

**KOLKATA PORT TRUST
HALDIA DOCK COMPLEX**

Office of the M. M. Division, Jawahar Tower, 2nd Floor,
P.O.: - Haldia Township, Dist.: East Midnapore,
PIN : 721607, West Bengal
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E-Tender under single stage **two part** system (Part I: Techno-Commercial Bid and Part II: Price Bid) are invited from reliable, bonafide & experienced manufacturers for supply and delivery of Marshalling Beetle and spares for Charging & Marshalling Beetle (as per tender BOQ) for Coal Handling Plant, Haldia Dock Complex.

Bid Document may be downloaded from MSTC website www.mstcecommerce.com

Corrigendum/ addendum/ clarifications, if any, shall be hoisted on the above mentioned website only. Tenderer should visit the website frequently.

SCHEDULE OF TENDER (SOT) :

a.	TENDER NO.	HDC / MM / OT-30/22/152
b.	MODE OF TENDER	e-Procurement System (Online Part I - Techno-Commercial Bid and Part II - Price Bid through www.mstcecommerce.com of MSTC Ltd. The intending bidders are required to submit their offer electronically through e-tendering portal. No physical tender is acceptable by Haldia Dock Complex.
c.	E-Tender No. (System Generated)	KoPT/Haldia Dock Complex/MM Div/45/16-17/ET/523
d.	Date of NIT available to parties to download	24.02.2017
e.	Pre-Bid Meeting starting date & Time	NA
f.	Pre –Bid Meeting closing date & Time	NA
g.	i) Earnest Money Deposit	The intending bidders should submit Earnest Money of ₹ 7,000.00 (Rupees seven thousand only) to Haldia Dock Complex along with their offer otherwise their offer will be summarily rejected. The bidders are advised to deposit Earnest Money through ECS (RTGS/NEFT) in favour of Kolkata Port Trust, Haldia Dock Complex directly into the designated bank account. Details of the bank account is appended hereunder. a) Name of Bank & Branch: United Bank of India, Haldia Dock Complex Branch, b) Account No.: 1604050000310, c) IFS Code: UTBI0HDCF75. Concerned tenderers must ensure that the remitting bank positively enters their name and System Generated E - Tender no. in the 'Sender to Receiver' column at the time of making payment of earnest money by RTGS/NEFT.

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			<p>Tenderers should deposit Earnest Money before filling and submission of bids.</p> <p>Details of Earnest money remitted should be entered by the participating vendor/contractor in the space provided in the e-tender as indicated hereunder :</p> <p>a) Name of remitting vendor/contractor :</p> <p>b) E- Tender No. : KoPT/Haldia Dock Complex/MM Div/45/16-17/ET/523</p> <p>c) Amount remitted :</p> <p>d) Remittance Bank Details:</p> <p>e) U.T.R No. :</p> <p>f) Date:</p>
	ii)	Bid Document fee	<p>The intending bidders should submit the tender cost of ₹ 500/- (Rupees five hundred only) (non-refundable) as per the payment mode as mentioned above alongwith their offer otherwise their offer will be summarily rejected.</p> <p>Tenderers should deposit bid document fee before filling and submission of bids.</p> <p>Details of Tender Cost remitted should be entered by the participating vendor/contractor in the space provided in the e-tender as indicated hereunder :</p> <p>a) Name of remitting vendor/contractor :</p> <p>b) E- Tender No. : KoPT/Haldia Dock Complex/MM Div/45/16-17/ET/523</p> <p>c) Amount remitted :</p> <p>d) Remittance Bank Details:</p> <p>e) U.T.R No. :</p> <p>f) Date:</p>
	iii)	Transaction Fee	<p>₹ 773/- (Including Service Tax @ 15%) .Payment of Transaction fee by NEFT/RTGS in favour of MSTC LIMITED (refer clause. No. 4 of Annexure -I)</p>
h.	<p>Last date of submission of EMD & Bid Document fee at HDC.</p> <hr/> <p>Last date of submission of Transaction fee through RTGS/NEFT in favour of MSTC Limited,Kolkata.</p>		<p>20.03.2017 upto 15:00 HRS</p> <p>Three working days before the last date of <u>closing of online bidding for the e-tender.</u></p>
i.	<p>Date of Starting of e-Tender for submission of on line Techno-Commercial Bid and price Bid at www.mstcecommerce.com/eprochome/</p>		<p>25.02.2017 time 11:00 HRS</p>
j.	<p>Date of closing of online e-tender for submission of Techno-Commercial Bid & Price Bid.</p>		<p>20.03.2017 time 15.00hours</p>
k.	<p>Date & time of opening of Part-I (i.e. Techno-Commercial Bid) Part-II Price Bid: Date of opening of Part II i.e. price bid shall be informed separately</p>		<p>20.03.2017 time 15.30hours</p>

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Important instructions for E-procurement

This is an e-procurement event of HALDIA DOCK COMPLEX . The e-procurement service provider is MSTC Ltd., 225C, A.J.C. Bose Road, Kolkata-700 020.

You are requested to read the terms & conditions (**Annexure- II**) of this tender before submitting your online tender. Tenderers who do not comply with the conditions with documentary proof (wherever required) will not qualify in the Tender for opening of price bid.

1. Process of E-tender :

A) Registration: The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type digital certificate. Vendors are to make their own arrangement for bidding from a P.C. connected with Internet. MSTC is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature).

SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT www.mstcecommerce.com/eprochome/

1). Vendors are required to register themselves online with **www.mstcecommerce.com** → e-Procurement → Psu / Govt depts → Register as Vendor Filling up details and creating own user id and password → Submit.

2). Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form.

Tenderers are requested to submit bid keeping sufficient time in hand. They should not wait for last minute to avoid any problem.

In case of any clarification, please contact HDC/MSTC, (before the scheduled time of the e- tender).

Contact person (Haldia Dock Complex):

1. Mr. S. K. Das
Dy. Manager(MM)
Haldia Dock Complex
Ph. No. 03224 264971
Mb. No. 9434031327

2. Mr. P.S. Brahma
Manager(MM)
Haldia Dock Complex
Ph. No. 03224 264496
Mb. No.94340 63229

Contact person (MSTC Ltd):

1. Mr. Arindam Bhattacharjee
Deputy. Manager (E-commerce)
MSTC Ltd.
MobileNo:09330102643
Landline:03322901004
Email-arindam@mstcindia.co.in

2. Mr. Sabyasachi Mukherjee
Junior Manager (E-commerce)
MSTC Ltd.
Mobile- 07278030407
Email: smukherjee@mstcindia.co.in

B) System Requirement:

i) Windows 98 / XP-SP3 & above/Windows 7 Operating System / Windows 8

ii) IE-7 and above Internet browser.

iii) Signing type digital signature

iv) JRE 7 update 9 and above software to be downloaded and installed in the system.

To enable ALL active X controls and disable 'use pop up blocker' under Tools → Internet Options → custom level

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2.	<p>(A) Part I Techno-Commercial bid will be opened electronically on specified date and time as given in the NIT. Bidder(s) can witness electronic opening of bid.</p> <p>(B) Part II Price bid will be opened electronically of only those bidder(s) whose Part I Techno-Commercial Bid is found to be Techno-Commercially acceptable by HDC. Such bidder(s) will be intimated date of opening of Part II Price bid, through valid email confirmed by them.</p>
3.	All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.
4.	<p><u>Special Note towards Transaction fee:</u> PAYMENT OF Transaction fee BY RTGS in favour of MSTC Limited .The Bank details, format etc for sending Transaction fee by RTGS to MSTC is detailed below</p> <p>Bank Details : Axis Bank ,Shakespeare Sarani Branch</p> <p>Account Details : Axis Bank A/c.No.005010200057840</p> <p>IFSC Code No. : UTIB00000005.</p> <p>“The vendors shall enter the transaction fee details by using the “Transaction Fee Entry” Link under “My Menu” in the vendor login. The vendors have to select the particular tender in which they want to participate against the transaction fee by clicking on the tick box at the right and then Clicking on the “Submit” Button at the bottom of the page. Then the page appears where the vendors are required to fill up the transaction details, namely the UTR No, Date of Transaction, and the Remitting Bank in the given fields and then click on the “Confirm” Button“.</p> <p>NOTE : The bidders should submit the transaction fee well in advance before the last date of submission of tender as they will be activated for bid submission only after receipt of transaction fee by MSTC.</p> <p>Contact Details :</p> <p>Fax No. : 033- 22831002</p> <p>Email ids: sanjibpoddar@mstcindia.co.in, arindam@mstcindia.co.in, rpradhan@mstcindia.co.in, smukherjee@mstcindia.co.in.</p> <p>Bidders may please note that the transaction fee should be deposited by debiting the account of the bidder only; transaction fee deposited from or by debiting any other party's account will not be accepted. Transaction fee is nonrefundable.</p> <p>In case of failure to access the payment towards Transaction fee for any reason, the vendor, in term, will not have the access to online e-tender.</p>
5.	<p>In case of failure to access the payment towards cost of tender document & EMD for any reason, the vender, in term, will not have the access to on line e-tender and no correspondence in this respect will be entertained and HDC will not be responsible for any such lapses on this account. Bidder(s) are advised to make remittance of tender fee and EMD through ECS (RTGS/NEFT) in favour of Kolkata Port Trust, Haldia Dock Complex well in advance and verify completion of transaction in respect of tender fee and EMD.</p> <p>Vendors are instructed to use Upload Documents link in My menu to upload documents in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB. Once documents are uploaded in the library, vendors can attach documents through Attach Document link against the particular tender. For further assistance please follow instructions of vendor guide.</p>
6.	All notices and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by HDC. Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with MSTC (i.e. Service Provider). Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).

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7.	(i)	Please note that there is no provision to take out the list of parties downloading the tender document from the web site mentioned in NIT. As such, bidders are requested to see the web site once again before the due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related corrigenda, if any, will be that of the downloading parties.
	(ii)	No separate intimation in respect of corrigendum to this NIT (if any) will be sent to tenderer (s) who have downloaded the documents from web site. Please see website www.mstcecommerce.com/eprochome/ of MSTC Ltd.
8.		E-tender cannot be accessed after the due date and time mentioned in NIT.
9.		<u>Bidding in e-tender & Reverse auction:</u>
	a.	Bidder(s) need to submit necessary EMD, Tender fees (if any) and Transaction fees to be eligible to bid online in the e-tender. Tender fees and Transaction fees are non refundable. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by HDC. Bank details i.e. name of bank and & address, Current a/c no, IFS Code to be mentioned by the tenderer for refund.
	b.	The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid.
	c.	The bidder(s) who have submitted the above fees can only submit their Techno Commercial Bids and Price Bid through internet in MSTC website www.mstcecommerce.com → e-procurement → Psu/Govt depts → Login → My menu → Auction Floor Manager → live event → Selection of the live event → Techno Commercial Bid.
	d.	The bidder should allow to run an application namely en Apple by accepting the risk and clicking on run. This exercise has to be done twice immediately after clicking on the Techno-Commercial bid. If this application is not run then the bidder will not be able to save/submit his bid.
	e.	After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to be filled up and then bidder should click on "save" to record their price bid. Then once both the Techno-Commercial bid & price bid has been saved, the bidder can click on the "Submit" button to register their bid
		NOTE: - The Techno-Commercial Bid & price bid cannot be revised once the submit button has been clicked by the bidder.
	a.	In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid.
	b.	During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.
	c.	The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.
	d.	All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter SUPPLIER
	e.	It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system.
	f.	Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.

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g.	No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the tender.
h.	Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.
10	Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein.
11.	No deviation to the technical and commercial terms & conditions are allowed.
12.	After submitting online bid, the bidder cannot access the tender, once it has been submitted with digital signature
13.	HDC has the right to cancel this e-tender or extend the due date of receipt of bid(s) without assigning any reason thereof.
14.	The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website www.mstcecommerce.com/eprochome/mstc of MSTC Ltd.
15.	The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.
16.	The bid will be evaluated based on the filled-in technical & commercial formats.
17.	The documents uploaded by bidder(s) will be scrutinized. In case any of the information furnished by the bidder is found to be false during scrutiny, EMD of defaulting bidder(s) will be forfeited. Punitive action including suspension and banning of business can also be taken against defaulting bidders.
18.	Necessary addendum/ corrigendum (if any) of tender would only be hosted in the e-tendering portal of M.S.T.C.
19.	Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme) are exempted from depositing Cost of Tender Document and Earnest Money having valid NSIC Certificate for MSEs along with DIC's (DISTRICT INDUSTRIES CENTRE) Certificate.
20.	Micro & Small Enterprises (MSEs) registered with NSIC under Single Point Registration Scheme (SPRS) are eligible to get the benefits under new Public Procurement policies for MSEs as notified by Govt. of India, Ministry of Micro, Small & Medium Enterprises (MSME) vide Gazette Notification, dated 26.03.2012. When splitting of tender quantity is not possible purely on technical ground, trustees reserve the right not to negotiate price with MSE if their price is within the band of L1+15% in comparison with L1 price of non-MSE for consideration of award of order for 20% of tender quantity against any item as per new public procurement policy.
21	If Micro & Small Enterprises (MSEs) registered with NSIC intends to participate in the tender, for the items they are not registered with NSIC, then they will have to deposit cost of Tender Document, full amount of Earnest Money as per NIT. Otherwise their offer for those items will not be considered.
22	Copy of valid NSIC Certificate for MSEs along with DIC's(DISTRICT INDUSTRIES CENTRE) Certificate has to be submitted along with the bid.
23	Due date of submission of tender will not be extended under any situation.



**KOLKATA PORT TRUST
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P.O.: -Haldia Township, Dist.: East Midnapore.
E-mail id: psbrahma@kopt.in
Fax No. 03224 263255

Commercial Terms & Conditions :

Annexure -II

Sl. No.	Terms & Conditions	Response
1.	Mere submission of Tender Document will not mean that a particular bidder will be automatically considered qualified and their bids will be entertained. Such qualification will be reviewed at the time of evaluation of bids also	AGREE
2.	Price Bids (Part-II) of only those eligible bidders whose Part-I Bids are complete and in order shall be opened on time and date to be intimated later separately.	AGREE
3.	Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme) are exempted from depositing Cost of Tender Document and Earnest Money having valid NSIC Certificate for MSEs along with DIC's(DISTRICT INDUSTRIES CENTRE) Certificate.	AGREE
4.	<p>i) Micro & Small Enterprises (MSEs) registered with NSIC under Single Point Registration Scheme (SPRS) are eligible to get the benefits under new Public Procurement policies for MSEs as notified by Govt. of India, Ministry of Micro, Small & Medium Enterprises (MSME) vide Gazette Notification, dated 26.03.2012.</p> <p>ii) When splitting of tender quantity is not possible purely on technical ground, trustees reserve the right not to negotiate price with MSE if their price is within the band of L1+15% in comparison with L1 price of non-MSE for consideration of award of order for 20% of tender quantity against any item as per new public procurement policy.</p> <p>iii) If Micro & Small Enterprises (MSEs) registered with NSIC intends to participate in the tender, for the items they are not registered with NSIC, then they will have to deposit cost of Tender Document, full amount of Earnest Money as per NIT. Otherwise their offer for those items will not be considered.</p>	AGREE
5.	Copy of valid NSIC Certificate for MSEs along with DIC's (DISTRICT INDUSTRIES CENTRE) Certificate has to be submitted along with the bid.	AGREE
6.	Tenders without requisite Earnest Money are liable to be rejected excepting in case of Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme) for items for which the tender is invited.	AGREE
7.	Due date of submission of tender will not be extended under any situation.	AGREE

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8. SCOPE OF WORK

AGREE

Scope of work will include manufacture, supply and delivery of Marshalling Beetles and spares for Marshalling & Charging Beetles for Coal Handling Plant, Haldia Dock Complex as per Bill of Quantities.

**9. TECHNICAL SPECIFICATION:
WORKING CONDITION:**

Marshalling Beetle is used for hauling 15-20 Nos. loaded BOX N wagons, each carrying approximately 60 MT of Coal to feed the wagon tippler.

9.1 TECHNICAL PARAMETERS & SPECIFICATIONS:

Marshalling Beetle will be in a single piece as shown in GA Drawing No. 210.114 and will run on 90 lb rail placed between standard 60 kg BG rail as shown in the aforesaid drawing. The forward and reverse ropes will be of 38mm & 20mm diameter respectively with standard sockets. The above rope fixing arrangements are to be provided. Bidders should visit the site conditions of Ore & Coal Handling Plant before submitting their offer.

9.2 PAINTING:

All exposed surface of the fabricated structures should be sand blasted and painted with 2 coats of zinc rich epoxy primer and minimum 2 coats of coal tar epoxy finish paint of reputed make viz. Berger/Shalimar/Jenson & Nicholson/Asian/ICI. Overall paint thickness should not be less than 225 microns.

All unexposed surface shall be painted with one coat of zinc chromate red oxide primer and one coat of high build black paint. All paints to be of above mentioned reputed make.

9.3**DRAWINGS:**

Marshalling Beetles and spares for charging and Marshalling Beetle thereof for Coal Handling Plant are to be manufactured as per following drawings:

<u>Sl. No.</u>	<u>Drawings related to 210-114</u>	<u>Drawing No.</u>	<u>Description</u>	<u>No. of Sheets.</u>
01.	Draw Bar Roller Assembly.	210-028 210-029 210-030 210-031	Roller Assembly. Pin. Shell for Roller Assembly. Components for Roller Assembly.	4 Sheets.
02.	Skid Block Assembly with Bracket.	210-012 R2 210-121 R1	Arrangement of Skid Blocks Body Wheel & its Brackets of Charging & Marshalling Beetle. Arrangement of Skid Block/Skid Wheel/Body Wheel & its Brackets of Charging & Marshalling Beetle.	2 Sheets.
03.	Body Wheel Assembly with Bracket Skid Wheel Assembly with Bracket.	210-012 R2 210-121 R1 210-032 R2	Arrangement of Skid Blocks Body Wheel & its Brackets of Charging & Marshalling Beetle. Arrangement of Skid Block/Skid Wheel/Body Wheel & its Bracket of Charging & Marshalling Beetle. Body Wheel Assembly of Charging & Marshalling Beetle.	3 Sheets.

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04.	Propelling Arm ~ L/H.	210-059 210-060 210-054 210-024 R1 210-055 210-056	Propelling Arm Assembly (Left). Sector Arm (Left). Sector Arm (Right). Pin for Propelling Arm. Bottom Bush (for Propelling Arm Assembly) Bush (for Propelling Arm Assembly)	6 sheets
	~ R/H.	210-014 210-057 210-001 R1 210-058 210-117 R1	Propelling Arm Assembly (Right). Washer for Propelling Arm Assembly (Pivot Pin). Roller. Spring. Roller Cap.	5 Sheets
05.	Rack Assembly, Pin & Link for Rack.	210-076 R1 210-077 R1 210-078 R1 210-081 210-082 210-083 R1	Rack Assembly. Link Assy. (Draw Bar Assy. of Charging & Marshalling Beetle). Draw Bar Link. Rack. Pin for Roller Assembly. Pin for Roller Assembly.	6 Sheets
06.	Draw Bar Assembly.	210-061 R1 210-084 R1 210-085/ (1-6)	Draw Bar Assembly for (Charging & Marshalling Beetle). Stopper Block. Link for Charging Beetle.	3 Sheets
07.	Body Assembly – III.	210-003 R1 210-008 R1	Bottom Plate Assy. of Body III of C/B & M/B – Sheet 1 of 2 & Bottom Plate Detail of Body III of C/B & M/B – Sheet 2 of 2. Top Plate Assy. of Body III – Sheet 1 of 2 & Detail of Top Plate of Body III – Sheet 2 of 2.	4 Sheets
08.	G.A. Drawing.	210-114	General Arrangement drawing of Charging & Marshalling Beetles.	1 Sheet.

