

SCHEDULE 'A' - 88kV BYPASS - GANTRY SECTION (FOR BAY 11 excl)														
S	L	C	P	S	S	L	C	P	S	S	CONDUCTOR AND HARDWARE SCHEDULE		QTY	
											Mk	SIZE		
											STRINGER (FOR 11 GTRY PORTAL TO GTRY 5)	1	2x800mm <sup>2</sup>	806m
											STRINGER (GTRY 5 TO Tx POLE)	2	1x400mm <sup>2</sup>	65m
											JUMPER/DROPPER (GANTRIES & TUBE SECTION)	1	2x800mm <sup>2</sup>	420m
											JUMPER (GTRY 5 & Tx POLE)	2	1x400mm <sup>2</sup>	36m
											DAMPING CONDUCTOR		1x400mm <sup>2</sup>	130m
											EARTHWIRE - HARE (100/18)	16	1x16mm <sup>2</sup>	156m
											DESCRIPTION	ITEM	QTY	
											INSULATOR STRAIN ASS'Y (POLYMERIC)	3	B44	42
											INSULATOR SUSP'N ASS'Y (POLYMERIC)	4	E42	3
											INSULATOR STRAIN ASS'Y (POLYMERIC)	5	A40	6
											SPACER CLAMP (NON CURRENT)	6	S-2	216
											STRAIN CLAMP (PISTOL TYPE)	7	STA-30/40	84
											STRAIN CLAMP (PISTOL TYPE)	8	STA-20/30	6
											TEE CLAMP	9	TC-10	84
											TEE CLAMP	10	TC-13	6
											PALM CLAMP 17 (OFF) 132kV ISOL 45°	11	YC-17	3
											PALM CLAMP (STP TYPE) 132kV ISOL 0°	12	STP-26/P	3
											CROSS CLAMP (K-TYPE) (EXISTING)	13	K-10	3
											P/ INSULATOR (CA-550 - 127/127)	14	K-10	15
											CLAMP (P-THRU TYPE) (Ø127 BASE)	15	P-38/127-150/15	

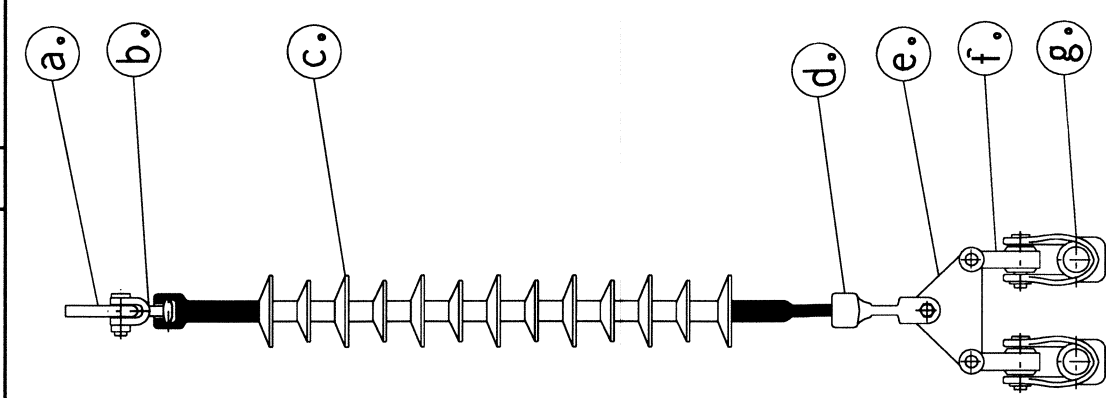
CLAMPING SCHEDULE				
DESCRIPTION	MA	ITEM	QTY	
CORONA-FREE END CAPS	1	TBEC/CR-200	12	
COUPLER SUPPORT CLAMP (F IYED)	2	TBEC-200/225	10	
IN-LINE BUS CONDUCTOR TAP-OF CLAMP 45°	3	TBIC-200/(2-38)	9	
TWISTED BUS CONDUCTOR TAP-OF CLAMP 45°	4	TBIC-200/(2-38)	3	
PALM TAP-OF CLAMP 0° (275KV ISOLATOR)	5	YC-16	6	
POST INSULATOR (275KV/CI0-115-225/275)	6		12	
COUPLER SUPPORT CLAMP (SLIDING)	7	TBSC-200/225	2	
BUS CONDUCTOR TAP-OF CLAMP 0°	8	TBCT-200/(2-38)	6	
POST INSULATOR (1224V/CI0-550-225/225)	9		9	
VIBRATION DAMPER/CONDUCTOR FIXING END CAP	10	TBCL/C-200	18	
ALUMINIUM TUBING (SEE SCHEDULE 1')	11			
SPACER CLAMP (NON CURRENT)	12	S-2	56	
COUPLER SUPPORT CLAMP (F IYED)	13	TBEC-200/127	3	
COUPLER SUPPORT CLAMP (SLIDING)	14	TBEC-200/127	6	

