Minutes of the 64thMeeting of State Level Task Force on Solid Waste Management for discussion on several issues of solid waste management

In the Chair:	Director, SUDA
Meeting Date:	15thJuly, 2024
Meeting Venue:	SUDA Conference Hall (2ndFloor)
Meeting Time:	11.00AM
Meeting Attendees:	

- List of Members and participants : Annexed

Director, State Urban Development Agency (SUDA) chaired the meeting.

At the outset, he welcomed all the members present and explained the discussion points of the meeting. After threadbare discussion the following decisions were arrived at:

1. The Committee was appraised that in the RFP document for inviting tender for engagement of agency for bio-mining and bioremediation of legacy waste of the ULBs at clause no. 5.11, it was stated that "If the following criteria exist in any of the Bidder awarded in last 5 years for same and similar nature of work from any Government Organization before floating of this NIT cannot be participate in this bid:
   - ✓ In the awarded tenders in last 5 years, if 70% of the Liquidity Damage (LD) imposed (which may be 10%, 15% etc. of the total project cost mentioned in the awarded tenders) by any Government Organization."

   Against this,all bidders have submitted their Affidavit of 1st Class Judicial Magistrate stating that

   > "That our organization/company have not been imposed with more than 70% of Liquidity Damage (LD) of the stipulation against a stipulated maximum ceiling of Liquidity Damages (LD) of the total project cost by any Government Organization for tenders awarded in the last 5 years."

   But after verification of the credential, it is observed that KMDA imposed 86.39% LD to M/s PATHYA in tender no. 06/SE(NC)/S&SWM/W&S/KMDA of 2020-21 out of 7 tenders, KMDA imposed 100% and 96.27% LD to M/s Greentech Environ Management Pvt. Ltd. in tender no. 41/SE(NC)/S&SWM/W&S/KMDA of 2020-21 and 42/SE(NC)/S&SWM/W&S/KMDA of 2020-21 respectively out of 6 tenders and KMDA imposed 74.81% LD to Rohini Fire Safetyin tender no. 10/SE(NC)/SD&SWM/KMDA of 2021-22out of 7 tendersagainst a stipulated maximum ceiling of Liquidity Damages (LD) of the total project cost.

   The Committee noted that interpreting the language by themselves, the abovementioned agencies have submitted their affidavit on the basis of average of LD of their all tenders awarded in the last 5 years.

   The Committee recommended that it should be considered as individual project not as average of all projects and disqualifies the agencies who have submitted the affidavit interpreting the language wrongly.

The Committee made the Technical Evaluation of 10 projects and observed the following:

Sl	Tender invited for Processing Legacy Waste of	No of Bidders Participated	No of Eligible Bidders	Name of the Eligible Bidders	Reason for disqualification
1	Cluster - I (2nd Call)	7	4	Eastern Organic, D H Patel, Tansam Engg & Pooja Consultation (JV) and NACOF & Agro Green (JV).	1. Environmental Techno and Greentech - Insufficient Credential, 2. PATHYA & Fungalite (JV) – LD imposed more than 70%.
2	Burdwan (1st Call)	6	3	Eastern Organic, Tansam Engg & Pooja Consultation (JV) and NACOF & Agro Green (JV).	1. PATHYA,Rohini Fire Safety, and Greentech – LD imposed more than 70%.
3	Midnapore (1st Call)	5	2	Eastern Organic, and Tansam Engg & Pooja Consultation (JV).	1. PATHYA, Rohini Fire Safety and Greentech – LD imposed more than 70%.
4	Siliguri (1st Call)	4	2	Eastern Organic and NACOF & Agro Green (JV).	1. Greentech - Insufficient Credential, 2. PATHYA & Fungalite (JV) – LD imposed more than 70%.
5	Behrampur (2nd Call)	4	1	Eastern Organic.	1. PATHYA,Rohini Fire Safty and Greentech – LD imposed more than 70%.
6	English Bazar and Old Malda (1st Call)	4	1	Tansam Engg & Pooja Consultation (JV).	1. PATHYA, Rohini Fire Safty and Greentech – LD imposed more than 70%.
7	Durgapur MC (1st Call)	4	2	Eastern Organic and NACOF & Agro Green (JV).	1. PATHYA and Greentech – LD imposed more than 70%.
8	Bhadreswar (1st Call)	4	1	Eastern Organic	1. PATHYA, Rohini Fire Safety and Greentech – LD imposed more than 70%.
9	Purulia and Raghunathpur (1st Call)	3	1	Aayushi Hygiene	1.Greentech and Rohini Fire Safty – LD imposed more than 70%.
10	Naihati (1st Call)	3	2	Eastern Organic and Aayushi Hygiene	1. Rohini Fire Safety – LD imposed more than 70%.

Based on the observation above, the Committee recommended to open the financial bids of the eligible bidders for Cluster-I (2nd Call), Burdwan (1st Call) and Berhampur (2nd Call) projects and place the same before the Committee in the next meeting acceptance of L-1 rate. The Committee further recommended to float the 1st call for remaining 7 projects – Siliguri MC,Midnapore, Naihati, Englishbazar & Old Malda, Durgapur MC, Bhadreswar and Purulia & Raghunathpur according to the RfP finalized recently.

2. The Committee noted that Asansol MC has forwarded a lay out plan of Mongalpur site for setting up fresh waste processing plant with the capacity of 400 TPD prepared by M/s NACOF and recommended to approve the same for further action.
   The Committee ratified the approval of the layout plan for setting up fresh waste processing plant of Bhadreswar and Dankuni Municipalities with the capacity of 45 TPD and 36 TPD respectively.

3. The Committee noted that as per direction of State Government, Bhatpara Municipality had engaged 9 (nine) Security Guards for their fresh waste processing unit. For this purpose, SUDA provided Rs.1,10,898/- to Bhatpara Municipality to make payment for the month of August and September, 2022. Now, Bhatpara Municipality has submitted the 2nd installment of demand of Rs. 10,50,804/- as expenditure from Oct'22 to April'24 for this purpose. Considering the absolutenecessity to keep security guards posted at the site, the Committee recommended to release the payment from the remaining untied fund of SBM-U 1.0.
4. The Committee was appraised regarding the action plan proposed by Government of India for implementation of 'NAMASTE' Programme of the Ministry of Social Justice and Empowerment (MoSJE), Government of India being jointly implemented by the MoSJE and MoHUA. As per their directions following actions may be taken:

   - ✓ All ULBs may be instructed to conduct the survey to capture details of actual number of Sewer and Septic Tank Worker (SSW) in a time bound manner as per guidelines under NAMASTE to get funds from NSKFDC, GoI.
   - ✓ As communicated by NSKFDC, UD&MA Department/SUDA may also involve I&WD Dept, PHE Dept, PWD Dept, Tourism Dept, MSME Dept, KMDA, MED, AMRUT Cell to address proper representation of SSW to ensure the benefit under the Scheme availed by maximum number of SSWs. For this, a meeting may be convened with all stakeholders in this regard.
   - ✓ As, the advisory (as per NAMASTE Guidelines & advisory for setting up RSA & ERSU) has already been issued to Kolkata MC/all other District by BCW Department about action points with regard to PEMSRA-2013 (Manual Scavengers Act), UD & MA Department may be requested to communicate KMC/Districts to furnish desired details in connection with RSA and setting up of 31 ERSUs.

The Committee recommended initiating the above actions.

The Committee was further appraised that Government of India has directed inclusion and profiling of waste pickers under 'NAMASTE' scheme with an objective to provide safe, dignified and sustained livelihood by empowering them through various schematic and non-schematic interventions, which has been informed by

BCW Department of Government of West Bengal vide no.BCW-17099/22/2022/Part-I/DFA/802900 dated 10.07.2024 The Committee recommended that the Waste Pickers may be included in this programme.

5. The Committee noted that SUDA has prepared model 3D drawing and estimate for construction of 4 (four) types of vehicle sheds for 6, 10, 20 and 30 SWM Tri-Cycle Vans for the ULBs. The 3D drawings and estimates are placed at **Annexure-I**. The Committee recommended circulating the same to all the ULBs for construction of their Tri-cycle Van Sheds. The Committee further recommended that the expenditure may be made from 15th FC Tied fund of respective ULBs or from unspent balance fund of SBM-U 1.0.
6. The Committee was appraised that the specifications of SWM vehicles that were approved earlier by the SLTF as per recommendation of the 'Technical Sub-Committee' are not customizable in the GeM portal as on date. As a result, tenders cannot be floated further as per approved technical specifications.
   The Committee recommended that the 'Technical Sub Committee' should revisit the specifications and place the revised specification at the next meeting of SLTF.
7. The Committee was appraised that presently Kalyani Municipality is dumping the entire Municipal Solid Waste at the land beside Kalyani Barrackpore Expressway, which is earmarked for 'SAMRIDDHI- Kalyani Analytics City' Town Ship (a knowledge based theme township), a project of Govt. of WB). As a result, Kalyani Municipality is suffering with burning issues like health hazards, public nuisance etc. due to accumulation of huge quantum of legacy waste at this interim site. Apart from this, Kalyani Municipality reported that some unknown parties are using this land for dumping their waste materials and frequently set them on fire which creates public nuisance on a large scale creating air pollution and health hazards to the local residents, student of the JIS College and Jawahar Navodaya Vidyalaya, Kalyani, Nadia etc. In this context, a meeting was held on 30.01.2024 at the chamber of Hon'ble Minister-in-Charge of UD&MA Department, in presence of the Principal Secretary of UD&MA Department and the Chairman of Kalyani Municipality. As per decision taken at the meeting, the Chairman, Kalyani Municipality has submitted a vetted estimate amounting to Rs. 99,45,539/-(Rupess Ninety Nine lakhs Forty Five thousand Five hundred Thirty Nine only) 'Construction of GIC sheet wall (View Guard) at garbage dumping area near Suniti Abasan under Kalyani Municipality' for approval and release of fund.
   Considering the urgency of the proposal, the Committee recommended to approve the fund from the remaining untied fund of SBM-U 1.0 for construction and erection of 'View guard' around the dumping site which is earmarked for 'SAMRIDDHI- Kalyani Analytics City Town Ship' (a knowledge-based theme township), a project of Govt. of WB). The legacy waste dumped at this site shall be processed in situ also.
8. The Committee noted that out of 128 ULBs of West Bengal, the fresh waste processing plant of 23 ULBs are being set up and operated by the agencies against the tipping fee; 10 ULBs are/will be setting set up and operate their fresh waste processing plant on their own; and the fresh waste processing plant of 95 ULBs are being/will be set up by SUDA with the support of MED and some operator will be engaged for these plants who will make it functional engaging the Self Help Group (SHG) members.