10. The terms and conditions of tender shall be read in conjunction with the general condition of contract. Specification, bill of quantity and other documents forming part of this contract wherever the contract so requires. AGREE
11. The several documents forming the Contract shall be taken, as mutually explanatory to one another and in case of any discrepancies; the Bill of Quantities shall prevail over the Specifications and the Terms and Conditions over the General Conditions of Contract. In case of any dispute, question or difference either during the execution of the Contract or any other time as to any matter or thing connected with or arising out of this Contract, the decision of the Manager (MM), Haldia Dock Complex, thereon shall be final and binding upon all parties. AGREE

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12. The Contract will include the Client's Bid Documents with the General Conditions of Contract and the Bidder's Offer as finally accepted by the Client, together with Addenda, if there be any. Trustees' General Conditions of contract is the integral part of the tender / contract. The above mentioned General Conditions of Contract may be inspected at the office of the undersigned on any working day before quoting for the Tender. General Conditions of Contract is also available at HDC's website (www.haldiadock.gov.in). AGREE
13. The Trustees also reserve the right to obtain revised commercial bid to the extent and in areas required from the technically acceptable bidders. AGREE
14. The Trustees are not bound to accept the lowest or any Tender and reserve the right to accept a tender in full or in part and / or reject a tender in full or in part without assigning any reason thereof. AGREE
15. The contract shall be governed by all relevant Indian Acts applicable only within the jurisdiction of the High Court at Kolkata.
16. Intending bidders must take into account any cost or expense incurred by them in connection with the preparation and delivery of their bids or for any other expenses incurred in connection with such bidding. AGREE
17. Bidders are advised to visit the Coal Handling Plant Site/Store, P & E Division, Haldia Dock Complex prior to submission of their bid. Bidder shall get himself thoroughly familiarized with the site conditions, existing road facilities for carrying materials etc. before submission of the tender. He may contact the Manager of M.M. Division or his authorized representative at his office at Jawahar Tower in this regard. Non compliance of the same will in no way relieve the successful bidder of any of his obligations in performing the work in accordance with this Bid Document within the quoted price. AGREE
18. **VALIDITY** AGREE
The tender shall remain open for acceptance for a period of **120 days** from the date of opening of the same.
If before expiry of this validity period, the Bidder amends his quoted rates or tender, making them unacceptable to the Trustees and / or withdraws his tender, the Earnest Money deposited shall be liable to forfeiture at the option of the Trustees / sanctioning Authority.
19. **NON- RESPONSIVE BIDDER** AGREE
The offer/tender shall be treated as non-responsive, if :
i) 120 days validity from the date of opening of techno-commercial bid is not accepted / agreed to as per tender condition.
ii) Offer / tender is submitted with any deviation from the tender terms & conditions.
20. **EARNEST MONEY AND SECURITY DEPOSIT** AGREE
i) The Earnest Money received will be refunded or released as the case may be to the unsuccessful Bidder without any interest subject to the provisions made in clause above. The Earnest Money of the successful Bidder will be retained and converted to as a part of the Security Deposit.
ii) The Security Deposit shall be equal to 5% of the basic contract value. Balance Security Deposit shall have to be deposited by Banker's Cheque or by Demand Draft of any Scheduled/ Nationalised Bank of India drawn in favour of Kolkata Port Trust and payable at Haldia, by the successful Bidder within 30 days from the date of placement of order. Failing this, the Trustees reserve the right to cancel the acceptance and forfeit the Earnest Money.
The Security Deposit shall be refunded without interest after the successful execution of the order and completion of guarantee period
iii) If the contract value aggregates to Rupees one lakh and above, the supplier may offer a Bank Guarantee in the Trustees' specified Pro-forma from any Scheduled/ Nationalised Bank of India from Kolkata / Haldia branch in lieu of Security Deposit. The Bank Guarantee shall have to be valid for at least 13 months from the date of last supply & acceptance of materials.
iv) In the event of the successful bidder failing to execute the order within the stipulated delivery period without sufficient reasons acceptable to the Trustees, the

Security Deposit may be forfeited and the order be cancelled at the option of the Trustees'.

21. PRICING OF BIDS

AGREE

i) Price should be quoted F.O.R HDC's site/store at Haldia including charges for packing, forwarding, loading, stacking, transportation, unloading, and transit risk, necessary for the complete services as described in the documents i.e. on free delivery basis upto HDC's site/store at Haldia .

ii) The Bidder shall state clearly the percentage of various Taxes and surcharge that will be charged extra over his quoted rates.

iii) Orders may be placed in parts. Each bidder shall keep in mind while quoting his rate against any item that, in the event of part order being placed, his quoted rate against the ordered item, shall form the basis of the subject order. Price(s) to be quoted should remain firm till the entire supply of goods is completed.

iv) No Price escalation is admissible other than statutory increase in Taxes & Duties. In case of decrease in rates of statutory taxes & duties, the price would be correspondingly decreased.

v) Any modification (addition /deletion /alteration including implementation of GST) in taxes or duties in future by the GOI after due date of submission of this tender will be addressed separately at the material time. Therefore the detailed tax break-up considered in the quoted price should also be submitted by the bidders along with their price bid in order to assess the impact of future tax levied subsequently, if any on the contract price. Any offer without the detailed tax break-up, if becomes the lowest price-bid and is accepted by KoPT with or without any negotiation of price, shall not be entitled for reimbursement of any additional amount due to subsequent modification of taxes or duties. But any recovery due on account of any subsequent modification in taxes or duties shall be assessed by HDC without any reference to the contractor and shall be made by HDC from the amount payable under the contract.

22. Please note that KoPT does not provide any concessional Sales Tax Form. Full rate of Sales Tax/ VAT should be considered while quoting.

AGREE

23. EVALUATION CRITERIA

AGREE

i) Evaluation will be made on the lowest (L1) landed price quoted against individual item among the techno-commercially qualified bids subject to the fulfilment of necessary Tender conditions and benefits will be extended to MSEs registered with NSIC as per New Public Procurement Policy as notified by the Government of India, Ministry of Micro, Small & Medium Enterprises (MSME) in The Gazette of India vide No. 503, dated 26.03.2012. When splitting of tender quantity is not possible purely on technical ground, trustees reserve the right not to negotiate price with MSE if their price is within the band of L1+15% in comparison with L1 price of non-MSE for consideration of award of order for 20% of tender quantity against any item as per new public procurement policy. It is not obligatory on the part of the Trustees to accept the Lowest Tender. They reserve the right to accept a Tender in full or in part and / or reject a Tender without assigning any reason thereof.

ii) In the event of Part Order being placed, the rate(s) against each of the item(s) constituting the order shall be identical to the rate(s) for the corresponding item(s) quoted in the Price Bid, tender terms and conditions shall also remain unaltered. Irrespective of whether order is placed on part or, on the whole of the BOQ no plea for subsequent withdrawal or the amendment will be entertained.

ii) In the event of Part Order being placed, the rate(s) against each of the item(s) constituting the order shall be identical to the rate(s) for the corresponding item(s) quoted in the Price Bid, tender terms and conditions shall also remain unaltered. Irrespective of whether order is placed on part or, on the whole of the BOQ no plea for subsequent withdrawal or the amendment will be entertained.

AGREE

iii) The bidders, in whose cases ED is applicable, are to confirm the submission of admissible Cenvatable documents. The evaluation of the offer shall be made on the basis of landed price less Excise Duty (along with applicable Cess).

AGREE

iv) For others, the evaluation shall be made on the total quoted price.

Contd. next page

24. **CENVAT CRITERIA:** AGREE
- i) Tenderers, in whose cases ED is applicable, are required to submit the copy of the Registration certificate of Central Excise Authority along with Techno commercial offer.
- ii) Successful tenderers, in whose cases ED is applicable, are required to submit Excise Invoice i.e. transporter's copy along with the supply. If the successful tenderer fails to submit Cenvatable documents (Excise Invoice), payment will be made after deducting ED with appropriate cess.
25. **PAYMENT :** AGREE
- Payment will be made on the basis of actual supply and delivery of materials in good condition and acceptance of the same at designated points and on submission of Bill accompanied with Inspection Certificate, if any, and challan duly signed by consignee or his authorized representative. The bills should be submitted in quadruplicate to Manager (MM)'s Office with necessary documents e.g., receipted challan in duplicate, Excise Invoice with Cenvatable Transporter's copy (if applicable), test certificate, guarantee certificate inspection report, if any.
- Payment will be made against supplier's clear bill within 30(thirty) days of receipt of satisfactory acceptance of materials at central store/ site. Payments shall be credited to supplier's bank account through NEFT/RTGS mechanism at all centers where such facilities are available in the bank. Accordingly bidders are requested to submit their bank Account No with the name and address of the bank along with the branch name account no. and IFS code number in the bill.
26. **TIME OF COMPLETION AND DELIVERY :** AGREE
- Delivery of the materials must be completed within **120(one hundred twenty) days** from the date of receipt of order by the supplier. Materials shall be delivered by the supplier to HDC's site/store at Haldia at their cost, risk and responsibility.
- Delivery period shall binding on the supplier. If delivery of materials is not made within the time undertaken without sufficient reasons acceptable to the Trustees, the order may be cancelled without notice at the option of Trustees. In the event of failure to execute the order, Trustees will take penal action against the supplier and his name will be removed from the list of approved suppliers. In case of default in supply or, failure to deliver as per correct specification or, the approved quality within the time stipulated Trustees are entitled to purchase the Items from any other source at the risks, costs and expenses of the supplier. Such purchase may comprise the whole or, any portion of the supply remaining undelivered or, not approved.
- The successful Bidder must make their own arrangements for delivery of all materials, as well as for careful and proper unloading and stacking at HDC's Store/Site. The responsibility for preventing damage / deterioration to the materials during transit, delivery, unloading and stacking at the designated point shall rest with the Supplier. All transit risk will be to supplier's account. The Bidder must send advance intimation to the concerned Officer as to the proposed dates of delivery of each and every installment of supply together with a list showing quantity and particulars of the material in the consignment. Materials will not be accepted if not accompanied by the authorized representative along with proper Delivery Challan, Inspection/Test Certificate, Guarantee Certificate and other related documents. Delivery of materials will not be accepted on Sundays and Holidays. No lorry shall be permitted into the protected area during night-time. Detention of lorries, if any, will be on supplier's account. The authorized representative of the Bidder should be present at the time of delivery.
27. **DESPATCH ARRANGEMENTS** AGREE
- The supplier shall be fully responsible for any transit loss or damage to the materials. The supplier shall send advance intimation as to the actual date of delivery of each and every installment of supply. Delivery of materials will not be accepted on Sundays and Port Holidays. The authorized representative of the suppliers should be present at the time delivery for jointly noting with the representative of Ko.P.T. the discrepancies, if any, regarding the particulars of materials actually delivered against the Challans for the same. Delivery will not be accepted if not accompanied with proper delivery challans (in quadruplicate) and other related documents like inspection certificates, etc. No lorry shall be permitted into the protected area during night-time. Detention of lorries, if any, will be on supplier's account.

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28. **INSPECTION AND TESTING:** Inspection of materials shall be done by Trustee's authorized person (representative of P&E Division, HDC) as may be deployed by the Sr.Dy.Manager (P&E) at Manufacturer's works before delivery in stages and in case of third party inspection, the successful bidder shall extend all co-operation to them in the same manner as is to be extended to KoPT/HDC's representative. AGREE
- The successful tenderer should provide a clear 10 days time, from the date of receipt of inspection offer by HDC. i.e. Notice period of 10 days is required for carrying out inspection.
- The materials supplied by the supplier should strictly conform to the laid down specification of tender/order.
- Inspection will be carried out in stages as mentioned below by the Sr.Dy.Manager (P&E) or his authorized representative. Dispatch of Marshalling Beetle Assemblies and spares for charging and marshalling beetles can only be made after 2nd stage Inspection and clearance. Marshalling Beetle Assemblies will be accepted only after completion of 3rd stage Inspection & clearance, however, spares will be accepted after 2nd stage inspection and clearance.
- 1st STAGE INSPECTION:
FOR FABRICATION ITEMS:
Set wise in open condition before sand blasting/painting of all fabricated items and sub assemblies. Primer painting will be done only after getting clearance of sand blasting from HDC's inspector. Set wise in open condition after sand blasting/painting of all fabricated items and sub assemblies.
- FOR MACHINING ITEMS:

All items set wise.
- 2nd STAGE INSPECTION:
All major assemblies and sub assemblies set wise.
- 3rd STAGE INSPECTION:
Set wise final assembly on rails & Trouble free movement of each Beetle/Beetle Assembly on rails with load is to be shown at HDC's site within 10 (ten) days of receipt of the same in consultation with officer in charge, Coal Handling Plant. No inspection would be carried out without the contractor's internal inspection clearance.
- It is to be noted that the above inspection and subsequent dispatch clearance will not relieve the contractor of their responsibility of maintaining quality to guarantee performance.
- If any operational and manufacturing defect would be found in any assembly/sub-assemblies during the performance guarantee period, repair/replacement of the same will have to be done by the contractor, free of cost, as stated earlier.
29. **GUARANTEE PERIOD** AGREE
- The materials, with all accessories and attachments, shall have to be guaranteed by the supplier against the manufacturing defects or, poor performance for a period of 12 months from the date of commissioning or, 18 months from the date of delivery & acceptance, whichever is earlier. If any defect whatsoever develops during the Guarantee Period, the defective materials will have to be replaced/rectified, as the case may be, by the Bidder at their own cost.
30. **CERTIFICATES:** Guarantee Certificate and all Material Test Certificate related to tender drawings from Government/Government approved or registered test house must be produced at the time of inspection of the materials and along with the supply. AGREE
31. **TRANSIT RISK :** AGREE
- Transit risk will be on supplier's account since the delivery is to be made on F.O.R. Destination basis.

Contd. next page

32. **PERMITS :** AGREE
The successful Bidder shall have to obtain dock permits from the office of the Manager (MM), HDC at Chiranjibpur or as directed for entry of their vehicles and workers into the Trustees' Stores for unloading and stacking of the material. Such permits shall be issued free of cost to the Bidder against receipt of proper application for the same during normal working hours on any working day.
33. **LIQUIDATED DAMAGES** AGREE
If the successful bidder (supplier) fails to complete the entire supply within the stipulated date or, such the extension thereof as communicated by the Manager (Materials Management Division) in writing, the supplier shall pay, as compensation (Liquidated Damage) to the Trustees and not as a penalty, @½ % (half percent) of the total basic value of the delayed portion of part order for every week delay in supply (part of the week being treated as a full week). Provided always that the amount of such compensation shall not exceed 10% of the total basic value of the part order.
- Without prejudice to any of their legal rights, the Trustees shall have the power to recover the said amount of compensation / damages as stated above, from any money due or, likely to become due to the supplier. The payment or deduction of such compensation / damages shall not relieve the supplier from his obligation to complete the supply order or, from any of his other obligations or liabilities under the contract.
- Service Tax on L.D. amount at the prevailing rate (presently @15%) will be levied.
- Any delay on the following two accounts beyond the time period on account of HDC will be considered for non-imposition of L.D. provided the bidder submits documentary evidence to substantiate the same.
1. 15 days time for inspection from the date of receipt of supplier's inspection call letter.
 2. 12 days time from the date of receipt of supplier's waybill request letter by HDC to the date of receipt of Waybill by the supplier from HDC.
34. **RISK PURCHASE :** AGREE
In case of supplier's failure and at the absolute discretion of the Manager (MM), the work may be ordered to be completed by some other agency at the risk and expense of the supplier (successful tenderer) after a minimum three days' notice in writing has been given to the supplier by the Manager (M.M.) or, his representative. In case of risk purchase extra cost will be borne by the supplier (successful tenderer).
35. **BANNED OR DE - LISTED CONTRACTORS** AGREE
Bidders must give a declaration to the effect that they have not been banned or, de-listed by any Government or, Quasi-Government Agency or, PSU. If a Bidder has been banned / de-listed by any Government or, Quasi-Government Agency or PSU, the details of any such ban must be clearly stated along with relevant documents which the Bidder is to enclose together with Techno-Commercial Bid. Incorrect declaration or suppression of facts will lead to rejection of the Offer
36. **FORCE MAJEURE** AGREE
In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the contract, the relative obligation of the Party affected by such Force Majeure shall upon notification to the other Party be suspended for the period during which Force Majeure event lasts. The cost and loss sustained by either party shall be borne by respective parties The Term 'FORCE MAJEURE' as employed herein shall mean acts of God, Earthquake, Floods and Hurricane / Cyclone, War, Revolution, Riot, Fire, Strike excluding Strike by the employees of the Supplier or their Sub-contractors. Upon the occurrence of such cause the party alleging that it has been rendered unable as aforesaid, shall notify the other party in writing immediately but not later than 7 (seven) days of the alleged beginning thereof giving full particulars and the satisfactory evidence in support of its claim.

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37. **PACKING OF MATERIALS :** AGREE
- The Supplier shall be responsible for proper packing and delivery of Stores. The materials should be packed by the Supplier/Manufacturer at their own cost for protection against any damage, loss, breakage or leakage etc.
38. **JURISDICTION OF COURT** AGREE
- The contract shall be governed by all relevant Indian Acts applicable within the jurisdiction of High Court at Calcutta.
39. **WORKMEN COMPENSATION** AGREE
- The successful bidders must cover his employees / workers, who will be engaged for delivery, unloading & stacking job at HDC's site, under workmen compensation act, fatal accident act and personal injuries insurance act for protection against any injury / accident and shall have to bear all the consequences and cost as applicable as per relevant acts.
40. **PERSONAL PROTECTIVE EQUIPMENT (PPE)** AGREE
- Suppliers and his workmen including driver & helper must use PPE i.e. Safety Helmet etc. at the time of supply of materials inside the Dock premises

Annexure-III

(To be downloaded, filled up, signed, scanned and uploaded)

Tender for supply & delivery of Marshalling Beetle and spares for Charging & Marshalling Beetle for Coal Handling Plant, Haldia Dock Complex.

BILL OF QUANTITIES (UN-PRICED BID)

[BIDDERS NOT TO QUOTE HERE]

BOQ Item No.	Description of Item	Unit	Qty.	Offered Specification (If specification is same please write "Yes" & "Make/Brand") (No other specification will be accepted)
1	Marshalling Beetle body complete assembly as per general arrangement drawing No. 210.114 of HDC, KoPT. And all other drawings related to drawing No. 210.114.	sets	2	
2	Spares for Draw Bar Roller Assembly of drawing no. 210.028 of HDC / KoPT.			
a)	Item No.1 of component drawing no.210.029 of HDC / KoPT,	nos.	15	
b)	Item No.2 of component drawing no. 210.030 of HDC / KoPT	nos.	12	
c)	Item Nos. 1, 2, 3 & 4 of component drawing no. 210.031 of HDC / KoPT	nos.	30 each	
d)	Item Nos. 8 & 9 of component drawing no. 210.028 of HDC / KoPT.	nos.	30 each	
3	Bottom Bush for Propelling Arm, as per drawing no. 210.055 of HDC, KoPT.	nos.	6	
4	Bush for Propelling Arm, as per drawing no. 210.056 of HDC, KoPT.	nos.	6	
5	Roller with Roller Cap [Arm Shell with Cap] fitted with 2 (two) nos. Bearing no. 22213C (Make: SKF/FAG), as per drawing nos. 210.001 R1 & 210.117 R1 of HDC, KoPT.	sets	12	
6	Pin for Body Wheel (Junction), [60 mm Diameter x 166 mm Length], as per drawing no. 210.032 R2 of HDC, KoPT [Item no. 5].	nos.	7	
7	Pin for Skid Block / body wheel of 60 mm Dia x 130 mm length, related to Drawing No. 210.121 R1 of Item No. 3	nos.	8	
8	Pivot Pin for propelling arm Assembly related to Drawing No. 210.024 R1	nos.	6	
9	Body wheel assembly fitted with bearing No. NU 2312 (SKF / FAG make) with cover related to Drawing No. 210.032 R2 by Item No. 1, 2, 3 & 4	sets	12	

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BOQ Item No.	Description of Item	Unit	Qty.	Offered Specification (If specification is same please write "Yes" & "Make/Brand") (No other specification will be accepted)
10	Spring for Sector Arm Assembly related to Drawing No. 210.058	nos.	4	
11	Sector Arm (L.H.) related to Drawing No. 210.060	nos.	2	
12	Bush for Beetles body pivot pin related to Drawing No. 210.014 of Item No 6	nos.	6	
13	Washer for propelling Arm Assembly, related to Drawing No. 210.057	nos.	8	
14	Skid Block for Beetles body, related to Drawing No. 210.121 R1 of Item No. 2	nos.	8	
15	Right Hand Male Bracket, related to Drawing No. 210.121 R1 and 210.012 R2 of HDC / KoPT	nos.	2	
16	Right Hand Female Bracket, related to Drawing No. 210.121 R1 and 210.012 R2 of HDC / KoPT.	nos.	2	
17	Left Hand Male Bracket, related to Drawing No. 210.121 R1 and 210.012 R2 of HDC / KoPT.	nos.	2	
18	Left Hand Female Bracket, related to Drawing No. 210.121 R1 and 210.012 R2 of HDC / KoPT.	nos.	2	
19	Bush for top plate related to Drawing No. 210.008 R1 of Item No. 4	nos.	4	
20	Cheese Head bolt M 20 x 195 with spring washer & Nut related to Drawing No. 210.012 R2 of item No. 09 & 10.	sets	128	
21	Pin for Rack assembly related to Drawing No. 210.082	nos.	8	
22	Pin for Rack assembly related to Drawing No. 210.083 R1	nos.	4	

Signature of Tenderer with Office Seal

Documents to be downloaded ,filled up, signed, scanned and uploaded**1.Pre-Qualification Criteria of Tenderers:**

Following documents for meeting the pre-qualification criteria should be uploaded by the tenderer alongwith offer otherwise their offer may be rejected : -

<p>1.The prospective bidder(s) should submit credential for supply of charging beetles or marshalling beetles or its spares or items involving forging / casting / fabrication including machining work of ₹8,07,000.00 (Rupees eight lakhs seven thousand) minimum in any number of orders, during last 5 (five) years, to Govt., PSU or Public / Private organization which should be substantiated by producing PURCHASE ORDER copy along with any one or more of the following documents :</p> <ul style="list-style-type: none"> i) Receipted Challan, ii) Certificate of Execution, iii) GRN, iv) Excise Invoice, v) Tax Invoice, vi) Consignment Note. <p>etc. as a proof of supply.</p> <p>The aforesaid documents are to be submitted as per following format with separate page.</p>				
Sl. No.	Item description with specification	Order nos. & date(with copies of purchase orders)	Nos. of Receipted challan / certificate of execution / GRN / Excise Invoice / Tax Invoice / Consignment Note etc. as a proof of supply (with copies of the same).	value of materials supplied in Rs
<p>2. Audited balance sheet and Profit & Loss account for the last 3 (three) financial years. Average annual financial turn over during the above mentioned period should be at least ₹ 4,03,500.00 (Rupees four lakhs three thousand five hundred only). If due dates (scheduled opening date of tender) falling within three months (April to June) of the closing of the latest financial year, the latest financial year may be ignored and financial turnover of the three years, year previous to the latest financial year may be considered.</p> <p>In case of the bidder is unable to submit audited accounts of last financial year (in case of tender opening date falling after June), due to non – completion of audit or for any other reason, he may be allowed to submit a certificate of turnover issued by the statutory auditor of the company / firm for the previous year.</p>				
3. VAT Registration Certificate or CST Registration Certification (TIN)				
4. Up-to-date Professional tax payment challan				
5. Excise Registration certificate, if any				

To be downloaded ,filled up, signed, scanned and uploaded

DECLARATION OF THE BIDDER

Manager (MM Division)
Haldia Dock Complex

I / We have examined carefully, read and understood the above Terms and Conditions, Specifications and General Conditions of Contract. I / We hereby tender and undertake to execute and complete all the works required to be performed in accordance with the Specifications, Bill of Quantities, General Conditions of the Contract and the Terms and Conditions as stated in the Tender and at rates and prices set out in the annexed Bill of Quantities within the time period as stated in the Tender. In the event of our Tender being accepted in full or, in part, I / we also hereby agree that the said Tender, Specifications, Bill of Quantities, General Conditions of Contract and the Terms and Conditions as stated in the Tender together with the acceptance thereof in writing by or, on behalf of the Trustees shall form the Contract.

