TECHNICAL EVALUATION SHEET AGAINST TENDER NO. TBS-S/PD/HQ/2020-2021

M/S SPIRIT INDUSTRIES PVT LTD
BRAND - HARBIN [illegible] TECHNOLOGY CHINA

<table>
<tr><th>S.N</th><th>TENDER DESCRIPTION</th><th></th><th>RAILWAY REQUIREMENT</th><th>BIDDER OFFER</th><th>REMARKS</th></tr>
<tr><td>1</td><td>Supply, installation, Testing & commissioning of Automatic Bar Straightening & Cutting Machine including Electric Work (sub [illegible] connection, cabling from main panel to the machine etc.), civil works (foundation of machine etc.), transportation, measuring gauges, necessary maintenance T&P etc., complete in all respect along with One Man Month and Training to 12 persons.</td><td>1 Set</td><td><u>AUTOMATIC BAR STRAIGHTENING & CUTTING MACHINE etc.</u>

<u>TOTAL QUANTITY:</u>
01 Set

<u>MINIMUM REQUIRED SPECIFICATIONS:</u>
[illegible] 8 mm and [illegible] [illegible] [illegible] specifications but not limited to the,
A. Specifications:
<table>
<tr><th>SN</th><th>Description</th><th>Unit</th><th>Value</th></tr>
<tr><td>1</td><td>Straightening & Cutting of Steel Bar</td><td>mm</td><td>[illegible] 12 and Max. 32</td></tr>
<tr><td>2</td><td>Length of the Cutted Steel Rebar</td><td>[illegible]</td><td>25 to 550</td></tr>
<tr><td>3</td><td>Speed</td><td>Pieces/minute</td><td>30 to 50</td></tr>
<tr><td>4</td><td>Main motor Power</td><td>KW</td><td>[illegible]</td></tr>
</table></td><td><u>AUTOMATIC BAR STRAIGHTENING & CUTTING MACHINE etc.</u>

<u>TOTAL</u> QUANTITY:
1 Set
The offered machine will be fully automatic [illegible] [illegible] automatically [illegible] [illegible]
The machine will be [illegible] [illegible]
[illegible]
[illegible] specification as minimum are
A. <u>Specifications:</u>
<table>
<tr><th>SN</th><th>Description</th><th>Unit</th><th>Value</th></tr>
<tr><td>1</td><td>Straightening & Cutting of Steel Bar</td><td>mm</td><td>Min 12 and Max. 32</td></tr>
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<tr><td>4</td><td>Main motor Power</td><td>KW</td><td>[illegible]</td></tr>
</table></td><td>Suitable</td></tr>
<tr><td>2</td><td>Supply, installation, Testing & commissioning of Automatic Hot Punching & Forming Bolt Machine induction furnace feeding machine, including Steel Bar Chamfer Machine, Water chiller with Tank & RO</td><td>1 Set</td><td>AUTOMATIC BOLT MACHINE, INDUCTION FURNACE, FEEDING MACHINE, INCLUDING STEEL BAR CHAMFER MACHINE, WATER CHILLER WITH TANK & RO PLANT, BORE (UPTO 350 FEET) AND STORAGE TANK WITH STAND, PLUMBING etc.

<u>TOTAL QUANTITY:</u>
01 Set

<u>MINIMUM REQUIRED SPECIFICATIONS:</u></td><td>AUTOMATIC BOLT MACHINE, INDUCTION FURNACE, FEEDING MACHINE INCLUDING STEEL BAR CHAMFER MACHINE, WATER CHILLER WITH TANK & RO PLANT, BORE (UPTO 350 FEET) AND STORAGE TANK WITH STAND, PLUMBING etc.

<u>TOTAL</u> QUANTITY:
01 Set</td><td>Suitable</td></tr>
</table>

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER'S OFFER	Remarks
	Plant, Bars ... 250 Tools and Storage ... with entry ... [illegible] machine ... [illegible] Electric Work ... [illegible] the machines ... machines. [illegible] Training of ... [illegible]	[illegible]	The offered [illegible] in compliance [illegible] [illegible] following specifications at minimum.	

[illegible]

Above Machine should meet minimum following specifications but not limited to:

a) **AUTOMATIC STEEL BAR CHAMFER MACHINE**

Automatic steel bar chamfer machine is required for the production [illegible] produced through [illegible].

MINIMUM REQUIRED SPECIFICATIONS

The machine [illegible] capable of Chamfering and ending [illegible]. The machine should [illegible] and [illegible] chamfering [illegible]. Machine should [illegible] following specifications.

A. Minimum following specifications 1st Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	16-20
2	Steel Bar Length Range	mm	50-300
3	Speed	Pcs/minute	≥12
4	Motor Power	KW	5.5 [illegible]

B. Minimum following specifications 2nd Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	21-33
2	Steel Bar Length Range	mm	50-500

[Bidder's offer]

The offered [illegible] in compliance [illegible] following specifications at minimum.

a) **AUTOMATIC STEEL BAR CHAMFER MACHINE**

A. Minimum following specifications 1st Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	12-20
2	Steel Bar Length Range	mm	50-300
3	Speed	Pcs/minute	≥10
4	Motor Power	KW	2.5-3.5

B. Minimum following specifications 2nd Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	20-33
2	Steel Bar Length Range	mm	50-500

S.N	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS

RAILWAY REQUIREMENT

3	Speed	Pcs/minute	5-10
4	Motor Power	kW	2.5 min

iv) AUTOMATIC HOT PUNCHING & FORMING MACHINE

MINIMUM REQUIRED SPECIFICATIONS:

The machine [illegible] must be capable of Automatically hot [illegible] punching and forming produced parts at high speed. The machine should be suited for [illegible] production industry with minimum following operational features:

- Material conveyed from Automatic [illegible] cutting machine is manually transferred to the storage bin of the Automatic feeding machine.
- The Automatic feeding machine will then push the material into the induction heating machine according to set frequency.
- Induction heating furnace receives the material through automatic feeder and heated according to given heating process time.
- Heated work piece then slide through the [illegible] rail to the forging with given frequency where the main motor clamps the work piece for hot forging.

Note: Machine should meet minimum following specifications:

Hot Auto-Punching & Forming Machine

SN	Specification	Unit	Value
1	Motor Power	kW	17.5min
2	Efficiency	Pieces/min	5-15
3	Raw Material Length	mm	30-300
4	Main Engine Running Pressure	MPa	0.3-0.6
5	Force Capacity	Tons	50-120
6	Power (3 phase) with Alert System	V/Hz	415/50

BIDDER OFFER

3	Speed	Pcs/minute	5-10
4	Motor Power	kW	2.5-3.5

iv) AUTOMATIC HOT PUNCHING & FORMING MACHINE

Hot Auto-Punching & Forming Machine

SN	Specification	Unit	Value
1	Motor Power	kW	17.5-19.5
2	Efficiency	Pieces/min	5-15
3	Raw Material Length	mm	60-600
4	Main Engine Running Pressure	MPa	0.2-0.6
5	Force Capacity	Tons	80-120
6	Power (3 Phase)	V/Hz	380/50

REMARKS: Suitable

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER

RAILWAY REQUIREMENT

Induction Furnace

S#	Specification	Unit	Value
1	Input Power (3 phase 04 wire system)	V/Hz	420/50
2	Input Current	Ampere	320
3	Output POWER	kW	200 Min
4	Output Oscillation Frequency	KHz	10-20
5	Cooling Water Pressure	MPa	0.2-0.6
6	Water Hardness	Degree	Not more than 50 degree
7	Main Body	mm	700x700x1720
8	Transformer	mm	910x800x555 or equivalent

Automatic Deforming Machine

S#	Specification	Unit	Value
1	Deforming Speed	Pcs/minute	8-11
2	Power	kW	15 Min
3	Supply Power (3 phase 04 wire System)	V/Hz	420/50

Bolt manufacturing Unit should meet the minimum energy and environmental requirement. Bolt heading and auto forging machine should operate under following condition.

Energy & Environmental Requirement

S#	Parameter	Unit	Range
1	Air Pressure	MPa	0.6-0.8

BIDDER OFFER

Induction Furnace

S#	Specification	Unit	Value
1	Input Power (3 phase 04 wire system)	V/Hz	380/50
2	Input Current	Ampere	320
3	Output POWER	kW	200
4	Output Oscillation Frequency	KHz	10-20
5	Cooling Water Pressure	MPa	0.2-0.6
6	Water Hardness	Degree	Not more than 50 degree
7	Main Body	mm	700x700x1720 or equivalent
8	Transformer	mm	910x800x520 or equivalent

Automatic Deforming Machine

S#	Specification	Unit	Value
1	Deforming Speed	Pcs/minute	8-11
2	Power	kW	15
3	Supply Power (3 phase 04 wire System)	V/Hz	380/50

Energy & Environmental Requirement

S#	Parameter	Unit	Range
1	Air Pressure	MPa	0.6-0.8

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS
	see below	see below	Suitable

RAILWAY REQUIREMENT

2	Power Supply	V	415V
3	Operating Temperature	°C	10-50
4	Humidity	%RH	95%

ALLIED MACHINES:

- [illegible] Machine [illegible] ... thermal [illegible] [illegible] SSL type and respective [illegible]
- Air Compressor or equivalent
- Other machine related accessories

C) AUTOMATIC WATER CHILLER WITH TANK & RO PLANT

MINIMUM REQUIRED SPECIFICATIONS

Automatic Water Chiller with tank and RO plant for [illegible] ... Production plant. The Equipment should meet the following specifications.

A. Water Chiller (Approx. minimum requirement)

Specification		Unit	Value
Water Chiller Capacity		HP	2.8 kW
Cold Water Control Mode		Type	Automatic Control
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	415V/50Hz
Unit Structure		Type	Stand Box
Evaporation Temperature		°C	+3 to +9
Condensation Temperature		°C	+50
Evaporator	Type	Type	Shell Tube
	Circulating Media	Type	Clean Water

BIDDER OFFER

2	Power Supply	V	380V/415V/[illegible]
3	Operating Temperature	°C	10-50
4	Humidity	%RH	≤95%

ALLIED MACHINES:

- Chiller with allied Motor
- Kit
- Other machine related accessories

C) AUTOMATIC WATER CHILLER WITH TANK & RO PLANT

A. Water Chiller following [illegible] minimum characteristics:

Specification		Unit	Value
Water Chiller Capacity		HP	2.8 kW
Cold Water Control Mode		Type	Automatic Control
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	380V/50Hz
Unit Structure		Type	Stand Box
Evaporation Temperature		°C	+3 to +5
Condensation Temperature		°C	+50
Evaporator	Type	Type	Shell Tube
	Circulating Media	Type	Clean Water

REMARKS: Suitable

S.#	TENDER DESCRIPTION	RAILWAY REQUIRMENT			BIDDER OFFER			
		Pump	In/Out Water Tem.	°C	+15/+10	In/Out Water Tem.	°C	+15/+10
			Flow Rate	m³/h	19-21	Flow Rate	m³/h	19-21
			Head Lift	M	32-36	Head Lift	M	32-36
			Motor Power	kW	3.5 Min	Motor Power	kW	3.5-4
		Condenser	Heat Exchange	Kcal/h	120000-125000	Heat Exchange	Kcal/h	120000-125000
			Cooling Air Volume	m³/h	Vent. + Ha. dissipation ≥40000 machines	Cooling Air Volume	m³/h	Vent. + Ha. dissipation ≥40000 machines
			In/out Temp.	°C	35/50	In/out Temp.	°C	35/50
		Control System Protection Devices	Abnormal Temperature		Low Temperature Cut Off Compressor	Abnormal Temperature		Low Temperature Cut Off Compressor
			Inverse Phase of Power Supply		Protection to Prevent Comp. Reverse	Inverse Phase of Power Supply		Protection to Prevent Comp. Reverse
			High and Low Voltage Fault		Pressure Switch Detecting	High and Low Voltage Fault		Pressure Switch Detecting
			Compressor Overload		Thermal Relay Protection	Compressor Overload		Thermal Relay Protection
			Overheating of Compressor		Internal Protector Protection Compress.	Overheating of Compressor		Internal Protector Protection Compress.
			Pump Overload		Thermal Relay Protection Pump	Pump Overload		Thermal Relay Protection Pump
			Low Water Level Warning		Water Level Switch	Low Water Level Warning		Water Level Switch
			Short Circuit		Air Switch	Short Circuit		Air Switch

B. Water Tank Specifications:

Water tank specification: The inner tank is made of Stainless Steel Plate of 3-

B. Water Tank Specifications:

8000litre water tank will be supplied/installed to store the water to received

S.No	TENDER DESCRIPTION		RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS
			[illegible] 2 [illegible] Gas [illegible] The water [illegible] equipped with water [illegible] drain [illegible] 2 [illegible] **C. RO Plant** Commercial Grade Matching RO plant [illegible]	[illegible] designed [illegible] sufficient capacity [illegible] followed with cooling [illegible] head [illegible]	
3	Supply, Installation, testing & commissioning of Automatic 2 Axles Threading Machine including all civil work, Electric Work [illegible] panel [illegible] from main panel to the machine [illegible] foundation of machine [illegible] necessary maintenance T&P etc complete in all respect alongwith one Year [illegible] Training of 12 persons.	Set	**AUTOMATIC 2 AXLES BOLT THREADING MACHINE ETC.** **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine [illegible] specially designed [illegible] for Railway and allied industry [illegible] head [illegible] Machine should meet minimum following specifications. Minimum following specifications 1st Set (table below) Minimum following specifications 2nd Set	**AUTOMATIC 2 AXLES BOLT THREADING MACHINE ETC.** **TOTAL QUANTITY:** 01 Set [illegible] Minimum following specifications (1st Set) (table below) Minimum following specifications 2nd Set (table below)	Sample

Railway requirement — Minimum following specifications 1st Set

Sr	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	10-30
2	Steel Bar Length Range	mm	50-500
3	Bolt Rolling Head	Nos.	5
4	Motor Power	KW	3.5 Min
5	Bolt Thread Requirement		[illegible]

Bidder offer — Minimum following specifications (1st Set)

Sr	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	10-30
2	Steel Bar Length Range	mm	50-500
3	Bolt Rolling Head	Nos.	2
4	Motor Power	KW	2.5 Min
5	Bolt Thread Requirement		[illegible]

Bidder offer — Minimum following specifications 2nd Set

Sr	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	20-[illegible]
2	Steel Bar Length Range	mm	50-500
3	Bolt Rolling Head	Nos.	2
4	Motor Power	KW	2.5 Min