The Committee requested the Chief Engineer, West Bengal Pollution Control Board (WBPCB) to make a suitable arrangement to enable SUDA to centrally upload the application for 'Consent to Operate' and 'Consent to Establish' of the 95 ULBs operated SWM processing plant with the engagement of SHG members.

9. The Committee noted that in the 57th meeting of SLTF held on 04.12.2023 the Committee was appraised the following:

M/s SIMOCO as L1 bidder awarded to setup fresh waste processing unit and operating the same for 10 years at 34 ULBs from 09.03.2022 to 22.04.2022.After that, they have communicated that they are unwilling to execute the work of 29 ULBs due to non-clearance of existing legacy waste from the sites, as detailed below:

SL No	Letter number of M/S SIMOC	No. of ULBs	Name of ULBs
1	SIMOCO/SUDA/2022-23/139, dated-16.03.2023	15	Titagarh, Bankura, Suri, Balurghat, Coochbehar,Jalpaiguri, Dhuliyan, Domkol, Bongaon,Rampurhat, Raigaj, Arambag, Murshidabad, Berhumpore and Basirhat
2	SIMOCO/SUDA/2023-24/35, dated-01.06.2023	14	Santipur, Nabadwip, Gayeshpur, Kalyani, Chakda, Ranaghat, Garulia, Panskura, Barrackpore, Madhyamgram, Halishar, Kharada, Hooghly- Chisuraand Chadernagore MC,

The representative of M/s SIMOCO informed in that meeting that they are willing to continue their contract for 5 ULBs – Kharagpur, Jhargram, Naihati, Budge Budge and Uluberia municipalities."

Now, the Committee was appraised that the M/s SIMOCO vide reference no. SIMOCO/SUDA/2024-25/53 dated 28.06.2024 informed the Director, SUDA that due to some unavoidable circumstances they are not in a position to execute their contractual obligation to Jhargram, Naihati, Uluberia and Budge Budge Municipalities.

The committee recommended taking appropriate legal action against M/S SIMOCO.

10. The Committee noted that in the 6th meeting of the Single Tender Committee of SUDA held on 05.07.2024 following decisions have been taken:

'It has been brought to the notice of the Committee that as approved by UD & MA Dept, NIT has been floated for selection of bidder for assessment of the area, volume and total quantity of land fill (Legacy Waste), geotechnical investigation &determination of in-situ density and moisture content of Cluster -15 Dumping Ground (3 No) located at Habra, Gobordanaga and Taki Municipality using Drone. All relevant documents were placed before the Committee for verification. After verification, it has been observed by the Committee that 4 (Four) bidders participated in the NIT out of which M/s Voyager has been found to be technically ineligible due to lack of required credentials as per desired terms and conditions specified in the NIT. Committee also recommends that this shortcoming is not remediable. Moreover, Committee was appraised about intimation to both technically qualified/ disqualified bidders clearly indicating reasons of disqualification as an automatically system generated report seen by the bidders through the e-tender portal.

After threadbare discussion, Committee unanimously recommended M/s Voyager as technically disqualified bidder and accorded permission for opening of financial bid among the rest 03 qualified bidders i.e. M/s Devi Enterprise, M/s Merchandise (India) and M/s M.D. Engineering & Surveys".

The Committee accepted the above decision of the Single Tender Committee of SUDA.

11. The Committee noted that as per approval M/s EoFPL started fresh waste processing of segregated waste of North Dum Dum and New Barrackpore Municipality on interim basis upto June 2024. Considering the success of the processing by the M/s EoFPL, the Committee recommended to provide them an extension upto September, 2024 and also suggested to ensure providing quality segregated waste by other ULBs of Cluster-I viz. Baranagar, South Dum Dum and Dum Dum to M/s EoFPL to continue the processing of their segregated waste as an ad interim measure.
12. The Committee was appraised that
    - The FSTPs of Promodhnagar are not functioning properly
    - The leachate generating from the legacy waste of Mount-B of Promodhnagar legacy waste site is creating pollution at the site and also at FSTP.

    After threadbare discussion, the Committee recommended that a joint inspection may be made in presence of GAP sector and SD&SWM Sector of KMDA, SUDA, M/s EoFPL and the agency engaged for operation and maintenance of FSTPs on 20.07.2024 to understand the real situation of the abovementioned issues and after submission of the report of joint inspection in the next meeting of SLTF further decision will be taken.
13. The Committee was appraised that Greentech Enviorn Management Pvt. Ltd was entrusted with the scientific management of legacy waste complying solid waste management Rules 2016 of different ULBs like Halisahar, Garulia, Bhatpara etc. After processing of legacy waste, they have submitted 9(Nine) sets of RDF (obtained as process fraction of legacy from Garulia & Halisahar Dumping Ground site) end-user certificates of RDF of total 5019.61 MT and 5(Five) sets of RDF (obtained as process fraction of legacy from Bhatpara Dumping Ground site) end user certificate of total 1317.075 MT issued by Suchi Paper Mills Ltd. The said certificates were sent to Suchi Paper Mills Ltd. for verification. In the reply of verification letter, Suchi Paper Mills Ltd. assured that the certificates have been issued by their plant in relation to the aforementioned RDF are in compliance with the guidelines said forth in the PWM rules 2016. The disposal of the said RDF has been carried out accordingly to the prescribed regulations.

    Regarding acceptance of the RDF end - user certificates issued by Suchi Paper Mills Ltd., the Committee recommended to forward the same to WBPCB for their expert opinion.
14. The Committee noted that as per tender, all the agencies engaged for biomining and bioremediation of legacy waste shall install Real Time Monitoring System (RTMS) at the site for monitoring. For noncompliance, a clause is there to deduct 10% of processed quantity value. The Committee realized that for small sites this clause is not cost effective for the agencies.

    Realizing the fact, the Committee recommended that

- ✓ The agencies processing 1 lakh MT and above quantity of legacy waste shall set up RTMS at their own cost
- ✓ For all sites with a legacy waste of 1 lakh MT, TIA shall install/commission Weigh Bridge integrated with a Real Time Monitoring System. The agency awarded the contract shall weigh both tare and loaded vehicles at this facility only, no other weighment facility shall be allowed on site or off site for weighment of vehicles (both empty and loaded).

The Committee further recommended that Chief Engineer, KMDA to set up a meeting with companies in the business of manufacturing weighbridges integrated with RTMS.

15. The Committee recommended that similar Kolkata MC, a Third Party Agency may be engaged for verification of quality of processing at all sites where more than 1 lakh MT legacy waste is processed.
16. M/s EOFPL has made a presentation before the Committee regarding availability of high moisture content (nearly 50 %) in legacy waste during this monsoon period has been observed at RWMC (Cluster-IV), which creates some difficulties in weighment. After detail discussion on the matter, the Committee recommended that 20 to 25% moisture in legacy waste may be considered which is fit for processing. The Committee further recommended considering 25% deduction for high moisture from weighment of legacy waste for this monsoon period i.e. from this date 15.07.2024 up to 30.09.2024.
17. The Committee noted that the agency for Cluster-I has submitted a request letter to release the Bank Guarantee for the project. The matter has been discussed in length and decided that M/s EOFPL shall submit the details of infrastructural work already implemented at site including machineries and equipments installed to process incoming fresh waste. They have also been asked to vet the estimate from reputed government organization including the amount involved for both the infrastructural work and machineries and equipments installed duly verified by reputed Chattered Accountancy firm. After submission of the documents by EOFPL, Nodal Engineer including EIC shall visit the site & submit a report against the submission for further decision.
18. EOFPL has made a presentation before the committee regarding shredding of plastic materials generated from both legacy and fresh waste materials. The Committee recommended the agency may set up the shredding machine at any Plant of Cluster-IV ULBs or at any land under the ownership of EOFPL or at any rented land, this will be in addition to the MRF already planned. Before installation, proper intimation both to SUDA & WBPCB should be made by the agency, for according consent to operate.

19. The Committee re-visited the mode for setting up of fresh waste processing unit of 128 ULBs and observed that the mode of setting up of fresh waste processing unit of 105 ULBs as decided earlier will remain same and recommended that the mode of setting up of fresh waste processing unit at 23 ULBs (as detailed at **Annexure-II**) may be changed to CAPEX mode.

20. The Committee noted that a draft of Notice Inviting Request for Proposal (RFP) forEngagementof experienced Facilitation Organizations for providing handholding support at different Wards under KMC for implementing Solid Waste Management Plan as per SWM Rules 2016 in West Bengal has been prepared by SUDA. After threadbare discussion, the Committee recommended to float this tender from SUDA subject to inclusion of the following points:

    - ✓ Timeline for each activity shall be mentioned.
    - ✓ Event wise number of participants for awareness programme shall be mentioned.
    - ✓ Cluster Supervisor @Rs.404/- per day and Motivator @Rs.303/- shall be engaged and paid by Kolkata MC subject to submission of monthly working certificate by the Facilitation Organizations to Kolkata MC.

With no other issue for discussion the meeting ended with vote of tanks to and from the chair.

(Supriya Ghosal)
Director, SUDA

Annexure-I

COST ABSTRACT

Name of the work:Model Estimate for the work of "Construction of vehicle shed".