I / We have deposited Requisite Earnest Money.

OR

I / We have submitted documentary evidences for Micro & Small Enterprises (MSEs) registered with NSIC (under single point registration scheme) **as per tender condition.**

I / We agree that the period for which the Tender shall remain open for acceptance shall not be **less than 120 days.**

Date :
Place :

Signature of Tenderer with Office Seal

Name : _____

Address: _____

Phone No & Fax No : _____

E-Mail ID: _____

BIDDER'S INFORMATION

Manager (MM),
Haldia Dock Complex

Tender No.

HDC/MM/ OT-30/22/152

Name of work/Item Description:

Supply and delivery of Marshalling Beetle and spares for Charging & Marshalling Beetle (as per tender BOQ) for Coal Handling Plant, Haldia Dock Complex.

Name of the Company:

Address:

Contact Person Name:

Phone:

Fax:

E-Mail Address:

Have you studied the Pre-Qualification requirement of the selected tender?

Yes / No

Is the company having Copy of VAT Registration Certificate / CST Registration Certificate (TIN)?

Yes / No

Is the company having Current valid Professional Tax Payment Challan (PTPC)?

Yes / No

Is the Company meeting the pre-qualifying criteria mentioned in the NIT?

Yes / No

Confirm that you will furnish the documentary evidence against pre-qualification criteria along with your offer.

Yes / No

Are you MANUFACTURERS / authorised dealers/ authorised stockists/ suppliers for the tendered materials? Please indicate your status.

(a) I / We hereby declare that I / We have not been banned or, de-listed by any Government or Quasi-Government Agency or Public Sector Unit.

(b) I / We hereby enclose the details of any banned / de-listed imposed on my / our agency by any Govt. / Quasi - Govt. Agency or, PSU.

[Please strike out the alternative which is not applicable in your case out of the following two and initial the same.]

I / We agree to upload the copies of pre-qualification documents as per the Notice Inviting Tender along with our offer. I / We undertake and confirm that in case we do not submit these Pre-qualifying document with our offer or the documents are not found in order by HDC / not acceptable to HDC, our tender shall be liable for rejection.

Signature of Tenderer with Office Seal

To be downloaded ,filled up, signed, scanned and uploaded

TO INDICATE THE FOLLOWING DETAILS OF STATUTORY LEVIES:-

SL. NO.	TARIFF HEAD	WHETHER APPLICABLE (GIVE TICK MARK)	
		YES	NO
1.	Excise Duty		
2.	CST		
3.	VAT		
4.	Any levies applicable other if		

Signature of Tenderer with Office Seal

PART-II

ANNEXURE-VIII

PRICED BILL OF QUANTITIES

Tender for supply & delivery of Marshalling Beetle and spares for Charging & Marshalling Beetle (as per tender BOQ) for Coal Handling Plant, Haldia Dock Complex.
[**BIDDERS NOT TO QUOTE HERE**]

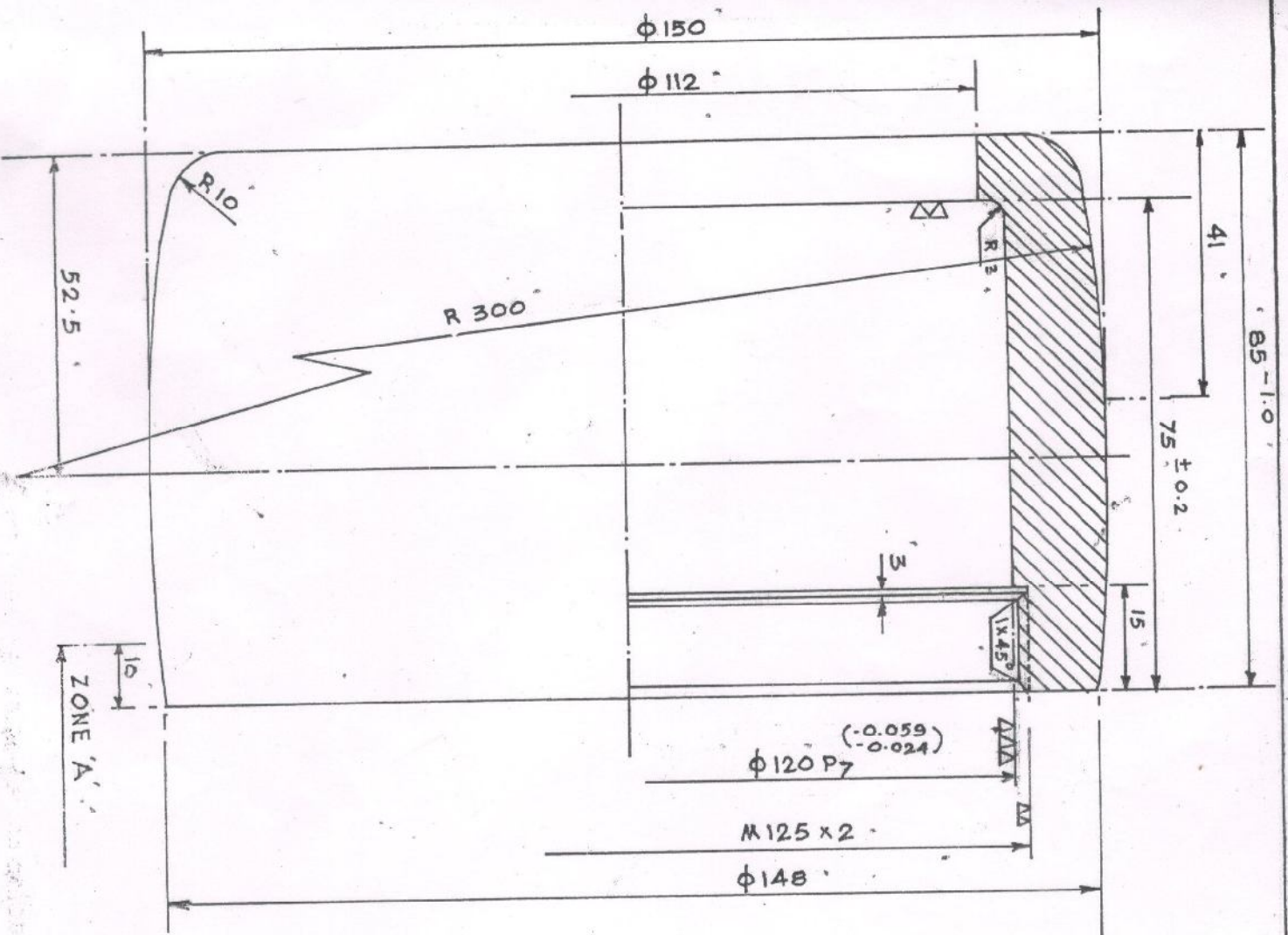
BOQ Item No.	Description of Item	Quantity	Unit	Unit Rate On F.O.R. upto HDC's Store at Haldia Basis	(%) of Excise Duty	(%) of Central Sales Tax OR VAT	Any other levies if applicable	Calculation of Landed Cost	Calculation of Evaluated Cost
				(Rs /unit) a	(%) b	(%) c	 d	(Rs /unit) $e = a + a * b / 100 + (a + a * b / 100) * c / 100 + d$	(Rs /unit) $(f) = (e) - (a * b / 100)$
1	Marshalling Beetle body complete assembly as per general arrangement drawing No. 210.114 of HDC, KoPT. And all other drawings related to drawing No. 210.114.	2	sets						
2	Spares for Draw Bar Roller Assembly of drawing no. 210.028 of HDC / KoPT.								
a)	Item No.1 of component drawing no.210.029 of HDC / KoPT,	15	nos.						

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b)	Item No.2 of component drawing no. 210.030 of HDC / KoPT	12	nos.									
c)	Item Nos. 1, 2, 3 & 4 of component drawing no. 210.031 of HDC / KoPT	30 each	nos.									
d)	Item Nos. 8 & 9 of component drawing no. 210.028 of HDC / KoPT.	30 each	nos.									
3	Bottom Bush for Propelling Arm, as per drawing no. 210.055 of HDC, KoPT.	6	nos.									
4	Bush for Propelling Arm, as per drawing no. 210.056 of HDC, KoPT.	6	nos.									
5	Roller with Roller Cap [Arm Shell with Cap] fitted with 2 (two) nos. Bearing no. 22213C (Make: SKF/FAG), as per drawing nos. 210.001 R1 & 210.117 R1 of HDC, KoPT.	12	sets									
6	Pin for Body Wheel (Junction), [60 mm Diameter x 166 mm Length], as per drawing no. 210.032 R2 of HDC, KoPT [Item no. 5].	7	nos.									
7	Pin for Skid Block / body wheel of 60 mm Dia x 130 mm length, related to Drawing No. 210.121 R1 of Item No. 3	8	nos.									
8	Pivot Pin for propelling arm Assembly related to Drawing No. 210.024 R1	6	nos.									
9	Body wheel assembly fitted with bearing No. NU 2312 (SKF / FAG make) with cover related to Drawing No. 210.032 R2 by Item No. 1, 2, 3 & 4	12	sets									
10	Spring for Sector Arm Assembly related to Drawing No. 210.058	4	nos.									

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THE REST



1. GRAIN REFINE TO BHN 240-270.
2. SURFACE HARDEN TO HRC 40-45.
3. ZONE 'A' & THREADS TO BE PROTECTED.
4. CASE DEPTH 2 mm.

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED

FOR TENDER PURPOSE ONLY.

1	DRG. GENERALLY REVISED.	REV.	DESCRIPTION	CKD.	DT.	APVD.	DT.
1			KOLKATA PORT TRUST HALDIA DOCK COMPLEX M(P&E)'S DRG. OFFICE				

SCALE: 1:1

WT. IN KG. 3.91 (4.77)

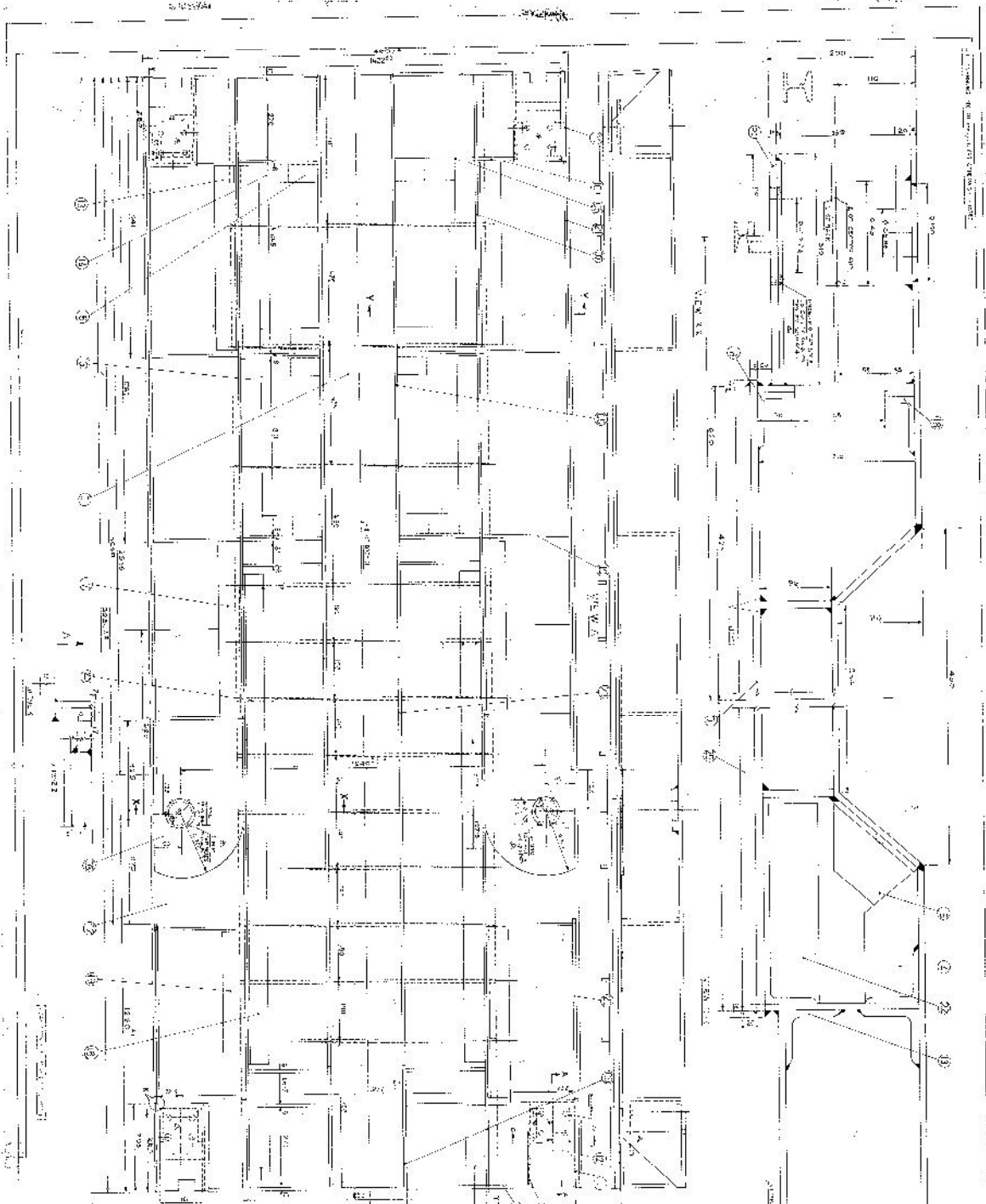
WAGON CHARGING DEVICE

MATL: 42 Cr4 Mo 2
15: 1570 - P4-88

ROLLER

DRG. NO.

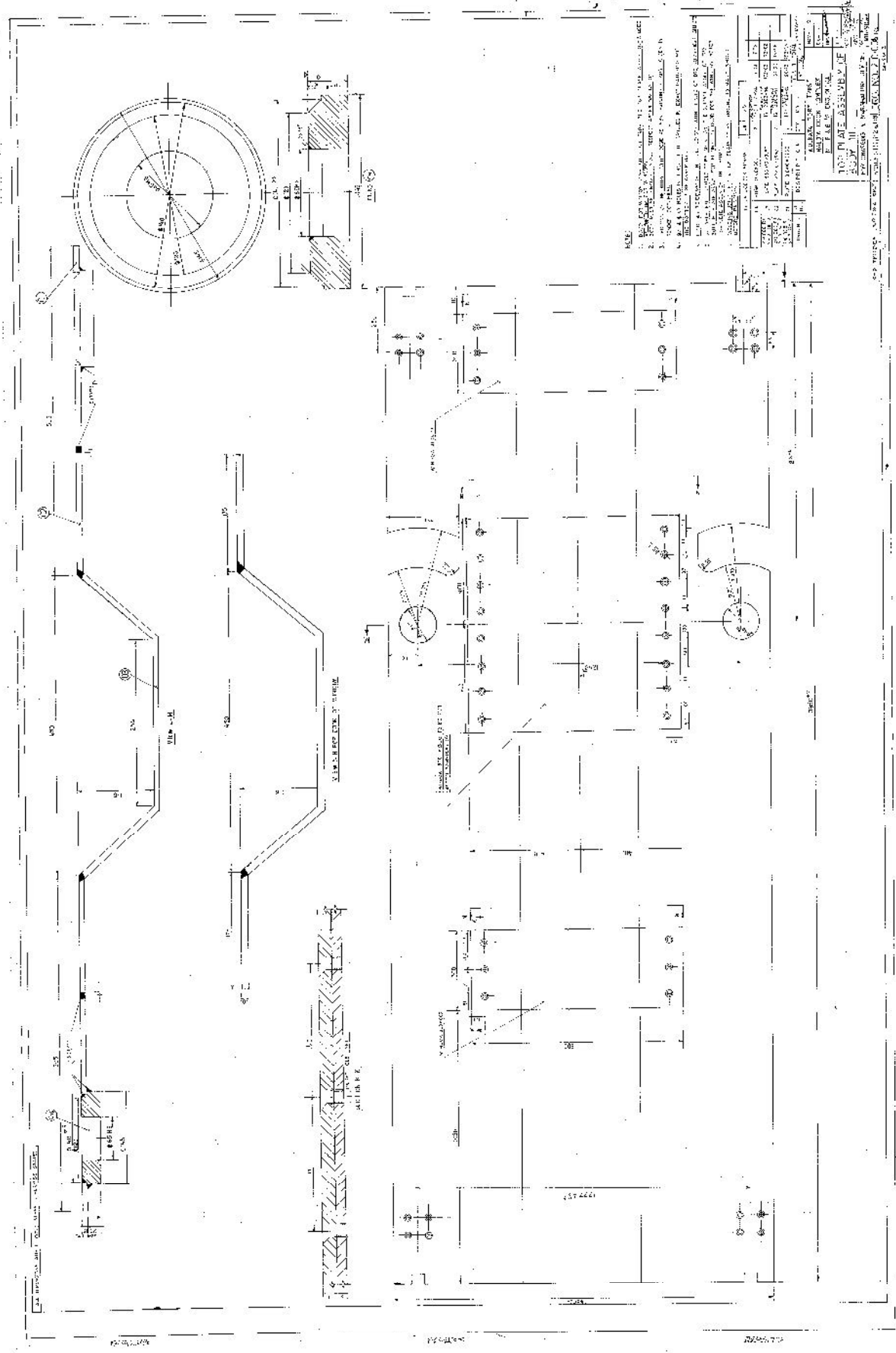
210-001R4



NOTE: 1. ALL DIMENSIONS ARE IN FEET AND INCHES. 2. DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED. 3. FINISHES ARE TO BE SPECIFIED BY THE ARCHITECT. 4. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE BUILDING CODES AND STANDARDS. 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. 6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES. 7. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES. 8. THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT ALL TIMES. 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL DEBRIS AND WASTE. 10. THE CONTRACTOR SHALL MAINTAIN RECORDS OF ALL WORK DONE AND SUBMIT THEM TO THE ARCHITECT UPON COMPLETION.