S.N.	TENDER DESCRIPTION	QTY	RAILWAY REQUIREMENT	BIDDER OFFER
			<table><tr><td>SN</td><td>Specifications</td><td>Unit</td><td>Value</td></tr><tr><td>1</td><td>Steel Bar Diameter Range</td><td>Dia</td><td>15-30</td></tr><tr><td>2</td><td>Steel Bar Length Range</td><td></td><td>20-50</td></tr><tr><td>3</td><td>Heat Rotating Head</td><td></td><td>50-500</td></tr><tr><td>4</td><td>Motor Power</td><td></td><td>2</td></tr><tr><td></td><td></td><td></td><td>2.5 kg</td></tr><tr><td>5</td><td>Bolt Thread Requirement</td><td></td><td>M24-M27</td></tr></table>	5 Bolt Thread Requirement M24-M27
4	Supply, Installation, Testing & commissioning of Automatic Nut Forging Machine, Induction furnace, feeding machine, Tapping machine, Motor, Cables with Tank & MS Plate from auto Bar Feed and Storage Tank with stand, Running unit to provide connection to each machine including 3 set of ... [illegible] Moulds/Dies, Electric Work with panel/connection from main panel to the machines etc. [illegible] all machines. With Inspection measuring gauges, necessary maintenance TBP ... complete in all respect along with one year Manpower training of 12 persons	1 Set	AUTOMATIC NUT FORGING MACHINE, INDUCTION FURNACE, FEEDING MACHINE ETC. **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine should be capable of producing Nut at high speed. The machine should be suited for nut and bolt industry with Automatic induction furnace feeder and hot forging. Machine should meet minimum following specifications. • Material collected from Automatic Cutting machine is manually transfer to the storage bin of the fully Automatic feeding machine. • The Automatic feeding machine will then push the material into the induction heating machine according to the set frequency. • Induction heating furnace receive the material through Automatic feeder and heated according to the given heating process time. • Heated work piece then slid through the guided tube to the hot forging with given frequency where the machine then forms the work piece for hot forging. Above Machine should meet minimum following specifications: A. **FORGING MACHINE:**	AUTOMATIC NUT FORGING MACHINE, INDUCTION FURNACE, FEEDING MACHINE ETC. **TOTAL QUANTITY:** 01 Set [illegible] machines are in compliance [illegible] to the tender documents wherein automatic transport [illegible] following items [illegible] **MINIMUM REQUIRED SPECIFICATIONS:** The machine [illegible] should be capable of producing Nut at high speed. The machine should be suited for nut and bolt industry with Automatic induction furnace feeder and hot forging. Machine should meet minimum following specifications: • Material collected from Automatic Cutting machine is manually transfer to the storage bin of the fully Automatic feeding machine. • The Automatic feeding machine will then push the material into the induction heating machine according to the set frequency. • Induction heating furnace receive the material through Automatic feeder and heated according to the given heating process time. • Heated work piece then slid through the guided tube to the hot forging with given frequency where the machine then forms the work piece for hot forging. Above Machine should meet minimum following specifications: A. **FORGING MACHINE:**

TENDER DESCRIPTION	RAILWAY REQUIRMENT				BIDDER OFFER				REMARKS
	Technical parameter				Technical parameter				Suitable
	Capacity	KN		200	Capacity	KN		200	
	Nominal force stroke	mm		8	Nominal force stroke	mm		8	
	Slider stroke	mm		200	Slider stroke	mm		200	
	Number of tiles	Fixed	mm -1	45	Number of tiles	Fixed	mm -1	45	
		Variable	mm -1	30-55		Variable	mm -1	30-55	
	Install mould height	mm		450	Install mould height	mm		450	
	Adjusted mould height	mm		110	Adjusted mould height	mm		110	
	Distance between Slide center	mm		430	Distance between Slide center	mm		430	
	Column distance	mm		910	Column distance	mm		910	
	Slide bottom dimension	mm		880X850	Slide bottom dimension	mm		880X850	
	Mould hole dimension	mm		70x100	Mould hole dimension	mm		70x100	
	Working table dimension	mm		1300X940	Working table dimension	mm		1300X940	
	Drop hole Dia	mm		240	Drop hole Dia	mm		240	
	Working table thickness	mm		180	Working table thickness	mm		180	
	Distance between working	mm		1800	Distance between working	mm		1800	
	Overall dimension	mm		2830X1540X2800	Overall dimension	mm		2830X1540X2800	
	Anchor bolt distance	mm		2020X1360	Anchor bolt distance	mm		2020X1360	
	Motor power	kw		18.5 Min	Motor power	kw		18.5 Min	
	Pneumatic	Mpa		0.5	Pneumatic	Mpa		0.5	
	B. INDUCTION FURNACE:				B. INDUCTION FURNACE:				
	Specification	Unit		Value	Specification	Unit		Value	
	Input voltage	V/HZ		420/50	Input voltage	V/HZ		420/50	
	Input power	kW		250 Min	Input power	kW		250 Min	

S#	TENDER DESCRIPTION
8.6	

RAILWAY REQUIREMENT

Input current	A	500
Cooling water pressure	PA	0.2-0.5
Output water	t/Hr	120

C. **AUTOMATIC FEEDING MACHINE:**

Minimum meets following specifications:

a. Input Power: 400V/3phase/50Hz
b. Delivery: Pneumatic
c. Time Control: Time Relay
d. Delivery Speed: 2.2 second/piece-3Second/piece
e. Air Pressure Required: 0.4Mpa-0.6Mpa, Power: ≤15kW

ALLIED MACHINES OF AUTOMATIC HOT PUNCHING & FORMING MACHINE:

- 05sets each size Mold of nuts described at Annexure-A. Finished nut must be with SSL logo and respective specification.
- Air Compressor or equivalent
- Other machine related accessories

D. **AUTOMATIC WATER CHILLER WITH TANK & RO PLANT**

MINIMUM REQUIRED SPECIFICATIONS:
Automatic Water Chiller with tank and RO plant is specially designed for hot forging bolt production plant. The equipment should meet minimum following specifications.

E. Water Chiller (Approx. minimum requirement)

Specification	Unit	Value
Water Chiller Capacity	HP	39.42

BIDDER OFFER

Input current	A	500
Cooling water pressure	PA	0.2-0.5
Output water	t/Hr	≤20

C. **AUTOMATIC FEEDING MACHINE:**

Minimum meets following specifications:

f. Input Power: 400V/3phase/50Hz
g. Delivery: Pneumatic
h. Time Control: Time Relay
i. Delivery Speed: 2.2 second/piece-3Second/piece
j. Air Pressure Required: 0.4Mpa-0.6Mpa, Power: ≤15kW

ALLIED MACHINES OF AUTOMATIC HOT PUNCHING & FORMING MACHINE:

- 05sets each size Mold of nuts described at Annexure-A. Finished nut must be with SSL logo and respective specification.
- Air Compressor or equivalent
- Other machine related accessories

D. **AUTOMATIC WATER CHILLER WITH TANK & RO PLANT**

MINIMUM REQUIRED SPECIFICATIONS:
Automatic Water Chiller with tank and RO plant is specially designed for hot forging bolt production plant. The equipment should meet minimum following specifications.

E. Water Chiller (Approx. minimum requirement)

Specification	Unit	Value
Water Chiller Capacity	HP	39.42

S.N	TENDER DESCRIPTION	RAILWAY REQUIREMENT				BIDDER OFFER				REMARKS
		Operation Control Mode		Type	Automatic/Semi-Automatic Control Display	Operation Control Mode		Type	Automatic/Semi-Automatic Control Display	
		Temperature Control Accuracy		℃	±1	Temperature Control Accuracy		℃	±1	
		Power Supply		V/Hz	420V-50Hz	Power Supply		V/Hz	420V-50Hz	
		Unit Structure		Type	Steel Box	Unit Structure		Type	Steel Box	
		Evaporation Temperature		℃	+3 to +6	Evaporation Temperature		℃	+3 to +6	
		Condensation Temperature		℃	+50	Condensation Temperature		℃	+50	
		Evaporator	Type	Type	Shell Tube	Evaporator	Type	Type	Shell Tube	
			Circulating Media	Type	Clean Water		Circulating Media	Type	Clean Water	
			In/Out Water Temp	℃	+15/+10		In/Out Water Temp	℃	+15/+10	
		Pump	Flow Rate	m³/h	19-21	Pump	Flow Rate	m³/h	19-21	
			Head Lift	M	32-35		Head Lift	M	32-35	
			Motor Power	KW	3.0-4		Motor Power	KW	3.5-4	
		Condenser	Heat Exchange	Kcal/h	120000-125000	Condenser	Heat Exchange	Kcal/h	120000-125000	Suitable
			Cooling Air Volume	m³/h	Cold + Heat dissipation ≥40000 machines		Cooling Air Volume	m³/h	Heat + Heat Dissipation ≥40000 Machines	
			Inlet Temp.	℃	25/50		Inlet Temp.	℃	25/50	
		Control System Protection Devices	Abnormal Temperature		Low Temperature Cut Off Compressor	Control System Protection Devices	Abnormal Temperature		Low Temperature Cut Off Compressor	
			Inverse Phase of Power Supply		Protection to Prevent Comp Reverse		Inverse Phase of Power Supply		Protection to Prevent Comp Reverse	
			High and Low Voltage Pressure Switch				High and Low Voltage Pressure Switch			

[illegible] [illegible] [illegible]

S#	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER
		(see fault tables below)	(see fault tables below)

Railway Requirement

Fault	Remedy
Compressor Overload	Thermal Relay Protection
Overheating of Compressor	Internal Protection Protection Compressor
Pump Overload	Thermal Relay Protection Pump
Low Water Level Warning	Water Level Switch
Short Circuit	Air Switch

Bidder Offer

Fault	Remedy
Compressor Overload	Thermal Relay Protection
Overheating of Compressor	Internal Protection Protection Compressor
Pump Overload	Thermal Relay Protection Pump
Low Water Level Warning	Water Level Switch
Short Circuit	Air Switch

Railway Requirement

F. <u>Water Tank Specifications:</u>
Water tank specification: The inner tank is made of Stainless Steel [illegible] being wrapped with stainless steel plate, and the middle insulation layer is [illegible] foam, [illegible]. The water tank is equipped with water replenishing [illegible] overflow port, drainage outlet, [illegible] 2 outlets.

G. RO Plant:
[illegible] RO plant for [illegible] American, European or equivalent standard [illegible] equipment is made. [illegible] consideration.

H. AUTOMATIC SHOT BLASTING MACHINE

MINIMUM REQUIRED SPECIFICATIONS

Bidder Offer

F. <u>Water Tank Specifications:</u>
2000 [illegible] water tank will be supplied/installed to store the water to [illegible] through RO Plant designed as per requirement to ensure sufficient capacity to [illegible] local [illegible] processes.

8. AUTOMATIC SHOT BLASTING MACHINE

MINIMUM REQUIRED SPECIFICATIONS

Sr	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS
4.		The Automatic shot blasting machine is capable of Automatically shot blast the rails and parts at high speed. The machine should be suited for batch production industry with minimum following operational features.	The Automatic shot blasting machine is capable of Automatically shot blast the rails and parts at high speed. The machine should be suited for batch production industry with minimum following operational features.	Suitable

RAILWAY REQUIREMENT

Sr	Specification		Value
1	Fans	Quantity	1 set
		Impeller	ϕ 250mm
		Motor power	11 Kw
		Speed	2930 r/min
		Shot blasting	210Kg/min
		Projectile velocity	65-75 m/s
		End plate diameter	1000 mm
2	Crawler drive	Crawler spacing	1100 mm
		Loading weight	500 kg
		Single workpiece max weight	30 kg
		Max workpiece size	500 mm
		Track speed	5.5 m/min
3	Dust collector	Type of dust collector	Cyclone dust collector + pulse back blow filter cartridge dust collector
		Dust collector with	5500 m3
		power	5.5 Kw

BIDDER OFFER

Sr	Specification		Value
1	Fans	Quantity	1 set
		Impeller	ϕ 250mm
		Motor power	11 Kw
		Speed	2930 r/min
		Shot blasting	210Kg/min
		Projectile velocity	65-75 m/s
		End plate diameter	1000 mm
2	Crawler drive	End plate spacing	1100 mm
		Loading weight	500 kg
		Single workpiece max weight	30 kg
		Max workpiece size	500 mm
		Track speed	5.5 m/min
3	Dust collector	Type of dust collector	Cyclone dust collector + pulse back blow filter cartridge dust collector
		Dust collector with	5500 m3
		power	5.5 Kw

S.#	TENDER DESCRIPTION	Qty	RAILWAY REQUIRMENT	BIDDER OFFER
			see nested table A below	see nested table B below
6.	Supply, installation, Testing & commissioning of Automatic Nut Tapping Machine 2 set of each size tapping dies, Electric Work with panel/controller wiring from main panel to the	1 Set	**AUTOMATIC NUT TAPPING MACHINE** **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine is specially designed to thread nut tapping at high speed. The machine should be suited for nut production industry for	**AUTOMATIC NUT TAPPING MACHINE** **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine is specially designed to thread nut tapping at high speed. The machine should be suited for nut production industry for

Railway requirement (continued):

4	Feeder	Maximum loading weight	500 kg
		Lifting	1 Ton chain hoist
5	Motor	Shot blasting	3000 r/min 11 Kw
		Track transmission	450 r/min 2 Kw
		Gate	8 r/min 0.75 Kw
		Feeder	8 r/min 1.5 Kw (1 ton chain hoist)
		Lifter	73 r/min 2.2 Kw
		Dust collector	2880 r/min 5.5 Kw
		machine	3650*2900*4800 mm
		Equipment total power	24 Kw
6	Equipment productivity		3-4 T/h

Supplier should mention the international British, European, American, Japanese or equivalent standard number following which each machinery and equipment is made. Machines made without any international standard liable to be rejected without any further consideration.

Bidder offer (continued):

4	Feeder	Maximum loading weight	500 kg
		Lifting	1T chain hoist
5	Motor	Shot blasting	3000 r/min 11 Kw
		Track transmission	450 r/min 2 Kw
		Gate	8 r/min 0.75 Kw
		Feeder	8 r/min 1.5 Kw (1 ton chain hoist)
		Lifter	73 r/min 2.2 Kw
		Dust collector	2880 r/min 5.5 Kw
		machine	3650*2900*4800 mm
		Equipment total power	24 Kw
6	Equipment productivity		3-4 T/h

Supplier should mention the international British, European, American, Japanese or equivalent standard number following which each machinery and equipment is made. Machines made without any international standard liable to be rejected without any further consideration.

