



**TP CENTRAL ODISHA DISTRIBUTION LIMITED**  
(A Tata Power & Odisha Govt. joint venture)  
**Procurement Department**  
2nd Floor, IDCO Tower, Janpath Bhubaneswar, Odisha 751022

**Corrigendum/ Pre bid Queries**

Please refer open tender notice no- TPCODL/ P&S/ 30/ 2020-21 for construction of 33 KV line for power supply to OMFED diary plant at Arilo-Govindpur, Dist- Cuttack under BCDD-II, Bhubaneswar

Some of changes have been made in the schedule for Items (BOQ). So, the name of the materials of the schedule for Items (BOQ) at Annexure-I of tender document may be read as follows,

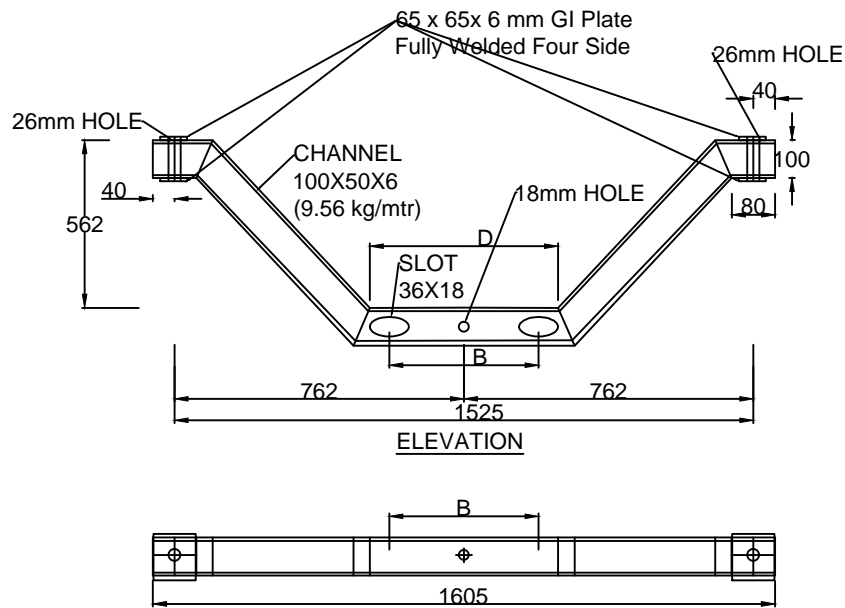
<b>BOQ SI No</b>	<b>Pre Bid Queries by prospective bidder</b>	<b>Existing Name of the materials / provision in schedule for Items (BOQ)</b>	<b>Modified Name of the materials / provision in schedule for Items (BOQ)</b>
(1)-2, (2)-2 & (4)-2	Drawing / dimension of 33 KV Top channel	33 KV Top channel	33 KV Pole Top Bracket as per the specification
(1)-3, (2)-3 & (4)-3	Drawing /dimension of 33 KV V cross arm	33 KV V cross arm	33 KV V Cross arm as per tender specification
(1)-17, (2)-17, (3)-18, (4)-17, (5)(6)-20 & (7)-13	Drawing / dimension of Concreting of pole pits	Concreting of pole pits	Concreting of pole pits as per the specification
(1)-19, (2)-19, (3)-20, (4)-19, (5)(6)-22 & (7)-15	Drawing / dimension of Concreting of stay pits	Concreting of stay pits	Concreting of stay pits as per the specification
(8)-12 & (9)-12	Drawing/ dimension of cable trench	Trench & Brick Masonary work with slab for laying of cable, Cable trench 1.5 meter width x1.5 meter depth & with RCC cover, Tray arrangement with 65x65x6 angle for laying of cable & sand filling for the protection of cable as per IS 1255-1983	RCC cable Trench with RCC cover and angle tray arrangement (Type - R) and as per the specification. The cable trench shall be filled by sand for protection of cable.
(8)-13 & (9)-13	Drawing / dimension of loop	Loop chamber	Loop chamber with excavation of soil with size 3.5 mtr x3.5 mtr x1.5 mtr depth. The chamber shall be filled with sand before and after looping of cable and then putting of PCC tiles on the filled sand. Finally, the chamber shall be filled by soil.

The prospective bidders are requested submit the schedule of items considering the above modification.

Addition to above, drawing/ specification of 33 KV V Cross arm, 33 KV top bracket, concreting of pole pit, concreting of stay pit, stay clamp, RCC cable trench (R -type) and approved make list is enclosed herewith.

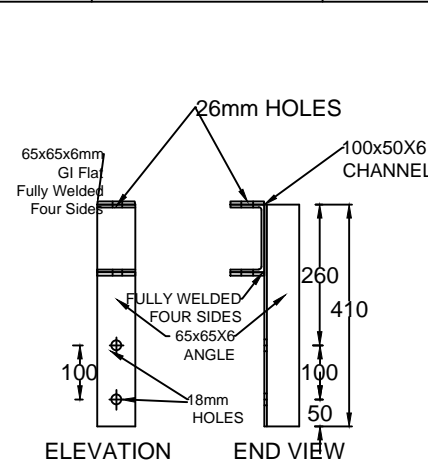
All others Terms and Condition of the original tender documents remain unaltered.

