BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA
Regd. Office- Head Office, Vidyut Bhawan-II, Bailey Road, Patna – 21
CIN – U74110BR2012SGC018889
E-mail –operation.maint @bsptcl.bihar.gov.in, **Website – www.bsptcl.in**

Letter No...../ Patna **Dated ...../**
CE/Trans. (O&M)/Misc-46/2023

From,

Deepak Kumar Jha,
Chief Engineer, Trans.(O&M)

To,

M/s Kapish Power Construction Pvt. Ltd.,
House No.- 873/A2, Near Riviresa Apartment,
Old H.B. Road, Ranchi, Jharkhand-834001 **Email:-** kapishpower@gmail.com

Sub. - Regarding adoption of Vendor along with GTP & Drawing for supply & delivery of ACSR Panther conductor of make M/s Prateek Wires Pvt. Ltd. [Now merged in M/s Nirmal Wires Pvt. Ltd.] and 7/3.15 mm GS Earth wire of make M/s Nirmal Wires Pvt. Ltd., Kolkata towards restoration of collapsed towers at loc. no- 92 & 93 along with other necessary modiications at some towers and conductoring of panther conductor and earth wire for 2 km of 132KV Jamui-Lakhisarai Trans. line under IRF (O&M) Line, Cable & Networks head against NIT no.-09/PR/BSPTCL/2023

Ref.-
1. *NIT- 09/PR/BSPTCL/2023*
2. *NOA No. 10, dated 07.07.2023*
3. *Your letter no- KPCPL/CE-BSPTCL/Adop./GTP&DRG/23-24/NIT-09/146 dated 19.09.23*

Dear Sir,

With reference to above, this is to inform that Vendor along with GTP & Drawing for supply & delivery of ACSR Panther conductor of make M/s Prateek Wires Pvt. Ltd. [Now merged in M/s Nirmal Wires Pvt. Ltd.] and 7/3.15 mm GS Earth wire of make M/s Nirmal Wires Pvt. Ltd., Kolkata towards restoration of collapsed towers at loc. no- 92 & 93 along with other necessary modifications at some towers and conductoring of panther conductor and earth wire for 2 km of 132KV Jamui-Lakhisarai Trans. line against NIT no.-09/PR/BSPTCL/2023 is hereby accorded on the risk and responsibility of M/s Kapish Power Construction Pvt. Ltd., Ranchi.

S.N.	Description	Vendor	Reference
1.	GTP and Drawing of ACSR Panther conductor	M/s Prateek Wires Pvt. Ltd. [Now merged in M/s Nirmal Wires Pvt. Ltd.]	NIT-12/PR/BSPTCL/2018
2.	GTP and Drawing of 7/3.15 mm GS Earth wire	M/s Nirmal Wires Pvt. Ltd., Kolkata	NIT-01/PR/BSPTCL/2019

This approval is however subject to the condition that the equipment/material shall be manufactured in conformity with tender specification/ISS/IEC. It may be noted that this approval and issue of the letter does not absolve you from any contractual responsibility in terms of quality and correctness of material and shall be strictly in accordance with tender specification/ISS/IEC/CBIP

Manual as well as BSPTCL technical specification and latest amended ISS/IEC/CBIP Manual update and if at any time, any abnormality is observed, BSPTCL reserves the right to withdraw this approval with immediate effect without any pre-intimation.

Encl:- As above

Yours' faithfully,

Sd/-

(Deepak Kumar Jha)

Chief Engineer, Trans. (O&M)

Memo No ...../ **Dated...../**

Copy forwarded to ESE, TC Begusarai for kind information and further needful.

Sd/-

(Deepak Kumar Jha)

Chief Engineer, Trans. (O&M)

Memo No 532/ **Dated**.....05/10/23/

Copy forwarded to GM-cum-CE Tr. Zone Bhagalpur for kind information and further needful.

05/10/23

(Deepak Kumar Jha)

Chief Engineer, Trans. (O&M)

KAPISH
Power Construction Pvt. Ltd.

