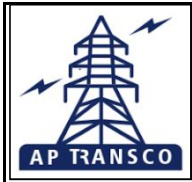


TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

GUARANTEED TECHNICAL PARTICULARS FOR 245KV 1600A HDB
ISOLATOR WITHOUT EARTH SWITCH

S.No	DESCRIPTION	GUARANTEED VALUE
1	Type / Installation	: "DBR" Double Break Center post rotating type" / Outdoor installation
2	Manufacturer's Name and Country of Manufacture	: PAVANI POWR SYSYEM PVT LTD. INDIA
3	Standards according to which the isolators are manufactured	: IS: 9921 - Part-I to V / IEC:62271-102
4	Miximum design voltage at which the isolator can operate (kV)	: 245
5	Frequency (Hz)	: 50
6	Rated voltage (kV)	: 220 CHIEF ENGINEER /PROJECTS APTRANSCO/VS/VIJAYAWADA
7	Maximum current that can be safely interrupted by the isolator Inductive (A & % PF) Capacitive (A & % PF)	: Inductive- 0.7 Amps at 0.15 p.f. Capacitive- 0.7 Amps at 0.15 p.f.
8	Continuous current rating Nominal (Amps) under site conditions	: 1600
9	Rated short time current	: MAIN SWITCH
	i) For 3 seconds (kA rms)	: 40 / 50KA 3.Sec.
	ii) For 1 second (kA rms)	: Not applicable
	iii) Rated peak short time current (kVp)	: 100 / 125
10	Current density at the minimum cross-section of	: Contact sizes indicated in Annexure - III of specification & as per the property of materials.
	a) Moving blade (Amps/ Sq.mm) Cu. Tube	: 2.0 Amps / Sq.mm for HDE Cu. Tube
	b) Terminal pad : Aluminum Flat	: 1.0 Amp/ Sq.mm for EC grade Alu. Flat
	c) Contacts : Cu.Flat	: 1.6 Amps/Sq.mm for HDE Cu. Flat
	d) Terminal connector : Aluminm Casting	: 1.0 Amps/Sq.mm for Alu. Alloy.
11	Maximum Temp. Rise of current carrying parts when carrying rated current continuously (deg.C)	: Within the specified limits of IS: 9921 - PartII/ IEC-62271-102
12	Insulation Levels	:
	i) Impulse withstand voltage (kV peak) phase to earth across isolating distance:	: 1050/ 1200 kV peak
	ii) Switching surge withstand voltage (kV peak) phase to earth across isolating distance	: Not applicable Drawing approval subject to valid vendor
	iii) Power frequency withstand voltage (kV rms) Phase to earth isolating distance	: 460/ 530 kV rms
13	Minimum clearance in air	:
	i) Between poles (mm)	: Phase spacing of 4500 mm
	ii) Between live parts and earth (mm)	: 2100 mm (Equal to dry arcing distance of insulators selected)
	iii) Between live parts when switch is open	:
	a) On the same pole (mm)	: 3200
	b) Between adjacent poles (mm)	: 4500

Since the supply of terminanal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA /Breaker requirement and campability.

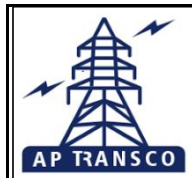


TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

GUARANTEED TECHNICAL PARTICULARS FOR 245KV 1600A HDB ISOLATOR WITHOUT EARTH SWITCH


S.No	DESCRIPTION		GUARANTEED VALUE
15	Rated mechanical terminal load		:
	i)	Load along the terminal connector side (Kg.)	: 102
	ii)	Load across the terminal connector side (Kg.)	: 33.7
16	Torque required to operated the switch in Kg.m		: 40
			CHIEF ENGINEER /PROJECTS
17	Design and Construction		APTRANSCO/VS/VIJAYAWADA
	i)	No. of insulators per pole	: Three
	ii)	No. of breaks per pole	: Two
	iii)	Type of closing / opening mechanism (Horizontal/Vertical break straight etc.)	: Horizontal double break
	iv)	Contacts	:
	a)	Material and grade	: Hard drawn electrolytic copper flat, contact area is silver plated (15 Microns)
	b)	Cross-sectional area (mm)	: 1017.6 sq.mm for 1600 Amps
	v)	Moving blades	:
	a)	Material and grade	: Hard drawn electrolytic copper flat, contact area is silver plated (15 Microns)
	b)	Cross-sectional area (mm)	: 829 sq.mm for 1600 Amps
	vi)	Contact support	:
	a)	Material and size of channel/block	: 4 mm thick, MS HDG
	b)	Material and size of plate	: 6 mm thick, MS HDG Plate
	vii)	Rain hood - Material grade and size	: 1mm GI Sheet
	viii)	Turn and twist mechanism	:
	a)	Material and size of clamps	: 50 x 10 mm thick, MS HDG flat.
	b)	Maerial size of springs	: 3.0 mm Stainless steel wire
	c)	Whether springs are encased	: Not encased.
	ix)	Nuts and Bolts	:
	a)	Size, material and grade in live parts	: Less than M12: Stainless steel
	b)	Size, material and grade in other parts	: M12 and above: MS HDG.
	x)	Insulator base plate material and size of plate below insulators	: 270 x 270 mm X 12mm MS HDG plate
	xi)	Bearings	:
	a)	Material and size of housing	: MS HDG suitable for 40 ID tapper roller/ ball bearing.
	b)	No. of bearings, location and size	: 2 Nos . Below centre rotating post insulator.

Since the supply of terminanal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA /Breaker requirement and campability.