Abstract cost for different capacity of Tri-Cycle

Sl.No	Capacity of Tri-Cycle	Unit	Estimated Amount Approxmately (Including 18% GST, 1% L.W Cess, & 3% Contingency)
1	6	Nos	₹ 751,092.50
2	10	Nos	₹ 901,994.00
3	20	Nos	₹ 1,379,598.40
4	30	Nos	₹ 1,590,980.60

Junior Engineer
SUDA

Assistant Engineer
SUDA

Executive Engineer
SUDA

6 NOS

MODEL ESTIMATE

Probable items with Details of quantities for a Vehicle Shed(Total area=10x5=50 sq.mt)

(Based on P.W.D. schedule of rates : Road & Bridge Works - 2018 w.e.f. 30.08.2018 with latest Addenda &Corrigenda)

1 Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone)

6 x 1.800 x 1.800 x 1.800 = 34.992 cu.m.
2 x 5.000 x 0.500 x 0.500 = 2.500 cu.m.
2 x 10.000 x 0.500 x 0.500 = 5.000 cu.m.
1 x 10.000 x 4.000 x 0.150 = 6.000 cu.m.
48.492 cu.m. @ ₹ 11,927.00 /%cu. m. = ₹ 5,784.00

2 Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation

6 x 1.800 x 1.800 x 0.075 = 1.458 cu.m.
2 x 5.000 x 0.500 x 0.075 = 0.375 cu.m.
2 x 10.000 x 0.500 x 0.075 = 0.750 cu.m.
1 x 10.000 x 5.000 x 0.075 = 3.750 cu.m.
= 6.333 cu.m. @ ₹ 131,714.00 / %cu. m = ₹ 8,341.00

3 Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand. According

6 x 1.800 x 1.800 = 19.440 sq.m.
2 x 5.000 x 0.500 = 5.000 sq.m.
2 x 10.000 x 0.500 = 10.000 sq.m.
1 x 10.000 x 5.000 = 50.000 sq.m.
84.440 sq.m. @ ₹ 361.00 / sq. m. = ₹ 30,483.00

4 Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground

(i) 6 x 1.800 x 1.800 x 0.075 = 1.458 cu.m.
2 x 5.000 x 0.500 x 0.075 = 0.375 cu.m.
2 x 10.000 x 0.500 x 0.075 = 0.750 cu.m.
2.583 cu.m. @ ₹ 5,466.86 / cu. m. = ₹ 14,121.00

5 Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in

(i) 6 x 1.800 x 1.800 x 0.200 = 3.888 cu.m.
6 x 1.800 x 1.800 x 0.200 = 3.888 cu.m.
6 x 0.500 x 0.500 x 1.800 = 2.700 cu.m.
2 x 5.000 x 0.500 x 0.300 = 1.500 cu.m.
2 x 10.000 x 0.500 x 0.300 = 3.000 cu.m.
1 x 10.000 x 5.000 x 0.100 = 5.000 cu.m.
19.976 cu.m. @ ₹ 6,016.45 / cu. m. = ₹ 120,185.00

6 Hire and labour charges for shuttering with centering and nece-ssary staging upto 4 m using approved stout props and thick hard wood planks

6 x 7.200 x 0.200 = 8.640 Sq. m.
6 x 2.000 x 1.800 = 21.600 Sq. m.
4 x 5.000 x 0.300 = 6.000 Sq. m.
4 x 10.000 x 0.300 = 12.000 Sq. m.
1 x 30.000 x 0.100 = 3.000 Sq. m.
51.240 Sq. m. @ ₹ 335.00 / sq. m. = ₹ 17,165.00

7 Reinforcement for reinforced concrete work in all sorts of str-uctures including distribution bars, stirrups, binders etc initial straightening and

1.25% of total concrete = 1.960 M.T. @ ₹ 60,150.00 /M.T. = ₹ 117,894.00

8 Brick work with 1st class bricks in cement mortar (1: 6)

(A) In Foundation & Plinth....Page-15/It. No-8(a) (3rd corrigen page-1 it-7(b))

2 x 5.000 x 0.250 x 0.300 = 0.750 cu. m.
2 x 10.000 x 0.250 x 0.300 = 1.500 cu. m.
2.250 cu. m. @ ₹ 5,413.00 / cu. m. = ₹ 12,179.00

(B) In superstructure, ground floorPage-15/It. No-8(b) (3rd corrigen page-1 sl-4)

1 x 5.000 x 0.250 x 0.900 = 1.125 cu. m.
1 x 10.000 x 0.250 x 0.900 = 2.250 cu. m.
3.375 cu. m. ₹ 5,636.00 / cu. m. = ₹ 19,021.50

9 Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints

9.1 1 x 30.000 x x 1.000 = 30.000 Sq. m.
30.000 Sq. m. @ ₹ 151.00 / sq. m. = ₹ 4,530.00

9.2 (b) 20 mm thick plaster>>ground

1 x 30.000 x x 1.000 = 30.000 Sq. m.
30.000 Sq. m. @ ₹ 175.00 / sq. m. = ₹ 5,250.00

10 Neat cement punning about 1.5mm thick in wall,dado,window sill,floor etc. NOTE:Cement 0.152 cu.m per100 sq.m. According to PWD

1 x 30.000 x x 1.000 = 30.000 Sq. m.
30.000 Sq. m. @ ₹ 34.00 / sq. m. = ₹ 1,020.00

11 Artificial stone in floor, dado, staircase etc with cement concrete (1:2:4) with stone chips, laid in panels as directed with topping made with

1 x 10.00 x 5.000 = 50.000 sq.m.
= $\overset{2}{5}0.000$ sq.m. @ ₹ 269.00 / sq. m. = ₹ 13,450.00

12 M.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968 & IS: 1161- 1998 cnnected to one another with bracket, gusset cleats as per design, direction of Engineer-in-charge complete including cutting to requisite size, fabrication with necessary metal arc welding conforming to IS: 8161969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour reqired for the work including all incidental chages such as electricity charges, labour inM.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968 & IS: 1161- 1998 cnnected to one another with bracket, gusset cleats as per design, direction of Engineer-in-charge complete including cutting to requisite size, fabrication with necessary metal arc welding conforming to IS: 8161969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour reqired for the work including all incidental chages such as electricity charges, labour insurance charges etc. Payment to be made on the basis of calculated weight of structural tubular memebrs as specified in relevent IS code in finished work. Payment for gusset, bracket, cleat may be made by adding the actual weight of such items with weight of finished structural members. The rates are considered for a height of erection 8 m. / 2nd floor level from the ground. Add 1.5 % extra over the rate for each additional floor or 4m. beyond the initial 8 m. or part thereof.For trusses spanning up to 12.00 m(i)weighing ISMB 300,46KG/M AS PER IS CODE PWD Schedule, 2017 Page-100/It.no -2(i)

0.450 MT @ ₹ 58,832.00 MT = ₹ 26,474.00

13 M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP(6)- 1964 connected to one another with bracket, gussets, cleats as per design,direction of Engineer-incharge complete including cutting to requisite shape andlength,fabrication with necessary bolting, metal arc welding conforming to IS: 816-1969 & IS: 1995 using electrodes of approved make and brand conforming toIS:814- 2004, haulage, hoisting and erection all complete. The rate includes thecost of rolled steel section,consumables such as electrodes, gas and hire charge ofall tools and plants and labour required for the work including all incidental chagessuch as electricity charges, labour insurance charges etc. I) For structuralmembers of specified sections weighing less than 22.5 Kg./m(i) weighing Rec. Tube 122X61X3.6 , 9.67kg/m as per IS Code.

0.600	MT	@	₹ 72,603.00	MT	=	₹ 43,562.00
0.200	MT	@	₹ 72,603.00	MT	=	₹ 14,521.00
0.700	MT	@	₹ 72,603.00	MT	=	₹ 50,822.00
0.250	MT	@	₹ 72,603.00	MT	=	₹ 18,151.00
0.270	MT	@	₹ 72,603.00	MT	=	₹ 19,603.00

14 Supplying, fitting & fixing Zn-Al alloy (55% Al & 45% Zn) coating of 150 grams per sq. metre (followed by colour coated on both side) steel sheet

2 x 5.000 x x 5.000 = 50.000 Sq. m.
2 x 1/2x5x1.5 = 6.750 Sq. m.
2 x 6.000 x x 0.750 = 9.000 Sq. m.
2 x 5.500 x x 0.750 = 8.250 Sq. m.
74.000 Sq. m. @ ₹ 787.00 / sq. m. = ₹ 58,238.00

15 Galvanised iron sheet ridging fitted with necessary bolts, screws, washers etc complete.(225mm end lapping) (A) 300 mm lapping each way (b)

1 x 5.250 = 5.250 Sq. m.
5.250 Sq. m. @ ₹ 380.00 / m. = ₹ 1,995.00

16 Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand

= 40.000 sq. m.
40.000 sq.m. @ ₹ 29.00 / sq. m. = ₹ 1,160.00

17 Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including

= 40.000 sq. m.
40.000 sq.m. @ ₹ 79.00 / sq. m. = ₹ 3,160.00

18 (a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and

2 x 1.500 x 1.200 = 3.600 sq.m. @ 16.0 kg/m 57.600 kg
0.58 Qtl @ ₹ 9,888.00 / Qtl = ₹ 5,735.00

19 Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative

Quantity Same As item no -9 = 40.000 sq. m.
40.000 sq.m. @ ₹ 3,140.00 / %sq. m = ₹ 1,256.00

20 Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of EIC to

Quantity Same As item no -9 = 40.000 sq. m.
40.000 sq.m. @ ₹ 97.00 / sq. m. = ₹ 3,880.00

			=	₹ 617,980.50
21 Add GST @ 18 % on total amount over item no 1 to 20 i.e.	₹ 617,980.50	18.00%	=	₹ 111,236.00
		SUB - TOTAL		₹ 729,216.50
22 Add Labour Cess @ 1 % on total amount over item no 1 to 21 i.e.	₹ 729,216.50	1.00%	=	₹ 7,292.00
				₹ 736,508.50
	Add contingency (+)	3.00%	=	₹ 21,876.00
		GRAND TOTAL :		₹ 751,092.50

(Rupees seven lakh fifty one thousand ninety two and fifty paise only)

