



DETAILS PROJECT REPORT



Anneki Hetampur District Haridwar (Uttarakhand)

Architect Signature
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PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 0008 Date 13/11/2018
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Proposed Pradhan Mantri Awas yojana Anneki Hetampur, Uttarakhand

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PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand : 249402

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ABBREVIATIONS

A&OE	Administrative and Other Expenses
AHP	Affordable Housing in Partnership
AIP	Annual Implementation Plan
BMTPC	Building Materials & Technology Pro-motion Council
CDP	City Development Plan
CLS	Credit linked subsidy
CNA	Central Nodal Agencies
CPHEEO	Central Public Health and Environmen-tal Engineering Organisation
CSMC	Central Sanctioning and Monitoring Committee
DIPP	Department of Industrial Policy and Promotion
DPR	Detailed Project Report
EMI	Equated Monthly Instalment
EWS	Economically Weaker Section
FAR	Floor Area Ratio
FSI	Floor Space Index
HFA	Housing for All
HFAPOA	Housing for All Plan of Action
HUDCO	Housing and Urban Development Corporation
IEC	Information Education & Communica-tion
IFD	Integrated Finance Division
IIT	Indian Institute of Technology
IS	Indian Standard
LG	Low Income Group
MD	Mission Directorate
MoA	Memorandum of Agreement
MoHUPA	Ministry of Housing and Urban Pov-erty Alleviation
MoU	Memorandum of Understanding
NA	Non Agricultural (NA)
NBC	National Building Code
NHB	National Housing Bank
NOC	No Objection Certificate
NPV	Net Present Value
PLI	Primary Lending Institution
RWA	Residents' Welfare Association
SECC	Socio Economic and Caste Census
SFCPOA	Slum Free City Plan of Action
SLAC	State Level Appraisal Committee
SLNA	State level Nodal Agencies
SLSMC	State Level Sanctioning and Monitoring Committee
TDR	Transfer of Development Rights
TPQMA	Third Party Quality Monitoring Agency
ULB	Urban Local Body
UT	Union Territory



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Definitions for the purpose of the mission

Affordable Housing Project	Housing projects where 35% of the houses are constructed for EWS category
Beneficiary	A beneficiary family will comprise husband, wife and unmarried children. The beneficiary family should not own a pucca house (an all weather dwelling unit) either in his/her name or in the name of any member of his/her family in any part of India.
Carpet Area	Area enclosed within the walls, actual area to lay the carpet. This area does not include the thickness of the inner walls
Central Nodal Agencies	Nodal Agencies identified by Ministry for the purposes of implementation of Credit linked subsidy component of the mission
Economically Weaker Section (EWS):	EWS households are defined as households having an annual income up to Rs.3,00,000 (Rupees Three Lakhs). States/UTs shall have the flexibility to re-define the annual income criteria as per local conditions in consultation with the Centre.
EWS House	An all weather single unit or a unit in a multi-storied super structure having carpet area of upto 30 sq. m. with adequate basic civic services and infrastructure services like toilet, water, electricity etc. States can determine the area of EWS as per their local needs with information to Ministry
"Floor Area Ratio" (FAR)/FSI	The quotient obtained by dividing the total covered area (plinth area) on all the floors by the area of the plot: $\text{FAR} = \frac{\text{Total covered area on all the floors} \times 100}{\text{Plot area}}$ If States/Cities have some variations in this definition, State/City definitions will be accepted under the mission
Implementing Agencies	Implementing agencies are the agencies such as Urban Local Bodies, Development Authorities, Housing Boards etc. which are selected by State Government/SLSMC for implementing Housing for All Mission.
Low Income Group (LIG):	LIG households are defined as households having an annual income between Rs.3,00,001 (Rupees Three Lakhs One) up to Rs.6,00,000 (Rupees Six Lakhs). States/UTs shall have the flexibility to redefine the annual income criteria as per local conditions in consultation with the Centre.
Primary Lending Institutions (PLI)	Scheduled Commercial Banks, Housing Finance Companies, Regional Rural Banks (RRBs), State Cooperative Banks, Urban Cooperative Banks or any other institutions as may be identified by the Ministry
Slum	A compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.
State Land Nodal Agencies (SLNAs)	Nodal Agency designated by the State Governments for implementing the Mission
Transfer of Development Rights (TDR)	TDR means making available certain amount of additional built up area in lieu of the area relinquished or surrendered by the owner of the land, so that he can use extra built up area himself in some other land.



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Background:

Shelter is a basic human need next only to food and clothing. At the end of the 10th Five Year Plan, the housing shortage is estimated to be 24.7 million. However, urban areas in our country are also characterized by severe shortage of basic services like potable water, well laid out drainage system, sewerage network, sanitation facilities, electricity, roads and appropriate solid waste disposal. It is these shortages that constitute the rationale for policy focus on housing and basic services in urban areas. This policy intends to promote sustainable development of habitat in the country with a view to ensuring equitable supply of land, shelter and services at affordable prices to all sections of society. Given the magnitude of the housing shortage and budgetary constraints of both the Central and State Governments, it is amply clear that Public Sector efforts will not suffice in fulfilling the housing demand. In view of this scenario, the National Urban Housing and Habitat Policy, 2007 focuses the spotlight on multiple stake-holders namely, the Private Sector, the Cooperative Sector, the Industrial Sector for labour housing and the Services/Institutional Sector for employee housing. In this manner, the Policy will seek to promote various types of public-private partnerships for realizing the goal of Affordable Housing for All.

Housing Needs :

The magnitude of housing shortage was estimated by a Technical Group in the context of formulation of the 11th Five Year Plan. The Technical Group estimated the housing shortage at the end of the 10th Plan to be around 24.7 million for 67.4 million households. The Group further estimated that 99% of this shortage pertains To Economical Weaker Section (EWS) & Low Income Group (LIG) sectors. During the 11th Plan, the Group estimated that the total housing requirement (including backlog) will be to the tune of 26.53 million units for 75.01 million households. Whereas more than 23% of the urban population resides in slum (Census: 2001), a much higher proportion of the urban population of metropolitan cities lives in slums; it is estimated that 55% of the population of Mumbai lives in slums. It is of critical importance that the strategy of in-situ slum up gradation is adopted for preponderant proportion of the slum dwellers, since they provide valuable services to residents living close to their own dwelling places.

The Working Group on Urban Housing pertaining to the 11th Plan made different assumptions on unit cost of construction of houses in million plus cities and other urban areas for estimating the investment required for overcoming the housing shortage. The total estimated investment for meeting the housing requirement upto 2012 was estimated to be of the order of Rs.3,61,318.10 crores consisting of Rs.1,47,195 crores for mitigating housing shortage at the beginning of 11th Plan and Rs.2,14,123.10 crores for new additions

to be made during the 11th Plan period (this includes construction of pucca houses & upgradation of semi-pucca and kutcha housing units).



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Magnitude of Poverty:

Non-affordability of housing by economically weaker sections of society and low income families in urban areas is directly linked with the magnitude of urban poverty. Poverty in India has declined from 320.3 million in 1993- 94 to 301.7 million in 2004-05. While there has been a decline of 18 million persons in the total numbers of the poor in India, the National Sample Survey Organization (NSSO) reports that the number of the urban poor has risen by 4.4 million persons during the same period. One fourth of the country's total urban population, numbering 80.7 million persons is below the poverty line. The urban poor constitute 26.7% of the total poor in the country. The fact that the number of urban poor has risen is in stark contrast with rural poverty, where both the total number of rural poor and its incidence vis-a-vis the rural population has fallen. The urban poor have limited access to basic services. According to the 2001 census, there is a 9% deficiency in drinking water, 26% in toilets and 23% in drainage. It is quite understandable that most of this shortage pertains to slums.

Scope of RAY RAY:

will provide the support to enable states to redevelop all existing slums in a holistic and integrated way and to create new affordable housing stock. The existing schemes of Affordable Housing in Partnership, and Interest Subsidy for Housing the Urban Poor (ISHUP), would be dovetailed into this scheme. No new projects under the BSUP and IHSDP scheme of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) will be sanctioned once implementation of RAY scheme is taken up except to consume existing 11th Plan allocations that may be left uncommitted. However, projects sanctioned under the two schemes will continue to receive Central assistance as per the sanctions and the existing provision of the schemes.



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Pradhan Mantri Awas Yojana (PMAY)- Housing for all

The Hon'ble President of India has announced "By the time the Nation completes 75 years of its Independence, every family will have a pucca house with water connection, toilet facilities, 24x7 electricity supply and access.

" Hon'ble Prime Minister envisioned Housing for All by 2022 when the Nation completes 75 years of its Independence. In order to achieve this objective, Central Government has launched a comprehensive mission "Pradhan Mantri Awas Yojana – Housing for All (Urban)". Mission for urban area will be implemented during 2015-2022 and this Mission will provide central assistance to implementing agencies through States and UTs for providing houses to all eligible families/ beneficiaries by 2022.

The mission seeks to address the housing requirement of urban poor including slum dwellers through following programme verticals:

- Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource • Promotion of Affordable Housing for weaker section through credit linked subsidy
- Affordable Housing in Partnership with Public & Private sectors
- Subsidy for beneficiary-led individual house construction /enhancement



The Mission will support construction of EWS (Economically Weaker Section) houses upto 30 square meter carpet area. As per **PMAY EWS households** are defined as households having an annual income up to Rs. **3,00,000 (Rupees Three Lakhs)**. States/UTs will have flexibility in terms of determining the size of house and other facilities at the state level in consultation with the Ministry but without any enhanced financial assistance from Centre. According to PMAY guidelines, the minimum numbers of about 35% of the houses are constructed for EWS Category in such Affordable Housing project.

The PMAY mission will be implemented as **Centrally Sponsored Scheme (CSS)** except for the component of credit linked subsidy which will be implemented as a Central Sector Scheme. A beneficiary family will comprise husband, wife, unmarried sons and/or unmarried daughters. The beneficiary family should not own a pucca house either in his/her name or in the name of any member of his/her family in any part of India to be eligible to receive central assistance under the mission. The houses constructed/acquired with central assistance under the mission should be in the name of

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Mandatory Conditions:

- Availability of urban land is the biggest constraint in providing housing to all including weaker sections. Therefore, to ease administrative and regulatory bottlenecks, a set of Mandatory Conditions has been included in the Mission to facilitate growth of housing sector including affordable housing. For participating in the mission and to avail of financial assistance from Central Government, States/ UTs should agree to fulfil following Mandatory Conditions:-
- States/UTs to make suitable changes in the procedure and rules for obviating the need for separate Non Agricultural (NA) Permission if land already falls in the residential zone earmarked in Master Plan of city or area.
 - States/UTs shall prepare/amend their Master Plans earmarking land for Affordable Housing.
 - A System should be put in place to ensure single-window, time bound clearance for layout approval and building permissions at ULB level.
 - States/UTs shall adopt the approach of deemed building permission and layout approval on the basis of pre- approved lay outs and building plans for EWS/LIG housing or exempt approval for houses below certain built up area or plot area.
 - States/UTs would either legislate or amend existing rental laws on the lines of
 - model Tenancy Act being prepared by Ministry. States/UTs shall provide additional FAR/FSI/TDR and relaxed density norms for
 - slum redevelopment and low cost housing, if required.



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Need for Pilot Projects:

Given that this is a path breaking approach being taken up by the Central, State and City governments, there is a felt need to embark on a set of pilot projects with the aim of evolving, demonstrating and establishing models that can thereafter be scaled. A key objective of the programme would be to therefore incentivize innovation and encourage new approaches and solutions that can demonstrably improve the quality and quantity of shelter and services for the poor.

Such innovation could encompass:

Projects with strong community participation i.e. Slum up gradation

- redevelopment projects initiated/spearheaded by the community; or with their demonstrable involvement and participation in design, planning and implementation.

• Creation of Fresh Housing Stock and Transit Shelters.

- State/UT Government and Implementing Agencies should encourage formation of associations of beneficiaries under the scheme like RWA etc. to take care of maintenance of houses being built under the mission
- New models of public-private partnerships whereby the private sector can be encouraged to take up affordable housing for the EWS/LIG

- Innovations in planning, demonstrating integrated livelihoods, shelter and services or convergence.
- Any other innovation for which the city feels it needs to design models and determine guidelines for larger application

With this intent the Ministry of Housing & Urban Poverty Alleviation, Government of India would encourage proposals and pilot projects from institutions/agencies as below.

The following institutions are eligible to apply for pilot projects under PMAY

- States

- Urban Local Bodies through the State Level Nodal Agencies (SLNA)

- Central Government Departments and Central Public Sector



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The PMAY mission will be implemented through four verticals giving option to beneficiaries, ULBs and State Governments. These four verticals are as below:



Application Modalities:

The application should consist of a Proposal containing a brief description of the project, the stage of slum free planning that the state is in. The proposal should clearly delineate the innovations and new models the project will be piloting in terms of its scope, objective, implementation strategies. It should also clearly bring out the envisaged outcomes; and implications for state wide or regional replicability. It is expected that the implementation of the pilot projects would catalyse an innovative and effective approach to the planning and implementation of the city plans for the PMAY scheme.

Pilot Project Detailed Project Report should clearly bring out:

- In-situ development projects, including infrastructure upgrading, replacement of kuchha structures with pucca structures, Incremental Housing, Affordable Housing Projects, Transit Shelters and Green field projects integrating shelter, services and livelihoods will be considered for pilots



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- Land/dwelling space to be assigned to the all slum households living in the concerned slum which will be in the form of ownership. A project which envisages grant of collective property rights would be eligible.

- Basic services including roads, water supply, sewerage, drainage, waste management and street lighting infrastructure have to be planned.

- Desirable services beyond basic services including: Fire safety plan; community Centre; local shopping complex.

- Pilot projects would need to demonstrate that the building bye laws and planning norms should not be a constraint to the slum upgrading exercise.

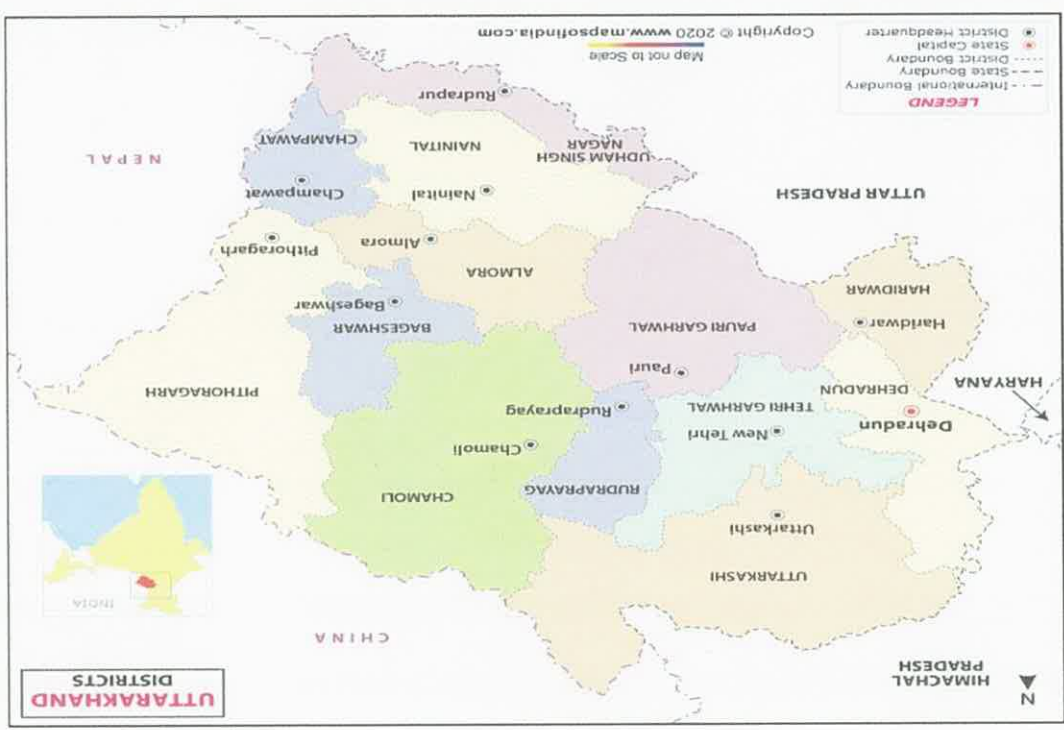
- Timelines to complete the project and implications for the Slum free City planning process under the PMAY scheme should be clearly laid out in the Pilot Project DPR to connect it to the Proposal.

- The DPR would be prepared as per the Delhi Schedule of Rates-2016 and would need to be submitted after approval of State Level Sanction and Monitoring Committee. For proposals pertaining to Central Government and Undertakings, DPR would be based on their respective schedule of rates.

- In view of the above considerations Urban Housing & Urban Development Authority (UHDA), a "Development Authority or the Authority" in relation to the whole of the State Area shall be as the State Authority and in relation to any development area shall be the Local Development Authority (hereinafter referred to as the Local Authority) constituted and notified under section 4 of the Act : may be called the Uttarakhand Urban and Country Planning and Development (Amendment) Act, 2013 has prepared



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Location, Geography and Climate

Uttarakhand was formed on the 9th November 2000 as the 27th State of India, when it was carved out of northern Uttar Pradesh. Located at the foothills of the Himalayan mountain ranges, it is largely a hilly State, having international boundaries with China (Tibet) in the north and Nepal in the east. On its north-west lies Himachal Pradesh, while on

The south is Uttar Pradesh. It is rich in natural resources especially water and forests with many glaciers, rivers, dense forests and snow-clad mountain peaks. Char-dhams, the four most sacred and revered Hindu temples of Badrinath, Kedarnath, Gangotri and Yamunotri are nestled in the mighty mountains. It's truly God's Land (Dev Bhoomi). Dehradun is the Capital of Uttarakhand. It is one of the most beautiful resorts in the sub mountain tracts of India, known for its scenic surroundings. The town lies in the Dun Valley, on the watershed of the Ganga and Yamuna rivers.

It is blessed with a rare bio-diversity, inter alia, 6/5 rare species of aromatic & medicinal plants are found in the State. It has almost all major climatic zones, making it amenable to a variety of commercial opportunities in horticulture, floriculture and agriculture. It has a vast tourism potential in adventure, leisure and eco-tourism.



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About Anneki Hetampur



Anneki Hetampur is a Village in Bahadurabad Block in Haridwar District of Uttarakhand State, India. It is located 14 KM towards west from District head . **Anneki Hetampur** village is located in Haridwar tehsil of Haridwar district in Uttarakhand, India. It is situated 12km away from sub-district headquarter Haridwar

Anneki Hetampur to haridwar distance 12 km

Haridwar is an ancient city and important Hindu pilgrimage site in North India's Uttarakhand state, where the River Ganges exits the Himalayan foothills. The largest of several sacred ghats (bathing steps), Har Ki Pauri hosts a nightly Ganga Aarti (river-worshipping ceremony) in which tiny flickering lamps are floated off the steps. Worshipers fill the city during major festivals including the annual



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Background of the Project

Shelter is a basic human need next only to food and clothing. However, urban areas in our country are also characterized by severe shortage of basic services like potable water, well laid out drainage system, sewerage network, sanitation facilities, electricity, roads and appropriate solid waste disposal. It is these shortages that constitute the rationale for policy focus on housing and basic services in urban areas. This policy intends to promote sustainable development of habitat in the country with a view to ensuring equitable supply of land, shelter and services at affordable prices to all sections of society. Given the magnitude of the housing shortage and budgetary constraints of both the Central and State Governments, it is amply clear that Public Sector efforts will not suffice in fulfilling the housing demand. In view of this scenario, Uttarakhand State government launched a scheme "Jan Awas Yojana" and Central Government has also launched a comprehensive mission "Pradhan Mantri Awas Yojana - Housing for All (Urban)". And in this connection, The Hon'ble President of India has also announced "By the time the Nation completes 75 years of its Independence, every family will have a pucca house with water connection, toilet facilities, 24x7 electricity supply and access."

Hon'ble Prime Minister envisioned Housing for All by 2022 when the Nation completes 75 years of its Independence. In order to achieve this objective, Central Government has launched a comprehensive mission "Pradhan Mantri Awas Yojana - Housing for All (Urban)". Mission for urban area will be implemented during 2015-2022 and this Mission will provide central assistance to implementing agencies through States and UTs for providing houses to all eligible families/ beneficiaries by 2022.

The mission seeks to address the housing requirement of urban poor including slum dwellers through following programme verticals:

- Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource
- Promotion of Affordable Housing for weaker section through credit linked subsidy
- Affordable Housing in Partnership with Public or Private Sectors.
- Subsidy for beneficiary-led individual house construction / enhancement.



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Defined as households having an annual income up to Rs. 3,00,000 (Rupees Three Lakhs). Uttarakhand state will have flexibility in terms of determining the size of house and other facilities at the state level in consultation with the Ministry but without any enhanced financial assistance from Centre. According to PMAY guidelines, the minimum numbers of about 35% of the houses are constructed for EWS Category as covered in the programme verticals mentioned above of such Affordable Housing project

The PMAY mission will be implemented as Centrally Sponsored Scheme (CSS) except for the component of credit linked subsidy which will be implemented as a Central Sector Scheme. A beneficiary family will comprise husband, wife, unmarried sons and/or unmarried daughters. The beneficiary family should not own a pucca house either in his/her name or in the name of any member of his/her family in any part of India to be eligible to receive central assistance under the mission. The houses constructed/acquired with central assistance under the mission should be in the name of the female head of the household or in the joint name of the male head of the household and his wife, and only in cases when there is no adult female member in the family, the house can be in the name of male member of the household.