S.#	TENDER DESCRIPTION	Qty	RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS
	machines etc), civil works (renovation of machines etc.), inspection and testing gauges, necessary maintenance TBT etc. complete in all respect alongwith necessary Man/h Training of 10 persons.		Railway and allied industry. Machine head should be rotating heads. Easily changeable die head and easy setting dies. Automatic oiling directly to the dies and not through die head during threading operation. Machine should meet minimum following specifications. Minimum Require Qty: 2Sets meeting the following specifications. Fully Automatic Machine with minimum following specifications.	Railway and allied industry. Machine head should be rotating heads. Easily changeable die head and easy setting dies. Automatic oiling directly to the dies and not through die head during threading operation. Machine should meet minimum following specifications: Minimum Require Qty 2Sets or equivalent meeting specifications. Fully Automatic Machine with minimum following specifications.	Suitable

Railway Requirement:

S#	Description	1st Set	2nd Set
1	Tapping Range	M12-M30	M30-M42
2	Mode	Pneumatic	Pneumatic
3	Feeding Mode	Automatic/Semi-Automatic	Automatic/Semi-Automatic
4	Output (pcs/min/spindle)	3-5	2-4
5	Spindles	2	2
6	Total Power (kW)	5	11 Min.

a. Nut tapping machine
b. Spindle quantity 4
c. Speed 2-3 pcs/spindle/minute at
d. Motor servo motor 5.5kw min
e. Reducer planetary reducer 1000w
f. Auto oil spray device
g. Lifting and feeding device 2sets

Bidder Offer:

S#	Description	1st Set	2nd Set
1	Tapping Range	M12-M30	M30-M42
2	Mode	Pneumatic	Pneumatic
3	Feeding Mode	Automatic/Semi-Automatic	Automatic/Semi-Automatic
4	Output (pcs/min/spindle)	3-5	2-4
5	Spindles	2	2
6	Total Power (kW)	5	11 Min.

a. Nut tapping machine
b. Spindle quantity 4
c. Speed 2-3 pcs/spindle/minute at
d. Motor servo motor 5.5kw min
e. Reducer planetary reducer 1000w
f. Auto oil spray device
g. Lifting and feeding device 2sets

S.#	TENDER DESCRIPTION	Qty	RAILWAY REQUIREMENT	BIDDER OFFER	REMARKS
6	Supply of Raw material, civil and electrical work (Detailed attached at Annexure 'A & B')	Job	RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc... SCOPE OF WORK Supply of Raw material, civil and electrical work (complete in respects (Details attached at Annexure 'A & B')	RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc... Raw material for trial production will be supplied in accordance with Pakistan Railways Specification being produced/made by reputable suitable mill preferably (Shalimar/Peoples Steel Mills) and all raw material used in civil work.	Suitable

Dy.CSTE/M   Dy.CSTE/Rail   Dy.CE/M&W

S.#	TENDER DESCRIPTION	RAILWAY REQUIRMENT	BIDDER OFFER
		TOTAL QUANTITY: 01 Job Annexure "A" DETAIL OF RAW MATERIAL REQUIRED FOR MANUFACTURING OF NUT AND BOLT S.# / Description / QTY 1 / MS Rod ½" dia 20ft long class 2 / 500 kg 2 / MS Rod 5/8" dia 20ft long class 2 / 1,000 kg 3 / MS Rod ¾" dia 20ft long class 2 / 1,000 kg 4 / MS Rod 1" dia 20ft long as per sample available in Signal Shop / 500 kg DETAIL OF CIVIL & ELECTRIC WORKS Annexure "B" Sr. # / DESCRIPTION / QTY 1 / Removing cement plaster over walls (Existing) / 800	will be complying to PEC pre-approved standard/guidelines. TOTAL QUANTITY: 01 Job Annexure "A" DETAIL OF RAW MATERIAL REQUIRED FOR MANUFACTURING OF NUT AND BOLT S.# / Description / QTY 1 / MS Rod ½" dia 20ft long class 2 / 500 kg 2 / MS Rod 5/8" dia 20ft long class 2 / 1,000 kg 3 / MS Rod ¾" dia 20ft long class 2 / 1,000 kg 4 / MS Rod 1" dia 20ft long as per sample available in Signal Shop / 500 kg DETAIL OF CIVIL & ELECTRIC WORKS Annexure "B" Sr. # / DESCRIPTION / QTY 1 / Removing cement plaster over walls (Existing) / 800

Dy. Controller

Dy. Controller

Dy. Engineer

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER			REMARKS
			Building (1-8-3) P.7			Building (1-8-3) P.7		
		2	Dismantling brick works (1.2.7) P-12	2000	2	Dismantling brick works (1.2.7) P-12	2000	
		3	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 2" thick P-96 (c)	1200	3	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 2" thick P-96 (c)	1200	
		4	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 4" thick P-96 (e)	4500	4	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 4" thick P-96 (e)	4500	
		5	Providing laying and jointing first class pucca brick work in ground floor 9"/13-1/2 thick wall including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects (a) P-6 1.3	1500	5	Providing laying and jointing first class pucca brick work in ground floor 9"/13-1/2 thick wall including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects (a) P-6 1.3	1500	
		6	Cement plaster on wall upto 20' height (1:4) 10.3.3 (b)	9000	6	Cement plaster on wall upto 20' height (1:4) 10.3.3 (b)	9000	
		7	providing Cement concrete slab using coarse sand and screened graded & washed aggregate of approved quality including placing compacting finishing curing, complete as per specifications without shuttering on ground floor of building and for structures upto 20ft height 1:2:4 P-35 (a) (5.4.1)	1500	7	providing Cement concrete slab using coarse sand and screened graded & washed aggregate of approved quality including placing compacting finishing curing, complete as per specifications without shuttering on ground floor of building and for structures upto 20ft height 1:2:4 P-35 (a) (5.4.1)	1500	Suitable
		8	Providing and laying mild steel reinforcement including cost of deform bar (G) grade 60000 Psi complete in all respects 5.8.1 (b) P-36	2000	8	Providing and laying mild steel reinforcement including cost of deform bar (G) grade 60000 Psi complete in all respects 5.8.1 (b) P-36	2000	
		9	Providing laying and jointing first class pucca brick work in ground floor 4-½ inch thick walls, including scaffolding, raking of joints and curing as per	500	9	Providing laying and jointing first class pucca brick work in ground floor 4-½ inch thick walls, including scaffolding, raking of joints and curing as per drawings	500	

Dy. [illegible] Dy. [illegible] Dy. [illegible]

S/#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER		
			drawings and fixed [illegible] complete in all respects [illegible] (Para 15.4)			and specifications complete in all respects [illegible] (Para 15.4)	
		10	Providing laying and pointing first class brick work other than in buildings above foundations and plinth upto [illegible] height including scaffolding, raking of joints and curing as per drawing and specifications cement and mortar 1:6 [illegible] (10.6.4)	1500	10	Providing laying and pointing first class brick work other than in buildings above foundations and plinth upto [illegible] height including scaffolding, raking of joints and curing as per drawing and specifications cement and mortar 1:6 [illegible] (10.6.4)	1500
		11	Providing and laying 5mm thick [illegible] floor [illegible] existing flooring [illegible] P.21 (4.4)	4000	11	Providing and laying 5mm thick [illegible] existing flooring [illegible] P.21 (4.4)	4000
		12	Priming coat [illegible] under distemper P.54 (12.2.1)	8000	12	Priming coat of chalk under distemper P.54 (12.2.1)	8000
		13	Distempering [illegible] surface [illegible] three coat P.54 (10.6.1)	9000	13	Distempering a new surface [illegible] three coat P.54 (10.6.1)	9000
		14	Providing and fixing MS flats 1/2x1/8 [illegible] square [illegible] grills for windows of approved design including painting 3 coats complete in all respects P-111 (12.7.1)	150	14	Providing and fixing MS flats 1/2x1/8 [illegible] square [illegible] grills for windows of approved design including painting 3 coats complete in all respects P-111 (12.7.1)	150
		15	Providing and fixing aluminum windows sliding consisting of chowkat of special types of section 4"x1" and [illegible] with vertical style 2"x1" x 1"x1" bottom rail 2"x1" and top rail 1.5"x1" including latch screws, sliding wheels 5mm glass sheets fixed with rubber channel etc complete in all respects as approved by the engineer incharge P-111 (13.0.2)	150	15	Providing and fixing aluminum windows sliding consisting of chowkat of special types of section 4"x1" and [illegible] with vertical style 2"x1" x 1"x1" bottom rail 2"x1" and top rail 1.5"x1" including latch screws, sliding wheels 5mm glass sheets fixed with rubber channel etc complete in all respects as approved by the engineer incharge P-111 (13.0.2)	150
		16	Providing and fixing aluminum wire gauze shutter to windows consisting of special type section 1.5x6" x 1/2" with aluminum wire gauze of 16x16 mesh per square inch fixed special rubber channel [illegible] etc complete as approved by engineer incharge P-111 (13.8.1)	150	16	Providing and fixing aluminum wire gauze shutter to windows consisting of special type section 1.5x6" x 1/2" with aluminum wire gauze of 16x16 mesh per square inch fixed special rubber channel [illegible] etc complete as approved by engineer incharge P-111 (13.8.1)	150

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER			REMARKS
		17	Providing and fixing aluminium doors and windows providing and fixing aluminium doors consisting of shutter of special type section 4"x1 3/4" and leaf of rectangular section 2"x1 3/4" paneled with sheet metal screw including pivoted hinges 6" handles 6" tower bolts on top and bottom and 5mm thick glass fixed special type rubber channel etc complete all respect as approved by design. P-111 [13.9.1]	400	17	Providing and fixing aluminium doors and windows providing and fixing aluminium doors consisting of shutter of special type section 4"x1 3/4" and leaf of rectangular section 2"x1 3/4" paneled with sheet metal screw including pivoted hinges 6" handles 6" tower bolts on top and bottom and 5mm thick glass fixed special type rubber channel etc complete all respect as approved by design. P-111 [13.9.1]	400	Suitable
		18	Providing and fixing frame work of aluminium section D-11, D-15 and D-16 and glazing with glass sheet fixed with rubber ring as per design and approval engineer incharge (a) with plane glass sheet 5 mm thick P-111 (a) [13.9.4]	400	18	Providing and fixing frame work of aluminium section D-11, D-15 and D-16 and glazing with glass sheet fixed with rubber ring as per design and approval engineer incharge (a) with plane glass sheet 5 mm thick P-111 (a) [13.9.4]	400	
		19	Reinforced cement concrete in roof slab beams columns lintel girder and other structural members upto 20' height (a) (iii) Nominal mix 1:2:4 P-36 [5.7.1]	500	19	Reinforced cement concrete in roof slab beams columns lintel girder and other structural members upto 20' height (a) (iii) Nominal mix 1:2:4 P-36 [5.7.1]	500	
		20	Structural excavation for foundation of buildings, bridges and other structures upto 5' feet (i) in ordinary soil 4.3.1 P-32	2000	20	Structural excavation for foundation of buildings, bridges and other structures upto 5' feet (i) in ordinary soil 4.3.1 P-32	2000	
		21	Trench excavation in open cutting for sewers and manhole chambers to the designed section, lines grades and profile according to drawing and specifications and disposal of excavated material within 100 ft. (a) 4.3.6 P-31	1500	21	Trench excavation in open cutting for sewers and manhole chambers to the designed section, lines grades and profile according to drawing and specifications and disposal of excavated material within 100 ft. (a) 4.3.6 P-31	1500	
		22	Filling watering and ramming earth under floors with surplus earth P-25 4.4.1 (a)	1500	22	Filling watering and ramming earth under floors with surplus earth P-25 4.4.1 (a)	1500	
		23	Supply and filling sand under floor 9.1(c) P-29	2500	23	Supply and filling sand under floor 9.1(c) P-29	2500	
		24	Providing and fixing 1-1/2" thick hollow flush doors and windows with commercial ply [illegible] on both faces of deodar wood shutter frame 1-3/4"	84	24	Providing and fixing 1-1/2" thick hollow flush doors and windows with commercial ply [illegible] on both faces of deodar wood shutter frame 1-3/4" thick and	84	

SN	TENDER DESCRIPTION	RAILWAY REQUIREMENT		BIDDER OFFER	
		Iron and Steel Work including all kinds of Steel and Iron work Vertical tipping 1-1/2" x 3/8" Flat 1 no Bolts including Chromium plated Brass Domed Nuts & capped [double Nut threaded bolts & ring bolt P- 50 [11.0.1]		Iron and Steel Work including all kinds of Steel and Iron work Vertical tipping 1-1/2"x3/8" flat 1 no Bolts including Chromium plated Brass Domed Nuts & capped [double Nut threaded bolts & ring bolt P-50 [11.0.1]	
29	Providing and fixing 16 gauge 15 gauge chevron moulded in the plane of inverted chevron including application of bitumen compound inside the chevron and filling it with CC 1:3:6 including socket bolt nuts etc complete as per instructions of Engineer Incharge (B) Size 2'x1'0" [11.0.3] P-52	14	89	Providing and fixing MS sheet 16 gauge chevron moulded in the shape of inverted chevron including application of bitumen compound inside the chevron and filling it with CC 1:3:6 including socket bolt nuts etc complete as per instructions of Engineer Incharge (B) Size 2'x1'0" [11.0.3] P-52	14
28	Providing and fixing sliding bolt to doors complete as per (B) Iron sliding bolt 12" [300 mm] long [11.10.1] (b) P-55	4	27	Providing and fixing sliding bolt to doors complete as per (B) Iron sliding bolt 12" [300 mm] long [11.10.1] (b) P-55	4
27	Painting New Surface Preparing surface and painting of doors and windows chowkhats (under item No 12.3.2 of CSR(2016) including all kinds of Painting [12.3.2] (a) P-102	353	26	Painting New Surface Preparing surface and painting of doors and windows chowkhats (under item No 12.3.2 of CSR(2016) including all kinds of Painting [12.3.2] (a) P-102	353
26	Painting New Surface ---do--- ---do--- ---do--- ---do--- (b) Each subsequent coat of paint [12.3.2] (b) P-102	353	25	Painting New Surface ---do--- ---do--- ---do--- ---do--- (b) Each subsequent coat of paint [12.3.2] (b) P-102	353
24	Providing and fixing white polished glass synthetic water closet squatter type pan basin with footrest 19" minimum between front to rear 07" wide in all respect (B) Coloured [20.1.2] (a) P-150	2	39	Providing and fixing white polished glass synthetic water closet squatter type pan basin with footrest 19" minimum between front to rear 07" wide in all respect (B) Coloured [20.1.2] (a) P-150	2
23	Providing and fixing low down flushing cistern 3 gallon (13.65 ltrs) capacity including brackets, bolts, copper connection pipe, etc complete in all respects (b) Plastic [22.1.2] (b) P-151	2	30	Providing and fixing low down flushing cistern 3 gallon (13.65 ltrs) capacity including brackets, bolts, copper connection pipe, etc complete in all respects (b) Plastic [22.1.2] (b) P-151	2

