DEENDAYAL PORT AUTHORITY

Office of the Executive Engineer (Project),
Administrative Office,
Room No.110 Annexe Building,
Post Box No. 50, Gandhidham–Kachchh
Email id- kptprojectdivision@gmail.com,
M-9427301528

****

No. Project/2026/5TPD/ **Dated: 11/04/2026**

EXPRESSION OF INTEREST

NAME OF WORK: 05 TPD GREEN BIO-METHANOL PLANT AT KANDLA – CONSTRUCTION OF VARIOUS CIVIL AND FABRICATION WORK FOR PLANT AND EQUIPMENT AT KANDLA.

Sir,

Deendayal Port Authority intends to carry out the various civil and fabrication works for 05 TPD Green Bio-Methanol Plant at Kandla under Project Division of Civil Engineering Department.

Kindly submit your Expression of Interest along with budgetary offer for the items of work enclosed at **Annexure-I.**

The rates quoted must be inclusive of Profit, required Materials, Labours, Equipment's, tools, Plants etc. all complete. The rate quoted must be excluding of GST but inclusive of all other taxes, duties. The GST applicable shall be shown separately, which shall not be considered for evaluation purposes.

Your Expression of Interest along with budgetary offer for the above work should reach to the following address on or before **17/04/2026 by 11:00 Hrs.**

Address;
Executive Engineer (P)
Room No.110, Annexe Building A.O Building
Deendayal Port Authority,
Gandhidham, Kachchh -370201
M-97143 01528.

-SD-
Executive Engineer(P)
Deendayal Port Authority

Annexure-I

SR. NO.	DESCRIPTION	UNIT	Rate
1	EARTHWORK IN EXCAVATION, BACKFILLING		
1.1.	Earthwork in Excavation for all kinds of works such as foundations, trenches, pavements, manholes, storm water drains, culverts, cable crossings, pipeway crossings, pipeway bridges, pipes sleepers, pipelines, pits etc., in all types of soils like loose earth, moorum over burdens etc., for depth upto 3.00m from natural ground level, including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, levelling, grading and ramming of bottoms, disposal/stacking of the excavated material within a lead of 1000m as per drawings, specifications and directed by Engineer-in-charge, including pumping and bailing out of subsurface and rain water and keeping the surface dry for subsequent works etc., including the cost of supplying shoring, strutting and dewatering.	cu.m	
1.2.	Earthwork in Excavation for all kinds of works such as foundations, trenches, pavements, manholes, storm water drains, culverts, cable crossings, pipeway crossings, pipeway bridges, pipes sleepers, pipelines, pits etc., in all types of soils like loose earth, moorum over burdens etc., for depth 3.01 m to 6.00 m from natural ground level, including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, levelling, grading and ramming of bottoms, disposal/stacking of the excavated material within a lead of 1000m as per drawings, specifications and directed by Engineer-in-charge, including pumping and bailing out of subsurface and rain water and keeping the surface dry for subsequent works etc., including the cost of providing shoring, strutting and dewatering.	cu.m	
1.11.	Earthwork in Backfilling with earth obtained from stacks within a lead of 1000m in & around foundations, trenches, below grade slabs, pavements, pits etc., to proper grade and level with selected materials from available excavated material, including re-excavating the deposited material excavated earlier, breaking clods, laying at all depths and heights in layers of thickness not exceeding 150mm, watering, rolling and ramming by manual/mechanical compactors to achieve 90% laboratory max dry density, dressing, trimming etc., all complete as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	
1.12.	Providing and laying approved earth brought from outside for filling,the material shall be free from lumps and clods, roots and vegetations, harmful salts and chemicals, organic materials, etc., including compaction, complete as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	
1.13.	Carting away		
1.13.a	Carting away the surplus earth and debris from construction areas immediately or simultaneously (along with excavation) and disposal of the same within outside plant premises including stacking, laying, etc. complete as per drawings, specifications and as directed by Engineer-In-Charge.	cu.m	

1.13.b	Carting away the surplus earth and debris from construction areas upto a distance of 1000m (from place of work) and disposal of the same within plant premises including stacking, laying, etc. complete as per drawings, specifications and as directed by Engineer-In-Charge.	cu.m	
1.13.c	Carting away the surplus earth and debris from construction areas for distance more than 1000m (from place of work) and disposal of the same within plant premises including stacking, laying, etc. complete as per drawings, specifications and as directed by Engineer-In-Charge.	cu.m	
1.14.	Supplying and filling river sand of approved quality in foundations, plinth, trenches, tank pads, under floor pavements etc., in layers of 200mm loose thickness at all depths/heights, watering, ramming and compacting all complete as per specifications, drawings and as directed by the Engineer-in-charge, dressing, levelling etc., complete.	cu.m	
1.16.	Supplying and laying one layer of 230 mm thick compacted crushed stone soling with approved quality black rubble, and the stone size shall be 220 to 230mm (min) on any direction with interstices filled with the selected earth,material shall be free from lumps and clods, roots and vegetations, harmful salts and chemicals, organic materials, as binding material, including watering, hand packing of stones, hammering smaller pieces into voids properly compacting with 10T power rollers to correct line and level and slope as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	
1.18.	Supplying and laying in the transformer yard machine crushed aggregate of 20 mm and 40mm size uniformly graded with top layer of soil treated with antiweed chemicals two layers including spreading, laying to correct level & slope as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	
1.19.	Supplying and laying bitumen sand carpet 50mm thick in two layers of 30mm & 20mm for tank pads using screened sand course sand, free from impurities and confoming to IS :383, mixed with bitumen 80/100 or Shelmac RC-3 or equal in proportion of 9% to 11% by volume (80 to 90 kg of bitumen to be mixed with approx.1 cu.m. of sand) giving homogenous, uniform mixture, including giving requisite lines, levels, slopes and tamping the layer with Compactors/Hand Rollers to form hard mass to the required thickness all complete.	sq.m	
2	PLAIN & REINFORCED CONCRETE WORK		
2.1.	Supplying and laying in position plain cement concrete of the following mix with machine crushed coarse aggregates as per relevant IS standards , with cement supplied by the owner, including consolidation of subgrade wherever required, staging, shuttering, tamping, curing, etc. complete for all depths and heights as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	