(122) (67)

GUARANTEE TECHNICAL PARTICULARS OF ACSR PANTHER

Sl. No.	DESCRIPTION	UNIT	ACSR PANTHER
1.	Name & address of the Manufacturer		Prateek Wires Pvt. Ltd. Regd. Office:Rudramani, 1720, Laskarhat, E.M. Bypass, Kolkata-700039
2.	Manufacturer's name and address (for the materials given below)		
	a) E.C.Grade Aluminium Rods/ingots		i) National Alu. Co. ltd. Bhubneswar, Orissa. ii) Hindalco Industries Ltd, Ramkoot, Uttar Pradesh. iii)Bharat Alu. Co. Ltd. Korba, Chhatisgarh.
	b) High Tensile Galvanzed Steel Wire.		i) Nirmal Wires Pvt. Ltd. Kolkata, West Bengal. ~~ii) Usha Martin Ltd., Ranchi~~
	c) Complete Conductor		Prateek Wires Pvt. Ltd. Works: Jessore Road, Madhyamgram, Kolkata-700 129
3.	Indian Standard		
	a) for conductor		IS:398 (Part-2) -96
	b) for drum		IS: 1778 -1980
4.	E.C.Grade Aluminium Rods		
	a) Indian Standard		IS: 5484:1978
	b) Composition	%	Purity: 99.6 (min) Copper: 0.04(max)
5.	High Tensile Galvanized Steel wire		
	a) Chemical Composition	%	C = 0.50 to 0.85 P = 0.035 (Max) S = 0.045 (Max)

ADOPTION
NOTE 09 PROPOSAL 2023
05/10/23

NIT OL/PR/BSPTCL/2018

APPROVED
Subject to the condition that you are not absolved of responsibility for correctness of the materials supplied as per specification
21/8/19
Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021
21/08/19

PRATEEK WIRES (P) LTD.
E.M. Bypass

124 65

GUARANTEE TECHNICAL PARTICULARS OF ACSR PANTHER

SL No.	DESCRIPTION	UNIT	ACSR PANTHER
			Si = 0.10 to 0.35 Mn = 0.50 to 1.10
6.	Aluminium Strands		
	a) Diameter Standard	mm	3.00
	maximum	mm	3.03
	minimum	mm	2.97
	b) Minimum Weight	Kg/Km	19.11
	c) Breaking load		
	Before stranding	KN	1.17
	After stranding	KN	1.11
	d) Electrical Resistance at 20°C	ohms/Km	4.079 4.025
	e) Cross Sectional Area of nominal dia wire	mm^2	7.069
	f) Minimum ultimate tensile stress	kg/mm²	16.80 (As per TS)
7.	Steel strands		
	a) Diameter Standard	mm	3.00
	maximum	mm	3.06
	minimum	mm	2.94
	b) Minimum Weight	Kg/km	~~55.15~~ 55 (As per TS)
	c) Breaking load:		
	Before stranding	KN	9.29
	After stranding	KN	8.83
	d) Cross Sectional Area of nominal dia wire	mm^2	7.069
	e) Elongation of 200 mm gauge length on breaking.		
	i) Before stranding	%	4
	ii) After stranding	%	3.5

ADOPTION
No. 05 /PR/BSPTCL/2023
05/10/23

NIT 02/PR/BSPTCL/2019
APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

22/8/19

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

22/08/19

PRATEEK WIRES PVT. LTD.
F.M. Bypass, Kotwali 039

(63

GUARANTEE TECHNICAL PARTICULARS OF ACSR PANTHER

Sl. No.	DESCRIPTION	UNIT	ACSR PANTHER
	f) No. of twists on a length equal to 100 times the diameter of wire (Torsion Test)		
	i) Before stranding	Nos.	18 (min)
	ii) After stranding	Nos.	16 (min)
	g) Galvanizing		
	i) Indian standard		IS: 209 : (1992)
	ii) Purity of Zinc	%	99.95 (Min)
	iii) Process of galvanizing		Hot Dip
	iv) Minimum weight of Zinc After stranding	Gms/Sq.Meter	~~240~~ 260 (As per TS)
	v) Uniformity of Zn coating		
	a) Before stranding Minimum no. of dips of 1 minute duration which the strand can withstand (under preece test)	Nos.	3
	b) After stranding	-do-	2½
	h) Minimum ultimate tensile stress	kg/mm²	134.00 (As per TS)
8.	Complete Conductor		
	a) Code		PANTHER ACSR
	b) Copper Equivalent Area	Sq. mm	130.0
	c) Nominal Aluminium Area	Sq. mm	200.0
	d) Sectional Aluminium Area	Sq. mm	212.10
	e) Total Sectional Area	Sq. mm	261.50