# 33 KV V-CROSS ARMS, TOP BRACKET & BACK CLAMP

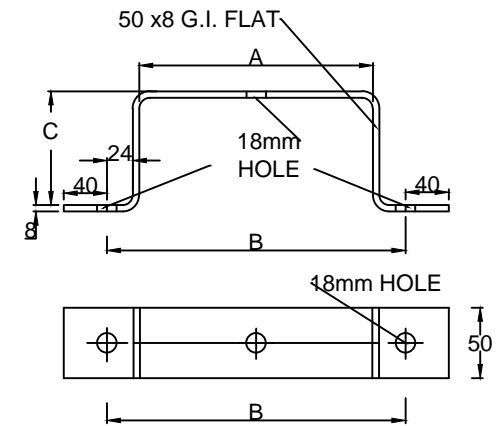


**33 KV V-CROSS ARM**

LENGTH OF	LOAD(KG)	A	B	C	D	BOTTOM LINE OF X-ARM FROM TOP OF THE POLE IN mm
10mtr. PSC Pole	300	230	294	100	361	1500
10mtr. PSC Pole	400	265	329	100	361	1500
150x150mm JOIST		155	220	140	361	1500



**POLE TOP BRACKET**



**BACK CLAMP**

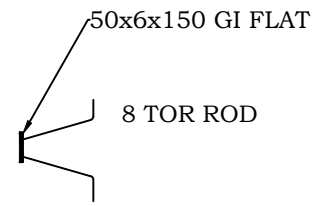
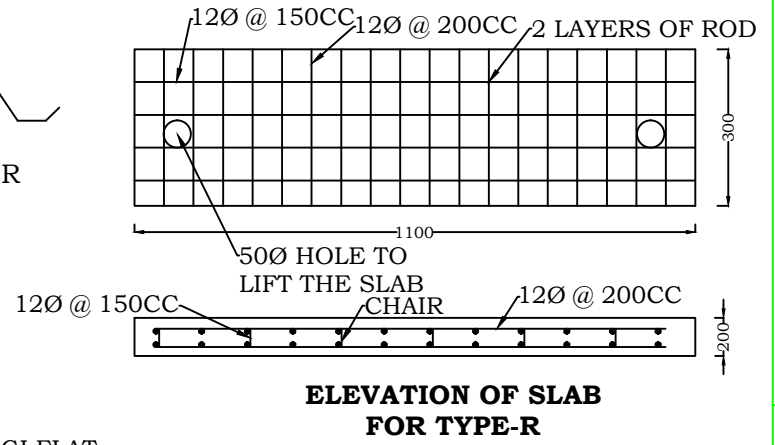
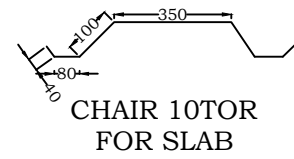
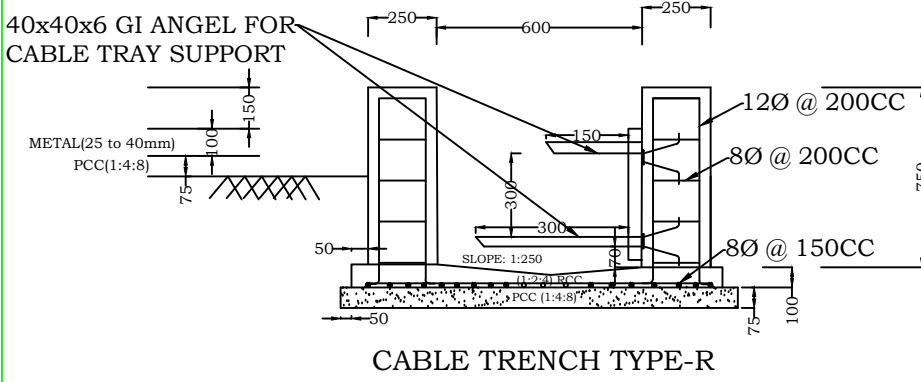
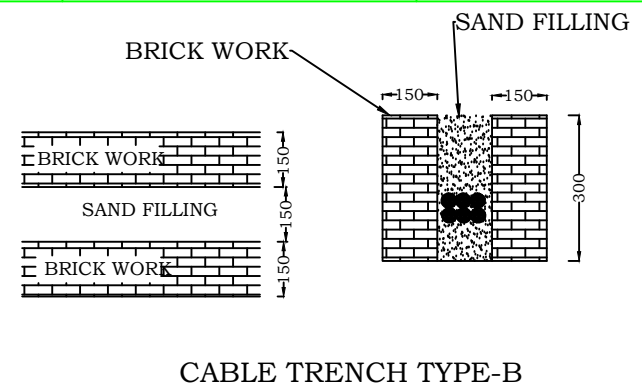
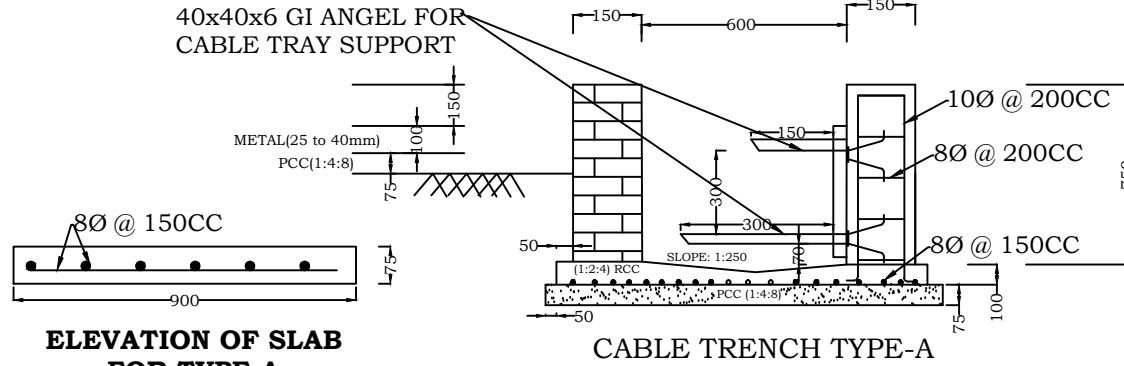
## WEIGHT OF MATERIALS