2.2.	Supplying and laying in position reinforced cement concrete of grade M – 20 with 20mm and down size graded machine crushed aggregates for Paving and Grade Slab including laying in alternate panels, Supplying construction joints, curing, cost of shuttering for sides, including panel wise grove cutting & bituminous filling, finishing of top surface of the pavement shall be compacted either by means of power driven finishing machine or by a vibrating hand screed for areas where width of the slab is very small as the corner of street junctions etc, for all depths as per specifications, drawings and as directed by the Engineer-in-charge but including the cost of cement & reinforcement steel.	cu.m	
2.3.	Supplying and laying in position reinforced cement concrete of the following grades with 20mm and down size graded machine crushed aggregates with OPC/PPC for all types of works such as equipment foundations including machine foundations, footings, columns, pedestals, beams, chajjahs, pardis, stairs, grade slabs, walls, trenches, pipe sleepers etc., including use of admixture if required, setting out, checking, vibrating, tamping, curing, finishing the exposed surfaces smooth and even all complete as per specifications, drawings and as directed by the Engineer-in-charge but including the cost of form work, cement & reinforcement steel.		
2.3.a	Upto Plinth		
2.3.a.3	M30 - upto Plinth	cu.m	
2.3.b	Above Plinth		
2.3.b.3	M30 - above Plinth	cu.m	
2.4.	Supplying precast reinforced cement concrete for sleepers, drain trench covers, lintels,beams etc., with concrete of grade M - 25 with 20mm and down size, graded, machine crushed aggregate, with all leads including Supplying necessary moulds, shuttering etc., vibrating, tamping, curing, making smooth and even surface or non skid finish as specified, Supplying lifting hooks (only MS inserts to be measured separately), transportation, erection, complete as per specifications, drawings and as directed by the engineer-in-charge but including the cost of cement, reinforcement steel and other structural steel embedments complete up to 300 Kg weight.	cu.m	
2.7.	Supplying and laying reinforced cement concrete of grade M - 30 (where ever applicable design mix shall suit sea water) with 20mm and down sized graded machine crushed coarse aggregates for water retaining structures or elements thereof supposed to hold water permanently at all depths / elevations and carrying out test to ensure water tightness after filling to the maximum depth with water and carrying out rectifications in case of any leakage by pressure grouting or any other method approved by the engineer -in -charge, including use of admixtures if required, vibrating, tamping, curing, finishing the exposed surfaces smooth and even all complete as per specifications, drawings and as directed by the Engineer-in-charge but including the cost of form work, cement & reinforcement steel. If the structure is below ground , the backfill will be done only after leakage test & rectification	cu.m	

2.9.	Supplying and installing ribbed PVC water stops of approved quality from reputed manufacturers in cement concrete works including laps by fixing/vulcanising joints and folds as applicable at all elevations for construction joint as per specifications, drawings, and as directed by the Engineer-in-charge 6mm thick and 225mm wide	RM	
2.11.	Fixing MS metal inserts and embedments in concrete structures made of MS plates, angles, flats, rounds, channels etc., including transporting of material from owner's storage point to shop or site of work, straightening, if required, cutting, assembly, welding, grinding and embedding / placing in position in concrete structures before pouring of concrete adjusting shuttering and reinforcement if required, welding or tying and holding to required position, providing temporary supports if required, providing one coat of red oxide primer to the exposed surfaces etc., all complete for all heights as per specification, drawings and as directed by the Engineer-in-charge.		
2.11.a	Supply, Fabrication & fixing Inserts including weight of lugs, plates and fixtures.	MT	
2.11.b	Fixing of Foundation bolts.	MT	
2.13	Supplying pockets in concrete floors, slabs, beams, foundations etc., of sectional area less than 0.1 Sq.m, including fixing and removing formwork made out of 12 mm thk ply for anchor bolts, pipe sleeves etc., as per drawing and as directed by the Engineer-in-charge. (No extra payment shall be made for formwork, repairs post concreting, etc.)		
2.13.a	Pockets - Upto 300mm deep	Nos.	
2.13.b	Pockets - 301 to 450mm deep	Nos.	
2.13.c	Pockets - 451 to 600mm deep	Nos.	
2.13.d	Pockets - 601mm to 750mm deep	Nos.	
2.13.e	Pockets - 751mm to 900mm deep	Nos.	
2.13.f	Pockets - Above 901mm deep	Nos.	
2.13.g	Shear keys in column or pedastal etc., of depth upto 200mm, including fixing and removing formwork made out of 12 mm thk ply , as per drawing and as directed by the Engineer-in-charge.	RM	
2.14.	Supplying and laying cement sand grouting with necessary form work with one (1) part cement and one (1) part river sand with just enough water to make the grout workable, when the thickness of the grout is less than 50mm, including Chipping off loose material by approved means prior to grouting, cleaning with compressed air, wetting the surfaces for several hours removing any accumulated water etc. under expert supervision and as per specifications, drawings and as directed by the Engineer-in-charge.	cu.m	
2.15.	Supplying, mixing and grouting with ready mix non-shrink grout having charecterisic strength of 40 N/mm2 manufactured by the Sika, CONBEXTRA-GP1 / GP2, or equivalent, including Chipping off loose material by approved means prior to grouting, cleaning with compressed air, wetting the surfaces for several hours, removing of excess accumulated water, shuttering the edges, curing, etc., strictly as per manufacturer's	cu.m	