NO.	DESCRIPTION	QTY	UNIT	PRICE	TOTAL
1	Excavation and Backfill	100	cu yd	1.50	150.00
2	Foundation Work	100	sq ft	2.00	200.00
3	Concrete Slab	100	sq ft	3.00	300.00
4	Reinforcing Steel	100	lb	0.50	50.00
5	Formwork	100	sq ft	1.00	100.00
6	Brickwork	100	sq ft	4.00	400.00
7	Masonry	100	sq ft	3.00	300.00
8	Plaster	100	sq ft	2.00	200.00
9	Paint	100	sq ft	1.00	100.00
10	Roofing	100	sq ft	5.00	500.00
11	Insulation	100	sq ft	1.00	100.00
12	Windows	100	sq ft	10.00	1000.00
13	Doors	100	sq ft	5.00	500.00
14	Interior Finishes	100	sq ft	2.00	200.00
15	Electrical	100	sq ft	1.00	100.00
16	Plumbing	100	sq ft	1.00	100.00
17	HVAC	100	sq ft	1.00	100.00
18	Landscaping	100	sq ft	1.00	100.00
19	Site Work	100	sq ft	1.00	100.00
20	Other	100	sq ft	1.00	100.00
TOTAL					5000.00

ESTIMATE BY: [Name]
DATE: [Date]
SCALE: 1/8" = 1'-0"



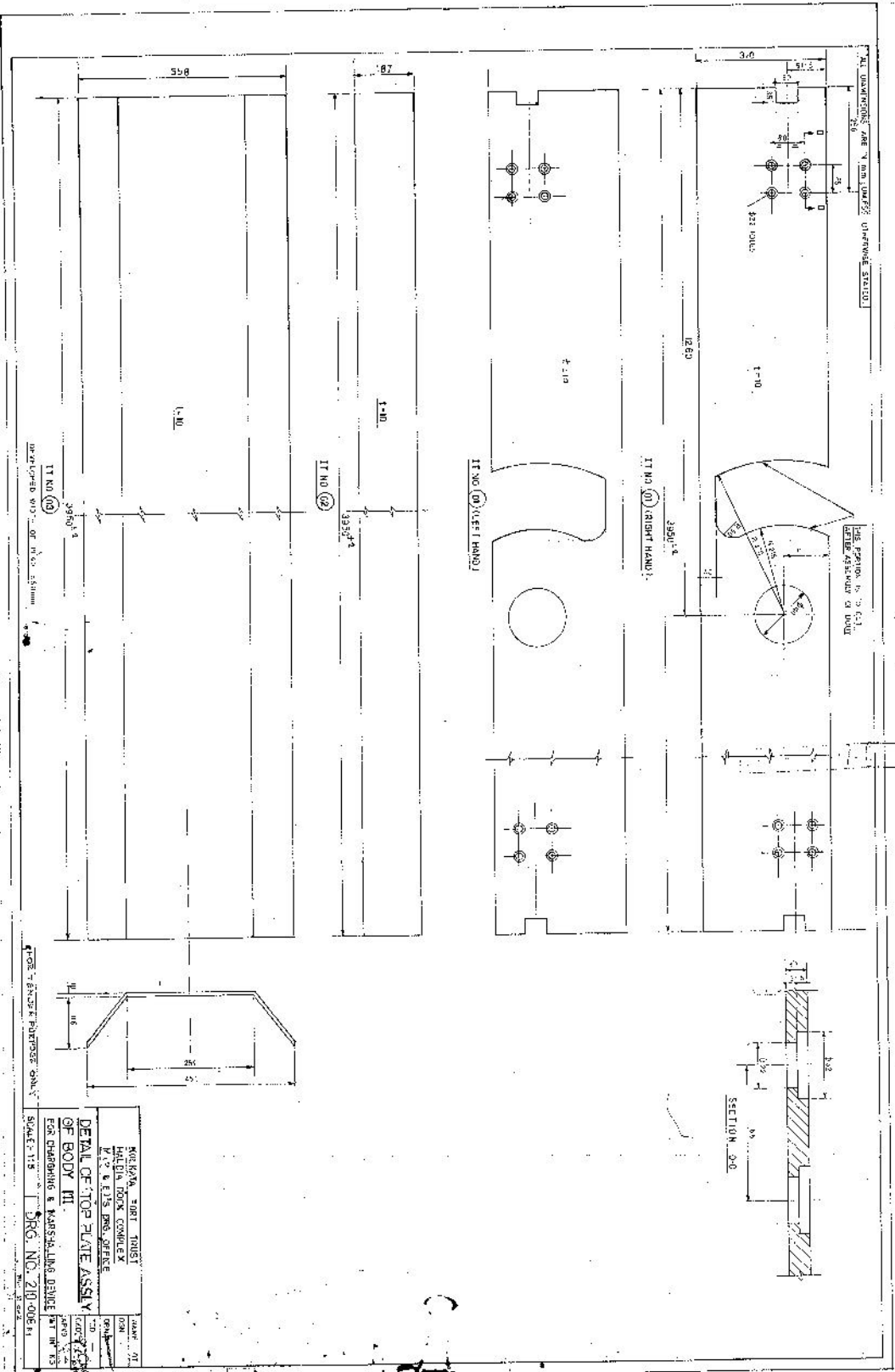
NOTE: 1. ALL DIMENSIONS ARE IN MILLIMETERS. 2. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE OR THE CENTER OF THE SHAFT. 3. THE SURFACE FINISH SHALL BE AS SPECIFIED IN THE DRAWING. 4. THE MATERIAL SHALL BE AS SPECIFIED IN THE DRAWING. 5. THE TOLERANCES SHALL BE AS SPECIFIED IN THE DRAWING. 6. THE DIMENSIONS SHALL BE TAKEN TO THE CENTER OF THE HOLE OR THE CENTER OF THE SHAFT. 7. THE SURFACE FINISH SHALL BE AS SPECIFIED IN THE DRAWING. 8. THE MATERIAL SHALL BE AS SPECIFIED IN THE DRAWING. 9. THE TOLERANCES SHALL BE AS SPECIFIED IN THE DRAWING. 10. THE DIMENSIONS SHALL BE TAKEN TO THE CENTER OF THE HOLE OR THE CENTER OF THE SHAFT.

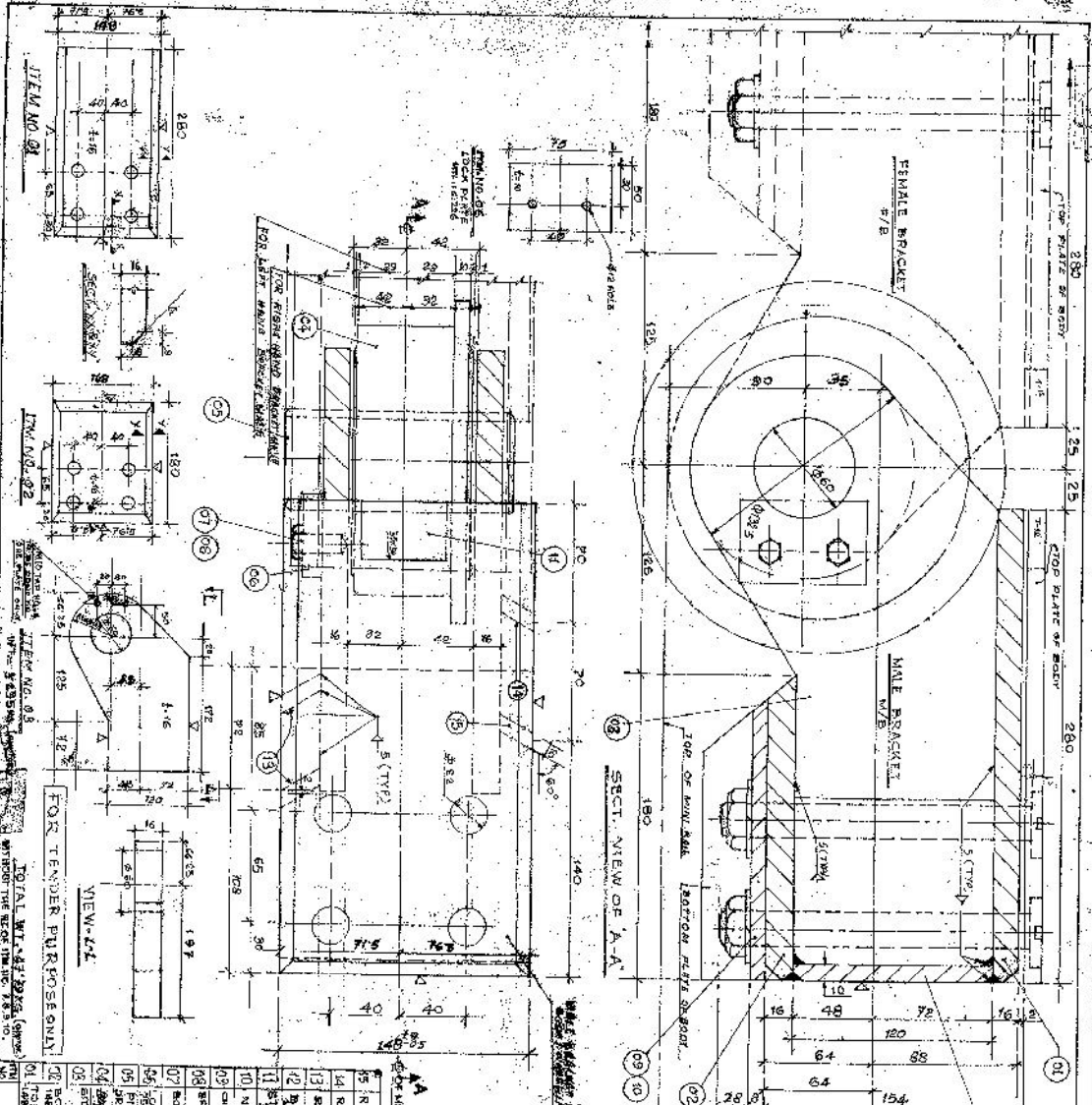
NO.	REVISION	DATE	BY	CHKD.	APP'D.
1	1	10/10/2020	10/10/2020	10/10/2020	10/10/2020

100% PLATE ASSEMBLY
100% PLATE ASSEMBLY
100% PLATE ASSEMBLY

GATEWAY

GATEWAY





ITEM NO.	DESCRIPTION	QTY	UNIT	REMARKS
1	WHEEL ASSEMBLY	1	EA	
2	WHEEL RIM	1	EA	
3	WHEEL HUB	1	EA	
4	WHEEL SPoke	12	EA	
5	WHEEL NUT	12	EA	
6	WHEEL BOLT	12	EA	
7	WHEEL WASHER	12	EA	
8	WHEEL LOCK WASH	12	EA	
9	WHEEL LOCK PLATE	12	EA	
10	WHEEL LOCK PIN	12	EA	
11	WHEEL LOCK RING	12	EA	
12	WHEEL LOCK SCREW	12	EA	
13	WHEEL LOCK BUSH	12	EA	
14	WHEEL LOCK PIN	12	EA	
15	WHEEL LOCK RING	12	EA	
16	WHEEL LOCK SCREW	12	EA	
17	WHEEL LOCK BUSH	12	EA	
18	WHEEL LOCK PIN	12	EA	
19	WHEEL LOCK RING	12	EA	
20	WHEEL LOCK SCREW	12	EA	
21	WHEEL LOCK BUSH	12	EA	
22	WHEEL LOCK PIN	12	EA	
23	WHEEL LOCK RING	12	EA	
24	WHEEL LOCK SCREW	12	EA	
25	WHEEL LOCK BUSH	12	EA	
26	WHEEL LOCK PIN	12	EA	
27	WHEEL LOCK RING	12	EA	
28	WHEEL LOCK SCREW	12	EA	
29	WHEEL LOCK BUSH	12	EA	
30	WHEEL LOCK PIN	12	EA	
31	WHEEL LOCK RING	12	EA	
32	WHEEL LOCK SCREW	12	EA	
33	WHEEL LOCK BUSH	12	EA	
34	WHEEL LOCK PIN	12	EA	
35	WHEEL LOCK RING	12	EA	
36	WHEEL LOCK SCREW	12	EA	
37	WHEEL LOCK BUSH	12	EA	
38	WHEEL LOCK PIN	12	EA	
39	WHEEL LOCK RING	12	EA	
40	WHEEL LOCK SCREW	12	EA	
41	WHEEL LOCK BUSH	12	EA	
42	WHEEL LOCK PIN	12	EA	
43	WHEEL LOCK RING	12	EA	
44	WHEEL LOCK SCREW	12	EA	
45	WHEEL LOCK BUSH	12	EA	
46	WHEEL LOCK PIN	12	EA	
47	WHEEL LOCK RING	12	EA	
48	WHEEL LOCK SCREW	12	EA	
49	WHEEL LOCK BUSH	12	EA	
50	WHEEL LOCK PIN	12	EA	
51	WHEEL LOCK RING	12	EA	
52	WHEEL LOCK SCREW	12	EA	
53	WHEEL LOCK BUSH	12	EA	
54	WHEEL LOCK PIN	12	EA	
55	WHEEL LOCK RING	12	EA	
56	WHEEL LOCK SCREW	12	EA	
57	WHEEL LOCK BUSH	12	EA	
58	WHEEL LOCK PIN	12	EA	
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60	WHEEL LOCK SCREW	12	EA	
61	WHEEL LOCK BUSH	12	EA	
62	WHEEL LOCK PIN	12	EA	
63	WHEEL LOCK RING	12	EA	
64	WHEEL LOCK SCREW	12	EA	
65	WHEEL LOCK BUSH	12	EA	
66	WHEEL LOCK PIN	12	EA	
67	WHEEL LOCK RING	12	EA	
68	WHEEL LOCK SCREW	12	EA	
69	WHEEL LOCK BUSH	12	EA	
70	WHEEL LOCK PIN	12	EA	
71	WHEEL LOCK RING	12	EA	
72	WHEEL LOCK SCREW	12	EA	
73	WHEEL LOCK BUSH	12	EA	
74	WHEEL LOCK PIN	12	EA	
75	WHEEL LOCK RING	12	EA	
76	WHEEL LOCK SCREW	12	EA	
77	WHEEL LOCK BUSH	12	EA	
78	WHEEL LOCK PIN	12	EA	
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93	WHEEL LOCK BUSH	12	EA	
94	WHEEL LOCK PIN	12	EA	
95	WHEEL LOCK RING	12	EA	
96	WHEEL LOCK SCREW	12	EA	
97	WHEEL LOCK BUSH	12	EA	
98	WHEEL LOCK PIN	12	EA	
99	WHEEL LOCK RING	12	EA	
100	WHEEL LOCK SCREW	12	EA	

ARRANGEMENT OF SPIDERS
OF CHASSIS MARSHAL

DRG NO. 210.012 R2

SCALE -

ITEM NO. 12

ITEM NO. 11

ITEM NO. 10

ITEM NO. 9

ITEM NO. 8

ITEM NO. 7

ITEM NO. 6

ITEM NO. 5

ITEM NO. 4

ITEM NO. 3

ITEM NO. 2

ITEM NO. 1

ITEM NO. 0

ITEM NO. -1

ITEM NO. -2

ITEM NO. -3

ITEM NO. -4

ITEM NO. -5

ITEM NO. -6

ITEM NO. -7

ITEM NO. -8

ITEM NO. -9

ITEM NO. -10

ITEM NO. -11

ITEM NO. -12

ITEM NO. -13

ITEM NO. -14

ITEM NO. -15

ITEM NO. -16

ITEM NO. -17

ITEM NO. -18

ITEM NO. -19

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ITEM NO. -89

ITEM NO. -90

ITEM NO. -91

ITEM NO. -92

ITEM NO. -93

ITEM NO. -94

ITEM NO. -95

ITEM NO. -96

ITEM NO. -97

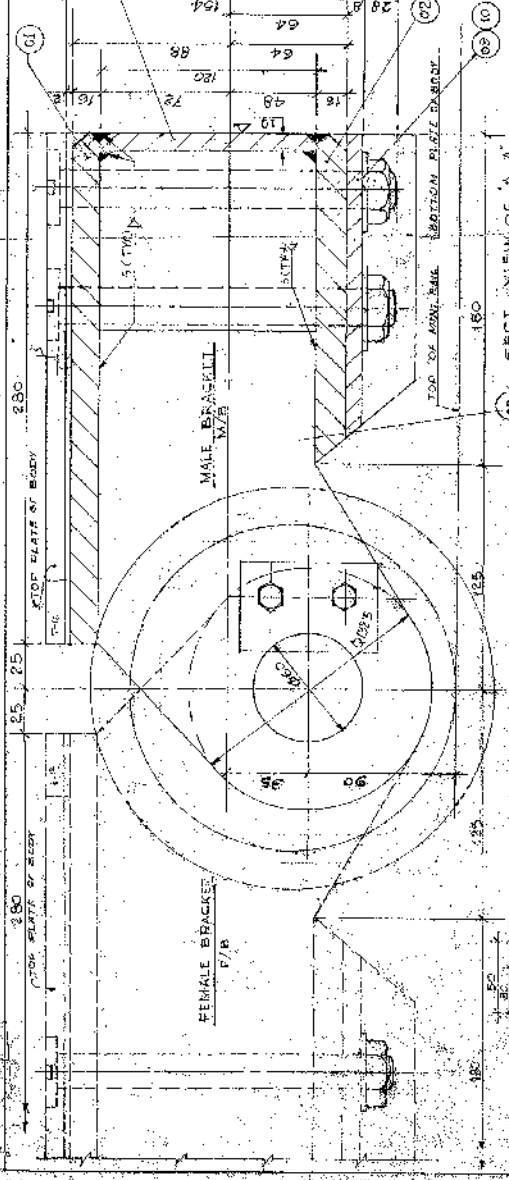
ITEM NO. -98

ITEM NO. -99

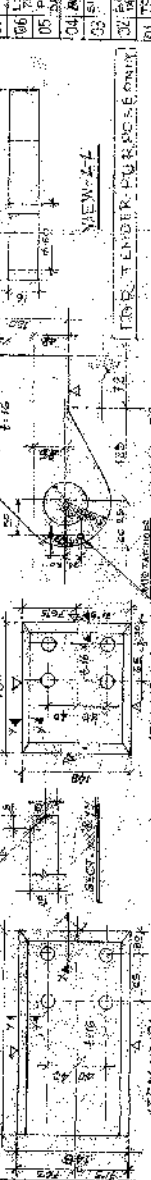
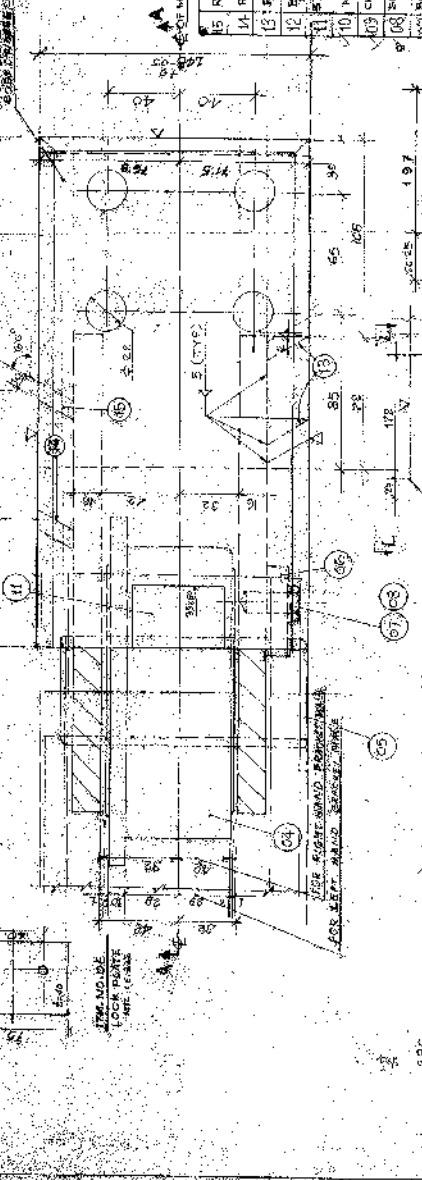
ITEM NO. -100

ITEM	DESCRIPTION	QTY	DATE	APPROVED
2	ITEM NO. 12	1	10/25/50	W. H. H.
1	ITEM NO. 11	1	10/25/50	W. H. H.

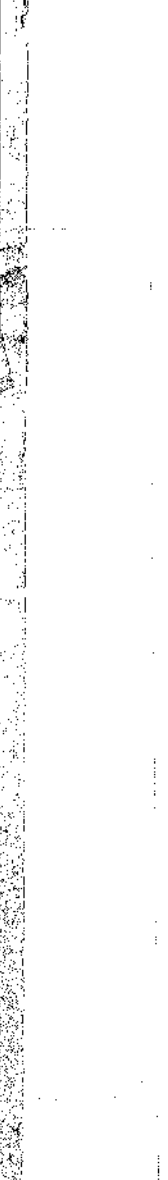
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE STATED.



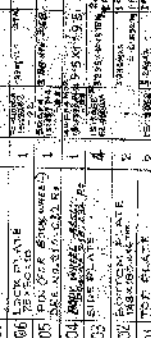
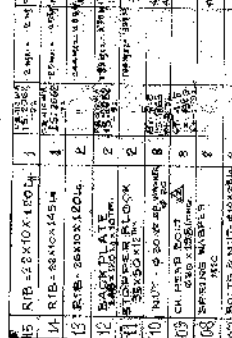
SECTION VIEW A-A



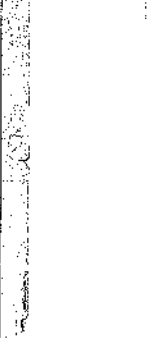
SECTION VIEW B-B



SECTION VIEW C-C



SECTION VIEW D-D



ITEM	DESCRIPTION	QTY	DATE	APPROVED
1	ITEM NO. 11	1	10/25/50	W. H. H.
2	ITEM NO. 12	1	10/25/50	W. H. H.

ITEM	DESCRIPTION	QTY	DATE	APPROVED
1	ITEM NO. 11	1	10/25/50	W. H. H.
2	ITEM NO. 12	1	10/25/50	W. H. H.

TOTAL WEIGHT 1.10 LBS (approx.)