SL	ITEM	CROSS SECTION	LENGTH (IN MM)	NO OF PC	UNIT WT (KG/MTR)	TOTAL WEIGHT (IN KG)	
1	33KV V-CROSS ARM	100 x 50 x 6	2160.0000	1.0000	9.5600	20.6496	
		65 x 6	65.0000	4.0000	3.0600	0.7956	
							21.4452
2	BACK CLAMP						
		For 10m 330Kg	50 x 8	574	1.0000	3.1400	1.8024
		For 10m 400Kg	50 x 8	609	1.0000	3.1400	1.9123
		For 150MM JOIST	50 x 8	579	1.0000	3.1400	1.8181
3	TOP BRACKET						
		65 x 65 x 6	410.0000	1.0000	5.8000	2.3780	
		100 x 50 x 6	65.0000	1.0000	9.5600	0.6214	
		65 x 6	65.0000	2.0000	3.0600	0.3978	
						3.3972	

N.B. : ALL FABRICATED ITEMS SHOULD BE

1. STEEL: GRADE Fe 410 WA, CONFIRMING TO IS:808, 2062
2. HOT DIP GALVANIZED AS PER IS: 2633, 2629 STANDARD. (610 gm/m<sup>2</sup>)

ALL DIMENSIONS ARE IN MM.



- NOTES:**
1. ALL DIMENTIONS ARE IN MM.
  2. ALL RCC SHALL BE OF GRADE: **M15**
  3. CLEAR COVER: For Pre Cast: 15mm  
For Side Wall: 40mm  
For Base Slab: 40mm AT BOTTOM & 25mm AT TOP
  4. LAP LENGTH FOR REINFOR CEMENT BAR SHALL BE :  
40xD (D- Dia of Bar) FOR BINDING  
10xD (D- Dia of Bar) FOR WELDING
  5. ALL PREINFORCEMENT STEEL SHALL BE HYSD/TMT BAR (Fe415) CONFORMING TO IS:1785/ WITH CORROSION RESITANT.
  6. SUPPORT ANGEL S SHALL BE 50x50x6 FOR POWER CABLE AND 40x40x6 FOR CONTROL CABLE.
  7. LIFTING HOOK SHALL BE PROVIDED AT EVERY COVER SLAB.

CUSTOMER:-	CESU.
PROJECT NAME:-	CESU , CAPEX
TITLE:-	DETAILS OF CABLE TRENCH.
DRAWN BY:	
Design: CAPEX, PHIROJ	

## TABLE FOR INSTALLATION

RS JOIST TYPE	L (MM)	B (MM)	D (MM)
RS Joist 150x150x6 mm	13000	2200	2300
RS Joist 160x152x6 mm	13000	2200	2300
RS Joist 160x160x6 mm	13000	2200	2300
RS Joist 160x160x6 mm	11000	1800	1900
RS Joist 150x150x6 mm	11000	1800	1900

## TABLE FOR LINE PARAMETERS

LINE TYPE	SPAN (M)	CONDUCTOR (SQMM.)
33KV	60-100	3 Nos. - 232/100

### NOTE:-

- THIS DWG. SHALL BE READ IN CONJUNCTION WITH TERMS & CONDITIONS OF THE CONTRACT, TECHNICAL SPECIFICATIONS & SCHEDULE OF ITEMS.
- DO NOT SCALE. FOLLOW WRITTEN DIMENSIONS ONLY.
- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER U.N.O.
- FINISH GRADE LEVEL (F.G.L) EL(+/-)0.000 WITH RESPECT TO EXISTING GROUND/ROAD LEVEL.
- IN CASE OF ANY DISCREPANCY IN DIMENSION AND LEVEL BETWEEN ELECTRICAL DRAWING AND ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL SEEK THE CLARIFICATION BEFORE PROCEEDING.
- ALL STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED CONFORMING TO IS 4759 & IS 2633.
- ALL MATERIALS USED & WORKMANSHIP SHALL CONFORM TO TECHNICAL SPECIFICATION AND SATISFACTION OF ENGINEER-IN-CHARGE.
- UNLESS NOTED OTHERWISE, PCC SHALL BE (1:4:8) 75MM THICK AND 75MM PROJECTED BEYOND THE FACE OF RCC.
- ALL REINFORCING STEEL WILL BE OF TESTED QUALITY CONFORMING TO IS:1786-1985
- ALL RCC WORK SHALL BE CARRIED OUT AS PER IS:456-2000 (LATEST)
- USED CONC. GRADE :- M20  
GRADE OF REINF. STEEL :- FE 500D U.N.O.
- LAP LENGTH OF REINFORCEMENT BAR SHALL NOT BE LESS THAN 50 TIMES THE DIAMETER OF BAR.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS.  
STRUCTURAL ELEMENT      TOP      BOTTOM      SIDE  
a) FOOTING      50      50      50  
b) COLUMN      -      -      40
- RS JOIST SHALL BE WELDED WITH 6MM FILLET WELD TO THE BASE PLATE.
- THIS DRAWING IS APPLICABLE FOR INSTALLATION OF POLE AS LINE POLE.

NET SAFE BEARING CAPACITY	5 T/SQM
BASIC WIND SPEED AS PER IS 875 (PART-3)	180 KM/HR

### ABBREVIATIONS:-

EL	=	ELEVATION
G.L.	=	GROUND LEVEL
T.O.C	=	TOP OF CONCRETE
THK.	=	THICK
TYP.	=	TYPICAL
C	=	CENTER LINE
T.O.R	=	TOP OF RAFT
CJ	=	CONSTRUCTION JOINT