	instructions, specifications, drawings and under expert supervision to the satisfaction of the Engineer-in- charge.		
3	REINFORCEMENT STEEL		
3	Supplying & Fixing in position the following reinforcement steel (Fe500D) of all diameters for RCC work including following scope: - revceiving and unloading directly from supplier and/or shifting the steel from Owner's stores to site of work, - forecasting of diameter wise quantity required for planned works, - straightening, cleaning, cutting, bending to shapes and length as per details, - supplying and binding with 18 SWG two strand annealed iron binding wire and/or welding if required - providing cover blocks, steel supports and spacer bars etc., complete for all depths and heights as per specifications, drawings and as directed by the Engineer-in-charge, - reconciliation of supplied material, returning the balance, returning the srcap at designated place within project premises, etc.		
3	Notes: 1. Quantity of Steel for chairs and spacers shown in drawings shall be considered for payment. 2. Quantity of Steel for chairs and spacers NOT shown in drawings but required practically, shall be considered only for reconciliation and no payment shall be made for the same. 3. Quantity of steel for additional laps, if any, as per execution conditions may be considered for payment at sole discretion of Engineer-in-charge. 4. The contractor at all times shall be proactive to reduce scrap and use scrap as far as possible.		
3.1.	Upto Plinth	MT	
3.2.	Above Plinth	MT	
3.3.	Paving and Grade Slabs	MT	
4	FORMWORK		
4.1.	Supplying, installing, dismantling and removing (after specific period) the following leakproof form work using standard ply of approved quality to give a fair and smooth exposed concrete finish including scaffolding, centring, bracing, providing openings, cutouts, pockets,provision for inserts etc., keeping the same in position during concreting, projecting dowels etc., all complete in all type of cast-in-situ concrete works as per specifications, drawings and as directed by the engineer-in-charge.		
4.1.a	Plywood Shuttering - Upto Plinth	sq.m	
4.1.b	Steel Shuttering - Upto Plinth	sq.m	
4.1.c	Curved Plywood Shuttering - Upto Plinth	sq.m	
4.2.	Above Plinth		
4.2.a	Plywood Shuttering - Above Plinth	sq.m	
5	STRUCTURAL STEEL WORK		

5.7.	Supplying and fixing in position at all elevations 1100 mm high handrailing including but not limited to - 32mm nominal diameter, medium duty (3.61 Kg/m) M.S. - Tubes conforming to IS:1161 as verticle poles at 1.5 m centres maximum, top rail and mid rails including - MS toe guard (100 wide x 6mm thick), - cutting to required length, welding, jointing with necessary fixtures, including two coats of red oxide painting with two coats of synthetic enamel painting as per specifications and drawings. However, steel for item like toe guard etc. will be issued and paid as per item 3.1 above. Notes : 1. Rate shall be running metre of handrail incase fixed on RCC after casting or structural steel member seperately after erection. 2. Incase handrail is fixed on structural member before erection, handrail shall be measured and paid on weight basis and not on running metre basis.	RM	
6	MASONRY, PLASTERING & ALLIED WORKS		
6.1.	Supplying and laying in position brick masonry works at all depths and Elevations using bricks of cruching strength of minimum 35 kg/mm2 in cement sand mortar 1:6 including watering, scaffolding, staging, mixing mortar, laying bricks, finishing the joints, raking of joints, curing etc., all complete as per specifications, drawings and as directed by the Engineer-in-charge. For thickness 200mm	cu.m	
6.2.	Same as item 6.1 above but for thickness of 150mm	cu.m	
6.3.	Same as item 6.1 above but for thickness 350mm	cu.m	
6.4.	Supplying and plastering 20mm thick sand faced cement plaster in two (2) layers on external surfaces of walls/concrete at all elevations, first layer 12mm thick in cement mortar 1:5 and second layer 6mm thick in cement mortar 1:4 including hacking the surfaces, scaffolding, curing, necessary drip moulds, fillets, grooves, making the openings if required, making good the opening areas in line and level, providing and installing temperory arrangements such as tarpaulin to protect equipments from damage, etc., all complete as per specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
6.5.	Supplying and applying 12mm thick plaster to internal surfaces of walls/concrete in two layers base coat in cement mortor 1:4 and finish coat of 2 mm thick to all internal surfaces at all levels including hacking the surfaces, scaffolding, curing, necessary drip moulds, fillets, grooves, making the openings if required, making good the opening areas in line and level , staging, scaffolding, roughening finishing the surfaces, Supplying and installing temperory arrangements such as tarpaulin to protect equipments from damage, etc., all complete as per specifications, drawings and as directed by Engineer-in-charge.	sq.m	
6.6.	Supplying and plastering 6mm thick ceiling plastering in cement mortar 1:4 for ceiling including standard smooth finish at all elevations, hacking the surfaces, scaffolding, curing, providing and installing temperory arrangements such as tarpaulin to protect equipments from damage,	sq.m	

