Sl. No.	Description	3.15MVA
1	Name and address of the Manufacturer	
a)	Transformer	
b)	HV & LV Bushings	
c)	Bimetallic connectors	
d)	Transformer Oil	
e)	On load tap changer	
f)	Instruments	
g)	Neutral Bushing CTs	
2	Service (Indoor / Outdoor)	
3	Normal continuous rating in KVA under site conditions at all taps :	
a)	HV winding (KVA)	
b)	LV winding (KVA)	
4	Rated Voltage	
a)	HV winding (KV)	
b)	LV winding (KV)	
5	Rated frequency (Hz)	
6	No. of phases	
7	Type of transformer	
8	Connections	
a)	HV winding	
b)	LV winding	
9	Connections symbols	
	HV – LV	
10	Tappings	
a)	Range	
b)	Number of steps	
c)	Position of tapping on HT winding for high voltage variation	
11	Reference ambient temperatures	
a)	Maximum ambient air temperature (^{0}C)	
b)	Maximum daily average ambient temperature (^{0}C)	
c)	Minimum ambient air temperature (^{0}C)	
d)	Maximum yearly weighted average ambient temperature (^{0}C)	
12	Maximum temperature rise over ambient temperature	
a)	Top oil by thermometer (^{0}C)	
b)	HV & LV windings by resistance measurement (^{0}C)	
Sl. No.	**Description**	
c)	Hot Spot Temperature rise of windings(° C)	
d)	Limit for hot spot temperature for which the transformer is designed (° C)	

e)	Temperature gradient between windings and oil (^{0}C)	
f)	Type of maximum winding temperature indicator (^{0}C)	
13	Voltage to earth for which the star point will be insulated	
14	Cooling type	
15	Losses	
a)	No-Load loss at rated voltage & rated frequency (KW)	
b)	Load loss at rated current at Normal Tap at 75^0 C (KW)	
16	Max. Current density in winding at rated current for normal tap position	
a)	HV winding (Amps/ sq.mm.)	
b)	LV winding (Amps / sq.mm.)	
17	Impedance voltage at rated current ,rated frequency and at 75^0 C expressed as percentage of rated voltage at :-	
a)	Principal (normal) tap (%)	
b)	Highest tap (%)	
c)	Lowest tap (%)	
18	Reactance at rated current & frequency as percentage of rated voltage at:	
a)	Principal (normal) tap	
b)	Highest Tap	
c)	Lowest Tap	
19	Resistance at 75º C	

a)	H.V. winding at normal tap position	
b)	L.V. winding	
c)	Resistance voltage drop at 75° C winding temperature expressed as percent of rated voltage (%)	
	i) Principal/ normal tap	
	ii) Highest tap	
	iii) Lowest tap	
20	Insulation level	
a)	Separate source power frequency voltage withstand	
	i) HV winding (KV rms)	
	ii) LV winding (KV rms)	
b)	Induced over voltage withstand	
	i) HV winding (KV rms)	
	ii) LV winding (KV rms)	
c)	Full wave lightning impulse withstand voltage	
Sl. No.	**Description**	
	i) HV winding (KV peak)	
d)	Power frequency high voltage tests	
	i) Test voltage for one minute withstand test on high voltage windings (induced)	
	ii) Test voltage for one minute withstand test on low voltage windings	
	iii) Test voltage for one minute withstand test on neutral end of low voltage windings	
e)	Lightning impulse withstand tests	

	i) Impulse test on high voltage winding 1.2/50 μ sec full wave withstand (KV peak)	
	ii) Impulse test on low voltage winding 1.2/50 μ sec full wave withstand (KV peak)	
	iii) Wave form for impulse test	
21	No load current, no load loss, no load power factor at normal ratio and frequency (Amp/ KW/ P.F.)	
a)	10 percent of rated voltage	
b)	25 percent of rated voltage	
c)	50 percent of rated voltage	
d)	85 percent of rated voltage	
e)	100 percent of rated voltage	
f)	105 percent of rated voltage	
g)	110 percent of rated voltage	
h)	112.5 percent of rated voltage	
i)	115 percent of rated voltage	
j)	120 percent of rated voltage	
k)	121 percent of rated voltage	
22	Efficiency at 75º C at unity power factor	
a)	Full load	
b)	75% load	
c)	50% load	
d)	25% load	

23(a)	The minimum percentage of load at which the transformer will run at maximum efficiency (%)	
b)	Maximum efficiency of the transformer	
24	Regulation at full load at 75º C	
a)	At unity power factor (%)	
b)	At 0.8 power factor (lagging) (%)	
25	Core data	
a)	Grade of core material used	
b)	Thickness of core plate lamination (mm)	
c)	Whether core laminations are of HIB cold rolled grain oriented	
Sl. No.	**Description**	
d)	Details of oil ducts in core, if any	
	i) Whether in the plane & at right angle to the plane of winding	
	ii) Across the plane of lamination	
e)	i) Insulation of core lamination	
	ii) Insulation of core plates	
	iii) Type of core joints(Mitred or Mitred Step-lap)	
26	Flux density	
a)	Designed maximum flux density at rated voltage and rated frequency (Tesla)	

b)	Designed maximum operating flux density which the transformer can withstand for one minute at normal tap (Tesla)	
c)	Designed maximum operating flux density which the transformer can withstand for five seconds at normal tap (Tesla)	
27	Inter-Tap insulation	
a)	Extent of extreme end turns reinforcement	
b)	Extent of end turns reinforcement	
c)	Extent of turn adjacent to tapping reinforced	
d)	Test voltage for 10 seconds 50Hz inter-turn insulation test on (a)	
e)	Test voltage for 10 seconds 50Hz inter-turn insulation test on (b)	
f)	Test voltage for 10 seconds 50Hz inter-turn insulation test on (c)	
28	Windings:	
a)	Material	
b)	Type of windings:	
	i) HV windings	
	ii) LV windings	
c)	Insulation of HV windings	
d)	Insulation of LV windings	
e)	Insulation between HV & LV windings	
29	Continuous rating under following conditions:	

a)	At 40ºC ambient air temp. at site	
b)	At 30ºC ambient air temp. at site	
c)	At 20ºC ambient air temp. at site	
30	Transformer Tank	
a)	Material	
b)	Thickness	
	- Top	
	- Sides	
	- Bottom	
c)	Details of painting	
	- Inner surface	
	- Outer surface	
31	Dimensions of 3 phase transformers:	
Sl. No.	**Description**	
a)	Max. Height to top of bushings (mm)	
b)	Over-all length (mm)	
c)	Over-all breadth (mm)	
32	Weight data of transformer components : (Tolerance + 5%) (approximate values not allowed)	
a)	Core excluding clamping (Kg)	
b)	Core with clamping (Kg)	
c)	HV winding insulated conductor (Kg)	
d)	LV winding Insulated conductor (Kg)	
e)	Coils with insulation (Kg.)	
f)	Core and windings (Kg)	
g)	Weight of steel (Kg)	
h)	Fittings and accessories (Kg)	
i)	Oil required for first filling including 10% extra (ltrs / Kg)	

	1. Oil in main tank (Ltrs)	
	2. Oil in the conservator (Ltrs)	
	3. Oil in the radiators (Ltrs)	
	4. Oil in the OLTC (Ltrs.)	
	5. Overall total quantity of oil with 10% extra oil for first filling (ltrs / Kg)	
j)	1. Transportation weight excluding accessories (Kg)	
	2. Shipping details	
	i) Weight of heaviest package (Kg.)	
	ii) Dimension of largest package (Kg)	
k)	Untanking weight (Kg)	
l)	Total weight of transformer with oil and fittings (Kg)	
33	Bushing data :	
a)	Type of bushing insulator	
	i) HV	
	ii) LV	
	iii) Neutral	
b)	Material of bushing (inner part / outer part)	
c)	Weight of bushing insulator (Kg.)	
d)	Quantity of oil in one bushing (lt.)	
e)	Minimum dry withstand & flash over power frequency voltage of bushing (KV)	
f)	Minimum wet withstand & flash over power frequency voltage of bushing (KV)	

g)	Minimum withstand & flashover impulse level (KV)	
h)	Voltage rating (KV)	
i)	Current rating (Amps.)	
j)	Thermal Short Time current & Duration	
Sl. No.	**Description**	
k)	Rated Dynamic current & its duration	
l)	Cantilever with stand loading	
m)	Clearance in oil	
	- phase to phase (mm)	
	- phase to earth (mm)	
n)	Creepage distance in oil & air (mm)	
o)	Minimum level of immersing / medium (oil) (mm)	
p)	Maximum pressure of immersing medium (oil) Kg/ cm^2	
q)	Free space required at top for removal of bushings (mm)	
r)	Angle of mounting	
34	Details of CT to be provided in the neutral for REF protection.	
a)	Outdoor bushing type	
b)	No. of cores and their function	
c)	Location (Line / Neutral)	
d)	Current rating for various cores (Primary / Secondary)	
e)	VA burden / Knee Point voltage (Core wise)	

f)	Magnetising current at half knee point voltage. (mA)	
g)	Classification (PS class) core wise	
h)	Test voltage	
i)	Construction details	
35	Conservator (Main Transformer and OLTC)	
a)	Total volume of the Conservator (Cub mtr / Ltr.)	
b)	Volume of the conservator between the highest and lowest level (Cubic mtr. / Ltrs)	
36	Calculated time constants for natural cooling	
37	Type of axial coil supports :	
a)	HV winding	
b)	LV winding	
38	Details of On Load tap changer	
a)	Make	
b)	Type	
c)	Rating	
	i) Rated Voltage	
	ii) Rated current	
	iii) Step voltage	
	iv) Number of steps	
	v)Rated Short Circuit Current	
Sl. No.	**Description**	
d)	Whether Diverter switch provided with gas vent and buchholz relay (Yes / No)	

e)	Whether a separate oil surge relay with trip contacts provided (Yes / No)	
f)	Pressure relief valve	
g)	Details of motor device unit housed in kiosk / mounted on tap changer	
h)	Whether Remote control panel provided with Control scheme for simultaneous operation of Tap changer when transformers are running in parallel and independent control when in independent operation.	
i)	Details of equipment in the OLTC kiosk	
j)	Details of OLTC panels	
	i) automatic tap changer relay	
	ii) literature of all the relays	
	iii) dimensions of OLTC, Panel L x B x H	
	iv) thickness of sheet	
	v) degree of protection	
	vi) details of equipment supplied	
39	Dispatch details :	
a)	Approx. mass of heaviest Package (Kg)	
b)	Approx. dimensions of largest Package	
	i) Length (mm)	
	ii) Breadth (mm)	

	iii) Height (mm)	
40	Un-tanking height (mm)	
41	Bimetallic connectors HV / LV	
a)	Normal current rating (A)	
b)	Short time current rating (A)	
c)	Tensile strength (Kg)	
d)	Maximum temperature limit	
e)	Dimensional sketch enclosed indicating tolerances (Yes/No)	
f)	Minimum clearance (mm)	
	- Phase to phase	
	- Phase to Earth	
42	CORE ASSEMBLY :-	
a)	Core diameter (mm)	
b)	Core window height (mm)	
c)	Core leg centre (mm)	
d)	Gross core cross – sectional area (m^2)	
e)	Total height of core (mm)	
f)	Details of top end frame	
g)	Details of Bottom end frame	
Sl. No.	**Description**	
h)	Details of clamp plate (material, thickness, insulation)	
i)	Total core weight (Kg)	

j)	Core loss, basing on core loss graph at operating flux density (rated voltage and rated frequency) (KW)	
k)	Core stacking factor	
l)	Net core area (Sq.m)	
m)	Margin towards corner joints, cross-fluxing, dielectric loss (KW)	
n)	Total core loss at rated voltage and rated frequency (KW)	
o)	Describe location / method of core grounding	
p)	Details of core- belting	
	i) Material , grade and type	
	ii) Width	
	iii) Thickness	
	iv) Fixing method	
43	DETAILS OF WINDING	
a)	Type of winding	
b)	Material of the winding conductor	
c)	Maximum current density of windings at rated current and conductor area	
d)	Whether windings are pre-shrunk ?	
e)	Whether adjustable coil clamps are provided for HV and LV windings ?	
f)	Whether steel rings are used for the windings ? If so, whether these are split ?	

g)	Whether electrostatic shields are provided to obtain uniform voltage distribution in the windings ?	
h)	Winding Insulation (Type & Class)	
i)	Insulating material , used for	
	i) H.V winding	
	ii) LV winding	
	iii) Tapping connection	
j)	Insulating material used between	
	i) L.V and H.V winding	
	ii) Core & L.V winding	
k)	H.V to H.V winding between phases	
l)	Type of axial supports	
	i) H.V winding	
	ii) L.V winding	
m)	Type of radial supports	
	i) H.V winding	
	ii) L.V winding	
n)	Maximum allowable torque on coil clamping bolts	
Sl. No.	**Description**	
o)	Clamping ring details	
	i) Thickness of ring mm	
	ii) Diameter of ring mm	
	iii) No. & size of pressure screw	
p)	Bare conductor size (mm)	
	i) HV	
	ii) LV	
q)	Insulated conductor size (mm)	
	i) HV	
	ii) LV	

r)	No. of conductor in parallel (Nos.)	
	i) HV	
	ii) LV	
s)	No. of turns / phase	
	i) HV	
	ii) LV	
t)	No. of discs / phase	
	i) HV	
	ii) LV	
u)	No. of turns / Disc	
	i) HV	
	ii) LV	
v)	Gap between discs (mm)	
	i) HV	
	ii) LV	
w)	Inside diameter (mm)	
	i) HV	
	ii) LV	
x)	Outside diameter (mm)	
	i) HV	
	ii) LV	
y)	Axial height after shrinkage (mm)	
	i) HV	
	ii) LV	
z)	D.C Resistance	
i)	L.V winding at 75^0 C (Ohms)	
ii)	H.V winding at normal tap at 75^0 C (Ohms)	
iii)	H.V winding at highest tap at 75^0 C (Ohms)	
iv)	H.V winding at lowest tap at 75^0 C (Ohms)	
Sl. No.	**Description**	
v)	Total I^2R losses at 75^0 C for normal tap (KW)	

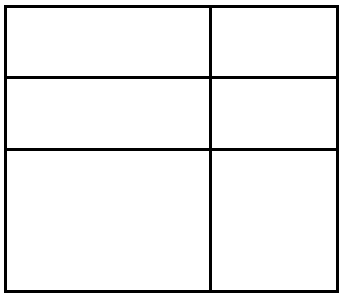
vi)	Total I^2R losses at 75^0 C for highest tap (KW)	
vii)	Total I^2R losses at 75^0 C for lowest tap (KW)	
viii)	Stray losses including eddy current losses in winding at 75^0 C (KW)	
	a) Normal tap position	
	b) Highest tap position	
	c) Lowest tap position	
	d) Any special measures, taken to reduce eddy current losses and stray losses. Mention in details	
ix)	Load losses at 75^0 C (I^2 R + Stray)	
	a) Normal tap position (KW)	
	b) Highest tap position (KW)	
	c) Lowest tap position (KW)	
x)	Details of special arrangement, provided to improve surge voltage distribution in the windings.	
44	DETAILS OF TANK :	
a)	Material of Transformer tank	
b)	Type of tank	
c)	Thickness of sheet (No approximate value to be mentioned)	
	i) Sides (mm)	
	ii) Bottom (mm)	

	iii) Cover (mm)	
	iv) Radiators (mm)	
d)	Inside dimensions of main tank (No approximation in dimensions to be used)	
	i) Length (mm)	
	ii) Breadth (mm)	
	iii) Height (mm)	
e)	Outside dimensions of main tank (No approximation in dimensions to be used)	
	i) Length (mm)	
	ii) Breadth (mm)	
	iii) Height (mm)	
f)	Vacuum recommended for hot oil circulation (torr / mm of Hg)	
g)	Vacuum to be maintained during oil filling in transformer tank (torr / mm of Hg)	
h)	Vacuum to which the tank can be subjected without distortion (torr / mm of Hg)	
i)	No. of bi-directional wheels provided	
j)	Track gauge required for the wheels	
	i) Transverse axis	
Sl. No.	**Description**	
	ii) Longitudinal axis	
k)	Type and make of pressure relief device and minimum pressure at which it operates (Kpa)	
45	CONSERVATOR :-	
a)	Thickness of sheet (mm)	

b)	Size (Dia x length) (mm)	
c)	Total volume (Litres)	
d)	Volume between the highest and lowest visible oil levels (Litres)	