NIT 02/PR/BSPTCL/2024

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

22/8/24

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

24/08/24

ADOPTION

For NIT 09 PR/BSPTCL 2023

05/10/23

PRATEEK WIRES (P) LTD.
E.M. Bypass
Kolkata

(61)

GUARANTEE TECHNICAL PARTICULARS OF ACSR PANTHER

Sl. No.	DESCRIPTION	UNIT	ACSR PANTHER
	f) Over all Diameter	mm	21.00
	g) Strands & Wire Diameter		
	Aluminium	Nos/mm	30/3.00
	Steel	Nos/mm	7/3.00
	h) Lay Ratio		
	Steel 6 Wire	mm	max.28/min13
	Aluminium 18 Wire	mm	max.14/min.10
	12 Wire	mm	max.16/min.10
	i) Calculated Breaking load	KN	89.67
	j) Final Modulus of Elasticity	GN/m2	80
	k) Coefficient of Linear Expansion	per ^{0}C	~~17.8 X 10^{-6}~~ 17.7 x 10^{-6} (As per TS)
	l) Minimum Weight (per KM)		
	Steel	Kg	388
	Aluminium	Kg	586
	ACSR conductor	Kg	974
	m) Calculated Resistance at 20^{0}C	ohms/km	0.1390
	n) Standard length	meter	2000 ± 5%
	o) No. of standard length in one drum	nos.	one
	p) Random lengths	%	10
	q) Joints in strands		
	Steel		No joints
	Aluminium		No two joints within 15m
	18 Wire layer		
	12 Wire layer		
	Method of making joints		Cold Pressure Butt welding
9.	Drums/Reels		As per Drum Drawing enclosed

NIT 01/PR/BSPTCL/2019

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

21/08/19

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

21/08/19

ADOPTION

For NIT 03 PR/BSPTCL/ 2023

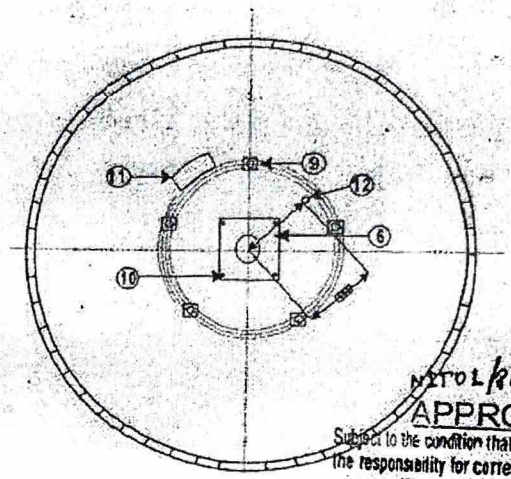
05/10/23

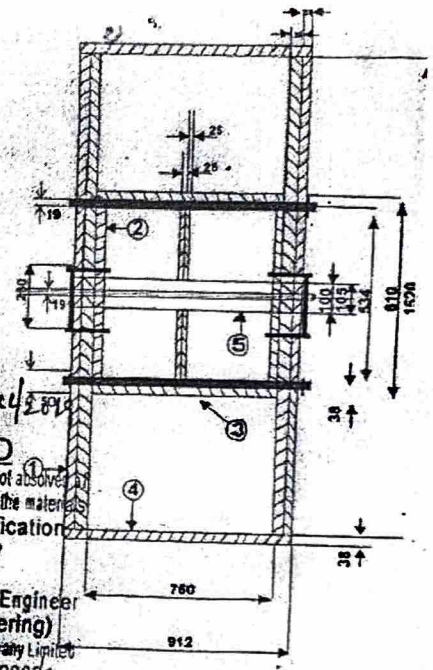
RATEEK WIRES (P) LTD.