SCHEDULE "L"		88kV BYPASS - BUSBAR TUBE SECTION	
DAMPING CONDUCTOR & TUBING SCHEDULE			
ITEM	TUBE LENGTH/mm	QTY DAMPING CONDUCTOR (mm)	ITEM QTY/m
1	5000	3orff	20,001
2	4500	1orff	6,000
3	8000	1orff	10,667
4	11600	1orff	15,467
5	18000	1orff	24,133
6	19600	1orff	26,133
7	20600	1orff	27,467
DAMPING CONDUCTOR TOTAL=			130m
ROUNDED			VALUE

NOTES:

1. AI TUBE TO BE Ø200x6MT.
2. DAMPING CONDUCTOR TO BE 1x21TYPE (1x40mm<sup>2</sup> )
3. TUBE LENGTHS GIVEN AS PER DESIGN LENGTHS.
4. TUBE SUPPLIED IN 25m LENGTHS (MAX).

SCHED. Q't	8BK BYPASS - GANTRY SECTION	8BKV FOR BAY 11		
SUSPENSION INSULATOR ASSEMBLY SCHEDULE	30ft ASSYS	30ft ASSYS		
DESCRIPTION	MA	ITEM	QTY/ASSY	TOTAL
U-BOLT (M6)(0.54/644 Sh 1)	a.		1	3
CLEVIS BALL (BOLT TYPE)	b.	CB-120	1	3
POLYMERIC INSULATOR ASSY (80kV) 7 DISC/999 LG/31mm/kv)	c.		1	3
SOCKET CLEVIS (BOLT TYPE)	d.	SC-120	1	3
YONE PLATE	e.	YP-1	1	3
TWISTED CLEVIS TONGUE (BOLT TYPE)	f.	TC120/38	2	
SUSPENSION CLAMP (GRABLE TYPE)	g.	SPA-30/40	2	6



E42 SUSPENSION ASSEMBLY  
(SEE GENERAL NOTE 17)