Mandatory Conditions:

Availability of urban land is the biggest constraint in providing housing to all including weaker sections. Therefore, to ease administrative and regulatory bottlenecks, a set of Mandatory Conditions has been included in the Mission to facilitate growth of housing sector including affordable housing. For participating in the mission and to avail of financial assistance from Central Government, Uttarakhand State should agree to fulfil following Mandatory Conditions:-

- Uttarakhand state to make suitable changes in the procedure and rules for obtaining the need for separate Non Agricultural (NA) Permission if land already falls in the residential zone earmarked in Master Plan of city or area.
- Uttarakhand state shall prepare/amend their Master Plans earmarking land for Affordable Housing.
- Uttarakhand state would either legislate or amend existing rental laws on the lines of model Tenancy Act being prepared by Ministry.



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Objectives:

The objectives of this project are:

- To provide affordable and liveable Shelter solution to Industrial Workers and – workers engaged in Construction projects/activities.
- To reduce temporary/permanent establishment of new slums lacking basic physical & social infrastructure.
- To provide alternative shelter to the slum dwellers who are not eligible for relocation houses and are likely to be displaced.
- To prevent unorganized growth in housing sector.

Project Concept:

It is proposed to construct Ground + Three storied building blocks along with civic amenities like Community Facilities, Open Spaces, Park/Garden, Local Shopping, Crèche, etc. with well-developed Infrastructure networks such as Roads, Drainage, Water Supply, Sewerage, Electrification, Rain Water Harvesting, Horticulture/Site Development, Street Light, Parking, Over Head Tank, Sewerage Treatment Plant, Substation, as well as planned circulation and other features. One such building will provide **16 units** at one floor and to provide **1152** units at total 18 Tower of such type of buildings need to be built up.

The main concept behind the formulation of this scheme is to provide not just shelter for the Economical weaker Section / Lower Income Group / migrating population but also a healthy and enabling urban environment, to help them to come out of their poverty level and

- To integrate the residential areas with social network of the entire complex.
- Sustainable improvement in overall quality of life of Weaker Class / Lower income Group/industrial labours/migrating population.
- Sustainable improvement in standards of health, education and community life and increased income-earning potential of Weaker Class / Lower income Group/ migrating population by providing a livelihood training centre.
- Strong, committed and broad-based formal and informal community-based groups, which participate actively in sustainable development activities established and functioning.

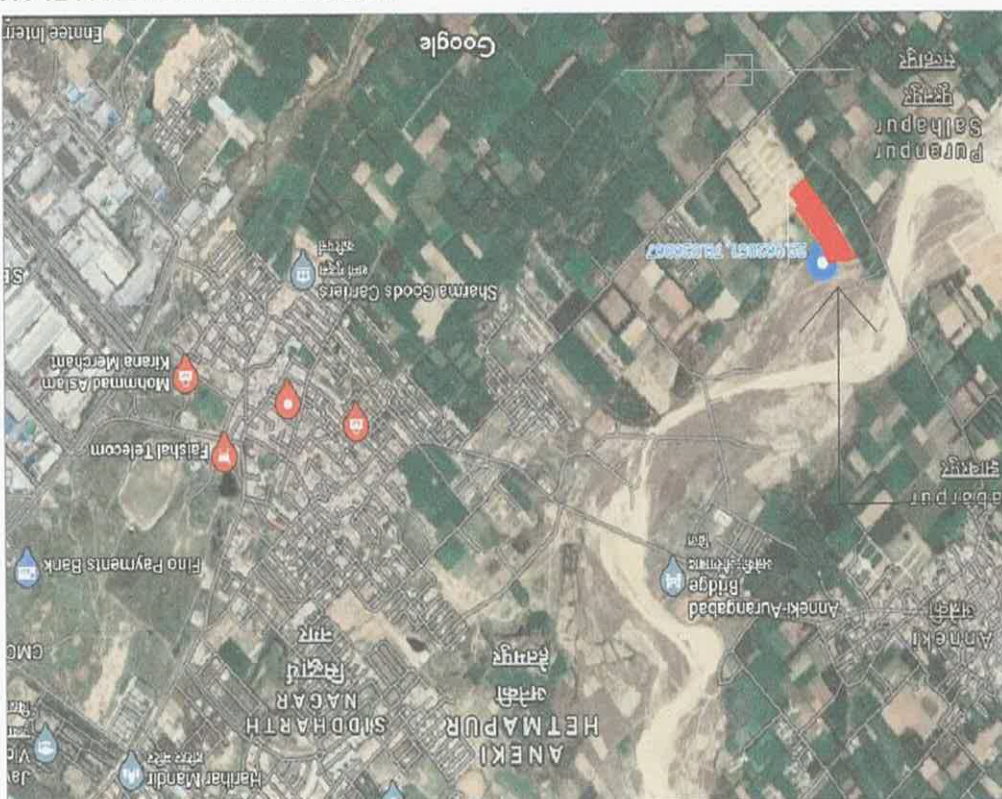


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Project Site, Location Google image & Key plan

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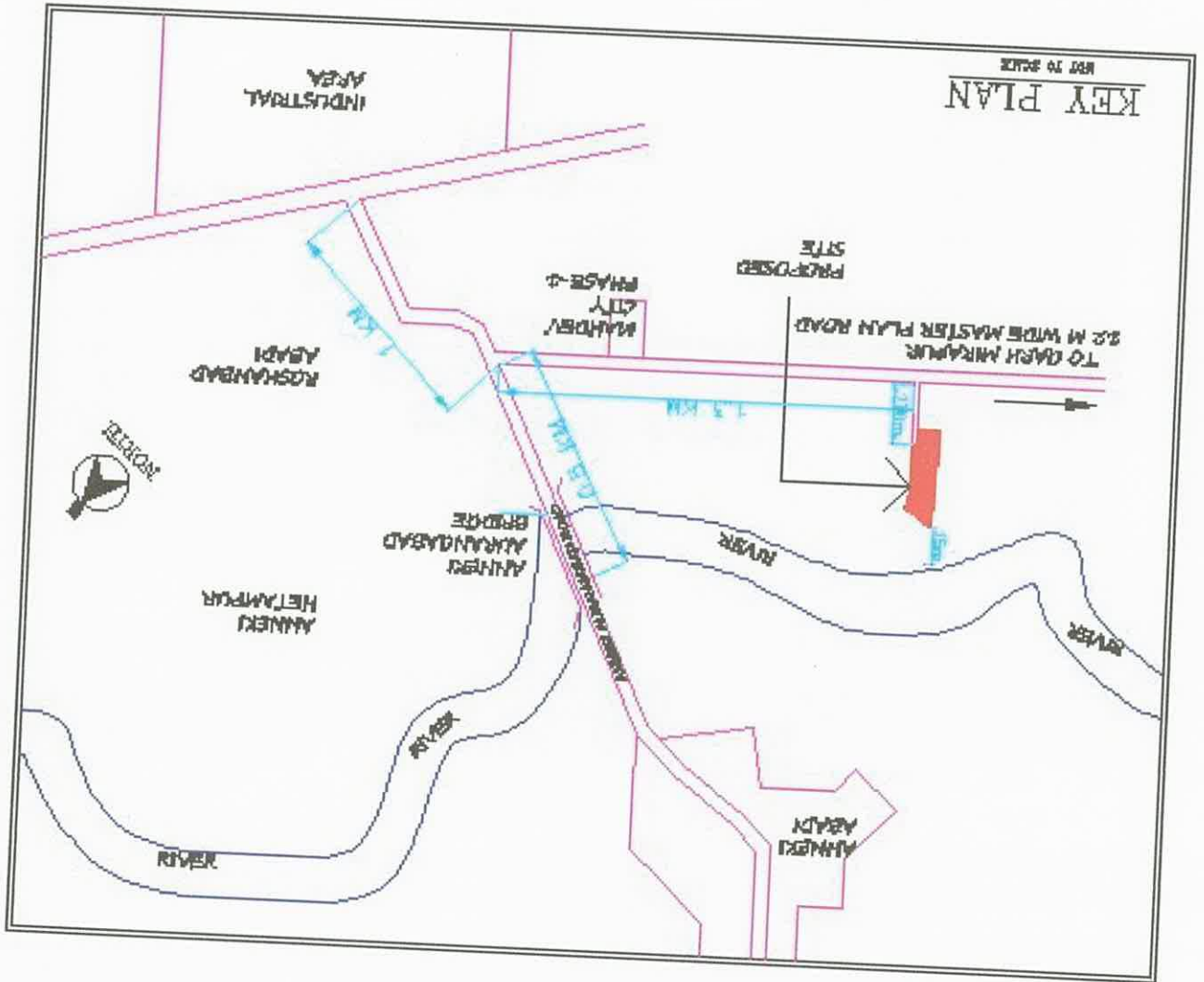
PROPOSED SITE

GOOGLE MAP LOCATION PLAN



PAL ARCHITECT AND ENGINEER
 COA NO. CA/2018/96244
 Case No. Date: 18/11/2021
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346

Key Plan



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 2580
Date: 19/11/2022
Near by IDBI Bank, Dehradun (U.K.)
Tapovan Road Infront of PRD Ground
Mob.: 7895872139, 9412143346



PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand : 249402

Monolithic Concrete Construction Technology:

Monolithic – The term is derived from Imposing in size, bulk or solidity. Characterized by massiveness and rigidity and total uniformity. The synonyms of Monolithic are Massive or Monumental.

In MCC beams, columns and filler brick walls are eliminated and instead walls made from concrete are used to take loads of the building. Here walls and slabs are cast in one operation in specially designed light weight forms / moulds. Concrete is poured in the forms and forms are removed after the setting of the concrete takes place, resulting in box like cubical structure of required architectural design.

The entire operation essentially comprises fitting and erecting the portion of shuttering / forms as already determined and then carrying out concreting of the walls and slabs. Props are so designed that they stay in position while de-shuttering of slabs takes place. The dimensional accuracy of the formwork is of high order. Therefore any possibility of errors does not rise. These forms enable rapid construction of multiple units of repetitive types. The pre-designed form work also acts some sort of assembly line production and require few semi-skilled workers / labour.

As bricks are not used in this type of construction walls are just rendered with cement slurry to give even shed thus eliminating need of plastering resulting in saving in time and cost of plastering. After removal of form work finishing activities like fixing of doors and windows, flooring works, fixing of plumbing, sanitary and electrical services etc can be carried out as per the current / local practice.

In this system, in place of traditional RCC framed construction of columns and beams; all walls, floors, slabs, columns, beams, stairs, together with door and window openings are cast-in-place monolithically using appropriate grade of concrete in one operation. The especially custom designed modular formwork made up of Aluminium is easy to handle with minimum labour & without use of any equipment. Being modular formwork system, it facilitates in rapid construction of multiple / mass unit scale



PAL ARCHITECT AND ENGINEER
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Highlights of the MCC Technology :

- In the Monolithic concrete construction with Aluminum / Plastic / Steel / Composite forms system, Concrete walls and slabs are cast monolithically at one pour.

- The system allows reduction in thickness of concrete members below the minimum value than the conventional construction, thus reducing the consumption of natural resources.
- The technology reduces the cost of repair and maintenance compared to conventional system.

- Walls and slabs are cast in one operation in specially designed light weight form/ moulds in concrete.

- Concrete is poured in the forms & forms are removed after the setting of concrete takes place, resulting in box like cubical structure of required architectural design.

- The pre-designed formwork also acts some sort of assembly line production and enables rapid construction of multiple units of repetitive type.

Basic Material Requirements

Formwork system

Formwork system is propriety system and designed as per loading requirements of the structure. It has adequate stiffness to weight ratio, yielding minimum deflection under concrete loading. The panel should fix precisely, securely and require no bracing. Being recent advancement in technology, IS-14687:1999 Guidelines for falsework for concrete does not cover requirements of special type of formwork system.

Concrete

Shall be of appropriate grade based on environment condition as per IS 456:2000

Reinforcement

Shall conform to IS 1786:2008



PAL ARCHITECT AND ENGINEER
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Details of Formwork

The formwork systems used are made of lightweight Aluminum. The recommended concrete forms generally use robotics welding system for manufacturing. A soft alloy weld wire is utilized in the concrete form weld process. Fixing of the formwork is done using tie, pin & wedges system. It does not require very skilled labor to do the job.

Structural Requirements of the Construction

The Monolithic RCC construction is considered as shear wall system. The maximum spacing between cross wall shall be limited to 1.5 times the floor height if supported on two edges and 2.0 times the floor height, when supported on all four edges. The walls are designed primarily for loading and also for in-plane lateral load (shear) and out of plane (bending) due to wind load and earthquake forces as per relevant Indian Standard Code IS 875(Pt.3):1987 and IS1893(Pt.1):2002 respectively. For out of plane loading, the plate can be assumed to be supported by floor slabs / diaphragm and cross walls and continuity can be assumed, wherever applicable.

The structural design of plain & RCC shall be as per IS 456:2000 while IS 13920:1993 is referred for ductile detailing of reinforced concrete structure. Thickness of wall below plinth level should be minimum 200 mm with double layers reinforcement. Guidelines on Monolithic Concrete Construction prepared by BMTPC may be referred for material requirements & design aspects of this system.

Durability

Since concrete is main constituent material in this system, durability of the structure can be achieved by using proper ingredient, Grade of concrete as per IS 456:2000 and mix design in accordance with IS 10262:2009.

Thickness of the wall is generally 100 mm with the centrally placed reinforcement. Therefore, adequate cover is likely to be maintained; as a result high durability is achieved.



PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand : 249402

PAL ARCHITECT AND ENGINEER
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Ease of fixing services

All electric and plumbing fixtures, lines have to be pre-planned and placed appropriately before pouring concrete in RC walls & slabs. Post construction alternation is not desirable.

ECONOMY OF SCALE

Economy of scale depends upon the volume of work and number of repetition of the formwork. To achieve economy, minimum 100 repetitions are desirable.

For very small project of less than 500 units, this system may not prove to be economical.

Other features

Pre designed formwork acts as assembly line production and enables rapid construction of multiple/mass scale 1) units of repetitive type.

Varying work cycle is possible, however, for speed and economy 3-4 days cycle are desirable.2)

It is flexible in design and can form any architectural or structural configuration, such as stairs, windows, etc.3)



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 0380 Date 12/11/22
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346

Proposed Pardhan Mantri Awas yojana Anneki Hetampur, Uttarakhand

23

SPECIFICATIONS FOR EWS HOUSES – CONSTRUCTED UNDER PMAY

Sl. No	ITEM	SPECIFICATION
1.	Earthwork excavation	The earthwork excavation shall be done as per CPWD specification. The foundation shall rest on firm base
2.	Filling in trenches	Same excavated good earth soil is to be filled.
	Foundation (monolithic cement concrete structure)	M-20 grade of concrete is used for all the RCC works
	Base concrete	1:4:8 grade, 10 cm thick below building foundations on hard strata.
	Plinth Filling	If excavated soil or part of excavated soil seems to be good for filling, same shall be refilled as per direction of engineer in charge
	RCC Footing/Raft/Piles	M-20 grade of concrete is used for 450mm thick raft using Self Compacting Concrete Design Mix.
	Plinth beam/grade slab	M 20 grade of concrete is used for all the works using Self Compacting Concrete Design Mix
3.	Super structure	M 20 grade of concrete is used for all the works using Self Compacting Concrete Design Mix.
	a) Slabs	M 20 grade of concrete is used for all the works using Self Compacting Concrete Design Mix.
	b) Projections	M 20 grade of concrete is used for all the works using Self Compacting Concrete Design Mix
4.	Flooring	1. Everywhere in EWS unit is having ordinary Cement flooring including staircase etc. with Colour Pigment. 2. Industrial tiles flooring in parking areas.
5.	Skirting	Skirting in ordinary cement with neat punning in all rooms shall be to the height of 100mm.
6.	Kitchen platform and sink	Ordinary RCC Slab with neat cement punning and with provision for cut-out of Stainless Steel Sink.
	Putty	Putty on inner walls and ceiling.
7.	Finishing	Internal:- White washing on internal walls and ceiling External:- Water proofing cement paint
8.	Waterproofing	Toilets cement slurry mixed with water proofing treatment.
9.	Joinery	
	a) Windows	Angle iron frames and glazed shutters for windows and clerestory windows using 4 mm thick float glass panes with hillock wood.
	b) Doors	a) Angle Iron Frames and shutters – 25 mm thick flush door shutter, non-decorative type for rooms b) Angle Iron Frames and Steel shutters for block entrance & munity of staircase. c) FRP frame and shutter for Bath and WC
10.	Doors & Window Fixtures and Fitting	Oxidised MS fittings
11.	Railings	MS railings



PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand 249402
Mob.: 7895872139, 9412143346
PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 8087 Date: 22/08/2022
Tapovan Road Infront of PRD Ground
Dehradun (U.K.)



Proposed Pradhan Mantri Awas yojana Anneki Hetampur,
Uttarakhand

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Public Health & Sanitary Works

Sl. No	ITEM	SPECIFICATION
1.	Water Supply	Internal Areas water supply pipe (inside the block in shafts, terrace and rising main as per drawing and design)
	Bib-Cock	Long body CP Brass Bib-Cock.
	Control valves	CI Wheel Gun Metal Valve.
2.	Sewerage (Sanitary & Rain water)	Internal areas sanitary pipe (inside the flats or inside the block and in all Bath, WC and kitchen)
	External Area	Stone Ware Pipes with all around concreting.
	Rain Water Drainage	Providing UPVC pipes of approved make for 4kg/Sq.Cms. of single socket pipe of ISI standard conforming to ISI 1352 with air tight joints, fixing with clamps and nails etc., complete for (Vent Shaft) WC Connection
3.	Sanitary Fittings	Indian type W.C. pan with 100 mm sand cast Iron P or S trap, 10 liter low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever).
	Floor Trap	Providing 76.2mm (3") Dia. NAHANY TRAP with Jali for UPVC/SWR for toilets and kitchen
	Gully Chambers	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :
	Internal sanitary and collecting chambers	Sewage disposal from Indian type W.C. pan & waste water from kitchen with 100 mm PVC pipe & Bathroom with 75 mm diameter PVC pipe with fittings.



Case No. 00808 Date: 13/11/2021
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Pehradun (U.K.)
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PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand : 249402

Proposed Pradhan Mantri Awas yojana Anneki Hetampur, Uttarakhand

Electrical Works:

Sl. No	ITEM	SPECIFICATION
1.	Point Wiring	Wiring for light point/ fan point/ exhaust fan point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with Piano type switch.
2.	Wiring for circuit / Submain	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed PVC conduit as required 2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire 2 X 4 sq. mm + 1 X 4 sq. mm earth wire 2 X 6 sq. mm + 1 X 6 sq. mm earth wire
3.	PVC conduit	Supplying and fixing of following sizes of PVC conduit of along with accessories in surface/ recess or cutting the wall and making good the same in case of recessed conduit as required. 20mm & 25mm dia with
4.	Switch and socket	Supplying and fixing following Piano Type switch/ socket on the switch box including connections 5/6 amps switch 15/16 amp switch 3 pin 5/6 amp socket outlet 3 pin 15/16 amp socket outlet
5	Fan regulator	Supplying and fixing stepped type electronic fan regulator
6	Switch box	Supplying and fixing of suitable size metal box with phenolic laminated sheet cover in front
7	Angle holder	Supplying and fixing brass batten/ angle holder including connection etc. as required.
8	MCCB	Providing and fixing MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.

Tapovan Road Infront of F&D Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346
Case No. CA/2018/5927
Date: 06/11/2022
P.M. PROJECT AND ENGINEER



PMAY of Site Anneki Hetampur District (Haridwar) Uttarakhand : 249402

Proposed Pardhan Mantri Awas yojana Anneki Hetampur,
Uttarakhand

	For Internal Flat		
9.	MCB Enclosure	Supplying and fixing SPN Distribution Board with IP43 Protection (Metal Door) as per 13032 for all incoming and outgoing (With MCB/ RCCB/ Isolator)	
	For Common Area Service		
10.	TPN Distribution Board	Following way TPN distribution boards 4 way Double door 6 way Double door 8 way Double door 12 way Double door	
11.	MCB	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, Single pole Single pole and neutral Double pole Triple pole Triple pole and neutral	
12.	Isolator	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.	40 amps 63 amps

PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 0080 Date 13/11/2022
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Mob.: 7895872139, 9412143346



ABSTRACT OF PROPOSED PHYSICAL INFRASTRUCTURE

Buildings

- 1) Total 1152 units are provided under the scheme
- 2) 18 Tower are designed to accommodate 1152 units.
- 3) Ground + 3 storied building
- 4) Each building has 16 units on each floor.
- 5) Each unit has 1 Bedroom, Living Room, Kitchen, Bathroom and WC
- 6) Total no. of floors – 4
- 7) Total no of units per tower 16 X 4 = 64 units

Infrastructures

I. Storm Water Drainage

- Brick Masonry open Drain is proposed for collection of Rain Water

II. Roads and Pavers

- Internal concrete road of 7.0 mtr. and 4 mtr wide are proposed with 10 mtr. wide road as the main entry road.
- 600 mm thick factory made cement concrete inter locking paver blocks are proposed at open areas between buildings and other locations.