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER			REMARKS
		31	Providing and fixing PVC pipes for soil, waste & Vent System (DADEX or Equivalent) including cost of all specials complete in all respects. (d) 75 MM (3") i/d. P-159 20.4.4 (d)	700	31	Providing and fixing PVC pipes for soil, waste & Vent System (DADEX or Equivalent) including cost of all Specials complete in all respects. (d) 75 MM (3") i/d. P-159 20.4.4 (d)	700	
		32	Providing and fixing 22"x16" glazed earthenware wash hand basin including bracket set, waste pipe and waste coupling, etc. complete. (i) Coloured with pedestal. 20.2.1 (g) P-155	2	32	Providing and fixing 22"x16" glazed earthenware wash hand basin including bracket set, waste pipe and waste coupling, etc. complete. (i) Coloured with pedestal. 20.2.1 (g) P-155	2	
		33	Providing and laying dado/skirting of glazed coloured tile ¼" thick jointed in white cement with matching pigment and laid over 1:2 cement sand mortar ¾" thick, including finishing complete in all respects. 9.5.7 P-73	500	33	Providing and laying dado/skirting of glazed coloured tile ¼" thick jointed in white cement with matching pigment and laid over 1:2 cement sand mortar ¾" thick, including finishing complete in all respects. 9.5.7 P-73	500	
		34	Providing and laying roof insulation, comprising of single layer of tiles 9"x 4-1/2" x 1-1/2" grouted with cement sand mortar 1:3 laid over 3" thick earth including 1" mud plaster over thermopore sheet 1" thick over polythene sheet 300 gauge over a layer of bitumen coating at 34 lbs/100 sft. as per specification and complete in all respects. P-58 (6.1.6)	950	34	Providing and laying roof insulation, comprising of single layer of tiles 9"x 4-1/2" x 1-1/2" grouted with cement sand mortar 1:3 laid over 3" thick earth including 1" mud plaster over thermopore sheet 1" thick over polythene sheet 300 gauge over a layer of bitumen coating at 34 lbs/100 sft. as per specification and complete in all respects. P-58 (6.1.6)	950	Suitable
		35	Kurras on roof 2'x2'x1-1/2" of cement concrete (1:2:4) laid over 3" thick 1:4:8 concrete as per specification complete in all respects. P-84 (8.7.2)	4	35	Kurras on roof 2'x2'x1-1/2" of cement concrete (1:2:4) laid over 3" thick 1:4:8 concrete as per specification complete in all respects. P-84 (8.7.2)	4	
		36	Bottom Kurras on ground in solid brick masonry in cement mortar 1:6 of size 4.5"x4-1/2" laid over 3" cement mortar 1:8:8 as per specifications complete. P-84 (8.7.3)	4	36	Bottom Kurras on ground in solid brick masonry in cement mortar 1:6 of size 4.5"x4-1/2" laid over 3" cement mortar 1:8:8 as per specifications complete. P-84 (8.7.3)	4	
		37	Providing and fixing paver tiles (7500 psi) unglazed of different colours manufactured by Ichra/Envirocrete or equivalent over 2" thick sand	4000	37	Providing and fixing paver tiles (7500 psi) unglazed of different colours manufactured by Ichra/Envirocrete or equivalent, over 2" thick sand base, as per specifications and details given in the drawing	4000	

S#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER			
			base, as per specification [illegible] given in the drawing including providing [illegible] compacting sand and preparation of surface [illegible] prior to laying of pavers [illegible] colour [illegible] P-79			including providing [illegible] and compacting sand and preparation of the surface prior to laying of pavers [illegible] Grey natural colour [illegible] P-79		
		33	Providing first class deodar wood wrought joinery in doors and windows etc. panelled or panelled and glazed or fully glazed fixed in position including deodar wood chowkats [illegible] hinges [illegible] rubber stop cleats G.I. [illegible] complete in all respects [illegible] sliding bolt and lock [illegible]	260	38	Providing first class deodar wood wrought joinery in doors and windows etc. panelled or panelled and glazed or fully glazed fixed in position including deodar wood chowkats [illegible] hinges [illegible] rubber stop cleats G.I. [illegible] handles and [illegible] complete in all respects [illegible] sliding bolt and lock [illegible]	260	
		39	Providing and fixing in position [illegible] 2" deep made of [illegible] steel including [illegible] board [illegible] hinges [illegible] locks all [illegible] material complete [illegible]	300	39	Providing and fixing in position [illegible] 2" deep made of [illegible] steel including [illegible] board [illegible] hinges [illegible] locks all [illegible] complete [illegible]	300	
		40	Providing and fixing steel grated doors with [illegible] thick sheeting including angle iron frame [illegible] and 3/4" square bars 4" centre to centre with locking arrangement	104	40	Providing and fixing steel grated doors with [illegible] thick sheeting including angle iron frame [illegible] and 3/4" square bars 4" centre to centre with locking arrangement	104	
		41	Providing and fixing plastic soap dish complete chromium plated soap dish complete [illegible] P-153	2	41	Providing and fixing plastic soap dish complete chromium plated soap dish complete [illegible] P-153	2	
		42	Providing and fixing chromium plated towel rail complete [illegible] 60 cm (24") long and 1.5 cm [illegible] dia. [illegible] P-153	2	42	Providing and fixing chromium plated towel rail complete [illegible] 60 cm (24") long and 1.5 cm [illegible] dia [illegible] P-153	2	
		43	Providing and laying cement [illegible] between 40mm to 50mm Gauge in foundation and plinth [illegible] ratio 1:4:8 P-32 [illegible]	8030	43	Providing and laying cement [illegible] between 40mm to 50mm Gauge in foundation and plinth [illegible] ratio 1:4:8 P-32 [illegible]	8900	
		44	Dismantling wooden roof ceiling [illegible]	2300	44	Dismantling wooden roof ceiling [illegible] wooden ceiling [illegible] P-1	2300	

S.#	TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER OFFER			REMARKS
			dismantling wooden ceiling above 3.6 m height P-3 1.4.2 (c)			1.4.5 (c)		
		45	Dismantling lime/cement concrete and separating lime from concrete P-3 1.2.2	330	45	Dismantling lime/cement concrete and separating lime from concrete P-3 1.2.2	330	
		46	Supplying and fixing in position cast iron rain water down pipe as per specification (BS 416 Part-1-1990) excluding bends and shoes but including painting and clamps etc. complete in all respects (c) 4" dia (internal) cast iron down pipe P-64 6.7.4 (c)	730	46	Supplying and fixing in position cast iron rain water down pipe as per specification (BS 416 Part-1-1990) excluding bends and shoes but including painting and clamps etc. complete in all respects (c) 4" dia (internal) cast iron down pipe P-64 6.7.4 (c)	730	
		47	Supplying and fixing shoes, bends or offsets of cast iron rain water down pipe as per specification (BS 416 Part-1-1990) including painting, complete in all respects P-64 6.7.6	150	47	Supplying and fixing shoes, bends or offsets of cast iron rain water down pipe as per specification (BS 416 Part-1-1990) including painting, complete in all respects P-64 6.7.6	150	
		48	Dismantling of plain cement Concrete (c) cement concrete plain 1:2:4 P-02 1.3.2 (c)	500	48	Dismantling of plain cement Concrete (c) cement concrete plain 1:2:4 P-02 1.3.2 (c)	500	[illegible]
		49	Dismantling of plain cement Concrete (c) cement concrete plain 1:4:8 P-02 1.3.2 (c)	100	49	Dismantling of plain cement Concrete (c) cement concrete plain 1:4:8 P-02 1.3.2 (c)	100	
		50	Plain / Corrugated GI sheets roofing providing corrugated galvanized iron sheets roofing over the existing trusses / purlins etc including fixing with GI bearings, nuts etc SWG sheets 100/24 G P-62 (b) 6.4.1	2500	50	Plain / Corrugated GI sheets roofing providing corrugated galvanized iron sheets roofing over the existing trusses / purlins etc including fixing with GI bearings, nuts etc SWG sheets 100/24 G P-62 (b) 6.4.1	2500	
		51	Providing deodar wood work sawn, wrought, planed & fixed in position, including steel nails and screws etc complete in all respects 11.1.1 (c) P-89	400	51	Providing deodar wood work sawn, wrought, planed & fixed in position, including steel nails and screws etc complete in all respects 11.1.1 (c) P-89	400	
		52	Electrical work including supply and installation of HT Panel 800 amp etc (railway approved) as per requirement, LT Panel etc as per requirement, metering arrangements, HT Cable (length 5 meters as per requirement), 4 Core Cable 19/44 2000 MTR (Railway approved Brand), Transformer 500 KVA	15	52	Electrical work including supply and installation of HT Panel 800 amp etc (railway approved) as per requirement, LT Panel etc as per requirement, metering arrangements, HT Cable (length 5 meters as per requirement), 4 Core Cable 19/44 2000 MTR (Railway approved Brand), Transformer 500 KVA with Wheel Trolley (WAPDA approved), MCB LT [illegible]	15	

SN	TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER OFFER
		[illegible] LT Breaker [illegible] Amp 25 Nos. MCB LT Breaker 3 Pole 500 Amp 2 Nos. Complete wiring of building with [illegible] Standard, including Industrial Fan (4 Nos), Ceiling Fan 56" Railway approved (15 Nos), Exhaust Fan 24" (3 Nos), Search Light 150 Watt [illegible] or equivalent (10 Nos), 2 Ton floor mounting AC [illegible] or Equivalent Rubber Sheet [illegible] Safety as per requirement and working of machines 1 Job etc.	3 Ph 120 Amp 25 Nos. MCB LT Breaker 3 Pole 500 Amp 2 Nos. Complete wiring of building with [illegible] as per requirement and IR Standard including Industrial Fan (4 Nos), Ceiling Fan 56" Railway Approved (15 Nos), Exhaust Fan 24" (3 Nos), Search Light 150 Watt [illegible] or equivalent (10 Nos), 2 Ton floor mounting AC [illegible] or equivalent Rubber Sheet [illegible] Safety as per [illegible] and working of machines 1 Job etc.

Note: [illegible] Tender Document [illegible] Railway Staff [illegible] documents [illegible] drawings along with flow chart will be submitted before [illegible] will be supplied in advance before [illegible] September 2022 [illegible] September 2022.

BID EVALUATION CHECK LIST

Bid evaluation of the tender for the Procurement and Installation of Nut & Bolt Forging Machines at Signal Workshops, Lahore.

M/s Spirit Industries PVT LTD

Sr. No.	Description	Remarks	No.
1.	Is Registered with Income Tax and Sales Tax Departments and who are on Active Taxpayers List of FBR?	Yes	1
2.	Is Registered with PEC in Category PEC C-4 category?	Yes	2
3.	Is deposited Bid Security (CDR)?	Yes	3
4.	Is Delivery and completion Schedule confirmed?	Yes	4
5.	Are Compliance to the provided Specifications and relevant literature attached?	Yes	5
6.	Work completion Certificate attached?	Yes	13 to 14
7.	Compliance to the Bid Validity Period	Yes	7
8.	Letter for confirmation of submission of performance security within 28days after receipt of Letter of Acceptance	Yes	8
9.	Is Organization chart attached?	Yes	9
10.	Is compliance to the Warranty i.e. 12 Month after supply of equipment and GCC Sub clause 28.5 also defined period in PEC confirmed?	Yes	10
11.	Is Letter for provision of After Sale services on expiry of Warranty for 05 years or above attached?	Yes	11
12.	Is Literature regarding machines accompany to bid?	Awaited vide S. No. 37	15

BID EVALUATION CRITERIA

BID EVALUATION OF THE TENDER FOR THE PROCUREMENT AND INSTALLATION OF NUT & BOLT FORGING MACHINE (COMPLETE UNIT) AT SIGNAL WORKSHOPS LAHORE.

M/s Spirit Industries PVT LTD

SR. NO.	DESCRIPTION	WEIGHTAGE (%)	S.No.	REMARKS
1	Registered with Income Tax and Sales Tax Department and who are on Active Taxpayers List of FBR	Compulsory	1	100%
2	Registered with PEC in Category (PEC Category)	Compulsory	2	100%
3	Bid Security (CDR)	Compulsory	3	100%
4	Delivery and completion Schedule	Compulsory	4	100%
5	Compliance to the provided Specifications	Compulsory	5	100%
6	Work executed for similar/equivalent nature of Job	10	6	00
7	Compliance to the Bid Validity Period	Compulsory	7	100%
8	Letter for confirmation of submission of performance security within 28days after receipt of Letter of Acceptance	Compulsory	8	100%
9	Organization chart for, d) Procurement of Goods from source e) Transportation of Goods from Source to destination (Signal Shops) f) Site/Tender work concerned and other related matters with Purchaser (Pakistan railways). iii. Concerned Engineer iv. Concerned Diploma Holder & Maintainer / Technician	20	9	20
10	Compliance to the Warranty i.e. 12 Month after supply/ITC of equipment and GCC Sub clause 28.3 also defined period in PCC	Compulsory	10	100%
11	Letter for provision of After Sale services on expiry of Warranty for 05 years or above	20	11	20
12	Registered with SECP Age of Company Above 10 Years = 10 Marks Above 05 Years = 05 Marks Below 05 Years = 0	10	12	05
13	Past Experience with Pakistan Railways (C5 & above certificates) = 10 Marks (C3 & above certificates) = 07 Marks (C1 & above certificates) = 05 Marks	10	13&14	10
14.	Past Experience with Pakistan Railways Completion of Contracts average last 3 years IV. Above Rs. 250M/Year = 20 V. Above Rs. 1500M/Year = 10 VI. Below Rs. 150M/Year = 0	20	14	20
15	Manufacturer/Supplier Authorization Certificate	10	15	10
	TOTAL	100		85

As per PPRA rule 22 (2j above bid evaluation criteria must be filled failing which the technical offer will be rejected.

