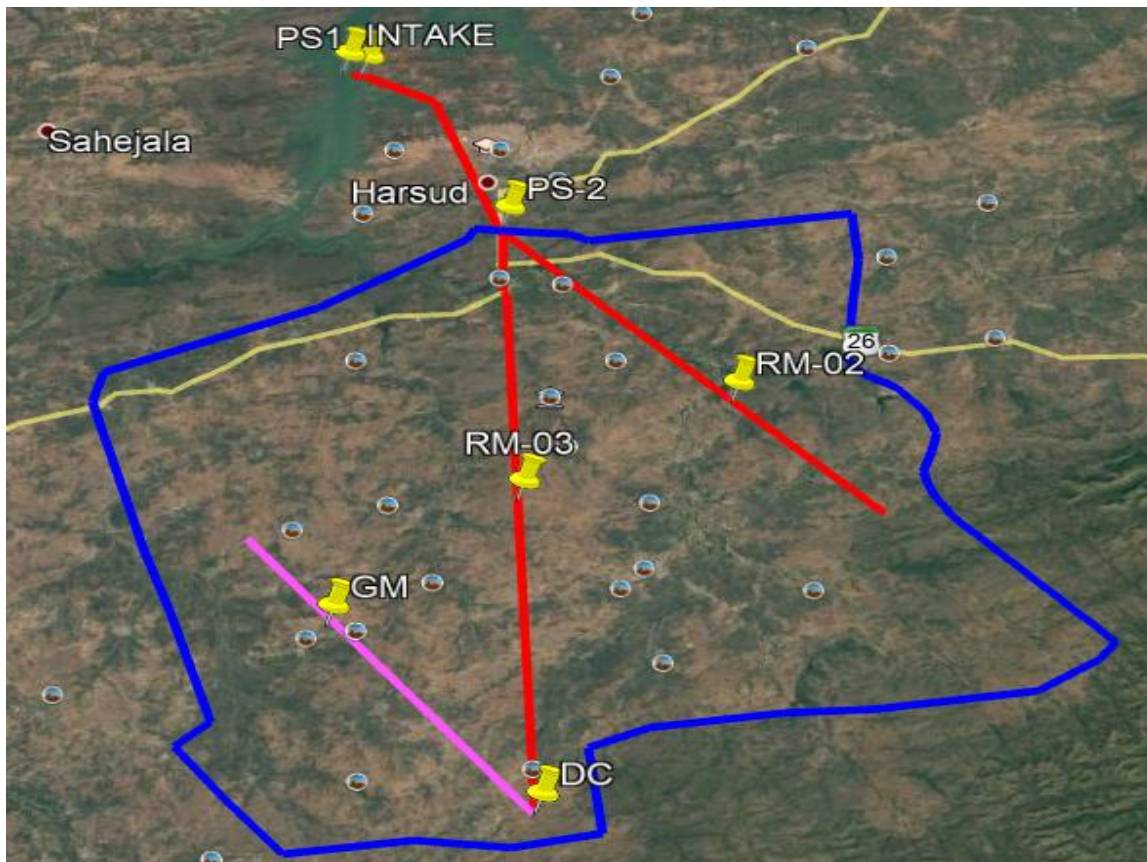
TANK LOCATIONS



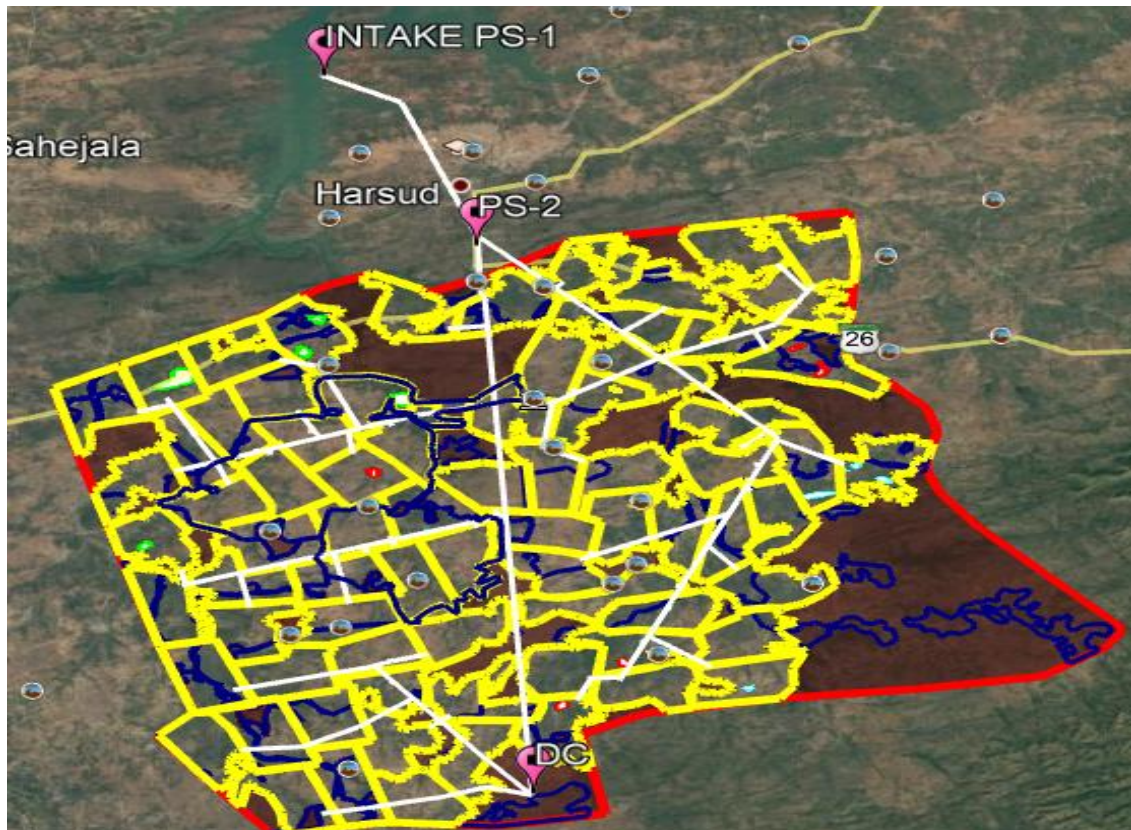
COMMAND AREA 500HA BOUNDARY



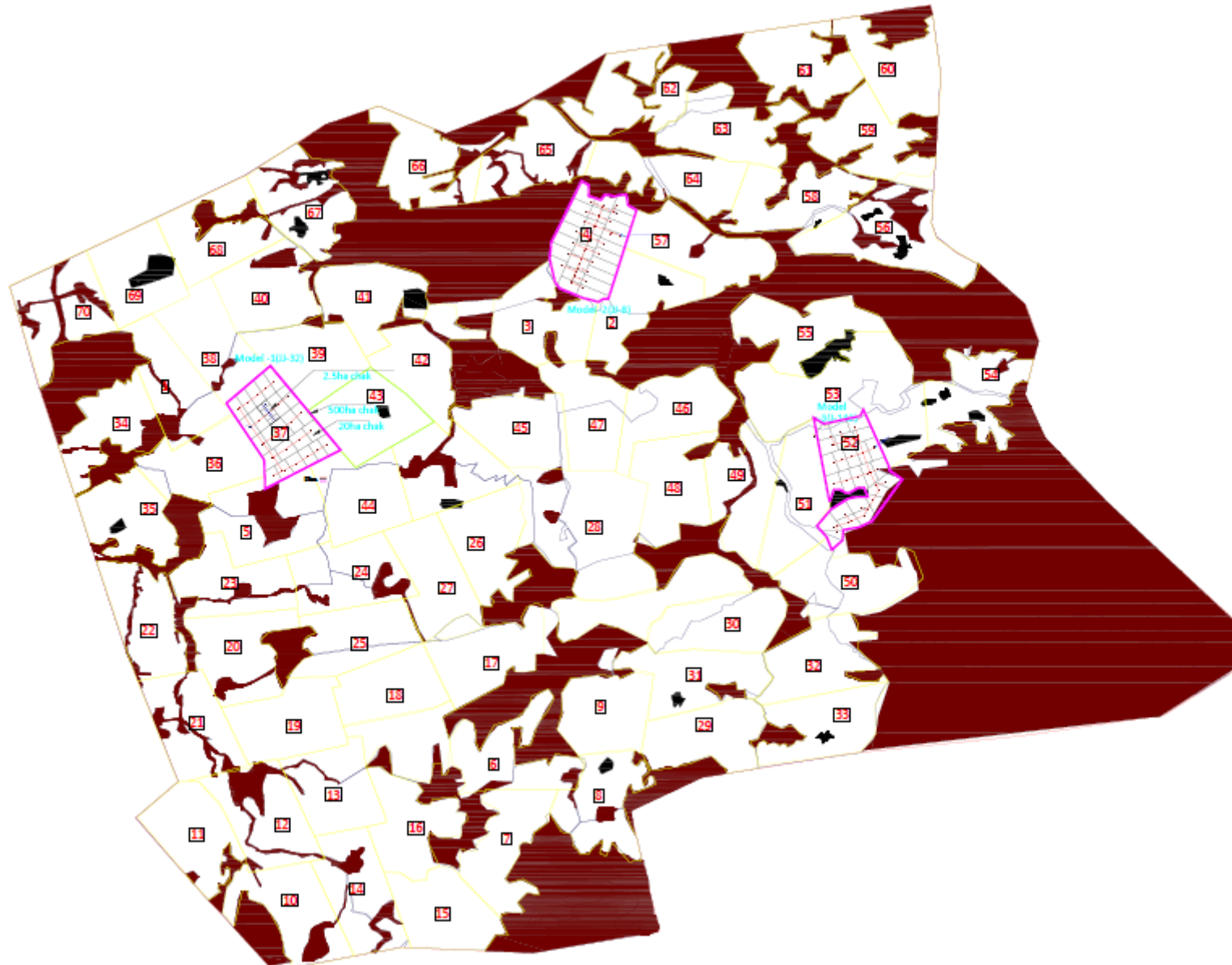
INTAKE TO PUMPING STATION COORDINATES



TOTAL PIPELINE



LAND PARCEL FOR THE IRRIGATION WATER SUPPLY



PHANS4 CONSULTING PVT. LTD.



COMPANY PROFILE - GLOBAL ENGINEERING CONSULTANCY
HYDERABAD - INDIA

COMPANY PROFILE



ABOUT US: -

- ▶ PHANS4 is engaged in global consulting solutions, where we combine classic management consulting with outstanding technological expertise. For more than 10 years, we have been supporting companies around, through various consulting services to improve the sustainability of their competitiveness and performance capabilities along the entire value chain with the aid of innovative technologies.

VISION: -

- ▶ PHANS4 CONSULTING PRIVATE LIMITED is a global diversified company with a network of workforce committed to the growth of your business through innovation which strikes for sustainable development of your business.

CONSULTING SECTORS

- ▶ PHANS4 CONSULTING services are carried out in sectors like : - Water Resource & Irrigation, Roads and Highway, Bridges, Railways, Ports, Oil & Gas, Special Economic Zones, Agriculture etc.