III. Compound Wall

- Brick Masonry Compound Wall

VII. Internal Water Supply and Sanitation Facilities

- WC's, Wash basins, Kitchen Sink, Urinal basins, water taps and all other necessary Water Supply & Sanitation facilities are proposed with proper fitting & fixtures at each floor of every building.

VIII. Internal Electrical Installations

- Sufficient nos. of electrical points for fans, Ceiling fans, call bell, light, charger (etc) are proposed in each room/corridors/stairs/baths/toilets/urinal/stores with metal box and proper wiring systems.

IX. Parking Facilities

- Sufficient Parking facilities for two Wheeler Vehicles are proposed.



PROJECT COST DETAILS

As per the Scheme Guidelines of Pradhan Mantri Awas Yojana Housing for all an single unit or a unit in multi-storied super structure of EWS type Houses with all adequate basic civic services and infrastructure services like Toilet, Water, Electricity etc. So, we have designed the typical EWS dwelling unit of approx. 23.00 square meters carpet area which will have 2 rooms (i.e., living room and one bed room), a kitchen, separate bath and WC and balcony.

SI No.	Type	Nos. of Dwelling Units	Carpet Area of each unit	Super built up Area of each unit
1.	EWS	1152	23.24 sq.m	25.30 sq.m

SI No	DESCRIPTION OF WORK	AMOUNT
2	Grand total amount for 18 tower A TO H & J TO S	744878575.5
3	Grand Total other service	120609602.5
	Grand total project cost	865488178



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Date.....
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(Architecture Drawing)

Pradhan Mantri Awas Yojna EWS

Anneki Hetampur



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 0002 Date 13/11/2022
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/962
Case No. Date 13/11/2018
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob: 789872139, 9412143346

Deep





Mod: 280872139, 941214340
Near by IBI Bank, Dehradun (U.K.)
Tapan Road Infront of PRD Ground
Case No. 280872139
Date: 13/11/2024
RAT ARCHITECT AND ENGINEER
CA No. CA/2018/96244

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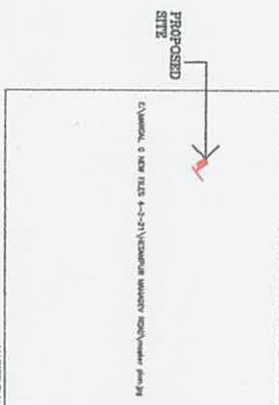
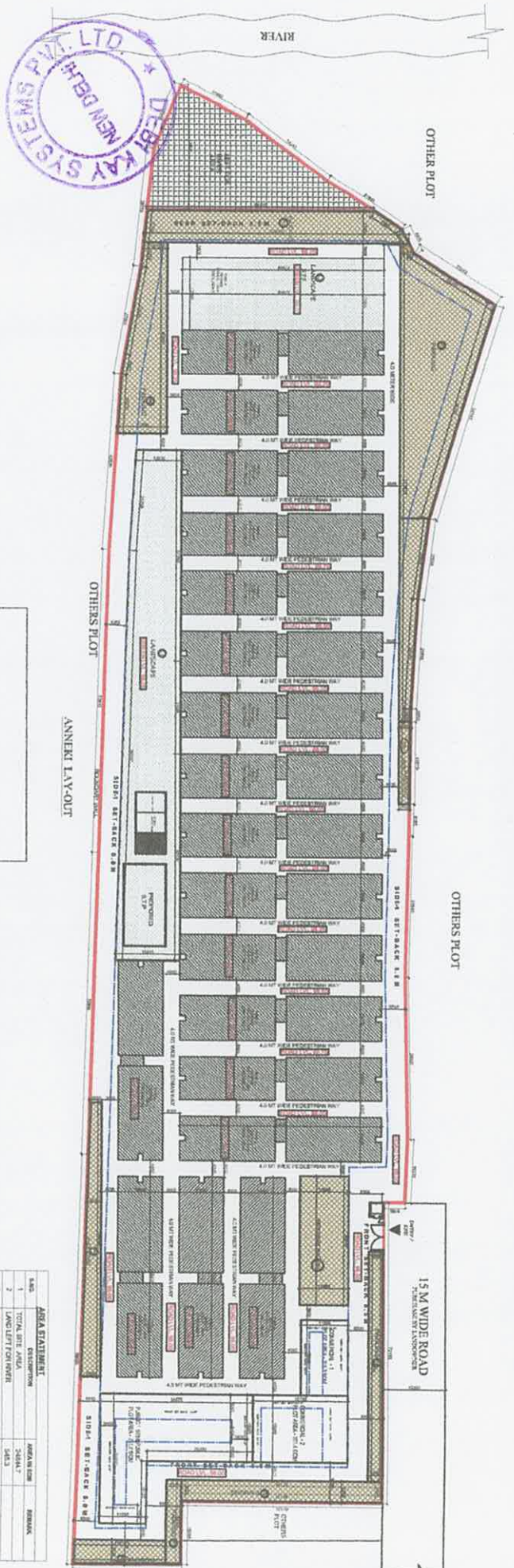




PAL ARCHITECT AND ENGINEER
COA No. CA/2018/9624
Case No. 0980 Date
Tapovan Road Infront of PKD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346

13/11/2018





STATION	DATE
1-1	10/1/10
1-2	10/1/10
TOTAL	2012

TABLE 1				
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97	97	98	99	100

[illegible]

DESCRIPTION	INITIAL	SIGNATURE
GRAND CONFERENCE MEMBERS AREA	23	GM
INVT VOLUME TEL. 400 BOLD	60.1	GM
INVT VOLUME BALANCE CONFERENCE (Balance minus \$5.10)	82.56	GM
TOTAL INVT VOLUME PENDING	90	GM
INVT VOLUME		

[illegible]

TEST BLOCK		POLYMERIZATION (E, 20°C)		PROCEEDING RATE	
TEST BLOCK					
PRODENT	0.5		0.5		
REAR	0.5		0.5		
SEDA	0.5		0.5		
SEDA-2	0.5		0.5		

PASSING AREA IN TEST BLOCK		POLYMERIZATION (E, 20°C)		PROCEEDING RATE	
TEST BLOCK					
PRODENT	0.5		0.5		
REAR	0.5		0.5		
SEDA	0.5		0.5		
SEDA-2	0.5		0.5		

S/N	DESCRIPTION	AREA IN HECTARE	REMARK
1	TOTAL SITE AREA	2484.7	
2	LAND LEFT FOR FORTH	546.3	
3	NET PLOT AREA	1938.4	

[illegible]

12m WIDE ROAD

1.5m WIDE SHOULDER

1.5m WIDE SIDEWALK

15' x 10' WIDE BOARD	
----------------------	--

PROTECTED
ANNEX, HENDON, HARDWAR
ROOPCHIN, PAVLAENG, AMASIV, YOLAN,
(UTTARANCHAL) WAS AYAL VIRAS PARISHAD)
RISHI, 06/10, 1991, 1942, VILL- ANNEKTE
HE-AMER, HARDWAR, DISTT- HARDWAR ,
UTTARAKHAND

APPLICANT
OLAS SMART HOMES PVT. LTD.
Director - Shri Ajay Mangal
G-127, 12TH FLOOR, HIMALAYAN
HOUSE, KASTURBA GANDHI
MARG, NEW DELHI

LAND OWNER
SHRI PREMNATH
ARORA
SHRI INDRAJIT
ARORA

KOASPSA NO	AREA
KE NO. - 1840	1.82147 HEC
KE NO. - 1841	0.6590 HEC
KE NO. - 1842	0.2040 HEC
TOTAL	= 2.68447 HEC = 24614.7 SQM

[illegible]

DRAWING TITLE SITE PLAN	DATE	REV. NO.
	12/15/2023	
DWG. NO.		

ARCHITECT
HDC
ARCHITECTS
Tel: +91-8077689025, 9870451193
Address: Madhav colony, Opp. Sreevidya Hotel, Rudrapur,
U.S.Nagar, UK 26153



PARKING AREA DETAIL

S.NO.	CAR PARKING NOS.	SCOOTER PARKING NOS.
P1	-	51
P2	18	-
P3	-	12
P4	-	-
P5	-	60
P6	-	-
P7	-	-
P8	78	-
P9	15	-
P10	14	-
TOTAL	104 ECS	240-72 ECS

24

PARKING AREA

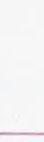
(EWS) 1 ECS (23 SQM) FOR 8 UNITS
 PARKING AREA PROVIDED (ECS) 144 ECS
 PARKING AREA PERMISSIBLE 3312.0 SQM
 PARKING AREA RPOVIDED 3321.13 SQM



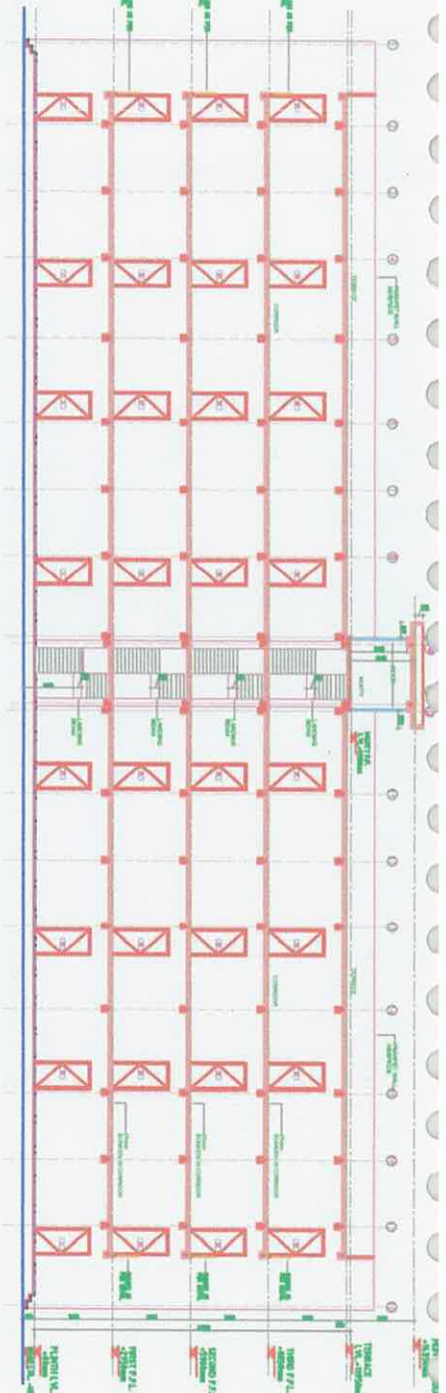
PAL ARCHITECT AND ENGINEER
 Case No. COA/2018/6224
 Tapovan Road, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

PARKING AREA DETAIL=(CARS+SCOOTERS/3)
 = 104+72
 = 176 ECS

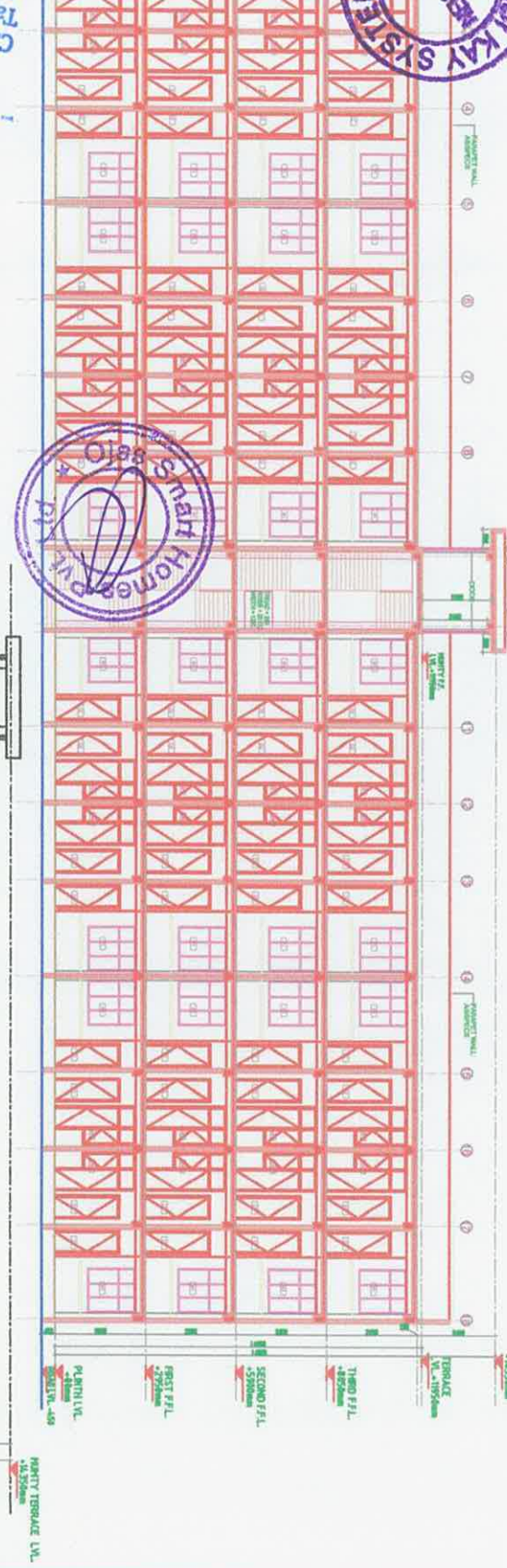
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DESIGNER PAL ARCHITECT AND ENGINEER PROJECT ADDRESS: PAL ARCHITECT AND ENGINEER PROJECT LOCATION: PAL ARCHITECT AND ENGINEER PROJECT DATE: 22/03/22		DATE 22/03/22
REVISIONS 1. 22/03/22 2. 22/03/22 3. 22/03/22		SCALE 1:500
DATE 22/03/22		SCALE 1:500
DATE 22/03/22		SCALE 1:500

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SECTION - E
SCALE: 1:100



TYPICAL SECTION "A-A"
SCALE: 1:80



FRONT ELEVATION - 1
SCALE: 1:80



PAL ARCHITECTS AND ENGINEERS
Case No. CA/2018/30244
Tapovan Road, Dehradun (U.P.)
Near by DBI Bank, Dehradun (U.P.)
Mob.: 7895872189, 9412143346

REVISIONS		PROJECT INFORMATION	
NO.	DATE	DESCRIPTION	
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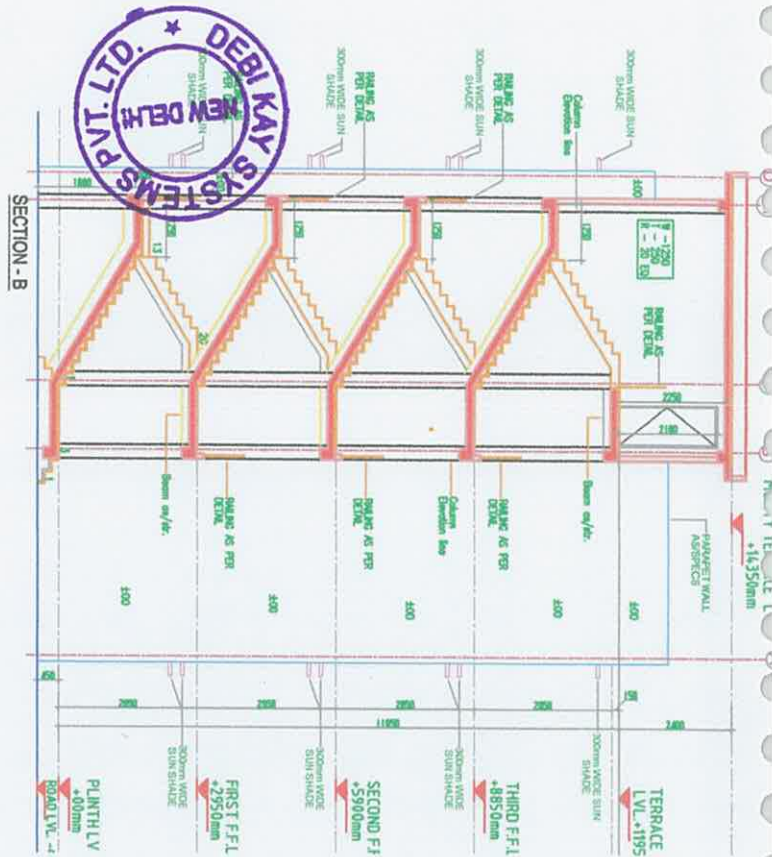
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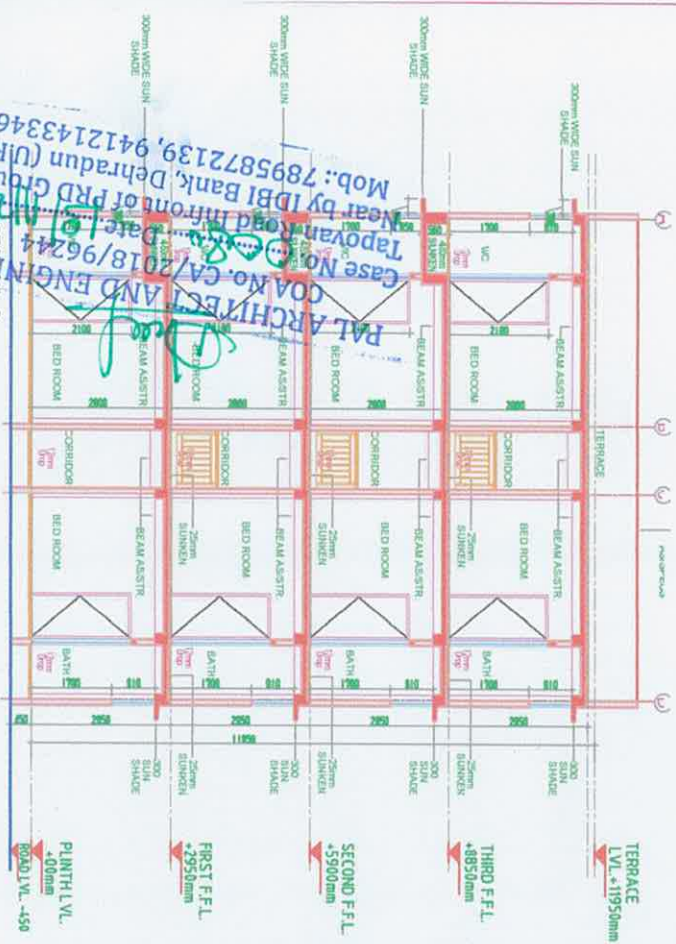
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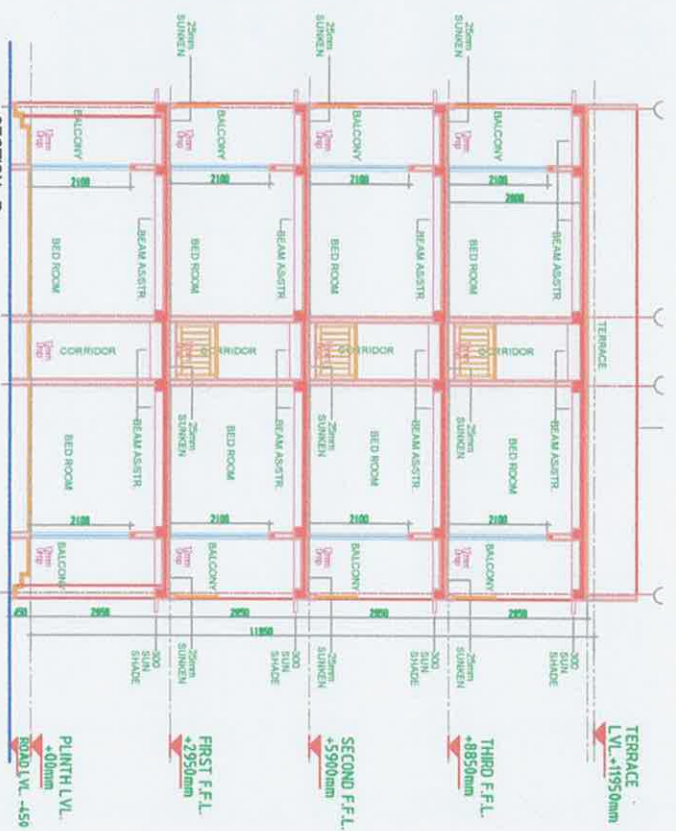
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SECTION - B