G-NAS 29

29/01—29/03

TECHNICAL EVALUATION SHEET AGAINST TENDER NO. 785-S/PD/HQ/2020-2021

M/S ARSHAD AMAN & SAID

S.#	TENDER DESCRIPTION		RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
1	Supply, Installation, Testing & commissioning of Automatic Bar Straightening & Cutting Machine, including Electric Main (sub panel, connection wiring from main board to the machine etc.) civil work, foundation of machine etc., inspection measuring gauges, necessary maintenance TAF etc., complete in all respect along with One Man Month local Training to 10 persons.	1 No.	**AUTOMATIC BAR STRAIGHTENING & CUTTING MACHINE etc.** **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** [illegible] a. Specifications Sr. / Description / Unit / Value 1 / Straightening & Cutting of Steel Bar / mm / Min 12 and Max 50 2 / Length of the Cutted Steel Rebar / mm / 50 to [illegible] 3 / Speed / [illegible] / 30 to 50 4 / Maximum motor Power / kW / 5 Kw	**AUTOMATIC BAR STRAIGHTENING & CUTTING MACHINE etc.** **TOTAL QUANTITY:** 01 Set Brand: [illegible] Machinery Model: LPG-50 Origin: China A. Specifications: Sr. / Description / Unit / Value 1 / Straightening & Cutting of Steel Bar / mm / Min 12 and Max 50 2 / Length of the Cutted Steel Rebar / mm / 50 to 900 3 / Speed / Pcs/minute / 30 to 50 4 / Max motor Power / kW / 5.5	Suitable
2	Supply, Installation, Testing & commissioning of Automatic Bar Punching & Forming Bolt Machine, induction furnace, feeding machine, including Steel Bar Chamfer Machine, Water Chiller with Tank & RO Plant, Bore (upto 250 Feet) and Storage Tank with stand, Plumbing etc.	1 Set	**AUTOMATIC BOLT MACHINE, INDUCTION FURNACE, FEEDING MACHINE, MOLDING STEEL BAR CHAMFER MACHINE, WATER CHILLER WITH TANK & RO PLANT, BORE (UPTO 250 FEET) AND STORAGE TANK WITH STAND, PLUMBING etc.** **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine/ [illegible] be capable for hot punching and forming of bolts [illegible] with high speed. The machine should be	**AUTOMATIC BOLT MACHINE, INDUCTION FURNACE, FEEDING MACHINE, MOLDING STEEL BAR CHAMFER MACHINE, WATER CHILLER WITH TANK & RO PLANT, BORE (UPTO 250 FEET) AND STORAGE TANK WITH STAND, PLUMBING etc.** **TOTAL QUANTITY:** 01 Set	Suitable

[illegible signature]

T. ARSHAD

[illegible signature]

#	TENDER DESCRIPTION	RAILWAY REQUIRMENT	BIDDER's OFFER	REMARKS
	To provide connection to each machine; 3 set of amps size hole Mouldcase, Electric Work (both panel/connection wiring from main panel to the machines etc.) and works foundation of machines etc. Unloading/erecting charges, necessary maintenance, T&P etc. Complete in all respect alongwith Two month Training of 12 persons.	[illegible] for [illegible] production [illegible] with minimum following operational features. These Machines should meet [illegible] following specifications [illegible] listed below.		

01. AUTOMATIC STEEL BAR CHAMFER MACHINE

Automatic steel bar chamfer machine required for the production process of [illegible] described in Annexure [illegible] which is will be [illegible] through [illegible] Rail Forging.

MINIMUM REQUIRED SPECIFICATIONS:

The machine [illegible] should be capable of Chamfering and [illegible] of [illegible] parts at high speed. The machine should be suitable for [illegible] industry for chamfering, [illegible]-turning and chamfering [illegible] and [illegible] [illegible]. Machine should meet [illegible] following specifications:

A. Minimum following specifications 1st Set

SR	Specification	Unit	Value
1	Steel Bar Diameter Range	mm	12-30
2	Steel Bar Length Range	mm	50-300
3	Speed	Pcs/minute	≥10
4	Motor Power	kW	2.5 [illegible]

B. Minimum following specifications 2nd Set

Sr	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	20-32
2	Steel Bar Length Range	mm	50-500
3	Speed	Pcs/minute	≥10
4	Motor Power	kW	2.5 [illegible]

Bidder's Offer

01. AUTOMATIC STEEL BAR CHAMFER MACHINE

Quantity: 2 Set
Brand: [illegible] Machinery
Model: CJ-150
Origin: China

A. Specifications 1st Set

SR	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	12-30
2	Steel Bar Length Range	mm	50-500
3	Speed	Pcs/minute	≥10
4	Motor Power	kW	3.0

B. Specifications 2nd Set

SR	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	20-33
2	Steel Bar Length Range	mm	50-500
3	Speed	Pcs/minute	≥10
4	Motor Power	kW	3

Remarks: Suitable

Dy. CE/[illegible]   Dy. CE/TEM/[illegible]   [illegible]

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER'S OFFER	REMARKS
	(see below)	(see below)	Suitable

RAILWAY REQUIREMENT

6) AUTOMATIC HOT PUNCHING & FORMING MACHINE

MINIMUM REQUIRED SPECIFICATIONS:

The machine is [illegible] capable of Automatically hot work punching and forming produced parts [illegible]. The machine should be suitable for [illegible] production industry with minimum following operational features:

- Material collected from Automatic shearing machine is manually transferred to the storage bin of the Automatic feeding machine.
- The Automatic feeding machine will then push the material into the induction heating machine according to desired frequency.
- Induction heating furnace moves the material through [illegible] and heated according to the given heating process time.
- Heated work piece then slid through the guided tube to the hot forging with given frequency where the manipulator [illegible] the work piece for hot forging.

Above Machine should meet minimum following specifications:

Hot Auto Punching & Forming Machine

SN	Specification	Unit	Value
1	Motor Power	kW	17 [illegible]
2	Efficiency	Pieces/min	5-15
3	Raw Materials Length	mm	[illegible]
4	Main Engine Running Pressure	MPa	0.3-0.6
5	Force Capacity	Tons	80-120
6	Power (3 phase 04 wire System)	V/Hz	400/50

Induction Furnace

SN	Specification	Unit	Value
1	Input Power (3 phase 04 wire system)	V/Hz	400/50
2	Input Current	Ampere	[illegible]

BIDDER'S OFFER

6) AUTOMATIC HOT PUNCHING & FORMING MACHINE

Quantity: 1 Set
Brand: IMT Machinery
Model: [illegible]
Origin: China

Hot Auto Punching & Forming Machine

SN	Specification	Unit	Value
1	Motor Power	kW	18.5 [illegible]
2	Efficiency	Pieces/min	5-15
3	Raw Material Length	mm	[illegible]
4	Main Engine Running Pressure	MPa	0.3-0.6
5	Force Capacity	Tons	110
6	Power (3 phase 04 wire System)	V/Hz	380-415/50

Induction Furnace

SN	Specification	Unit	Value
1	Input Power (3 phase 04 wire system)	V/Hz	380-415/50
2	Input Current	Ampere	220

REMARKS

Suitable

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
			Suitable

RAILWAY REQUIREMENT

3	Output POWER	KW	200 Min
4	Output Oscillation Frequency	KHz	15-30
5	Cooling Water Pressure	MPa	0.2-0.6
6	Water Hardness	Degree	Not more than 50 degree
7	Main Body	mm	700x700x1720
8	Transformer	mm	910x680x520 or equivalent

Automatic Deforming Machine

SL	Specification	Unit	Value
1	Deforming Speed	Pcs/minute	9-11
2	Power	KW	15 Min
3	Supply Power (3 phase 4 wire System)	V/Hz	400/50

Bolt manufacturing Line/s should be at the minimum energy and environmental requirement. Bolt, heading and bars forging machine should operate under following condition.

Energy & Environmental Requirement

SL	Parameter	Unit	Range
1	Air Pressure	MPa	0.5-0.8
2	Power Supply	V	415V
3	Operating Temperature	°C	10-50
4	Humidity	%RH	<85%

ALLIED MACHINES:

- 10 sets each size [illegible] of bolts described at Annexure A, Finished Bolt

BIDDER's OFFER

3	Output POWER	kW	200
4	Output Oscillation Frequency	KHz	15-30
5	Cooling Water Pressure	MPa	0.2-0.6
6	Water Hardness	Degree	Less than 50 degree
7	Main Body	mm	700x700x1720
8	Transformer	mm	910x680x520

Automatic Deforming Machine
Quantity: 1 Set, Brand: "TM" Machinery, Model: DF-60, Origin: China

SL	Specification	Unit	Value
1	Deforming Speed	Pcs/minute	9-11
2	Power	kW	15
3	Supply Power	V/Hz	380/50

Energy & Environmental Requirement

SL	Parameter	Unit	Range
1	Air Pressure	MPa	0.5-0.8
2	Power Supply	V	380V ± 10 3 Phase 5 wire
3	Operating Temperature	°C	10~50
4	Humidity	%RH	≤85%

ALLIED MACHINES:

- 10 sets each for sizes mentioned at Annexure "A" with SSL Logo at the

Suitable

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
	(see below)	(see below)	Suitable

RAILWAY REQUIREMENT

[illegible] with SSL [illegible] (Specifications [illegible])
- Air Compressor or equivalent
- Other machine related accessories

C) AUTOMATIC WATER CHILLER WITH TANK & RO PLANT

MINIMUM REQUIRED SPECIFICATIONS:

Automatic Water Chiller with tank and RO plant [illegible] production plant. The [illegible] should meet minimum following specifications.

A. Water Chiller (Approx. minimum requirement)

Specification		Unit	Value
Water Chiller Capacity		HP	30 Min
Operation Control Mode		Type	Automatic Control
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	380V 50Hz
Unit Structure		Type	Steel Box
Evaporation Temperature		°C	[illegible]
Condensation Temperature		°C	40
Evaporator	Type	Type	Shell Tube
	Circulating Media	Type	Clean Water
	In/Out Water Temp.	°C	[illegible]
Pump	Flow Rate	m³/h	[illegible]
	Head Lift	M	[illegible]
	Motor Power	kW	[illegible] Min.
Condenser	Heat Exchange	Kcal/h	[illegible]
	Cooling Air Volume	m³/h	[illegible] machines
	In/Out Temp.	°C	[illegible]
Control System	Normal Temperature		Low Temperature

BIDDER's OFFER

[illegible]
- Air Compressor
- Standard accessories for each machine shall be supplied accordingly

C) AUTOMATIC WATER CHILLER WITH TANK & RO PLANT

Quantity : 1 Set, Brand: TMT Machinery , Model: YTO-40AD, Origin : PRC/China

A. Water Chiller (Approx. minimum requirement)

Specification		Unit	Value
Water Chiller Capacity		HP	30
Operation Control Mode		Type	Automatic Control
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	380V 440V 50Hz 3phase
Unit Structure		Type	Steel Box
Evaporator Temperature		°C	+5
Condensation Temperature		°C	+50
Evaporator	Type	Type	Shell Type
	Circulating Media	Type	Clean Water
	In/Out Water Temp	°C	+15/+10
Pump CDM [illegible]	Flow Rate	m³/h	20
	Head Lift	M	5
	Motor Power	kW	4
Condenser	Heat Exchange	Kcal/h	125000
	Cooling Air Volume	m³/h	Vent + Heat dissipation [illegible] machines
	In/Out Temp.	°C	35/50

REMARKS: Suitable

Dr. [illegible]

[illegible]

Dr. [illegible]

TENDER DESCRIPTION			RAILWAY REQUIRMENT		BIDDER's OFFER		REMARKS
			Protective Devices		Control System Protective Devices		
				Inverse Phase of Power Supply		Abnormal Temperature	Low Temperature Cut Off Compressor
				High and Low voltage Fault		Inverse Phase of Power Supply	Protection to Prevent Comp. Reverse
				Compressor Overload		High and Low Voltage Fault	Pressure Switch Detecting pressure of refrigerant system
				Overheating of Compressor		Compressor Overload	Thermal Relay Protection
				Pump Overload		Overheating of Compressor	Internal Protector Protector Compress.
				Low Water Level Warning		Pump Overload	Thermal Relay Protector Pump
				Short Circuit		Low Water Level Warning	Water Level Switch
						Short Circuit	Air Switch
			B. Water Tank Specifications Water tank specification: The inner tank is made of Stainless Steel Plate of 3 5mm, wrapped with stainless steel plate and the middle insulation layer is 5cm polyurethane foam. The water tank is equipped with water superscribing float switch, overflow port, drainage outlet, main pipe inlet and outlet are 2 inlets and 2 outlets diameter DN50. C. RO Plant: Commercial Grade Matching RO plant for water chiller and tank, water tank refill done by supplier.		B. Water Tank Specifications To match with 40HP Air Cooled Chiller Quantity = 1 set, Origin: Part/China The inner tank is made of 3.5mm Stainless Steel Plate wrapped with steel plate and the middle insulation layer is 5cm polyurethane foam. The water tank is equipped with water superscribing float switch, overflow port, drainage outlet, main pipe inlet and outlet are 2 inlets and 2 outlets diameter DN50 C. RO Plant Commercial Grade Matching RO plant for water chiller and tank, water tank refill 35G	Suitable
3	Supply, Installation, Testing & commissioning of Automatic 2 Axles Threading Machine	1 Set	AUTOMATIC 2 AXLES BOLT THREADING MACHINE ETC... TOTAL QUANTITY 01 Set		AUTOMATIC 2 AXLES BOLT THREADING MACHINE ETC... TOTAL QUANTITY 01 Set		Suitable

TENDER DESCRIPTION		RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
including [illegible] dies, sleeves, with [illegible] panel, connection, wiring from main panel to the machines etc. [illegible] (foundation of machines etc.) [illegible] necessary [illegible] complete in all respect alongwith one man Month Training of [illegible] persons		**MINIMUM REQUIRED SPECIFICATIONS:** The machine, single axle specially designed to thread bolts, forging bolts at high speed. The machine should be suited for bolt/nut production industry for Railway and allied industry. Machine head should be rotating with die [illegible] rotating head, easily changeable die head and [illegible] cutting dies. Automatic [illegible] directly to the dies and [illegible] through die head during threading operation. Machine should meet minimum following specifications.	Brand: TMT Machinery Model: [illegible] Origin: China Comments: [illegible] Machine: Designed to [illegible] thread bolts at high speed. Die [illegible] rotating head and easily changeable dies. Automatic [illegible] directly to the dies [illegible] through the head during threading operation with following specifications.	