PART NO.	PART DESCRIPTION	DIMENSION IN MM.
1	2-PLY FLANGE	Ø 1520X76
2	BARREL DISC.	Ø 534X38
3	MID BARREL DISC.	Ø 534X76(2PLY)
4	BARREL BATTENS	760X76X38
5	OUTER LAGGING	912X100X38
6	TIE ROD	Ø 16X962
7	NO. OF TIE RODS	05
8	BUSH PLATE M.S.	230X230X4
9	TIE ROD WASHER	76X75X4
10	BUSH PLATE STUD	Ø 12
11	CONDUCTOR SLOT WIDTH	40X200
12	DOG HOLE DISTANCE FROM CENTRE	180

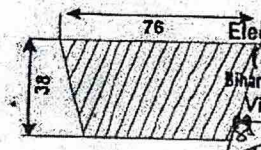
DRUM MARKING

	FRONT	REVERSE
1	LOGO OF MANUFACTURE	CONTRACT / AWARARD KETTR NO.
2	DRUM NO.	NAME & ADDRESS OF CONSIGNEE
3	CODE NAME	MANUFACTURE'S NAME & ADDRESS
4	TYPE	ARROW MARKING FOR UNWINDING
5	SIZE	POSITION OF CONDUCTOR END
6	LENGTH	NO.OF TURNS IN OUTER MOST LAYER
7	GROSS WT.	MONTH & YEAR OF MANUFACTURE
8	TARE WT.	CIP / MICC No.
9	NET WT.	DISTANCE BETWEEN OUTERMOST LAYER OF COND & INNER SURFACE OF LAGGING





BARREL BATTEN CROSS SECTION



NITOL/RR/BSPTCL/2019

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

ADOPTION

NOTE :

1. ALL DIMENSIONS ARE IN MM. ONLY
2. THE DRUM SHALL CONFORM GENERALLY IS : 1778/1980
3. THE STANDARD LENGTH OF THE CONDUCTOR IS 2000 METRE +5%
4. TOLERENCE ON THICKNESS OF WOOD IS +3MM.
5. DISTANCE BETWEEN EXTERNAL PROTECTIVE LAGGING AND OUTER SURFACE OF CONDUCTOR LAYER SHOULD BE AT LEAST 75MM.
6. THE SIZE OF NAIL USED ON THE FLANGES SHALL BE 4X100 MM.
7. ALL UNITS OF TIE RODS SHOULD BE TACK WELDED
8. GROSS WEIGHT IS 2108 KGS. MAX. WITH EXTERNAL LAGGING
9. NET WEIGHT OF CONDUCTOR IS 1948 KGS. APPROX. (VARIABLE).
10. WEIGHT OF EMPTY DRUM WITH EXTERNAL LAGGING IS 200 +10% KGS (APPROX)
11. THE INNER SURFACE OF FLANGE & DRUM BARREL SHALL BE FIXED WITH BITUMINUSED WATERPROOF PAPER BY MEANS OF COMMERCIAL ADHESIVE PASTE
12. THE CONDUCTOR ENDS SHALL BE PROPERLY SEALED AND SECURED WITH THE HELP OF U-NAIL ON THE SIDE OF ONE OF THE FLANGES TO AVOID

REV.	DATE	DESCRIPTION	DRAWN BY	CHECKED
	29.06.2019	DRUM DRAWING FOR ACSR - PANTHER-30/7/3.00 MM		

Contractor : M/s. ABN Tower & Transmission Pvt. Ltd., Kolkata

Name of Project: Construction of 132 KV 2 phase, Single Circuit tower between 133/33 KV GSS Nalanda & Railway TSS Nalanda (line length - 09 KM Approx.) on turnkey bas

Customer: BSPTCL

Manufacturer: R[illegible]steek Wires Pvt. Ltd., Kolkata

(53

GUARANTEED TECHCHNICAL PARTICULARS OF GALVANISED STEEL EARTH WIRE SIZE 7/3.15 MM

PURCHASER :	M/s. Bihar State Power Transmission Company Ltd.
CONTRACTOR :	M/s. VSPL Energy Private Limited
NIT No.	12/PR/BSPTCL/2018
PROJECT :	Construction of 132 KV DC SS, TL from GSS Wazirganj to Tilaiya TSS
MANUFACTURER :	M/s. NIRMAL WIRES (P) LTD, KOLKATA