	etc., all complete as per specifications, drawings and as directed by the Engineer-in-charge.		
6.7.	Supplying and providing screed layer in trenches, pits and other places at all elevations, average thickness 50mm in 1:2:4 (1 Cement: 2 Sand : 4 aggregate 6mm) including mixing, laying to slope, finishing, curing etc., with all materials complete as per specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
7	PAINTING, COLOUR WASHING, FLOORING, ETC.		
7.1.	Supplying and painting the external surfaces with prime coat and two or more finish coats of approved make and color Water-proof cement paint for all heights. The first stage shall comprise of 2 parts of water proof cement paint and one part of water stirred thoroughly and allowed to stand for 5 minutes. The second stage shall comprise of adding further one part of water to the mix and stirring thoroughly to obtain a liquid of workable and uniform consistency.Painted surfaces shall be sprinkled with water 2 or 3 times a day. This shall be done between coats and for at least 2 days following the final coat. The curing shall be started as soon as paint has hardened so as not to damage by sprinkling of water say about 12 hours after the application. The rate shall include scaffolding, preparation of surfaces, curing, all material etc., complete as per specifications, drawings and as directed by the Engineer-in-Charge.	sq.m	
7.3.	Supplying and painting the internal surfaces with approved make and color Synthetic Washable Distemper for all heights. The surface shall be prepared as for Cement Primer Coat. Unevenness in the plaster shall be made good by applying plaster of Paris putty mixed with distemper of the colour to be used on the entire surface including filling up the undulations. The surface shall then be rubbed down with a fine grade sand paper and made smooth. After the primer coat has dried for at least 48hours, the surface shall be lightly sand papered to make it smooth, taking care not to rub the priming coat out. All loose particles shall be dusted off. One coat of distemper properly diluted with thinner, shall be applied with brushes/rollers in horizontal strokes followed immediately by vertical ones which together constitute one coat. The subsequent coats shall be applied in the same way. Two or more coats of distemper as are found necessary shall be applied to obtain an even shade. A time interval of at least 24 hours shall be allowed between consecutive coats. The brushes shall be of 15 cm. double bristled type. The rate shall include scaffolding, preparation of surfaces, curing, all material etc., complete as per specifications, drawings and as directed by the Engineer-in-Charge.	sq.m	
7.13.	Providing and laying 50mm thick Granolithic flooring with ABC FLOOR HARDENER or equivalent with 6mm glass strips for panelling at various elevations, in alternate panels in cement concrete 1:2:4 with 20mm down graded chips finished with floating coat of neat cement including all works but not limited to preparation of base, finishing, rounding corners & junctions, curing etc., including edge shuttering if necessary, with all materials complete as per	sq.m	

	specifications, drawings and as directed by the Engineer-in-charge.		
7.14.	Supplying and laying acid / alkali resistant tiled for floor, skirting, dado as per Relevant BS / EN Code (with 25mm thick tiles from approved manufacturer) at various elevations including preparation of base laying underbed of 12mm thick acid proof mortar as per manufacturer's specifications, over three layers of bitumen (total thickness of all layers – 3mm) grade 85/25 over 12mm thick cement mortar 1:3 underbed, tiles, pointing of size 6mm x 18mm deep with CNSL mortar or equivalent including curing the joints with dilute hydrochloric acid (25% proof) as per manufacturer's specification etc., with all material and labour complete as per specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
7.15.	PPG Lining	sq.m	
7.16.	Supplying and laying 20mm thick, 150mm heigh cement skirting at various elevations including preparation of base, laying underbed with cement-mortar 1:3, neat cement topping, rounding corners & junctions giving smooth finish, curing etc., with all materials complete as per specifications, drawings and as directed by the Engineer-in-charge.	RM	
7.18.	Supplying and laying Vitrified tile floor, skirting / dado for operating floor and staircase at various elevations, including preparation of 12mm thick base in cement mortar 1:3, rounding pieces for corners & junctions, curing etc., and including pointing the joints neat with white cement with all materials complete as per specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
7.19.	Supplying and laying Ceramic tile floor, skirting / dado (SPARTEK/JHONSON/BELL or equivalent) at various elevations, including preparation of 12mm thick base in cement mortar 1:3, rounding pieces for corners & junctions, curing etc., and including pointing the joints neat with white cement with all materials complete as per specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
7.20.	Supplying and laying machine cut, machine polished Kota stone of 25mm thick over 20mm thick base of cement mortar 1:4 for flooring, staircase,etc., complete with all materials as per drawings, specifications and as directed by the Engineer-in-charge.	sq.m	
8	DOORS, WINDOWS, LOUVRES, ROLLING SHUTTERS & GLAZING		
8.1.	Supplying and fixing pressed steel hollow metal flush steel doors 40 mm thick, shutters with 16 gauge and pressed steel metal frame with 18 gauge of 125 mm and necessary hold fasts, vision panel, rubber buffers and lugs, gaskets, fixing of all hinges and hardware, standard fittings etc., complete as per drawing and specifications and as directed by engineer-in-charge including painting as per painting specification mentioned above.		
8.1.a	Single Shutter	sq.m	
8.1.b	Double Shutter	sq.m	