## PROJECT

INSTALLATION OF RS JOIST  
AT CESU - ODISHA

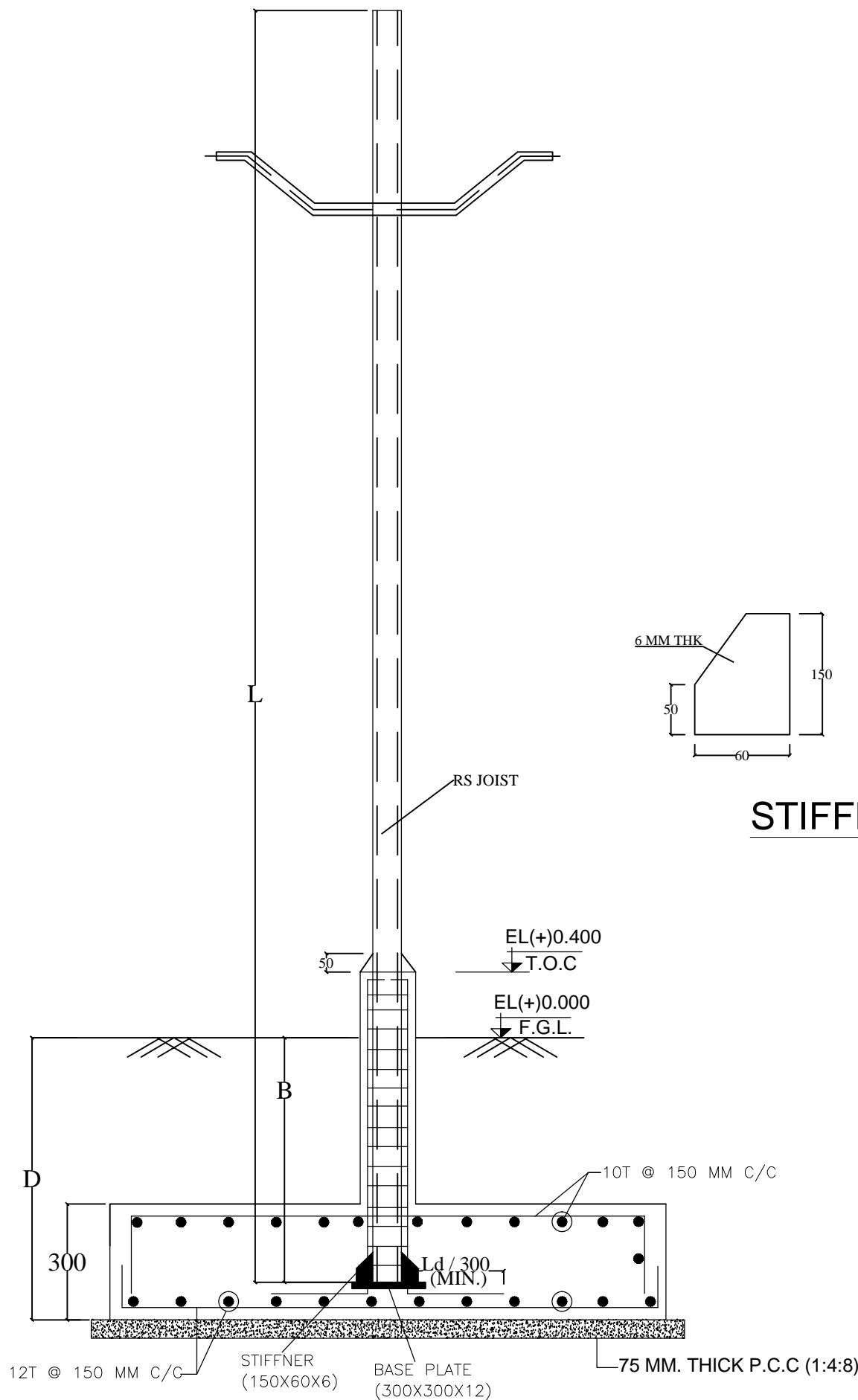
### SAFETY:-

- All safety precautions i.e. usage of PPE's etc. need to be taken care during the installation/construction.
- Barricades shall be used if found necessary.
- Warning board to be provided if necessary for safety measures.

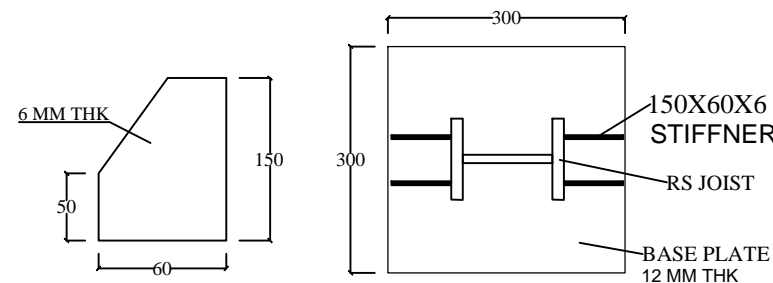
DATE	REV. NO.	REMARKS	DGN.	REV.	APPD.	ISSUED.
27.05.2020	00	Issued for construction purpose				

**TATA POWER-DDL**  
TATA POWER DELHI DISTRIBUTION LIMITED  
(A TATA POWER AND DELHI GOVERNMENT JOINT VENTURE)  
District Office Building, Sector 03, Rohini, Delhi-110085

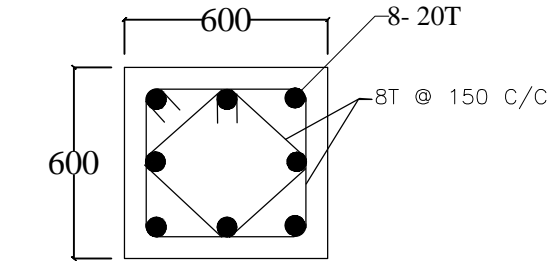
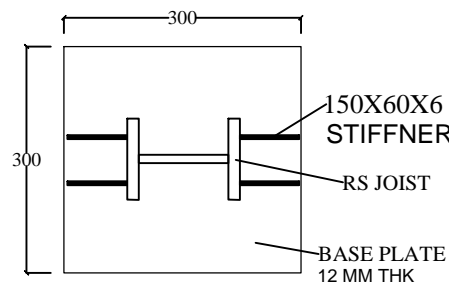
DESIGN(DGN.)	PR/CS	TITLE:-			
DRAWN(DRN.)	CS	FOUNDATION DETAILS FOR RS JOIST FOR 33KV LINE			
REVIEWED(REV.)	PR				
APPROVED(APPD.)	DS	SHEET	DRAWING NO.	REV.	
SCALE	N.T.S.	1 OF 1	TPD-ODS-202-C-001	00	