Bidder's offer

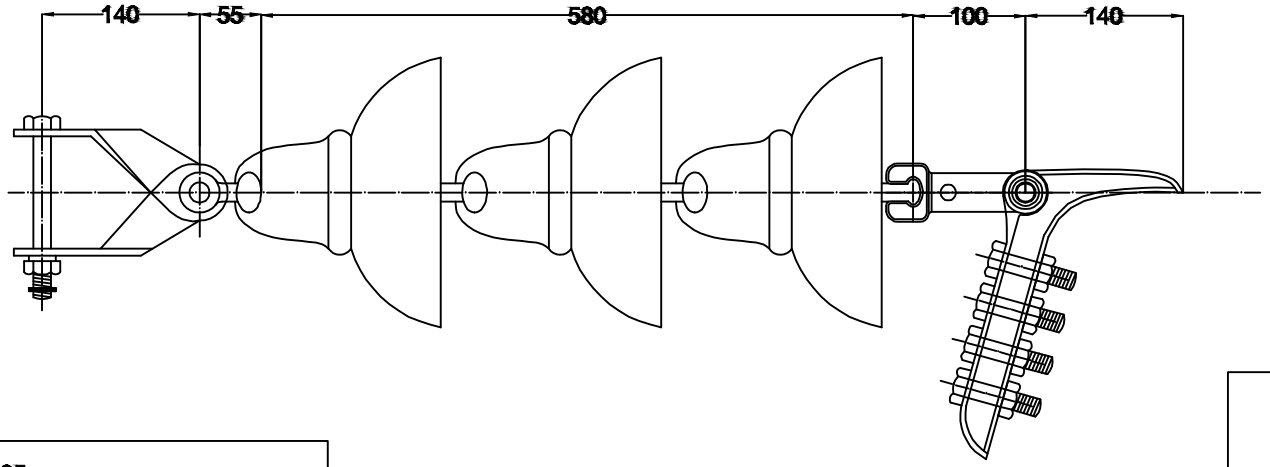
5MVA	8MVA

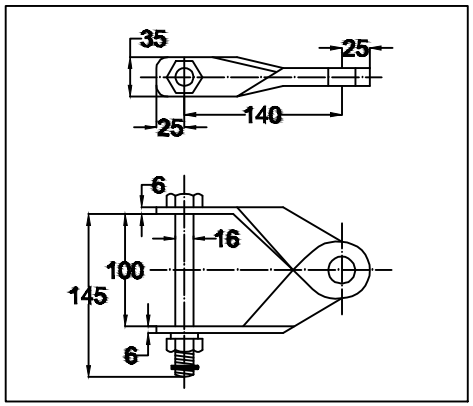


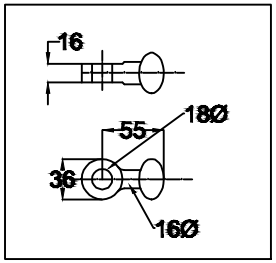
CHAPTER:-E21-II

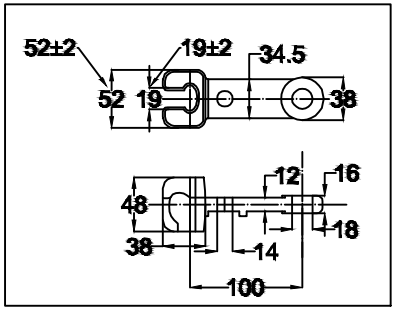
Sl No.	Drawing Name	Drawing Number
1	Single Line Diagram (GIS)	ODSSP/SS/SLD/1
2	Single Line Diagram (AIS)	ODSSP/SS/SLD/2
3	Sub-Station Layout	ODSSP/SS/1
4	Control Room Layout	ODSSP / SS /2
5	T1 Column with Beam Arrangement	ODSSP / SS /3
6	T2 Column with Beam Arrangement	ODSSP/ SS /4
7	G3 Beam	ODSSP/ SS /5
8	33kV V Cross Arm for RS Joist	ODSSP/ SS /6
9	33kV SI Structure (Outdoor)	ODSSP/ SS /7
10	33kV Outdoor CT Structure (Outdoor)	ODSSP/ SS /8
11	Earthmat Layout	ODSSP/ SS /9
12	Cable trench	ODSSP/ SS /10
13	4 Bolted Tension Clamp	ODSSP/ SS /11
14	DP Structure	ODSSP/LINE/1
15	400kg 10 Mtr PSC Pole	ODSSP/LINE/2
16	300kg 10 Mtr PSC Pole	ODSSP/LINE/3
17	11kV V Cross arm for RS Joist Pole	ODSSP/LINE/4
18	11kV V Cross arm for PSC Pole	ODSSP/LINE/5
19	Earthing Flat Jointing	ODSSP/LINE/6
20	Spike	ODSSP/LINE/7
21	Foundation for PSC Pol	ODSSP/ CIVIL /1
22	Foundation for RS Joist Pole	ODSSP/ CIVIL /2
23	Foundation for T1-T2 column	ODSSP/ CIVIL /3
24	Transformer Foundation (3.15,5 &8 MVA)	ODSSP/ CIVIL /4
25	Transformer Foundation for 100 kVA for (Station Transformer)	ODSSP/ CIVIL /5
26	Retaining Wall	ODSSP/ CIVIL /6
27	Drain	ODSSP/ CIVIL /7
28	Foundation Plan for T1 & T2 Column with Foundation Bolt for Indoor Arrangement	ODSSP/ CIVIL /8
29	Foundation for 33kV VCB with CT (Outdoor)	ODSSP/ CIVIL /9
30	Compound Wall / Pillar Foundation	ODSSP/ CIVIL /10
31	Road Inside Sub-Station	ODSSP/ CIVIL /11

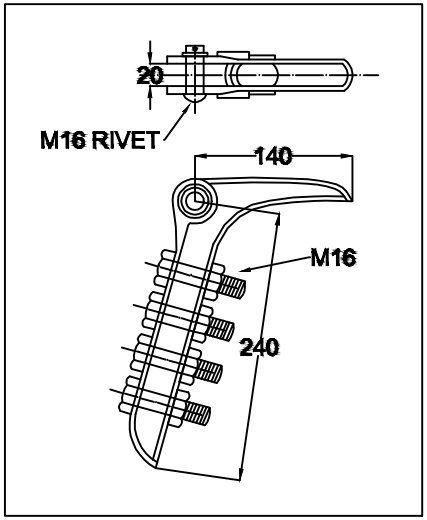
4 BOLTED TENSION CLAMP





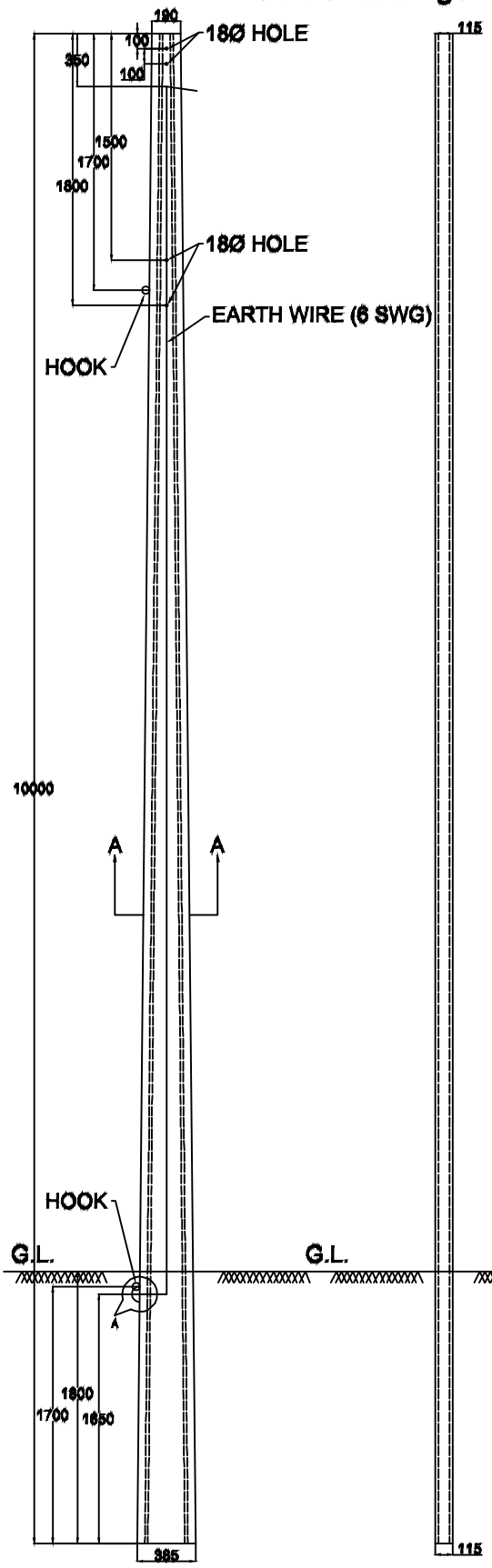






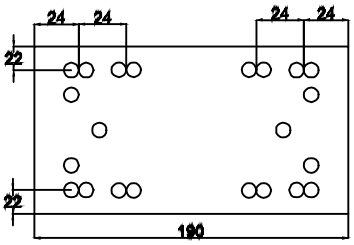
DRG NO .- ODSSP / SS / 11

10Mtrs /300 Kgs PSC POLE

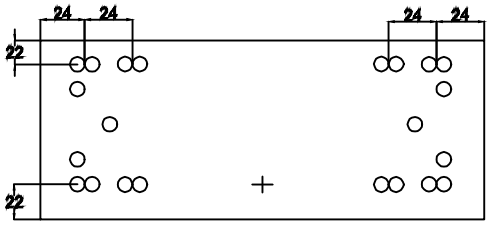


ELEVATION

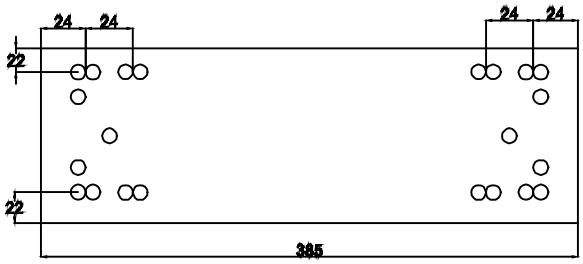
SIDE VIEW



PLAN AT TOP



PLAN AT A-A



PLAN AT BOTTOM

Note:- FACTOR OF SAFETY 2.5

SL.NO.	DESCRIPTION	QUANTITY
1.	NO. OF. TENSINED WIRES (4MM)	22 NOS.
2.	CONCRETE GRADE	M-420
3.	DIA OF PRESTRESSING WIRE	4MM
4.	WORKING LOAD	330 KGS
5.	ULTIMATE TENSILE STENGTH OF PRESTRESSING WIRE	17500 KG/CM²
6.	PLANTING DEPTH	1800MM
7.	CLEAR COVER	22 MM
8.	G.I. EARTH WIRE 6 SWG	1 NO.

LEGEND:-

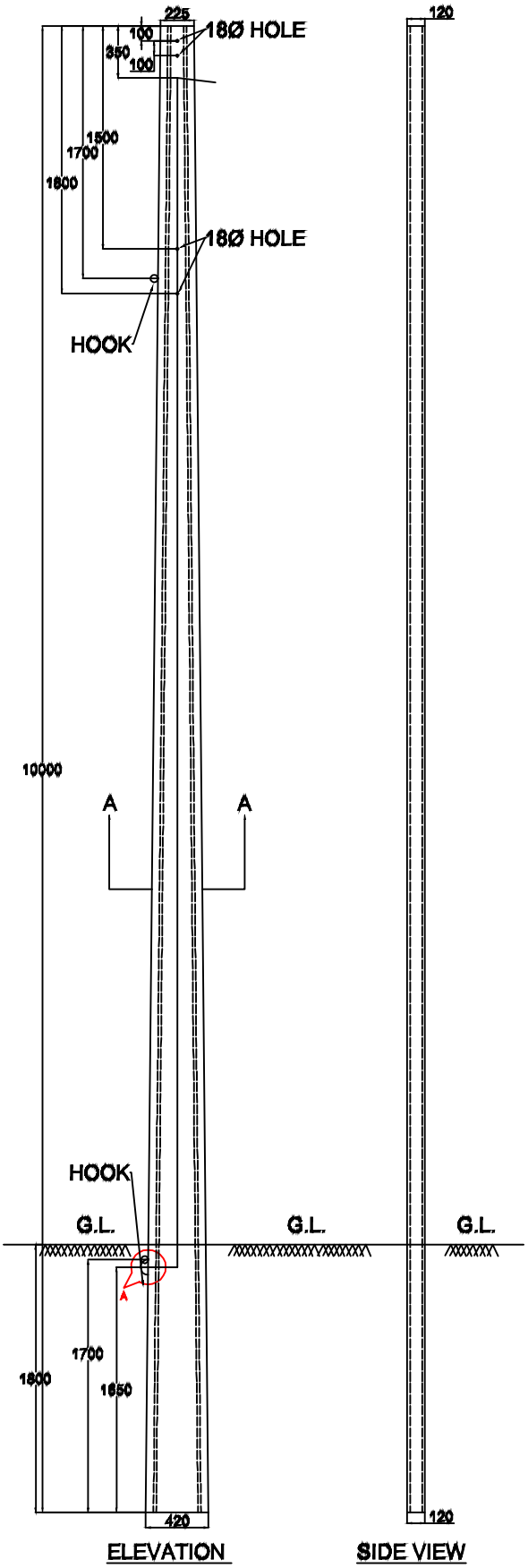
●- DENOTES TENSIONED WIRE

+- DENOTES POSSIBLE OF EARTH WIRE

- ALL DIMENSION ARE NOT IN SCALE

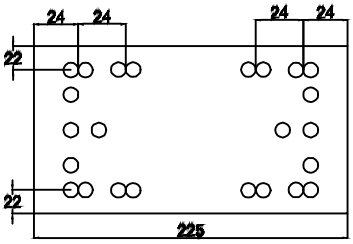
DRG NO .- ODSSP / LINE / 3

10Mtrs/400 Kg PSC POLE



ELEVATION

SIDE VIEW



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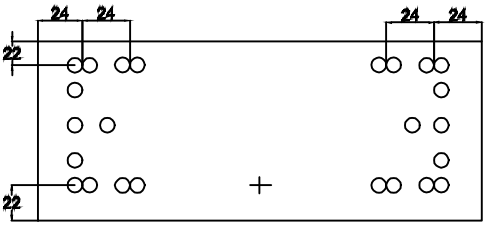
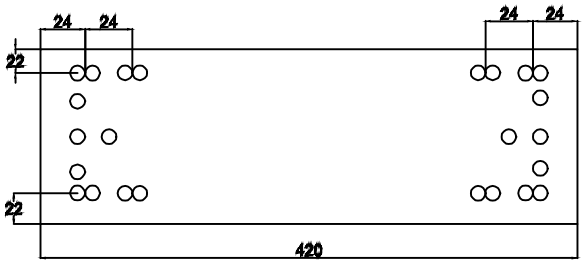


PLAN AT A-A



PLAN AT BOTTOM

Note:- FACTOR OF SAFETY 2.5

SL.NO.	DESCRIPTION	QUANTITY
1.	NO. OF. TENSINED WIRES (4MM)	24 NOS.
2.	CONCRETE GRADE	M-420
3.	DIA OF PRESTRESSING WIRE	4MM
4.	WORKING LOAD	400 KGS
5.	ULTIMATE TENSILE STENGTH OF PRESTRESSING WIRE	17500 KG/CM²
6.	PLANTING DEPTH	1800MM
7.	CLEAR COVER	22 MM
8.	G.I. EARTH WIRE 6 SWG	1 NO.