8.3.	Supplying and fixing in position the following mild steel rolling shutters of approved manufacturer havingy 18 gauge sheet laths including pressed steel bottom rails, channel guides, ball bearings, suspension shaft, bolts, screws, brackets, hood, locking arrangement and grills for ventilation including all fittings and accessories as per drawings & specifications including one one shop coat of red oxide zinc chromate primer, crafting, packing, transporting to site all freight & insurance charges, assembling fitting & fixing at all elevations and a coat of red oxide zinc chromate primer and synthetic enamel paint as per note no. 2 above etc., complete as per drawing and specifications and as directed by engineer-in-charge.		
8.3.a	Manually Operated	sq.m	
8.3.b	Electrically Operated	sq.m	
8.4.	Supplying and fixing in position following hinged type fire proof doors of approved equivalent conforming to relevant BS / EN standards with all necessary fittings and fixtures etc. Fire proof doors shall have minimum fire rating of 120 min. The door shall be provided with automatic closing gear		
8.4.a	Single leaf door (Size < 2.50 Sq.m)	sq.m	
8.5.	Supplying and fixing in position annodised aluminium sliding Doors in extruded sections, outer frame having weep holes and water drainage section at bottom including PVC weather strips and glazing channels nilon glider, rubber bumpers in interlocking sections, locking arrangements etc. complete as per specificaitons and drawings.		
8.5.a	Aluminium Doors - 6mm Float glass	sq.m	
8.6.	Supplying and fixing in position annodised aluminium sliding windows upto three tracks in extruded sections, outer frame having weep holes and water drainage section at bottom including PVC weather strips and glazing channels nilon glider, rubber bumpers in interlocking sections, locking arrangements etc. complete as per specificaitons and drawings.		
8.6.a	Aluminium Windows - 6mm Float glass	sq.m	
8.8.	PVC Doors		
8.8.a	Supplying and fixing 30 mm thick factory made PVC rigid foam panelled door shutters manufacture by M / s Sintex made from M.S. tube of 19 gauge thickness size 19x19 mm for styles and 15x15 mm for top and bottom rails , covered with heat moulded PVC "C" channels of 5 mm thick sheet and 30x50 mm wide to form styles and 5 mm thick and 75 mm wide PVC sheets for top rail. , lock ail and bottom rail on either side and 5 mm thick, 20 mm wide cross PVC sheet as gap insert for top rail and bottom rail panelling of 5 mm thick PVC sheet fitted in the M.S. frames welded / sealed to the styles and rails with 5x30 mm PVC sheet beading on either side and joined together with solvent cement adhesiveetc. complete as per manufacturers specification and direction of Engineer-in-charge fixed to frames with 4 nos. M.S. powder coated butt hinges (For W.C. and bathroom shutters)	sq.m	

8.8.b	Supplying and fixing factory made P.V.C. door frame manufactured by M/S Sintex of size 50x47 mm with a wall thickness of 5 m made out of extruded 5 mm rigid PVC foam sheet mitred at corners and joined with 2 nos. of 150 mm long brackets of 15x15 mm M.S. square tube , the vertical door profilesto be reinforced with 19x19mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal tjo be approved throught out the frames .The door frame to be fixed to the wall using M.S.screws of 65 /100 mm size complete as per manufacture specifiction and direction of Engineer-in-charge.	RM	
9	WATER PROOFING & ROOF INSULATION		
9.3.	Supply and laying Bitumen Felt water proofing of seven courses at various elevations including surface cleaning, preperations and as following: The roof shall be re-graded by screed to ensure everywhere a run off gradient of not less than 1 in 120. The screed shall consist of one part cement and four parts medium to coarse sand by volume. The screed shall be cured for 7 days. The surface shall then be cleaned of all foreign matter by wire brushing and dusting. - Bitumen primer at rate 0.08 lit/m2 - Hot bitumen of grade 30/40 applied at the rate of 1.2 kg/m2 - Fiber based felt type 2, grade 2 or Hessian based felt type 3, grade 2. - Hot bitumen applied at the rate of 1.2 kg/m2 - Fiber based felt type 2, grade 2 or hessian based felt type 3, grade 1. - Hot bitumen applied at the rate of 2.5 kg/m2 and 1.5 kg/m2 for felt and hessian respectively. - Pea-sized gravel or grit at the rate of 0.008m3/m2 or (if specified) 2 coats bituminous aluminium paint. The water proofing treatment should be guaranteed for a minimum period of ten years of trouble free life. (Measurment will be given as per plan area)	sq.m	
9.4.	Supplying and applying Two coats of Elastomeric (of Sika lastic 450 I make or equivalent approved make), single component, aliphatic polyurethane based cold liquid applied waterproof coating system reinforced with glass fibre cloth . Complete with all respect as per direction of the engineer in charge & manufacturer instructions. Sikalastic®-450 (I) conforms to ASTM 836 - 89 Elongation at break: 900 %; Tensile Strength : 2N/mm2 in 14 days/+27deg ; water permeability passes as per IS 2645; including cutting of panels minimum after 24 hrs. of casting & filling joints/groove of size 8 mm X 8 mm at panels with Polyurethene/Polysulphide sealant, etc. complete as per drawings and as directed by Engineer-in-charge.	sq.m	
9.5.	Supplying & laying water proofing treatment with Atactic Polypropylene Membrane 3 mm thick with a layer of geotextile. The water proofing membrane shall have a non woven polyster membrane coated on both sides with APP modified bitumen . When installed, it shall form an impervious, flexible blanket, which accepts normal structural movement without breaking or cracking wherever required, all as per manufacturer's requirement and as instructed by the Engineer. The APP membrane	sq.m	