May be vetted

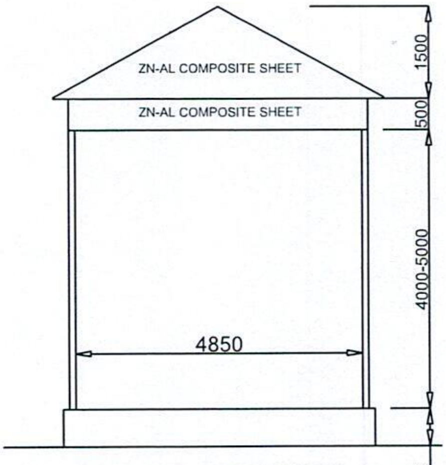
May be vetted

VETTED

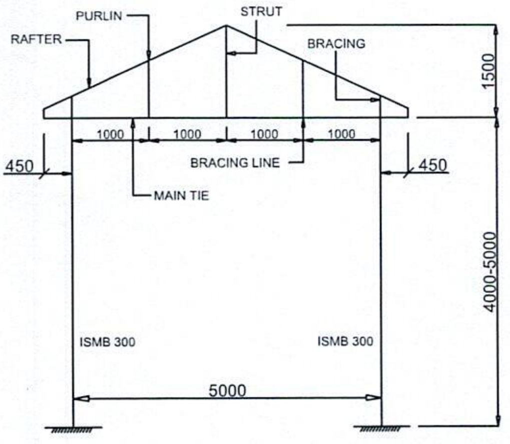
Junior Engineer
SUDA

Assistant Engineer
SUDA

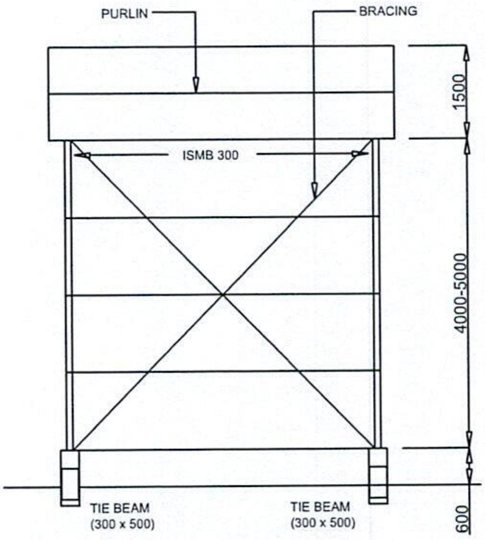
Executive Engineer SUDA



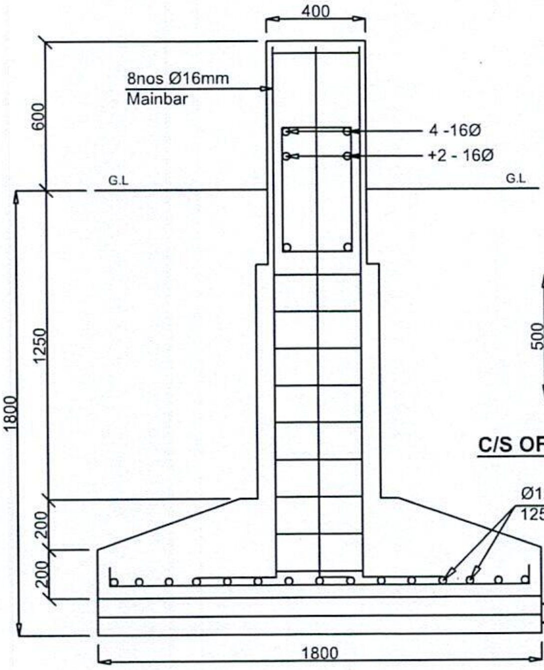
FRONT ELEVATION



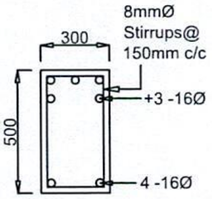
C/S Details of Truss



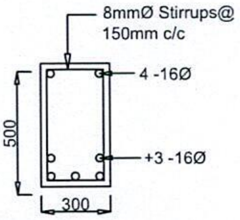
SIDE C/S DETAILS



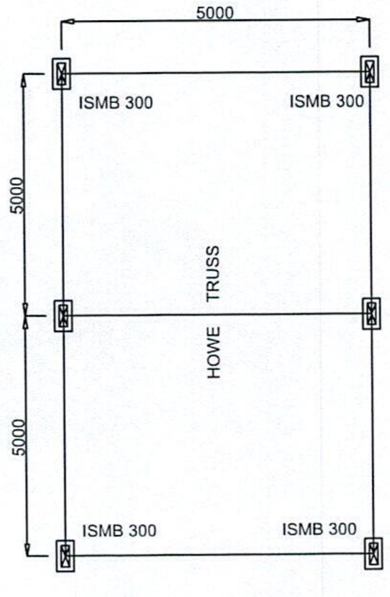
C/S PLAN OF COLUMN AND BASE PLATE



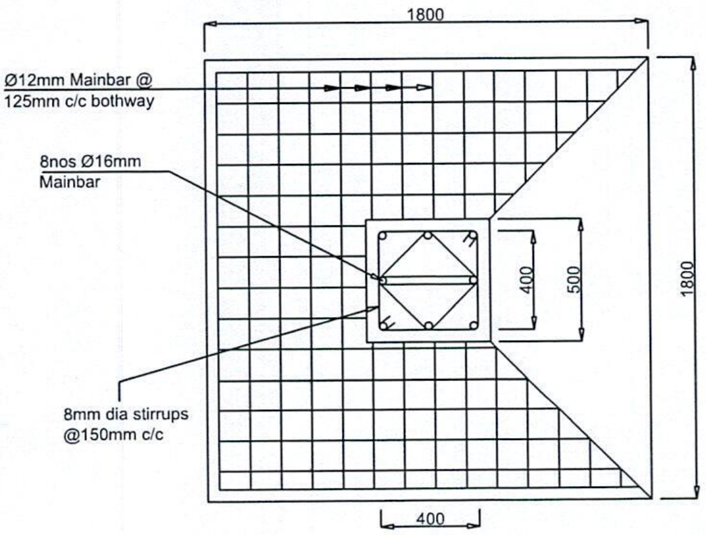
C/S OF TIE BEAM AT SUPPORT



C/S OF TIE BEAM AT SPAN



PLAN OF CAR SHED



PLAN OF COLUMN AND BASE PLATE

10 NOS

MODEL ESTIMATE

Probable items with Details of quantities for a Vehicle Shed(Total area=15x5=75 sq.mt)

(Based on P.W.D. schedule of rates : Road & Bridge Works - 2018 w.e.f. 30.08.2018 with latest Addenda &Corrigenda)

1 Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone)

	6	x	1.800	x	1.800	x	1.800	=	34.992	cu.m.				
	2	x	4.500	x	0.500	x	0.500	=	2.250	cu.m.				
	2	x	14.000	x	0.500	x	0.500	=	7.000	cu.m.				
	1	x	15.000	x	5.000	x	0.150	=	11.250	cu.m.				
									55.492	cu.m.	@	₹ 11,927.00 /%cu. m.	=	₹ 6,619.00

2 Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation

	6	x	1.800	x	1.800	x	0.075	=	1.458	cu.m.				
	2	x	4.500	x	0.500	x	0.075	=	0.338	cu.m.				
	2	x	14.000	x	0.500	x	0.075	=	1.050	cu.m.				
	1	x	15.000	x	5.000	x	0.075	=	5.625	cu.m.				
								=	8.471	cu.m.	@	₹ 131,714.00 / %cu. m	=	₹ 11,157.00

3 Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand. According

	6	x	1.800	x	1.800			=	19.440	sq.m.				
	2	x	4.500	x	0.500			=	4.500	sq.m.				
	2	x	14.000	x	0.500			=	14.000	sq.m.				
	1	x	15.000	x	5.000			=	75.000	sq.m.				
									112.940	sq.m.	@	₹ 361.00 / sq. m.	=	₹ 40,771.00

4 Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground

(i)	6	x	1.800	x	1.800	x	0.075	=	1.458	cu.m.				
	2	x	4.500	x	0.500	x	0.075	=	0.338	cu.m.				
	2	x	14.000	x	0.500	x	0.075	=	1.050	cu.m.				
									2.846	cu.m.	@	₹ 5,466.86 / cu. m.	=	₹ 15,559.00

5 Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in

(i)	6	x	1.800	x	1.800	x	0.200	=	3.888	cu.m.				
	6	x	1.800	x	1.800	x	0.200	=	3.888	cu.m.				
	6	x	0.500	x	0.500	x	1.800	=	2.700	cu.m.				
	2	x	5.000	x	0.500	x	0.300	=	1.500	cu.m.				
	2	x	15.000	x	0.500	x	0.300	=	4.500	cu.m.				
	1	x	15.000	x	5.000	x	0.100	=	7.500	cu.m.				
									23.976	cu.m.	@	₹ 6,016.45 / cu. m.	=	₹ 144,250.00

6 Hire and labour charges for shuttering with centering and nece-ssary staging upto 4 m using approved stout props and thick hard wood planks

	6	x	7.200	x	0.200			=	8.640	Sq. m.				
	6	x	2.000	x	1.800			=	21.600	Sq. m.				
	4	x	5.000	x	0.300			=	6.000	Sq. m.				
	4	x	15.000	x	0.300			=	18.000	Sq. m.				
	1	x	40.000	x	0.100			=	4.000	Sq. m.				
									58.240	Sq. m.	@	₹ 335.00 / sq. m.	=	₹ 19,510.00

7 Reinforcement for reinforced concrete work in all sorts of str-uctures including distribution bars, stirrups, binders etc initial straightening and

	1.25% of total concrete							=	2.353	M.T.	@	₹ 60,150.00 /M.T.	=	₹ 141,533.00

8 Brick work with 1st class bricks in cement mortar (1: 6)

(A) In Foundation & Plinth....Page-15/It. No-8(a) (3rd corrigen page-1 it-7(b))

	2	x	5.000	x	0.250	x	0.300	=	0.750	cu. m.				
	2	x	15.000	x	0.250	x	0.300	=	2.250	cu. m.				
									3.000	cu. m.	@	₹ 5,413.00 / cu. m.	=	₹ 16,239.00

(B) In superstructure, ground floorPage-15/It. No-8(b) (3rd corrigen page-1 sl-4)

	1	x	5.000	x	0.250	x	0.900	=	1.125	cu. m.				
	1	x	15.000	x	0.250	x	0.900	=	3.375	cu. m.				
									4.500	cu. m.	₹ 5,636.00 / cu. m.		=	₹ 25,362.00

9 Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints

9.1	1	x	40.000	x		x	1.000	=	40.000	Sq. m.				
									40.000	Sq. m.	@	₹ 151.00 / sq. m.	=	₹ 6,040.00

9.2 (b) 20 mm thick plaster>>ground

	1	x	40.000	x		x	1.000	=	40.000	Sq. m.				
									40.000	Sq. m.	@	₹ 175.00 / sq. m.	=	₹ 7,000.00

10 Neat cement punning about 1.5mm thick in wall,dado,window sill,floor etc. NOTE:Cement 0.152 cu.m per100 sq.m. According to PWD

	1	x	40.000	x		x	1.000	=	40.000	Sq. m.				
									40.000	Sq. m.	@	₹ 34.00 / sq. m.	=	₹ 1,360.00

11 Artificial stone in floor, dado, staircase etc with cement concrete (1:2:4) with stone chips, laid in panels as directed with topping made with

	1	x	15.00	x	5.000			=	75.000	sq.m.				
								=	75.000	sq.m.	@	₹ 269.00 / sq. m.	=	₹ 20,175.00