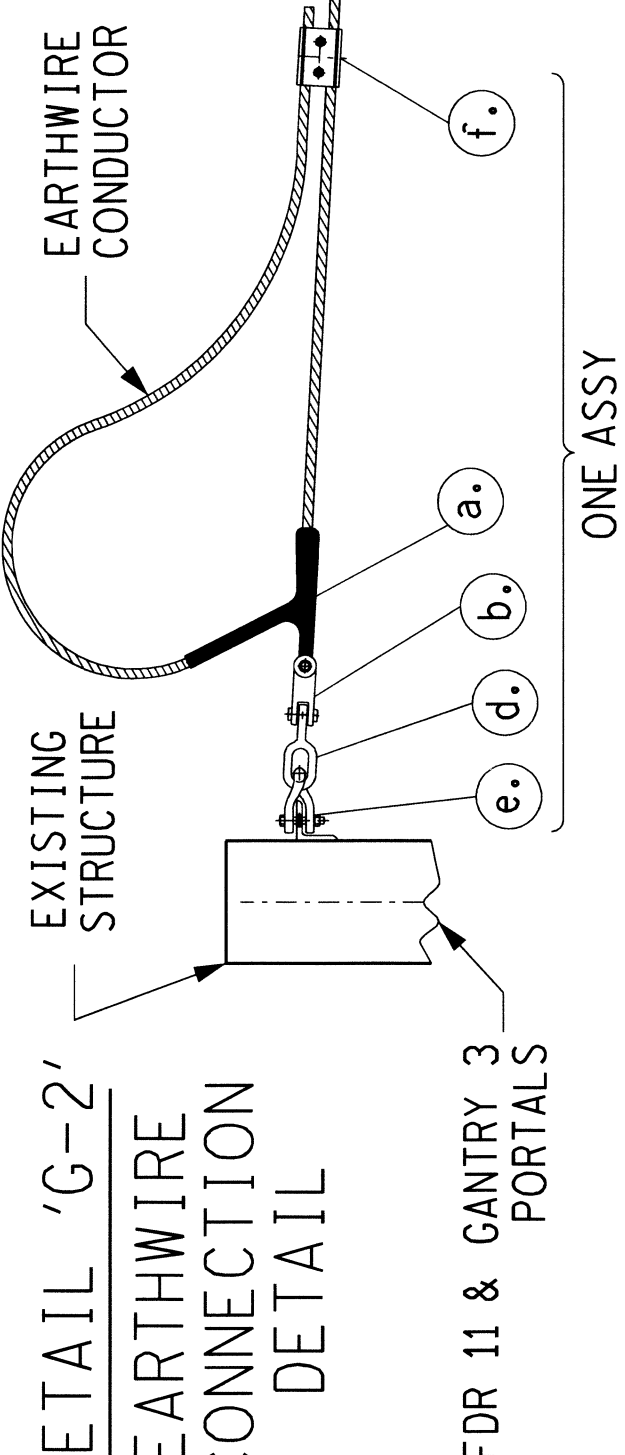
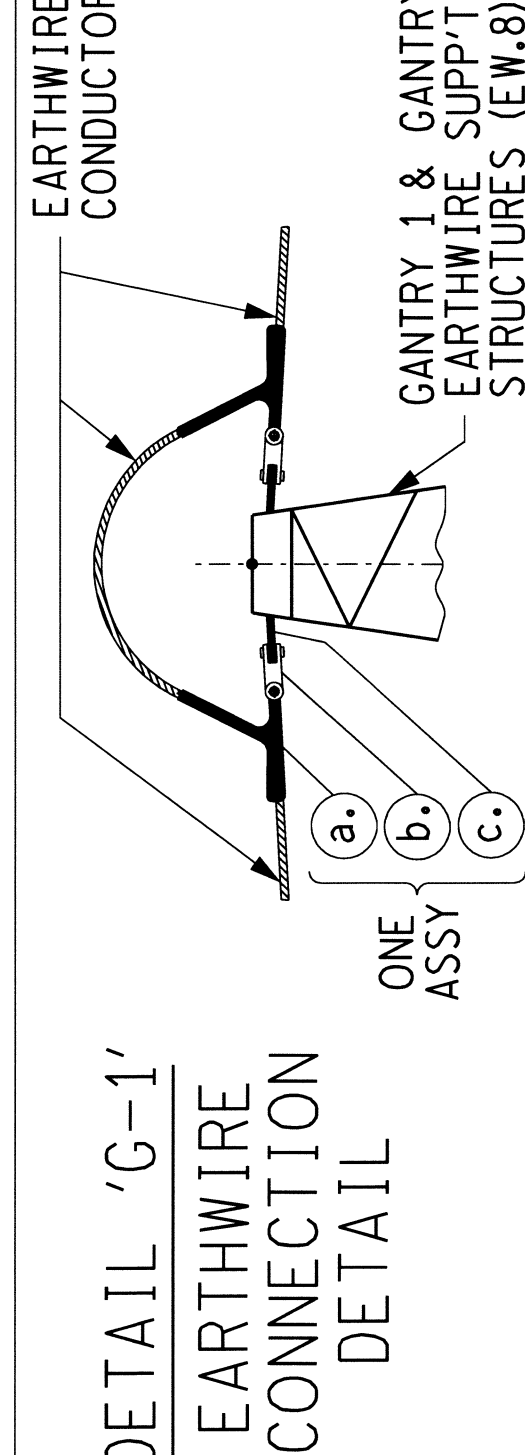
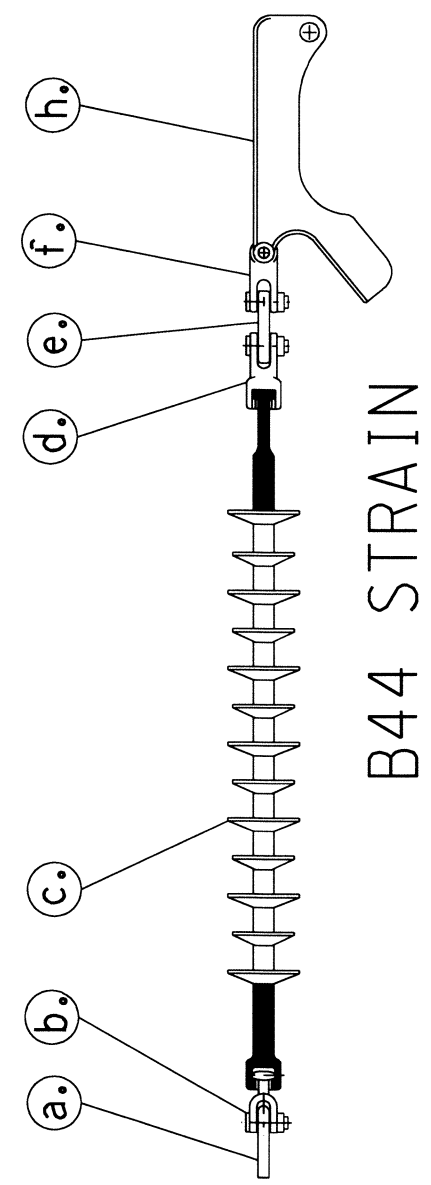
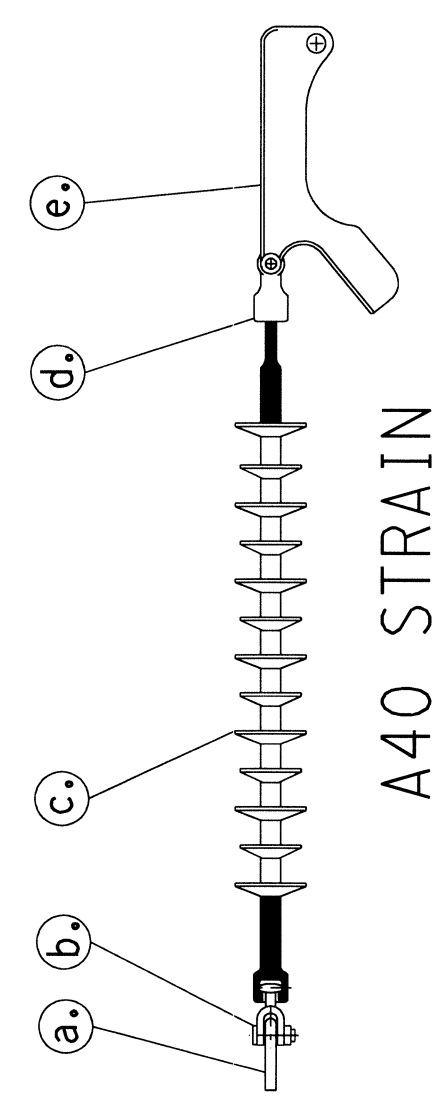
SCHEDULE 'E' 88kV BYPASS – GANTRY SECTION C/TRY 5 TO 1x POLE			
TRAIN INSULATOR ASSEMBLY SCHEDULE			60sf ASSYS
DESCRIPTION	Mk	ITEM	QTY/ASSY TOTAL
-BOLT (M16) (0.54/644 Sh 1)	a.		1 6
LEWIS BALL (BOLT TYPE)	b.	CB-120	1 6
OLYMERIC INSULATOR ASSY 88kV/7 DISC/999 LG/31mm/kV)	c.		1 6
COCKET TONGUE	d.	ST-120/16	1 6
TRAIN CLAMP (PISTOL TYPE)	e.	STA-20/30	1 6