WATER SECTOR

WE DEAL

Rural
Water
Supply and
Sanitation

lift
Irrigation
Schemes

Drip &
Sprinkler
Irrigation

Dam &
Marine
Structures

Treatment
Plants

Storm
Water
Drainage
System

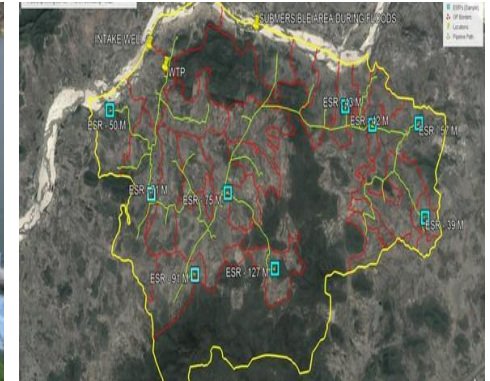
Lake
Development

RURAL WATER SUPPLY SANITATION

- ▶ Population growth in India is putting tremendous pressure on existing water systems to supply water to both urban and rural area in terms of quality and quantity requirement. PHANS4 CONSULTING has designed efficient rural piped water supply consulting solutions to meet the requirements of the country. Our experienced Engineers draws a lot of strategies and best technologies to the projects.

CONSULTING SERVICES

- Pre bid engineering
- Water demand studies
- Site survey and investigations
- Raw water intake pump calculations
- Master balancing reservoir (MBR)
- Water treatment plant design
- Hydraulics Design
- Capacity calculations
- Elevated service reservoirs
- Distribution pipeline networks
- Electrical, Mechanical & Instrumentation (BOQ)
- Power (Substation design, Transmission line etc)
- SCADA, PLC, RTU's - Control Panels
- Operations & Maintenance

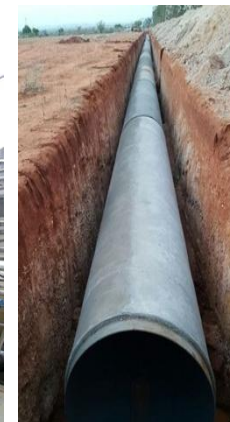
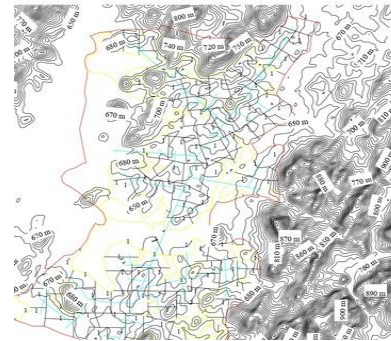


LIFT IRRIGATION

- ▶ Phans4 is engaged in projects involved in water sector such as EPC of lift Irrigation system to supply water through pressurized pipeline system for lift irrigation (Drip/Sprinkler) to deliver at farmers filed at respective chak's, also including survey, investigation, designing, drawing, procurement, construction of pump houses, laying, of rising /gravity mains, main lines, branch lines, distribution network (500/20/2.5 Ha Chak), controlling and regulation system with SCADA and Management operations and maintenance.

CONSULTING SERVICES

- Tender Support (Pre-bid Review, Meetings, Queries, Bid submissions)
- GIS Mapping (Watershed, Contours, Mapping)
- Survey and Investigations Intake systems
- Pump House design and selection
- Rising Mains/Pressure Mains (DI, MS Pipes)
- Gravity mains (DI,MS pipes, HDPE)
- Delivery Chamber/BPT
- Distribution network planning
- Control and Instrumentation design of entire scheme
- Major and Minor outlets with Locations
- BOQ's (Electrical & Mechanical)
- Project management consulting



DRIP/SPRINKLER IRRIGATION

- ▶ Phans4is engaged in projects involved in water sector such as micro-irrigation through **Drip/ Sprinkler** with subsurface and surface sources with components designed for pumps, water filters, backwash, pressure control valves, emitting designs with the principle idea of matching the farm's conditions and designing the most reliable, efficient and cost-effective scale per acre.