LEGEND:-

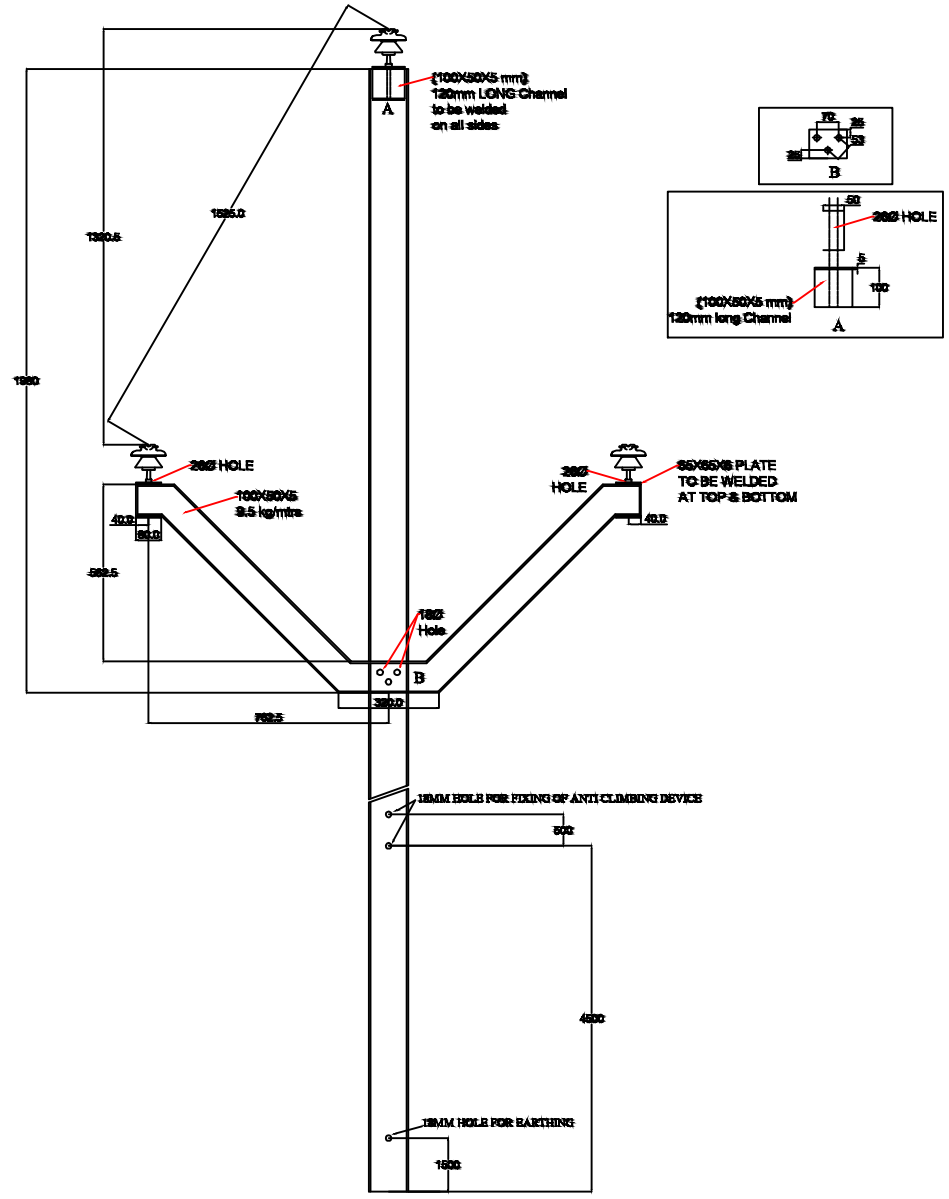
● - DENOTES TENSIONED WIRE

+ - DENOTES POSSIBLE OF EARTH WIRE

-ALL DIMENSION ARE NOT IN SCALE

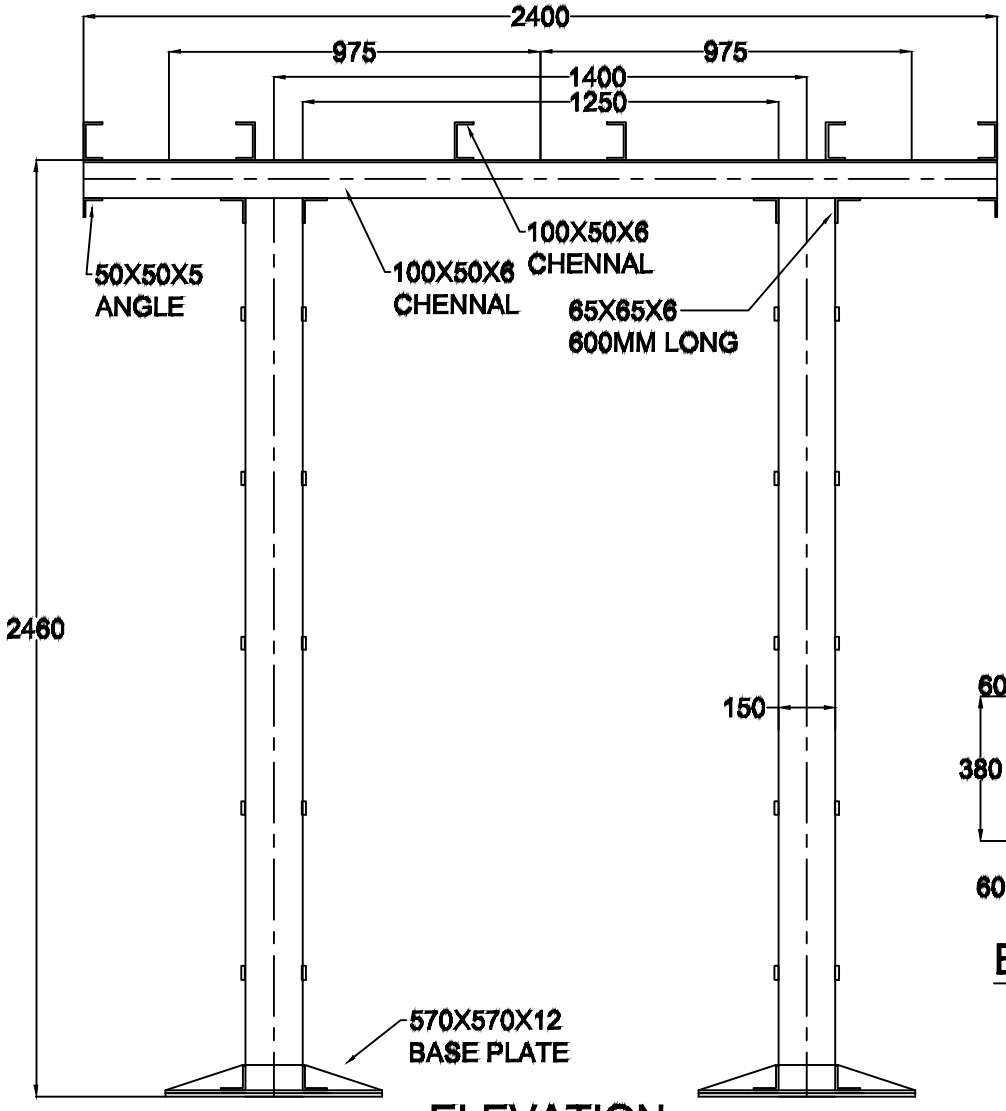
DRG NO .- ODSSP / LINE / 2

33Kv V-CROSS ARM FOR RS JOIST

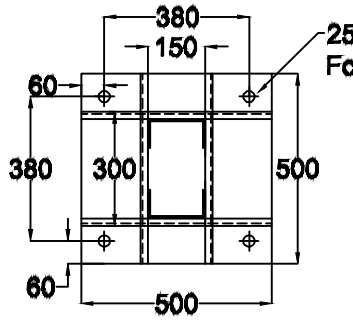


DRG NO .- ODSSP / SS / 6

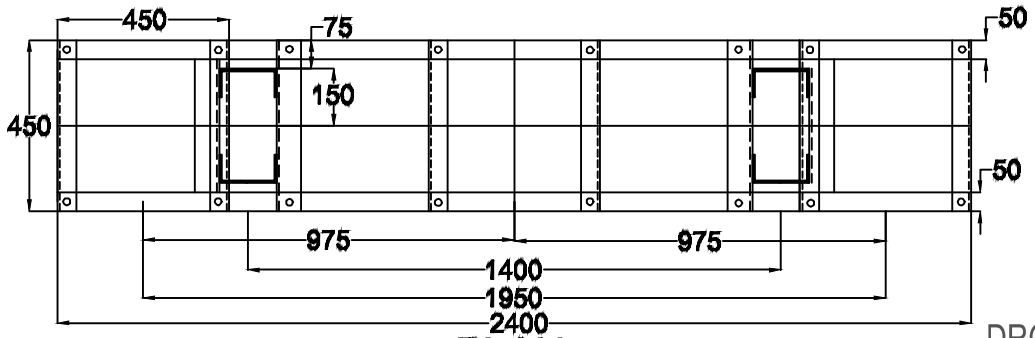
33 kV CT STRUCTURE
(OUTDOOR)