Minimum following specifications 1st Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	[illegible]
2	Steel Bar Length Range	mm	[illegible]
3	Axle Rotating Head	Nos.	2
4	Motor Power	KW	2.5 Min
5	Bolt Thread Requirement		M12-M24

Specifications as per Bolt/Axle Threading Machine 1st Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	[illegible]
2	Steel Bar Length Range	mm	50-500
3	Axle Rotating Head	Nos.	2
4	Motor Power	KW	[illegible]
5	Bolt Thread Requirement		M12-M24

Minimum following specifications 2nd Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	20-32
2	Steel Bar Length Range	mm	50-500
3	Axle Rotating Head	Nos.	2
4	Motor Power	KW	2.5 Min
5	Bolt Thread Requirement		M24-M32

Specifications 2nd Set

Sr.	Specifications	Unit	Value
1	Steel Bar Diameter Range	mm	[illegible]
2	Steel Bar Length Range	mm	50-500
3	Axle Rotating Head	Nos.	2
4	Motor Power	KW	[illegible]
5	Bolt Thread Requirement		M24-M32

TENDER DESCRIPTION		RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
4 Supply, Installation, Testing & commissioning of Automatic Nut Forging Machine, Induction furnace, feeding machine, Sizing Machine, Water Chiller with Tank & RO Plant, Rod Feeding Table and Storage Tank	1 Set	AUTOMATIC NUT FORGING MACHINE, INDUCTION FURNACE, FEEDING MACHINE ETC. **TOTAL QUANTITY:** 01 Set **MINIMUM REQUIRED SPECIFICATIONS:** The machine single axle auto capable of producing Nut at high speed. The machine should be suited for nut production industry with Automatic induction furnace feeding and hot forging. Machine should meet minimum following	AUTOMATIC NUT FORGING MACHINE, INDUCTION FURNACE, FEEDING MACHINE ETC. **TOTAL QUANTITY:** 01 Set **SPECIFICATIONS:**	

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
will stand. Rotating rack to provide connection to each machine including 3 sets of each size Moulds/dies, electric Work place panel, conveyors for transportation of material to the machines and, and control panel. Transfer of machine etc.) Induction heating furnace, necessary tools/spares for (operation & maintenance), and all operation manuals. Tr[illegible] training of Operators.	Specifications • Material collected from Automatic Cutting machine is manually loaded to the storage bin of the fully Automatic feeding machine. • The Automatic feeding machine will then push the material into the induction heating machine according to the set frequency. • Induction heating furnace receive the material through Automatic feeder and heated according to the given heating process time. • Heated work piece then slid through the guided tube to the hot forging with given frequency where the robotic arm clamp the work piece for hot forging. Above Machines should meet minimum following specifications **A. FORGING MACHINE:**	• Material collected from Automatic Cutting machine is manually loaded to the storage bin of the fully Automatic feeding machine. • The Automatic feeding machine will then push the material into the induction heating machine according to the set frequency. • Induction heating furnace receive the material through Automatic feeder and heated according to the given heating process time. • Heated work piece then slid through the guided tube to the hot forging with given frequency where the robotic arm clamp the work piece for hot forging. Above Machines meet the minimum following specifications. **A. FORGING MACHINE:** Origin: [illegible], TMT Machinery, Model J[illegible]-250 China	Complies

Railway requirement — A. FORGING MACHINE

Technical parameters			
Capacity	kN		2500
Nominal force stroke	mm		6
Slider stroke	mm		200
Number of trips	Fixed	min-1	45
	Variable	min-1	30-55
Inside mould height	mm		450
Adjustable mould height	mm		110
Distance between Slide centre	mm		430
Column distance	mm		910
Slide bottom dimension	mm		880X522
Mould hole diameter	mm		72x100
Working table dimension	mm		1050X940
Drop down Die	mm		240

Bidder's offer — A. FORGING MACHINE

Technical parameters			
Capacity	kN		2500
Nominal force stroke	mm		6
Slider stroke	mm		200
Number of trips	Fixed	min-1	45
	Variable	min-1	30-55
Inside mould height	mm		450
Adjustable mould height	mm		110
Distance between Slide centre	mm		430
Column distance	mm		910
Slide bottom dimension	mm		880X522
Mould hole diameter	mm		72x100
Working table dimension	mm		1050X940
Drop down Die	mm		240

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
	(see below)	(see below)	Similar

RAILWAY REQUIREMENT

Working table thickness	mm	160
Distance between working	mm	1000
Overall dimension	mm	2000×1540×2580
Anchor bolt distance	mm	2000×1960
Motor power	kw	15.5 Min
Pneumatic	Mpa	0.5

B. INDUCTION FURNACE:

Specification	Unit	Value
Input voltage	V/HZ	380V/50
Input power	KW	250 Min
Input current	A	500
Cooling water pressure	PA	0.2-0.5
Output value	m/hr	150

C. AUTOMATIC FEEDING MACHINE:

Minimum meets following specifications:

a. Input Power 380V/50 three phase
b. Delivery Pneumatic
c. Time Control: Time Relay
d. Delivery Speed 2.7 seconds/piece-6.0seconds/piece
e. Air Pressure Required 0.4mpa-0.6mpa, Power: [illegible]KW

ALLIED MACHINES OF AUTOMATIC HOT PUNCHING & FORMING MACHINE:

- Grade tools are total of items described in Annexure A, Finished tool with 550 hrs/and [illegible] assessment.
- Air Compressor or equivalent.

BIDDER's OFFER

Working table thickness	mm	160
Distance between working	mm	1000
Overall dimension	mm	2000×1540×2580
Anchor bolt distance	mm	2000×1960
Motor power	kw	11.5
Pneumatic	Mpa	0.5

B. INDUCTION FURNACE:

Qty: 1 Set, Brand, TMT Machinery, Model MZP-250, China

Specification	Unit		Value
Input voltage	V/HZ		380V/50
Input power	KW		250
Input current	A		500
Cooling water pressure	PA		0.2-0.5
Output value	m/hr		150

C. AUTOMATIC FEEDING MACHINE:

Qty: 1 Set, Brand, TMT Machinery, Model [illegible], China

Specifications:

a. Input Power 380-440V 3phase/50Hz
b. Delivery Pneumatic
c. Time Control: Time Relay
d. Delivery Speed 2.7 seconds/piece-6seconds/piece
e. Air Pressure Required 0.4mpa-0.6mpa, Power: [illegible]KW

ALLIED MACHINES OF AUTOMATIC HOT PUNCHING & FORMING MACHINE:

Qty: 1 Set, Brand, TMT Machinery, China

- Mold 20 sets, same [illegible] mentioned in Annexure "A" with 550 hrs of the final bolt
- Air Compressor

Similar

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
	• Other machine data accessories	• Standard accessories for each machine shall be supplied accordingly	

D. AUTOMATIC WATER CHILLER WITH TANK & RO PLANT (Railway Requirement)

MINIMUM REQUIRED SPECIFICATIONS:
Automatic Water Chiller with tank and RO plant capacity [illegible] for [illegible] ... The equipment shall meet minimum following specifications:

E. Water Chiller (Approx. minimum requirement)

Specification		Unit	Value
Water Chiller Capacity		HP	30-35
Operation Control Mode		Type	Automatic/Serial Automatic Control Display
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	220V-50Hz
Unit Structure		Type	Steel Box
Evaporation Temperature		°C	+2 to +5
Condensation Temperature		°C	+50
Evaporator	Type	Type	Shell Tube
	Circulating Media	Type	Clean Water
	In/Out Water Temp.	°C	+15/+10
Pump	Flow Rate	m³/h	10-21
	Head Lift	M	20-35
	Motor Power	kW	3.5-4
Condenser	Heat Exchange	Kcal/h	120000-135000
	Cooling Air Volume	m³/h	Vertical Fan Dissipation 40000

D. AUTOMATIC WATER CHILLER WITH TANK & RO PLANT (Bidder's Offer)

Quantity: 1 Set, Brand: TMT Machinery, Model: YTD-40AD, Origin: PRC/China

Remarks: Complies

E. Water Chiller

Specification		Unit	Value
Water Chiller Capacity		HP	33
Operation Control Mode		Type	Automatic Control
Temperature Control Accuracy		°C	±1
Power Supply		V/Hz	380V-440V-50Hz 3phase
Unit Structure		Type	Steel Box
Evaporation Temperature		°C	+5
Condensation Temperature		°C	+50
Evaporator	Type	Type	Shell Tube
	Circulating Media	Type	Clean Water
	In/Out Water Temp	°C	15/10
Pump (DN65)	Flow Rate	m³/h	21
	Head Lift	M	35
	Motor Power	kW	4
Condenser	Heat Exchange	Kcal/h	135000
	Cooling Air Volume	m³/h	Vertical Fan Dissipation 40000 m³/h

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
	(see below)	(see below)	Suitable

RAILWAY REQUIREMENT

Control System Protective Devices		
	Inlet Temp. 10	Function limit
	Abnormal Temperature	Low Temperature Cut Off Compressor
	Inverse Phase of Power Supply	Protection to Prevent Comp Reverse
	High and Low Voltage Fault	Pressure Switch Detecting
	Compressor Overload	Thermal Relay Protection
	Overheating of Compressor	Internal Pressure Protection Compressor
	Pump Overload	Thermal Relay Protection Pump
	Low Water Level Warning	Water Level Switch
	Short Circuit	Air Switch

F. Water Tank Specifications:

Water tank specification: The inner tank is made of Stainless Steel Plate of 3-5mm wrapped with stainless steel plate, and the middle insulation layer is 5cm polyurethane foam. The water tank is equipped with water replenishing float switch, overflow port, drainage outlet, main pipe inlet and outlet etc. 2 inch and 3 inches.

G. RO Plant

One Seeds Group Matching RO plant for water chiller and sink water tank etc.

BIDDER's OFFER

Control System Protective Devices		
	Inlet Temp.	7C	35/50
	Abnormal Temperature	Low Temperature Cut Off Compressor
	Inverse Phase of Power Supply	Protection to Prevent Comp Reverse
	High and Low Voltage Fault	Pressure Switch Detecting pressure of refrigerant system
	Compressor Overload	Thermal Relay Protection
	Overheating of Compressor	Internal Pressure Protection Compressor
	Pump Overload	Thermal Relay Protection Pump
	Low Water Level Warning	Water Level Switch
	Short Circuit	Air Switch

F. Water Tank Specifications

To match with water chiller, Quantity = 1 set, Origin: PAKISTAN.

The inner tank is made of 1.5mm Stainless Steel Plate, wrapped with steel plate, and the middle insulation layer is 5cm polyurethane foam. The water tank is equipped with water replenishing float switch, overflow port, drainage outlet, main pipe inlet and outlet are 3 inches and 2 inches diameter [illegible].

G. RO Plant

Commercial Grade Matching RO plant for water chiller and tank, water tank etc. 300.

Suitable

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER'S OFFER	REMARKS
	from the supplier. Supplier should mention the Name of the British/European/American/Japanese or equivalent manufacturer of the following which are machinery and equipment for the ... Machines made without any ... standard liable to be rejected without any further consideration. **H. AUTOMATIC SHOT BLASTING MACHINE** **MINIMUM REQUIRED SPECIFICATIONS:** The Automatic shot blasting machine is capable of Automatically shot blasting nuts and parts at high speed. The machine would be suitable for both ... production industry with minimum following operational features:	**AUTOMATIC SHOT BLASTING MACHINE** Quantity: 1 Set, Brand: TMT Machinery, Model: [illegible]-1991, Origin: P.R.China	Suitable

Railway Requirement

Sl.	Specification		Value
1	Pills	Quantity	1 Set
		Impeller	ϕ 250 mm
		Motor power	11 Kw
		Speed	2900 r/min
		Shot blasting	210 Kg/min
		Projectile velocity	[illegible] m/s
2	Crawler drum	End plate diameter	1000 mm
		End plate spacing	1100 mm
		Loading weight	500 kg
		Blasting workpiece max weight	30 kg
		Max workpiece size	300 mm
		Track speed	5.5 m/min
3	Dust collector	Type of dust collector	Cyclone dust collector + pulse backflow filter

Bidder's Offer

Sl.	Specification		Value
1	Pills	Quantity	1 Set
		Impeller	ϕ 250 mm
		Motor power	11 Kw
		Speed	2900 r/min
		Shot blasting	210 Kg/min
		Projectile velocity	65-70 m/s
2	Crawler drum	End plate diameter	1000 mm
		End plate spacing	1100 mm
		Loading weight	500 kg
		Blasting workpiece max weight	30 kg
		Max workpiece size	300 mm
		Track speed	5.5 m/min
3	Dust collector	Type of dust collector	Cyclone separator + pulse backflow filter cartridge dust collector

TENDER DESCRIPTION			RAILWAY REQUIREMENT				BIDDER's OFFER				REMARKS
						parameter as following					
			4	Motor	Dust collector (?)	5[illegible]m3	4	Motor	Dust Collector (?)	5000m3	Suitable
					power	5.5Kw			power	5.5Kw	
					Maximum loading weight	600 kg			Maximum loading weight	600 kg	
					Lifting	1 Ton chain hoist			Lifting	1 Ton chain hoist	
					Shot blasting	2900 r/min 11Kw			Shot blasting	2900 r/min 11Kw	
					Track transmission	0.2m/min 2.5Kw			Track transmission	0.2m/min 2.5Kw	
			5	Motor	Gear	[illegible] cylinder [illegible]	5	Motor	Gear	[illegible] cylinder [illegible]	
					Feeder	[illegible] 1.5Kw (1 ton chain hoist)			Feeder	[illegible] 1.5Kw (1 ton chain hoist)	
					Lifter	13 m/min 2.2Kw			Lifter	13 m/min 2.2Kw	
					Dust collector machine	2850 r/min 5.5Kw			Dust collector machine	2850 r/min 5.5Kw	
						3000×2700×4500mm				3000×2700×4500mm	
					Equipment total power	24Kw			Equipment total power	24Kw	
			6	Equipment productivity		3-4 t/h	6	Equipment productivity		3-4 t/h	
			Supplier should mention the International British, European, American, Japanese or equivalent standard number following which such machinery and equipment is made. Machines made without any International standard number shall be rejected without any further consideration.				Supplier should mention the International British, European, American, Japanese or equivalent standard number following which such machinery and equipment is made. Machines made without any International standard number shall be rejected without any further consideration.				
6	Supply, Installation, Testing & commissioning of Automatic Nut Tapping Machine, 2 Nos. of each [illegible] tapping dies, Electric	1 Set	AUTOMATIC NUT TAPPING MACHINE TOTAL QUANTITY: 01 Set MINIMUM REQUIRED SPECIFICATIONS:				AUTOMATIC NUT TAPPING MACHINE TOTAL QUANTITY: 01 Set SPECIFICATIONS:				Suitable

	TENDER DESCRIPTION		RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
a	Nut [illegible] machine, [illegible] main [illegible] to the machine etc), civil works [illegible] of machine etc (inclusive of [illegible] gauges, necessary [illegible], T&P etc.) complete in all respect [illegible] with [illegible] training of 12 persons.		See below	Quantity: 1 Set, Source: [illegible] Machinery, Model: 30-DT, Origin: China	Suitable
b	Supply of Raw material, civil and electrical work (Detailed attached as Annexure 4 & 5)	1 Job	RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc...	RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc...	Suitable

RAILWAY REQUIREMENT

The machine is single unit set & specially designed to [illegible] high speed. The machine should be suited for [illegible] industry for Railway and allied industry. Machine head should be [illegible]. Each [illegible] & [illegible] automatic [illegible] and [illegible] spindle head during [illegible] operation. [illegible] minimum following specifications.