SECTION - C

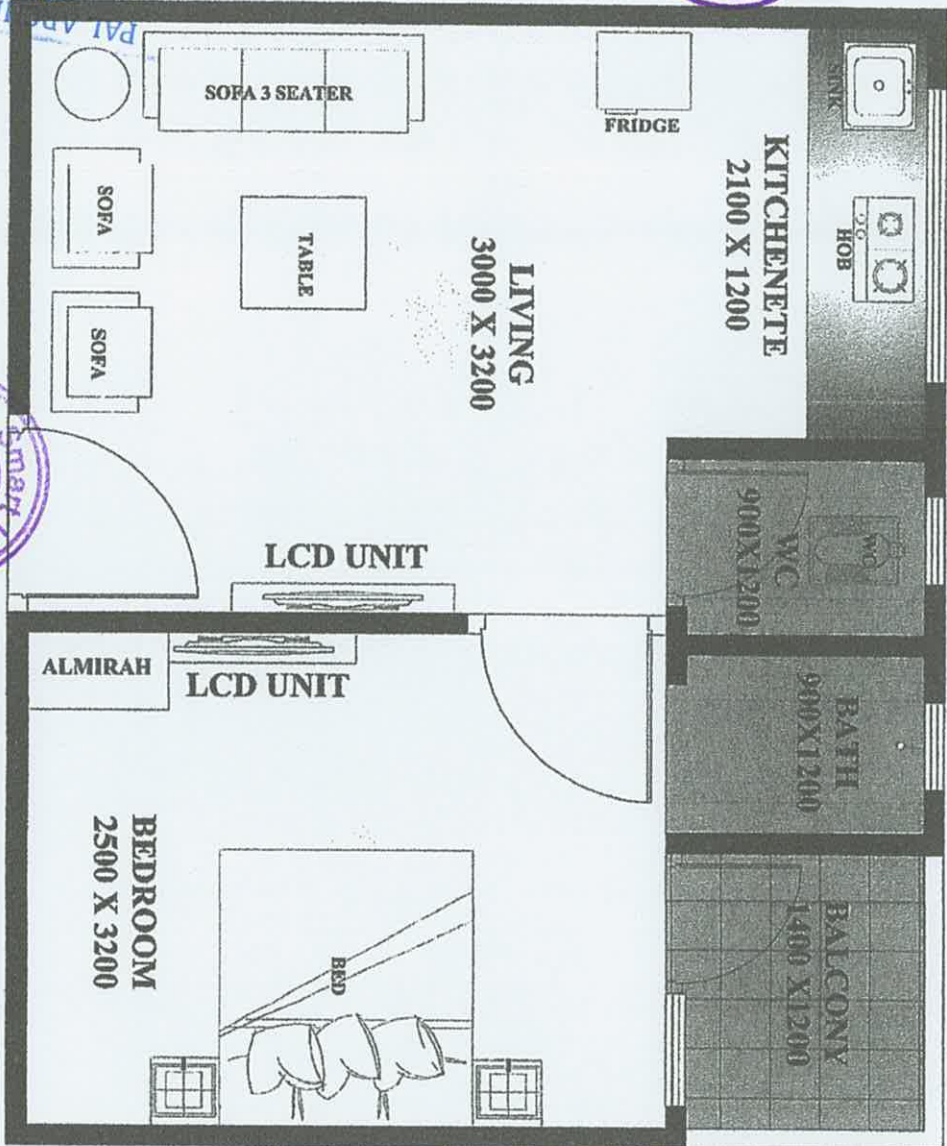


SECTION - D

- NOTES**
1. ALL DIMENSIONS ARE IN METERS.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 3. THE DRAWING SHALL BE USED IN CONNECTION WITH ALL RELEVANT SPECIFICATIONS, CONTRACTS, AND AGREEMENTS.
 4. ANY DISCREPANCY BETWEEN THE DRAWING AND THE SPECIFICATIONS SHALL BE RESOLVED IN FAVOR OF THE SPECIFICATIONS.
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A2

PROJECT INFORMATION PROJECT NAME: PROPOSED PWDY (PWS) ANSVA YOUNA PROJECT LOCATION: ANAND, HETIMBER, HIRWARA PROJECT ARCHITECTS:		CLIENT INFORMATION CLIENT NAME: PWDY (PWS) ANSVA YOUNA CLIENT ADDRESS: ANAND, HETIMBER, HIRWARA CLIENT CONTACT:	
DESIGNER INFORMATION DESIGNER NAME: ANAND & ASSOCIATES DESIGNER ADDRESS: ANAND, HETIMBER, HIRWARA DESIGNER CONTACT:		APPROVAL INFORMATION APPROVED BY: [Signature] APPROVED DATE: 22.09.22 APPROVED FOR: [Signature]	
DRAWING INFORMATION DRAWING TITLE: SECTION - D DRAWING SCALE: 1:80 DRAWING DATE: JAN. 2022 DRAWING BY: [Signature]		CONSTRUCTION INFORMATION CONSTRUCTION NAME: PWDY (PWS) ANSVA YOUNA CONSTRUCTION ADDRESS: ANAND, HETIMBER, HIRWARA CONSTRUCTION CONTACT:	



**PROPOSED
SINGLE
UNIT PLAN
FOR EWS**

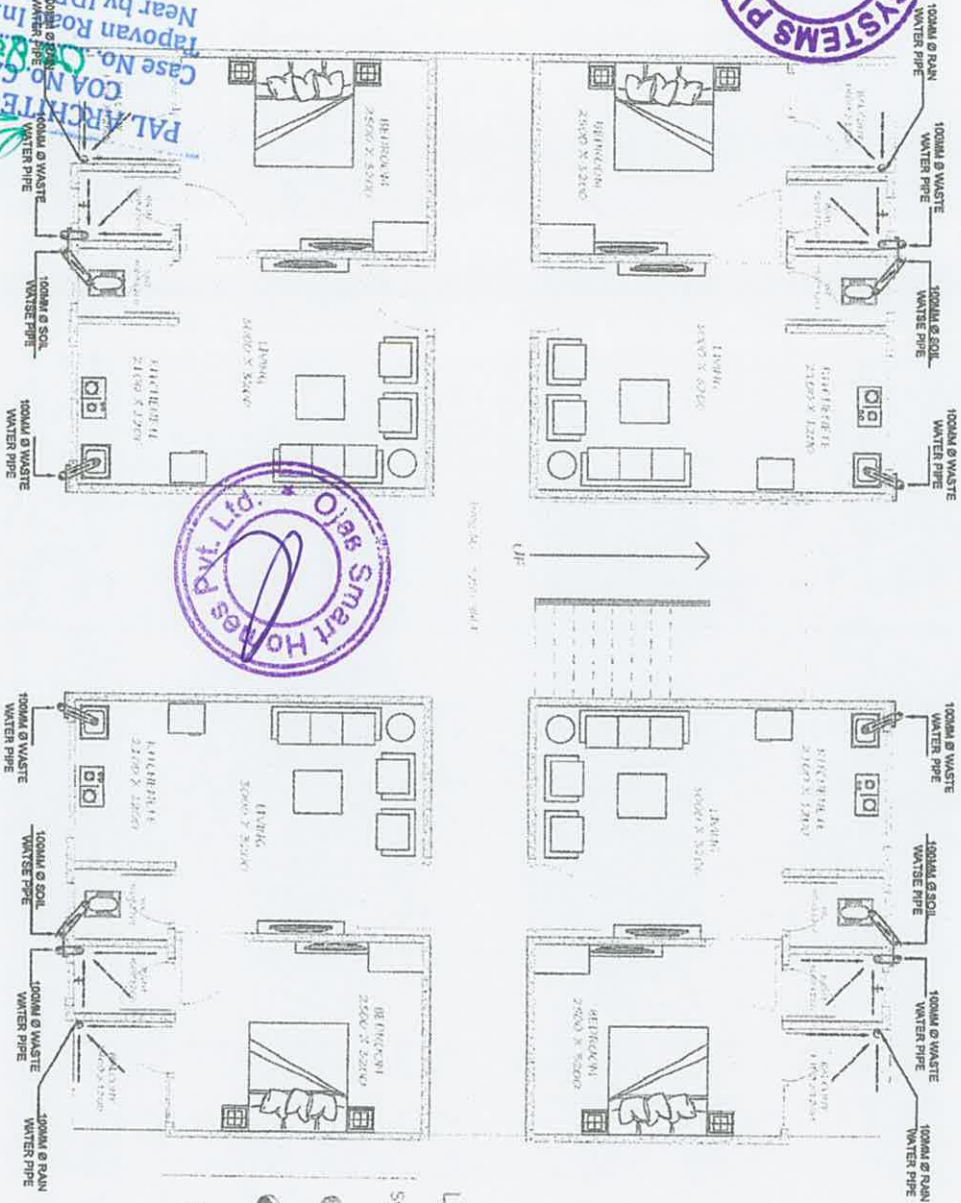
TYPE OF UNIT	CARPET AREA OF SINGLE UNIT (IN SQMT)	WALL AREA (IN SQMT)	TOTAL BUILT-UP AREA (IN SQMT)
EWS	23.24	2.38	25.30

COA No. CA/2018/96344
PAI ARCHITECT AND ENGINEER
Case No. 2080
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346





PAL ARCHITECT AND ENGINEER
 Case No. COA No. CA/2018/96244
 Date: 15/11/2018
 Near by IDB Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346



TYPICAL FLOOR PLAN EWS (GROUND, FIRST, SECOND & THIRD FLOOR)

LEGENDS :-

Symbol	DESCRIPTION
	100 Ø PIPE FOR SOIL WASTE
	100 Ø PIPE FOR WASTE WATER
	100 Ø FLOOR TRAP

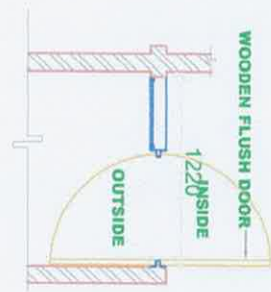
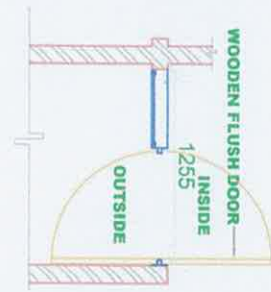
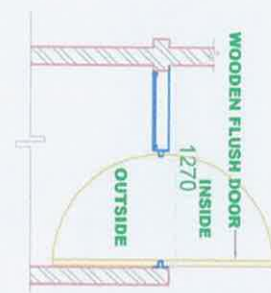
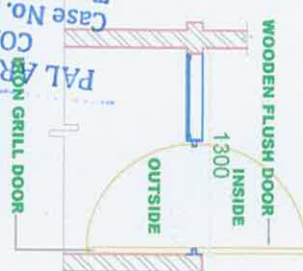
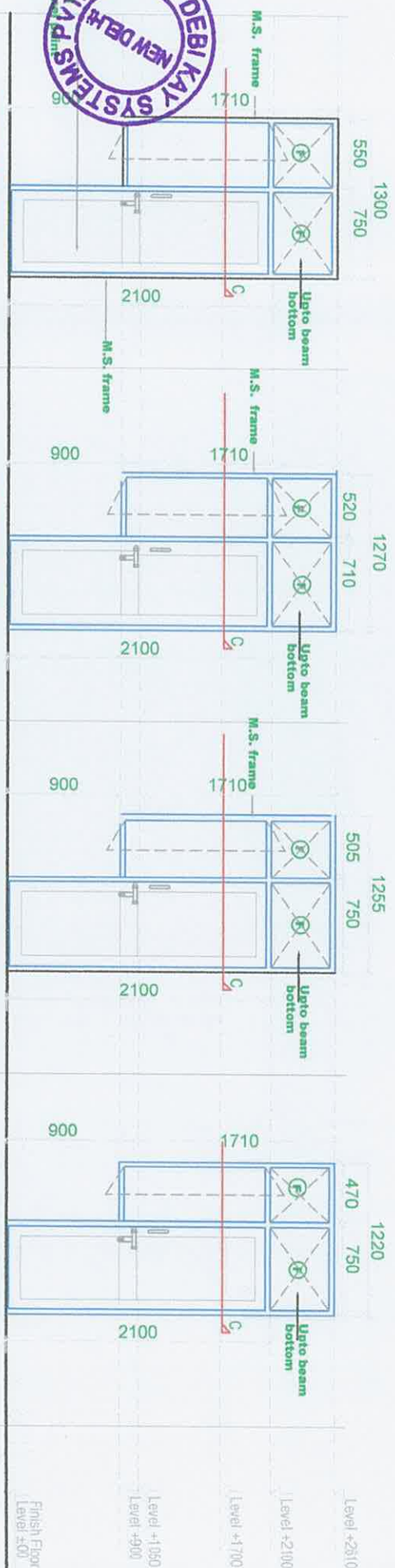
PLUMBING LAYOUT



ELECTRICAL LAYOUT

MAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 111/19 Date: 13/11/2019
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346

25mm thick
Flush door
Synthetic end grain
on both sides.



PLAN (DW2)			PLAN (DW3)			PLAN (DW4)			PLAN (DW5)		
Type	DW2	DW3	Type	DW3	DW4	Type	DW4	DW5	Type	DW5	DW5
Opening Size	1300 X 2100/1710	1270 X 2100/1710	Opening Size	1270 X 2100/1710	1255 X 2100/1710	Opening Size	1255 X 2100/1710	1220 X 2100/1710	Opening Size	1220 X 2100/1710	1220 X 2100/1710
Frame Section	M.S. Section	M.S. Section	Frame Section	M.S. Section	M.S. Section	Frame Section	M.S. Section	M.S. Section	Frame Section	M.S. Section	M.S. Section
Location	Bed room/balcony	Bed room/balcony	Location	Bed room/balcony	Bed room/balcony	Location	Bed room/balcony	Bed room/balcony	Location	Bed room/balcony	Bed room/balcony

Case No. COA No. GA 2018/96244
Date: 15/11/2018
PAL ARCADE AND ENGINEER
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346





The floor plan shows the 10th floor of the World Trade Center, which was a double-decker floor. The plan is divided into two main sections by a central atrium. The left section contains rooms 1001 through 1010, and the right section contains rooms 1001 through 1010. The central atrium is labeled '10TH FLOOR ATRIUM'. The plan also shows the '10TH FLOOR ELEVATOR SHAFT' and '10TH FLOOR STAIRS'. The rooms are labeled with their names and numbers, such as '1001 OFFICE', '1002 OFFICE', '1003 OFFICE', '1004 OFFICE', '1005 OFFICE', '1006 OFFICE', '1007 OFFICE', '1008 OFFICE', '1009 OFFICE', and '1010 OFFICE'. The plan also shows the '10TH FLOOR MEETING ROOM' and '10TH FLOOR CONFERENCE ROOM'. The plan is a detailed architectural drawing showing the layout of the floor, including walls, doors, windows, and furniture.



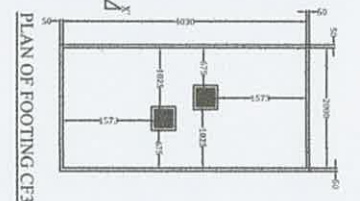
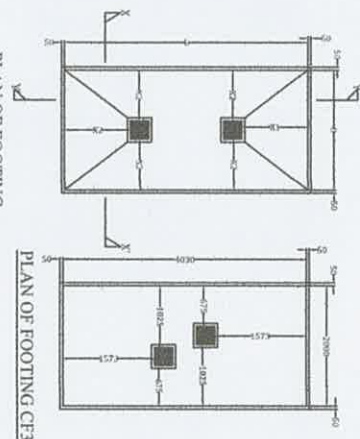
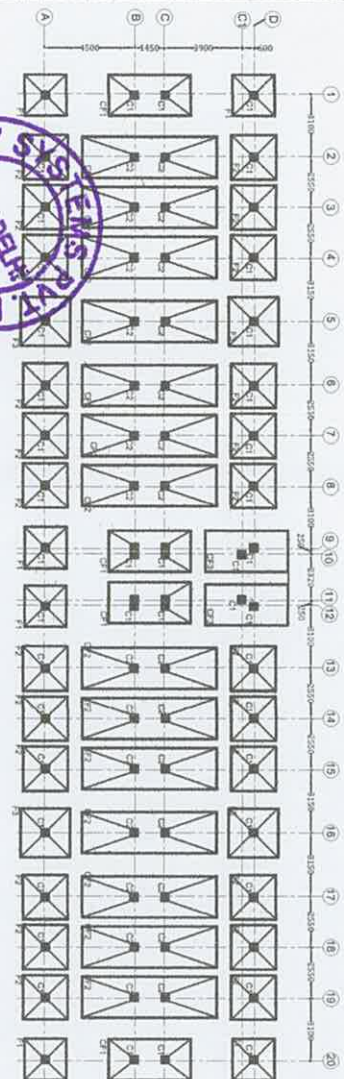
PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 12.11.2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

THE DRAWING IS THE PROPERTY OF GARG & ASSOCIATES. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF GARG & ASSOCIATES.	
NOTES 1. ALL DIMENSIONS ARE WITH DIMS. 2. ALL DIMENSIONS ARE TO BE GIVEN ONCE AND NOT TO BE REPEATEDLY GIVEN. 3. THE DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ARCHITECTURAL, SERVICES AND LANDSCAPE DRAWINGS. 4. ANY DISCREPANCIES OR OMISSIONS IN ANY CASE SHALL BE REFERRED TO THE ARCHITECT FOR CLARIFICATION. 5. THE DRAWING IS FOR INFORMATION PURPOSES ONLY. IT DOES NOT REPRESENT A CONTRACT DOCUMENT. 6. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 7. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 8. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 9. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 10. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 11. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY. 12. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT ONLY.	
PROJECT AND DETAILS GARG & ASSOCIATES PLANNING & DESIGNING ARCHITECTS 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751,	

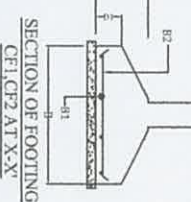
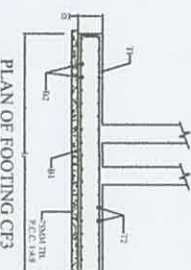
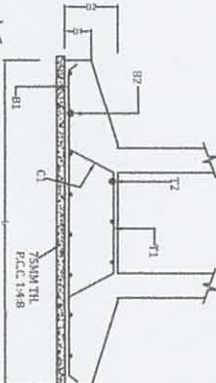
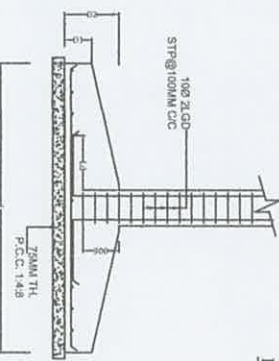
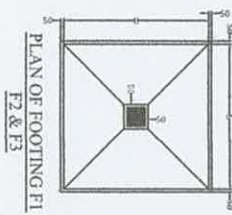
(Structure Drawing)
Pradhan Mantri Awas Yojna EWS
Anneki Hetampur



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 0080
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Date: 13/11/2022
Mob.: 7895872139, 9412143346



FOOTING NAME	FOOTING DIMENSIONS		FOUNDATION REINFORCEMENT	
	L x B	D1	D2	
F1	1700 X 1700	150	360	ALONG SHORT SPAN 150 @ 180 MM C/C 120 @ 200 MM C/C
F2	1900 X 1900	200	400	ALONG LONG SPAN 150 @ 180 MM C/C 120 @ 200 MM C/C
F3	2100 X 2100	200	400	ALONG LONG SPAN 150 @ 180 MM C/C 120 @ 200 MM C/C



SCHEDULE FOR COMBINED FOOTING (MD-1: EE-500)									
FOOTING NAME		FOUNDATION DESCRIPTION							
FOUNDATION DETAIL		BULK MAJOR							
		T1		T2		M1		M2	
L X B		D1	D2	X1	X2	B1	B2	C1	C2
CF1	400 X 1000	150	300	1000	600	41.50	120.250 MM C.C	51.50	120.250 MM C.C
CF2	645 X 1500	300	600	2400	600	62.000	160.220 MM C.C	11.500	160.220 MM C.C
CF3	400 X 1000	150	300	1000	600	41.50	120.250 MM C.C	51.50	120.250 MM C.C

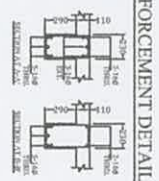
NOTE: THE DETAIL OF FOUNDATION FROM NG-1 SHALL BE 1500 MM

NOTE: THE DESIGN CONDITION FROM N.G.L. SHALL BE 1500 MM

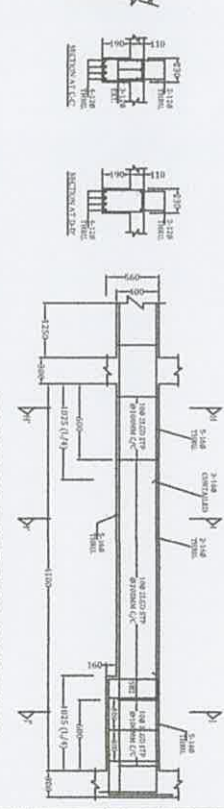
PROJECT :	DWG. NO.	TITLE	REV.	DATE	STRUCTURE ENGRG. SIGN	DESIGNED BY:	CONSULTANT
PROPOSED NEW 600' x 400' HINDUSTAN UNDER REHABILITATION PROJECT AWASTI KSO/JAN/CAN/NOV/2 UNIT 16 NABRU, HET SANGRA, HAIRIDWAR, UTTARANCHAL	1	PLAN & DETAIL OF FOUNDATION	R1	27/09/2020	GAC	ER. HARIT VERMA B.TECH (CE) AM-IEI	M.V.P CONSULTANTS & ASSOCIATES 203, TARA PLACE MAINITAL ROAD HAIRIDWAR Email: consultantmv@gmail.com