ITEM NO. 01

ITEM NO. 02

ITEM NO. 03

ITEM NO. 04

ITEM NO. 05

ITEM NO. 06

ITEM NO. 07

ITEM NO. 08

ITEM NO. 09

ITEM NO. 10

ITEM NO. 11

ITEM NO. 12

ITEM NO. 13

ITEM NO. 14

ITEM NO. 15

ITEM NO. 16

ITEM NO. 17

ITEM NO. 18

ITEM NO. 19

ITEM NO. 20

ITEM NO. 21

ITEM NO. 22

ITEM NO. 23

ITEM NO. 24

ITEM NO. 25

ITEM NO. 26

ITEM NO. 27

ITEM NO. 28

ITEM NO. 29

ITEM NO. 30

ITEM NO. 31

ITEM NO. 32

ITEM NO. 33

ITEM NO. 34

ITEM NO. 35

ITEM NO. 36

ITEM NO. 37

ITEM NO. 38

ITEM NO. 39

ITEM NO. 40

ITEM NO. 41

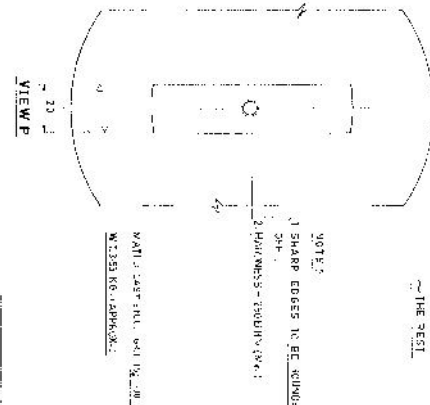
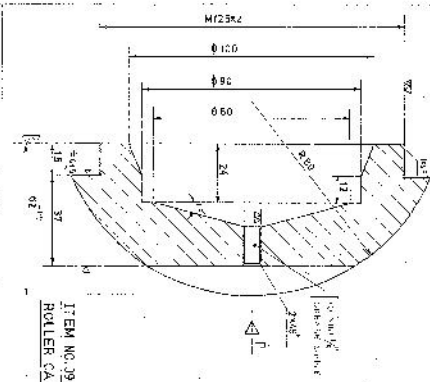
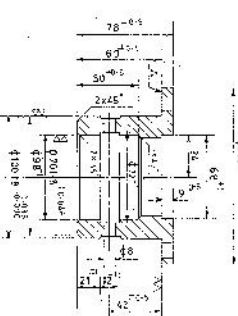
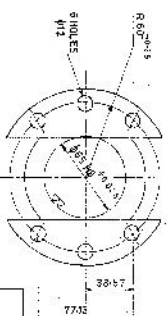
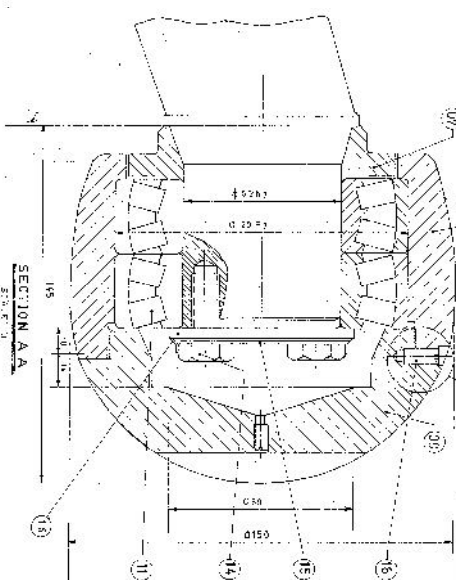
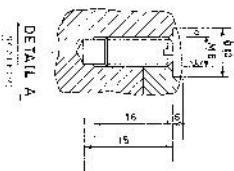
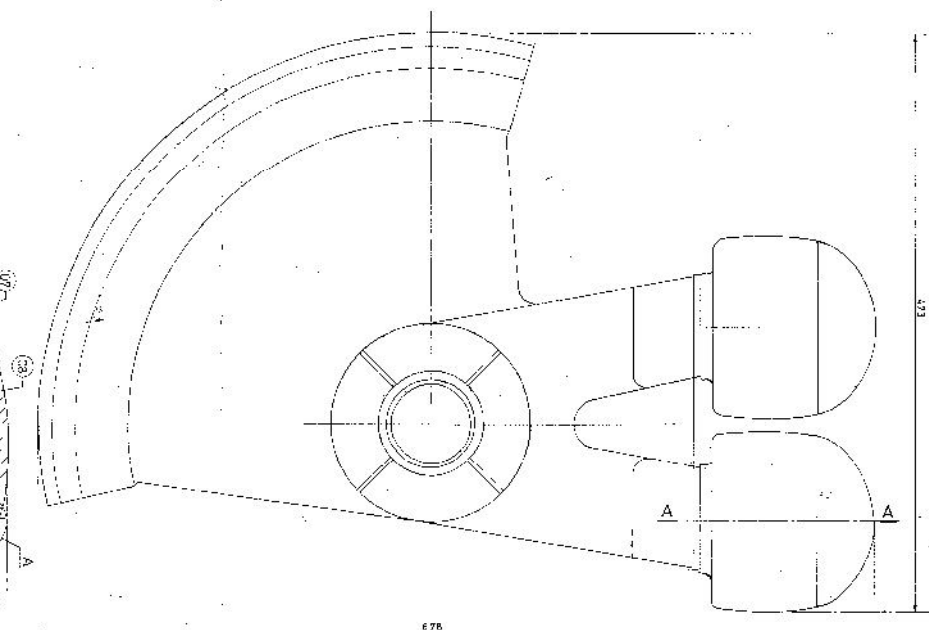
ITEM NO. 42

ITEM NO. 43

ITEM NO. 44

ITEM NO. 45

ITEM NO. 46



THE SURFACE 'X' & THE SURFACES #001R, #0200 & 0554
ARE TO BE MACHINED IN SIMULT SETTING.

$$\text{WT. } 0.27 \text{ Kg. (6.75 oz.)}$$

ITEM NO. 36
BUSH

NOTE:-
M. ALINO MAKES SAT/TA

[illegible]

... 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 28

PROPELLING ARM ASSY. CRIGHT	DRG. NO. 210-014
FOR CHARGING & MARSHALLING USE	
SCALE: 1/2"	

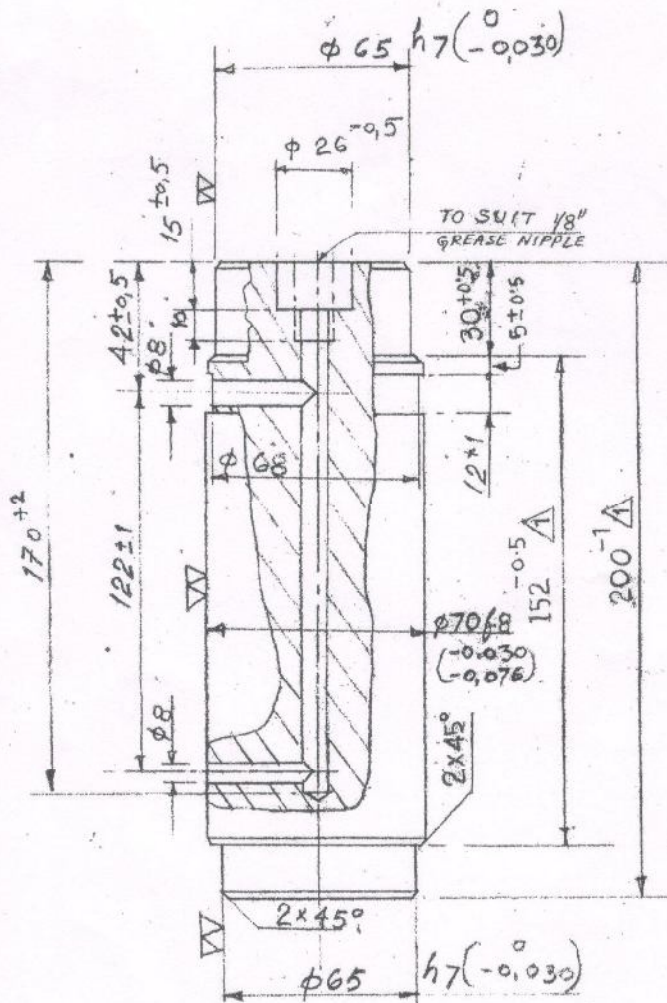
SCALE:1:7	DRG. NO. 210-014
-----------	------------------

210.024 R1

FOR TENDER PURPOSE ONLY

THE REST

ALL DIMENSIONS ARE IN mm; UNLESS OTHERWISE STATED.



HARDEN TO BHN 240~280

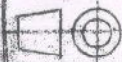
1	DIMENSIONS 200 & 152 WERE 205 & 157 RESPECTIVELY	CKD.	DATE	APPD.	DATE
REV.NO.	DESCRIPTION	CKD.	DATE	APPD.	DATE

KOLKATA PORT TRUST
HALDIA DOCK COMPLEX
MANAGER (P&E)'S D.R.G. OFFICE.

SCALE 1:2

PIN
FOR PROPELLING ARM

WT. 7.00kg
(APPROX.)



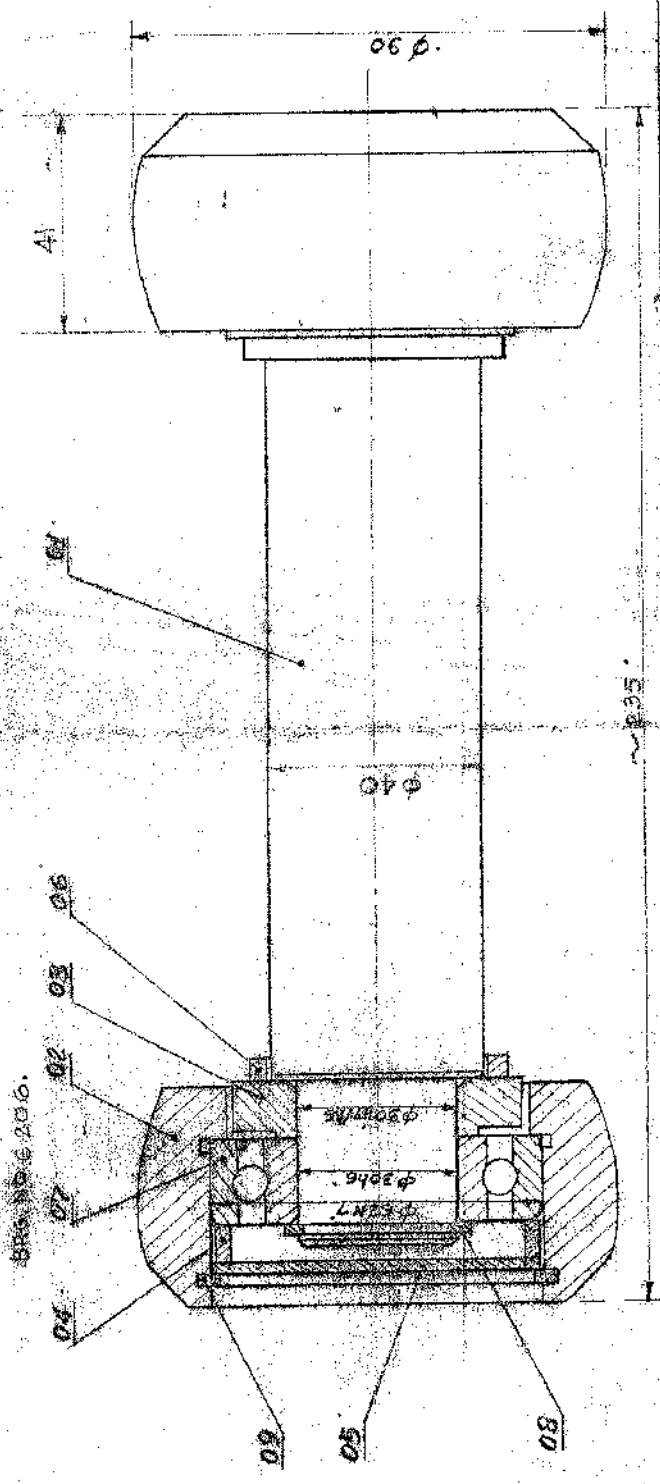
MATL. STEEL - 42CrMo2 - IS-1570 - P1 # 88

DESIGNED	—	—
DRAWN	—	—
TRACED	ojha	26.8.88
CHECKED	of K. Subh	
APPROVED	an. Roy	31.8.88

DRAWING NO.

210.024 R1

ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.



FOR TENDER PURPOSE ONLY

NOTE:-
 1) THE ASSEMBLY OF SHELL, BEARING, ETC. TO BE DONE AFTER THE PIN, DRG. NO. 210-029, HAS BEEN ASSEMBLED ON THE DRAW BAR ASSEMBLY, DRG. NO. 210-065.
 2. BEARING MAKES :- SKF/FAG.

SL. NO.	DRG. NO.	DESCRIPTION	QTY	MATERIAL	UNIT	QTY
09	15.3075	CLIP LIGHT BEZ	2	55.517 / 51570	PCS	2
08	15.3075	CLIP LIGHT	2	- DO -	PCS	2
07	6206 2RS1	DEEP GROOVE BEARING	2	SKF/FAG	PCS	2
06	210.031/A	RING	2	16 M03H / 151570-PI T-92	PCS	2
05	210.031/3	COVER PLATE	2	- DO -	PCS	2
04	210.031/2	SPACER RING	2	30	PCS	2
03	210.031/1	BUSH	2	30	PCS	2
02	210.030	SHELL	2	42 CT 4 M02 / 151570-PI T-92	PCS	2
01	210.029	PIN	1	DO -	PCS	1

CALCUTTA PORT TRUST
 HALDIA DOCK COMPLEX
 MANAGER (PRE)'S DRG. OFFICE

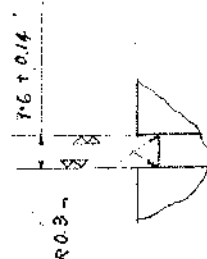
SCALE 1:1

WT 3.39 KG.

ROLLER ASSEMBLY

FOR DRAW BAR ASSEMBLY

210.029

$$\Delta(\mathcal{M})$$


VIEW ON I
SCALE-4:1

HARDNESS: BHN 240-270

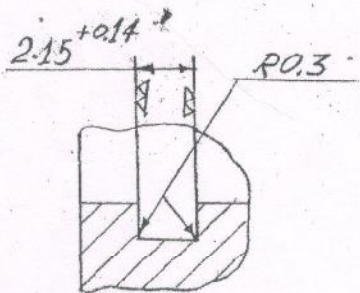
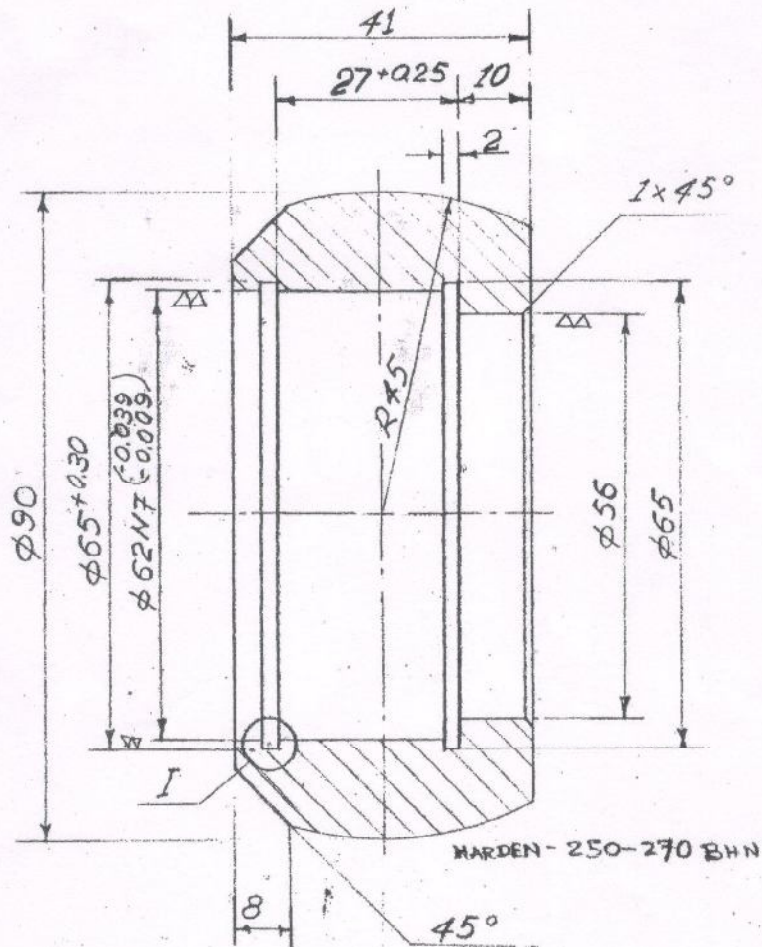
DESIGN. NO.	44
DRWN.	—
TCD. S.B.	—
EXD.	1/25
APPD.	6/18/64
DRG. NO.	910029

CALCUTTA PORT TRUST.	
HALDIA DOCK COMPLEX	
MANAGER (P&E)'S DRG. OFFICE.	
SCALE	1:1
TITLE	PIN
NO. 1226	FOR ROLLER ASSY.
DATE	1/10/64

FOR TENDER PURPOSE ONLY

ALL DIMENSIONS ARE IN mm ; UNLESS OTHERWISE STATED .

$\nabla(\nabla)$

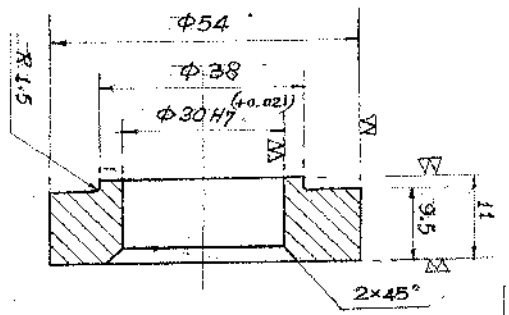


DETAIL - I
(SCALE 4:1)

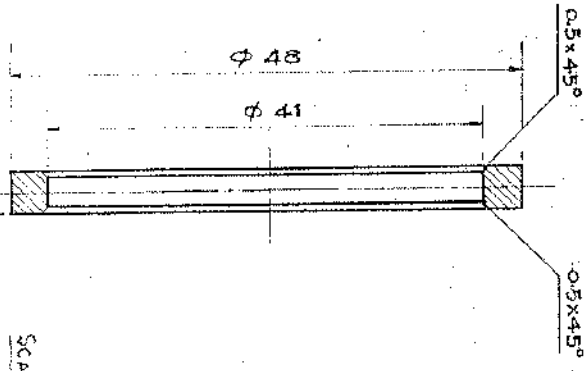
FOR TENDER PURPOSE ONLY

CALCUTTA PORT TRUST HALDIA DOCK COMPLEX MANAGER (P&E)'S DRG. OFFICE.		NAME	DATE
SCALE	TITLE	DESIGNED	—
1:1	SHELL FOR ROLLER ASSY.	DRAWN	—
		TRACED	13.9.82
		CHECKED	17.9.82
		APPROVED	
		DRAWING NO. 210.030	
	MATL: 12 CR 4 MO2		

ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.
ITEM NO.1.



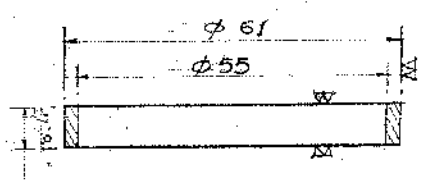
BUSH
MATERIAL: 16 M03H
IS: 1570 Pt-7-92
DRG. NO. 210.031/1
ITEM NO. 4.
V ALL OVER



SCALE 2:1
FOR TENDER PURPOSE ONLY
DRG. NO. 210.031/4

ITEM NO.2

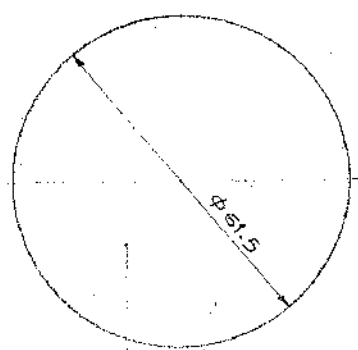
V THE REST



SPACER RING
MATERIAL: 16 M03H
IS: 1570 Pt-7-92
DRG. NO. 210.031/2

ITEM NO.3.