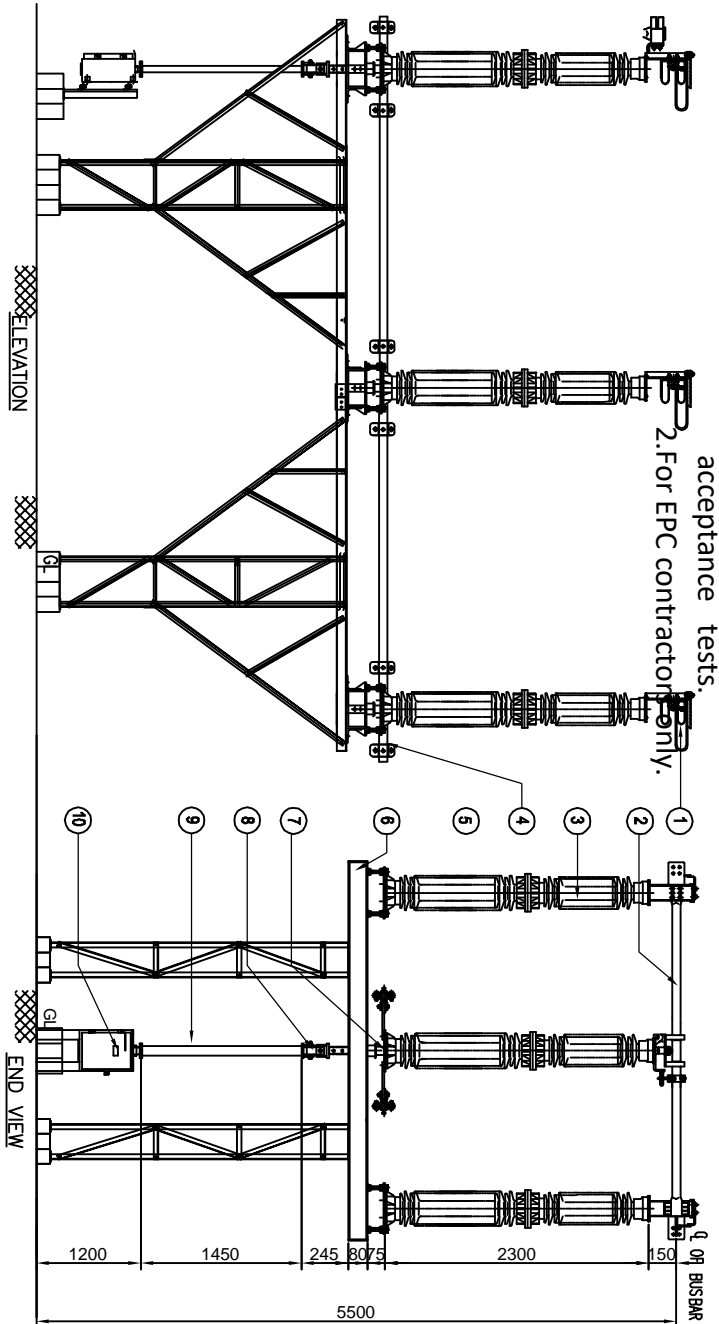


TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

GUARANTEED TECHNICAL PARTICULARS FOR 245KV 1600A HDB ISOLATOR WITHOUT EARTH SWITCH

S.No	DESCRIPTION	GUARANTEED VALUE
xii)	Tandem pipe	:
	a) Size, class and No. of pipes	: 32mm NB Class B,GI Pipe for Main switch-2Nos
	b) Size of shackle, screw	: Suitable for 32mm NB GI Pipe
	c) No. of bearings/bush and its material and size	: Not applicable
xiii)	Type of interlock	: Electrical interlock between isolator and correspondin breaker
xiv)	Down pipe size and class	: 50 NB Class B GI pipe
xv)	Type of universal/swivel joint	:
	a) Between bearing and down pipe	: Universal joint
	b) Between down pipe and operating mechanism	: Vernier flange
xvi)	Operating mechanism	: Motor operated mechanism for main switch
	a) Control cabinet material and thickness	: 3.mm THK Aluminum Sheet
	b) Degree of protection	: IP: 55 as per IS: 2147
	c) Type, size and No. of cable glands	: Double compression type 2Nos. 19 mm (Contractor scope of supply)
	d) Whether removable gland plate provided	: Yes, provided.
	e) Make, type, rating and quantity of motors	: HE/CGL/Remi or Eqvt. 3 Phase, 415 V, 0.5 HP
	f) Auxiliary blocks	: 12 NO + 12 NC Contacts for main switch, 10 Amps, 2 A DC Breaking with 2A - 1 No.
	g) Terminal blocks	: UBT-4
	i) Insulated wires	: 1100 V grades, 2.5 Sq.mm PVC For Auxiliary Circuit and 2.5 Sq.mm for Power cricuit.
	j) HRC Fuse / MCB	: C&S/Siemns/ABB or Eqvt.
	k) Space Heater	: 1 No. 230 V AC - 80 watts
	l) Interlocks	: with Rotary switch Kaycee or Eqvt.
xvii)	Base:	:
	a) Size of steel section used	: 145x80x5mm Rectangle box profile(M.S.HDG)
	b) Overall sie	: 145 x 80 x 3560 mm
	c) Total weight.	: 95Kgs (Approx.) one pole
18	List of drawings furnished.	: Enclosed.
	Name of the firm	: For Pavani Power Systems Pvt. Ltd.
	Signature of Bidder	: 
	Designation & Seal	: (T. SESHAGIRI RAO) Managing Director
	CHIEF ENGINEER/PROJECTS APTRANSCO/VS/VIJAYAWADA	Date : 18-05-2023

NOTE:- 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.
2. For EPC contractor only.