S.No	Particulars	G.S. Earth Wire 7/3.15 mm
1.	Maker's Name & Address	Nirmal Wire (P) Ltd. • *Office*: "Rudramani", 1720 Laskarhat, E.M. Bypass, Kolkata - 700039 *Plant*: Unit -I : Roybagan, Jessore Road, Madhyamgram, Kolkata – 700129 Unit-II : Vill-Iswaripur, Deulti, P.O. Barunda, P.S. Bagnan, Howrah – 711 303
2.	Name & Address for supply of raw materials	
	(a) Wire Rod	Electro Steel/SAIL/TISCO/RINL
	(b) Zinc	HINDUSTAN ZINC LTD
	(c) Drums	1778/1980
3.	Particulars of Raw Materials	
	i. Steel Wires/Rods	
	• Carbon	0.55% Maximum
	• Manganese	0.40 to 1.10%
	• Phosphorous	0.050% Maximum
	• Sulphur	0.050% Maximum
	• Silicon	0.15 to 0.35%
	ii. Zinc: Minimum purity	99.95% (Will satisfy all requirements of IS:209)
4.	Steel Strand	
	a) Diameter of each strand	
	• Nominal	3.15mm
	• Maximum	3.25mm
	• Minimum	3.07mm
	b) Minimum Elongation % (GL = 200mm)	4.0% (before stranding) 3.5% (after stranding)
	c) Minimum Torsion (GL = 100 D)	20 (before stranding) 18 (after stranding)
	d) Wrapping Test	Shall not break when wrapped around a mandrel of 4 times wire diameter to form a close helix of 8 turns. 6 turns then unwrapped and closely wrapped again (before stranding)

ADOPTION
03 /PR/BSPTCL/ 2023
For NIT
05/10/23

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)

NIRMAL WIRES (P) LTD. E.M. Bypass Kol - 700 039 Rudramani, 1720, Laskarhat

(51)

(97)

5.	Galvanising	
	(a) Minimum weight of zinc coating as per sq.m. of uncoated wire surface	240 gm/sq.m (before stranding). 228 gm/sq.m (after stranding)
	(b) Minimum number of one minute dips that the galvanized strand can withstand in the standard precee test	3 Nos. (before stranding) 2 Nos. (after stranding) and
	(c) Minimum number of half minute dips	1 Nos. (after stranding)
	(d) Process of Galvanizing	Hot Dip process
6.	Stranded Earth wire	
	(a) No. of Strand	Steel Core = 1 Outer Steel Wire = 6
	(b) Stranding & Wire Diameter	7/3.15 mm
	(c) Total Sectional Aea	54.50 mm²
	(d) Approx. Nominal Dia (Overall)	9.45 mm
	(e) Breaking Load of Earth strand	54.0 KN Minimum
	(f) Lay Length of outer steel layer	Min. – 123 mm & Max. - 265 mm
	(g) DC resistance of Earth wire at 20°C	3.41 Ohm/Km Max
	(h) Standard length of Earth wire	2000 Meters
	(i) Tolerance on standard length	±5%
	(j) Direction of lay of outer layer	Right Hand
	(k) Linear mass of earth Wire • Standard	426 Kg/km
7.	Drum is as per specification	Yes
8.	Joints	There shall be no joint in any of the wire of constituting the earth wire.
9.	Oiling/greasing on Earth Wire	Boiled Linseed oil.
10.	Any other details	We are an ISO: 9001/2015 certified company having the required technical & financial capability to cater the World Class projects for manufacture & supply of GSS Earth Wire.