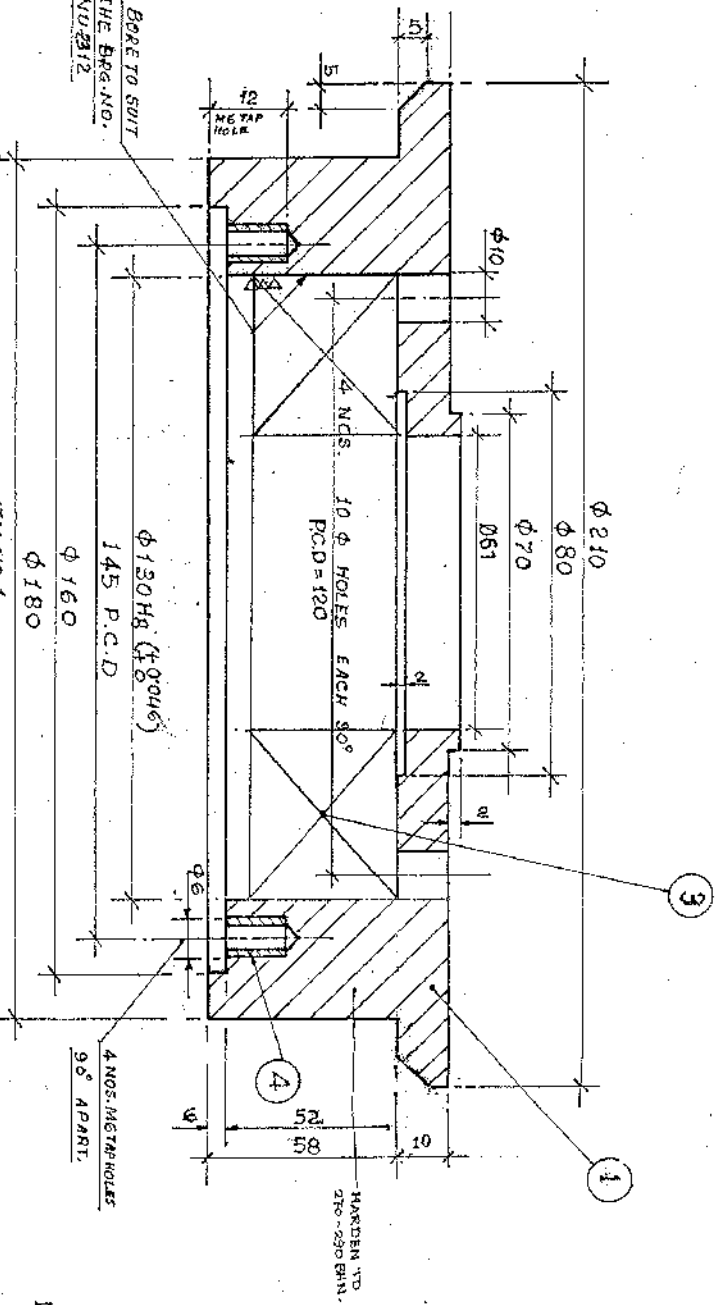
V ALL OVER



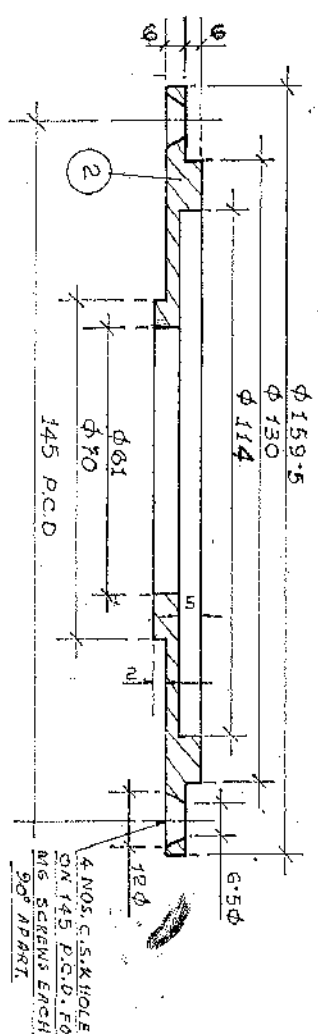
COVER PLATE
MATERIAL: 16 M03H
IS: 1570 Pt-7-92
DRG. NO. 210.031/3

SCALE	TITLE	COMPONENTS	DRG. NO.
1:1	CALCUTTA PORT TRUST	DESIGN --	210.031
2:1	HALDIA DOCK COMPLEX	DRW. --	
1:1	MANAGER (P&E)'S DRG. OFFICE	TCO. <i>Chen</i>	
1:1		APVD. <i>Chen</i>	

BORE TO SUIT
THE BRAND.
NO 2312



17M. NO. 1
WT. 8.481 kg



ITM. NO. 2
WT. 1025 kg.

FOR TENDER PURPOSE ONLY

2	DRAWING GENERALLY REVISED	DATE	BY	CHKD	DATE	APPD	DATE
REVNO	DESCRIPTION						

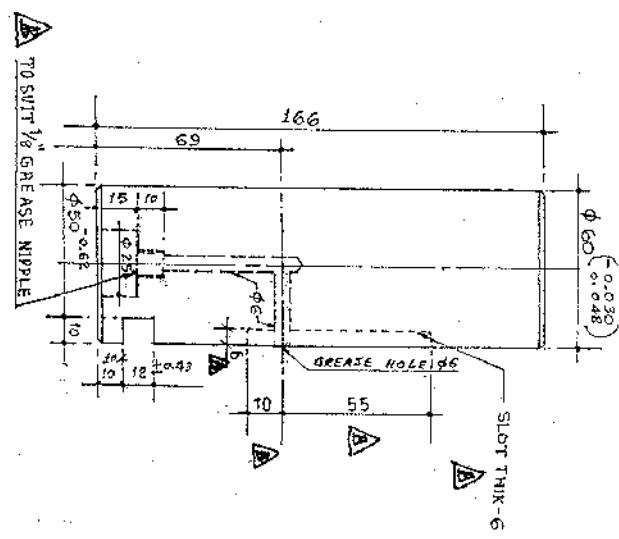
5.	210-032R ₁	PIN	42C47 M02	150C47
4.	210-032R ₁	C/S K. SCREW	1515R37-P4-68	1515R37-P4-68
3.	210-032R ₁	ROLLER BEARING	NO. N12B12	
2.	210-032R ₂	WHEEL COVER	1515R37-P4-68	
1.	210-032R ₁	WHEEL	1515R37-P4-68	
ITEM NO.	DRG. NO.	DESCRIPTION	QTY	MATERIAL
KOLKATA PORT TRUST				
HALDIA DOCK COMPLEX				
M/P&E'S DRG.OFFICE				
BODY WHEEL ASSELY				
OF C.B AND M.B				
SCALE.				
APVD. <i>[Signature]</i>				
CHKD. <i>[Signature]</i>				
DWN. <i>[Signature]</i>				
DGN. <i>[Signature]</i>				
NAME DATE				

NOTE :-
I, MAKE

MAKE OF BEARING - SKF / FAG

Correction done on 29.01.2003.

(S. 10.5)

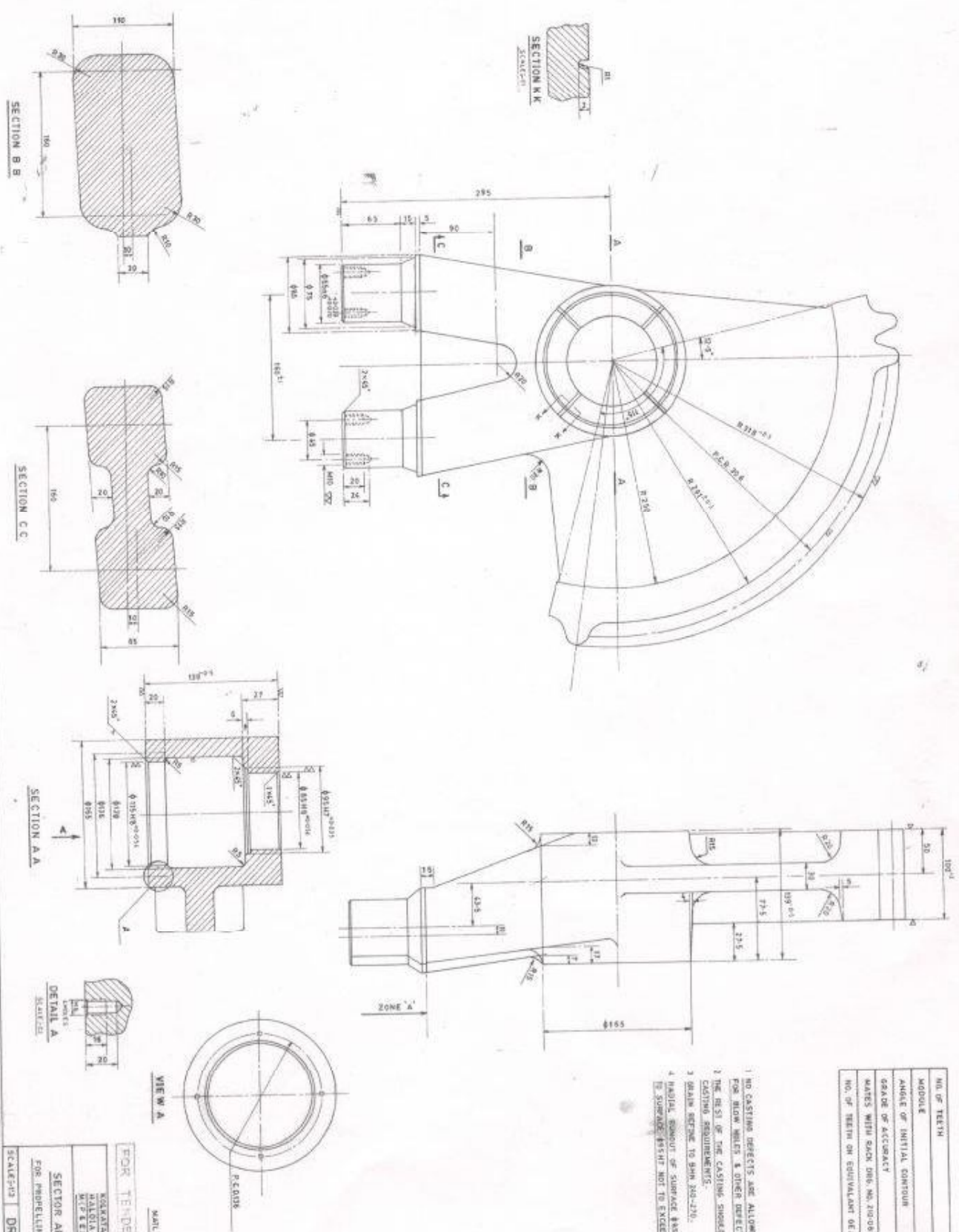


DETAIL OF PIN, ITM.5

CASEHARDEN TO 250-270 BHN
WITH CASEDEPTH 2 MM.

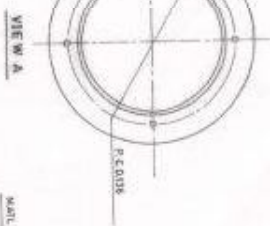
GATEWAY

GATEWAY



NO. OF TEETH	2	18
MODULE	m	12
ANGLE OF INITIAL CONTACT	6	20°
GRADE OF ACCURACY	-	9X
NOTES WITH EACH Dwg. NO. 210-054		
NO. OF TEETH OR EQUIVALENT GEAR		
	50	

1. NO CASTING DEFECTS ARE ALLOWED IN ZONE 'A' & CHECK FOR BLOW HOLES & OTHER DEFECTS BY X-RAY.
2. THE DESIGN OF THE CASTING SHOULD CONFORM TO GENERAL CASTING REQUIREMENTS.
3. GRAIN REFINE TO BHN 300-320.
4. HANDLE, REMOVAL OF SURFACE DEFECTS & DIMENSIONS RELATIVE TO SURFACE FINISH NOT TO EXCEED 0.03mm.

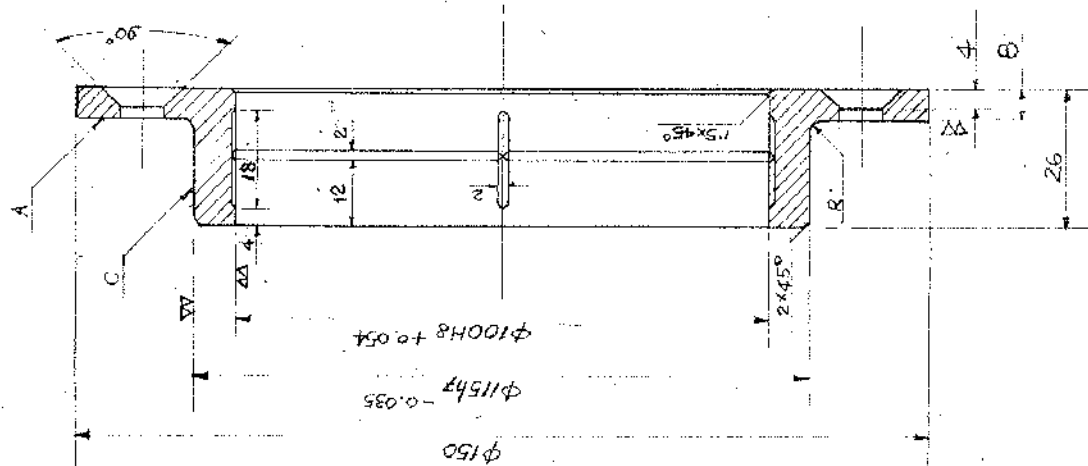


FOR TENDER PURPOSE ONLY
 MATERIAL SPECIFICATION
 FOR PROPELLING AND ASSOCIATED
 SCALE: 1:100
 DRG. NO. 210-054

THE TEST

TECHNICAL REQUIREMENTS

1. NON-PERPENDICULARITY OF SURFACE 'A' W.R.T. NOT TO EXCEED 0.02 MM.
2. RADIAL RUN OUT OF SURFACE 'C' W.R.T. AXIS OF 'B' NOT TO EXCEED 0.02 MM.
3. HARDNESS 250 BHN UP TO A CASE DEPTH 2 MM.



FOR TENDER PURPOSE ONLY.

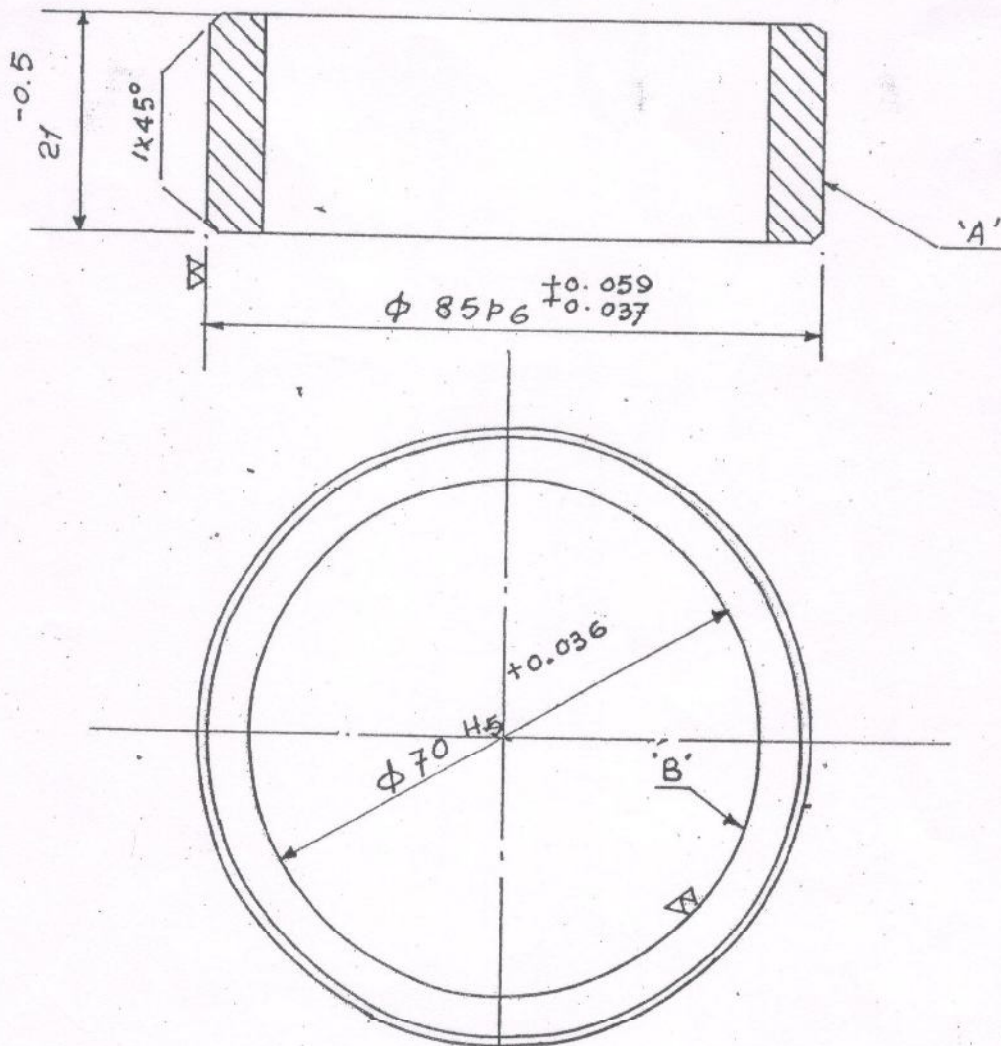
NAME	DATE
DESIGN	
DRAWN	
TC'D	3/20/68
CK'D	3/20/68
AP'D	3/20/68
DRG. NO.	
CIP-015	

CALCUTTA PORT TRUST	
HALDIA DOCK COMPLEX	
MANAGER (P&E)'S DRG. OFFICE	
SCALE	1:1
TITLE	BOTTOM BUSH
FOR REFERENCE AND APPROVAL	
MANAGER'S DRG. OFFICE	
STAMP NO. 4	

WT	105 kg
+	+

▽ THE REST

TECHNICAL REQUIREMENT
RADIAL RUN OUT OF SURFACE 'A' W.R.T.
AXIS OF 'B' NOT TO EXCEED 0.03 mm.



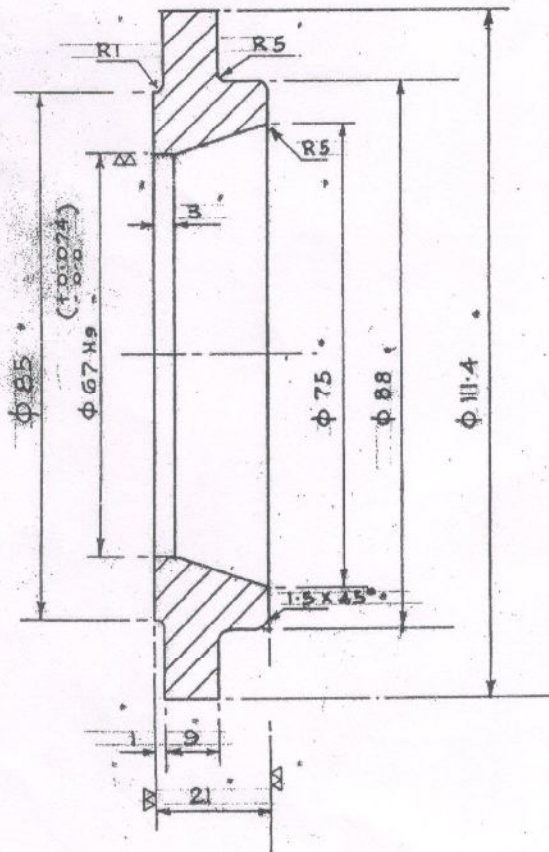
FOR TENDER PURPOSE ONLY.

HARDNESS - 250 BHN.

<u>CALCUTTA PORT TRUST</u> <u>HALDIA DOCK COMPLEX</u> <u>MANAGER (P&E'S DRG. OFFICE)</u>		NAME DT DGN. DWN. TCD. <i>P. S. S.</i> CKD. <i>W. S.</i> APVD. DRG. NO. 210.056
SCALE 1:1 WT. 0.30 kg (approx.)	TITLE <u>BUSH</u> (FOR PROPELLING ARM ASSY) STEEL ENGIN 151570 PF 4-88	

ALL DIMENSIONS ARE IN mm ; UNLESS OTHERWISE STATED .

▽ THE REST.

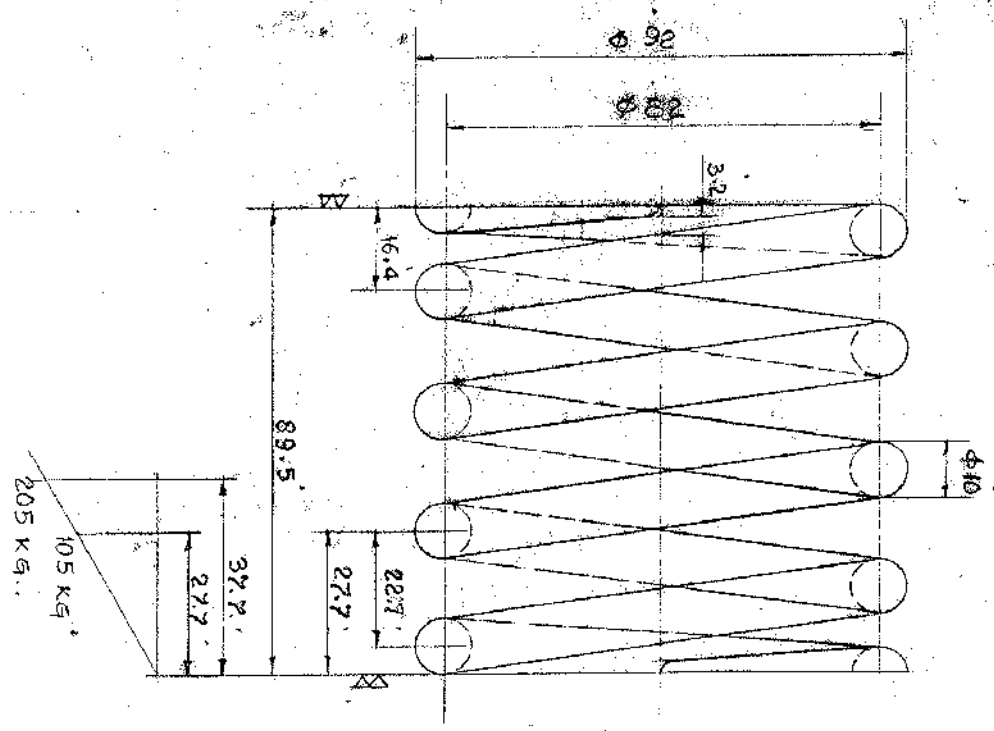


FOR TENDER PURPOSE ONLY.