Minimum Required Qty: 2 Sets [illegible] specific features. Fully Automatic Machine with minimum following specifications:

Sl	Description	1st Set	2nd Set
1	Tapping Range	M12-M33	M20-M72
2	Mode	Pneumatic	Pneumatic
3	Feeding Mode	Automatic/Semi-Automatic	Automatic/Semi-Automatic
4	Output (pcs/min/spindle)	5-8	2-4
5	Spindles	2	2
6	Total Power (kW)	5	11 kW

a. Nut tapping machine
b. Spindle quantity: 4
c. Speed: [illegible] pcs/spindle/minute [illegible]
d. Motor: [illegible] motor [illegible]
e. Reducer: planetary reducer, [illegible]
f. Auto oiling device
g. Lifting and feeding device: [illegible]

RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc...

SCOPE OF WORK:

Supply of Raw material, civil and electrical work (complete in respect) Detailed attached as Annexure 4 & 5

BIDDER's OFFER

Quantity: 1 Set, Source: [illegible] Machinery, Model: 30-DT, Origin: China

Sl	Description	1st Set	2nd Set
1	Tapping Range	M12-M30	M30-M42
2	Mode	Pneumatic	Pneumatic
3	Feeding Mode	Automatic/Semi-Automatic	Automatic/Semi-Automatic
4	Output (pcs/min/spindle)	2-8	2-4
5	Spindles	2	2
6	Total Power (kW)	5	11 kW

a. Nut tapping machine
b. Spindle quantity: 4
c. Speed: 2-8 pcs/spindle/minute [illegible]
d. Motor: [illegible] motor, [illegible]
e. Reducer: planetary reducer, [illegible]
f. Auto oiling device
g. Lifting and feeding device: [illegible]

RAW MATERIAL, CIVIL & ELECTRICAL WORK Etc...

SCOPE OF WORK:

Supply of Raw material, civil and electrical work (complete in respect) Detailed attached as Annexure 4 & 5

[illegible signatures]

TENDER DESCRIPTION	RAILWAY REQUIREMENT	BIDDER's OFFER	REMARKS
	TOTAL QUANTITY: 01 Job	TOTAL QUANTITY: 01 Job	5 days

Annexure "A"

DETAIL OF RAW MATERIAL REQUIRED FOR MANUFACTURING OF NUT AND BOLT

S.#	Description	QTY
1	MS Rod 5/8" dia 20ft long class 3	500 kg
2	MS Rod 5/8" dia 20ft long class 3	1,000 kg
3	MS Rod 5/8" dia 20ft long class 2	1,000 kg
4	MS Rod 1" dia 20ft long as per sample available in Signal Shop	500 kg

DETAIL OF CIVIL & ELECTRIC WORKS

Annexure "B"

Sr. #	DESCRIPTION	QTY
1	Removing cement plaster over walls (Existing building) (1:4:3) P/G	[illegible]
2	Dismantling brick works (1:3:3) P/G	2000
3	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in 2	1200

Bidder's offer:

Annexure "A"

DETAIL OF RAW MATERIAL REQUIRED FOR MANUFACTURING OF NUT AND BOLT

S.#	Description	QTY
1	MS Rod 5/8" dia 20ft long class 3	500 kg
2	MS Rod 5/8" dia 20ft long class 2	1,000 kg
3	MS Rod 5/8" dia 20ft long class 2	1,000 kg
4	MS Rod 1" dia 20ft long as per sample available in Signal Shop	500 kg

DETAIL OF CIVIL & ELECTRIC WORKS

Annexure "B"

Sr. #	DESCRIPTION	QTY
1	Removing cement plaster over walls (Existing building) (1:4:3) P/G	[illegible]
2	Dismantling brick works (1:3:3) P/G	2000
3	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in 2	1200

TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER'S OFFER			REMARKS
		respects CCT topping dividing into panel 2" thick P.(a) 1.6			respects CCT topping dividing into panel 2" thick P.(a) 1.6		
	4	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 4" thick P.(a) 1.6	4500	4	Providing and laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into panels as per specifications and complete in all respects CCT topping dividing into panel 4" thick P.(a) 1.6	4500	Suitable
	5	Providing laying and jointing first class pacca brick work in ground floor 9" / 13-1/2 thick wall including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects (b) P.4.1.3	1500	5	Providing laying and jointing first class pacca brick work in ground floor 9" / 13-1/2 thick wall including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects (b) P.4.1.3	1500	
	6	Cement plaster on wall upto 20' height 3/4" 1:4 10.2.3 (b)	9000	6	Cement plaster on wall upto 20' height 3/4" 1:4 10.2.3 (b)	9000	
	7	Providing Cement concrete plain using coarse sand and screened graded & washed aggregate of approved quality including placing compacting finishing curing complete as per specification without shuttering on ground floor of building and for structures upto 20ft height 1:2:4 P.10 (c) 6.4.1	1000	7	Providing Cement concrete plain using coarse sand and screened graded & washed aggregate of approved quality including placing compacting finishing curing complete as per specification without shuttering on ground floor of building and for structures upto 20ft height 1:2:4 P.10 (c) 6.4.1	1500	
	8	Providing and laying mild steel reinforcement including cost of deform bar 60 grade 60000 Psi complete in all respects 5.5.1 (b) P.30	2000	8	Providing and laying mild steel reinforcement including cost of deform bar 60 grade 60000 Psi complete in all respects 5.5.1 (b) P.30	2000	
	9	Providing laying and jointing first class pacca brick work in ground floor 4-1/2 inch thick walls including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects (b) cement sand mortar 1:4 (i)	500	9	Providing laying and jointing first class pacca brick work in ground floor 4-1/2 inch thick walls including scaffolding raking of joints and curing as per drawings and specifications complete in all respects (b) cement sand mortar 1:4 (i)	500	
	10	Providing laying and jointing first class pacca brick work other than in buildings above foundations and plinth upto 10 ft (3 m) height including scaffolding raking of joints and curing as per drawing and specifications cement sand mortar 1:6 upto 10 ft height	1500	10	Providing laying and jointing first class pacca brick work other than in buildings above foundations and plinth upto 10 ft (3 m) height including scaffolding raking of joints and curing as per drawing and specifications cement sand mortar 1:6 upto 10 ft height	1500	

TENDER DESCRIPTION		RAILWAY REQUIREMENT			BIDDER's OFFER		REMARKS
16		(B) 6.4.1			(B) 6.4.1		
	11	Providing and fixing 5mm thick 1 ½" wide strips for dividing flooring in to panel (c) marble. P-71 9.4.4	4000	11	Providing and fixing 5mm thick 1 ½" wide strips for dividing flooring in to panel (c) marble. P-71 9.4.4	4000	
	12	Priming coat of chalk under distemper P-84 10.6.1)	8000	12	Priming coat of chalk under distemper P-84 10.6.1)	8000	Suitable
	13	Distempering a new surface (iii) three coat P-84 10.6.1	8000	13	Distempering a new surface (iii) three coat P-84 10.6.1	8000	
	14	Providing and fixing MS flats 1/2x1/8 are ms square 5/8"x5/8" grill in windows of approved design including painting 3 coats complete in all respects P-116 (15.7.1)	180	14	Providing and fixing MS flats 1/2x1/8 are ms square 5/8"x5/8" grill in windows of approved design including painting 3 coats complete in all respects P-116 (15.7.1)	180	
	15	Providing and fixing aluminum window sliding consisting of chokat of special types a section 4"x1" and leaf with vertical style 2"x1" x 1 ½ x 1" bottom rail 2 ¼" x 1" and top rail 1 ¾" x 1" including latch screws, sliding wheel 5mm glass sheets fixed with rubber channel etc complete in all respect as approved by the engineer incharge P-111 (13.9.2)	180	15	Providing and fixing aluminum window sliding consisting of chokat of special types a section 4"x1" and leaf with vertical style 2"x1" x 1 ½ x 1" bottom rail 2 ¼" x 1" and top rail 1 ¾" x 1" including latch screws, sliding wheel 5mm glass sheets fixed with rubber channel etc complete in all respect as approved by the engineer incharge P-111 (13.9.2)	180	
	16	Providing and fixing aluminum wire gauze shutter to windows consistent of special type section 1 5/8" x1/2" with aluminum wire gauze of 16"x16" mating per square inch fixed special rubber channel INCLUDING cost wheel, screws etc complete as approved by engineer incharge P-111 (13.9.1)	180	16	Providing and fixing aluminum wire gauze shutter to windows consistent of special type section 1 5/8" x1/2" with aluminum wire gauze of 16"x16" mating per square inch fixed special rubber channel INCLUDING cost wheel, screws etc complete as approved by engineer incharge P-111 (13.9.1)	180	
	17	Providing and fixing aluminum door and window providing and fixing aluminum doors consistent of chokat of special type a section 4"x1 3/4" and leaf of rectangular section 2"x1 ¾" jointed with sheet metal screw including pivoted hinges 6" handles 9" tower bolts on top and bottom and 5mm thick glass fixed special type rubber channel etc complete all respect as approved by design P111 (13.9.1)	400	17	Providing and fixing aluminum door and window providing and fixing aluminum doors consistent of chokat of special type a section 4"x1 3/4" and leaf of rectangular section 2"x1 ¾" jointed with sheet metal screw including pivoted hinges 6" handles 9" tower bolts on top and bottom and 5mm thick glass fixed special type rubber channel etc complete all respect as approved by design P111 (13.9.1)	400	
	18	Providing and fixing frame work of aluminum section	400	18	Providing and fixing frame work of aluminum section	400	

TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER'S OFFER			REMARKS
		D-1, D15 and D-16 and grating with glass fibre reinforced rubber ring as per design and approved drawings (Grating with plain glass sheet is not part of this item) (Item 8.4)			D-1, D15 and D-16 and grating with glass fibre reinforced rubber ring as per design and approved drawings (Grating with plain glass sheet is not part of this item) (Item 8.4)		
	18	Reinforced cement concrete in roof slabs, beams, columns, lintel, girder and other structural members upto 30' height (a) 1:1:2 Nominal mix (Item 5.2 & 5.3)	10		Reinforced cement concrete in roof slabs, beams, columns, lintel, girder and other structural members upto 30' height (a) 1:1:2 Nominal mix (Item 5.2 & 5.3)	10	
	20	Structural connection for foundation of buildings, bridges and other structures upto 30' level (Item 5.4 and payment as per 5.4.3.1 & 5.4.3.2)	2.83		Structural connection for foundation of buildings, bridges and other structures upto 30' level (Item 5.4 and payment as per 5.4.3.1 & 5.4.3.2)	2.83	
	21	Trench excavation in open cutting for sewers and manhole chambers in the designed section, level, grade and profile according to drawing and specifications and disposal of excavated material within 100 ft. (Item 4.3 & 4.3.1 & 4.3.2)	170		Trench excavation in open cutting for sewers and manhole chambers in the designed section, level, grade and profile according to drawing and specifications and disposal of excavated material within 100 ft. (Item 4.3 & 4.3.1 & 4.3.2)	170	
	22	Filling watering and ramming earth under floor, (a) with available earth (Item 4.4.1 (a))	120		Filling watering and ramming earth under floors (a) with available earth (Item 4.4.1 (a))	140	
	23	Supply and filling sand under floor (Item 4.4.2 & 4.4.3)	2020		Supply and filling sand under floor (Item 4.4.2 & 4.4.3)	2020	
	24	Providing and fixing 1-1/2" thick hollow flush doors and windows with commercial ply (Door shutter from veneer of deodar wood shutter frame 1-1/4" thick and solid wood beading at about 4" apart and decorative wood lipping 1-1/2"x1/2" fixed in position including chromium plated fitting complete in all respect including cleaning, lock & oiling both (Item 11.5.1)	64		Providing and fixing 1-1/2" thick hollow flush doors and windows with commercial ply (Door shutter from veneer of deodar wood shutter frame 1-1/4" thick and solid wood beading at about 4" apart and decorative wood lipping 1-1/2"x1/2" fixed in position including chromium plated fitting complete in all respect including cleaning, lock & oiling both (Item 11.5.1)	64	
	25	Providing and fixing MS sliced 16 gauge chowkat moulded in the shape of wooden chowkat including application of bitumen compound make (to the chowkat and filling it with CC 1:2:4 including cost of hole (Item 2 Note marked (xv) of bottom of chowkat) Complete in all respects as per instructions of	34		Providing and fixing MS sliced 16 gauge chowkat moulded in the shape of wooden chowkat including application of bitumen compound make (to the chowkat and filling it with CC 1:2:4 including cost of hole (Item 2 Note marked (xv) of bottom of chowkat) Complete in all respects as per instructions of	34	

TENDER DESCRIPTION		RAILWAY REQUIREMENT			BIDDER's OFFER		REMARKS
		Engineer, janitor (B) Size 2'x15" 11.8.2 (b) P-90			Size 2'x15" 11.8.2 (b) P-90		
	26	Providing and fixing sliding bolt to doors complete in all respects. (B) for sliding bolt 12" (300 mm) long. 11.10.7 (b) P-95	4	26	Providing and fixing sliding bolt to doors complete in all respects. (B) for sliding bolt 12" (300 mm) long. 11.10.7 (b) P-95	4	
	27	Painting New Surface. Preparing surface and painting of doors and windows of types (under item No.12.3.2 of CSR/2018) including edges. (a) Priming coat 12.3.3 (a) P-102	250	27	Painting New Surface. Preparing surface and painting of doors and windows of types (under item No.12.3.2 of CSR/2018) including edges. (a) Priming coat 12.3.3 (a) P-102	250	
	28	Painting New Surface ---do--- do---do--- do--- (b) Each subsequent coat of paint. 12.3.3 (b) P-102	2500	28	Painting New Surface ---do--- do---do--- do--- (b) Each subsequent coat of paint. 12.3.3 (b) P-102	2500	[illegible]
	29	Providing and fixing white/coloured glazed earthenware water closet squatter type combined with foot rest 19" measured between flushing rims complete in all respect. (B) Coloured 20.1.3 (b) P-150	2	29	Providing and fixing white/coloured glazed earthenware water closet squatter type combined with foot rest 19" measured between flushing rims complete in all respect. (B) Coloured 20.1.3 (b) P-150	2	
	30	Providing and fixing low down flushing cistern 3 gallon (13.62 liter) capacity including bracket set, copper connection, etc. complete in all respects. (b) Plastic 20.1.7 (b) P-151	2	30	Providing and fixing low down flushing cistern 3 gallon (13.62 liter) capacity including bracket set, copper connection, etc. complete in all respects. (b) Plastic 20.1.7 (b) P-151	2	
	31	Providing and fixing PVC pipes for soil, waste & vent system (DADEX or Equivalent) including cost of all specials complete in all respects. (f) 75 MM (3") (d) P-153 22.4.4 (f)	200	31	Providing and fixing PVC pipes for soil, waste & vent system (DADEX or Equivalent) including cost of all specials complete in all respects. (f) 75 MM (3") (d) P-153 22.4.4 (f)	200	
	32	Providing and fixing 22"x16" glazed earthenware wash hand basin including bracket set, waste pipe and waste coupling, etc. complete. (c) Coloured with pedestal 20.2.1 (b) P-155	2	32	Providing and fixing 22"x16" glazed earthenware wash hand basin including bracket set, waste pipe and waste coupling, etc. complete. (c) Coloured with pedestal 20.2.1 (b) P-155	2	
	33	Providing and laying dado/skirting of glazed coloured tile 1/4" thick jointed in white cement with matching pigment and laid over 1/2" cement sand mortar 1/2" thick, including finishing complete in all respects. 9.6.2 P-92	500	33	Providing and laying dado/skirting of glazed coloured tile 1/4" thick jointed in white cement with matching pigment and laid over 1/2" cement sand mortar 1/2" thick, including finishing complete in all respects. 9.6.2 P-92	500	