12 M.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968 & IS: 1161- 1998 cnnected to one another with bracket, gusset cleats as per design, direction of Engineer-in-charge complete including cutting to requisite size, fabrication with necessary metal arc welding conforming to IS: 8161969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour reqired for the work including all incidental chages such as electricity charges, labour inM.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968 & IS: 1161- 1998 cnnected to one another with bracket, gusset cleats as per design, direction of Engineer-in-charge complete including cutting to requisite size, fabrication with necessary metal arc welding conforming to IS: 8161969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour reqired for the work including all incidental chages such as electricity charges, labour insurance charges etc. Payment to be made on the basis of calculated weight of structural tubular memebrs as specified in relevent IS code in finished work. Payment for gusset, bracket, cleat may be made by adding the actual weight of such items with weight of finished structural members. The rates are considered for a height of erection 8 m. / 2nd floor level from the ground. Add 1.5 % extra over the rate for each additional floor or 4m. beyond the initial 8 m. or part thereof.For trusses spanning up to 12.00 m(i)weighing ISMB 300,46KG/M AS PER IS CODE PWD Schedule, 2017 Page-100/It.no -2(i)

0.600 MT @ ₹ 58,832.00 MT = ₹ 35,299.00

13 M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP(6)- 1964 connected to one another with bracket, gussets, cleats as per design,direction of Engineer-incharge complete including cutting to requisite shape andlength,fabrication with necessary bolting, metal arc welding conforming to IS: 816-1969 & IS: 1995 using electrodes of approved make and brand conforming toIS:814- 2004, haulage, hoisting and erection all complete. The rate includes thecost of rolled steel section,consumables such as electrodes, gas and hire charge ofall tools and plants and labour required for the work including all incidental chagessuch as electricity charges, labour insurance charges etc. I) For structuralmembers of specified sections weighing less than 22.5 Kg./m(i) weighing Rec. Tube 122X61X3.6 , 9.67kg/m as per IS Code.

0.900 MT @ ₹ 72,603.00 MT = ₹ 65,343.00
0.300 MT @ ₹ 72,603.00 MT = ₹ 21,781.00
0.100 MT @ ₹ 72,603.00 MT = ₹ 7,260.00
0.350 MT @ ₹ 72,603.00 MT = ₹ 25,411.00
0.400 MT @ ₹ 72,603.00 MT = ₹ 29,041.00

14 Supplying, fitting & fixing Zn-Al alloy (55% Al & 45% Zn) coating of 150 grams per sq. metre (followed by colour coated on both side) steel sheet

2 x 7.500 x x 5.000 = 75.000 Sq. m.
2 x 1/2x5x1.5 = 6.750 Sq. m.
2 x 9.000 x x 0.750 = 13.500 Sq. m.
2 x 7.500 x x 0.750 = 11.250 Sq. m.
106.500 Sq. m. @ ₹ 787.00 / sq. m. = ₹ 83,816.00

15 Galvanised iron sheet ridging fitted with necessary bolts, screws, washers etc complete.(225mm end lapping) (A) 300 mm lapping each way (b)

1 x 9.000 = 9.000 Sq. m.
9.000 Sq. m. @ ₹ 380.00 / m. = ₹ 3,420.00

16 Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand

= 40.000 sq. m.
40.000 sq.m. @ ₹ 29.00 / sq. m. = ₹ 1,160.00

17 Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including

= 40.000 sq. m.
40.000 sq.m. @ ₹ 79.00 / sq. m. = ₹ 3,160.00

18 (a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and

2 x 1.500 x 1.200 = 3.600 sq.m. @ 16.0 kg m 57.600 kg
0.58 Qtl @ ₹ 9,888.00 / Qtl = ₹ 5,735.00

19 Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative

Quantity Same As item no -9 = 40.000 sq. m.
40.000 sq.m. @ ₹ 3,140.00 / %sq. n = ₹ 1,256.00

20 Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of EIC to

Quantity Same As item no -9 = 40.000 sq. m.
40.000 sq.m. @ ₹ 97.00 / sq. m. = ₹ 3,880.00

= ₹ 742,137.00

21 Add GST @ 18 % on total amount over item no 1 to 20 i.e. ₹ 742,137.00 18.00% = ₹ 133,585.00

SUB - TOTAL ₹ 875,722.00

22 Add Labour Cess @ 1 % on total amount over item no 1 to 21 i.e. ₹ 875,722.00 1.00% = ₹ 8,757.00

₹ 884,479.00

Add contingency (+) 3.00% = ₹ 26,272.00

GRAND TOTAL : ₹ 901,994.00

(Rupees nine lakh one thousand nine hundred ninety four only)

may be vetted

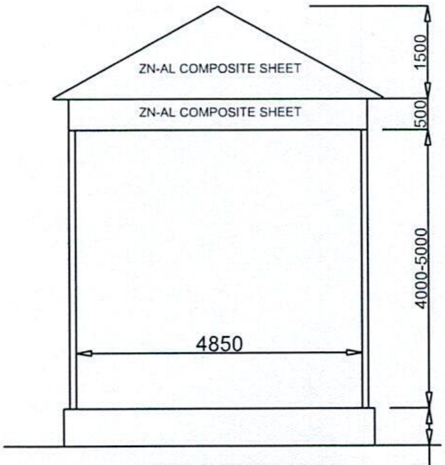
May be vetted

VETTED

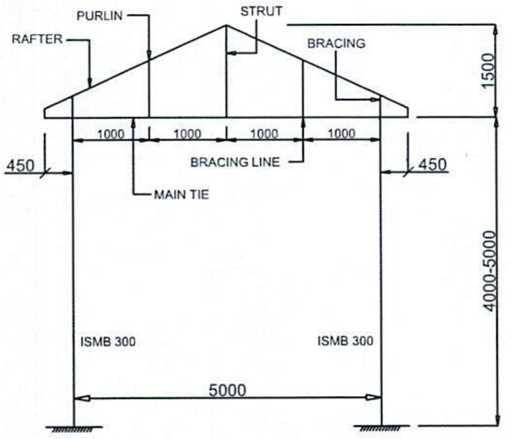
Junior Engineer
SUDA

Assistant Engineer
SUDA

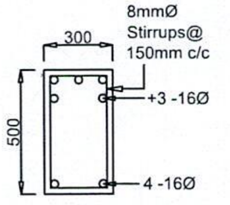
Executive Engineer SUDA



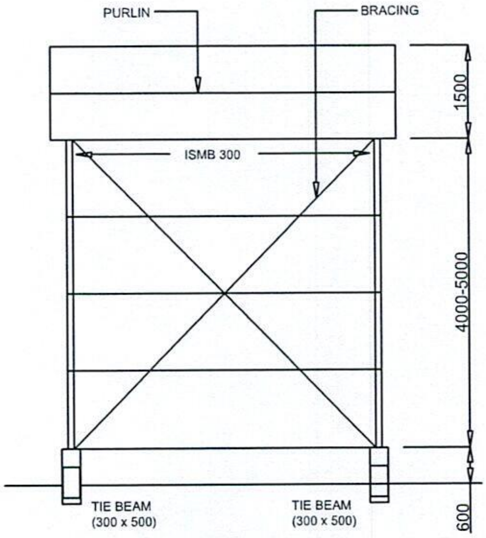
FRONT ELEVATION



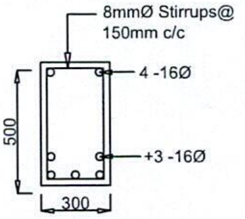
C/S Details of Truss



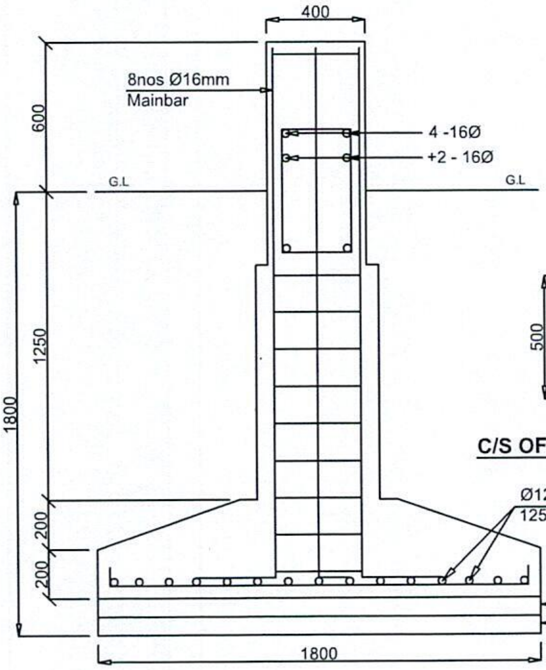
C/S OF TIE BEAM AT SUPPORT



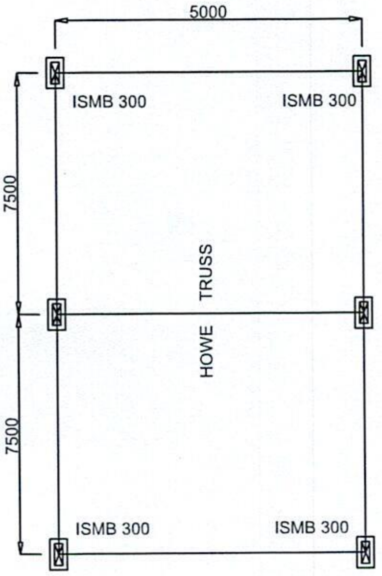
SIDE C/S DETAILS



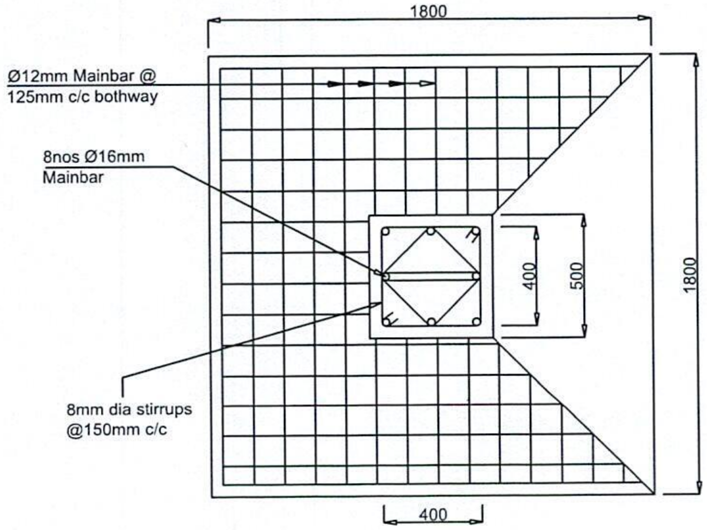
C/S OF TIE BEAM AT SPAN



C/S PLAN OF COLUMN AND BASE PLATE



PLAN OF CAR SHED



PLAN OF COLUMN AND BASE PLATE

20 NOS

MODEL ESTIMATE

Probable items with Details of quantities for a Vehicle Shed(Total area=15x9=135 sq.mt)