PART LIST:

1. FIXED CONTACT ASSEMBLY
2. MOVING CONTACT ASSEMBLY
3. INSULATOR STACK (COSTUMER SCOPE)
4. TANDEM PIPE FOR ISOLATOR (32NB, CLASS "B" G.I PIPE)
5. ELEVATOR PLATE (270X270X12MM THK M.S HDG)
6. BASE CHANNEL (145 X 80 X 5MM THK. M.S HDG)
7. ROTATING STOOL BASE WITH LEVER ARM & CLAMP (M.S HDG)
8. OPERATING PIPE CONNECTING BUSH (M.S HDG)
9. DOWN PIPE FOR ISOLATOR (50NB CLASS" B" G.I PIPE)
10. MOTOR OPERATING MECHANISM FOR ISOLATOR

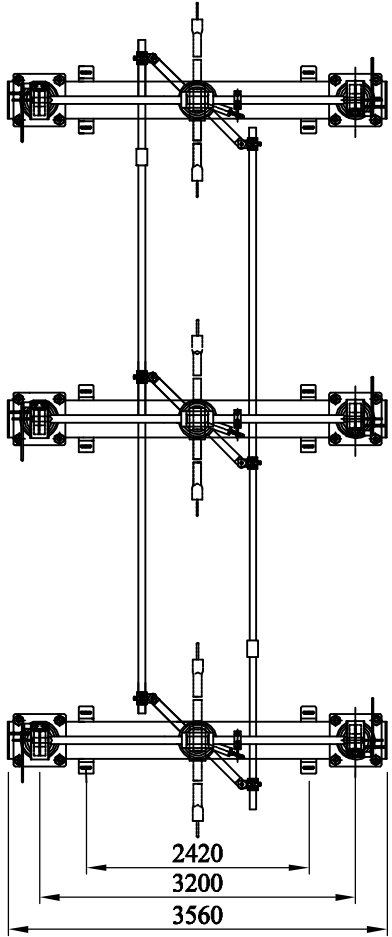
REFERENCE DRAWINGS:

1. FOR ISOLATOR CONTACT ASSEMBLY (1600 AMPS)
2. FOR MOTOR OPERATING MECHANISM BOX
3. FOR SCHEMATIC DIAGRAM
4. FOR TERMINAL BLOCK DETAILS
5. FOR NAME PLATE DETAILS

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. THE INDICATED DIMENSIONS ARE SUBJECT TO THE MANUFACTURING TOLERANCE:
UP TO 50mm -----±3%; 51 TO 100mm ----- ±2%
101 TO 300mm ----- ± 1%; ABOVE 300mm -----±0.5%
3. SHORT TIME CURRENT RATING 40kA/50kA rms. FOR 3 Sec.
4. MIN. CREEPAGE DISTANCE 3625 mm(25mm/kV)
5. APPLICABLE STANDARD : IEC: 62271-102
6. ALL FERROUS PARTS ARE HOT DIP GALVANIZED (85MICRONS)

7622120/2023/EMMRT-ENE51



PLAN

Drawing approval subject to valid vendor registration


18 X 36 SLOT HOLES



CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIJAYAWADA

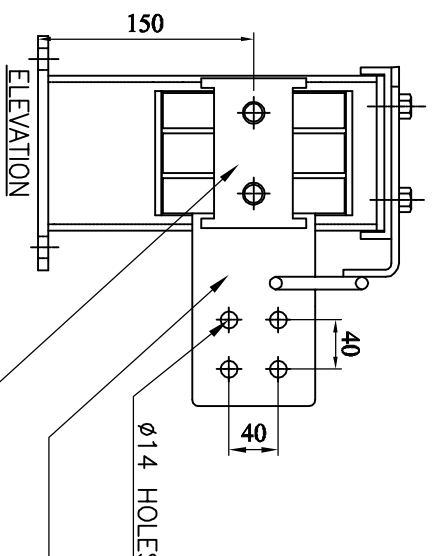
For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
Managing Director

REVISIONS	
D	C
B	A

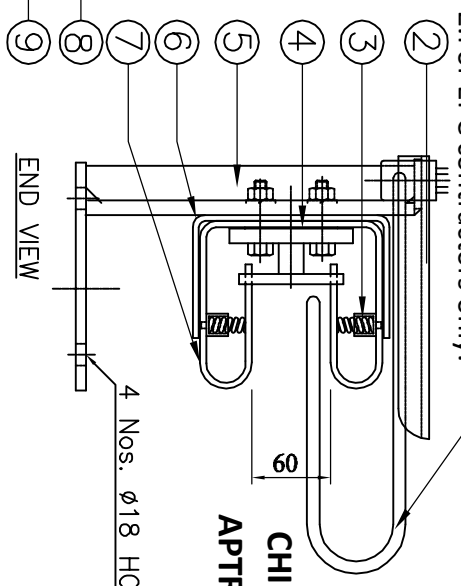
 <p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD</p>	
<p>TITLE: 245KV, 1800A, TP, HDB, RT, ISOLATOR WITHOUT E.S. (WITH MOTOR OPERATING MECHANISM)</p>	
<p>PAYANI POWER SYSTEMS PVT.LTD. Plot No. 06/055/4/6, K.K. OVERSEAS SOCIETY, KODIPALLI FROST, HYDERABAD - 500100. MEDICAL MARKAGER DIST. TELANGANA</p>	
SCALE: 1:1	DATE: 18-05-2023
DRAWN	CHECKED
APPROVED	SHEET: 01 OF 06
DESIGN: PPSPT-APT-GAD-44-01	

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during

FIXED CONTACT ASSEMBLY:

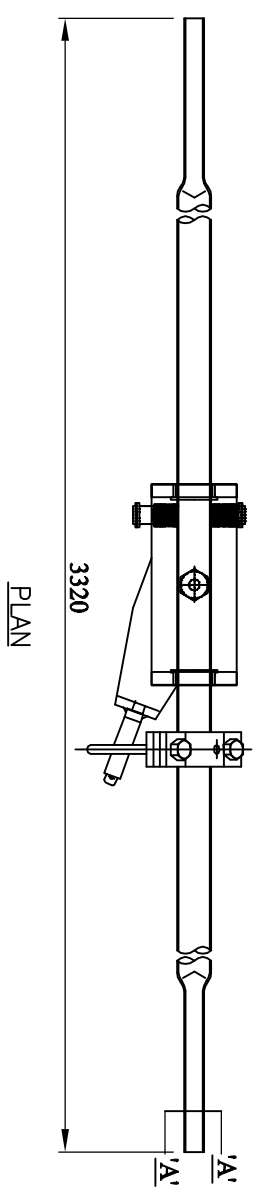
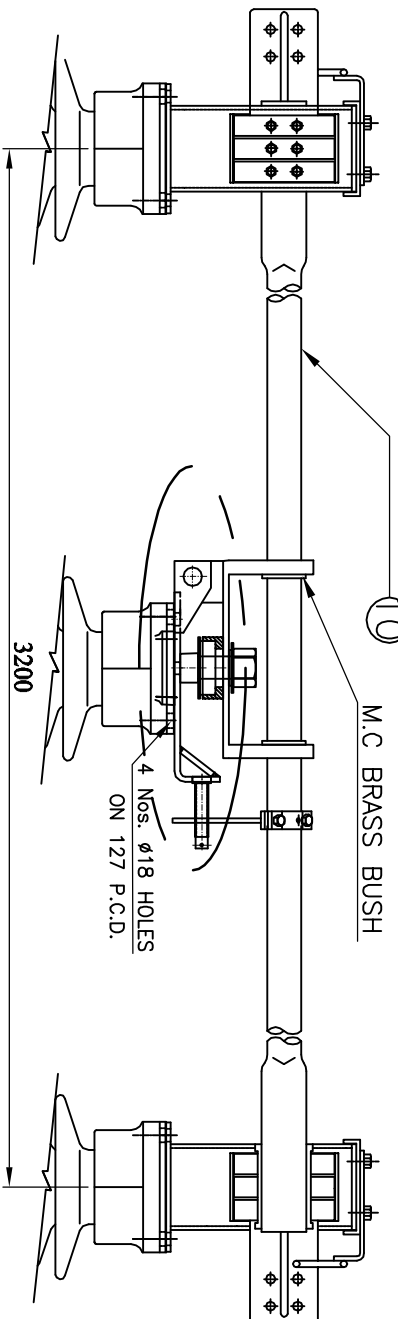


- 1 Acceptance tests.
- 2 For EPC contractors only.



CHIEF ENGINEER /PROJECTS
APTRANSCO/VS/VIJAYAWADA

MOVING CONTACT ASSEMBLY:



BILL OF MATERIAL PER ONE SET

SL NO.	DESCRIPTION	SIZE IN MM	MATERIAL
1.	ARCING HORNS	φ10MM ROD	M.S HDG
2.	RAIN HOOD	1MM SHEET	M.S HDG
3.	JAW SPRINGS	φ2mm WIRE	STAINLESS STEEL
4.	BI-METALLIC SHEET	2mm THK	ALU. + CU.
5.	FIXED CONTACT SUPPORT CHANNEL	115x30x4 mm	M.S HDG
6.	JAW SUPPORT BRACKETS	32 X 5 FLAT	M.S HDG
7.	FIXED CONTACT JAWS (3. NOS)	32 X 5.3 FLAT	HDEC
8.	JUMPER PAD	100 X 16 FLAT	ALUMINIUM
9.	FC SPACER	-----	ALUMINIUM
10.	MOVING CONTACT	50-ODX38-ID	HDEC

- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED (85 MICRONS)
 3. ALL NON FERROUS CONTACT POINTS ARE SILVER PLATED (15 MICRONS)
 4. MOVING CONTACT ASSEMBLY SHOWN IS FOR TURN & TWIST ASSEMBLY

For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
Managing Director

TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD

Drawing approval subject to valid vendor registration

REVISIONS		SCALE: 1:1	
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		18-05-2023	