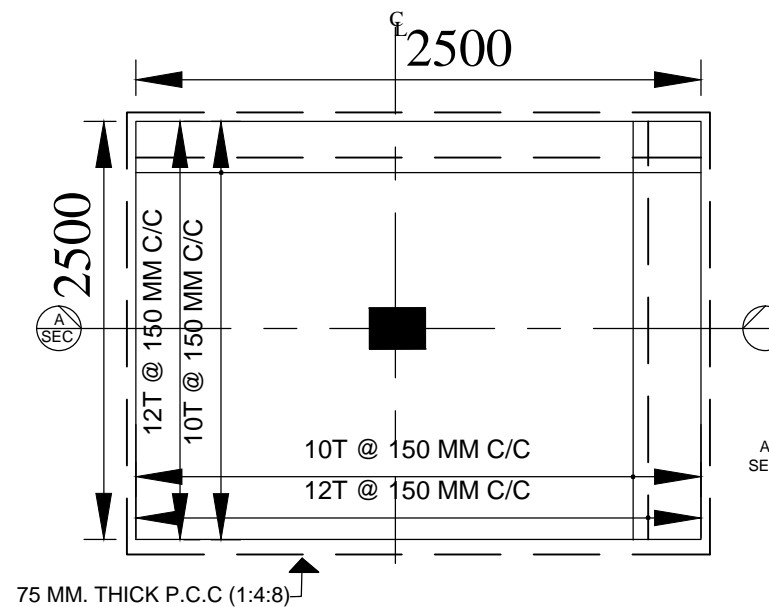
SECTION -A (TYP)