(Based on P.W.D. schedule of rates : Road & Bridge Works - 2018 w.e.f. 30.08.2018 with latest Addenda &Corrigenda)

1 Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone)

8 x 1.800 x 1.800 x 1.800 = 46.656 cu.m.
2 x 10.000 x 0.500 x 0.500 = 5.000 cu.m.
2 x 14.000 x 0.500 x 0.500 = 7.000 cu.m.
1 x 15.000 x 9.000 x 0.150 = 20.250 cu.m.
78.906 cu.m. @ ₹ 11,927.00 /%cu. m. = ₹ 9,411.00

2 Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation

8 x 1.800 x 1.800 x 0.075 = 1.944 cu.m.
2 x 10.000 x 0.500 x 0.075 = 0.750 cu.m.
2 x 14.000 x 0.500 x 0.075 = 1.050 cu.m.
1 x 15.000 x 9.000 x 0.075 = 10.125 cu.m.
= 13.869 cu.m. @ ₹ 131,714.00 / %cu. m = ₹ 18,267.00

3 Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand. According to

8 x 1.800 x 1.800 = 25.920 sq.m.
2 x 10.000 x 0.500 = 10.000 sq.m.
2 x 14.000 x 0.500 = 14.000 sq.m.
1 x 15.000 x 9.000 = 135.000 sq.m.
184.920 sq.m. @ ₹ 361.00 / sq. m. = ₹ 66,756.00

4 Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground

(i) 8 x 1.800 x 1.800 x 0.075 = 1.944 cu.m.
2 x 10.000 x 0.500 x 0.075 = 0.750 cu.m.
2 x 14.000 x 0.500 x 0.075 = 1.050 cu.m.
3.744 cu.m. @ ₹ 5,466.86 / cu. m. = ₹ 20,468.00

5 Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in ground

(i) 8 x 1.800 x 1.800 x 0.200 = 5.184 cu.m.
8 x 1.800 x 1.800 x 0.200 = 5.184 cu.m.
8 x 0.500 x 0.500 x 1.800 = 3.600 cu.m.
2 x 9.000 x 0.500 x 0.300 = 2.700 cu.m.
2 x 15.000 x 0.500 x 0.300 = 4.500 cu.m.
1 x 15.000 x 9.000 x 0.100 = 13.500 cu.m.
34.668 cu.m. @ ₹ 6,016.45 / cu. m. = ₹ 208,578.00

6 Hire and labour charges for shuttering with centering and nece-ssary staging upto 4 m using approved stout props and thick hard wood planks

8 x 7.200 x 0.200 = 11.520 Sq. m.
8 x 2.000 x 1.800 = 28.800 Sq. m.
4 x 9.000 x 0.300 = 10.800 Sq. m.
4 x 15.000 x 0.300 = 18.000 Sq. m.
1 x 48.000 x 0.100 = 4.800 Sq. m.
73.920 Sq. m. @ ₹ 335.00 / sq. m. = ₹ 24,763.00

7 Reinforcement for reinforced concrete work in all sorts of str-uctures including distribution bars, stirrups, binders etc initial straightening and

1.25% of total concrete = 3.402 M.T. @ ₹ 60,150.00 /M.T. = ₹ 204,630.00

8 Brick work with 1st class bricks in cement mortar (1: 6)

(A) In Foundation & Plinth....Page-15/It. No-8(a) (3rd corrigen page-1 it-7(b))

2 x 9.000 x 0.250 x 0.300 = 1.350 cu. m.
2 x 15.000 x 0.250 x 0.300 = 2.250 cu. m.
3.600 cu. m. @ ₹ 5,413.00 / cu. m. = ₹ 19,487.00

(B) In superstructure, ground floorPage-15/It. No-8(b) (3rd corrigen page-1 sl-4)

1 x 9.000 x 0.250 x 0.900 = 2.025 cu. m.
1 x 15.000 x 0.250 x 0.900 = 3.375 cu. m.
5.400 cu. m. ₹ 5,636.00 / cu. m. = ₹ 30,434.40

9 Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints

9.1 1 x 50.000 x x 1.000 = 50.000 Sq. m.
50.000 Sq. m. @ ₹ 151.00 / sq. m. = ₹ 7,550.00

9.2 (b) 20 mm thick plaster>>ground

1 x 50.000 x x 1.000 = 50.000 Sq. m.
50.000 Sq. m. @ ₹ 175.00 / sq. m. = ₹ 8,750.00

10 Neat cement punning about 1.5mm thick in wall,dado,window sill,floor etc. NOTE:Cement 0.152 cu.m per100 sq.m. According to PWD

1 x 50.000 x x 1.000 = 50.000 Sq. m.
50.000 Sq. m. @ ₹ 34.00 / sq. m. = ₹ 1,700.00

11 Artificial stone in floor, dado, staircase etc with cement concrete (1:2:4) with stone chips, laid in panels as directed with topping made with

1 x 15.00 x 12.000 = 180.000 sq.m.
= 180.000 sq.m. @ ₹ 269.00 / sq. m. = ₹ 48,420.00

12 M.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968 & IS: 1161- 1998 cnnected to one another with bracket,

1.390	MT	@	₹ 58,832.00	MT	=	₹ 81,776.00

13 M.S. structural works in columns. beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP(6)- 1964 connected to one another with bracket, gussets, cleats as per design,direction of Engineer-incharge complete including cutting to requisite shape andlength,fabrication with necessary bolting, metal arc welding conforming to IS: 816-1969 & IS: 1995 using electrodes of approved make and brand conforming toIS:814- 2004, haulage, hoisting and erection all complete. The rate includes thecost of rolled steel section,consumables such as electrodes, gas and hire charge ofall tools and plants and labour required for the work including all incidental chagessuch as electricity charges, labour insurance charges etc. I) For structuralmembers of specified sections weighing less than 22.5 Kg./m(i) weighing Rec. Tube 122X61X3.6 , 9.67kg/m as per IS Code.

1.390	MT	@	₹ 72,603.00	MT	=	₹ 100,918.00
0.470	MT	@	₹ 72,603.00	MT	=	₹ 34,123.00
0.037	MT	@	₹ 72,603.00	MT	=	₹ 2,686.00
0.524	MT	@	₹ 72,603.00	MT	=	₹ 38,044.00
0.639	MT	@	₹ 72,603.00	MT	=	₹ 46,393.00

14 Supplying, fitting & fixing Zn-Al alloy (55% Al & 45% Zn) coating of 150 grams per sq. metre (followed by colour coated on both side) steel sheet

2 x	9.000 x		x	7.500	=	135.000	Sq. m.				
2 x		1/2x9x1.5			=	6.750	Sq. m.				
2 x	15.000 x		x	0.750	=	22.500	Sq. m.				
2 x	9.000 x		x	0.750	=	13.500	Sq. m.				
						177.750	Sq. m.	@	₹ 787.00 / sq. m.	=	₹ 139,889.00

15 Galvanised iron sheet ridging fitted with necessary bolts, screws, washers etc complete.(225mm end lapping) (A) 300 mm lapping each way (b)

1 x	9.000 x	=	9.000	Sq. m.				
			9.000	Sq. m.	@	₹ 380.00 / m.	=	₹ 3,420.00

16 Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand

=	60.000 sq. m.				
	60.000 sq.m.	@	₹ 29.00 / sq. m.	=	₹ 1.740.00

17 Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including

=	60.000 sq. m.				
	60.000 sq.m.	@	₹ 79.00 / sq. m.	=	₹ 4.740.00

18 (a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S. W.I. Flats and bars of windows, railing etc. fitted and

2 x	1.500 x	1.200 =	3.600 sq.m.	@	16.0 kg m	57.600 kg		
			0.58 Qtl	@	₹ 9.888.00 / Qtl		=	₹ 5.735.00

19 Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative

Quantity Same As item no -9	=	50.000 sq. m.				
		50.000 sq.m.	@	₹ 3.140.00 / %sq. n	=	₹ 1.570.00

20 Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of EIC to

Quantity Same As item no -9	=	50.000 sq. m.				
		50.000 sq.m.	@	₹ 97.00 / sq. m.	=	₹ 4.850.00

			=	₹ 1,135,098.40
21 Add GST @ 18 % on total amount over item no 1 to 20 i.e.	₹ 1,135,098.40	18.00%	=	₹ 204,318.00
		SUB - TOTAL		₹ 1,339,416.40
22 Add Labour Cess @ 1 % on total amount over item no 1 to 21 i.e.	₹ 1,339,416.40	1.00%	=	₹ 13,394.00
				₹ 1,352,810.40
	Add contingency (+)	3.00%	=	₹ 40,182.00
		GRAND TOTAL :		₹ 1.379.598.40

(Rupees thirteen lakh seventy nine thousand five hundred ninety eight and forty paise only)