NOTE :-

1. DRAWING NOT TO SCALE FOLLOW WRITTEN DIMENSIONS ONLY.
2. ALL DIMENSIONS ARE IN MM. UNLESS STATED OTHERWISE.
3. THE R.C.C. GRADE FOR FOUNDATION, COLUMN, BEAM, SLAB & WALL SHALL BE OF M20
4. STEEL REINFORCEMENT BARS ARE TO BE HIGH YIELD STRENGTH COLD TWISTED DEFORMED BARS (FE 500 GR.GRADE) AS PER IS 1786:2008 BEFORE USE IT SHOULD BE TESTED AND RECORDED.
5. THE QUALITY OF MATERIALS USED IN CONCRETE SHALL BE CHECKED REGULARLY AND LAB TEST SHALL BE DONE TO ENSURE THAT SPECIFICATIONS ARE MET.
6. THE CONCRETING SHALL BE DONE BY WEIGHT AND SITE RECORDS SHALL BE MAINTAINED.
7. REGULAR CUBE CASTING AND TESTING SHALL BE DONE AT SITE AND RECORD SHALL BE MAINTAINED.
8. P.C.C SHALL BE OF GRADE M-7.5 (1:4:8) 75 MM THICK IN FOUNDATION.
9. DEVELOPMENT LENGTH SHOULD BE MIN. 45d (WHERE d – DIA OF BAR)
10. CLEAR COVER OF 25 MM IN BEAM, 30 MM IN COLUMN AND 50 MM IN FOUNDATION.
11. ANY DIFFICULTY SHALL BE BROUGHT TO THE DESIGNER BEFORE TAKING ANY DECISION.
12. CLOSED LINKS SHALL BE PROVIDED OVER THE ENTIRE LENGTH OVER WHICH THE LONGITUDINAL BARS ARE SPLICED SPACING OF THESE LINKS SHALL NOT EXCEED 150 MM IN BEAM AND 100 MM IN COLUMN.
13. LAP LENGTH SHALL NOT BE LESS THAN THE DEVELOPMENT LENGTH OF THE LARGEST LONGITUDINAL BAR IN TENSION.
14. LAP SPLICES SHALL NOT BE PROVIDED:
 - A) WITHIN A JOINT.
 - B) WITHIN A DISTANCE 2D FROM THE FACE OF COLUMN / BEAM
15. MORE THAN 50 % OF BARS SHALL NOT BE SPLICED AT ANY ONE SECTION.
16. STRUCTURE IS DESIGNED FOR A S.C. OF 10.07/72
17. ALL SLABS FROM OF TO FF TERRACE 110 MM THICK EXCEPT NOTED OTHERWISE



REINFORCEMENT DETAIL OF BEAM B2



REINFORCEMENT DETAIL OF BEAM B4

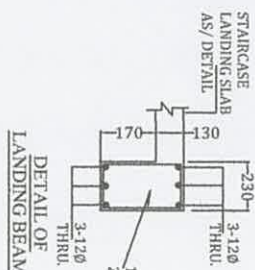
REINFORCEMENT DETAIL OF BEAM B3



REINFORCEMENT DETAIL OF BEAM SB3

SCHEDULE FOR SLAB BEAM

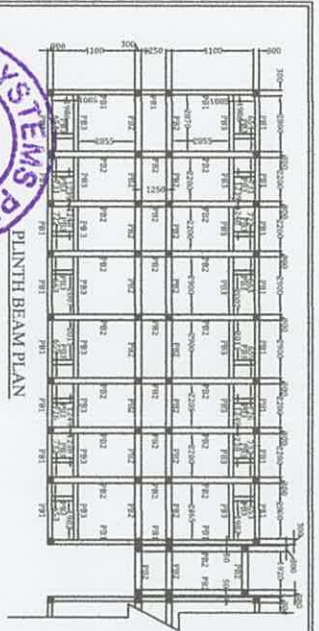
BEAM	WIDTH (B)(MM)	DEPTH (D)(MM)	AT SUNK
B1	230	400	-
B2	230	300	-
B3	230	300	560
B4	230	400	560
SB1	230	560	-
SB2	230	300	560
SB3	230	300	-



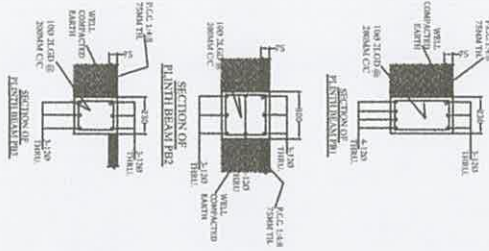
NOTE :-

1. DRAWING NOT TO SCALE FOLLOW WRITTEN DIMENSIONS ONLY.
2. ALL DIMENSIONS ARE IN MM. UNLESS STATED OTHERWISE.
3. THE R.C.C. GRADE FOR FOUNDATION, COLUMN, BEAM, SLAB & WALL SHALL BE OF M 20.
4. STEEL REINFORCEMENT BARS ARE TO BE HIGH YIELD STRENGTH COLD TWISTED DEFORMED BARS (FE 500 GRADE) AS PER IS 1786:2008. BEFORE USE IT SHOULD BE TESTED AND RECORDED.
5. THE QUALITY OF MATERIALS USED IN CONCRETE SHALL BE CHECKED REGULARLY AND LAB TEST SHALL BE DONE TO ENSURE THAT SPECIFICATIONS ARE MET.
6. THE CONCRETING SHALL BE DONE BY WEIGHT AND SITE RECORDS SHALL BE MAINTAINED.
7. REGULAR CURE CASTING AND TESTING SHALL BE DONE AT SITE AND RECORD SHALL BE MAINTAINED.
8. P.C.C. SHALL BE OF GRADE M-7.5 (1:4:8) 75 MM THICK IN FOUNDATION.
9. DEVELOPMENT LENGTH SHOULD BE MIN. 45d (WHERE d = DIA OF BAR).
10. CLEAR COVER OF 25 MM IN BEAM, 30 MM IN COLUMN AND 50 MM IN FOUNDATION.
11. ANY DIFFICULTY SHALL BE BROUGHT TO THE DESIGNER BEFORE TAKING ANY DECISION.
12. CLOSED LINKS SHALL BE PROVIDED OVER THE ENTIRE LENGTH OVER WHICH THE LONGITUDINAL BARS ARE SPICED SPACING OF THESE LINKS SHALL NOT EXCEED 150 MM IN BEAM AND 100 MM IN COLUMN.
13. LAP LENGTH SHALL NOT BE LESS THAN THE DEVELOPMENT LENGTH OF THE LARGEST LONGITUDINAL BAR IN TENSION.
14. LAP SPICES SHALL NOT BE PROVIDED:
- A) WITHIN A JOINT.
- B) WITHIN A DISTANCE 2D FROM THE FACE OF COLUMN / BEAM
15. MORE THAN 50 % OF BARS SHALL NOT BE SPICED AT ANY ONE SECTION.
16. STRUCTURE IS DESIGNED FOR A S.B.C. OF 10.07/M2
17. ALL SLABS FROM GF TO FF TERRACE 110 MM THICK EXCEPT NOTED OTHERWISE

PROJECT	PROPOSED NEW GROUP HOUSING UNDER PHASE II, AWASTHY/ROHINI ROAD, UNIT 16 ANNEK, GURGAON, HARYANA
DRG. NO.	3
TITLE	DETAIL OF TYP. FIRST, SECOND, THIRD FLOOR, SLAB BEAM
REV.	RO
DATE	27/09/2022
STRUCTURE ENGG. SIGN	G.E.C.
DESIGNED BY:	ER. HARIT VERMA B.TECH (C.E.) AM-IEI
CONSULTANT	M.V.P. CONSULTANT & ASSOCIATES 203, TARA PLACE MAIN TARA ROAD HALDVAANI Email: consultantmvp@gmail.com

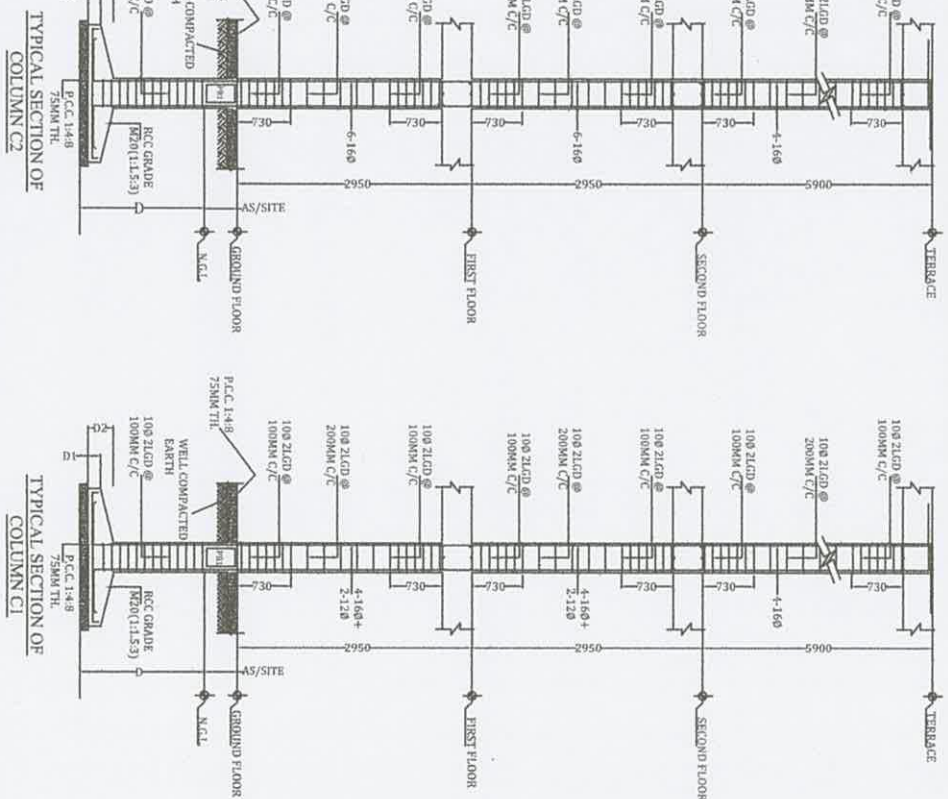


SECTION	REMARKS
C1	FROM FOUNDATION TO SECOND FLOOR
C2	FROM FOUNDATION TO TERRACE



TYPICAL SECTION OF COLUMN C2

TYPICAL SECTION OF COLUMN C1



- NOTE :-
1. DRAWING NOT TO SCALE FOLLOW WRITTEN DIMENSIONS ONLY.
 2. ALL DIMENSIONS ARE IN M.M. UNLESS STATED OTHERWISE.
 3. THE R.C. GRADE FOR FOUNDATION, COLUMN, BEAM, SLAB & WALL SHALL BE OF M 20
 4. STEEL REINFORCEMENT BARS ARE TO BE HIGH YIELD STRENGTH COIL TWISTED DEFORMED BARS (FE 500 GRADE) AS PER IS 1786:2008. BEFORE USE IT SHOULD BE TESTED AND RECORDED.
 5. THE QUALITY OF MATERIALS USED IN CONCRETE SHALL BE CHECKED REGULARLY AND LAB TEST SHALL BE DONE TO ENSURE THAT SPECIFICATIONS ARE MET.
 6. THE CONCRETING SHALL BE DONE BY WEIGHT AND SITE RECORDS SHALL BE MAINTAINED.
 7. REGULAR CUBE CASTING AND TESTING SHALL BE DONE AT SITE AND RECORD SHALL BE MAINTAINED.
 8. P.C.C. SHALL BE OF GRADE M-7.5 (1:4:8) 75 MM THICK IN FOUNDATION.
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 13. LAP LENGTH SHALL NOT BE LESS THAN THE DEVELOPMENT LENGTH OF THE LARGEST LONGITUDINAL BAR IN TENSION.
 14. LAP SPICES SHALL NOT BE PROVIDED.
 15. WITHIN A JOINT.
 16. WITHIN A DISTANCE 2D FROM THE FACE OF COLUMN / BEAM
 17. MORE THAN 50 % OF BARS SHALL NOT BE SPICED AT ANY ONE SECTION.
 18. STRUCTURE IS DESIGNED FOR A S.B.C. OF 10.0 T/M²
 19. ALL SLABS FROM GF TO FF TERRACE 110 MM THICK EXCEPT NOTED OTHERWISE

DESIGNED BY:

CONSULTANT

ER. HARIT VERMA
B.TECH (CE)

M.V.P. CONSULTANT & ASSOCIATES
203, TARA PLACE NAINTAL ROAD
HAIHWAN
Email: consultantmv@gmail.com

PROJECT

TITLE

PROPOSED EWS GROUP HOUSING
UNDER PRADHAN MANTRI
AVASIVA YOJANA (PMAY-G)
UNIT 16 ANNEKI, HETAMPUR
HARIDWAR, UTTARAKHAND

REV. DATE

PLINTH LEVEL PLAN
AND DETAIL OF COLUMN
AND THE BEAM

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

C.E.C.

DATE

27/09/2022

STRUCTURE ENGG. SIGN

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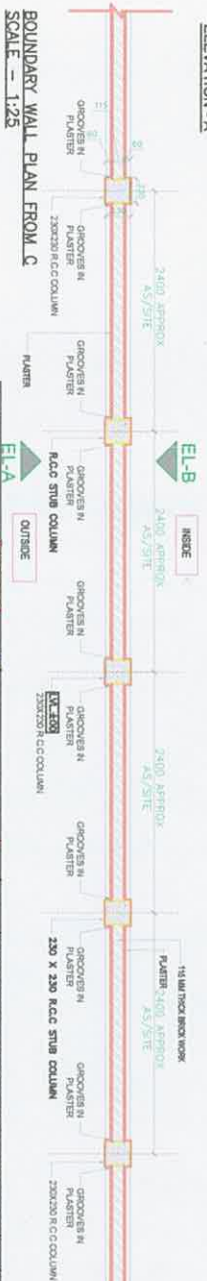
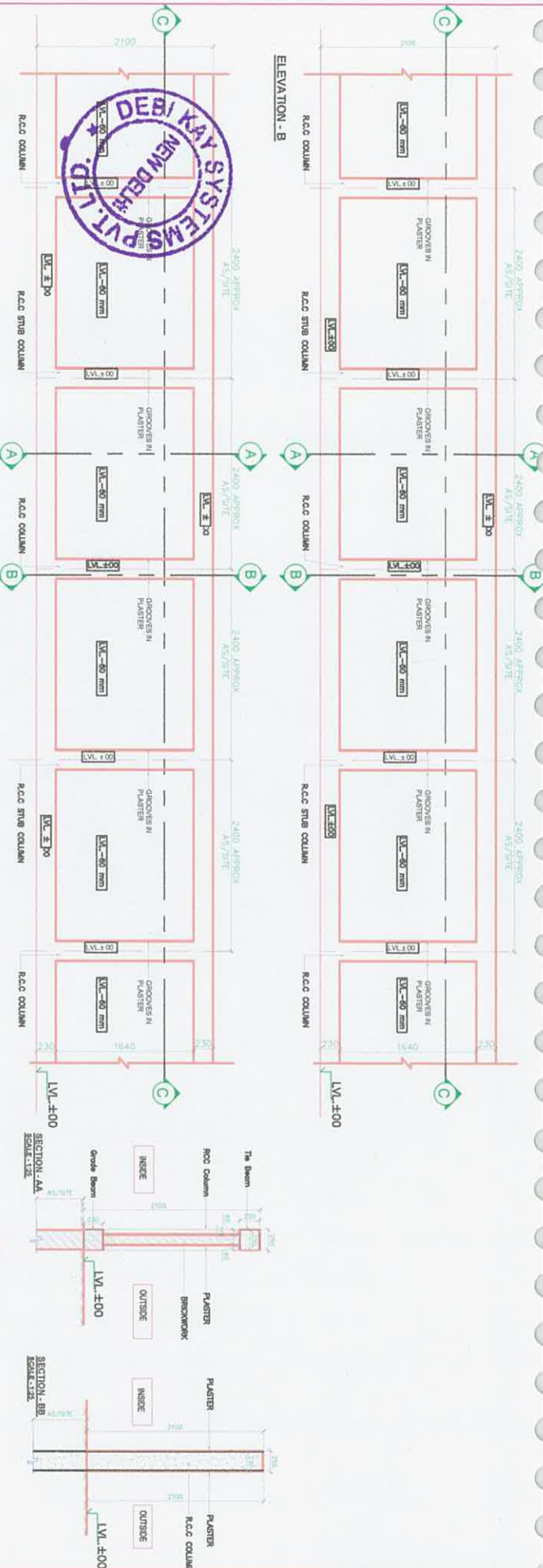
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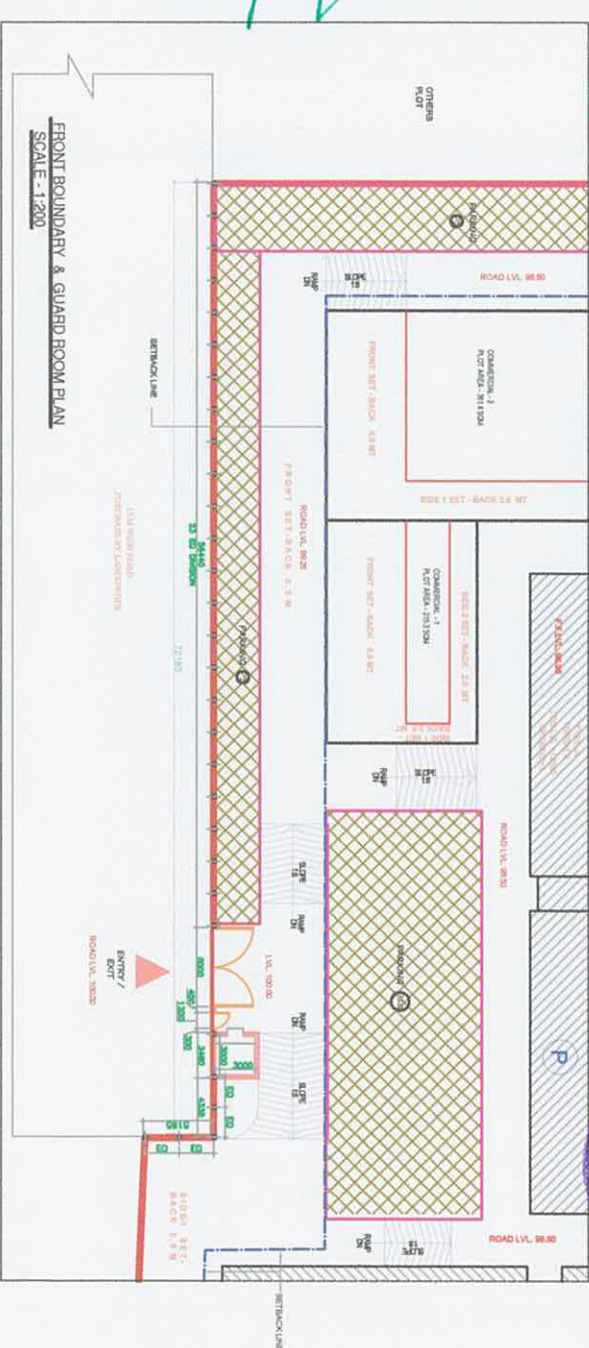
27/09/2022

STRUCTURE ENGG. SIGN



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0580 Date 23/11/2022
 Tapovan Road Infront of RD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346

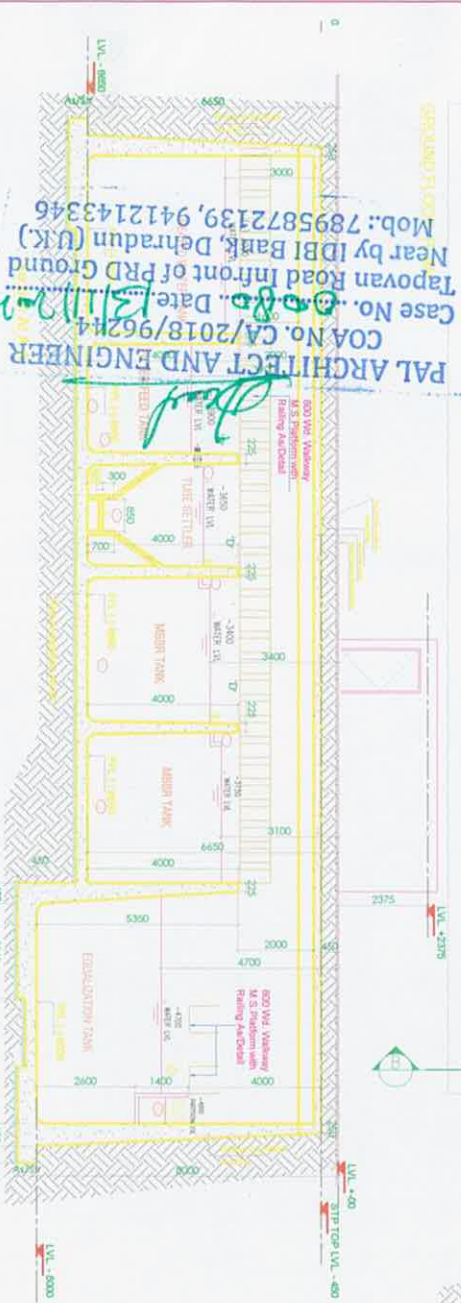
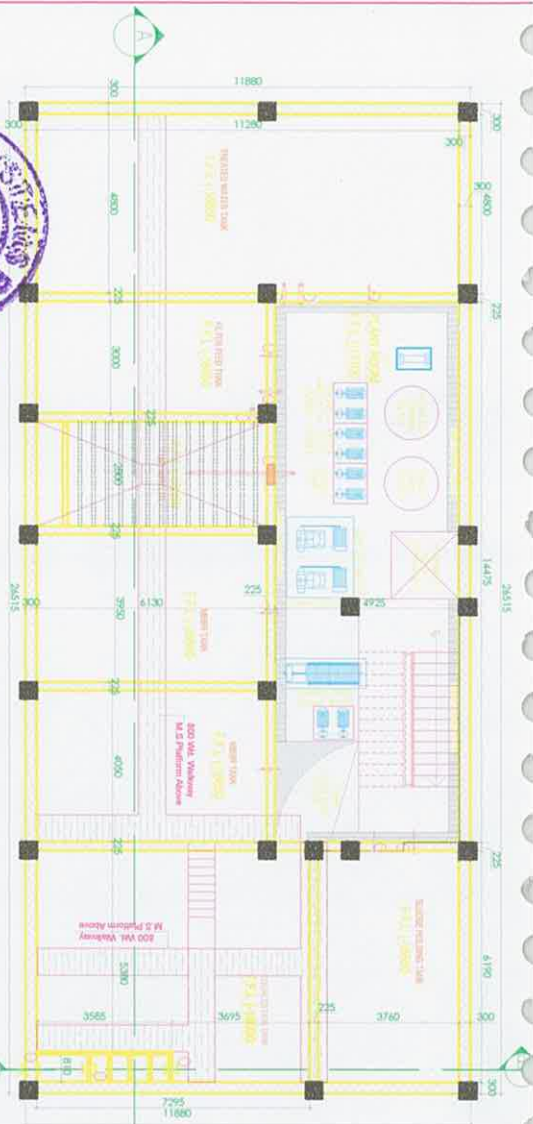
FRONT BOUNDARY & GUARD ROOM PLAN
SCALE - 1:200



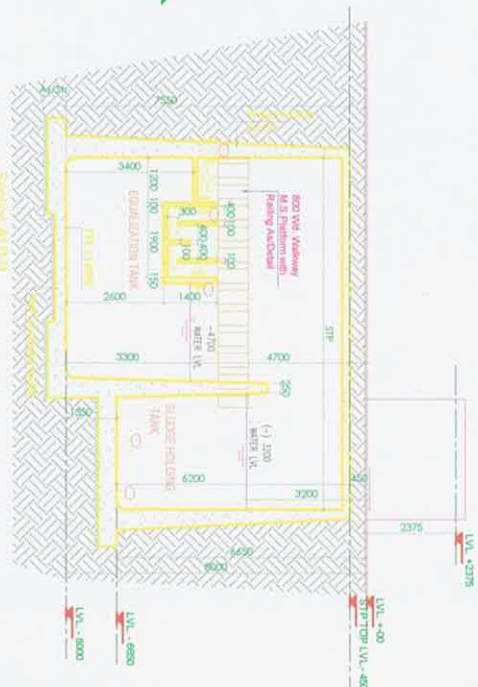
NOTES

1. The dimensions of the structure are given in meters.
2. The structure is to be constructed in accordance with the specifications of the Indian Standard Code of Practice for Reinforced Concrete Structures.
3. The structure is to be constructed in accordance with the specifications of the Indian Standard Code of Practice for Reinforced Concrete Structures.
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10. The structure is to be constructed in accordance with the specifications of the Indian Standard Code of Practice for Reinforced Concrete Structures.

