





BILL OF QUANTITY - 400KV			
ITEM CODE	DESCRIPTION	SYMBOL	QTY.
1	420KV, 3150A, 40MVA/s CIRCUIT BREAKER WITHOUT CLOSE RESISTOR (3-PH)		01
2	420KV, 3150A, 40MVA/s CIRCUIT BREAKER WITH CLOSE RESISTOR (3-PH)		02
3	420KV, 3150, 40MVA/s HDB ISOLATOR WITH 1 E/S (3-PH)		08
4	420KV, 3000A, 40MVA/s CURRENT TRANSFORMER (1-PH)	•	09
5	420KV CAPACITIVE VOLTAGE TRANSFORMER (8800 PF) (BUS CVT)	•	06
6	33kV SURGE ARRESTER (1-PH)	•	12
7	WAVE TRAP 1.0 mH (3150A)	•	04
8	420KV, 2000A, 40MVA/s HDB ISOLATOR WITH 1 E/S (3-PH)		02
9	420KV POST INSULATOR	+	26

—	PRESENT SCOPE
—	FUTURE (NOT IN BHSL SCOPE)
⇄	SHIELD WIRE
**	FENCE
—	TENSION STRING INSULATOR (400KV)
—	TENSION STRING INSULATOR (220KV)
—	SUSPENSION STRING INSULATOR
○	ISO. AND E/S BOX. CT/PT/CVT/IB
□	COLUMN WITHOUT PEAK
▣	COLUMN WITH PEAK

SYSTEM PARAMETERS :-	
1.	NOMINAL SYSTEM VOLTAGE
2.	HIGHEST SYSTEM VOLTAGE
3.	RATED FREQUENCY
4.	RATED SHORT TIME CURRENT FOR 1 SEC
5.	RATED FULL WAVE WITHSTAND VOLTAGE
6.	DRY IMPULSE WITHSTAND VOLTAGE
7.	MINIMUM CREEPAGE (25MM/IN)
8.	SYSTEM NEUTRAL EARTHING
9.	EFFECTIVELY EARTHED

CLEARANCE TABLE :-	
MINIMUM CLEARANCE TABLE	400V
PHASE TO PHASE (P-P)	4000mm
PHASE TO EARTH (P-E)	3500mm
SECTION CLEARANCE (S-S)	6500mm
HEIGHT OF TUBE CENTRE LINE OF FIRST LEVEL (MIN.) (FROM PLINTH LEVEL)	8000mm
GROUND CLEARANCE TO NEAREST PART NOT AT EARTH POTENTIAL OF AN INSULATOR SUPPORTING LIVE CONDUCTOR	2500mm

<b>STRINGING DETAILS :-</b>					
<b>MAIN BUS I &amp; II</b>	<b>CONDUCTOR</b>	<b>INS. STRING</b>			
<b>JACK BUS &amp; JUMPING</b>	<b>QUAD MOOSE</b>	<b>SINGLE TENSION</b>			
<b>ALL EQUIPMENT INTERCONNECTION</b>	<b>SINGLE MOOSE</b>	<b>SINGLE TENSION</b>			
<b>ALL EQUIPMENT INTERCONNECTION</b>	<b>4.5" IPS AL./TWIN MOOSE</b>				
<b>SUB CONDUCTOR SPACING FOR QUAD</b>	<b>450 mm</b>				
<b>SUB CONDUCTOR SPACING FOR TWIN</b>	<b>250 mm</b>				
<b>EARTHING</b>					
					<b>10.98MM DIA GS WIRE.</b>

- NOTES:—**
1. ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED OTHERWISE.
  2. LIGHTNING PROTECTION SHALL BE WITH SHIELDED WIRE FOR 400KV SWITCHYARD.
  3. PLANT LEVEL 300MM ABOVE F.O.L.
  4. WIRE TENSION SHALL BE AS SPECIFIED IN TWO PHASE ARE INDICATIVE ONLY (TO BE DECIDED BASED ON ATTENUATION TEST AT SITE)
  5. CONDUCTOR TENSION:-
    - a) LINE ENTRY 2000kg./SUB CONDUCTOR
    - b) MAIN BUS 1000kg./SUB CONDUCTOR
    - c) EARTH WIRE 800kg./CONDUCTOR
  7. THE REQUIRED CLEARANCES AS PER CLEARANCE TABLE ABOVE AND AS PER PROVISION OF I.E. RULE & OTHER STATUTORY REGULATION ETC SHALL BE MAINTAINED BY BHEL.
  8. CUSTOMER SHALL TERMINATE 400KV LINE WITH TENSION INSULATORS.
  9. SUBSTATION LIGHTING SHALL BE PROVIDED ON CANTRIES.
  10. A) DISMANTLING & HANDLING OVER TO STORES AT PGCIL(WMBHQA) OF EXISTING 400KV, 2000V CB (3NOS), CT (3NOS) & ISOLATORS (6NOS) B) DISMANTLING OF CONDUCTOR & BHEL USED FOR RE-ORIENTATION OF ICT3 BAY IS IN BHEL SCOPE.

DRWG. NO.	TITLE
C/EN02/MR/WARDHA-EXT/400/OA/01	GA DRWG FOR 400 KV WARDHA S/S EXTENSION
C/EN03/MR/WARDHA-EXT/400/LV/01	LAYOUT PLAN 400 KV WARDHA S/S EXTENSION
C/EN04/MR/WARDHA-EXT/400/LV/01	LAYOUT PLAN 400 KV WARDHA S/S EXTENSION
WB-3-347-317-318-001	S/D FOR 400KV WARDHA (P/S) EXTN.

[illegible]