ELEVATION



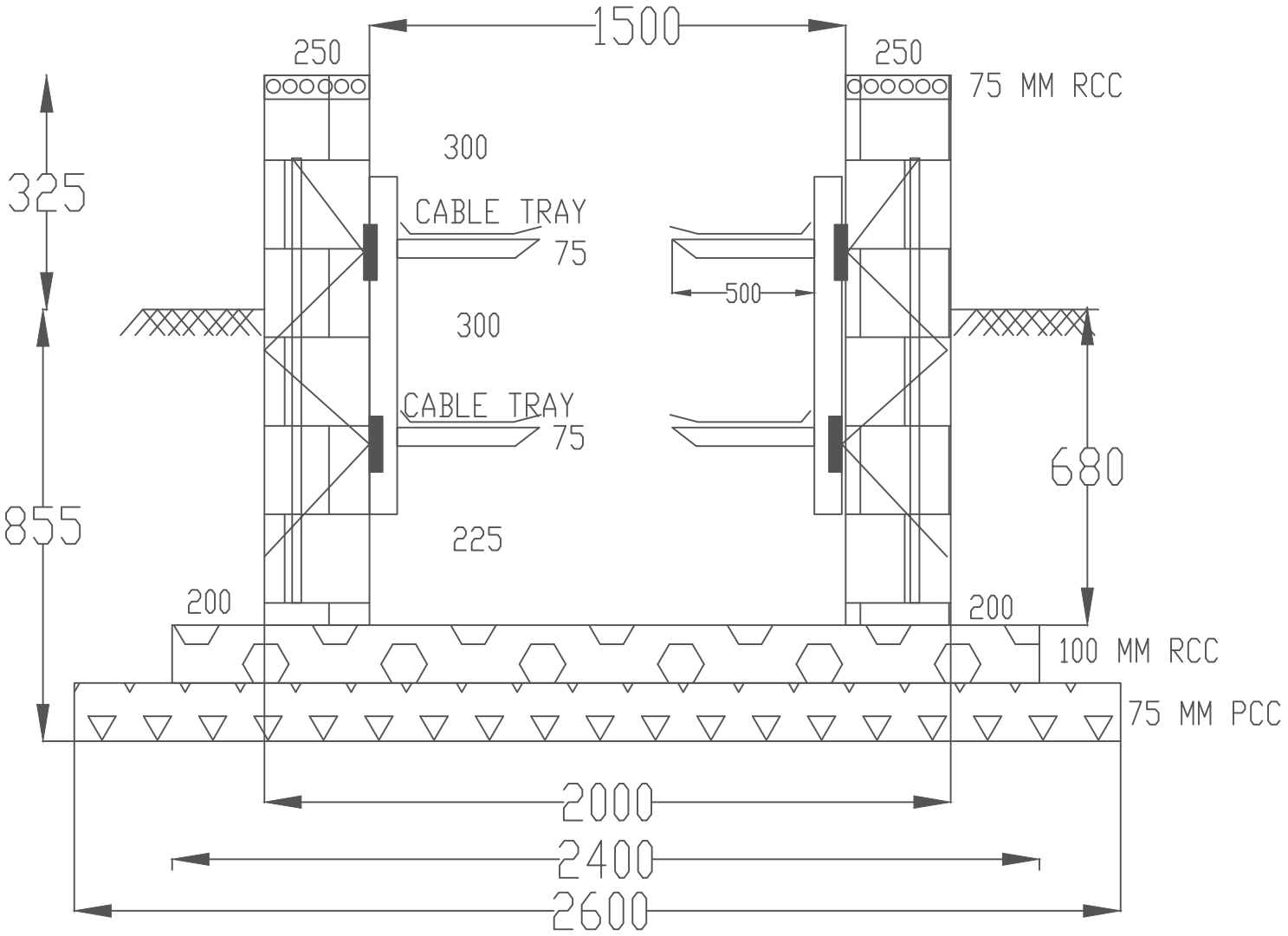
BASE PLATE



PLAN

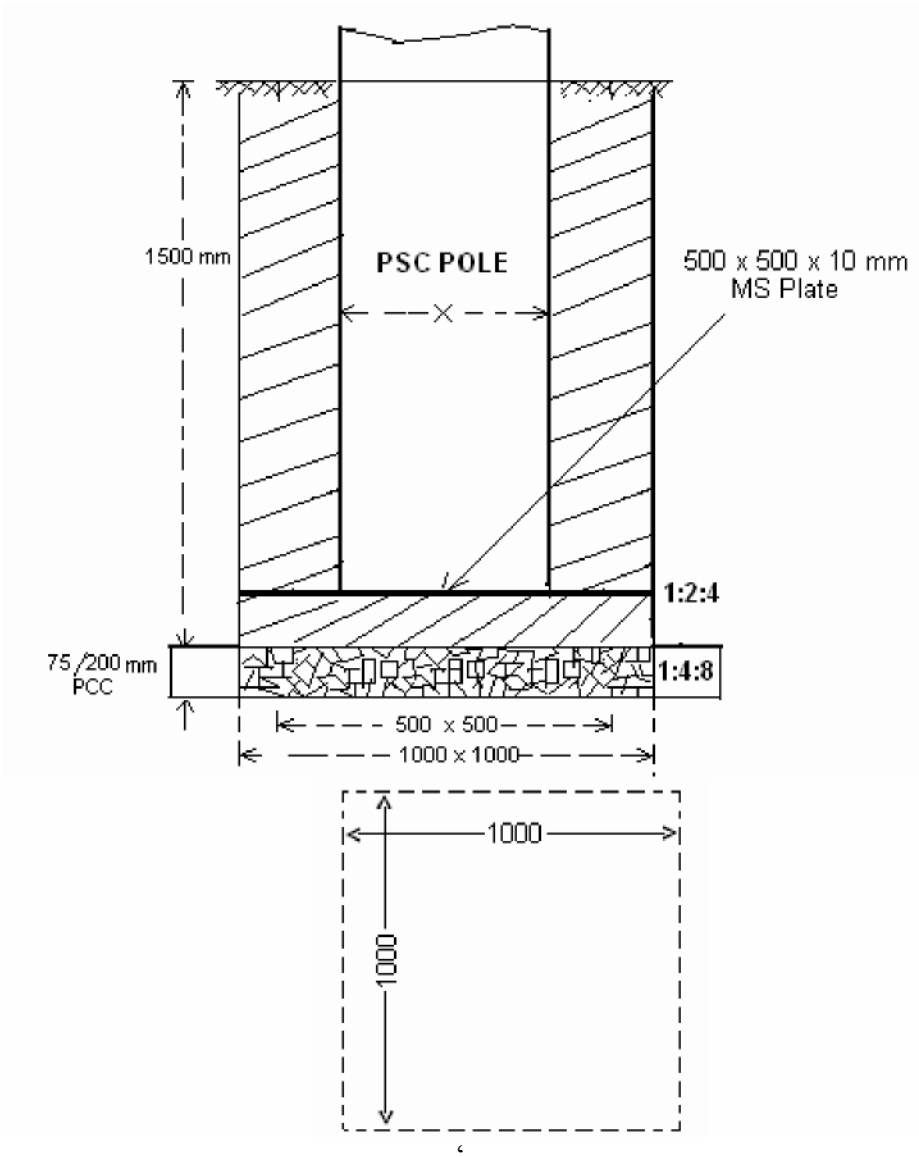
DRG NO .- ODSSP / SS / 8

CABLE TRENCH



DRG NO .- ODSSP / SS / 10

CONCRETING OF PSC POLES



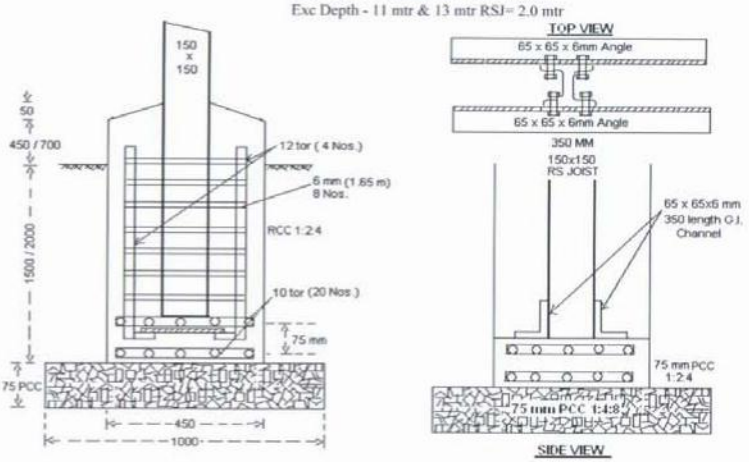
ALL PCC - 1:3:6 & RCC - 1:1.5:3

DRG NO.- ODSSP /CIVIL/1

FOUNDATION FOR RS JOIST POLE

Exc Depth- 9 mtr & 10 mtr RSJ= 1.5 mtr

Exc Depth - 11 mtr & 13 mtr RSJ= 2.0 mtr



FOUNDATION FOR RS JOIST POLE

		RS JOIST- 9 Mtr & 10 Mtr				RS JOIST- 11 Mtr & 13 Mtr			
		Urban Area		Rural Area		Urban Area		Rural Area	
1	Excavation	1 x 1 x 1.575	= 1.575 cum		= 1.575 cum	1 x 1 x 2.075	= 2.075 cum		= 2.08 cum
2	PCC (1:4:8)	1 x 1 x 0.075	0.075 cum		0.075 cum		0.075 cum		0.08 cum
3	RCC (1:2:4)	0.45 x 0.45 x 1.950	= 0.39 cum	0.45x 0.45x2.25	= 0.46 cum	0.45 x 0.45 x 2.45	= 0.50 cum	0.45x 0.45x2.75	= 0.56 cum
4	ROD :10 Tor	0.4 mtr x 20nos x 0.617 kg	= 5 Kg.		= 5 Kg.	0.4mx20nosx0.617kg	= 5 Kg.		= 5 Kg.
	12 Tor	2.25 mtr x 4 nox0.888 kg	= 8.01 Kg.	2.5mx4nox0.888kg	= 8.9 Kg.	2.75mx4nox0.89kg	= 9.79 Kg.	3.0mx4nox0.89kg	= 10.7 Kg.
	6 mm	1.65 x 8 no. x 0.22	= 2.90 Kg.	1.65 x 9 no. x 0.22	= 3.26 Kg.	1.65 x 10 no. x 0.22	= 3.63 Kg.	1.65x11no.x0.22	= 4.000 Kg.
	Total Rod		**= 15.85 Kg.**		**= 17.16 Kg.**		**= 18.42 Kg.**		**= 19.68 Kg.**
5	Angle (65x65x6 mm)	350 mm x 2no.x 5.8 kg.	= 4.06 Kg.		= 4.06 Kg.	350mmx2no.x5.8kg.	= 4.06 Kg.		= 4.06 Kg.

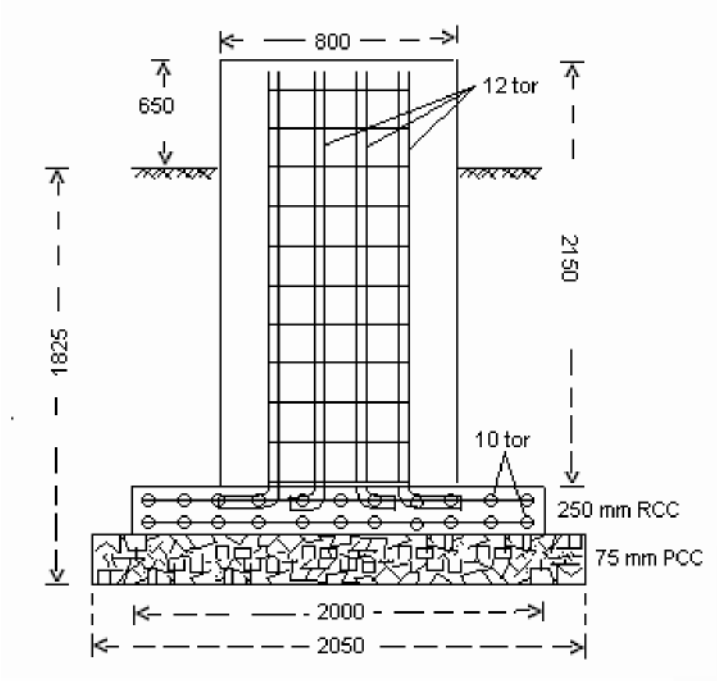
N.B.: **1.** Side concrete should be 40 mm above pedestra;.

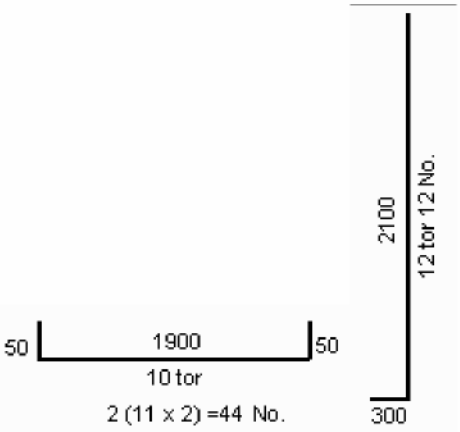
2. Plain side clips 2 No.-65 x 65 x 6mm x 350 mm lengh each clit should have 2 no. 16 mm x 30 mm size bolts with pack end spring washers.

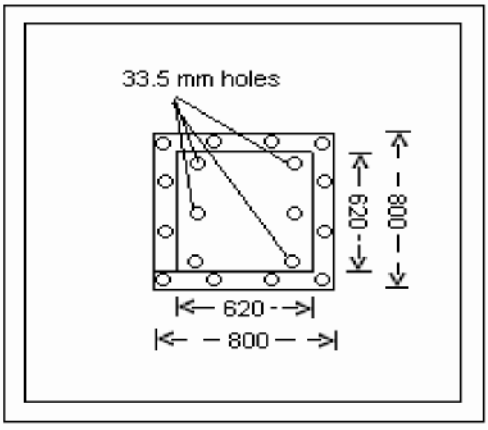
ALL PCC - 1:3:6 & RCC - 1:1.5:3

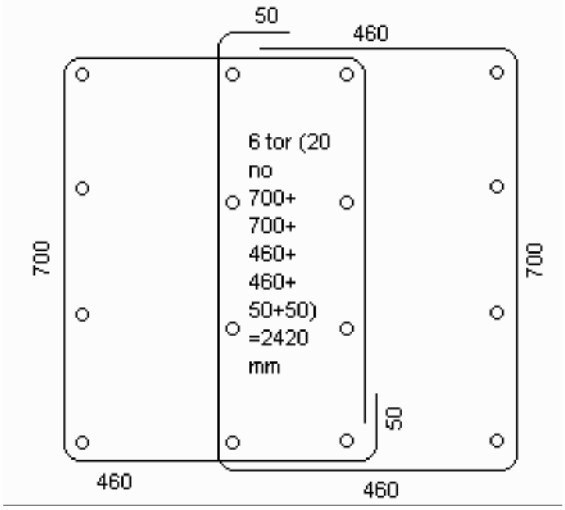
DRG NO.- ODSSP /CIVIL/2

Foundation for T1 &T2 Columns





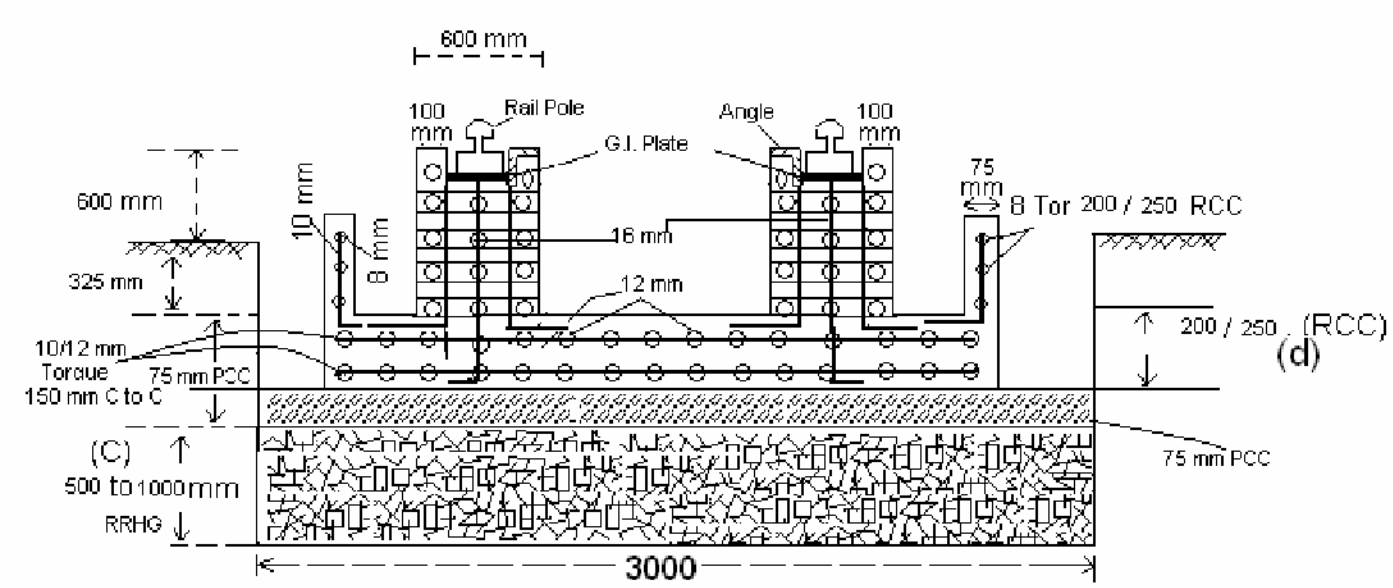




ALL PCC - 1:3:6 & RCC - 1:1.5:3

DRG NO.- ODSSP /CIVIL/3

TRANSFORMER FOUNDATION

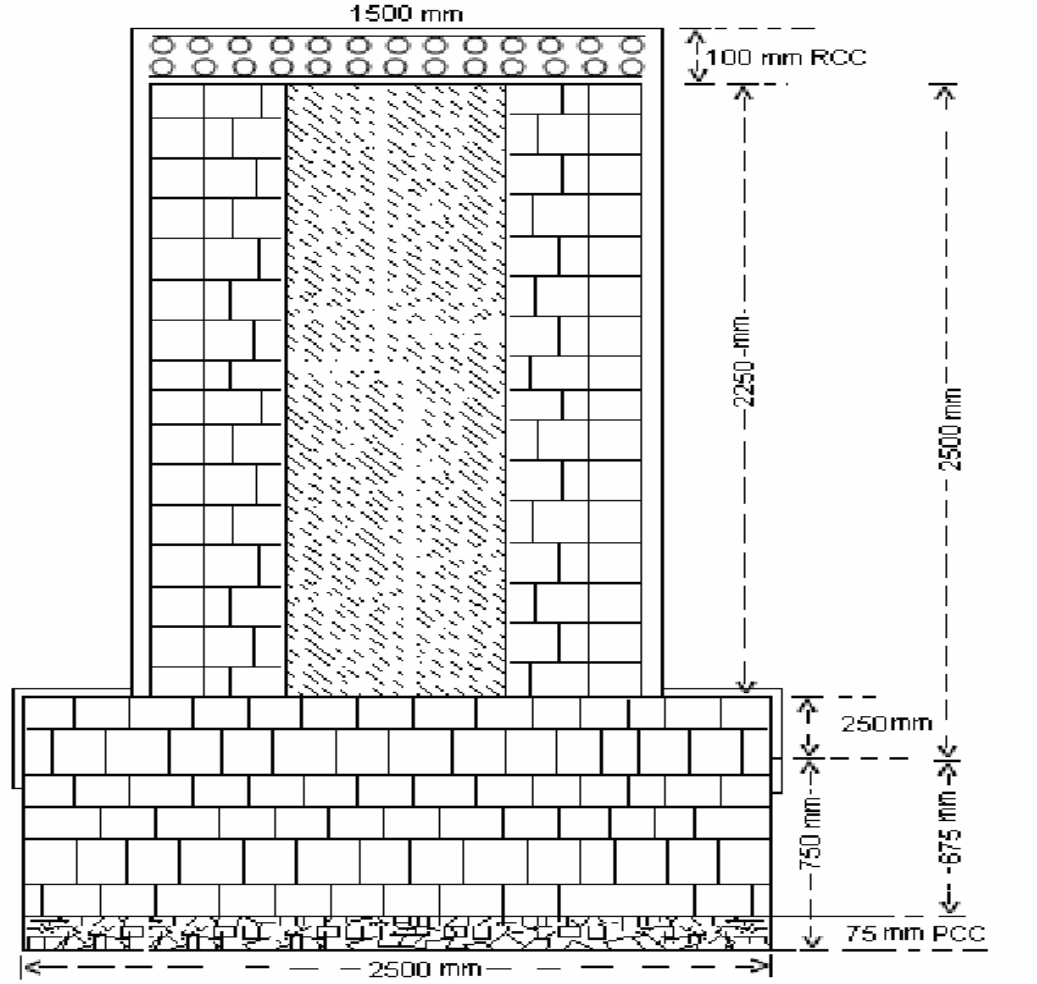


Rail to Rail Distance-1510 mm for 3.15 MVA & 5 MVA Transformers,
1600mm for 8 MVA Transformers.