Dy. CTN (M&E)

TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER's OFFER			REMARKS
	24	Providing and laying roof insulation comprising of single layer of tiles 9"x 4-1/2" x 1-1/2" grouted with cement sand mortar 1:3 laid over 2" thick earth (including 1" mud plaster over thermopore sheet 1" thick over polythene sheet 230 gauge over a layer of bitumen coating @ 34 lbs/100 sft, as per specification and complete in all respects. P-58 (8.1.6)	600	24	Providing and laying roof insulation comprising of single layer of tiles 9"x 4-1/2" x 1-1/2" grouted with cement sand mortar 1:3 laid over 2" thick earth including 1" mud plaster over thermopore sheet 1" thick over polythene sheet 230 gauge over a layer of bitumen coating @ 34 lbs/100 sft as per specification and complete in all respects. P-58 (8.1.6)	600	Suitable
	25	Khurras on roof 2'x2'x1-1/2" of cement concrete (1:2:4) laid over 3" thick PCC concrete as per specification complete in all respects. P-58 (8.7.2)	4	25	Khurras on roof 2'x2'x1-1/2" of cement concrete (1:2:4) laid over 3" thick PCC concrete as per specification complete in all respects. P-58 (8.7.2)	4	
	26	Bottom Khurras on ground in first brick masonry in cement mortar 1:6 of size 4'x2'x4-1/2" laid over 3" cement mortar 1:3:6 as per specifications complete. P-58 (8.7.3)	4	26	Bottom Khurras on ground in first brick masonry in cement mortar 1:6 of size 4'x2'x4-1/2" laid over 3" cement mortar 1:3:6 as per specifications complete. P-58 (8.7.3)	4	
	27	Providing and laying paver tiles (TCO) consisting of different colours manufactured by [illegible] or equivalent, over 2" thick sand base, as per specifications and details given in the drawing, including providing leveling and compacting sand and preparation of the surface prior to laying of pavers / interlocking tiles. Grey / natural colour (Unit) P-75	4000	27	Providing and laying paver tiles (TCO) consisting of different colours manufactured by [illegible] or equivalent, over 2" thick sand base, as per specifications and details given in the drawing, including providing leveling and compacting sand and preparation of the surface prior to laying of pavers / interlocking tiles. Grey / natural colour (Unit) P-75	4000	
	28	Providing first class deodar wood wrought joinery in doors and windows etc. panelled or panelled and glazed or fully glazed fixed in position including deodar wood chowkat hold fast hinges tower bolts, stoppers, rubber stop cleats G.I. Chap handles and chain with hooks etc. complete in all respects (including sliding bolt and lock) 1-3/4" thick. P-87 (8)	300	28	Providing first class deodar wood wrought joinery in doors and windows etc. panelled or panelled and glazed or fully glazed fixed in position including deodar wood chowkat hold fast hinges tower bolts, stoppers, rubber stop cleats G.I. Chap handles and chain with hooks etc. complete in all respects (including sliding bolt and lock) 1-3/4" thick. P-87 (8)	300	
	29	Providing and fixing in position wash room door type 2 [illegible] made of lamination sheet including lamination board decorative paint hinges tower bolts, handles, catches, locks of rubber etc. [illegible]	500	29	Providing and fixing in position wash room door type 2 [illegible] made of lamination sheet including lamination board decorative paint hinges tower bolts, handles, catches, locks all above the design at site. P-90 (8.7.1)	500	

TENDER DESCRIPTION	Item	RAILWAY REQUIREMENT	Qty	Item	BIDDER'S OFFER	Qty	REMARKS
		complex. P-08 1.7.3					
	40	Providing and fixing steel glazed doors with 1/16" thick sheeting including angle iron frame 2"x2"x3/8" and 3/8" square bars 4" centre to centre and locking arrangement	324	40	Providing and fixing steel glazed doors with 1/16" thick sheeting including angle iron frame 2"x2"x3/8" and 3/8" square bars 4" centre to centre and locking arrangement	324	Suitable
	41	Providing and fixing plastic soap dish complete chromium plated soap dish complete (20.1.15) (a) P-152	2	41	Providing and fixing plastic soap dish complete chromium plated soap dish complete (20.1.15) (a) P-152	2	
	42	Providing and fixing chromium plated towel rail complete. (a) 50 cm (20") long and 1.5 cm (1/2") dia. 20.1.16 (a) P-152	2	42	Providing and fixing chromium plated towel rail complete. (a) 50 cm (20") long and 1.5 cm (1/2") dia. 20.1.16 (a) P-152	2	
	43	Providing and laying cement concrete with stone ballast 40mm to 50mm gauge in foundation and plinth (b) ration 1:4:8 P-02 (5.2.1)	3000	43	Providing and laying cement concrete with stone ballast 40mm to 50mm gauge in foundation and plinth (b) ration 1:4:8 P-02 (5.2.1)	3000	
	44	Dismantling wooden roof ceiling (a) extra for dismantling wooden ceiling above 25 ft high. P-2 1.1.3 (b)	3000	44	Dismantling wooden roof ceiling (a) extra for dismantling wooden ceiling above 25 ft high. P-3 1.1.3 (b)	3000	
	45	Dismantling reinforced cement concrete and separating reinforcement from concrete P-2 1.1.3	300	45	Dismantling reinforced cement concrete and separating reinforcement from concrete P-2 1.1.3	300	
	46	Supplying and fixing in position cast iron rain water down pipe as per specification (BS 416 Part-I 1990) excluding heads and shoes but including painting and clamps etc. complete in all respects (a) 4" dia internal cast iron down pipe P-24 (8.7.4 (a))	200	46	Supplying and fixing in position cast iron rain water down pipe as per specification (BS 416 Part-I 1990) excluding heads and shoes but including painting and clamps etc. complete in all respects (a) 4" dia internal cast iron down pipe P-24 8.7.4 (a)	100	
	47	Supplying and fixing shoes, bends or elbows of cast iron rain water down pipe as per specification (BS 416 : Part-I-1990) including painting, complete in all respects. P-24 8.7.6	100	47	Supplying and fixing shoes, bends or elbows of cast iron rain water down pipe as per specification (BS 416 : Part-I-1990) including painting complete in all respects. P-24 8.7.6	100	
	48	Dismantling of plain cement Concrete. (b) cement concrete plain 1:2:4. P-02 1.3.2 (b)	500	48	Dismantling of plain cement Concrete. (b) cement concrete plain 1:2:4. P-02 1.3.2 (b)	500	
	49	Dismantling of plain cement Concrete. (c) cement concrete plain 1:4:8. P-02 1.3.2 (c)	600	49	Dismantling of plain cement Concrete. (c) cement concrete plain 1:3:6. P-02 1.3.2 (c)	500	
	50	Plain / Corrugated GI sheets roofing providing	3300	50	Plain / Corrugated GI sheets roofing providing corrugated galvanized iron sheets roofing [illegible]	3300	

TENDER DESCRIPTION	RAILWAY REQUIREMENT			BIDDER's OFFER			REMARKS
		corrugated galvanized iron sheets roofing over the existing houses / garden etc including its fixing with GI bolts, nuts etc SWG sheets 100x2.75x8 PAS [illegible]			existing houses / garden etc including its fixing with GI bolts, nuts etc SWG sheets 100x2.75x8 PAS [illegible]		
	51	Providing planks wood works sawn, wrought planed & fixed in position, including cost nails and screws etc complete in all respects 17.1.1 (b) P-86	400	51	Providing planks wood works sawn, wrought, planed & fixed in position, including cost nails and screws etc complete in all respects 17.1.1 (b) P-86	400	
	52	Electrical work including supply and installation of HT Panel 630 amp with (railway approved) as per requirement, LT Panel with as per requirement, metering arrangements, HT Cable length & size as per site requirements, 4 Core Cable 16MM 2000 MTR (Railway approved brand), Transformer 630 KVA with Wheel Trolley (WAPDA Approved), MCB LT Breaker 3 Poll 100 Amp 25 Nos, MCB LT Breaker 3 Poll 800 Amp 2 Nos, Complete wiring of building with material as per requirement and PR Standard including industrial Fan (4 Nos), Ceiling Fan 56" Railway approved (15 Nos), Exhaust Fan 24" (6 Nos), Search Light 150 Watt Orient or equivalent, (10 Nos), 2 Ton floor mounting AC for equipment room Gree or Equivalent, Rubber Sheet 1" for Safety as per requirement and earthing of machines 1 Job etc.	LS	52	Electrical work including supply and installation of HT Panel 630 amp with PEL Pakistan as per requirement, LT Panel with (MFS ENTERPRISES) as per requirement, metering arrangements, HT Cable NEWAGE (length 600 meters size 120mm three core silver as per site requirement), 4 Core Cable 16MM 2000 MTR ASIAN cable, Transformer 630 KVA (PEL [illegible]) with Wheel Trolley, MCB LT Breaker 3 Poll (SCHNEIDER) 100 Amp 25 Nos, MCB LT Breaker 3 Poll 800 Amp 2 Nos, Complete wiring of building with material as per requirement and PR Standard including industrial Fan (4 Nos), Ceiling Fan 56" Railway approved (15 Nos), Exhaust Fan 24" (6 Nos), Search Light 150 Watt Orient or equivalent, (10 Nos), 2 Ton floor mounting AC for equipment room Gree or Equivalent, Rubber Sheet 1" for Safety as per requirement and earthing of machines 1 Job etc.	LS	Suitable

[illegible signature and stamp]

[illegible signature and stamp]

[illegible signature and stamp]

BID EVALUATION CHECK LIST

Bid evaluation of the tender for the Procurement and Installation of Nut & Bolt Forging Machines at Signal Workshops, Lahore.

M/s Arshad Amjad & Abid PVT LTD.

Sr. No.	Description	Remarks	S. No.
1.	Is Registered with Income Tax and Sales Tax Departments and who are on Active Taxpayers List of FBR?	Yes	7
2.	Is Registered with PEC in Category PEC C-4 category?	Yes	6
3.	Is deposited Bid Security (CDR)?	Yes	4
4.	Is Delivery and completion Schedule confirmed?	Yes	1
5.	Are Compliance to the provided Specifications and relevant literature attached?	Yes	1
6.	Work completion Certificate attached?	Yes	1
7.	Compliance to the Bid Validity Period	Yes	1
8.	Letter for confirmation of submission of performance security within 28days after receipt of Letter of Acceptance	Yes	5
9.	Is Organization chart attached?	Yes	9
10.	Is compliance to the Warranty i.e. 12 Month after supply of equipment and GCC Sub clause 28.5 also defined period in PCC confirmed?	Yes	2
11.	Is Letter for provision of After Sale services on expiry of Warranty for 05 years or above attached?	Yes	3
12.	Is Literature regarding machines accompany to bid?	Yes	1

BID EVALUATION CRITERIA

BID EVALUATION OF THE TENDER FOR THE PROCUREMENT AND INSTALLATION OF NUT & BOLT FORGING MACHINE (COMPLETE UNIT) AT SIGNAL WORKSHOPS LAHORE.

M/s Arshad Amjad & Abid PVT LTD.

SR. NO.	DESCRIPTION	WEIGHTAGE (%)	S.No.	REMARKS
1	Registered with Income Tax and Sales Tax Departments and also are on Active Taxpayers List of FBR	Compulsory	7	100%
2	Registered with PEC in Category PEC C-4 category	Compulsory	6	100%
3	Bid Security (CDR)	Compulsory	4	100%
4	Delivery and completion Schedule	Compulsory	1	100%
5	Compliance to the technical Specifications	Compulsory	1	100%
6	Work executed for similar/equivalent nature in last	10	10	10
7	Compliance to the Bid Validity Period	Compulsory	2	100%
8	Letter for confirmation of submission of performance security within 28 days after receipt of Letter of Acceptance	Compulsory	3	100%
9	Organization chart for, a) Procurement of Goods from source b) Transportation of Goods from Source to destination (Signal Shops) c) SME to deal with contractor and other related matters with Purchaser (Pakistan railways) i. Concerned Engineer ii. Concerned Diploma Holder & Maintainer/ Technician	20	3	20
10	Compliance to the Warranty i.e. 12 Month after supply/T/C of equipment and CCC whichever is later or as defined period in PCC	Compulsory	2	100%
11	Letter for provision of After Sale services on expiry of Warranty for 05 years or above	20	5	20
12	Registered with SECP Age of Company Above 10 Years = 10 Marks Above 05 Years = 05 Marks Below 05 Years = 0	10	8	10
13	Past Experience with Pakistan Railways (05 & above certificates) = 10 Marks (03 & above certificates) = 07 Marks (01 & above certificates) = 05 Marks	10	11	10
14	Past Experience with Pakistan Railways Completion of Contracts average last 3 years I. Above Rs. 25M/Year = 20 II. Above Rs. 15M/Year = 10 III. Below Rs. 15M/Year = 0	20	11	00
15	Manufacturer/Supplier Authorization Certificate	10	3	10
	TOTAL	100	-	80

As per PPRA rule 21 (3) above bid evaluation criteria must be filled, failing which the technical offer will be rejected.

Signature with Sign & Stamp