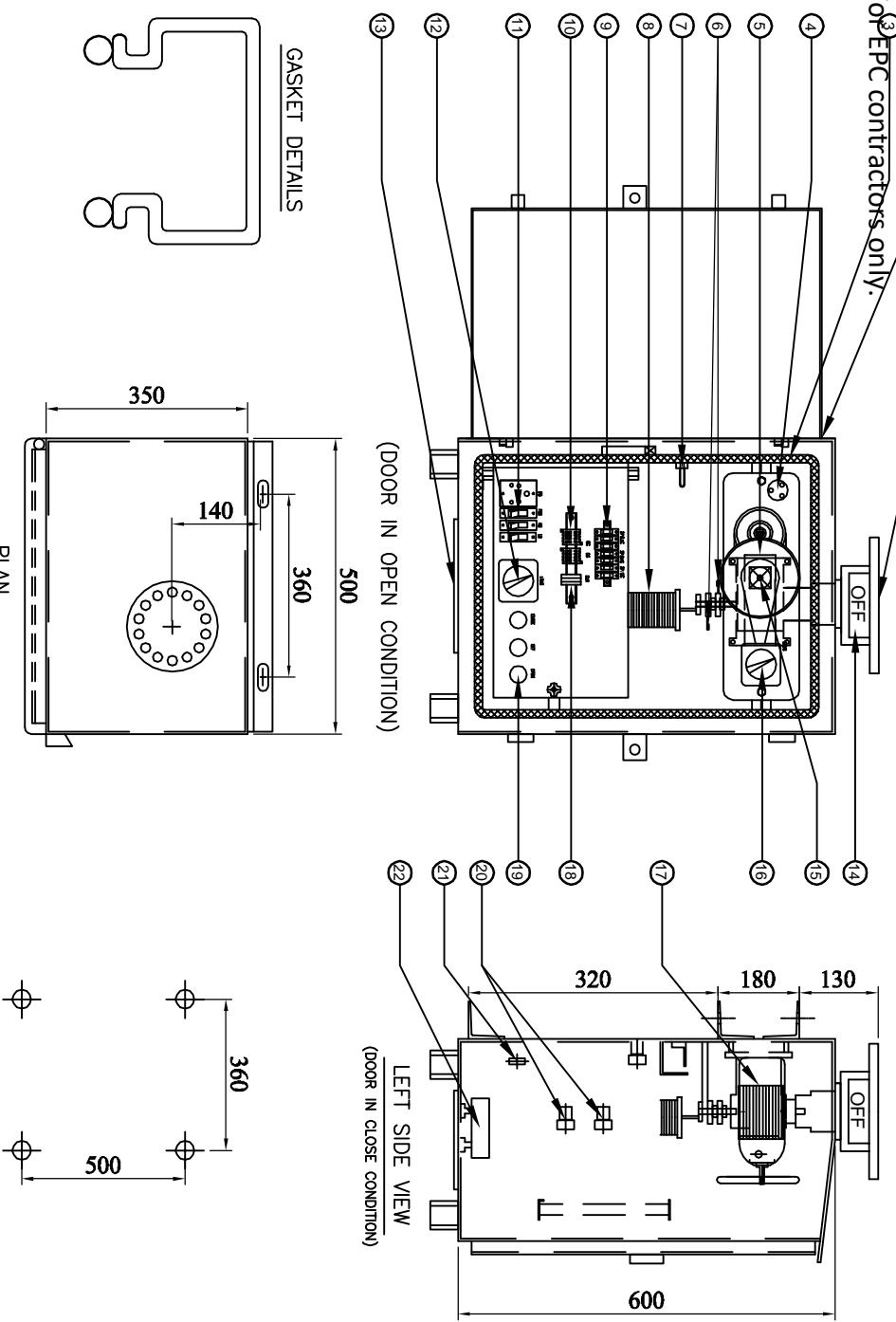
AP TRANSCO

MAIN SWITCH CONTACT ASSEMBLY
(FOR 245kV, 1600A ISOLATOR)

PAVANI POWER SYSTEMS PVT.LTD.
Plot No. 06/056/4/6, K.K. OVERSEAS SOCIETY,
UDA, DULLAPALLY, QUTHUBULLAPUR MANDAL,
KOMURU FORT, HYDERABAD - 500100.
KORUPU MALKAJGIR DIST. TELANGANA

CHECKED: _____
APPROVED: _____
SHEET: 02 OF 06
DRG.No: PPSPT-APT-MSCA-A4-02

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.
2. For EPC contractors only.



Drawing approval subject to valid vendor registration

ALL DIMENSIONS ARE IN MILLIMETERS
CUBICLE WILL BE POWDER COATED WITH LIGHT GRAY SHADE NO:631 OF IS : 5
DEGREE OF PROTECTION IP: 55 AS PER IS : 13947
20% SPARE TERMINALS WILL BE PROVIDED AND SHALL BE UNIFORMLY DISRIBUTED TO ALL TERMINAL BLOCKS EQUALLY
WIRING WILL BE DONE WITH 1100V.GRADE 2.5 Sq.MM CU STRANDED P.V.C. INSULATED CONDUCTOR
WEIGHT OF THE BOX : 95Kg (APPROX.)
PPSP PL MAKE REDUCTION GEAR RATIO:20:1 MATERIALS EN8/STEEL

CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIJAYAWADA

PART LIST:-

1. 14-HOLES FLANGE
2. CUBICAL WITH DOOR (3mm Alu. SHEET)
3. RUBBER GASKET (EPDM)
4. THORMOSTAT (30CTO 85°C)
5. REDACTION GEAR BOX
6. LIMIT SWITCHES(OPEN & CLOSE)
7. CUBICLE LAMP HOLDER
8. AUXILIARY SWITCH -12NO+12NC
9. 3.POLE MCB-FOR MOTOR SUPPLY
2.POLE MCB-FOR SINGLE PHASE SUPPLY
10. CONNECTORS FOR OPEN & CLOSE
11. POWER SOCKET/LIGHT & HEATER SWITCHES
12. LOCAL/REMOTE/MANUAL SELECTOR SWITCH
13. DETACHABLE TYPE CABLE GLANDS PLATE
14. ON/OFF INDICATOR
15. MANUAL OPERATING ARRANGEMENT
16. INTER LOCK ROTARY SWITCH
17. MOTOR (0.5HP 415V AC,50 Hz)
18. OLR-OVER LOD RELEY
19. PUSH BUTTONS
20. TERMINAL BLOCK
21. EARTHING TERMINAL-2 Nos.
22. HEATER

For Pavani Power Systems Pvt. Ltd.