PROJECT INFORMATION		CLIENT	
PROJECT NAME	PROJECT ADDRESS	CLIENT NAME	CLIENT ADDRESS
PROJECT NO.	PROJECT DATE	CLIENT PHONE	CLIENT EMAIL
DESIGNER INFORMATION		APPROVED BY	
DESIGNER NAME	DESIGNER ADDRESS	APPROVED BY NAME	APPROVED BY ADDRESS
DESIGNER PHONE	DESIGNER EMAIL	APPROVED BY PHONE	APPROVED BY EMAIL
DATE OF DRAWING		DATE OF APPROVAL	
DATE OF DRAWING	DATE OF APPROVAL	DATE OF DRAWING	DATE OF APPROVAL
SCALE		SCALE	
SCALE	SCALE	SCALE	SCALE



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/962H4
 Case No. 0080
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346



Project
 PROPOSED PALM (ENS) ANKITA TOLNA
 ANKITA, NEW DELHI, INDIA

Drawing
 Title
 STP PLAN (700 KLD)

Drawing Purpose
 GOOD FOR CONSTRUCTION

Scale
 1:100

Date
 MAY, 2022

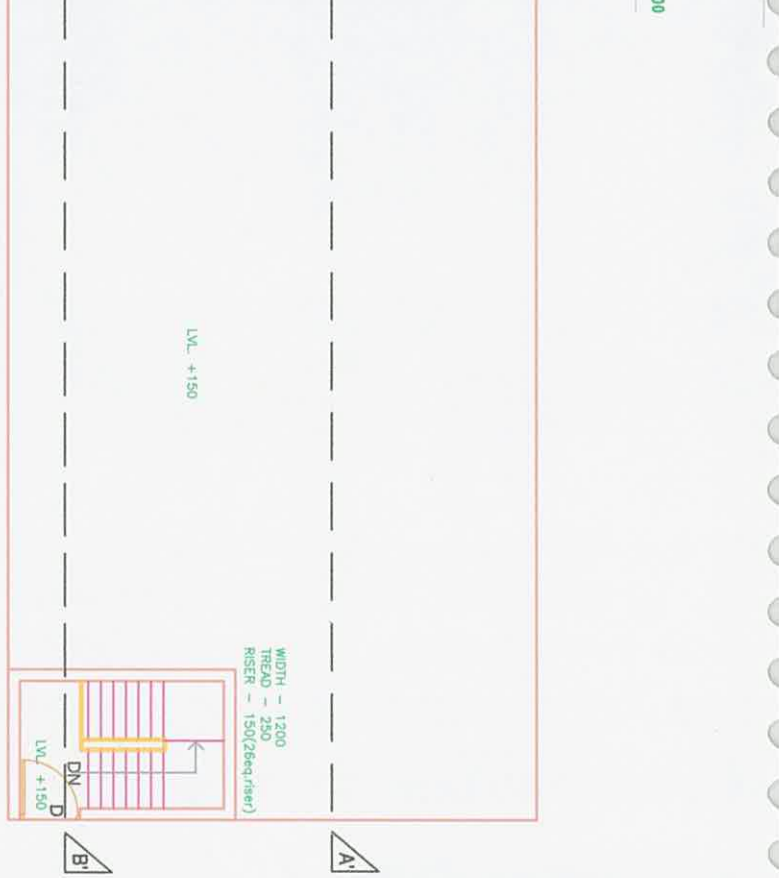
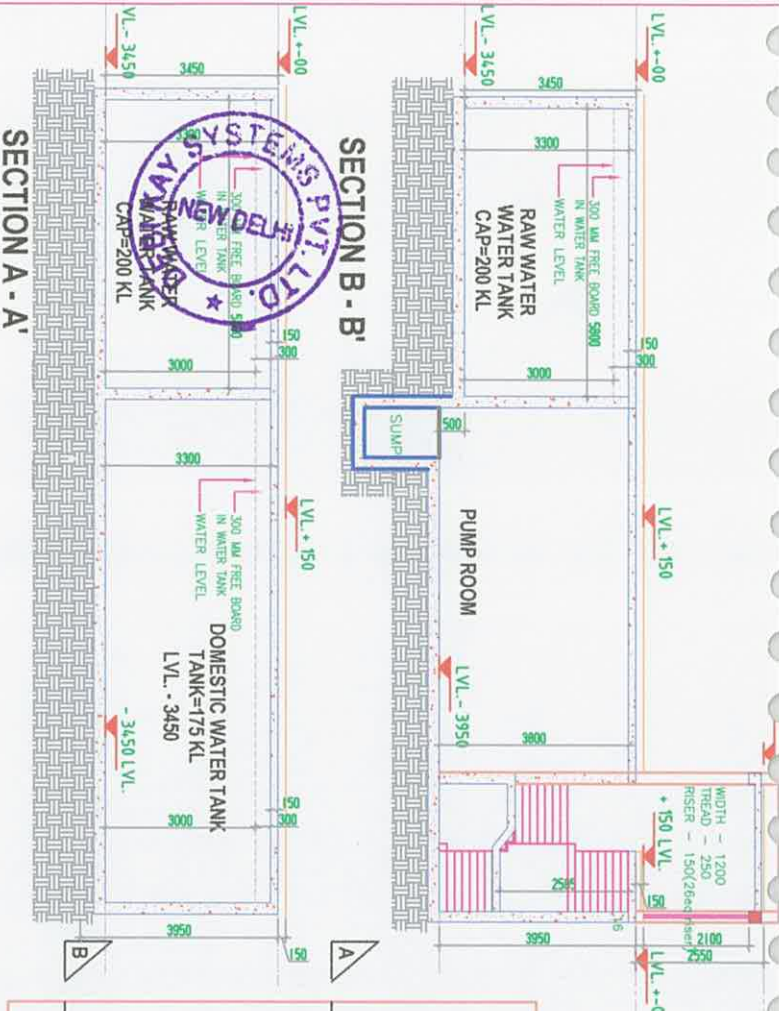
Drawn by
 R. RAJAT

Checked by
 R. RAJAT

Approved by
 R. RAJAT

Rev. R0
 Date of Issue
 22.05.22

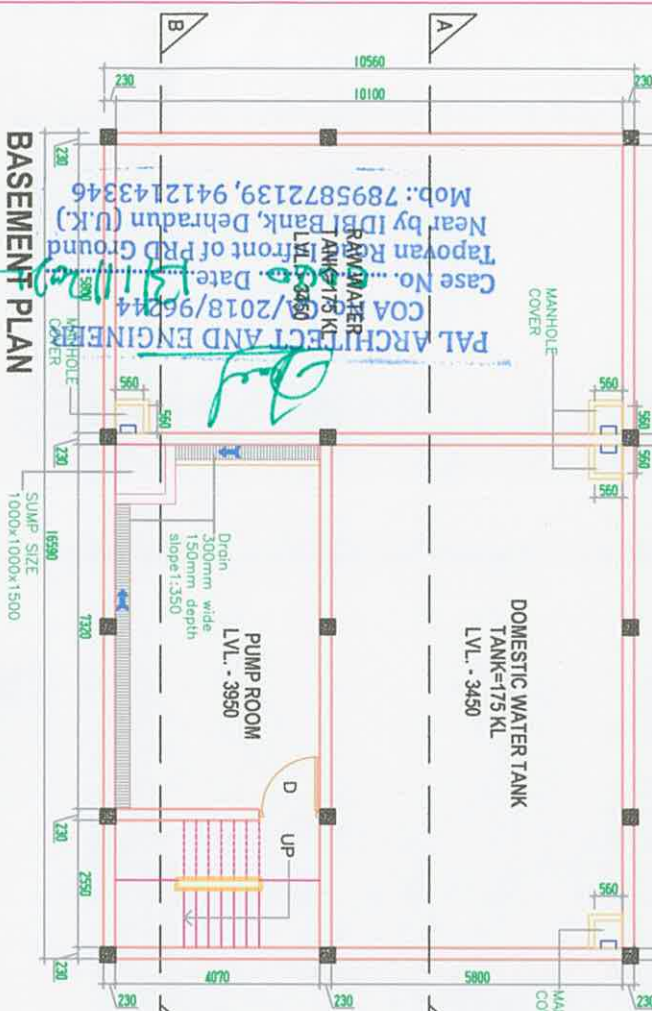
NOTES
 1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 3. THE DRAWING SHOULD BE USED IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, SPECIFICATIONS, AND STANDARDS.
 4. ANY DISCREPANCY IN THE DRAWING OR ANY PART THEREOF SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
 5. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
 6. THE DRAWING IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
 7. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
 8. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
 9. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
 10. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.



NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
2. THE FINISHES SHOULD BE AS PER THE ARCHITECT'S SPECIFICATION.
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GROUND FLOOR PLAN



PROJECT INFORMATION

Project: **PROPOSED PUMP (ENS) ANKSHA TOLANA**

Client: **ANKSHA, HETAMPUR, HAWDWAR**

Project Architects: **GARG & ASSOCIATES**

Project Engineer: **ASHUTOSH K. SHARMA**

Project Designer: **ANISH K. SHARMA**

Project Drafter: **ANISH K. SHARMA**

Project Checker: **ANISH K. SHARMA**

Project Approver: **ANISH K. SHARMA**

Project Date: **22.09.22**

Project Location: **ANKSHA, HETAMPUR, HAWDWAR**

Project Scale: **1:75**

Project Status: **GOOD FOR CONSTRUCTION**

Project Drawing Number: **PMAY/M/01**

Project Date of Issue: **22.09.22**

**(Tower No 18 A to H & J to T Tower)
Bill Of Quantity PMAY EWS Anneki
Hetampur (Uttakhand)**

(Civil Work)

TOWER NO A TO H, J TO S (18 TOWER) BILL OF QUANTITY PMAY EWS ANNEKI HETAMPUR (HARIDWAR) (UTARAKHAND)

S.NO.	DSR - 21	DESCRIPTION OF WORK	UNIT	QTY	RATE	AMOUNT
EARTH WORK						
1	2.28	Surface dressing of the ground including removing vegetation and in equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.				
2	2.28.1	All kinds of soil	sqm	24844.7	28.15	699378.305
3	2.32	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the area cleared.	sqm	4968.94	7.4	36770.156
4	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge. 2.6.1 All kinds of soil				
5	2.6.1	All kinds of soil	cum	14185.91	205.45	2914495.21
6	2.36	Extra for levelling & neatly dressing of disposed soil completely as directed by Engineer-in-charge.	cum	2127.74	76.7	163197.658
SUB TOTAL						
3813841.329						
CONCRETE WORK						
7	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
8	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1457.33	6326.05	9219142.447
9	4.20.1	4.20.1 All works upto plinth level :				
10	4.20.1.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	3505.65	8387.15	29402412.4
11	4.20.2	All works above plinth and upto floor V level				
12	4.20.2.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	7108.092	10009.5	71148446.87
SUB TOTAL						
109770001.7						
FORM WORK						
12	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
13	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	sqm	11671.66	307.95	3594287.697
14	5.9.3	Suspended floors, roofs, landings, balconies and access platform	sqm	153440.4	766.55	117619731
16	5.9.6	Columns, Piers, Abutments, Posts and Struts	sqm	23814	657.75	15663658.5
17	5.9.7	Stairs, (excluding landings) except spiral-staircases	sqm	4983.8	657.75	3278094.45
SUB TOTAL						
140155771.6						
STEEL REINFORCEMENT						
18	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level				
19	5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more	kg	1182830	89.65	106040745.4
SUB TOTAL						
106040709.5						



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 13/11/2018
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

TOWER NO A TO H, J TO S (18 TOWER) BILL OF QUANTITY PMAY EWS ANNEKI HETAMPUR (HARIDWAR) (UTTARAKHAND)

S.NO.		DSR - 21	DESCRIPTION OF WORK				UNIT	QTY	RATE	AMOUNT
			SUB TOTAL							293906.88
21	8.6	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	sqm	703.8	417.6	293906.88				
22	8.9	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete								
			SUB TOTAL							293906.88
CLADDING WORK										
20	6.38	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	cum	5717.52	8890.8	50833326.82				
			SUB TOTAL							50833326.82
FLOORING WORK										
23	9.18	Providing and fixing Pre-laminated flat pressed 3 layer (medium density) particle board or graded wood particle board 15 : 3087 marked, with one side decorative and other side balancing lamination Grade I, Type II exterior grade 15 : 12823 marked, in shelves with screws and fittings wherever required, edges to be painted with polyurethane primer (fittings to be paid separately)								
24	9.18.2	25 mm thick	sqm	10281.6	1501	15432681.6				
25	10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.								
26	10.25.2	n gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	KG	282240	142.3	40162752				
27	10.26	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.								
	10.26.1	M.S. tube		12153.6	157.15	1909938.24				
28	9.12	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	SQM	2799.36	148.5	415704.96				
			SUB TOTAL							57921076.8
FLOORING WORK										
29	11.37	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	SQM	38952	935.6	36443491.2				
			SUB TOTAL							36443491.2

PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Date: 12/11/2018
Case No. 048
Tapovan Road Infront of RKD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346



TOWER NO A TO H, J TO S (18 TOWER) BILL OF QUANTITY PMAY EWS ANNEKI HETAMPUR (HARIDWAR) (UTTARAKHAND)

S.NO.	DSR - 21	DESCRIPTION OF WORK	UNIT	QTY	RATE	AMOUNT
FINISHING WORK						
30	13.1	12 mm cement plaster of mix :				
31	13.1.2	1:6 (1 cement: 6 fine sand)	sqm	239419.2	294.85	70592748.17
32	13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacture, over the plastered wall surface to prepare the surface even and smooth complete.	sqm	239419.2	123.85	29652066.68
33	13.48	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
34	13.48.1	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr /10 sqm	sqm	239419.2	158.95	38055680.25
33	13.47	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
34	13.47.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	sqm	24452.28	162.35	3969827.658
35	13.83	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour				
36	13.83.2	Two coats	sqm	210714	121.55	25612285.48
SUB TOTAL						
PLUMBING AND SANITARY INSTALLATIONS						
37	17.3	Plumbing and sanitary installation of 1152 EWS per floor 16 unit G+3				23436200.52
	17.3.1	Internal Electrical work of 1152 EWS per floor 16 unit G+3 (64 Unit) total 18 tower				46588896
WATER PROOFING						
22.6		Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying:				
(a)		after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm.				
(b)		laying second layer of fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm.				
(c)		third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30 cm on parapet wall and tucked into groove in parapet all around				
(d)		fourth and final layer of brick tiling with cement mortar (which will be paid for separately.				
		For the purpose of measurement the entire treated surface will be measured.				
			2901.11	15	585.55	1698744.961
GRAND TOTAL TOWER A TO H, J TO S 18 TOWER						
						744878575.5



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 008
 Date: 13/11/2022
 Near by IDBI Bank, Dehradun (U.K.)
 Tapovan Road Infront of FRD Ground
 Mob.: 7895872139, 9412143346

They



A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
2		4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :										
		4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)										
			Foundation (F1) P.C.C		2.02			2.02	0.075	0.306	6	1.836	
			Foundation (F2) P.C.C		2.16			2.16	0.075	0.3449	24	8.398	
			Foundation (F3) P.C.C		2.4			2.4	0.075	0.432	4	1.728	
			Foundation (CF1) P.C.C		4.03			4.03	0.075	0.6	4	2.418	
			Foundation (CF2) P.C.C		6.65			6.65	0.075	0.997	14	13.965	
			Foundation (CF3) P.C.C		4.03			4.03	0.075	0.6	2	1.2	
			Sub Total										
			Plinth beam (PB1) P.C.C		164.1			164.1	0.075	29.545	cum	6326.05	186903.147
			Plinth beam (PB2) P.C.C		238.2			238.2	0.075	3.692			
			Plinth beam (PB3) P.C.C		164.1			164.1	0.075	5.359			
			Ground floor pcc		48.42			48.42	0.075	12.743	cum	6326.05	80612.85
			SUB TOTAL										512175.977
													244659.98



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0080
 Date 13/11/2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - 21	CODE NO.	4.20.1	4.20.1	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
					4.20.1 All works upto plinth level :										
					Concrete of M20 grade with minimum cement content of 270 kg/cum										
					Foundation (F1) R.C.C		2.02		0.3	1.22	6	7.34			
					Foundation (F2) R.C.C		2.16		0.4	1.86	24	44.78			
					Foundation (F3) R.C.C		2.4		0.4	2.3	4	9.216			
					Foundation (CF1) R.C.C		4.03		0.3	2.418	4	9.672			
					Foundation (CF2) R.C.C		6.65		0.3	3.99	14	55.86			
					Foundation (CF3) R.C.C		4.03		0.4	3.224	2	6.448			
					Plinth beam (PB1) R.C.C		164.1		0.23	0.4		133.316	cum	8387.15	1118141.29
					Plinth beam (PB2) R.C.C		238.18		0.3			15.09			
					Plinth beam (PB3) R.C.C		164.1		0.23	0.3		11.32			
					Column (C1) R.C.C upto plinth beam level		0.3		0.3	2	0.2385	50	11.925		
					Column (C2) R.C.C upto plinth beam level		0.3		0.3	2	0.2385	28	6.678		
					All works above plinth and upto floor V level							18.603	cum	8387.15	156026.15
					4.20.2										
					Concrete of M20 grade with minimum cement content of 270 kg/cum										
					Column (C1) R.C.C upto terrace level		0.3		0.3	11.95	50	53.775			
					Column (C2) R.C.C upto terrace level		0.3		0.3	11.95	28	30.114			
					Column (C1) R.C.C terrace to mummy		0.3		0.3	2.4	6	1.296	cum	10009.5	12611.97
					(B1)		36		0.23	0.4		3.312			
					(B2)		126		0.23	0.3		8.694			
					(B3)		92		0.23	0.3		6.348			
					(B4)		92		0.23	0.4		2.392			
					(S81)		21.63		0.23	0.4		2.785			
					(S82)		92		0.23	0.3		6.348			
					(S83)		21.63		0.23	0.3		1.492			
					G.F		48.42		0.125	64.459		64.459			
					F.F		48.42		0.125	64.459		64.459			
					S.F		48.42		0.125	64.459		64.459			
					T.F		48.42		0.125	64.459		64.459			
					Staircase landing		2.06		0.125	1.287	4	1.287			
					20 Steps(0.5*20*1.0,15*0.145)		1		0.15	0.435	4	0.435			
					projection 4 floor		1.7		0.45	6.12	16	6.12			
					projection 4 floor		0.65		0.45	2.34	16	2.34			
					projection 4 floor		0.65		0.45	2.34	16	2.34			
					projection 4 floor		1.65		0.45	0.3712	2	0.3712			
					Kitchen Counter 4 floor		2.07		0.075	5.9616	16	5.9616			
					Mummy slab		5.91		0.125	1.6474		1.6474			
					SUB TOTAL							309.7092	cum	10009.5	3100034.23
															5585806.08