	shall be coated with cement screed (1:2:4) of 25mm thickness with 24 SWG chicken wire mesh laid to slope in panels upto 6 sq.m size. The joints between panels shall be raked out neatly to a minimum 6mm x 6mm Vgroove and filled up with an approved quality elastomeric compound sealant. The water proofing treatment should be guaranteed for a minimum period of ten years of trouble free life (Measurment will be given as per plan area).		
10	FALSE FLOORING & FALSE CEILING		
10.2.	Supplying and installing False Ceiling system with following scope and specifications: The system shall have Gypsm boards of approved make and color. Suspension system shall consist of the grid supporting the ceiling panels, intermediate runner supports for the grid if any and hangers, wall angles etc. required to suspend the grid or the runners from structural walls, slabs and beams or trusses. Anodized aluminium grid ceiling system from the approved supplier shall be used. All members of the suspension system shall be of sufficient strength and rigidity to carry the ceiling boards or sheets in a true and level plane without exceeding a deflection of 1/360th of their span. Main runners shall be extruded anodized (25 microns) aluminium Tee section of minimum 25 mm x 35 mm size. Secondary runners shall be aluminium Tee section of minimum size 25 mm x 25 mm. Wall angles shall be of minimum size 38 mm x 38 mm. Generally the grid dimensions of 610 mm x 610 mm shall be adopted. Cutouts for light fixtures, diffusers etc. shall be the exact dimensions and in exact locations.	sq.m	
10.5.	VOID	sq.m	
10.6.	Supplying and installing 50mm thick under deck insulation with best quality Expanded Polystyrene (TF thermocol) blocks fixed underside of slab with Bitumen paint or CRPX compound, sealing the joints with self adhesive BOPP tapes and 18 gauge GI wire mesh fixed with chromium plated screws, all materials etc., complete as per drawings and specifications and drawings and as directed by the Engineer-in-charge.	sq.m	
11	WATER SUPPLY, DRAINAGE AND SANITARY WORKS		
11.1.	Supplying, fitting & fixing the following best quality sanitary fixtures at various elevations as per drawings including all accessories, necessary brackets, supports etc., chromium plated fittings, screws, gratings cutting & making good necessary openings, chases etc. connecting lead pipes & bends as required, with all materials etc., complete as per drawings & specifications.		
11.1.1	European type water closets with P trap conforming to BS / EN / IS:2556 with white/color glazed vitreous china basin and low level PVC system 10 liters discharge capacity with half twin heavy duty CP brass flush valve of 32mm dia including valveless fittings, flush bonds, supply connections, siphon, approved quality plastic seat with cover etc., complete.	Nos	

11.1.2	Supplying and fixing approved make white/color glazed ceramic flat back half stall type urinal of size 1125 x 500 x 390mm including a pair of 250 x 125mm white ceramic footrest per urinal, with half turn heavy duty CP brass flush valve of 32mm dia waste pipe, C.P. spreaders with unions and clamps, G.I. waste pipe to C.I. waste shaft on the outside of the wall complete.	Nos	
11.1.3	Supplying and fixing stainless steel sink of size 610 x 450 x 300mm including supplying and fixing CI brackets, 32mm dia. CP waste pipe fitting, 50mm dia CI/PVC waste to CI/PVC waste shaft on the outside of wall with unions, cleaning eyes, water proof joints etc., as directed by the Engineer-in-charge.	Nos	
11.1.4	Supplying and fixing approved make white/color glazed vitreous china hand wash basin of size 550 x 400mm conforming to BS / EN / IS:2556 with a central tap hole, fixed on CI brackets with 1 no. 15 mm dia. C.P. screw down 75mm nose pillar taps of approved make, 32mm dia C.I. waste pipe with fittings, plug with C.P. chain, C.P. bottle trap and 40mm dia. GI/PVC waste pipe to CI/PVC waste shaft on the outside wall with unions cleaning eyes, waterproof joints etc., as directed by Owner including cutting and making good the walls, painted C.I. brackets screwed to wall with rawl plug and screws etc. complete.	Nos	
11.1.5	Supplying well polished white marble partitions of thickness 25mm and of size 1125 x 700mm with neatly rounded top and front corners and fixing them between stall type urinals including cutting grooves in the walls and floor and making up the grooves after installing the partitions etc.	Nos	
11.1.6	Supplying and fixing 600 x 450 x 6mm bevelled edge mirror of approved make with 6mm thick asbestos cement sheet backing fixed to wooden cleat with C.P. brass screws, Alluminium frame work etc. complete or equivalent.	Nos	
11.1.7	457mm long 12mm dia chromium plated towel rails with brackets, fittings etc. complete.	Nos	
11.1.8	All chromium plated standard liquid soap holders with fittings etc. complete	Nos	
11.1.9	All chromium plated brass toilet paper holder with bracket, fittings etc. complete	Nos	
11.1.10	Supplying and fixing in the floor CI floor traps (Nahni traps) conforming to BS / EN / IS:3989 in cement concrete with C.I soil variety plug, bend of required arm including chrome plated removable grating, cutting holes in walls/floors and making good the same etc. complete	Nos	
11.1.11	Supplying and fixing 15mm dia. C.P. brass screw down bib taps heavy grade conforming to BS / EN / IS:781 of Ego or equivalent approved make and tested.	Nos	
11.1.12	Supplying and fixing C.P. brass stop valves heavy grade conforming to BS / EN / IS:781 tested of Ego or equivalent approved make and design		
11.1.12.a	50mm	Nos	
11.1.12.b	40mm	Nos	
11.1.13.c	25mm	Nos	
11.1.14	Supplying and fixing in position CI manhole cover with frame conforming to BS / EN / IS:1726 at various elevations over man holes, sumps etc. with all materials, labour, complete.		