ALL PCC - 1:3:6 & RCC - 1:1.5:3

DRG NO.- ODSSP /CIVIL/4

Transformer Foundation for 100 KVA

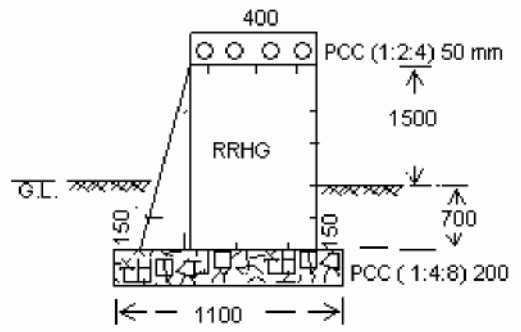


ALL PCC - 1:3:6 & RCC - 1:1.5:3

BRICK WORK-1:6 MTR.

DRG NO: - ODSSP /CIVIL/5

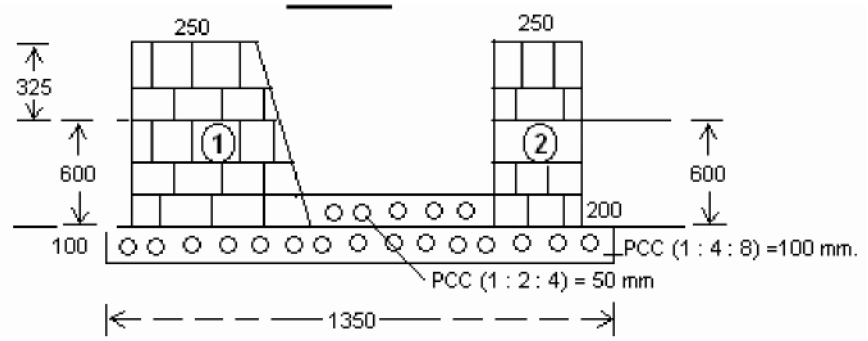
RETAINING WALL WHERE EARTH FILLING 1 MTR.



ALL PCC - 1:3:6 & RCC - 1:1.5:3

DRG NO.-ODSSP /CIVIL/6

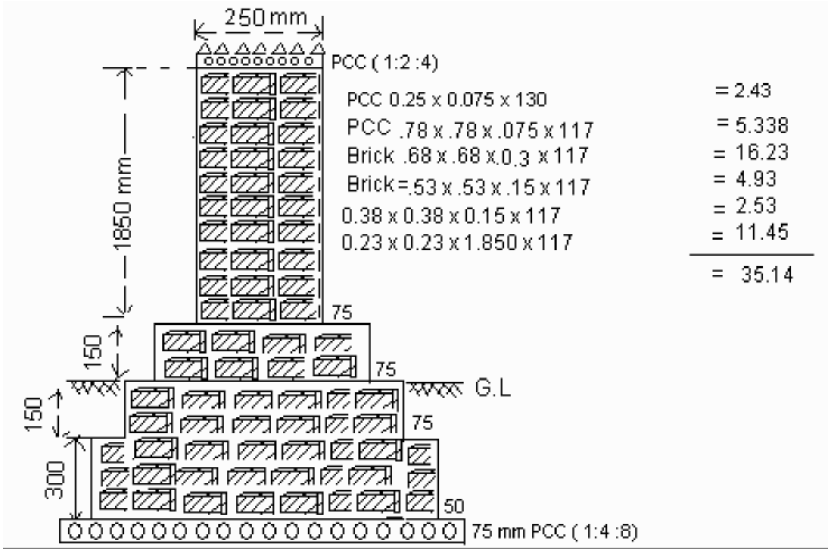
DRAIN



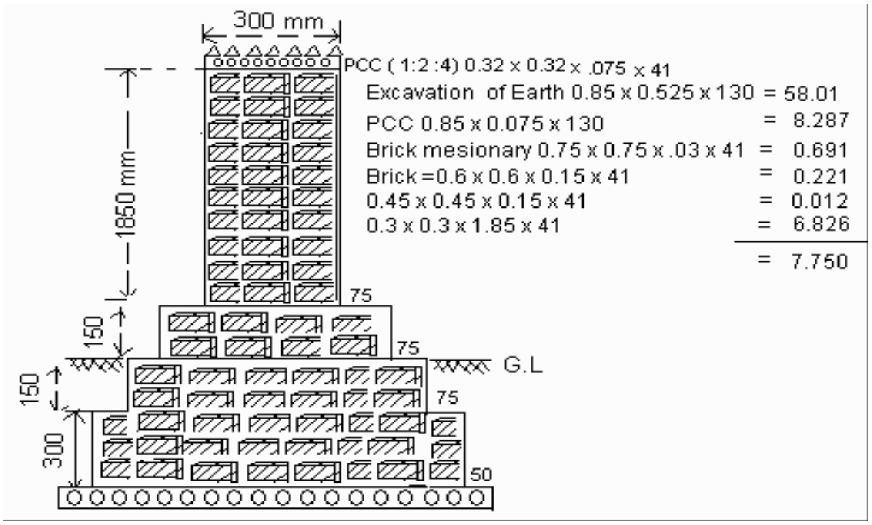
ALL PCC - 1:3:6 & RCC - 1:1.5:3

DRG NO.-ODSSP /CIVIL/7

COMPOUND WALL FOUNDATION



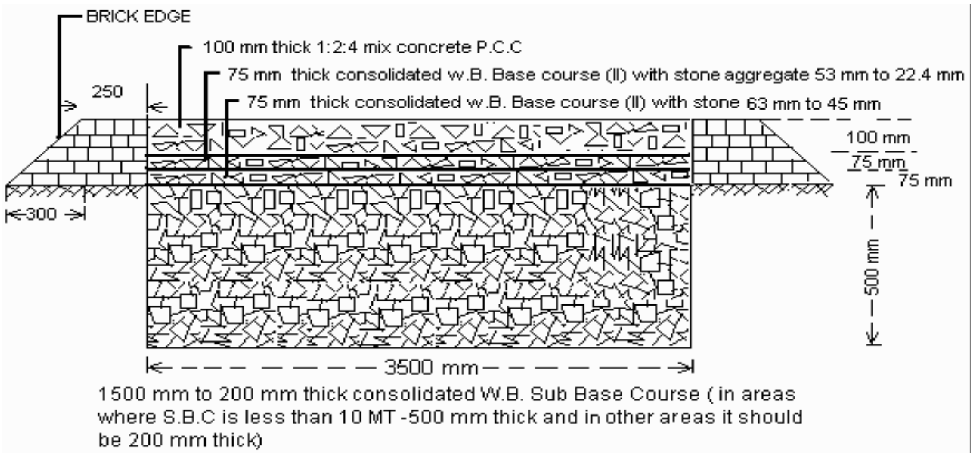
PILLAR FOR COMPOUND WALL WITH FOUNDATION



ALL PCC SHOULD BE 1:3:6 & RCC SHOULD BE 1:1.5:3

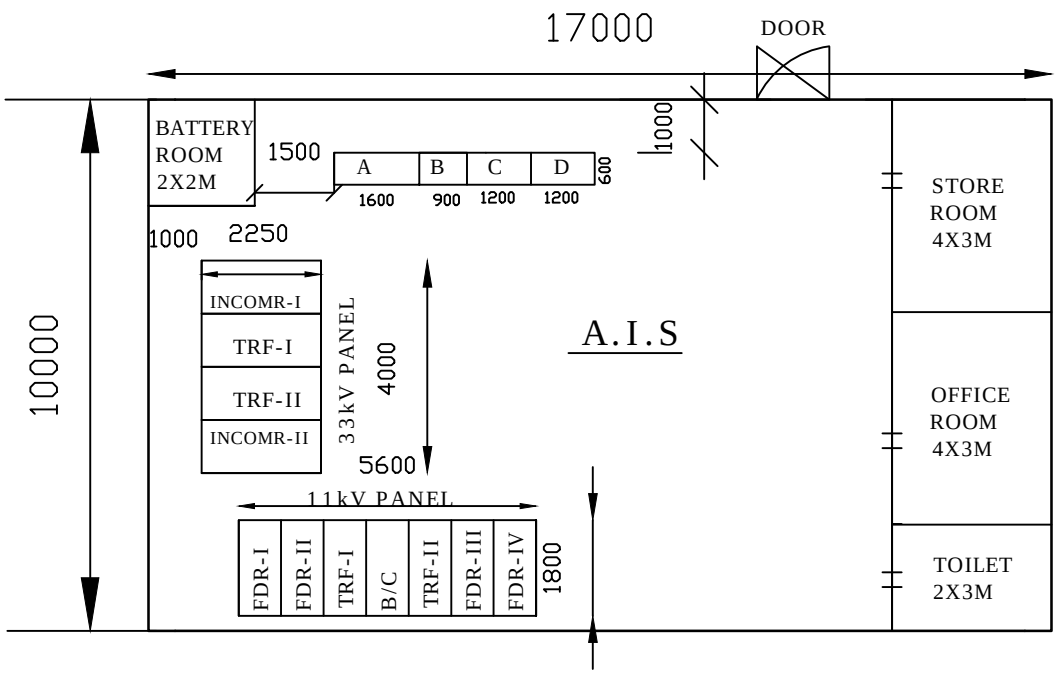
DRG NO.-PMU/OPTCL/CIVIL/10

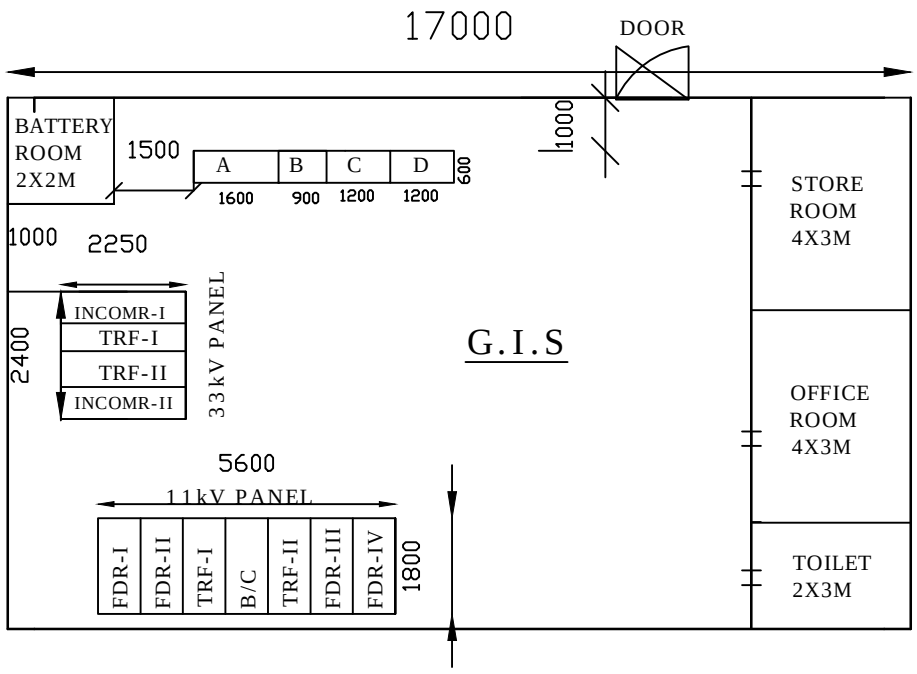
ROAD INSIDE SUB STATION



ALL PCC SHOULD BE 1:3:6 & RCC SHOULD BE 1:1.5:3

DRG NO.-PMU/OPTCL/CIVIL/11



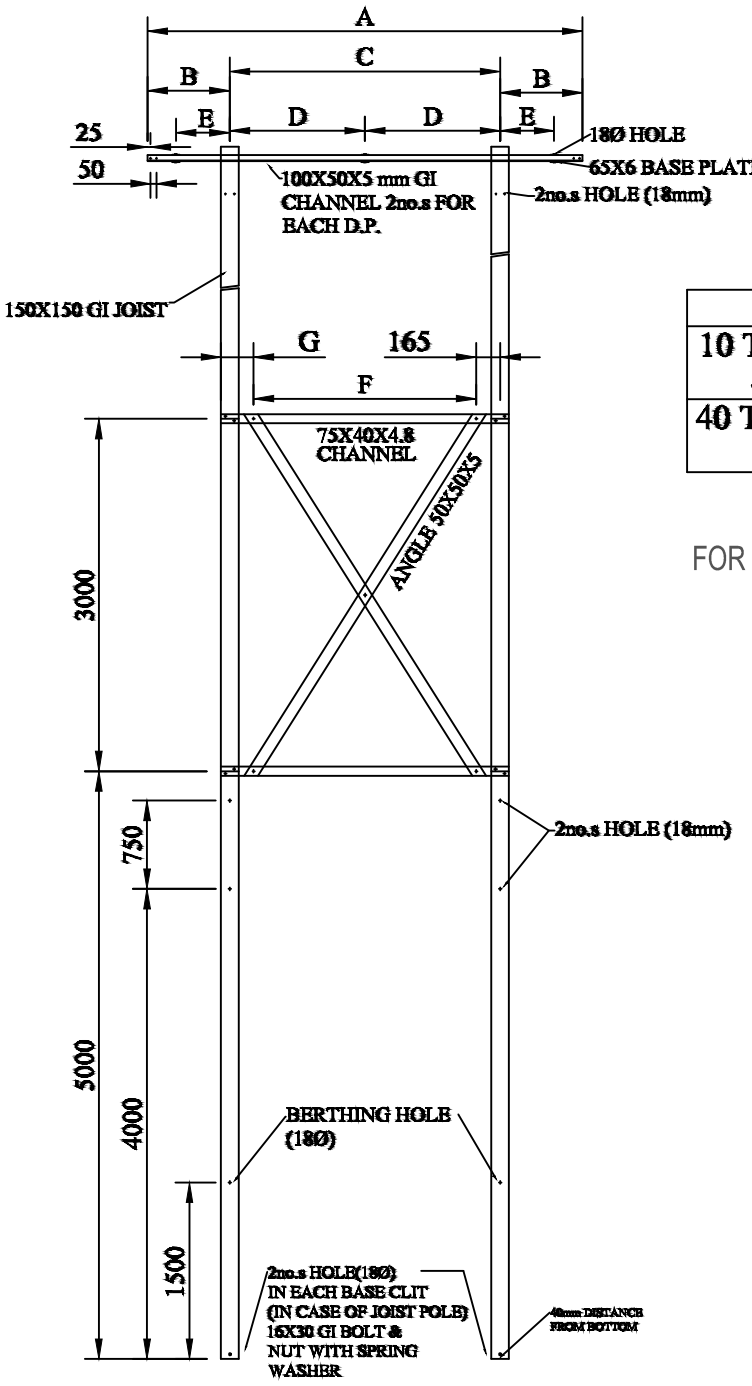


A-CHARGER , B-ACDB, C-RTCC 1 & RTCC 2 , D-RTU

CONTROL ROOM CUM SWITCHGEAR BUILDING (AIS & GIS)

DRG NO .- ODSSP / SS / 2

DP STRUCTURE FOR 11/33kv(JOIST)