STIFFNER DETAIL

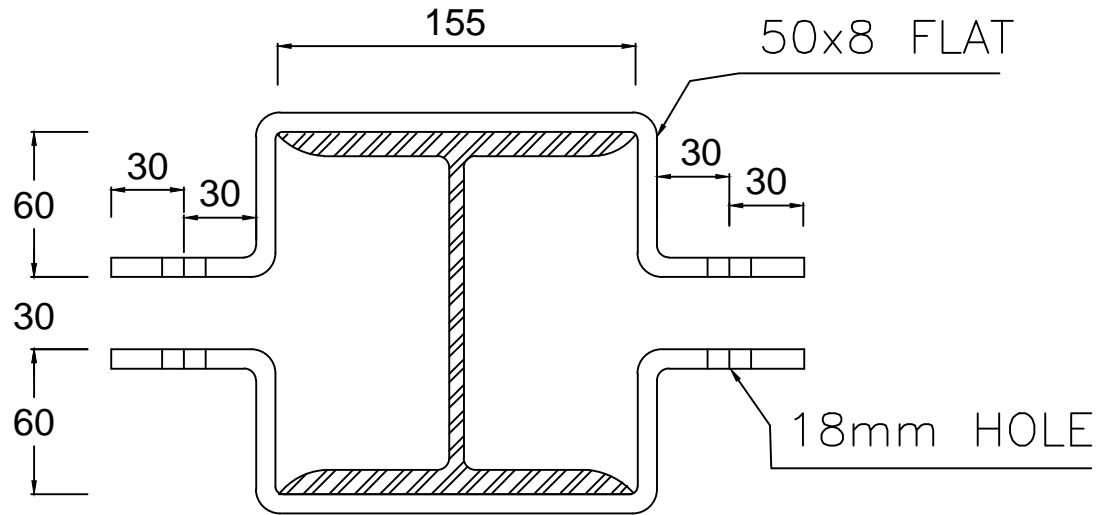


COLUMN DETAIL



PLAN VIEW

# STAY SET CLAMP( FOR 150 x 150 MM GI JOIST POLE )



## WEIGHT OF MATERIALS

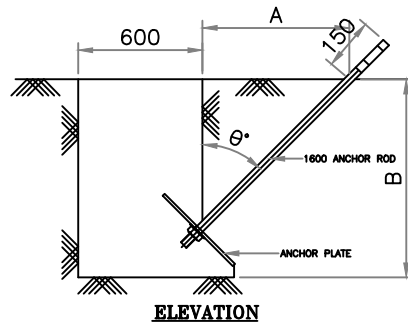
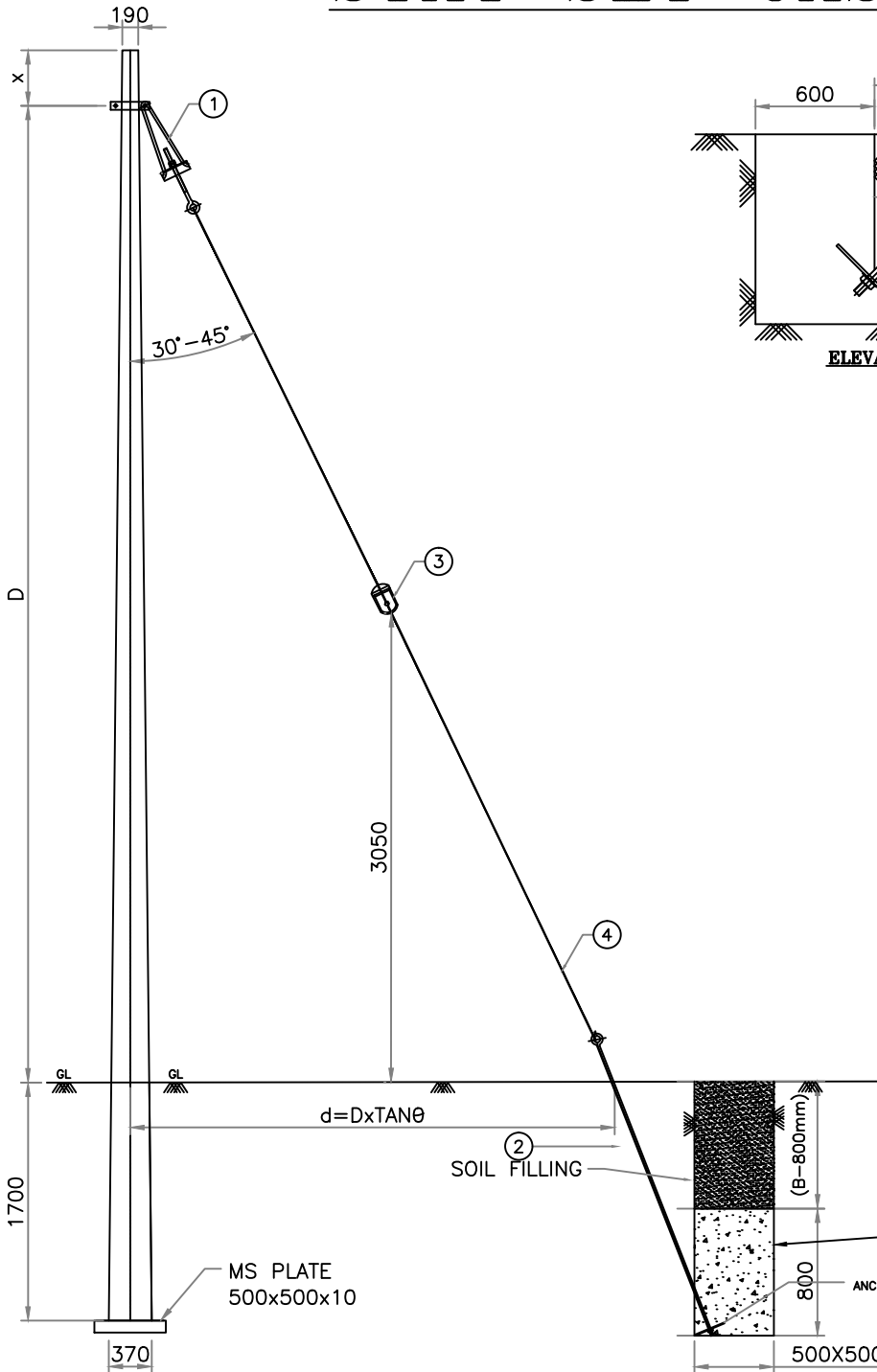
SL	ITEM	CROSS SECTION	LENGTH (IN MM)	NO OF PC	UNIT WT (KG/MTR)	TOTAL WEIGHT ( IN KG )
1	STAY SET CLAMP FOR 150 x 150 mm GI JOIST POLE	50 x 8	411.0000	2.0000	3.1400	2.5811

N.B. : ALL FABRICATED ITEMS SHOULD BE

1. STEEL: GRADE Fe 410 WA ,CONFIRMING TO IS:808, 2062
2. HOT DIP GALVANIZED AS PER IS: 2633, 2629 STANDARD  
(610 gm/m<sup>2</sup> )

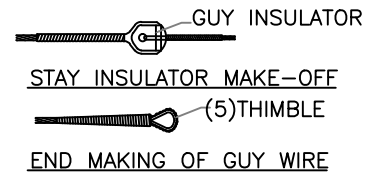
ALL DIMENSIONS ARE IN MM.

# STAY SET CASTING



$\theta$	30°	45°
A	750	1100
B	1500	1300

## GUY ASSEMBLY (CONVENTIONAL ARRANGEMENT)



CONCRETING TO BE DONE  
WHERE SOIL IS NOT FIRM

APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

*for New Grids & Bay ext. jobs.*

66 KV CT / PT / CVT	BHEL / CGL / ABB / AREVA / MEHRU / KAPCO/HEPTACARE
C&R Panels	ABB/SIEMENS/ALSTOM/HAIL
66 KV CB	ABB / SIEMENS
LIGHTNING ARRESTORS	AREVA / CGL / ELPRO / OLBUM/ RAYCHEMM/LAMCO
INSULATORS	WSI / BHEL / BIRLA NGK (ABIL)/ GENERAL POWER, CJI, IEC
HARDWARE FITTINGS	RASHTRA UDYOG LTD (RUL) / SUPREME/LIGEON ENERGY/ELECTROMECH/TRANSTECH
11 KV CAPACITORS	SHREEM / EPCOS/ UNIVERSAL/ABB
LIGHT FITTINGS ( INDOOR/ OUTDOOR )	PHILIPS / CGL / GE / BAJAJ / WIPRO
250 KVA DISTRIBUTION TRANSFORMER	CGL / AREVA /VOLTAMP / PATSON / KOTSON / VIJAY ELECTRICALS / CAPITAL / NUCON / RAYCHEM / SPEC/ATLANTA/TOSHIBA
CIRCUIT BREAKER/ SWITCHGEARPANELS (33 KV VCB PANELS)	SIEMENS / SCHNEIDER / ABB
CIRCUIT BREAKER/ SWITCHGEARPANELS (11 KV VCB PANELS)	SIEMENS / SCHNEIDER / ABB
11 KV POWER CABLE ( XLPE)	RPG / CCI / NICCO / FORT GLOSTER / POLYCAB / TORRENT/UNIVERSAL/ STERLITE/KEC/KEI
1.1 KV POWER AND CONTROL CABLE	RPG / POLYCAB / KRISHNA ELECTRICALS / TORRENT / GEMSCAB / ALCON / GENUS / ELECTROTECH / PARAGAON / TCL /RAVIN CABLES / MP TELELINK/CAPITAL URJATECH/EMPIRE / PARAMOUNT/KEI
33. KV CABLE	UNIVERSAL / NICCO / RPG / TORRENT / FORT GLOSTER / CCI / ILGIN / LS /STERLITE
Power Connector	: TYCO-Wedge type connector / Sun Electric
1.1KV, Electrical wire	Finolex / POLYCAB/CAPITAL URJATECH/TCL/Havells/KEI





APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

Cables Termination Kits / Joints	:	RAYCHEM / 3M
Cable tray	:	BHARATI / SLOTCO / STEEL WAYS, AR enterprises, MME
Battery Charger/ DCDB	:	MASSTECH / EMERSON
Battery (Ni-Cd)	:	HBL, AMAR RAJA, AMCO
LT Moulded case circuit breaker (MCCB)	:	GE POWER/ SIEMENS / L & T/ABB /SCHNEIDER/ELESCON ENGG. / C & S
AC LT panel Boards	:	L&T/ Siemens/ Kaybee/Advance/ A TO Z
LT Fuse Switches / Switch Fuses	:	GE POWER / SIEMENS / L & T
AFDAS (Fire detection system)	:	Honeywell, Agni Suraksha, System sensor
Indication Meters	:	IMP/ AE
Static Type Energy Meter	:	SECURE / L & T/ ABB/ ELSTER
Control Switches	:	SIEMENS / KAYCEE / SALZER
Select Switches	:	SIEMENS / KAYCEE / SALZER
Contactors	:	SIEMENS / L & T / GE POWER / C & S
Push Button	:	SIEMENS / Telemechnic/ L & T
Indication Lamp	:	SIEMENS / Telemechnic/ L & T
Annunciator	:	MINILEC / AREVA / PROCON
Fuses (LT)	:	Areva / SIEMENS / L & T
Miniature Circuit Breaker (MCB) /ELCB	:	MDS / HAGER / MERLIN GERIN
Cable glands	:	COMET/AXIS
ERW Conduit / PVC Conduit	:	AKG /Supreme/Finolex
6A & 16 A Switch - Socket	:	MK / ANCHOR/ MDS
63 A & 20A Industrial Socket	:	MDS /CGL
Ceiling fan / Exhaust Fan	:	KHAITAN / CROMPTON GREAVES / USHA/ GEC
Inverter	:	Exide, Microtech, Sukam
Metal clad socket	:	B & C / CROMPTON / MDS

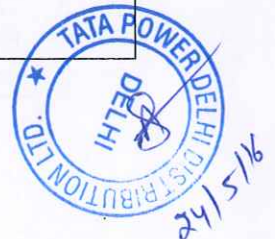


APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

TMU	a-eberle,
Terminal Blocks	ELMEX / ESSEN
Reinforcement steel (TMT)	Rathi / TISCO/SAIL
Fire Extinguisher	Ceasefire/Minimax/ Safex
Air Conditioner	Voltas
Isolator	ABB,SEIMENS,S&S chennai
Marshalling Kiosk	A To Z / Telmos / ECS/ Advance
Earth Enhancement Material	Terec + , Erico Gem
Galvanized Structural Steel	Nexo/Techno/NL Engineers/RS Steel/ M J engg/Sangam/Jyoti/Good Luck/Mann/Ferro Gelva/salasar Techno/UCIC/Balakra fabricon/ VSP Enterprises
LED Lighting	Nichia, cree, seoul, osram, Philips, Bajaj
Pump	CGL / Kirloskar
RTU/Data Concentrator / Protection relays	Please refer latest revision of protection specification ENG-EHV-105 & automation specification ENG-EHV-106

Note: Below relay approved make list is subject to fulfillment of all the protection and automation requirement as per protection specification ENG-EHV-105 & automation specification ENG-EHV-106

Protection		O/C E/F	Trafo Diff	Line Diff (with distance backup)
Schneider	66KV/33KV	S- 80	P642	P543
	11 KV	S- 80	N.A.	N.A.
ABB	66KV/33KV	REC 670	RET 650	RED 670
	11 KV	REF615 with RIO 600	N.A.	N.A.
Siemens	66KV/33KV	It shall be as per TPDDL protection & automation specification & to be finalized during detailed engineering	7UT61	7SD5
	11 KV	7SJ66	N.A.	N.A.
GE	66KV/33KV	F650	T60	L90
	11 KV	F650	N.A.	N.A.
Alstom	66KV/33KV	It shall be as per TPDDL protection & automation specification & to be finalized during detailed engineering	P642	P543
	11 KV	It shall be as per TPDDL protection & automation specification & to be finalized during detailed engineering	N.A.	N.A.



APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

Note: The list indicates the make of manufacturers for equipment & material and successful bidder may supply above materials as approved by TPDDL. In addition, Bidder may refer to the attached QR for purchasing the material from other bidders.