May be vetted
Ghosh

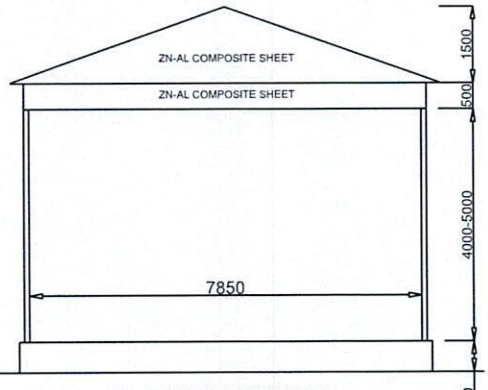
Junior Engineer
SUDA

May be vetted

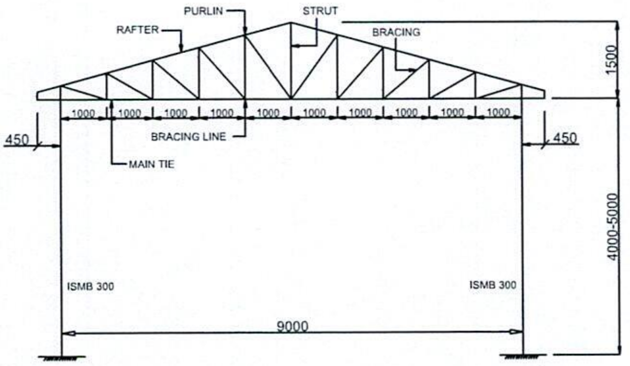
Assistant Engineer
SUDA

VETTED

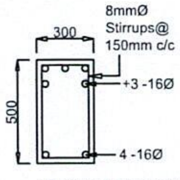
Executive Engineer SUDA



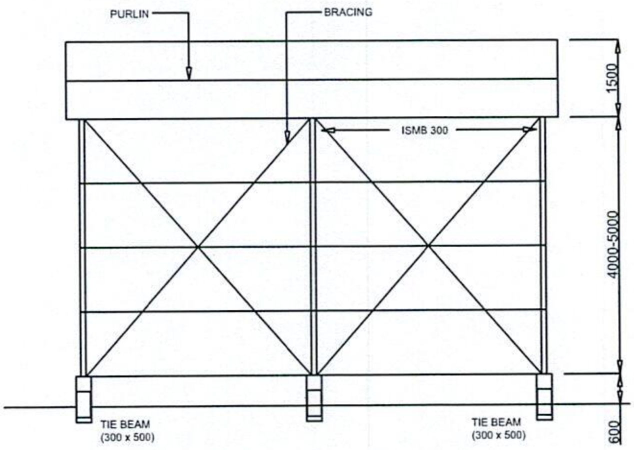
FRONT ELEVATION



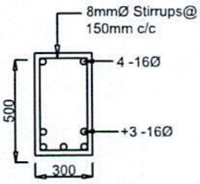
C/S Details of Truss



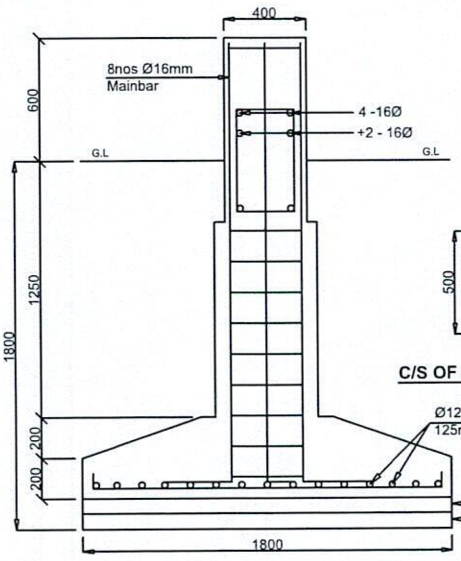
C/S OF TIE BEAM AT SUPPORT



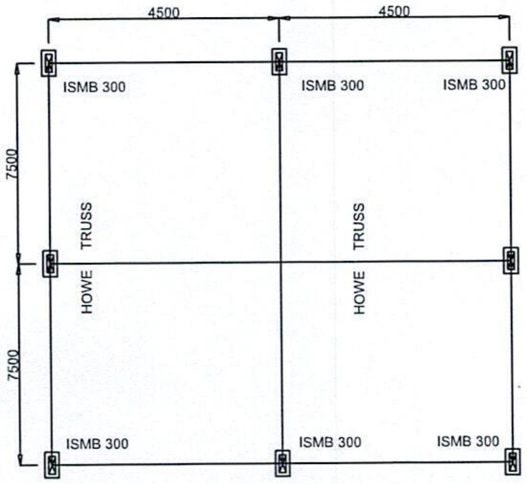
SIDE C/S DETAILS



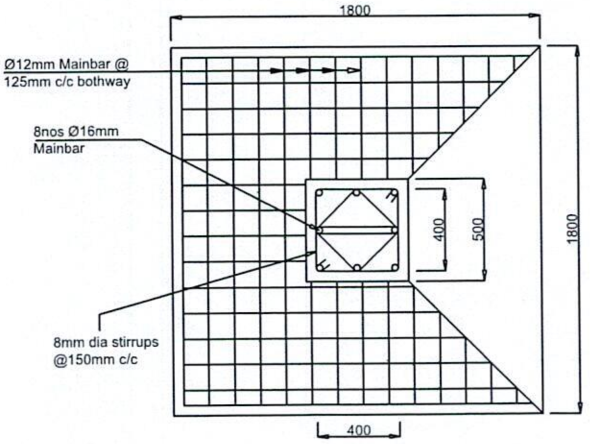
C/S OF TIE BEAM AT SPAN



C/S PLAN OF COLUMN AND BASE PLATE



PLAN OF CAR SHED



PLAN OF COLUMN AND BASE PLATE

30 NOS

MODEL ESTIMATE

Probable items with Details of quantities for a Vehicle Shed(Total area=15x11=165 sq.mt)

(Based on P.W.D. schedule of rates : Road & Bridge Works - 2018 w.e.f. 30.08.2018 with latest Addenda &Corrigenda)

1 Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone)

8 x 1.800 x 1.800 x 1.800 = 46.656 cu.m.
2 x 11.000 x 0.500 x 0.500 = 5.500 cu.m.
2 x 14.000 x 0.500 x 0.500 = 7.000 cu.m.
1 x 15.000 x 11.000 x 0.150 = 24.750 cu.m.
83.906 cu.m. @ ₹ 11,927.00 /%cu. m. = ₹ 10,007.00

2 Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation

8 x 1.800 x 1.800 x 0.075 = 1.944 cu.m.
2 x 11.000 x 0.500 x 0.075 = 0.825 cu.m.
1 x 14.000 x 0.500 x 0.075 = 0.525 cu.m.
1 x 15.000 x 11.000 x 0.075 = 12.375 cu.m.
= 15.669 cu.m. @ ₹ 131,714.00 / %cu. m = ₹ 20,638.00

3 Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand. According to

8 x 1.800 x 1.800 = 25.920 sq.m.
2 x 11.000 x 0.500 = 11.000 sq.m.
1 x 14.000 x 0.500 = 7.000 sq.m.
1 x 15.000 x 11.000 = 165.000 sq.m.
208.920 sq.m. @ ₹ 361.00 / sq. m. = ₹ 75,420.00

4 Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground

(i) 8 x 1.800 x 1.800 x 0.075 = 1.944 cu.m.
2 x 11.000 x 0.500 x 0.075 = 0.825 cu.m.
2 x 14.000 x 0.500 x 0.075 = 1.050 cu.m.
3.819 cu.m. @ ₹ 5,466.86 / cu. m. = ₹ 20,878.00

5 Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in ground

(i) 8 x 1.800 x 1.800 x 0.200 = 5.184 cu.m.
8 x 1.800 x 1.800 x 0.200 = 5.184 cu.m.
8 x 0.500 x 0.500 x 1.800 = 3.600 cu.m.
2 x 11.000 x 0.500 x 0.300 = 3.300 cu.m.
2 x 15.000 x 0.500 x 0.300 = 4.500 cu.m.
1 x 15.000 x 11.000 x 0.100 = 16.500 cu.m.
38.268 cu.m. @ ₹ 6,016.45 / cu. m. = ₹ 230,238.00

6 Hire and labour charges for shuttering with centering and nece-ssary staging upto 4 m using approved stout props and thick hard wood planks

8 x 7.200 x 0.200 = 11.520 Sq. m.
8 x 2.000 x 1.800 = 28.800 Sq. m.
4 x 11.000 x 0.300 = 13.200 Sq. m.
4 x 15.000 x 0.300 = 18.000 Sq. m.
1 x 42.000 x 0.100 = 4.200 Sq. m.
75.720 Sq. m. @ ₹ 335.00 / sq. m. = ₹ 25,366.00

7 Reinforcement for reinforced concrete work in all sorts of str-uctures including distribution bars, stirrups, binders etc initial straightening and

1.25% of total concrete = 3.755 M.T. @ ₹ 60,150.00 /M.T. = ₹ 225,863.00

8 Brick work with 1st class bricks in cement mortar (1: 6)

(A) In Foundation & Plinth....Page-15/It. No-8(a) (3rd corrigen page-1 it-7(b))

2 x 11.000 x 0.250 x 0.300 = 1.650 cu. m.
2 x 15.000 x 0.250 x 0.300 = 2.250 cu. m.
3.900 cu. m. @ ₹ 5,413.00 / cu. m. = ₹ 21,111.00

(B) In superstructure, ground floorPage-15/It. No-8(b) (3rd corrigen page-1 sl-4)

1 x 11.000 x 0.250 x 0.900 = 2.475 cu. m.
1 x 15.000 x 0.250 x 0.900 = 3.375 cu. m.
5.850 cu. m. ₹ 5,636.00 / cu. m. = ₹ 32,970.60

9 Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints

9.1 1 x 60.000 x x 1.000 = 60.000 Sq. m.
60.000 Sq. m. @ ₹ 151.00 / sq. m. = ₹ 9,060.00

9.2 (b) 20 mm thick plaster>>ground

1 x 60.000 x x 1.000 = 60.000 Sq. m.
60.000 Sq. m. @ ₹ 175.00 / sq. m. = ₹ 10,500.00

10 Neat cement punning about 1.5mm thick in wall,dado,window sill,floor etc. NOTE:Cement 0.152 cu.m per100 sq.m. According to PWD

1 x 60.000 x x 1.000 = 60.000 Sq. m.
60.000 Sq. m. @ ₹ 34.00 / sq. m. = ₹ 2,040.00

11 Artificial stone in floor, dado, staircase etc with cement concrete (1:2:4) with stone chips, laid in panels as directed with topping made with

1 x 15.00 x 11.000 = 165.000 sq.m.
= 165.000 sq.m. @ ₹ 269.00 / sq. m. = ₹ 44,385.00

12 M.S. structural works in roof trusses with tubular sections conforming to IS: 806-1968& IS: 1161- 1998 cnnected to one another with bracket,

1.410 MT @ ₹ 58,832.00 MT = ₹ 82,953.00

13 M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP(6)- 1964 connected to one another with bracket, gussets, cleats as per design,direction of Engineer-incharge complete including cutting to requisite shape andlength,fabrication with necessary bolting, metal arc welding conforming to IS: 816-1969 & IS: 1995 using electrodes of approved make and brand conforming toIS:814- 2004, haulage, hoisting and erection all complete. The rate includes thecost of rolled steel section,consumables such as electrodes, gas and hire charge ofall tools and plants and labour required for the work including all incidental chagessuch as electricity charges, labour insurance charges etc. I) For structuralmembers of specified sections weighing less than 22.5 Kg./m(i) weighing Rec. Tube 122X61X3.6 , 9.67kg/m as per IS Code.