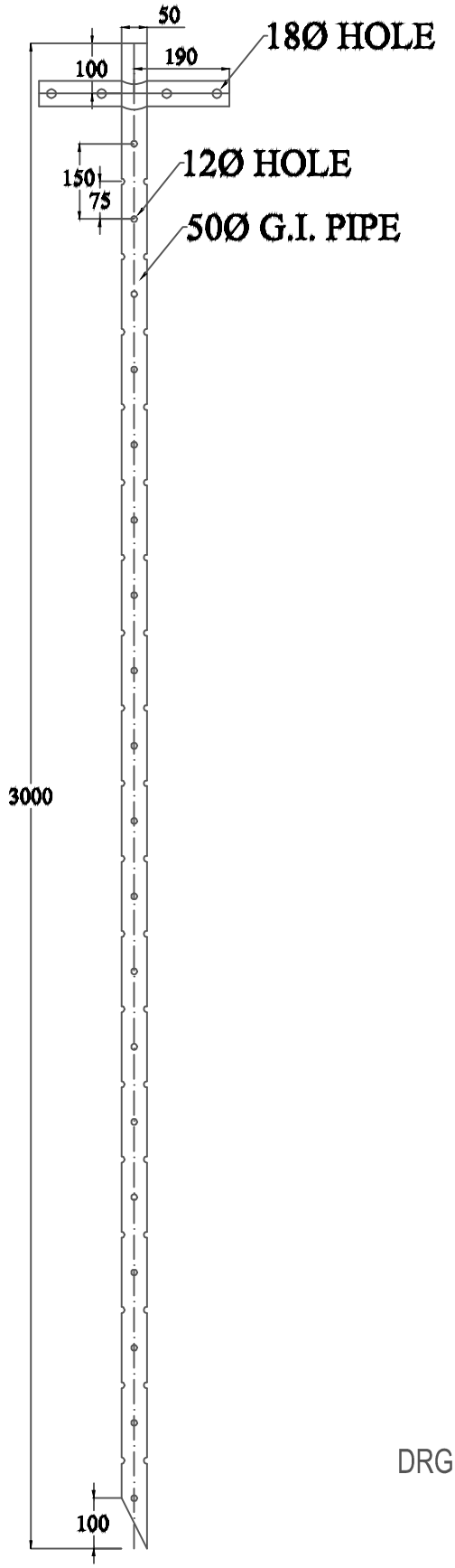


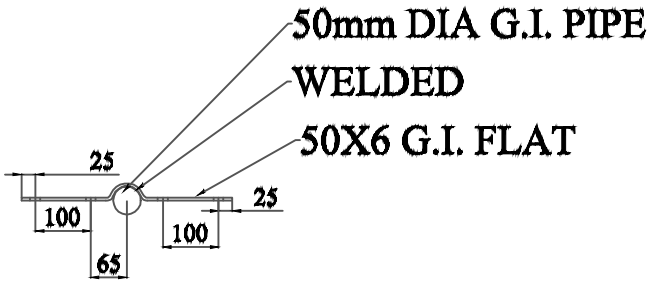
	A	B	C	D	E	F	G
10 TO 40	3700		2300		460		240
		700		1150		1970	
40 TO 60	4200		2500		600		240
		850		1250			

FOR 11KV 10 TO 40 NO DP

DRG NO .- ODSSP / LINE / 1

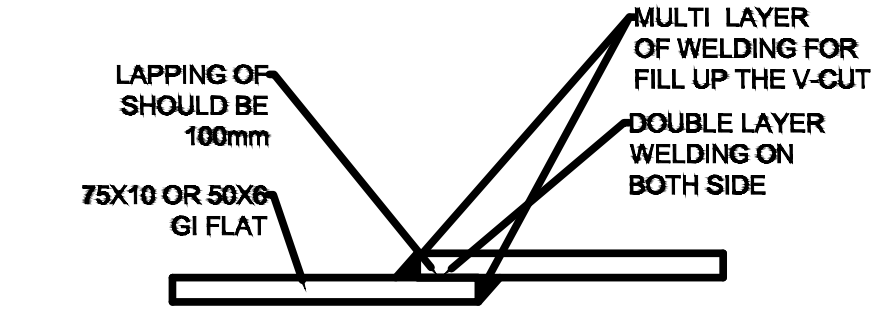
EARTHING DEVICE
HEAVY GAUGE (TATA/GINDL)

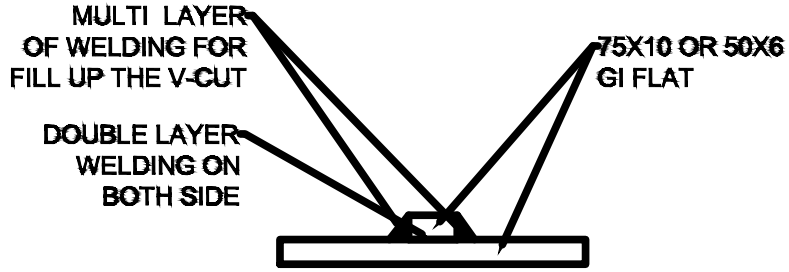




DRG NO .- ODSSP/ LINE / 6

EARTHMAT FLAT JOINTING



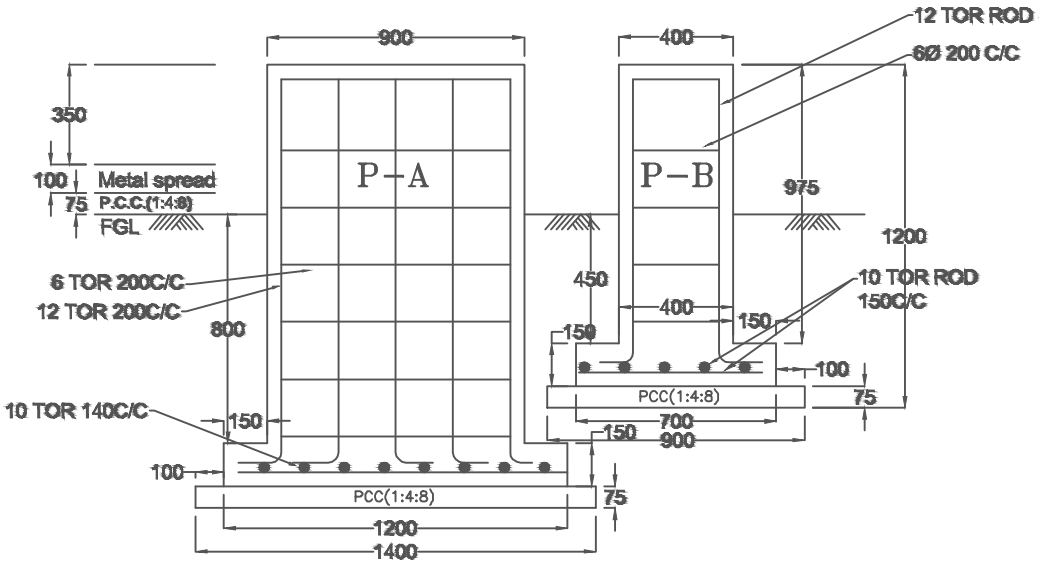


DRG NO .- ODSSP / SS / 9

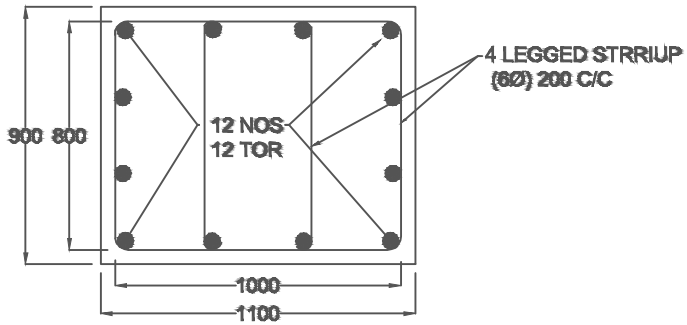
NOTE:

1. ZINC TO BE REMOVED(THE JOINTING PORTION OF THE FLAT) PRIOR TO WELDING OF JOINT.
2. AFTER REMOVAL OF ZINC THE JOINTING PORTION SHOULD BE RIGIDLY HOLD BY USING "C" CLAMP THEN ONLY THE WELDING WAS SHOULD BE TAKEN UP.
3. THE FLUX SHOULD BE REMOVE BEFORE PUTTING THE SUCCESSIVE LAYERS OF THE WELDING.
4. AFTER COMPLETION OF WELDING WORK THE "C" CLAMP SHOULD BE REMOVED.
5. JUST AFTER COMPLETION OF WELDING WORK TWO LAYER OF ANTICORROSION PAINT SHOULD BE APPLIED IMMEDIATELY.
6. THEN DOUBLE LAYER OF BLACK BITUMINOUS PAINT SHOULD BE APPLIED OVER THE WELDING PORTION.
7. BEFORE BURRING THE FLAT INSIDE THE TRENCH EACH JOINT SHOULD BE COVERED WITH BLACK TAPE.
8. EACH JOINTING PORTION COVERED WITH CONCRETE MIX(1:2:4) ALL AROUND BEFORE FILLING OF SOIL.

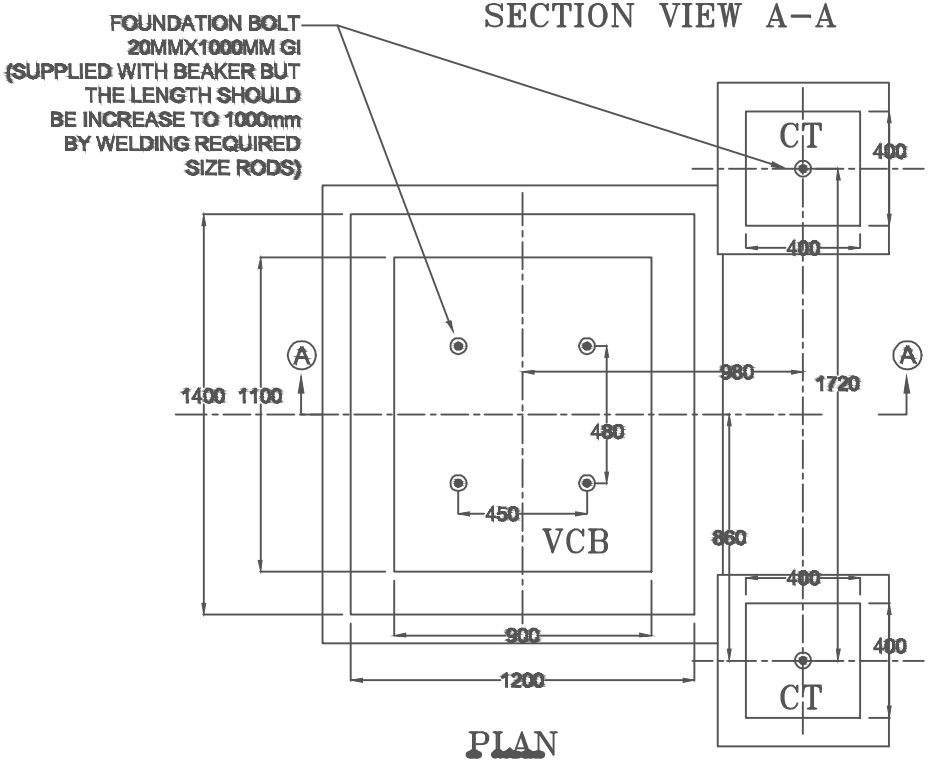
FOUNDATION DETAILS FOR 33kV VCB WITH CT FOUNDATION AT SOURCE S/S