11.1.14.a	square light duty 610mm x 610mm	Nos	
11.1.14.b	square light duty 300mm x 300mm	Nos	
11.1.15	Supplying and fixing in position HDPE overhead water tanks of following capacities and installing over the roof including provision of ball valve & other nozzles for outlet, inlet etc. complete		
11.1.15.a	500 liters	Nos	
11.1.15.b	1000 litres	Nos	
11.1.15.c	2000 litres	Nos	
11.1.15.d	5000 litres	Nos	
11.1.16	Supplying, laying, fitting, fixing and jointing medium grade "Galvanised iron" pipes class-B conforming to BS / EN / IS:1239 Indian Tube Co. or equivalent approved valve for water lines at various elevations, with all bends, elbows, tees, reducers etc. (including jointing with "Hold tight" compound) including excavation & backfilling in layers, ramming, watering etc. and pipe supports in concrete of mix 1:2:4 using 20mm down graded blue granite aggregates and curing etc. wherever necessary and as directed for underground pipes, hangers, supports, straps, etc. & making good a prime coat of anti-corrosive paint and wrapping with polythene sheet of 300micron thick conforming to BS / EN / IS:158 with all materials etc., complete as per drawings and specifications.		
11.1.16.a	15mm	RM	
11.1.16.b	20mm	RM	
11.1.17	Supplying and laying unglazed earthenware pipe of 100mm diameter in dispersion trenches with open joints to the slope & level given as per specification.	RM	
11.1.18	Supplying, laying, fitting, fixing & jointing PVC pipes of 4kg/cm2 at all elevations with all fittings bends, tees, reducers, etc. wherever necessary and as directed concrete supports, sealing with "OMAI SEAL" compound, testing, cutting chases, grooves, etc. & making good, hangers, supports, straps, etc. complete as per specifications.		
11.1.18.a	25mm dia.	RM	
11.1.18.b	75mm dia	RM	
11.1.18.c	100mm dia.	RM	
11.1.18.d	150mm dia	RM	
11.2.	VOID		
11.3.	Supplying, laying and fixing in position on surface with necessary MS clamps and wooden blocks of approved quality UPVC rain water pipes (Class 1 of IS : 4985) with required specials including caulking of joints, testing, etc. complete (special shall includes all bends, offsets, shoes, junctions etc. the rate shall be inclusive of such specials measured on linear basis.		
11.3.a	UPVC RWP - 110 mm dia	RM	
11.3.b	UPVC RWP - 160 mm dia	RM	
12	SHEETING WORK IN ROOF AND SIDING		
12.1.	Supplying and fixing rain water gutters formed out of galvanised steel sheet 0.8 mm thk , fixed to sheeting with all brackets, drop ends, nozzels, stop ends etc., laying to required slopes, making joints to water tightness etc.,	RM	

	complete all as per specifications, drawings at all elevations.		
12.2.	Providing and Fixing Profiled Galvanised steel 0.8 mm thick profiled Metal Decking conforming to IS:277/IS:513/IS:1079 of approved make (Pennar Industries Ltd, Unitech Metals or equivalent) to support finished roofing material and/or to serve as a permanent form and/or positive reinforcement for concrete floor slabs etc., at all elevations including fixing to roof beams, trusses etc. including supply and fixing of shear studs, with all specials as required complete as per manufacturer's specifications, drawings and as directed by the Engineer-in-charge.	sq.m	
12.3.	Supplying & fixing in roofing and side cladding, pre coated corrugated galvanised steel sheets of 0.65 mm thick with zinc coating not less than 175gm /m2 conforming to IS:513 of approved make and shade having primer coat of 5 micron of epoxy primer,top coat of 20 micron polyster coat,back coat(bottom unexposed surface) of 7 micron epoxy coating, including fixing leads, GI bolts to suit structure, washers, seals, self tapping/ stiching screws, eaves, flashings, etc. all complete as per drawings, manufacturer's specification and as diredted by engineer in charge.	sq.m	
12.4.	Supplying & fixing close fitting pre coated GI Ridge with nuts , bolts, washeres as per item 13.3 above and as per manufacturee's specifications.	RM	
13	GATE AND FENCING		
13.1.	Supplying and fixing GI chain link fencing of 2.5m total vertical height with 50 mm mesh size, 3.1 mm dia mesh wire conforming to IS:2721, 4 mm dia galvanised line wires 3 nos. including Supplying MS flat of 25 x 6 mm as stretcher bars, fixing fabric to the post with 16 gauge galvanised wire including 65 x 65 x 6 angle iron posts at maximum distance of 2.5 m embedded in PCC block,angle shall be painted with 2 coats of red oxide zinc chromate primer and 2 coats of synthetic enamel paint of approved make and shade, all accessories, clips, bolts, clamps, flats, GI nibs etc., all complete as per drawings, specifications and as directed by the Engineer-in-charge.	RM Sq.m	
13.2.	Supplying and fixing GI barbed wire fencing 2.5m total vertical height including 0.45 m with slant as anticlimbers, 9 rows on vertical and 3 rows on anticlimbers of GI barbed wires of two strands, 12 guage and 4 barbed points of 14 gauge including cross barbed wires fixed to angle 65 x 65 x 6 verticle angle iron posts spaced at maximum distance of 2.5 m centers and strainer posts at 20m centers including 2 coats of red oxide zinc chromate primer and 2 coats of synthetic enamel paint of approved make and shade, all accessories etc., all complete as per drawings, specifications and as directed by the Engineer-in-charge.	RM	
13.3.	Supplying and fixing with MS gate (single or double shutter) with 50 NB medium duty MS pipe on periphery and 6 mm thick flats all round and internally welded to pipes including MS welded mesh of size 25 mm x 25 mm with two coats of red oxide zinc chromate primer, and 2 coats of synthetic enamel paint with approved make, colour and shade, guide tracks, stoppers, tower bolts, aldrop, steel rollers/wheels all accessories, clips, bolts,		