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0080
 Date 13/11/2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

Foot

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

Case No. 6080
COA No. CA/2018/96244
PAL ARCHITECT AND ENGINEER
Near by IDBI Bank, Dehradun (U.K.)
Tapovan Road Infront of PRD Ground
Mob.: 7895872139, 9412143346



sno	DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
5	5.22		Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level										
	5.22.6		Fe-500B or more										
			Foundation (F1) steel	12 mm	44.44			39.107	6	234.64			
			Foundation (F2) steel	12 mm	49.68			43.718	24	1049.24			
			Foundation (F3) steel	12 mm	69.9			61.512	4	246.048			
			Foundation (CF1) steel	08 mm	32.24			12.73	4	50.93			
			Foundation (CF2) steel	12 mm	48.24			42.45	4	169.8			
			Foundation (CF2) steel	20 mm	65.2			160.98	14	2253.82			
			Foundation (CF3) steel	16 mm	75			118.5	14	1659			
			Foundation (CF3) steel	16 mm	118			186.44	2	372.88			
			Column (C1) steel upto plinth beam level	16 mm	10			15.8	50	790			
			Column (C1) steel upto plinth beam level	12 mm	5			4.4	50	220			
			Column (C2) steel upto plinth beam level	16 mm	15			23.7	28	663.6			
			Column (C2) steel upto plinth beam level	10 mm	5			4.4	28	123.2			
			Column (C1) steel upto Terrace level	16 mm	48			75.84	50	3792			
			Column (C1) steel upto Terrace level	12 mm	24			22	50	1100			
			Column (C2) steel upto Terrace level	10 mm	72			44	50	2200			
			G+3	16 mm	72			113.76	28	3185.28			
			G+3	10 mm	72			44	28	1232			
			Column (C1) steel upto Terrace to munity level	16 mm				22.75	6	136.512			
			Column (C1) steel upto Terrace to munity level	12 mm				4.224	6	25.344			
			Column (C1) steel upto Terrace to munity level	10 mm				5.688	6	34.128			
			Plinth beam (PB1) steel	12 mm	164.1			144.4	7	1010.85			
			Plinth beam (PB1) steel	10 mm	1.26			0.768	820	630.25			
			Plinth beam (PB2) steel	12 mm	238.18			209.59	6	1257.9			
			Plinth beam (PB2) steel	10 mm	1.26			0.768	820	630.25			
			Plinth beam (PB3) steel	12 mm	164.1			144.4	7	1010.85			
			Plinth beam (PB3) steel	10 mm									
			Plinth beam (PB3) steel	12 mm	164.1			144.4	7	1010.85			
			Plinth beam (PB3) steel	10 mm									
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			Plinth beam (PB3) steel	12 mm	164.1			144.4	7	1010.85			
			Plinth beam (PB3) steel										

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
6	6.38	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.										
		WALL (G+3 building)	4	2.8	2.65	29.68	16	474.88				
			4	4.1	2.65	43.45	16	695.304				
			4	2.8	2.65	29.68	16	474.88				
			4	1.3	2.65	29.68	16	474.88				
			4	0.6	2.65	6.359	16	101.75				
			4	1	2.65	10.6	16	169.6				
			4	0.35	2.65	3.706	16	59.304				
			4	2.2	2.65	23.31	16	373.11				
			4	3	2.65	31.79	16	508.66				
			4	1.4	2.65	14.83	16	237.43				
			4	1.4	2.65	14.83	16	237.43				
		WALL	4	1.2	2.65	1.59	12.72	25.44				
		(Door & window) Deduction no of unit 16 x 4 floor	D1	1	2.1	2.1	2	268.8				
			D2	0.75	2.1	1.575	2	201.6				
			DW1	0.75	2.1	1.575	1	201.6				
			DW1	0.6	1.2	0.72	1	46.08				
			W1	1.5	0.9	1.35	1	86.4				
			V1	0.45	0.4	0.18	2	11.52				
								816	SQM			
		Wall						3578.17				
		Deduction						816	SQM			
								2762.17				
								317.64	cum			
		SUB TOTAL				0.115	2762.17					2824073.71
											8890.8	2824073.71



PAL ARCHITECT AND ENGINEER
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13/11/2022

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

SR NO	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
7	9.18	Providing and fixing Pre-laminated flat pressed 3 layer (medium density) particle board or graded wood particle board 15 : 3087 marked, with one side decorative and other side balancing lamination Grade I, Type II exterior grade 15 : 12823 marked, shelves with screws and fittings wherever required, edges to be painted with polyurethane primer (fittings to be paid separately)	9.18.2	25 mm thick								
			D1	1	2.1	2.1	2	4.2				
			D2	0.75	2.1	1.575	2	3.15				
			DW1	0.75	2.1	1.575	1	1.575				
			64 unit G+3			8.925	64	571.2	sqm	1501	857371.2	
			Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.									
			10.25									
			10.25.2									
			in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works									
			Door chowkhat (16 UNIT)									
	64 UNIT G+3 FLOOR	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.	D1	60	30	2	60					
			D2	60	30	2	60					
			DW1	45	1	1	45					
			W1	50	1	1	50					
			V1	30	2	2	30					
			245				245					
			15680				15680					
			142.3				142.3					
			2231264				2231264					
			10.26									
	10.26.1	M.S. tube 65x40 25x25 20x20 20x20	65x40	1.25	1	1.25						
			25x25	0.84	2	1.68						
			20x20	1.25	2	2.5						
			20x20	0.64	8	5.12						
			per floor 16 unit			10.55	16	168.8				
			G+3 floor			168.8	4	675.2	kg	157.15	106107.68	
			Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clrestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).									
			9.12									
			DW1	0.6	1	0.6						
			W1	1.5	1	1.5						
			V1	0.45	2	0.9						
			per floor 16 unit			2.43	16	38.88				
			G+3 Floor Building			38.88	4	155.52	sqm	148.5	23094.72	
			Sub Total									2360466.4



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
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A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - 21 CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
8	13.1	12 mm cement plaster of mix : 1:6 (1 cement: 6 fine sand)										
	13.1.2											
		wall		2.8			8.26	16	132.16			
		wall		4.1			12.095	16	193.52			
		wall		2.8			8.26	16	132.16			
		wall		1.3			3.835	16	61.36			
		wall		0.6			2.95	16	28.22			
		wall		1			2.95	16	47.2			
		wall		0.35			1.0325	16	16.52			
		wall		2.2			2.95	16	103.84			
		wall		3			8.85	16	141.6			
		wall		1.4			4.13	16	66.08			
		wall		1.2			3.54	16	56.64			
		G.F, F.F, S.F, T.F ceiling		48.42			515.673	4	2062.69			
		INNER WALL					3108.17	4	12432.68			
		D1		1			2.1	2	4.2			
		D2		0.75			1.575	2	3.15			
		DW1		0.6			0.72	1	0.72			
		W1		1.5			1.35	1	1.35			
		V1		0.45			0.4	2	0.36			
		(Door & window) Deduction no of unit 16 x 4 floor					11.355	64	726.4			
		INNER WALL					12432.7		726.4			
		DEDUCTION							726.4			
		TOTAL							11706.3			
		OUTER WALL		4.361			2.95	16	205.8392			
		CORRIDOR		10.65			2.95	2	62.835			
		G+3 FLOOR					400.815	4	1603.26			
		DEDUCTION		1.5			0.9	16	21.6			
		W1		0.75			1.575	16	25.2			
		DW1		0.6			0.72	16	11.52			
		V1		0.45			0.4	16	2.88			
		G+3 FLOOR					61.2	4	244.8			
		WALL					1603.26		244.8			
		DEDUCTION							244.8			
		TOTAL							1358.46			
		PARAPET WALL		48.42			1	4	193.68			
		Sub total							236.28			
									42.6			
									193.68			
									4			
									10.65			
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		</										

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - 21 CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
9	11.37	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	floor	3.27	3.002		9.8165	16	157.064			
		Living Room	skirting	12.54	0.1	1.254		16	20.064			
		Kitchen	floor	2.101	1.2	2.521		16	40.336			
			skirting	6.602	0.1	0.6602		16	10.5632			
		toilet	floor	0.9	1.2	1.08		16	17.28			
			wall	0.9	1.52	1.368		16	21.88			
			wall	1.2	1.52	1.824		16	29.18			
		Bed room	floor	2.465	3.155	7.77		16	124.32			
			skirting	11.2	0.1	1.12		16	17.92			
		Entrance	floor	1.335	1.335	1.7822		16	28.515			
			skirting	5.34	0.1	0.534		16	8.544			
		Corridor	floor	48.42	1.25				60.525			
			skirting	48.42	0.1				4.842			
		G+3 floor					541.033	4	2164.012	sqm	935.6	2024649.63
	8.6	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.										
				0.3	1.5	0.45		20	7.2			
		G+3 Floor		2.06	1.25	2.575		1	2.575			
						9.775		4	39.1	sqm	417.6	16328.16
		Sub total										2040977.79



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0088 Date 13/11/2022
 Near by IDBI Bank, Dehradun (U.K.)
 Tapovan Road Infront of PRD Ground
 Mob.: 7895872139, 9412143346

A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
10	13.8		Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	wall	2.8	2.95	8.26	16		132.16			
				wall	4.1	2.95	12.095	16		193.52			
				wall	2.8	2.95	8.26	16		132.16			
				wall	1.3	2.95	3.835	16		61.36			
				wall	0.6	2.95	1.77	16		28.32			
				wall	1	2.95	2.95	16		47.2			
				wall	0.35	2.95	1.0325	16		16.52			
				wall	2.2	2.95	6.49	16		103.84			
				wall	3	2.95	8.85	16		141.6			
				wall	1.4	2.95	4.13	16		66.08			
				wall	1.2	2.95	3.54	16		56.64			
			G.F, F.F, S.F, T.F ceiling	wall	48.42	10.65	515.673	4		2062.69			
			INNER WALL				3108.17	4		12432.68			
				D1	1	2.1	2.1	2		4.2			
				D2	0.75	2.1	1.575	2		3.15			
				DW1	0.75	2.1	1.575	1		1.575			
				DW1	0.6	1.2	0.72	1		0.72			
				W1	1.5	0.9	1.35	1		1.35			
				VI	0.45	0.4	0.18	2		0.36			
			(Door & window) Deduction Per floor unit				11.355	64		726.4	SQM		
			INNER WALL							12432.7			
			DEDUCTION							726.4			
			TOTAL							11706.3	SQM		
			OUTER WALL		4.361	2.95	12.865	16		205.8392			
					2.8	2.95	8.26	16		132.16			
			CORRIDOR		10.65	2.95	31.4175	2		62.835			
			G+3 FLOOR				400.815	4		1603.26			
			DEDUCTION	W1	1.5	0.9	1.35	16		21.6			
				DW1	0.75	2.1	1.575	16		25.2			
				DW1	0.6	1.2	0.72	16		11.52			
				VI	0.45	0.4	0.18	16		2.88			
			G+3 FLOOR				61.2	4		244.8			
			WALL							1603.26			
			DEDUCTION							244.8			
			TOTAL							1358.46	SQM		
			PARAPET WALL		48.42	1	48.42	4		193.68			
					10.65	1	10.65	4		42.6			
										236.28	SQM		
			Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :										
			Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr /10 sqm										
			Finishing walls with Premium Acrylic Smooth primer qty							1358.46	SQM		
			New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)										
			exterior paint qty							1358.46	SQM		
			Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour										
			Two coats										
			Interior paint qty							11706.3			
			Sub total										

PAL ARCHITECT AND ENGINEER
 1358/45
 COX NO. CA/2018/96244
 152/35/2020/5454882
 Case No. 0080 Date: 13/11/2022
 Tapovan Road Infront of F.R.D Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob. 7895872139, 9412143346



A TO H J TO S 18 TOWER DETAILED ESTIMATE OF CIVIL WORK PER FLOOR 16 UNIT G+3 (64 UNIT)

sno	DSR - Z1 CODE NO.	Description of work	Item	Measurement				Qty	No	Total Qty	Unit	Rate	Amount
				L	B	H							
11	22.6	Providing and laying water proofing cement slurry mixed with water proofing cement compound consisting of applying:											
		after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm.											
		(a)											
		laying second layer of fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm.											
		(b)											
		third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30 cm on parapet wall and tucked into groove in parapet all around											
		(c)											
		fourth and final layer of brick tiling with cement mortar (which will be paid for separately.											
		(d)											
		For the purpose of measurement the entire treated surface will be measured.											
		G+3 Floor						1.915		2.518	16	40.29	
		Sub total								4	161.166	sqm	585.55
												94370.7513	94370.7513



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 00800
 13/11/2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

S.NO	DSR -2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		SUB HEAD "B" INTERNAL WIRING (Point Wiring)				
1.8		Wiring for light point /fanpoint/exhaust fan point with 1.5 sq.mm FRLS PVC insulated copper conductor single core in surface / recessed medium class pvc conduit , with piano type switch , phenolic laminated sheet, suitable size M.S box and earthing the point with 1.5 sq.mm FRLS PVC Insulated copper conductor single core cable etc. as required.	Nos.	440	1221	537240
1.8.1		Group point				
1.2		Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class pvc conduit, 2 way piano type switch, phenolic laminated sheet, suitable size M.S box and earthing the point with 1.5 sq.mm FRLS PVC Insulated copper conductor single core cable etc. as required.	Point	45	1835	82575
1.3		Wiring of circuit / sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface / recessed medium class PVC conduit as required				
1.7.2		2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Meter	327	1650	539550
1.7.3		2 X 4 sq. mm. + 1 X 4 sq. mm. earth wire	Meter	850	428	363800
1.7.4		2 X 6 sq. mm. + 1 X 6 sq. mm. earth wire	Meter	500	589	294500
1.27		modular base & cover plate for modular switches in recess etc. as required.				
1.27.1		1 or 2 Module (75 mmX75 mm)	Each	298		22350
1.27.2		3 Module (100 mmX75 mm)	Each	260	327	85020
1.23		existing switch box/ cover including connections etc. as required.				
5/6 amps switch			Each	72	103	7416
15/16 amp switch			Each	72	156	11232
3 pin 5/6 amp socket outlet			Each	72	122	8784
6 pin 15/16 amp socket outlet			Each	72	197	14184
TV antenna socket outlet			Each	72	148	10656
Bell push			Each	72	140	10080
1.38		Supplying and fixing call bell / buzzer suitable for single phase, 230 volts, complete as required.	Each	72	99	7128
1.25		regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	72	369	26568
1.32		Supplying and fixing brass batten/ angle holder including connection etc. as required.	Each	194	131	25414
1.21.2		Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.	Meter	388	145	56260
2.3		Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 Volts, on surface / recess complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCBO/Isolator)				
2.3.1		6 way double door	Each	72	2206	158832
2.1		Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB) having sensitivity up to 30 milli ampere in the existing MCB DB complete following poles in existing MCB DB complete with connections, testing and commissioning etc. as required.	Each	388	256	99328
2.10.1		single pole	Each			
2.14		Supplying and making of end terminations with brass compression gland and Al./CU. lugs for following size PVC insulated and PVC sheathed /XLPE Al Armored / Unarmored conductor cable of 1.1 KV grade as required	Each	72	2642	190224
2.14.2		40 amps				
9.1		Supplying and making of end terminations with brass compression gland and Al./CU. lugs for following size PVC insulated and PVC sheathed /XLPE Al Armored / Unarmored conductor cable of 1.1 KV grade as required	Each	72	2642	190224
9.1.23		3.5C X 70 sq. mm (Al Armored Cable)				
5.4		Earthing with G.I. earth plate 600 mm X 600 mm & 6 mm thick plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.				
5.7		Supplying and laying 6 SWG GI wire at 0.50 Meter below ground level for conductor earth electrode including connections / termination with GI thimble etc. as required.	meter	40		



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0680
 Date 13/11/2020
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346



5.15	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	meter	40	1162	46480
	Providing and fixing of lightning conductor finial, made of 25mm dia 300mm long G.I tube, having single prong at top, with 85mm dia 6mm thick G.I base plate including holes etc. complete as required.	Each	5	518	2590
	Providing and fixing G.I tape 20mm X 3mm thick on parapet or surface of wall for lightning conductor complete as required (for horizontal run)	meter	400	126	50400
	Sub Total				2692351

DETAILED ESTIMATE OF INTERNAL PLUMBING WORK 16 UNIT PER FLOOR

G+3 64 UNITS

S. No.	DSR 2021	DESCRIPTION OF WORK	UNIT	Qty	Rate (Rs)	Amount (Rs)
1	17.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device(handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
a)	17.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests.	Each	64	5781.35	370006.4
	17.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :				
	17.10.2	Kitchen sink without drain board	Each	64	3337.85	213622.4
	17.28.2	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
	17.28.2.1	Flexible pipe				
	17.28.2.1	32 mm dia	Each	64	104.35	1669.6
	18.51	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
a)	18.51.1	15 mm nominal bore	Each	192	594.75	114192
	18.7	WATER SUPPLY SYSTEM Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. : Internal work - Exposed on wall				
b)	18.7.2	20 mm nominal outer dia. Pipes.	metre	400	325.10	130040
c)	18.7.3	25 mm nominal outer dia. Pipes.	metre	112	408.55	45757.6
d)	18.7.4	32 mm nominal outer dia. Pipes.	metre	192	500.95	96182.4
e)	18.7.5	40 mm nominal outer dia. Pipes.	metre	48	674.35	32368.8



P.L. ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 6586
 Date: 13/11/2020
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

DETAILED ESTIMATE OF INTERNAL PLUMBING WORK 16 UNIT PER FLOOR
G+3 (64 unit)

S. No.	DSR 2021	DESCRIPTION OF WORK	UNIT	Qty	Rate (Rs)	Amount (Rs)
a)	18.8.1	15 mm nominal outer dia. Pipes.	Metre	96	441.15	42350
	18.8.2	20 mm nominal outer dia Pipes	metre	128	712.75	91232
	18.8.3	25 mm nominal outer dia Pipes	metre	16	626.05	10016.8
		Providing and fixing gun metal gate valve with CI wheel of approved quality (screwed end)				
	18.17.3	40 mm dia nominal bore	Each	32	707.30	22633.6
	18.17.5	65 mm dia nominal bore	Each	12	1490.70	17888.4
	18.18	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
b)	18.18.2	20 mm nominal bore	Each	64	397.45	25436.8
c)	18.18.3	25 mm nominal bore	Each	4	399.15	1596.6
	18.21	Providing and fixing uplasticsed PVC connection pipe with brass unions :				
a)	18.21.1	30 cm length				
(i)	18.21.1.1	15 mm nominal bore	Each	64	74.80	1196.8
	18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC to slab 1:2:4 mix (1cement :2 coarse sand : 4 grad stone aggregate 20mm nominal size)/c necessary excavation, foundation concrete 1:5:10 (1cement : fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :				
a)	18.33.1	With common burnt clay F.P.S.(nomodular) bricks of class designation 7.5	No.	4	10102.50	40410
	18.58	Providing and fixing PTMT grating of approved quality and colour.				
a)	18.58.1	Circular type.				
(ii)	18.58.1.2	125 mm nominal dia with 25 mm waste hole.	No.			