(T. SESHAGIRI RAO)
Managing Director



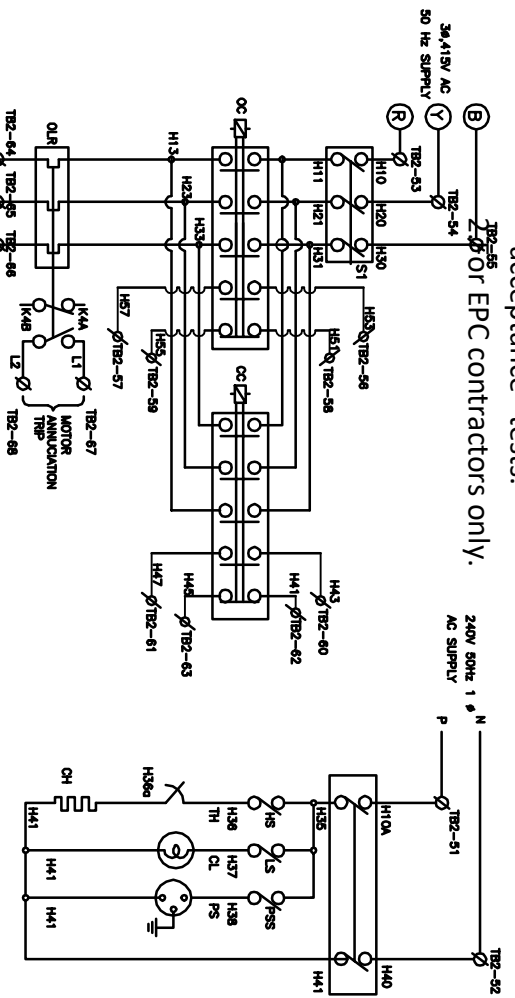
TRANSMISSION CORPORATION OF
ANDHRA PRADESH LTD

REVISIONS		DATE	
D	C	B	A
PAVANI POWER SYSTEMS PVT.LTD. Plot No. 06/065/4/6, K.K. OPENERS SOCIETY, DDA, DULAPALLY, QUTHUBULLAPUR MANDAL, KODURUVA FORT, HYDERABAD - 500100. MICROFIL MANAGER DIST. TELANGANA			
MOTOR OPERATING MECHANISM BOX (FOR 245KV ISOLATOR)		SCALE: 1:1	DATE: 18-05-2023
DRAWN		CHECKED	APPROVED
SHEET		03 OF 06	
DRG.No: PPSP-APT-MOM-44-03			

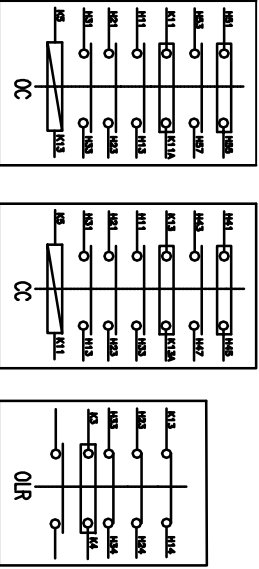
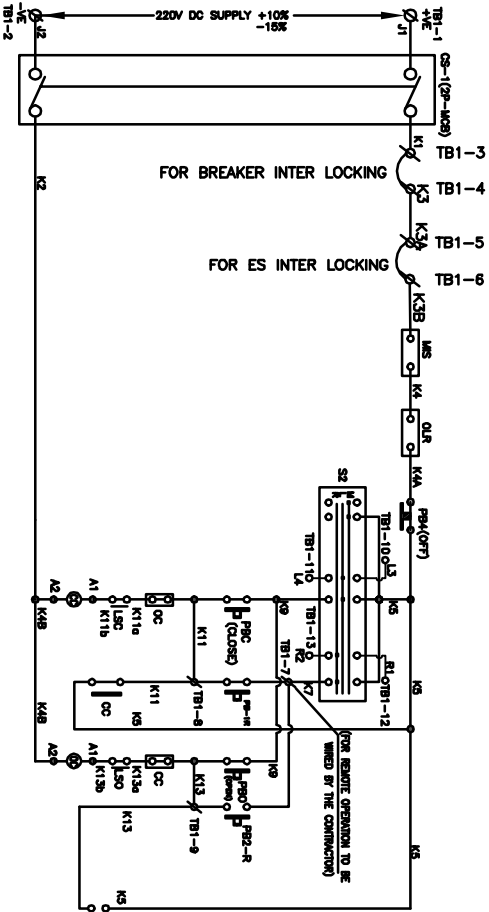
NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during

acceptance tests.

2. For or EPC contractors only.



Drawing approval subject to valid vendor registration



LEGEND	DESCRIPTION	MAKE
CC & OC	Close & Open contactors 220V DC, 7A	C&S/ SIEMENS/ Schneider/ ABB
CS1&CS2	Compact fluorescent lamp	PROVISION FOR LAMP.
S3	Cubic heater (80W, 240V)	Grish Ego./Kontakt Pyrosensors
HS	AC 3φ 415V MCB-6A for motor	C&S/ SIEMENS/ Schneider/ ABB
MIS	AC 1φ 240V MCB-16A for AC supply	C&S/ SIEMENS/ Schneider/ ABB
LS	AC 1φ 240V, 6A one way switch for heater	Anchor/MARU
LSC	Manual interlock switch	Recom/Kaycee/Jabdalaji/MANI
LSO	Lamp switch 240V, 6A one way switch	Anchor/MARU
OLR	Opens when the isolator opens, 10A 1NO+1NC	JAI BALAJI/MANI
PBC & PBO	Thermostat 30° to 85°C	Bhoskary/Mavis/Grish EGO
AUX SWITCH	Over load relay with SPP (1.0A TO 1.6A)	C&S/ SIEMENS/ Schneider/ ABB
	Close and open push buttons, 10A	Vishnov/Siemens/Schneider/C&S
	Power socket 6A, 1φ, 3pin, 230V	Anchor/CGL OR Equiv.
	Power socket 6A, 1φ, 3pin, 230V	Anchor / Maru OR Equiv.
	AC 1φ 230V one way switch	Anchor/Maru
	Local / Remote / Manual selector switch	Recom/Kaycee/Jabdalaji/MANI
	Motor (0.5 HP 3φ 415V AC, 50Hz)	REMI/LHP/ELCEN/CGL
	08NO + 08 NC	Power Drives/Imax/Mani's
	Push button to OFF the circuit 10 A	Vishnov/Siemens/Schneider/C&S
	Terminal block.	Vin Mech/Elmex/Connectwell