CALCUTTA PORT TRUST		NAME	DR
HALDIA DOCK COMPLEX		DGN.	—
M(P&E)'S DRG. OFFICE		DRM.	—
SCALE 1:1		ICD. #	12.4.89
WASHER		CKD.	—
FOR PROPELLING ARMS		APVD.	—
ASSEMBLY (PIVOT PIN)		DRG. NO.	210.057
MTRL STEEL 500H			
18/16702-11-68			

850.012

ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.



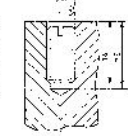
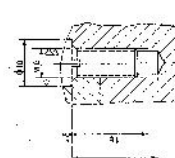
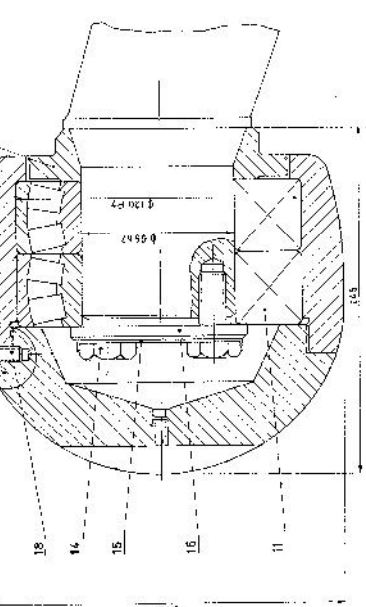
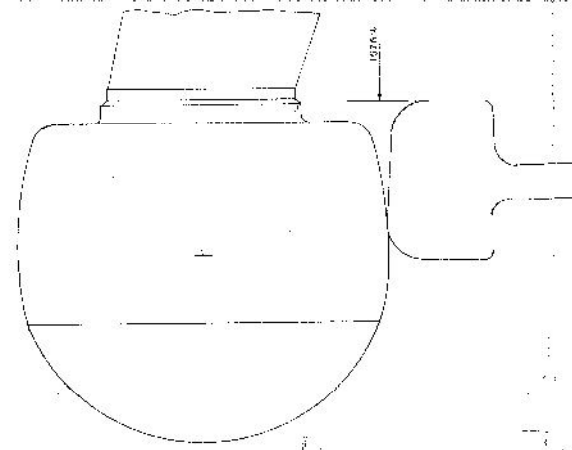
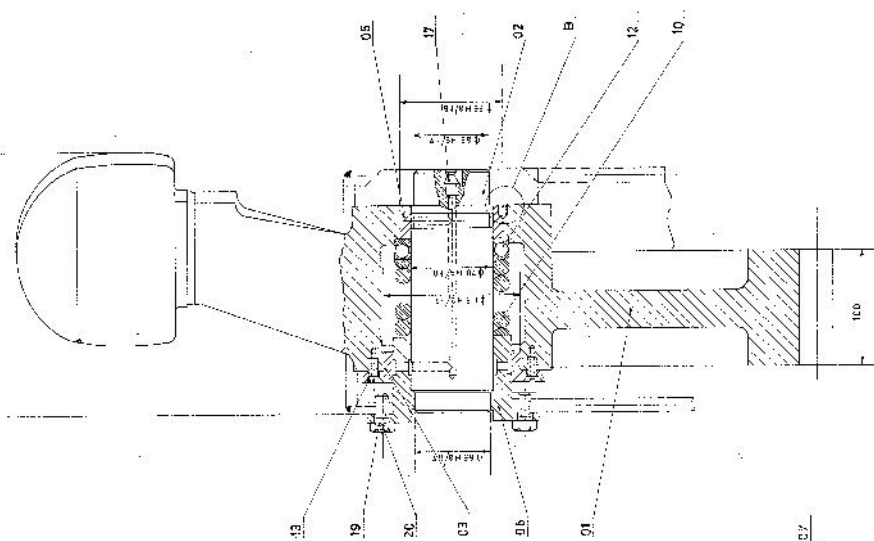
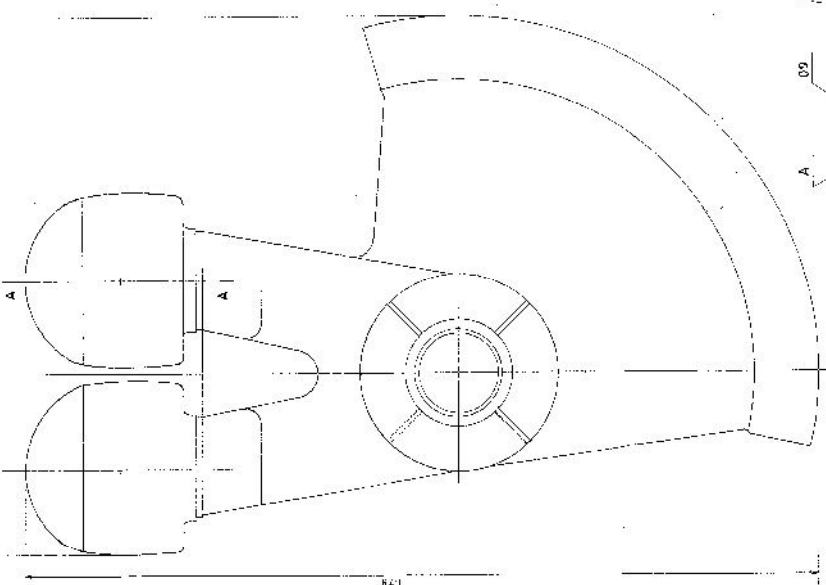
1	TOTAL LENGTH OF WIRE	1291.5
2	HAND OF WINDING	RIGHT
3	NUMBER OF ACTIVE COILS	3.5
4	NUMBER OF TOTAL COILS	5.0
5	SPRING STIFFNESS	5.15 kg/mm
6	ALLOWABLE TORSIONAL STRENGTH	60 kg/mm ²
7	MODULUS OF RIGIDITY	8500 kg/mm ²

TECHNICAL REQUIREMENTS

1. SHARP EDGES SHOULD BE ROUNDED OFF.
2. NON-PERPENDICULARITY OF THE AXIS OF SPRING W/L TO ENDS SHOULD NOT BE MORE THAN 1MM ON THE LENGTH OF SPRING.
3. HARDNESS SHOULD BE H.R.C 45-50.
4. THE END SURFACE SHOULD OCCUPY 3/4 OF COIL AND THICKNESS AT THE ENDS SHOULD BE 2.5 MM MINIMUM.

FOR TENDER PURPOSE ONLY

CALCUTTA PORT TRUST HALDIA DOCK COMPLEX MANAGER (P&S) DRS. OFFICE	
SCALE: 1/1	TITLE
WEIGHT: 0.2 KG	SPRING
MAT'L: STEEL - 55	IS: 1526 - 1948



REF	REF. NO.	REF. NAME	QTY	UNIT	QTY	UNIT
20	15-1360	PROP. ARM ASSY (LEFT)	1	EA	1	EA
19	15-1363	PROP. ARM ASSY (RIGHT)	1	EA	1	EA
18	15-1368	PROP. ARM ASSY (MID)	1	EA	1	EA
17	15-1369	PROP. ARM ASSY (REAR)	1	EA	1	EA
16	15-1370	PROP. ARM ASSY (FRONT)	1	EA	1	EA
15	15-1371	PROP. ARM ASSY (MID)	1	EA	1	EA
14	15-1372	PROP. ARM ASSY (REAR)	1	EA	1	EA
13	15-1373	PROP. ARM ASSY (FRONT)	1	EA	1	EA
12	15-1374	PROP. ARM ASSY (MID)	1	EA	1	EA
11	15-1375	PROP. ARM ASSY (REAR)	1	EA	1	EA
10	15-1376	PROP. ARM ASSY (FRONT)	1	EA	1	EA
09	15-1377	PROP. ARM ASSY (MID)	1	EA	1	EA
08	15-1378	PROP. ARM ASSY (REAR)	1	EA	1	EA
07	15-1379	PROP. ARM ASSY (FRONT)	1	EA	1	EA
06	15-1380	PROP. ARM ASSY (MID)	1	EA	1	EA
05	15-1381	PROP. ARM ASSY (REAR)	1	EA	1	EA
04	15-1382	PROP. ARM ASSY (FRONT)	1	EA	1	EA
03	15-1383	PROP. ARM ASSY (MID)	1	EA	1	EA
02	15-1384	PROP. ARM ASSY (REAR)	1	EA	1	EA
01	15-1385	PROP. ARM ASSY (FRONT)	1	EA	1	EA
00	15-1386	PROP. ARM ASSY (MID)	1	EA	1	EA

FOR CHARGING & MARSHALLING BEETLE

SCALE 1:2 DRG. NO. 210-059

Year	Percent
1960	10
1965	12
1970	11
1975	13
1980	14

1. NO CRACKING DEFECTS ARE ALLOWED IN ZONE A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.
2. THE REST OF THE CASTING SHOULD CONFORM TO GENERAL CASTING REQUIREMENTS.
3. GRAIN SIZE TO BE IN 250-270.
4. REPAIRING OF SURFACE CRACKS & VENTING RELATIVE TO SURFACE AREA NOT EXCEED 0.001mm.

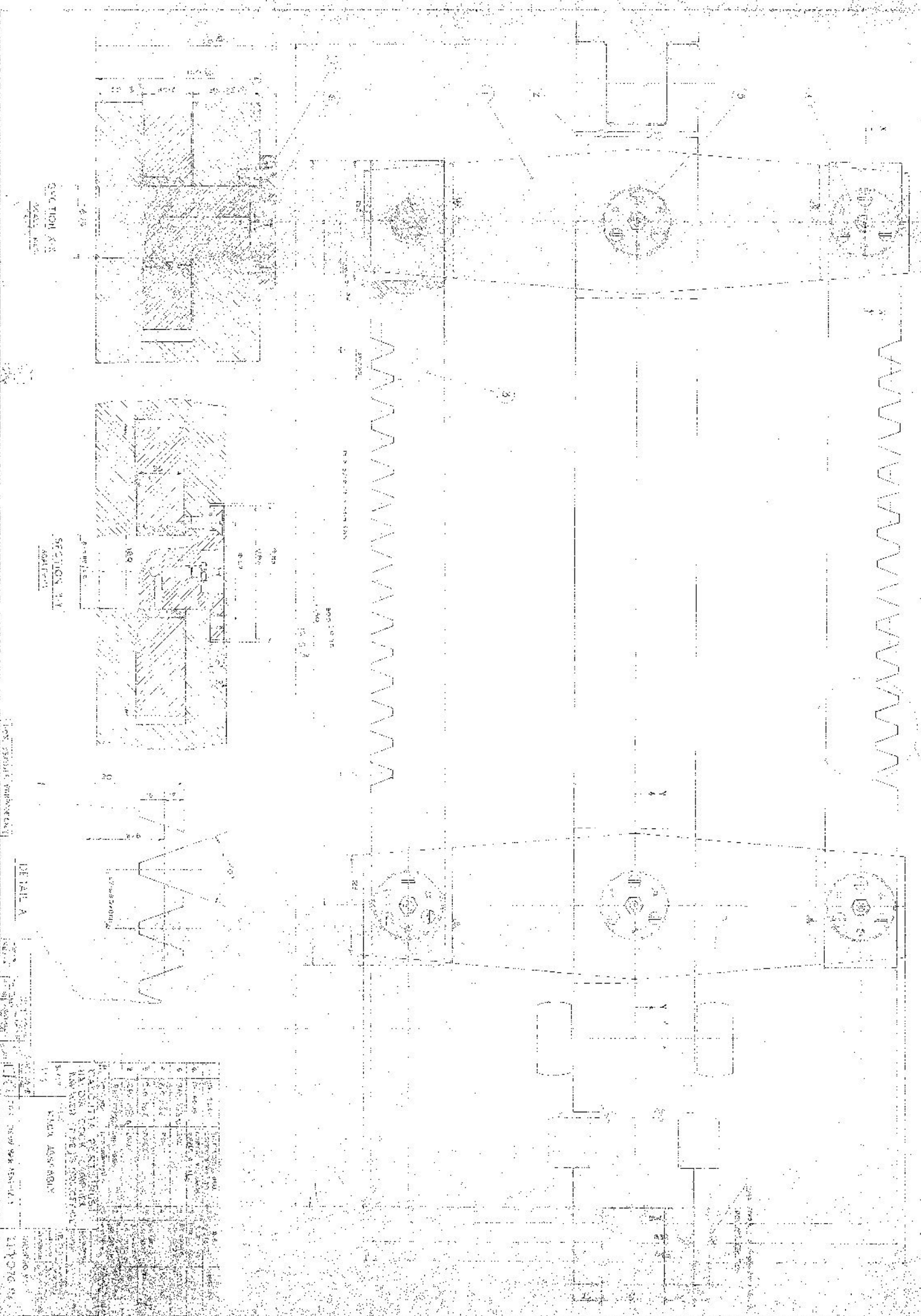


SECTION 38

SECTION 99

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ORG. NO. 210-060

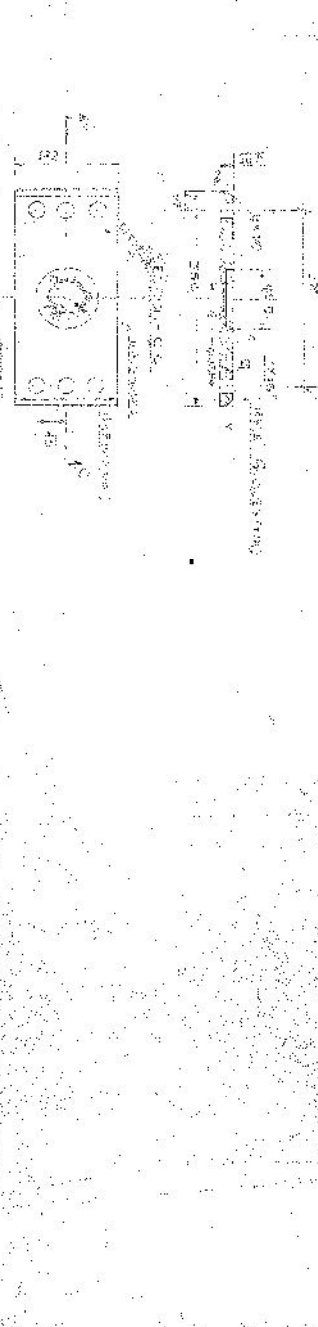
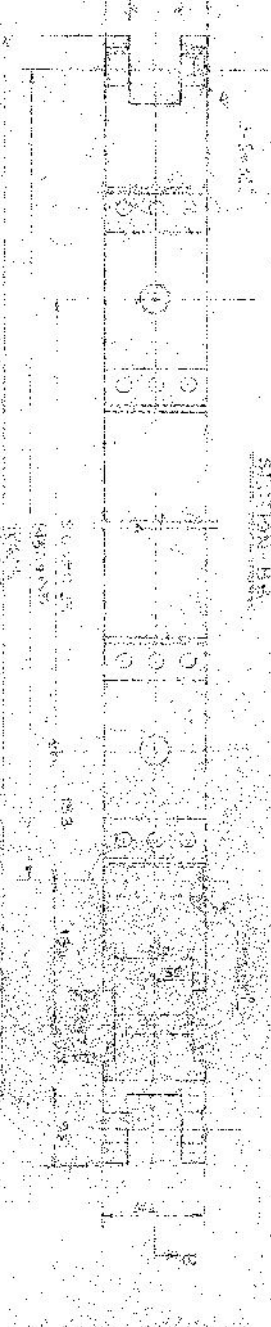
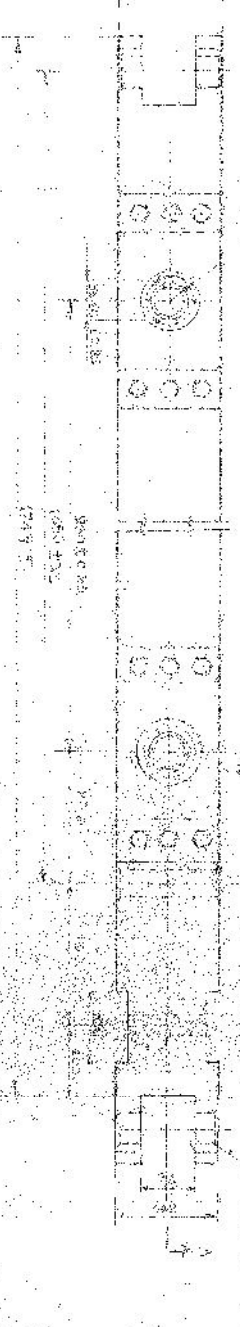


DETAIL A

NO.	DESCRIPTION	QTY	UNIT	REMARKS
1	PLATE	1	PC	
2	SCREW	4	PC	
3	WASHER	4	PC	
4	NUT	4	PC	
5	SPACER	1	PC	
6	WASHER	1	PC	
7	SCREW	1	PC	
8	NUT	1	PC	
9	WASHER	1	PC	
10	SCREW	1	PC	
11	NUT	1	PC	
12	WASHER	1	PC	
13	SCREW	1	PC	
14	NUT	1	PC	
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31	SCREW	1	PC	
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33	WASHER	1	PC	
34	SCREW	1	PC	
35	NUT	1	PC	
36	WASHER	1	PC	
37	SCREW	1	PC	
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87	WASHER	1	PC	
88	SCREW	1	PC	
89	NUT	1	PC	
90	WASHER	1	PC	
91	SCREW	1	PC	
92	NUT	1	PC	
93	WASHER	1	PC	
94	SCREW	1	PC	
95	NUT	1	PC	
96	WASHER	1	PC	
97	SCREW	1	PC	
98	NUT	1	PC	
99	WASHER	1	PC	
100	SCREW	1	PC	



SECTION A-A



DETAILS OF THE PLATE

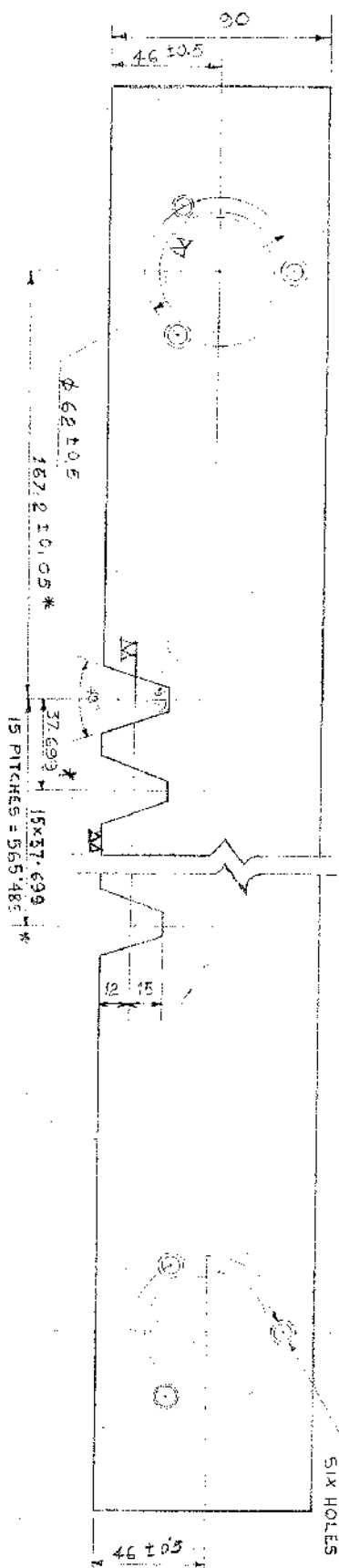
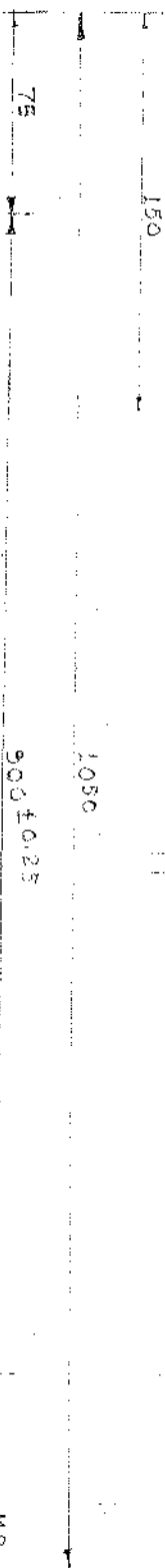
FOR THE PLATE

LINE	DESCRIPTION	QUANTITY	UNIT	TOTAL
1	PLATE	1	EA	1
2	SCREW	4	EA	4
3	WASHER	4	EA	4
4	NUT	4	EA	4
5	SPACER	1	EA	1
6	WASHER	1	EA	1
7	SCREW	1	EA	1
8	NUT	1	EA	1
9	WASHER	1	EA	1
10	SPACER	1	EA	1
11	WASHER	1	EA	1
12	SCREW	1	EA	1
13	NUT	1	EA	1
14	WASHER	1	EA	1
15	SPACER	1	EA	1
16	WASHER	1	EA	1
17	SCREW	1	EA	1
18	NUT	1	EA	1
19	WASHER	1	EA	1
20	SPACER	1	EA	1
21	WASHER	1	EA	1
22	SCREW	1	EA	1
23	NUT	1	EA	1
24	WASHER	1	EA	1
25	SPACER	1	EA	1
26	WASHER	1	EA	1
27	SCREW	1	EA	1
28	NUT	1	EA	1
29	WASHER	1	EA	1
30	SPACER	1	EA	1
31	WASHER	1	EA	1
32	SCREW	1	EA	1
33	NUT	1	EA	1
34	WASHER	1	EA	1
35	SPACER	1	EA	1
36	WASHER	1	EA	1
37	SCREW	1	EA	1
38	NUT	1	EA	1
39	WASHER	1	EA	1
40	SPACER	1	EA	1
41	WASHER	1	EA	1
42	SCREW	1	EA	1
43	NUT	1	EA	1
44	WASHER	1	EA	1
45	SPACER	1	EA	1
46	WASHER	1	EA	1
47	SCREW	1	EA	1
48	NUT	1	EA	1
49	WASHER	1	EA	1
50	SPACER	1	EA	1
51	WASHER	1	EA	1
52	SCREW	1	EA	1
53	NUT	1	EA	1
54	WASHER	1	EA	1
55	SPACER	1	EA	1
56	WASHER	1	EA	1
57	SCREW	1	EA	1
58	NUT	1	EA	1
59	WASHER	1	EA	1
60	SPACER	1	EA	1
61	WASHER	1	EA	1
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63	NUT	1	EA	1
64	WASHER	1	EA	1
65	SPACER	1	EA	1
66	WASHER	1	EA	1
67	SCREW	1	EA	1
68	NUT	1	EA	1
69	WASHER	1	EA	1
70	SPACER	1	EA	1
71	WASHER	1	EA	1
72	SCREW	1	EA	1
73	NUT	1	EA	1
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75	SPACER	1	EA	1
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77	SCREW	1	EA	1
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93	NUT	1	EA	1
94	WASHER	1	EA	1
95	SPACER	1	EA	1
96	WASHER	1	EA	1
97	SCREW	1	EA	1
98	NUT	1	EA	1
99	WASHER	1	EA	1
100	SPACER	1	EA	1

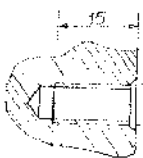
CHARTERED BY THE
FEDERAL BUREAU OF INVESTIGATION
U.S. DEPARTMENT OF JUSTICE
WASHINGTON, D.C. 20535
JAN 1964

ALL DIMENSIONS ARE IN mm., UNLESS OTHERWISE STATED

THE TEST

[illegible]

97. 100



- 1 DIMENSIONS *- THUS MARKED ARE TO BE KEPT IDENTICAL IN BOTH THE RACKS.
- 2 TOOTH PROFILE BASIC RACK PR. ANGLE 20°.
- 3 HARDNESS: 270-300 BHN.