Case No. 1284525
COA No. CA/2018/96214
Date 15/11/2022
PAL ARCHITECT AND ENGINEER
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346

DETAILED ESTIMATE OF INTERNAL PLUMBING WORK 16 UNIT PER FLOOR					
G+3 (64 unit)					
S.No.	DSR 2021	DESCRIPTION OF WORK	UNIT	Qty	Rate (Rs)
					Amount (Rs)
12.43	12.43.2	110 mm	Each	128	309.5
		Providing and fixing un plasticised -PVC pipe clips of approved design to un plasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.			39616
Total cost for single (G+3) tower					1302011.84



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 3080
Date: 15/11/2022
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346

(Signature)

(Other services)

Bill of Quantity PMAY EWS (Uttarakhand)

1- External Sewrage System

2- External Water Supply System

3- External Drainage System

4- C.C Paving Work Cost

5- Boundary Wall Construction 840.05 M

6- Tube Wall Cost

7- Main Entrance gate

8- UG Tank And Pump room

9- S.T.P Tank Construction

DETAILED ESTIMATE OF EXTERNAL SEWERAGE SYSTEM

S.NO	DSR-2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.1		EARTHWORK				
2.10.1.2		Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Rm	3818	417.35	1593442.3
2.10.1.3		Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm	Rm	25	651.55	16288.75
2.11		Extra for excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth upto 1.5 metre).	Rm	1654	127	210058
19.1		Providing, laying and jointing glazed stoneware pipes class SP-1 cement : 1 fine sand) including testing of joints etc. complete : with stiff mixture of cement mortar in the proportion of 1:1 (1				
19.1.3		200 mm diameter	Rm	3658.2	830.4	3037769.28
19.1.4		250 mm diameter	Rm	163.4	1293.9	211423.26
19.1.5		300 mm diameter	Rm	154.3	1774.5	273805.35
19.2		Providing and laying cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate 20 mm nominal size) all-round				
19.2.3		200 mm dia	Rm	3798	830.4	3153859.2
19.3		Providing and laying cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate 20 mm nominal size) up to haunches of S.W. Pipes including 150 mm thick bed concrete as per standard design:				
19.3.5		300 mm dia	Rm	142.3	1089.1	154978.93
19.4		Complete with C.I. grating brick masonry chamber with water tight cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
19.4.1		100x100 mm size P type				
19.4.1.1		With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	965	2453.55	2367675.75
19.9		Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design				
19.9.1		0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter con forming to I.S. 12592, total weight of cover and frame to be not less than 182 kg, fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)	Each	458.6	11886.45	5451125.97
19.9.1.1		With common burnt clay F.P.S. (non modular) bricks of class designation 7.5				



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 6080
Date 13/11/2022
Tapovan Road Infront of PKD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346



PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 8288 Date: 12/11/2022
Near by IDBI Bank, Dehradun (U.K.)
Tapovan Road Infront of PRD Ground
Mob: 7895872139, 9412143346

19.11	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, all complete as per standard design :				
19.11.1	.68 m deep with SFRS Cover and frame (heavy duty HD 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :	Each	136	22463.9	3055090.4
19.11.1.2	With Sewer bricks conforming IS : 4885	Each	136	22463.9	3055090.4
19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS : 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tall length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacturer's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	1685	487.1	820763.5
19.1	Extra depth for circular type manhole 0.91 m internal dia (at bottom) beyond 0.91 m to 1.67 m	Meter	125	6693.95	836743.75
19.10.2	With Sewer bricks conforming IS : 4885				
19.30.1	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 fine sand : 3 graded stone aggregate 20 mm nominal size), stone aggregate 40 mm nominal size, inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design:				
19.30.1	inside dimensions 455x610 mm and 45 cm deep for single pipe line :				
19.30.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	396	6431.3	2546794.8
Sub Total					23729819.24



DETAILED ESTIMATE OF EXTERNAL WATER SUPPLY SYSTEM

S.NO	DSR-2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		EARTHWORK				
2.1		Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
2.10.1		All kinds of soil				
2.10.1.1		Pipes, cables etc, not exceeding 80 mm dia.				
2.10.1.2		Pipes, cables etc, exceeding 80 mm dia. but not exceeding 300 mm dia				
		Sand filling				
18.41		Providing and filling sand of grading zone V or coarser grade, allround the G.I. pipes in external work :				
18.41.9		100 mm diameter pipe		995.6	304.75	303409.1
18.41.10		150 mm diameter pipe		995.3	453.95	451816.435
		Pipe work				
18.7		Ductile iron Pipes including testing of joints and the cost of rubber gasket				
18.70.1		100 mm dia pipes		400	96.15	38460
18.70.2		150 mm dia pipes		400	156.05	62420
18.70.3		200 mm dia pipes		60	229.5	13770
18.72		Providing and laying S&S Centrifuagally Cast (Spun) / Ductile iron Pipes conforming to IS : 8329 :				
18.72.1		100 mm dia Ductile iron Class K-7 pipes	Rm	756	1121.1	847551.6
18.72.2		150 mm dia Ductile iron Class K-7 pipes	Rm	345	1601.3	552448.5
18.72.3		200 mm dia Ductile iron Class K-7 pipes	Rm	1045	1975.95	2064867.75
18.8		Disinfecting C.I. water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.				
18.80.2		100 mm diameter C.I. pipe		7.65	1996.5	15273.225
18.80.4		150 mm diameter C.I. pipe		7.65	2974.9	22757.985
18.80.5		200 mm diameter C.I. pipe		7.65	3954.45	30251.5425
		VALVES AND ACCESSORIES				
18.31		Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately)				
18.31.1		100 mm diameter				
18.31.1.2		Class II	Each	20	4097.9	81958
18.31.3		150 mm diameter				
18.31.3.2		Class II	Each	9	13512.6	121613.4
18.31.4		200 mm diameter				
18.31.4.2		Class II	Each	5	27521.5	137607.5
18.59		Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc if required will be paid separately) :				
18.59.1		50 mm dia	each	5	5171.75	25858.75
18.59.2		80 mm dia	each	3	6255.45	18766.35
18.6		Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately) :				
18.60.2		100 mm dia nominal bore	Each	5	4995.9	24979.5
18.60.3		150 mm dia nominal bore	Each	3	7357.35	22072.05



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 2080, Date 13/11/2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346

PAL ARCHITECT AND ENGINEER
COA No. CA/2018/96244
Case No. 008- Date 13/11/2019
Tapovan Road Infront of PRD Ground
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346



18.34	Constructing masonry Chamber 50x30x100 cm inside, in brick work with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), /C necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :	Each			
18.34.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	36	17577.9	632804.4
19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
19.6.3	250 mm dia. R.C.C. pipe	meter	95	811.15	77059.25
19.6.4	300 mm dia. R.C.C. pipe	meter	95	902.05	85694.75
18.61	Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete	meter	95	902.05	85694.75
18.61.3	150 mm dia conforming to IS : 2373 :	each	5	8394.25	41971.25
Sub Total					6403773.838

[illegible]

S.No.	DSR No.	DESCRIPTION	UNIT	QTY.	RATE (Rs)	AMOUNT(Rs)
1	2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
	2.8.1	All kinds of soil.	Cum	289.5	286.85	830459.7
	a	Extra over item no. 1 for depth exceeding 1.5 m but not exceeding 3.0 m.	cum	289.00	286.85	82899.65
2	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	cum	498.65	253.95	124346.61
CEMENT CONCRETE WORKS						
4	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	4.1.4	1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 40 mm nominal size).	cum	110.58	7226.95	799156.131
	4.1.11	1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size).	cum	223.65	5660.45	1265959.64
5	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1888	8288.35	15648404.8
6	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	758.69	307.95	233638.58
	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sqm	11258.00	669.55	7537793.9
EARTH WORK						
	2.1					
	13.4	12 mm cement plaster.				
	13.4.2	1:6 (1 cement : 6 coarse sand)	sqm	7258	213639.23	
	13.18	Neat cement punning.	sqm	7458	505652.4	

DETAILED ESTIMATE OF CC ROAD & PAVING

sno	DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
12	2.27		Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.		5325		0.03	159.75	1	159.75	cum	2161.2	345251.7
4.3			Centering and shuttering including strutting, propping etc. and removal of form work for :										
4.3.1			Foundations, footings, bases for columns		1358		0.12	162.96	2	325.92	cum	307.95	100367.064
16.1			Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.		14225				1	14225	sqm	180.5	2567612.5
16.78			Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.										
16.78.1			With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30										
P1					184.4		0.125		1	23.05			
P2					240.78		0.125		1	30.0975			
P3					70.78		0.125		1	8.8475			
P4					121.6		0.125		1	15.2			
P5					243.5		0.125		1	30.4375			
P6					424.8		0.125		1	53.1			
P7					464.2		0.125		1	58.025			
P8					1157.14		0.125		1	144.6425			
P9					52		0.125		1	6.5			
P10					360.96		0.125		1	45			
										414.9	cum	2658.1	1102845.69
16.75			Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-Charge. (The panel shuttering work shall be paid for separately).		14225		0.125		1	1778.125	cum	8277.55	14718518.6
			STEEL REINFORCEMENT										
5.22			Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level										
5.22.6			Thermo-Mechanically Treated bars of grade Fe-500D or more.		22			1889	1	41558	kg	89.65	3725674.7
16.47			Painting runway/taxi track/apron marking with adequate nos of coats to give uniform finish with road marking paint of superior make as approved by the Engineer-in-Charge, i/c cleaning the surface of all dirt, scales, oil, grease and other foreign material etc. and lining out complete.										
16.47.1			New work (Two or more coats)										
					2357				1				



Case No. 2357
COA No. CA/2018/963
PAL ARCHITECT AND ENGINEER
Date: 27/11/2019
Near by IDBI Bank, Dehradun (U.K.)
Mob.: 7895872139, 9412143346
Tapovan Road Infront of PRD Ground

DETAILED ESTIMATE OF BOUNDARY WALL CIVIL CONSTRUCTION

DSR - 21	CODE NO.	Description of work	Item	L	B	H	Qty	No	Total Qty	Unit	Rate	Amount
12	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge.										
	2.6.1	All kinds of soil		30	0.9	0.75	20.25	1	20.25	CUM	205.45	4160.36
	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :		30								
	4.1.10	1:5:10 (1 cement : 5 coarse sand (zone-II) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)		30	0.9	0.15	4.05	1	4.05	CUM	6050.65	24505.13
	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)		30	0.46	0.05	0.69	1	0.69	CUM	7365.15	5081.95
	5.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :										
	5.2.2	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)		30	0.23	0.15	1.035	1	1.035	CUM	10185.05	10541.475
	5.2.2A	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.		1.035				1	124.2	KG	89.65	11134.53
	5.2.2A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more										
	6.2	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in :										
	6.2.2	Cement Mortar 1:6 (1 cement : 6 coarse sand).		30	0.68	0.15	3.1	1	3.1			
				30	0.575	0.15	2.6	1	2.6			
				30	0.46	0.15	2.1	1	2.1			
				30	0.345	0.15	1.6	1	1.6	CUM	5549.95	52169.53
	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :										
	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)		24.94	0.23	0.15	0.8604	1	0.8604			
		Length of wall=30-0.46*11 (below RCC band)		24.94	0.23	1.2	0.6883	1	6.88			
		Above RCC Band		0.46	0.46	1.8	0.3808	11	4.189			
		Column								cum	8288.35	98875.04
	13.4	12 mm cement plaster of mix :		24.94	1.2	29.28		1	29.28			
		1:4 (1 cement: 4 coarse sand)		0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5	15 mm cement plaster on rough side of single or half brick wall of mix:						1	29.28			
		1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5	15 mm cement plaster on rough side of single or half brick wall of mix:						1	29.28			
		1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5	15 mm cement plaster on rough side of single or half brick wall of mix:						1	29.28			
		1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5	15 mm cement plaster on rough side of single or half brick wall of mix:						1	29.28			
		1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.5.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			
				0.115	1.8	0.207	4.554	22	42.942	sqm	507.25	18193.92
	13.4.1	1:4 (1 cement: 4 coarse sand)		24.94	1.2	29.28		1	29.28			
				0.46	1.8	0.828	9.108	11	9.108			

PAL ARCHITECT AND ENGINEER
 Case No. CA/2018/96214
 Date 12/11/2022
 Registered in front of PWD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139 9412143346



PAL ARCHITECT AND ENGINEER
 COA NO. CA/2018/96244
 Case No. 0080
 Date: 13/11/2022
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

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DETAILED ESTIMATE OF TUBE WELL

S.NO	DSR-2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
23.1		Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 50 metre depth below ground level.				
23.1.1		All types of soil				
23.1.1.1		300 mm dia	metre	59	592.05	34930.95
23.2		Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, beyond 50 metre & upto 150 metre depth below ground level.				
23.2.1		300 mm dia	metre	125	690.7	86337.5
23.10.3		Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, fittings & accessories, all complete, as per direction of Engineer-in-charge.	metre	62.5	2082.1	130131.25
23.11		200 mm nominal size dia having minimum wall thickness 5.40 mm, including painted with outside surface with two coats of anticorrosive bituminous paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.	metre	62.5	2194.85	137174.125
23.6		Supplying, filling, spreading & levelling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all heads & lifts, all complete as per direction of Engineer-in-charge.	cum	4.35	1309	5694.15
23.12		Development of tube well in accordance with IS: 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, l/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	hour	30	916.8	27504
23.13.3		Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/casing pipe, removable as per requirement, all complete for bore well.				
23.14		Providing and fixing M.S. clamp of required size complete housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.	each	1	280.95	280.95

TAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96844
 Date 31/11/2021
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346





PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 13/11/2020
 Case No. 00083
 Tapovan Road Infront of PRD Ground
 Near by IDBI Bank, Dehradun (UK)
 Mob: 7895872139, 9412143346

23.14.3	200 mm clamp	each	1	1827	1827
23.15	Providing and fixing Ball plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
23.15.3	200 mm dia	each	1	308.55	308.55
TOTAL Drill of Tube well civil + Electrical cost					
Total 1 No Drilling of Tube well					424192.475

Mob: 7895872139, 9412143346
Near by IDBI Bank, Dehradun (U.K.)
Tapovan Road Infront of PWD Ground
Case No. 0086
COA No. CA/2018/96244
PAL ARCHITECT AND ENGINEER



S.NO	DSR -2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.1		P/L cement concrete - all works upto plinth level : 15:10 (1 cement : 5 coarse sand derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	25.12	6050.65	151992.328
9.71		Providing and fixing 15 : 12817 marked stainless steel butt hinges (heavy weight) with stainless steel screws etc. complete :	each	6	85.45	512.7
10.16		Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolting with special shaped washers etc. complete.				
10.16.1		Hot finished welded type tubes	kg	76.8712		
		HollowSSBOsection 80x40x2mm	kg	134.4244		
		HollowSSBOsection 40x20x1.5mm	kg	211.2956		
		TOTAL			154.9	32729.68844
10.27.2		10 x 80 mm	each	36	117.3	4222.8
10.27		Providing and fixing carbon steel galvanized (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame, concrete/ masonry, etc. as per direction of Engineer-in-charge.	each			
10.27.2		Total cost of 2 Main gate	each	2	239627.11	479254.22
4.1		Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 15:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	0.072	6050.65	435.6468
9.71		Providing and fixing 15 : 12817 marked stainless steel butt hinges (heavy weight) with stainless steel screws etc. complete :	each	6	85.45	512.7
10.16		Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolting with special shaped washers etc. complete.				
10.16.1		Hot finished welded type tubes	kg	110.25	154.9	
		HollowSSBOsection 80x40x2mm	kg	180.25	154.9	
		HollowSSBOsection 40x20x1.5mm	kg	290.5	154.9	44998.45
10.27		Providing and fixing carbon steel galvanized (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame, concrete/ masonry, etc. as per direction of Engineer-in-charge.	each	36	117.3	4222.8
10.27.2		Total cost of 2 Main gate	each	2	239627.11	479254.22

DETAILED ESTIMATE OF MAIN GATE

DETAILED ESTIMATE OF UNDER GROUND TANK AND PUMP ROOM

S.NO	DSR -2022	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.6		Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge				
2.6.1		All kinds of soil	cum	950.5	205.45	195280.225
		Extra over item no. 1 for depth exceeding 1.5 m but not exceeding 3.0 m	cum	640	205.45	131488
		Extra over item no. 1 for depth beyond 3.0 m.	cum	42	205.45	8628.9
2.25		Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	cum	455.2	253.95	115598.04
4.1		Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level				
4.1.3		1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.54	7365.15	26072.631
4.1.11		1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size).	cum	67.3	5660.45	380948.285
5.33		Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but, excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).				
5.33.1		All works up to plinth level.	cum	568.2	7997.3	4544065.86
		Centering and shuttering including strutting, propping etc. and removal of form				
5.9.1		Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	53	307.95	16321.35
5.9.2		Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sqm	1570	669.55	1051193.5
5.9.3		Suspended floors, roofs, landings, balconies and access platform.	Sqm	475.6	766.55	364571.18
5.22		Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
5.22A.6		Thermo-Mechanically Treated bars	Kg	58645.2	89.65	5257942.18
		Providing and fixing in recommended proportion admixtures as per IS code for water proofing concrete as per manufacturer specification and direction of Construction manager				
22.4.1		Serrated with central bulb (225 mm wide, 8-11 mm thick)	metre	77.9	285.6	22248.24
11.26		Kota stone slab flooring over 20 mm (average) thick base laid over and joined with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1:4 (1 cement : 4 coarse sand) : 25 mm thick				
22.14		Grading roof for water proofing treatment with	sqm	45	0.1491	6.7095
22.14.1		Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	18.9	3.2	60.48
22.1		Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-charge and consisting of : i) 5t layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cum/m/sqm thoroughly embedded in the 2nd layer.				

PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 13/11/2022
 Case No. 7895872139, 9412143346
 Near by IDBI Bank, Dehradun (UK)
 Tapovan Road Infront of PKD Ground
 Mob.: 9895872139, 9412143346





PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 08.08.2020
 Tapovan Road Infront of PKD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

22.1.1	Using rough kota stone sqm	Sqm	390	0.342	133.38
22.2.1	Using rough kota stone	sqm	250	0.443	110.75
6.3	Brick work with common burnt clay machine moulded perforated bricks of class designation 12.5 conforming to IS: 2222 in superstructure above plinth level up to floor five level in cement mortar 1:6 (1 cement : 6 coarse sand) :				
6.3.1	With F.P.S. (non modular) bricks	cum	15.9	8030.6	127686.54
13.4.2	1:6 (1 cement: 6 coarse sand)	sqm	215.3	294.35	63373.555
13.37	White washing with lime to give an even shade :				
13.37.1	New work (three or more coats)	sqm	215.3	32.45	6986.485
TOTAL COST					
					12912916.29

DETAILED ESTIMATE OF SEWAGE TREATMENT PLANT FOR CONSTRUCTION OF 1152 HOUSES

SR NO	DSR-21	DESCRIPTION	UNIT	QTY.	RATE (RS)	AMOUNT (RS)
1	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.				
	2.6.1	All kinds of soil.	cum	5528.10	205.45	1135748.14
	a	Extra over item no. 1 for depth exceeding 1.5 m but not exceeding 3.0 m.	cum	541.63	205.45	111277.88
	b	Extra over item no. 1 for depth beyond 3.0 m.	cum	1052.50	205.45	216236.125
2	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	cum	168.50	253.95	42790.575
	CEMENT CONCRETE WORKS					
	4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	4.1.1	1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size).	cum	63.16	6050.65	382159.054
5	5.5	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but, excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).				
	5.3.1	All works up to plinth level.				
	using M20 grade instead		cum	523.98	8320.05	4359539.79
6	Centering and shuttering including strutting, propping etc. and removal of form for :					
	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	39.20	307.95	12071.64
	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sqm	2120.00	669.55	1419446
	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	Sqm	442.68	766.55	339336.35
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.					
	5.22A.6	Thermo-Mechanically Treated bars.	Kg	51578.00	89.65	4623967.7
	8	Providing and fixing in recommended proportion admixtures as per IS code for water proofing concrete as per manufacturer specification and direction of Construction manager used in the mix	Per bag of			
8	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :					
	22.4	Serrated with compound (225mm wide, 8-11mm thick).	M	154.00	285.60	43982.4
	22.4.1					



P.A.L. ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Date: 13/11/2022
 Near by IDBI Bank, Dehradun (U.K.)
 Tapovan Road Infront of PRD Ground
 Mob.: 7895872139, 9412143346

DETAILED ESTIMATE OF SEWAGE TREATMENT PLANT FOR CONSTRUCTION OF 1152 HOUSES

SR NO	DSR-Z1	DESCRIPTION	UNIT	QTY.	RATE (RS)	AMOUNT (RS)
9		Providing and fixing 500 mm dia CI manhole cover and frame (medium duty). Weight of cover not less than 58 Kg.				
10	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing sand) : complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 25 mm thick	sqm	159.60	1706.60	272373.36
11	22.14	Grading roof for water proofing treatment with				
12	22.14.1	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.25	3.20	20
13	22.1	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) 1st layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cum/sqm thoroughly embedded in the 2nd layer.				
22.1.1		Using rough kota stone.	Sqm	558.66	0.342	191.06
22.2		Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-Charge :				
22.2.1		Using rough Kota stone	sqm	248.99	0.443	110.262
22.23		Providing and applying integral crystalline slurry of hydrophilic nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels/subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all in-charge. The product performance shall carry guaranteed for 10 years against any leakage.				



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. 0887
 Date 12/11/2022
 Tapovan Road, Front of RRD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346

DETAILED ESTIMATE OF SEWAGE TREATMENT PLANT FOR CONSTRUCTION OF 1152 HOUSES

SR.NO	DSR-21	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15	6.3	Brick work with common burnt clay machine moulded perforated bricks of class designation 12.5 conforming to IS: 2222 in superstructure above plinth level up to floor five level in cement mortar 1:6 (1 cement : 6 coarse sand) :				
	6.3.1	With F.P.S.(non modular) bricks.	CUM	9.58	8030.60	76933.148
	13.4	12 mm cement plaster of mix :				
16	13.4.2	1:6 (1 cement: 6 coarse sand)	Sqm	138.57	294.35	40788.07
17	13.37	White washing with lime to give an even shade :				
	13.37.1	New work (three or more coats)	One Square Metre	168.25	32.45	5459.712
TOTAL CIVIL WORK OF STP						13082431.22

PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. ... Date: 13/11/2022
 Tapovan Road Infront of PKD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob.: 7895872139, 9412143346



PAL ARCHITECT AND ENGINEER
 COA No. CA/2018/96244
 Case No. Date: 14/11/2018
 Tapovan Road Infront of PHD Ground
 Near by IDBI Bank, Dehradun (U.K.)
 Mob: 7895872139, 9412143346



OTHER SERVICES					
1	External sewerage system				23729819.24
2	External water supply system				6403773.838
3	External Drainage system				29164703.71
4	C.C Paving work cost				26091326.9
5	Boundary wall construction 840.05 M				8921784.63
6	Tube well cost				424192.475
7	Main Entrance gate				479254.22
8	U.G Tank and Pump Room				12312316.29
9	S.T.P Construction				13082431.22
other service					120609602.5
GRAND TOTAL 18 TOWER A TO H, J TO S					
Grand Total other service					744878575.5
Grand total project cost					120609602.5
					865488178