1.910 MT @ ₹ 72,603.00 MT = ₹ 138,672.00
0.646 MT @ ₹ 72,603.00 MT = ₹ 46,902.00
0.050 MT @ ₹ 72,603.00 MT = ₹ 3,630.00
0.721 MT @ ₹ 72,603.00 MT = ₹ 52,347.00
0.879 MT @ ₹ 72,603.00 MT = ₹ 63,818.00

14 Supplying, fitting & fixing Zn-Al alloy (55% Al & 45% Zn) coating of 150 grams per sq. metre (followed by colour coated on both side) steel sheet

2 x 11.000 x x 7.500 = 165.000 Sq. m.
2 x 1/2x11x1.5 = 8.250 Sq. m.
2 x 11.000 x x 0.750 = 16.500 Sq. m.
2 x 15.000 x x 0.750 = 22.500 Sq. m.
212.250 Sq. m. @ ₹ 787.00 / sq. m. = ₹ 167,041.00

15 Galvanised iron sheet ridging fitted with necessary bolts, screws, washers etc complete.(225mm end lapping) (A) 300 mm lapping each way (b)

1 x 11.000 x = 11.000 Sq. m.
11.000 Sq. m. @ ₹ 380.00 / m. = ₹ 4,180.00

16 Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand

= 70.000 sq. m.
70.000 sq.m. @ ₹ 29.00 / sq. m. = ₹ 2.030.00

17 Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including

= 70.000 sq. m.
70.000 sq.m. @ ₹ 79.00 / sq. m. = ₹ 5.530.00

18 (a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and

2 x 1.500 x 1.200 = 3.600 sq.m. @ 16.0 kg m 57.600 kg
0.58 Qtl @ ₹ 9.888.00 / Qtl = ₹ 5.735.00

19 Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative

Quantity Same As item no -9 = 60.000 sq. m.
60.000 sq.m. @ ₹ 3.140.00 %sq. n = ₹ 1.884.00

20 Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of EIC to

Quantity Same As item no -9 = 60.000 sq. m.
60.000 sq.m. @ ₹ 97.00 / sq. m. = ₹ 5.820.00

= ₹ 1,309,018.60

21 Add GST @ 18 % on total amount over item no 1 to 20 i.e. ₹ 1,309,018.60 18.00% = ₹ 235,623.00

SUB - TOTAL ₹ 1,544,641.60

22 Add Labour Cess @ 1 % on total amount over item no 1 to 21 i.e. ₹ 1,544,641.60 1.00% = ₹ 15,446.00

₹ 1,560,087.60

Add contingency (+) 3.00% = ₹ 46,339.00

GRAND TOTAL : ₹ 1.590.980.60

(Rupees fifteen lakh ninety thousand nine hundred eighty and sixty paise only)

May be vetted
Ghosh

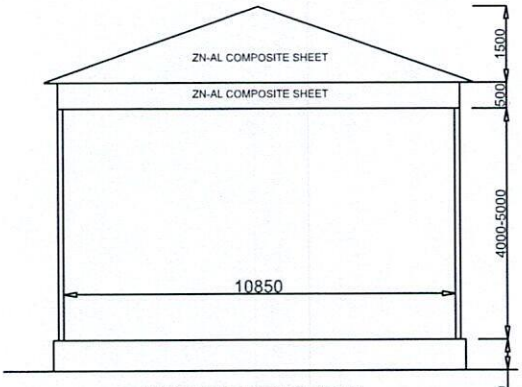
Junior Engineer
SUDA

May be vetted

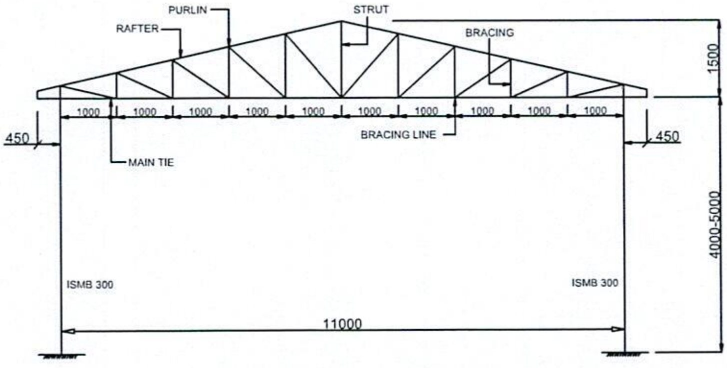
Assistant Engineer
SUDA

VETTED

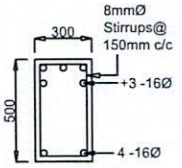
Executive Engineer SUDA



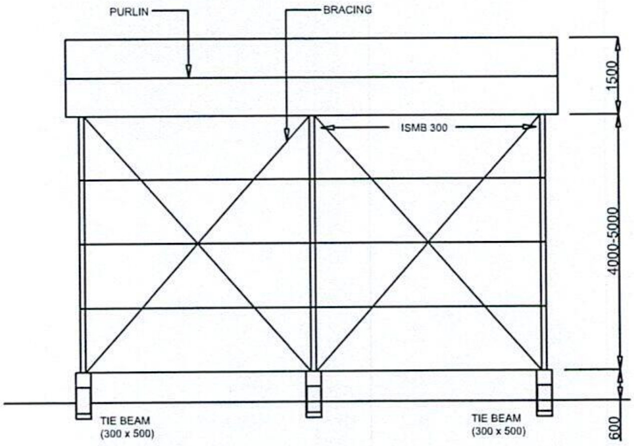
FRONT ELEVATION



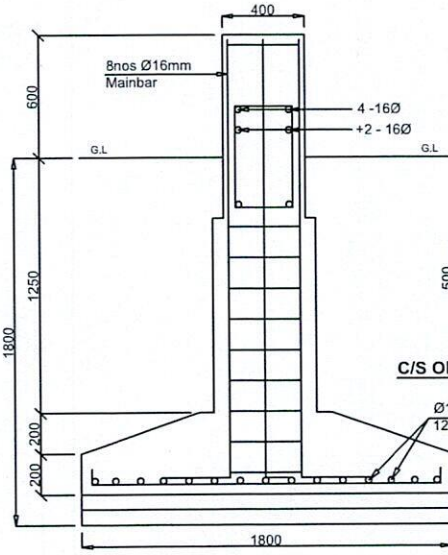
C/S Details of Truss



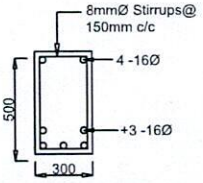
C/S OF TIE BEAM AT SUPPORT



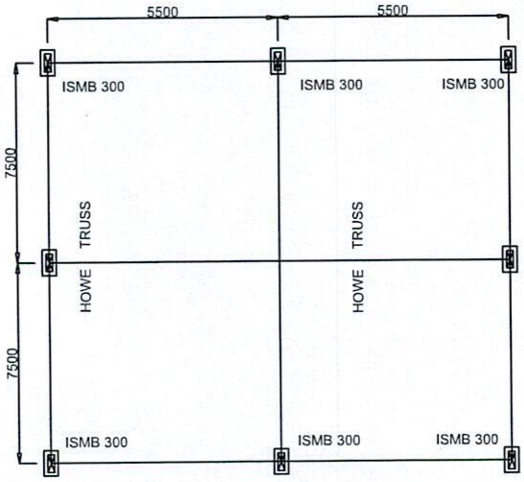
SIDE C/S DETAILS



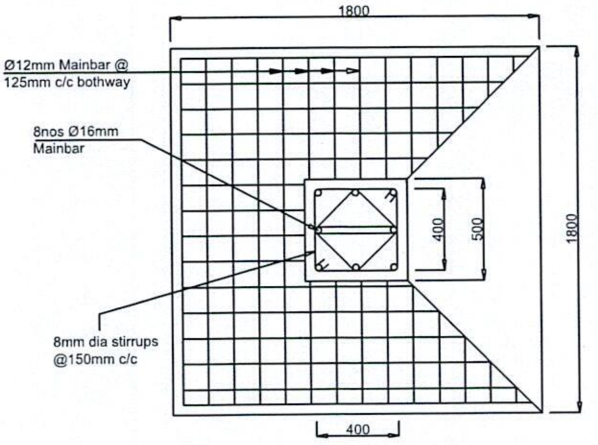
C/S PLAN OF COLUMN AND BASE PLATE



C/S OF TIE BEAM AT SPAN



PLAN OF CAR SHED



PLAN OF COLUMN AND BASE PLATE

Rate Analysis of Ordinary Cement Concrete 1:2:4

Sl No	Item	Quantity	Unit	Rate	Amount (Rs.)
1	Ordinary Cement concrete (mix 1:2:4) with graded stonechips (20 mm nominal size) excluding shuttering andreinforcement if any, in ground floor as per relevant IS codes (i) Pakur Variety Ref - It. No. 4(a),Page -24 of PWD(B) of 2017. and 3rd corrigenda, Page-10.	1.000	Cu.M	4060.00	4060.00
2	Cost of stone aggregate including loading unloading and carrige upto site.				
	(a) 20mm aggregate	0.660	Cu.M	1631.450	1076.76
	(b) 10mm aggregate	0.220	Cu.M	1500.450	330.10

Rate comes per cu-m= 5466.86

Rate Analysis of Ordinary Cement Concrete 1:1.5:3

Sl No	Item	Quantity	Unit	Rate	Amount (Rs.)
1	Ordinary Cement concrete (mix 1:1.5:3) with graded stonechips (20 mm nominal size) excluding shuttering andreinforcement if any, in ground floor as per relevant IS codes (i) Pakur Variety Ref - It. No. 10(i),Page -26 of PWD(B) of 2017. and 3rd corrigenda, Page-13.	1.000	Cu.M	4651.00	4651.00
2	Cost of stone aggregate including loading unloading and carrige upto site.				
	(a) 20mm aggregate	0.573	Cu.M	1631.45	934.82
	(b) 10mm aggregate	0.287	Cu.M	1500.45	430.63

Rate comes per cu-m= 6016.45

Ghosh
JE, SUDA

AE, SUDA

Annexure-II

List of further 23 ULBs to be taken up in Capex Mode

Sl No	ULB
1	Bankura
2	Bolpur
3	Rampurhat
4	Suri
5	Bardwan
6	Contai
7	Englishbazer
8	Berhumpore
9	Santipur
10	Ranaghat
11	Uluberia
12	Naihati
13	Jhargram
14	Budge Budge
15	Arambag
16	Chakda
17	Old Malda
18	Dhuliyan
19	Domkol
20	Murshidabad
21	Nabadwip
22	Purulia
23	Panskura