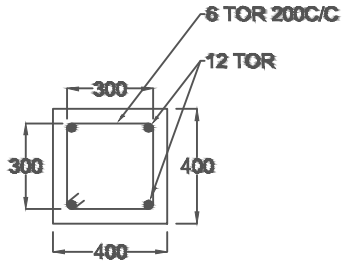
SECTION VIEW A-A



P-A

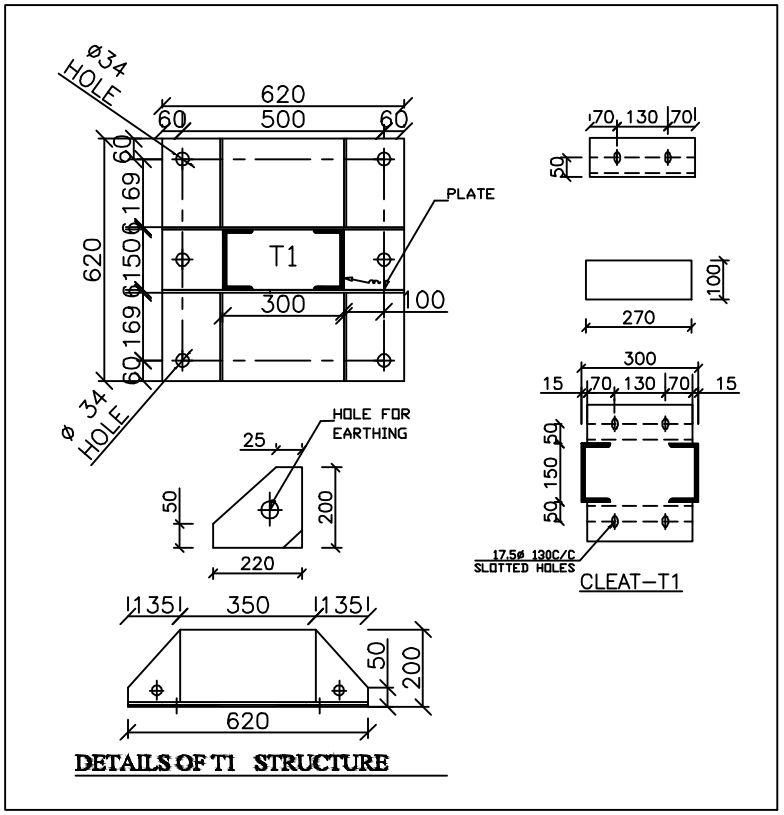


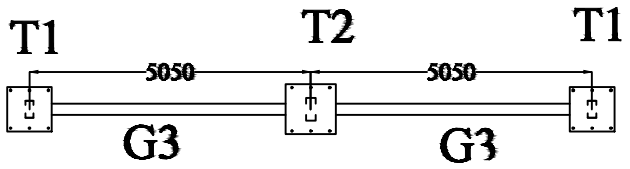
PLAN



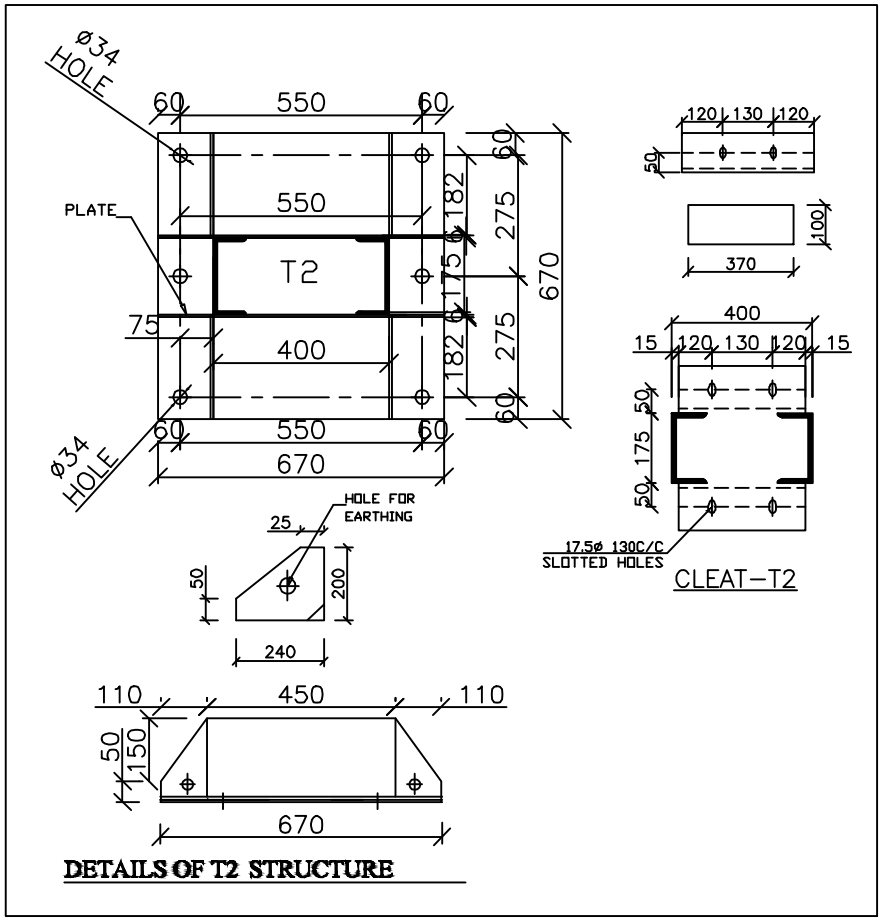
P-B

DRG NO .- ODSSP / CIVIL / 9





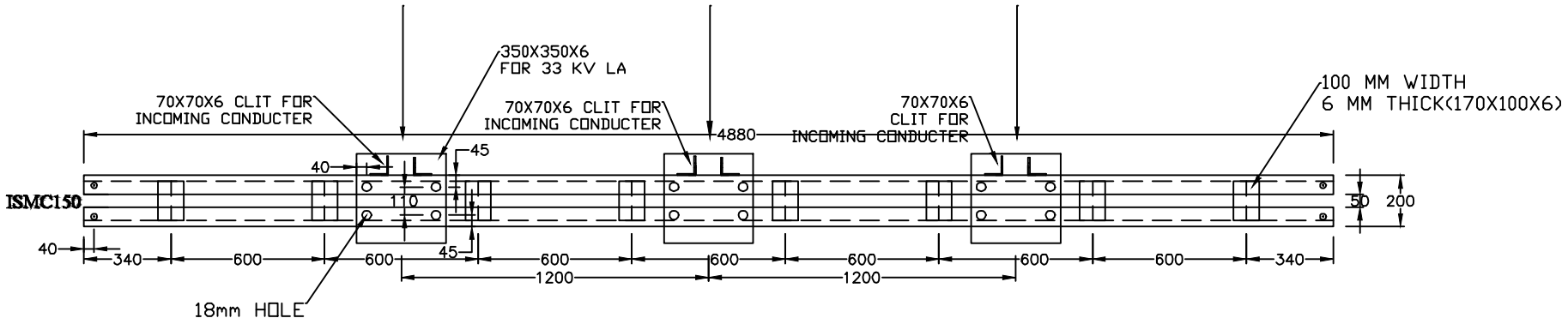
FOUNDATIONBOLT FOR INDOOR ARRANGEMENT



FOUNDATION PLAN FOR T1 & T2 COLUMN

BILL OF MATERIAL								
ERECTION MARKS	DESCRIPTION	A	B	C	TOTAL B+C	D	E	F
1	T1/T2	205	6970	280	7250	150	125	4000
2	FOUNDATION BOLT	T1	T2	T1A	T2A	T3		
	a.32x1400	0	6 NOS	0	6 NOS	0		
	b.32x1000	6 NOS	0	6 NOS	0	0		
	c.25x750					4 nos		

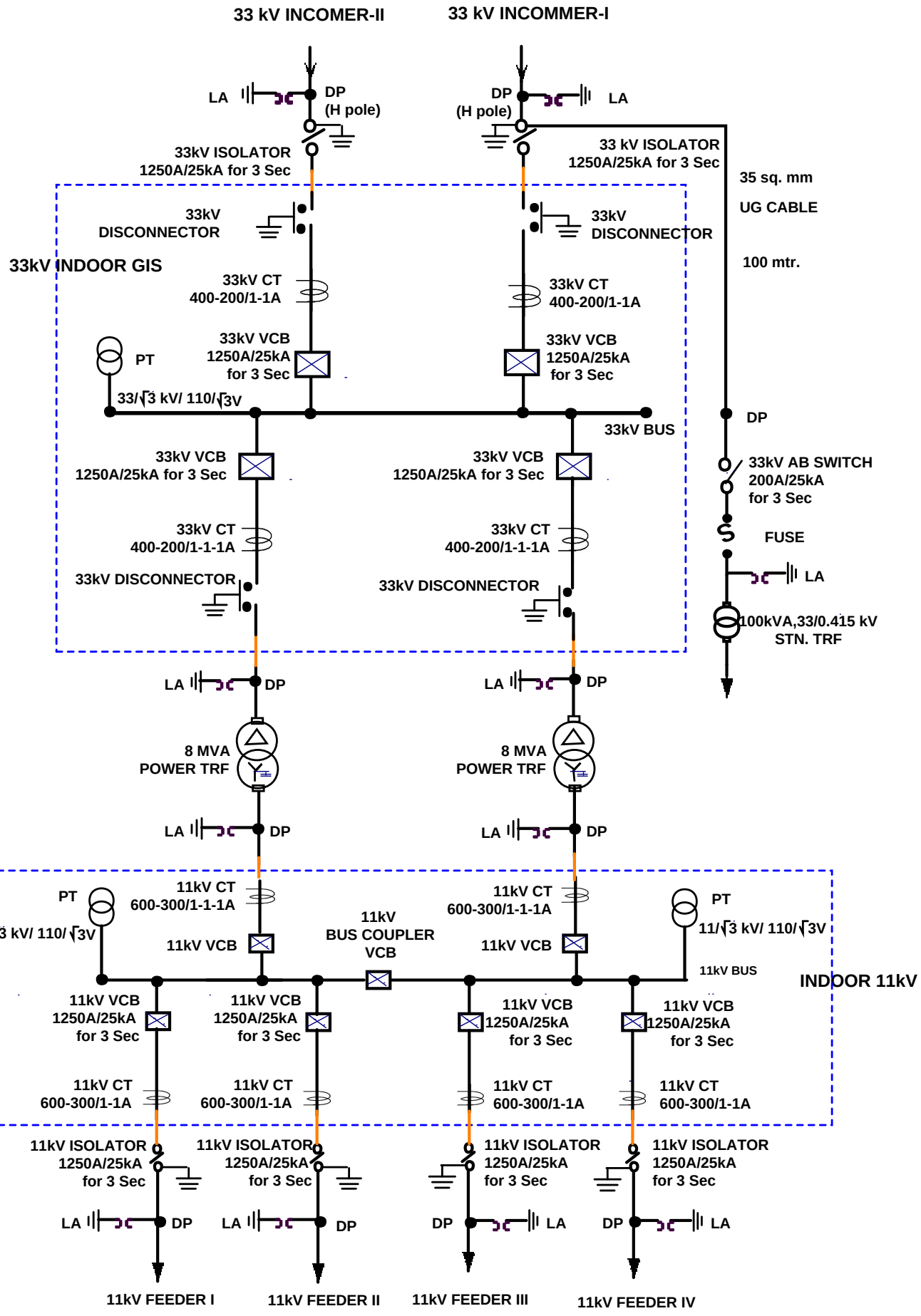
DRG NO .- ODSSP / CIVIL / 8



G3 FOR 33 KV INCOMMER.

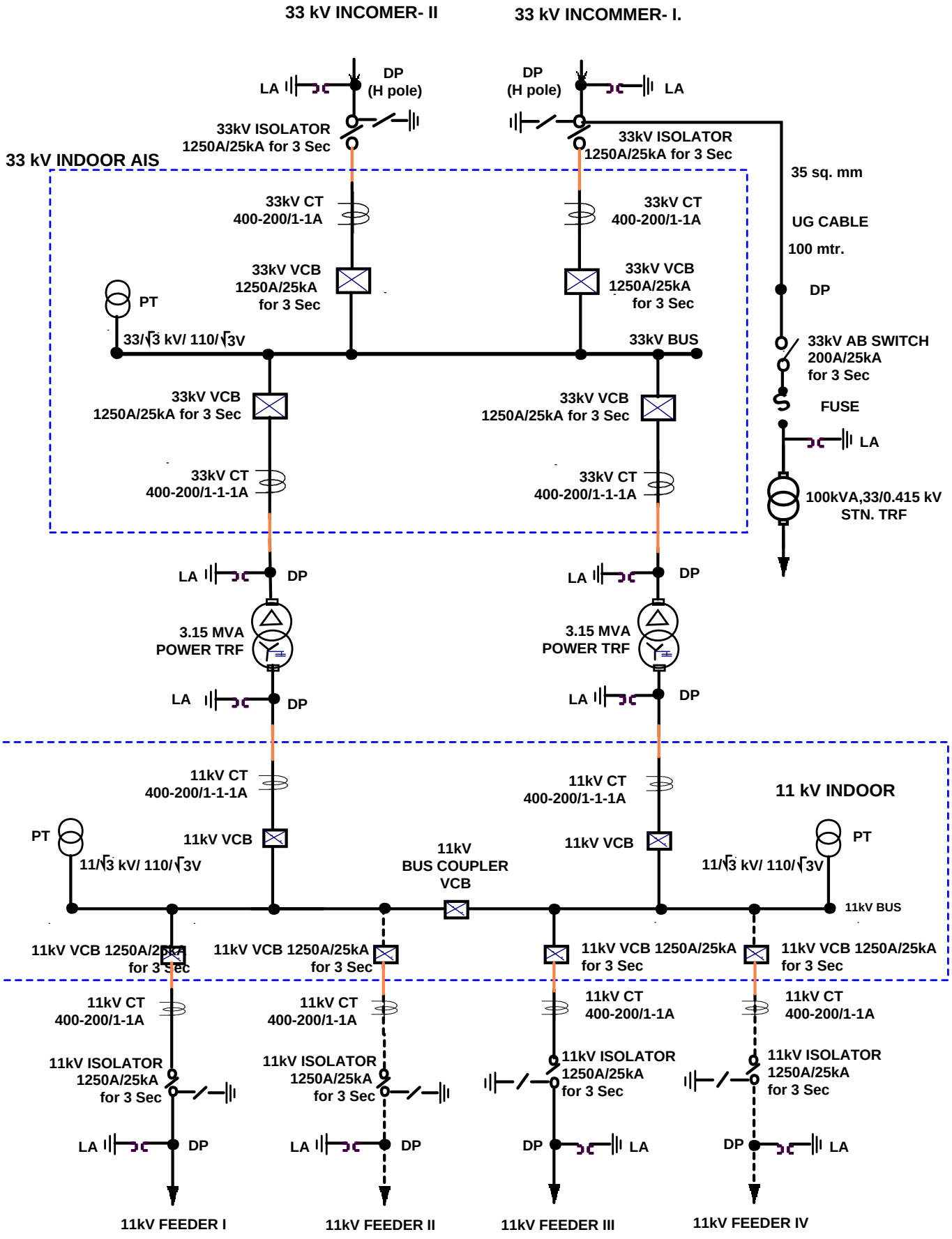
DRG NO .- ODSSP / SS / 5

PROPOSED SINGLE LINE DIAGRAM FOR 2X8 MVA, 33/11 kV GIS S/S
(33 kV GIS INDOOR, 11 kV GIS INDOOR)



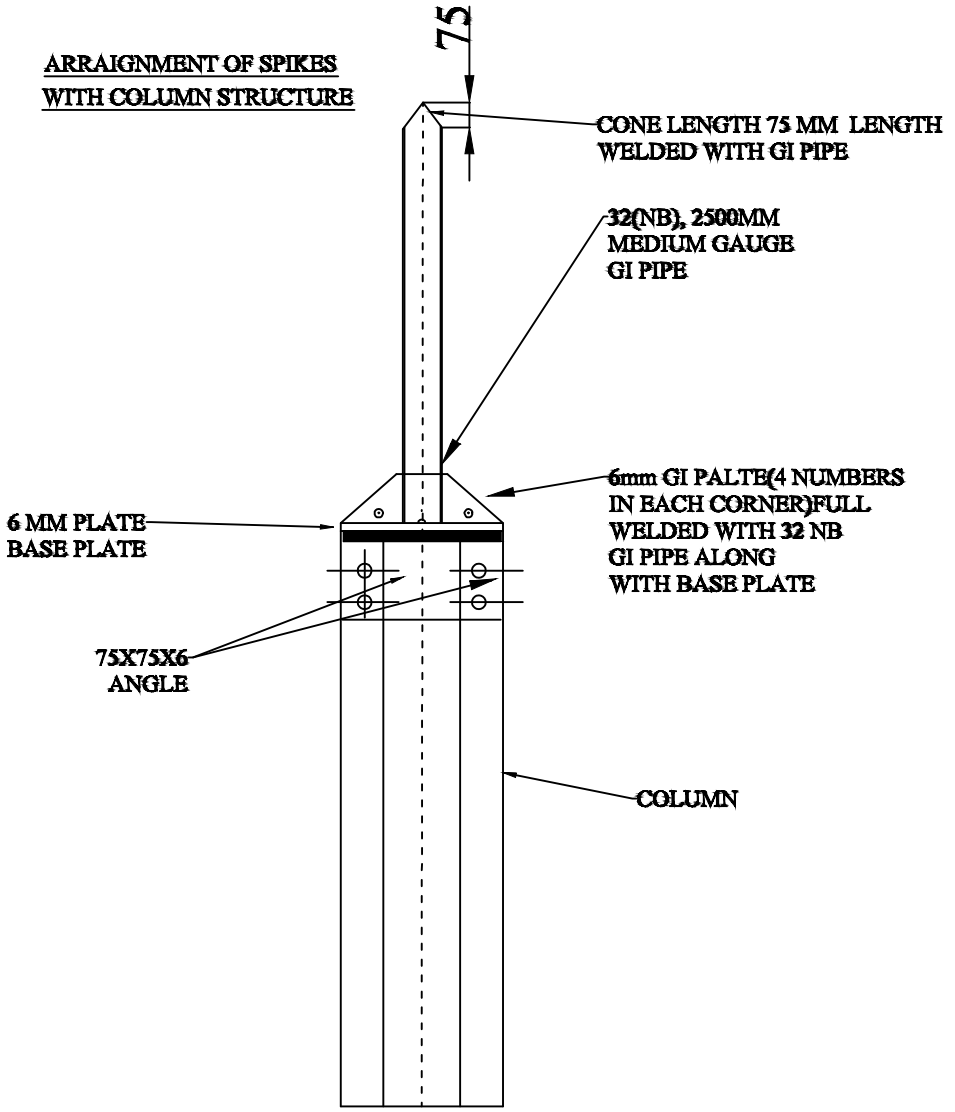
DRAWING NO - ODSSP/ SS/ SLD/ 1

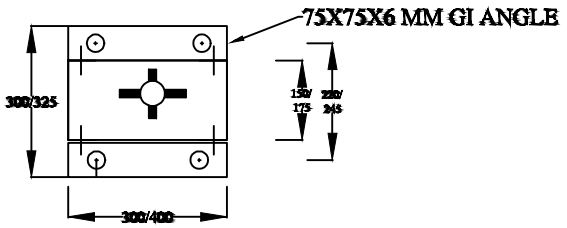
PROPOSED SINGLE LINE DIAGRAM FOR 2X3.15 MVA, 33/11 kV AIS INDOOR S/S
(33 kV AIS INDOOR, 11 kV AIS INDOOR)