OPERATING INSTRUCTIONS:

1. Operation is possible only when the breaker is 'OPEN' ensure this condition is satisfied
2. For manual operation of isolator follow the following steps:
 - i) Keep selector switch (s2) in manual position.
 - ii) Rotate the rotary switch provided on the top panel board, insert the handle for the manual operation.
 - iii) Rotate the handle clockwise / anticlockwise to open / close the isolator respectively
 - iv) When the manual operation is not needed restore the position of rotary switch on top panel

CHIEF ENGINEER/PROJECTS
APTRANSCO/NS/VIJAYAWADA

For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
Managing Director

TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD

AP TRANSCO

SCHEMATIC DIAGRAM FOR MOTOR / DC CONTROL PANEL.

REVISEMENTS	DATE	SCALE	BY
D		1:8	
C		05	
B		2023	
A			

PAYANI POWER SYSTEMS PVT.LTD.
 Plot No. 06/065/4/6, K.K. OPENERS SOCIETY,
 DDA, DULAPALLY, QUTHUBULLAPUR MANDAL,
 KODURUVA FORT, HYDERABAD - 500100.
 MEDICAL WALKER DIST. TELANGANA

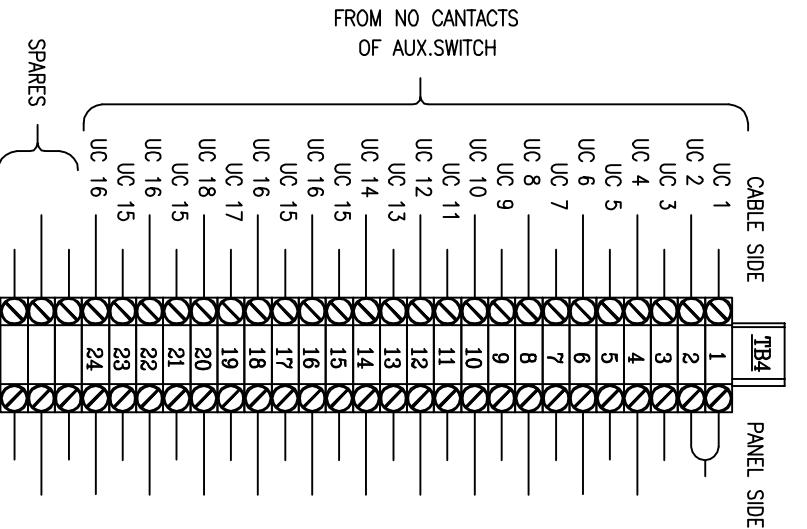
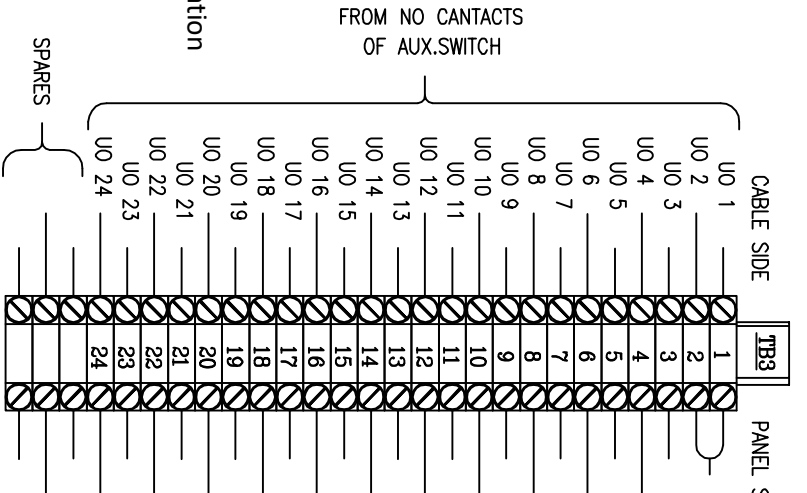
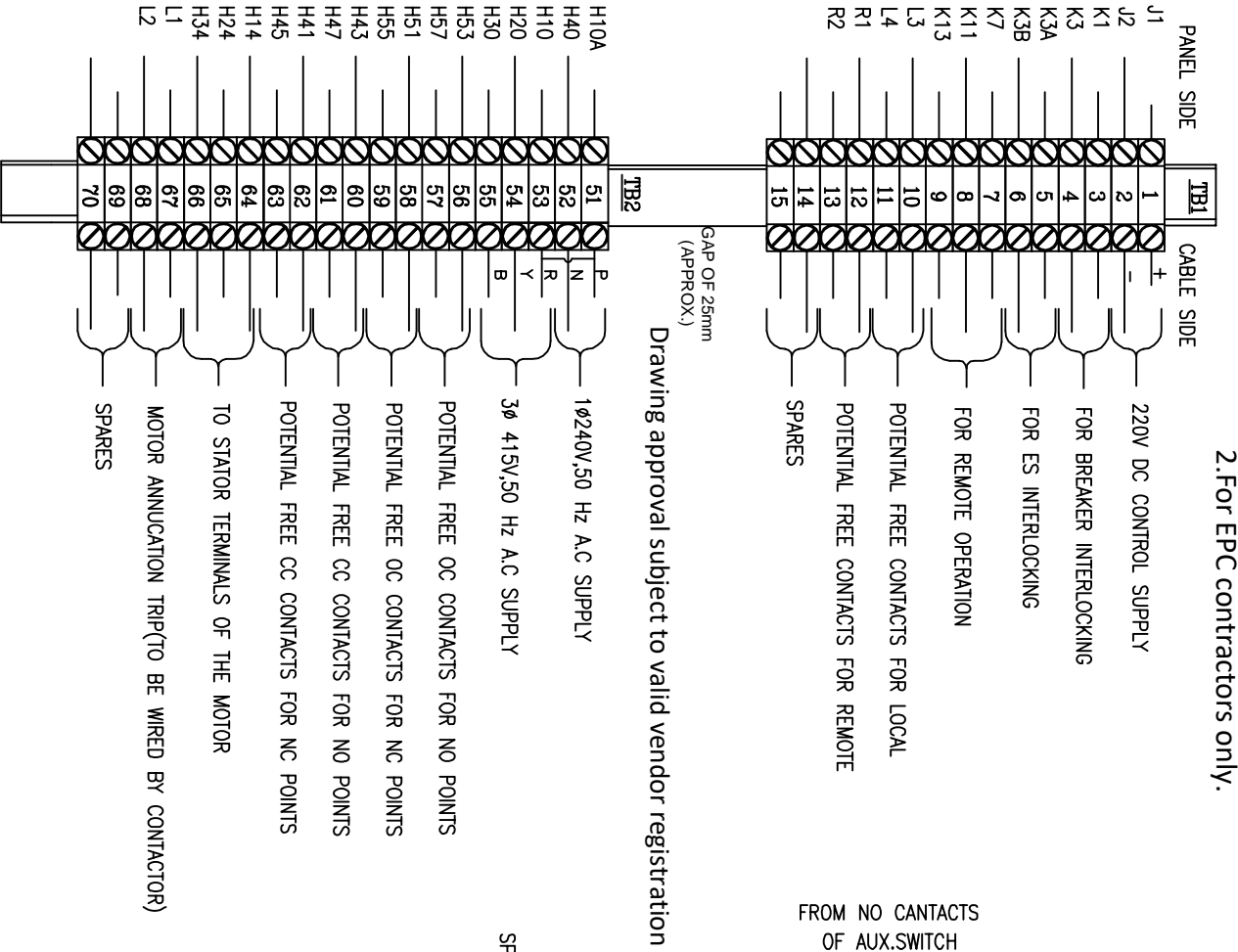
DRAWN: _____
 CHECKED: _____
 APPROVED: _____
 SHEET: 04 OF 06
 DRG.NO: PPSPT-APT-SD-A4-04