	flats etc. complete as specified and directed including supply of structural steel.		
13.3.a	MS Gate - Single Shutter	sq.m	
13.3.b	MS Gate - Double Shutter	sq.m	
14	ROADS WORKS		
14.1.	Supply and laying 150mm thick granular subbase over compacted soil.	sq.m	
14.2.	Supply & laying 300mm thick subbase course compacted crushed stone grade .4 aggregate 2 layer of 150mm each	sq.m	
14.3.	Water Bond Maccadum - Supplying and laying first layer of water bound macadam (WBM) course to obtain a compacted layer of 75mm thickness using 63 - 40mm size machine crushed blue granite/black trap stone aggregate and moorum containing lime stone nodules and of red colour from approved source bound with water, including screening, sorting spreading compacting with a 10T power roller, complete as per specification and drawing, all materials and labour complete. - Supplying and laying second layer of water bound macadam (WBM) course to obtain a compacted layer of 75mm thickness using 63 - 40mm size machine crushed blue granite/black trap stone aggregate and moorum containing lime stone nodules and of red colour from approved source bound with water, including screening, sorting spreading compacting with a 10T power roller, complete as per specification and drawing, all materials and labour complete. - Supplying and laying third layer of water bound macadam (WBM) course to obtain a compacted layer of 75mm thickness using 63 - 40mm size machine crushed blue granite/black trap stone aggregate and moorum containing lime stone nodules and of red colour from approved source bound with water, including screening, sorting spreading compacting with a 10T power roller, complete as per specification and drawing, all materials and labour complete.	sq.m	
14.4.	Supplying and applying tack coat using hot straight run bitumen of grade 80/100 including heating the bitumen, spraying the bitumen with mechenically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specification On WBM @ 0.75 Kg/Sqm	sq.m	
14.5.	Supplying and laying 50mm thick seal coat of premixed fine aggregate (passing 2.36mm and retained on 180micron sieve) with bitumin using 128kg of bitumen of grade 80/100 bitumen per cum of fine aggregate and 0.6 cu m of fine aggregete per 100 sq m of road surface including rolling and finishing with road roller all complete.	sq.m	
14.6.	Supplying and laying RCC pipe of approved make and class including cutting of roads, wherever necessary, excavation, laying in position, bedding, jointing, grouting, curing backfilling and finishing road, complete as per specification all materials and labour complete (Items like PCC, masonry work, RCC etc. will be measured and paid for separately. Excavation will not be measured, which is to be included in the rate under this item).		
14.6.a	RCC Pipes - 750mm dia	RM	

14.6.b	RCC Pipes - 600mm dia	RM	
14.6.c	RCC Pipes - 450mm dia	RM	
14.6.d	RCC Pipes - 300mm dia	RM	
14.6.e	RCC Pipes - 200mm dia	RM	
14.6.f	RCC Pipes - 150mm dia	RM	
14.6.g	Supplying and Fixing Precast (1:2:4) curb stones (300 x 300 x 250 mm) along road sides as per drawings.	Nos.	
15	Other WORKS		
15.1.a	Anti Termite Treatment	sq.m	
	BOQ FOR BORED CAST IN SITU PILING WORK **Total No of Piles = approx 390 Nos, 750 mm dia.**		
1	Forming vertical piles by boring all kinds of soils (dense sand & stiff clay) by using Hydraulic boring rig for piles of length up to 25 m from tip to cut off elevation of piles as shown and called for on the drawings or as instructed by the OWNER/ENGINEER including SPT test to decide the bore termination level.		
i	750 mm dia.	RM	
2	Same as item No 1 above but for boring in hard rock		
i	750 mm dia.	RM	
3	Reinforcement for Piles: Supplying, Bending, binding and lowering cage in bore for piles including transporting, handling, cleaning, cutting, bending, tack welding lap joints , assembling, tying, binding with soft annealed 16 gauge black iron wire, placing and maintaining in position reinforcement steel consisting of High yield strength cold twisted steel bars to relevant BS code of grade Fe415.	MT	
4	"Filling the bore with M30 grade concrete, design mix, inclusive of concreting a minimum 1000 mm above specified cut-off level, cutting off piles at the elevation specified, etc. complete .The rate to be inclusive of removal of slush & surplus soil generated in boring and disposing the same witin a radius of 3Km. (Mode of measurement: The length of the pile from tip to cut off level converted into volume for corresponding dia of pile shall be considered for payment.)"	CUM	
5	Conducting load test on piles (cost of installation of test piles to be paid separately under relevant items), including provision and erection of all kentledge, (including boring and installation of rock anchor / anchor piles if required), supporting blocks, loading frame, excavation, dewatering, backfilling with proper compaction of pile test pit, preparing the scheme for pile load testing and pile head for conducting the test and submission of test results etc., with all labour, materials,equipment, handling, transportation, testing including usage of LVDT (Linear Variable Displacement Transducer), load cells for measurement of deflection and load respectively etc., complete as per the approved scheme, drawings, specifications and instructions of the Engineer for piles of following diameter and safe load carrying capacity.		
5a	Initial vertical (cyclic) load test as per relevant IS code upto 3 times safe vertical load carrying capacity on		
i	750 mm dia.	Each	

5b	Initial lateral load test upto 3 times safe lateral load carrying capacity on		
i	750 mm dia.	Each	
5c	Initial pullout load test as per relevant IS code upto 3 times safe pullout load carrying capacity on		
i	750 mm dia.	Each	
5d	Routine Vertical (direct) load test as per relevant IS code for 1.5 times safe vertical load carrying capacity on		
i	750 mm dia.	Each	
5e	Routine lateral load test as per relevant IS code for 1.5 times safe lateral load carrying capacity on		
i	750 mm dia.	Each	
5f	Routine pullout load test as per relevant IS code for 1.5 times safe lateral load carrying capacity on		
i	750 mm dia.	Each	
6	Chipping and dressing up of pile heads of following sizes upto the cut off level for lengths not exceeding up to 2.5m excluding the cost of excavation which shall be paid separately at relevated quoted rates.		
	750 mm dia.	Mtrs	