11. Equivalent modulus of elasticity galvanized steel earth strand (kg/mm²) — 19×10^3

ADOPTION
03 IPRASPTCL 2023
For SEE
05/10/23

per NIT-131/PR/BvRCL/2018

NIRMAL WIRES (P) LTD. E.M. Bypass Kol - 700 039 Rudramani, 172 Vastumat

As corrected

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

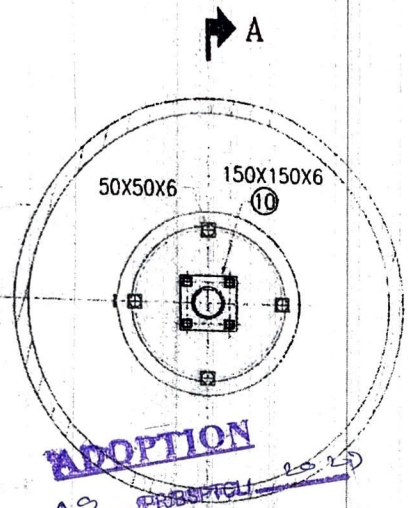
20/7

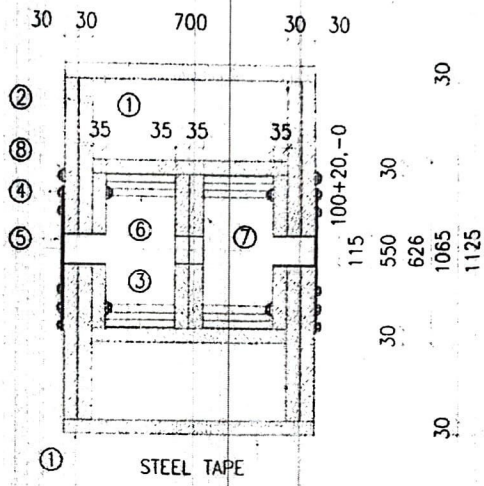
Electrical Superintending Engineer

C49

C96

NIRMAL WIRES PVT. LTD





SECTION : AA

ADOPTION
For NIT 09 PROSPECTIVE 2019
05/10/23

All construction detail should be as per IS 1778:1980 (Table-2)

SL. NO.	DESCRIPTION	QTY.	MATERIAL	DIMENSION (mm)
1.	Protective External Logging	1	Wood	30x75x786
2.	Flange	2	Wood	1065x60
3.	Barrel	1	Wood	50x75x700
4.	Barrel Stud	8	MS	M16x190
5.	Mild Steel Bush	2	MS	100 IDx135
6.	Tie Rods	4	MS	M16x950
7.	Barrel Support	4	Wood	550 DIA
8.	Washer	16	MS	50x50x6
9.	Slot for Inner End of Earth Wire	–	–	–
10.	Bush Plate	2	MS	150x150x6

NOTES

1. All dimension are in mm.
2. Clearance from outer surface of outer layer of earth wire to inner surface of protective logging is at least 50 mm.
3. Singal lengths of earth wire wound on every drum.
4. Thickness of protective logging shall be 30mm.
5. The Standard length of earth wire 2000M ± 5%
6. Tolerance on Wood dimension = ±3mm
7. Type of wood as per IS : 1778/1980

As correction

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Name of Purchaser	BSPTCL
Name of Contractor	VSPL Energy Private Limited
Name of Sub-Vendor	M/s. Nirmal Wires Pvt. Ltd.
Line Details	132 KV DC SS, TL from GSS Wazirganj to Tilaiya TSS

for NIT-12/PR/BSPTCL/2018

Prepared by	Checked by	Approved by
Bhowmick	NIRMAL WIRES (P) LTD. E.M. Bypass Kol-700 039 Rudramani, 1720, Laskarhat	

NIT No.	12/PR/BSPTCL/2018
Title	Drum Drawing of GS Earthwire Drawing
Drawing No.	NWPL/19-20/038
Date	01.07.2019

Electrical Superintending Engineer (Planning and Engineering) Bihar State Power Transmission Company Limited Vidyut Bhawan, Patna-800021

NIRMAL WIRES PVT LTD
REGD OFFICE : "Rudramani" 1720 Laskarhat, E.M. Bypass, Kolkata – 700 039
WORKS–Unit–1: Ray Bagan, Jessore Road, Madhyamgram, Kolkata–700129
Unit–II: Vill–Iswaripur, Deulti, PO–Barunda PS–Bagnan, Howrah–711 303