TERMINAL BLOCK FOR DC & AC acceptance tests.

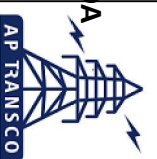
2. For EPC contractors only.

NOTE:-1. Drawings Approval subject to valid type test reports, to be checked during

AUX. SWITCH 12NO / 12NC



CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIAVAYAWADA



TRANSMISSION CORPORATION OF
ANDHRA PRADESH LTD

For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
Managing Director


Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA/Breaker requirement and capability.

REVISIONS		SCALE: 1:1	
D	C	B	A
TERMINAL BLOCK DETAILS		DATE	18-05-2023
DRAWN		CHECKED	
APPROVED		SHEET	05 OF 06
DRG. NO.		PPSP-APT-TBD-44-05	



PAVANI POWER SYSTEMS PVT.LTD.
Plot No. 06/056/4/6, K.K. OVERSEAS SOCIETY,
PDA, DUTTAPALLY, QUTHUBULLAPUR MANDAL,
KODURU ROAD, HYDERABAD - 500100.
REGISTRAR MANDAL DIST. TELANGANA

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.
 2.For EPC contractors only.

		MANUFACTURED & SUPPLIED BY PAVANI POWER SYSTEMS PVT.LTD. PLOT No.05/055/A/6, K.K.OWNERS SOCIETY, DULAPALLY INDUSTRIAL AREA, KOMMIPALLY POST, HYDERABAD-500100, MEDCHAL MALKAJGIRI DIST. T.S.	
ISOLATOR RATING NAME PLATE			
CLIENT:	TRANSMISSION CORPORATION OF A.P LTD		
CUSTOMER:			
PO.No./DATE:			
YEAR OF MFG.	-----	SL.No.	-----
TYPE	DBR	FREQUENCY (Hz)	50
VOLTAGE (kV)	245	I.W. VOLTAGE	1050kVp
STC kA/SEC.	50/3	P.F.W. VOLAGE(DRY)	460kVrms
CURRENT (A)	1600	OPERATING DRIVE	MOTOR
		CONTROL VOLTAGE	220 V DC


Since the supply of terminanal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA /Breaker requirement and campability.

Live part to ground clearance shall be mainted during erection as per IE rules.

Drawing approval subject to valid vendor registration

CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIJAYAWADA

For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
 Managing Director

		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD	
NAME PLATE DETAILS (FOR 245kV, ISOLATOR)			
REVISIONS	D C B A	SCALE: 1:1	DATE: 18-05-2023
PAVANI POWER SYSTEMS PVT.LTD. Plot No. 05/055/A/6, K.K.OWNERS SOCIETY, DDA, DULAPALLY QUTHBULLAPUR MANDAL, KOMMIPALLY POST, HYDERABAD - 500100. MEDCHAL MALKAJGIR DIST. TELANGANA		CHECKED	APPROVED
		SHEET	06 OF 06
		DRG.No:	PPSP-APT-NPD-44-06