DRAWING NO - ODSSP/ SS/ SLD/ 2

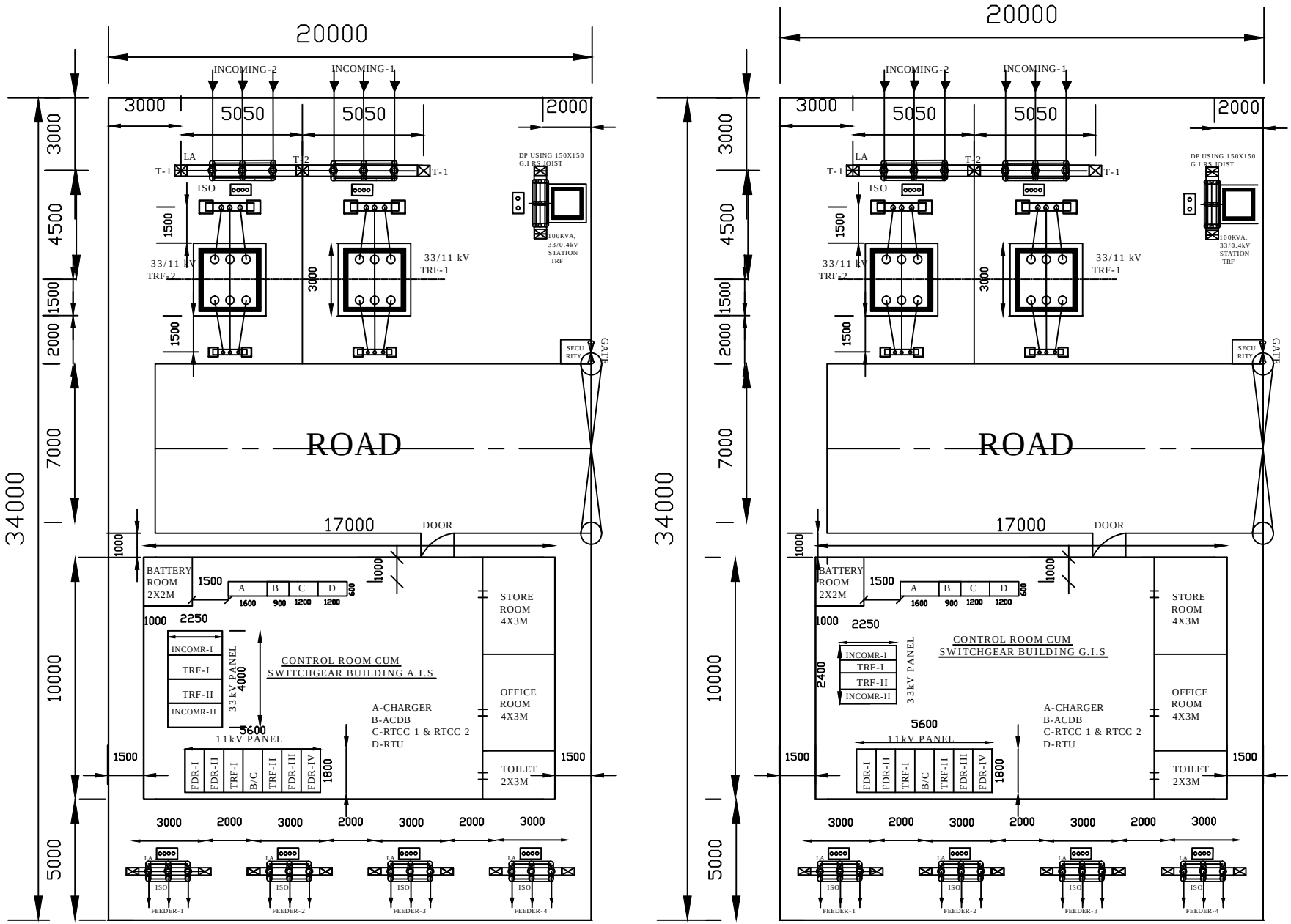
ARRAIGNMENT OF SPIKES
WITH COLUMN STRUCTURE





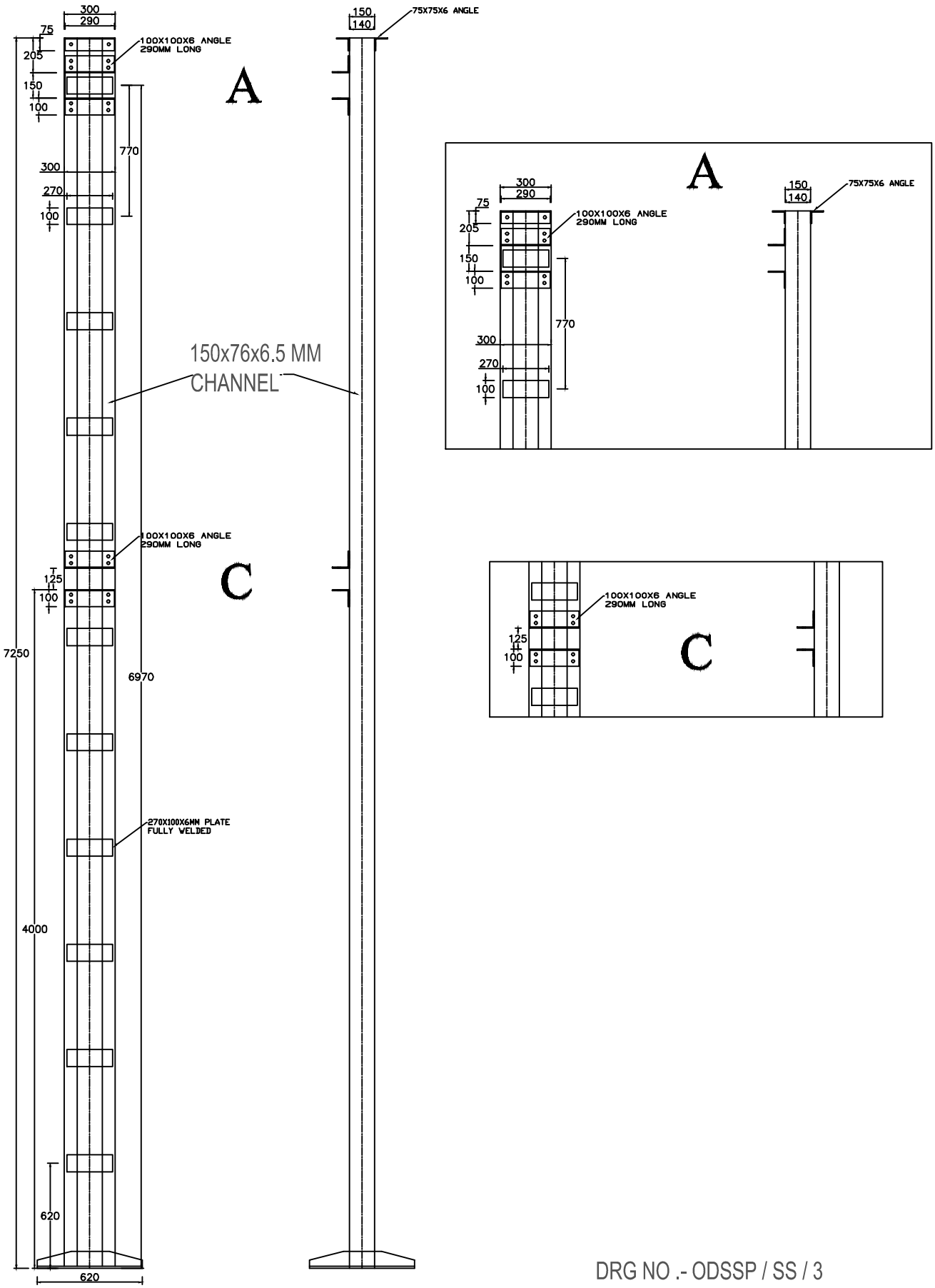
TOP PLAN OF
STRUCTURE

DRG NO .- ODSSP / LINE / 7



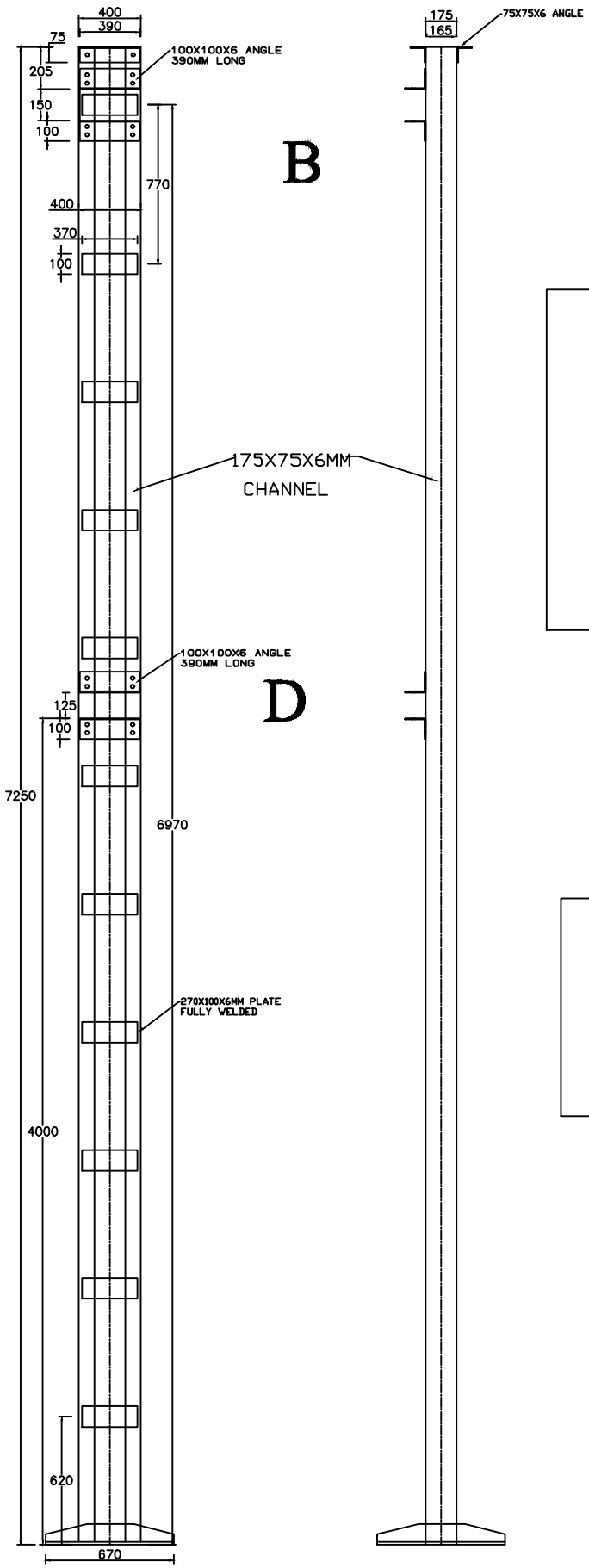
SUB-STATION LAYOUT (AIS & GIS)

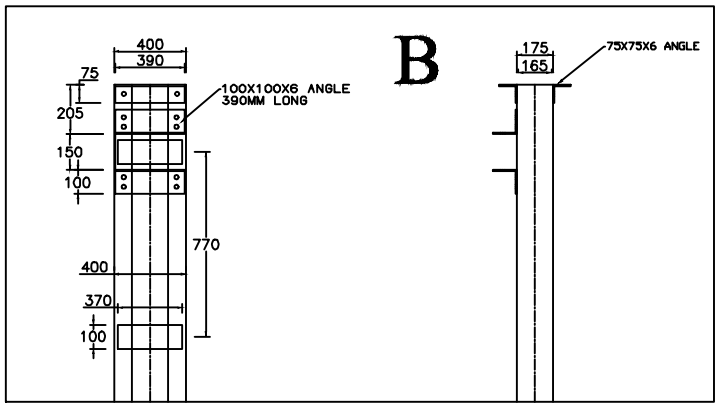
DRG NO .- ODSSP / SS / 1

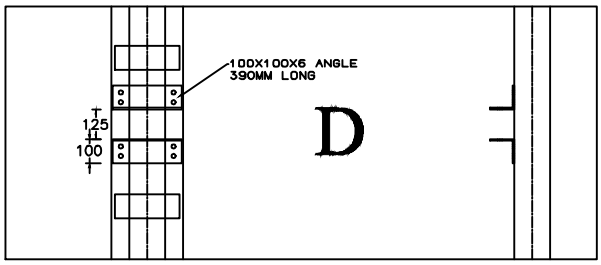


DRG NO .- ODSSP / SS / 3

T1 COLUMN WITH BEAM ARRANGEMENT







DRG NO .- ODSSP / SS / 4

T2 COLUMN WITH BEAM ARRANGEMENT

E23 - VENDOR LIST FOR MAJOR BOUGHT OUT ITEMS

	The List is Subject to modification on the suggestions of prospective bidders and scrutinisation thereof	
SL No	**Description**	**Name Of Vendor**
1	**Transformer**	ABB/CGL/Schnider/BHEL/Siemens/Silchar Technology, Vadodara/ Vijai Electric, Hyderabad/ Tesla Transformers, Bhopal/ Technical Associates/ Volt Amp, Ahmedabad
1.1	Indoor Switchgear panel with VCB, CT, IVT, Bus bar	Siemens/ABB/CGL/Schnider/ BHEL
4.1	SURGE ARRESTOR	CGL/OBLUM/LAMCO/ELPRO International
5.1	Relays	ABB/SIEMENS/Schnider/CGL/Easun Reyrole
6.1	ISOLATORS	ABB/SIEMENS/SWITCHGEAR & STRUCTURALS/CGL
8	CONDUCTOR	APAR/GPIL/ERITECH/STERLITE/VIJAYA/LUMINO/CABCON/TIRUPATI/ Gamon/ Vijaya
9	DISC INSULATORS/ POST INSULATORS/PIN INSULATORS	BHEL/WS Insulator/MODERN INSULATOR/ADITYA BIRLA INSULATORS /SRAVANA,M/s Insulators & Electricals Company, Mandeep ,M.P / Gold Stone
10	PVC INSULATED POWER AND CONTROL CABLES	NICCO/GLOSTER / CCI/KEI/CRYSTAL/ POLYCAB/ GPIL/ FINOLEX/Universal/ Havells India Ltd./ KEI/ KEC International Ltd.
11	STATION TRANSFORMER (BEE STANDARD)	AREVA/ALFA/TESLA/OTPL/TECHNO ASSOCIATE/ SILCHAR TECHNOLOGY/ VIJAYA ELECTRIC
12	LIGHTING FIXTURES	PHILIPS/CGL/BAJAJ/HAVELLS
13	CEMENT OPC GRADE	ACC/ULTRATECH/KONARK/LAFARGE
14	STEEL	SAIL/TATA/RINL
15	GI PIPE	TATA/JINDAL
16	AIR CONDITIONER	HITACHI/CARRIER/BLUE STAR/VOLTAS/LG
18	SWITCHES	ANCHOR/ABB/CONA/HAVELLS/ INDOASIAN
19	MCB	L & T /ABB/SIEMENS/MDS/HAVELLS/ INDOASIAN
20	ACB/MCCB	L & T /SIEMENS/MERLIN GERIN
21	ACDB /DCDB/BMK/CONSOLE BOX	MAKTEL SYSTEM (VADODARA)/SARVANA (CHENNAI)/TECHNOCRAT (CUTTACK).M/s UNITED ENGINEERS PVT LTD./BOSE ENGINEERS (INDIA) PVT LTD,KOLKATA/ ALFA AUTOMATION PVT.LTD,ROURKELA/ RMS AUTOMATION/ CONTINENTAL, Lucknow

22	CLAMPS / CONNECTORS	ELECTROMECH TRANSTECH /RASTRAUDYOG /TYCO/IAC/ASWINI KUMAR & CO. CUTTACK
23	GI BOLTS & NUTS	NEXO /GKW/ASP/MAHESWARI(P)FASTENERS & BRIGHT PVT . LTD ,MEDCHAL
24	VRLA BATTERY & BATTERY CHARGER	EXIDE, CHLORIDE POWER SYSTEM & SERVICES (previously CALDYNE) &AMARAJA
25	METERS	SECURE LTD/ L&T/ GENUS, Gujarat/ L&G
26	FIRE FIGHITING EQUIPMENT	MINIMAX/CEASE FIRE
27	CABLE JOINT KIT	RPG RECHEM/FRONTECH/3M
28	HARD WARE FITTINGS	RASTODYAGA/IAC/MODERN MALLEABLE/JAINCO/ERITECH/SUPREME/ELECTROMECH