**List of Approved Makes(Civil, Sanitary Items)**

S.No.	Material Description	Make
1	Cement PPC	Ultratech / Birla Uttam / Binani / Shree Ultra / Gujrat Ambuja / ACC
2	White Cement	Birla / JK
3	Structural Steel	TATA / SAIL / RINL / IISCO <b>(For quantity more than 10 tonnes)</b>
		Capital, Rana, MC
4	Reinforcement Steel	Tisco, SAIL <b>(For quantity more than 10 tonnes)</b>
		Rathi, Kamdhenu
5	Acid Resistant Tiles	Corromandel
6	Floatglass / Mirror	Modi Guard / Saint Gobain
7	Enamel Paint / Primer	Premium Quality of Asian / Berger / Nerolac / Dulux
8	Cement Paint / Primer	Snowcem India
9	Interlocking Tiles	Nimco / Dalal / HPL
10	Aluminium	Hindalco / Jindal / Mahabir
11	PVC Water Tank	Syntex
12	Wash Basin, IWC, EWC etc.	Parryware / Hindware
13	Kitchen Sink	Neelkanth
14	PVC Pipes and Fittings	Supreme, Finolex, Prakash
15	CI Soil Pipes / Waste / Rainwater Pipes	S.I.F, R.I.F
16	CP Brass Bib Cock, Stop Cock etc.	Parko, Chilli
		Jaguar (Base model) ( For Distt. Offices and other major buildings like Corporate, Scada, KPM, Cenpied)
17	GI Pipe	Jindal B
18	GI Fittings	Unik
19	Laminates	Formica, Greenlam, Merino
20	Flush doors	ISI mark water proof
21	Board / Ply	National, Kitply, Durian, Greenlam, Century
22	MDF Board - Exterior / Interior Grade	Nuwud, Duratuff, Bajaj Echotech, Action Tesa
23	Particle Board	Bajaj, Action tesa, Novapan
24	Door Closer / Floor Spring	Everite, Doorking, Doorset
		Ozone, Dorma ) ( For Distt. Offices and other major buildings like Corporate, Scada, KPM, Cenpied)
25	Door Locks and Handles	Godrej, Hettich, Doorset
26	Adhesive	Fevicol, Vamicol
27	Melamine Polish	Asian Paints, ICI, MRF, Touchwood, Wemblay
28	Fire Retardent Paint (For all frame works)	Viper FR.881 or Approved Equivalent
29	Terxtured paint	Spectrum, Unitex, Dulux
30	Wood For Framing	Jammu Kail, Marandi, African Hard Wood
31	Veneered Ply	Jacksons, United Veneers, Donear, Duro



APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

32	Glazed / Vitrified Tiles	Kajaria, Somani, Jhonson & Jhonson, Marbonite
33	PTMT Fittings	Prayag or Equivalent
34	Exhaust Fan	Crompton
35	Monoblock Pump Sets	Kirloskar, Crompton Greaves
36	Submersible Pump and Starter	KSB
37	Brass Bib Cock / Stop Cock	Benson, Pace
38	Brass Ferrule, Gunmetal Valves	DRP

**LIST OF APPROVED MAKES OF MATERIALS: (ELECTRICAL-Building)**

	Material	Approved Makes
1.	M.S. Conduit Pipe (ISI Marked-ERW)	BEC / SENCO(CALCUTTA) /AKG
2.	M.S. Conduit Accessories	SHARMA/RAMA/PEI
3.	PVC Insulated Copper Stranded Conductor	NATIONAL / SKYLINE / FINOLEX / BATRA-HENALY / RR
a)	1.1 KV Grade Cable	KABLES
b)	PVC Insulated PVC Sheathed Aluminium /Copper Conductor armoured L.T Cable (1.1 KV)	GLOSTER / UNIVERSAL / ICC / INCAB / POLYCAB
4.	Moulded Plate Switch Socket with Switch Boxes & accessories / As per Item : Telephone/Music / Sockets	MK
5.	Lugs/Ferrules	DOWELLS/JAINSON
6.	Brass Compression Gland (Heavy Duty)	COMMEX/GRIPWELL
7.	MCCB Thermal Magnetic O/C,S/C, E/F (Variable type)	SIEMENS / L&T / ABB
8.	ELCB / MCB (10 KA)	HAGER / MDS (Legrand) / MERLIN GERIN
9.	Distributions Board (Double Door & Metal Clad Socket Outlet)	HANGER / MDS (Legrand) / MERLIN GERIN
10.	Telephone Cable	DELTON / NATIONAL / SKYLINE / FINOLEX
11.	Telephone Tag Block with Boxes	KRONE/POUYET
12.	Cable Trays	BHARATI / SLOTCO / STEEL WAYS, AR enterprises, MME
13.	Selector Switch	L&T / SIEMENS / BCH / SALZER
14.	L.T. Switch by M.V. Switch Boards (Powder Coated)	TRICOLITE / ELECTRO CONTROL SYSTEM / MADHU ELECTRICAL./ KAYBEE Electricals (Noida) / KMG ATOZ (NOIDA)
15.	PVC Conduit (ISI)	BEC / POLYPACK / PRECISION / AKG
16.	Measuring Meters	DUCATI / ENERCON / L&T / AE
17.	Control Fuses	SIEMENS / GE/ L&T
18.	CT'S (Cast Resin)	AEI / KAPPA / PRAGATI / C & S
19.	MCCB'S	SIEMENS / L&T / SCHNEIDER / LEGRAND (MDS)
20.	GICU. Strip & Earthing Material	BHARATI / INDIANA
21.	Ceiling Fan (High Breeze)	CROMPTON / GEC
22.	Braket Fan	ALMONARD / CROMPTON / GEC
23.	G.I. Pipe & Accessories (ISI)	TATA/JINDAL/PRAKASH/HISSAR
24.	Light Fixture	PHILIPS / DECON / WIPRO, OR APPROVED MAKE
25.	Smoke/Heat Defector	APOLLO/EST (EDWARD), TATA HONEWELL
26.	Fire Alarm Panel with SMF Battery & Battery Charger	MCE / MINIMAX /STYLUSS / AGNI SURAKSHA



APPROVED MAKE LIST – Product to be of the following make or equivalent subject to TPDDL approval

27.	Response Indicator	APOLLO /EDWARDS /TAT HONEYWELL / AGNI
28.	Speaker/ Hooter	PHILIPS/EDWARD/TAT HONEYWELL / AGNI
29.	M.S. Conduit ISI	BEC / SENCO
30.	Conduit Accessories Heavy Duty (ISI)	SHARMA /PIE EQUIVALENT
31.	FRLS PVC Insulated Copper Wire 1.1 KV Grade (ISI)	SKYLINE / NATIONAL / FINOLEX / BATRA HANELY/ RR KABLES
32.	Manual Call Station	APOLLO/EDWARD/TAT HONEYWELL / AGNI
33.	Exhaust fans	CROMPTON / Newtec / Alsthom
34.	Ceiling Rose, Piano type Switches/ Sockets & lamp holders	ANCHOR
35.	Changeover Switch / Main switch	L & T/ SCHNEIDER / ABB / Siemens