CONSULTING SERVICES

- Pre Bid Engineering
- Site Survey & Investigations
- Soil Type and Usage Classification
- Water source and Intake Point
- Crop Pattern & Climate Study
- Water Requirements' as per Crop
- Hydraulics Design (Drip/Sprinkler)
- Pump house & Storage of water
- Selection of Drip Irrigation System (Drip Pipe, Lines, Drippers, Fitters, Valves)
- Selection of Sprinkler Irrigation System (Pipes, Sprays, Foggers, Overhead)

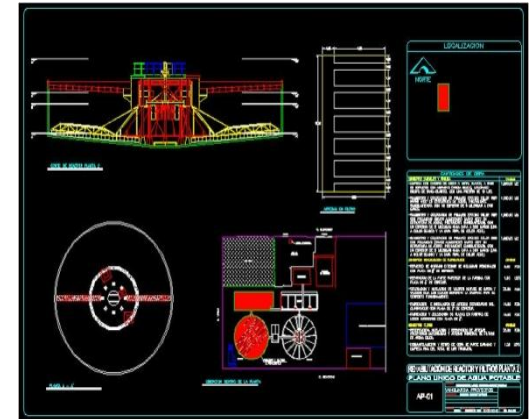


TREATMENT PLANTS

- ▶ Our engineers have proven experience and been independent consultancy on water and wastewater treatment in enhancing the efficiency of the plant while adding extra safety to the environment. PHANS4 has focused on improving operational flexibility and reliability mastered the design and development of efficient systems for industrial water treatment and effluent treatment plants.

CONSULTING SERVICES

- Site Study & Design engineering
- Identification of technologies
- Preparation of feasibility study (WTP, ETP)
- Detailed project reports (WTP, ETP)
- Transaction advisory services (WTP,ETP)
- Source Survey
- Water quality report (pH, TDS, TSS, Hardness, Cl, SO4, Turbidity, COD)
- Design and Supply and Erection and Commissioning of WTP, ETP
- Operations and Maintenance (WTP, ETP)

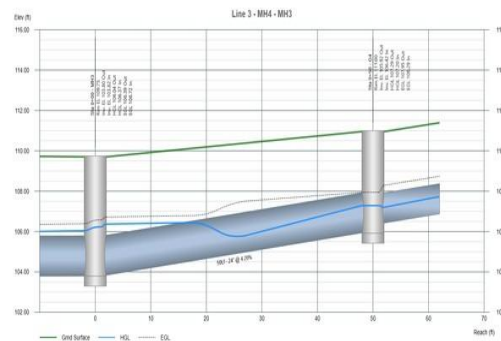


STORM WATER MANAGEMENT

- ▶ Storm water management is the effort to reduce the runoff of rainwater and improvement of water quality. Together we provide a greater understanding of the characteristics of storm water run-off, sediment detention design, water quality impacts and management of non-storm water potential pollutant sources. Over the years PHANS4 CONSULTING has developed design models for efficient storm water drainage systems for various government bodies, SEZ's, Real-estate projects, ports across India.

CONSULTING SERVICES

- Identifying the urban flooded areas using the latest technologies
- Data collections
- Conducting surveys and investigations
- Watershed Management
- Preparation of storm water drainage network
- Hydraulic designs of storm water drainage
- Manholes locations
- Downstream Calculations
- Pumping of storm runoffs
- Outfall structures and natural streams
- Conducting rainfall analysis
- Design of rainwater harvesting systems



LAKE DEVELOPEMENT

- ▶ Phans4 has proven expertise in lake development and consulting right from lake rejuvenation and beautification to revenue making. Our expertise is as follows.

CONSULTING SERVICES

- Detailed project reports
- Water Quality Analysis
- Inflow Channels
- Contours Survey
- Beautification of lakes
- Bund improvements & Pitching work
- Gravity main pipeline network
- Topographical survey maps of the area Village map
- Tank details & Rainfall details
- Reconnaissance survey for tank silt
- Bund details & Waste weir details
- Preparation of preliminary designs
- Drawings & detail estimates
- Improvements of tanks
- Waste weir
- Structures detail design



CONTACT

“

PHANS4 CONSULTING PVT. LTD.

#703, Dega Towers, Rajbhavan Road
Somajiguda, Hyderabad, Telangana 500082.

Website – www.phans4.com

Email - business@phans4.com

Mobile - +91 78 42 43 0123

”