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CALCUTTA PORT TRUST
HALDIA DOCK COMPLEX
MANAGER (P&E)'S DRG. OFFICE

SCALE III

2

WT: 55 kg

123

1

DESIGNED		
DRAWN		

DRAM.

Figure 1. Schematic diagram of the experimental setup.

754511

20

LOCKED

✓

APPENDIX

100

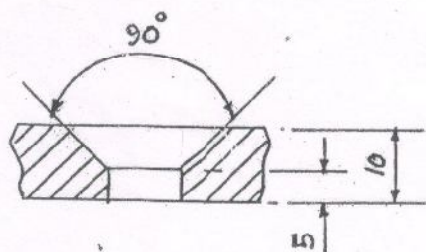
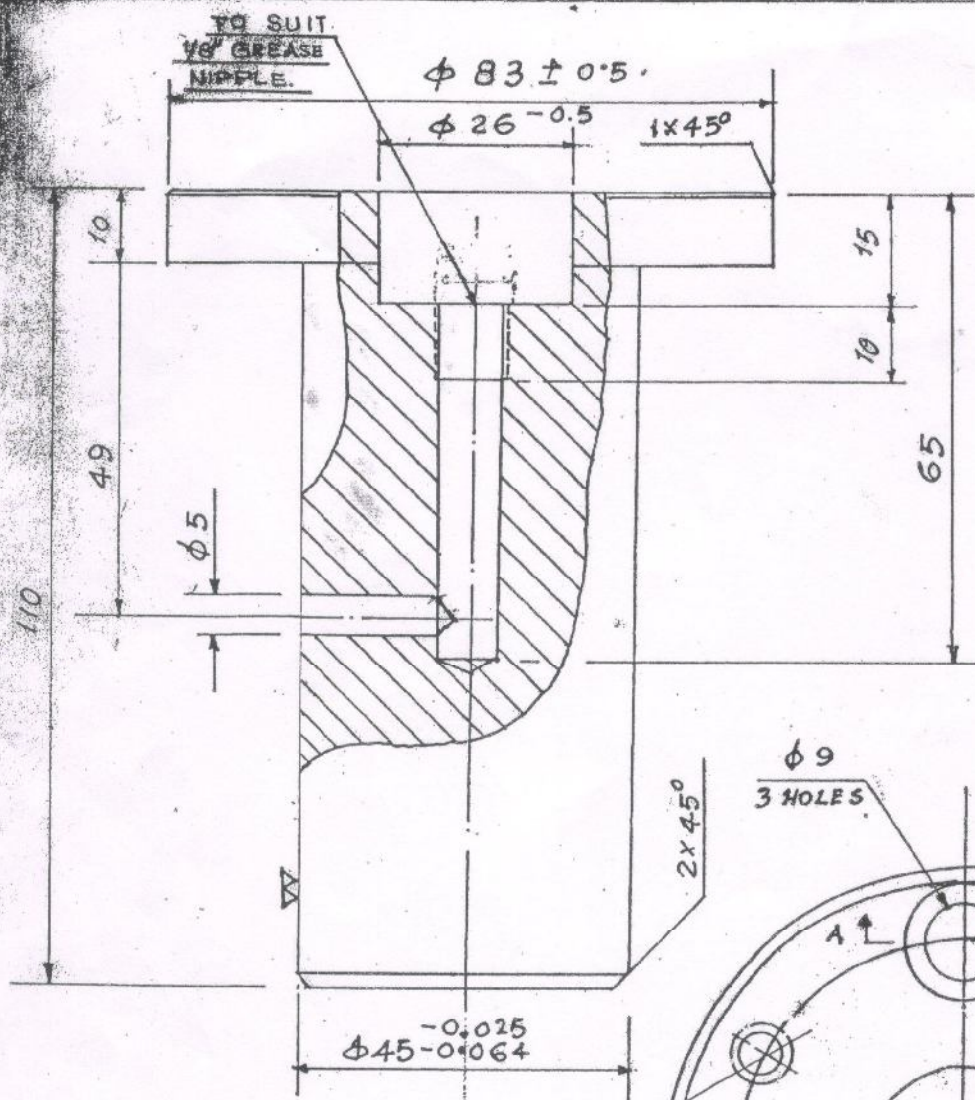
020220

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880-072

ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE STATED.

THE REST



SECTION A-A

HARDNESS - 250-270 BHN.

CALCUTTA PORT TRUST
HALDIA DOCK COMPLEX
M/P&E'S DRG. OFFICE

SCALE 1:1

WT. 1.36
(approx.) KG.

TITLE

PIN FOR
RACK ASSEMBLY

MATL. STEEL 50C4 - IS 3044-58

NAME DT.

DGN.

DWN.

TCD. *[Signature]*

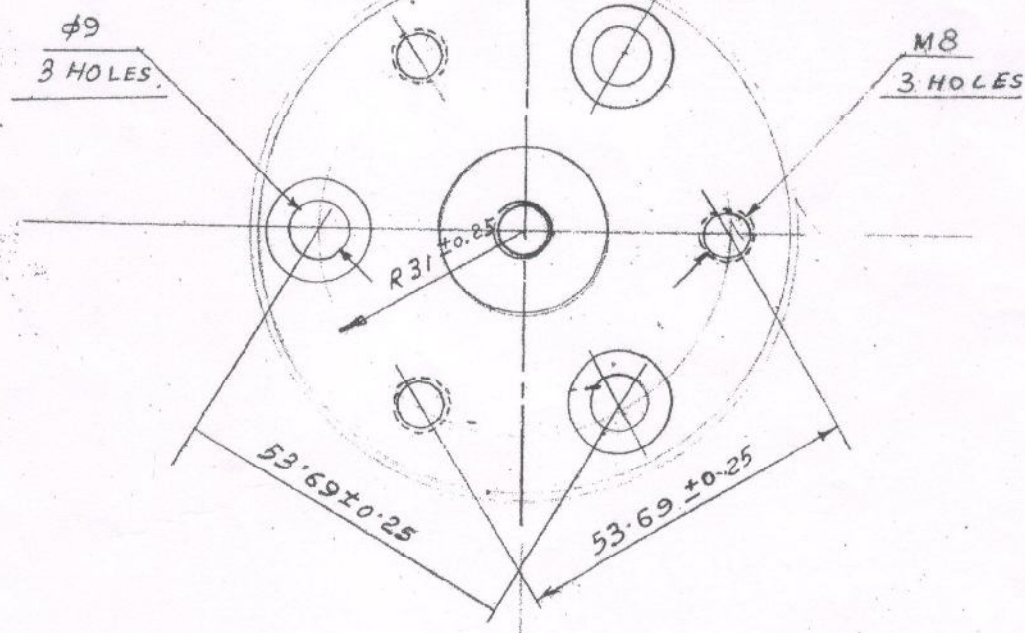
CHKD. *[Signature]*

APVD. *[Signature]*

DRG. NO

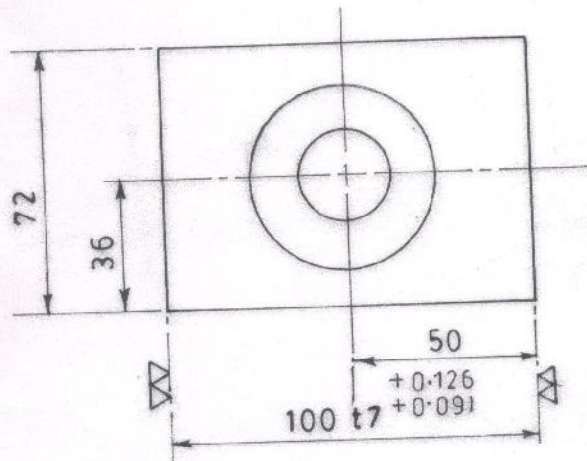
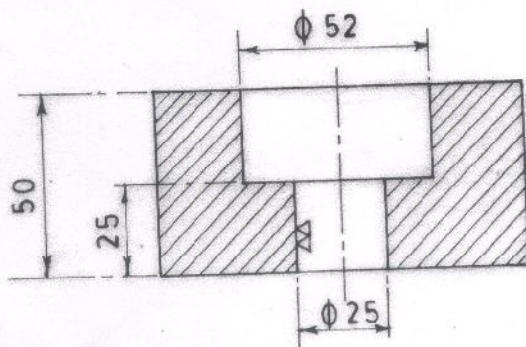
210.082

FOR TENDER PURPOSE ONLY



FOR TENDRE PURPOSE ONLY

CALCUTTA PORT TRUST		NAME	DT.
HALDIA DOCK COMPLEX		DES.	—
M/P&E'S DRG. OFFICE		DWN.	<i>Chatter</i>
<u>PIN</u>		CRD.	<i>g.f. h.</i>
		APPD.	<i>2</i>
			1.3.02
FOR RACK ASSEMBLY		SCALE-	1:1
MATEL-50CR4-1570 Pt-4-88		DRG. NO. 210.083 REV. <i>R</i>	

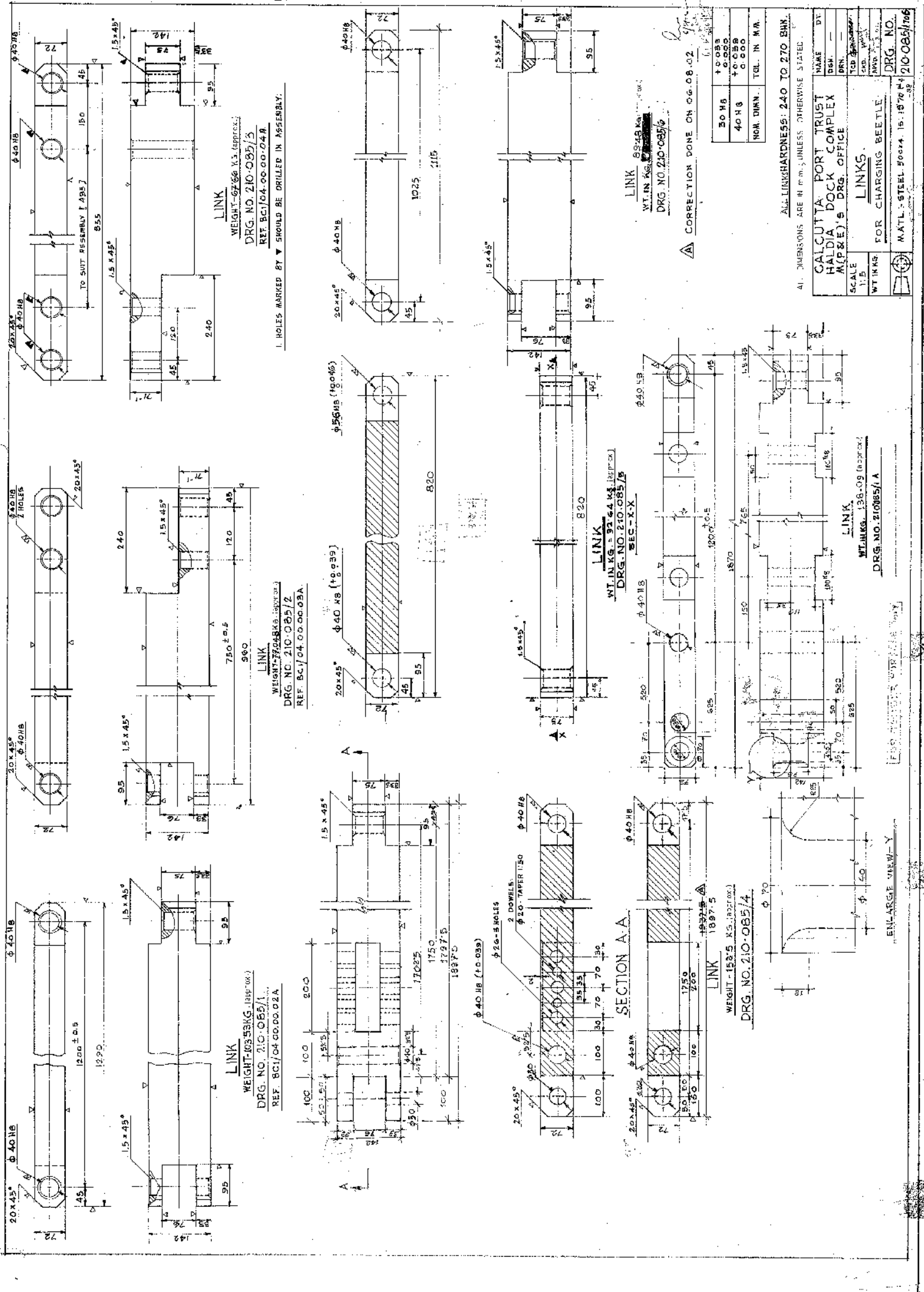


MATL. :- ST. 50 Cr4, IS:1570 (Pt IV)-1988.

HARDNESS: 240 - 270 BHN.

WT. 0.275 KG (approx.)

KOLKATA PORT TRUST HALDIA DOCK COMPLEX MCP&E'S DRG.OFFICE	NAME	DT
	DGN	—
STOPPER BLOCK. FOR DRAW BAR ASSEMBLY.	DRN	16-10-08
	TCD	—
SCALE:-1:2	CKD	16-10-08
	APVD	23.10.08
DRG. NO. 210-084 R1.		



30 HB	10.033
40 HB	10.033
NOM. DIM.	TEL. IN. M.R.

ALL LINK HARDNESS: 240 TO 270 BHN	
ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.	
NAME	DT
CALCUTTA PORT TRUST	—
HALDIA DOCK COMPLEX	—
M(P&E)'S DRG. OFFICE	—
SCALE	1:5
WT IN KG	FOR CHARGING BEETLE
WT IN KG	LINKS
WT IN KG	FOR CHARGING BEETLE
MATL: STEEL 50014, 15, 1676 H	DRG. NO.
	210-085/106

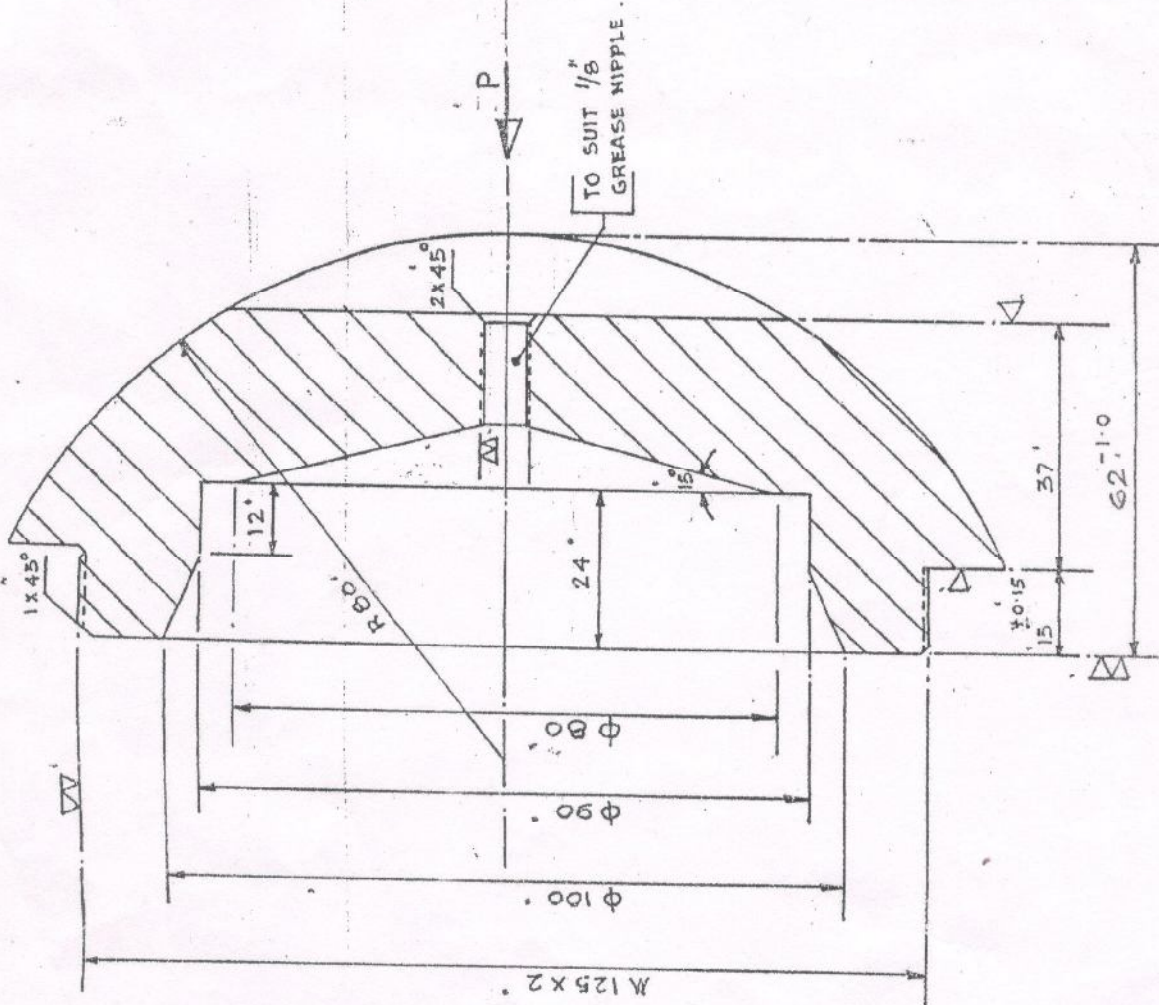
LINK 88-18 kg (194.5 lb)
WT. IN KG. 88-18
DRG. NO. 210-085/6
CORRECTION DONE ON 06-08-02

SECTION A-A

ENLARGE VIEW-Y

210-117R1 ALL DIMENSIONS ARE IN mm; UNLESS OTHERWISE STATED.

THE REST.



NOTE :

1. SHARP EDGES TO BE ROUNDED OFF.
2. HARDNESS - 250 B.H.N (MIN)

REV	DESCRIPTION	DATE
1	DRG. GENERALLY REVISED	15/11/81
2	DRG. GENERALLY REVISED	15/11/81

NAME	DT.
DGN.	
DRN.	
TCD.	18.768
CKD.	
APP.	15/11/81
SCALE	1:1
WT. IN KG	3.53 (approx)
MATL.	CAST STEEL
GRADE	15.1030
DRG. NO.	210-117R1