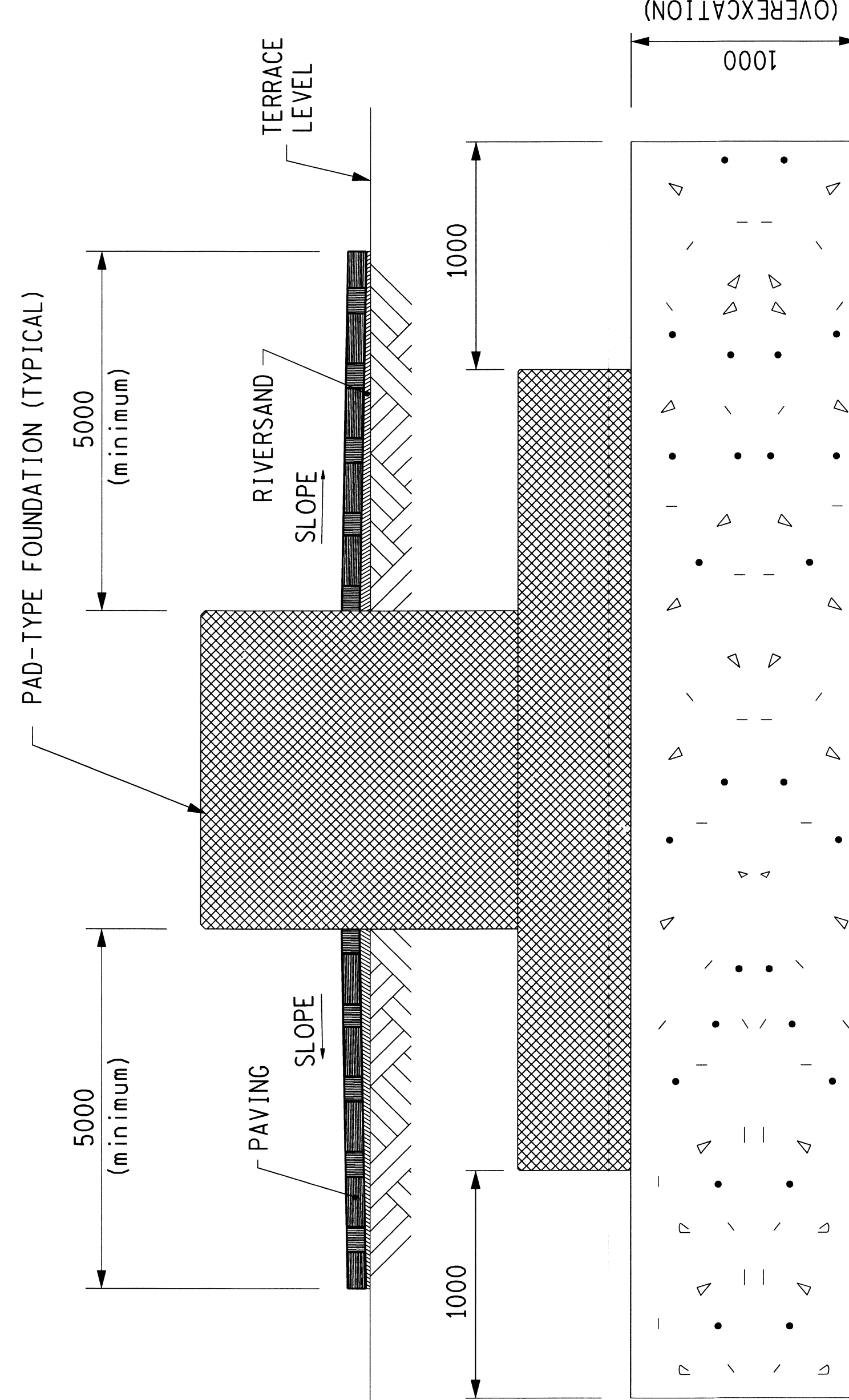
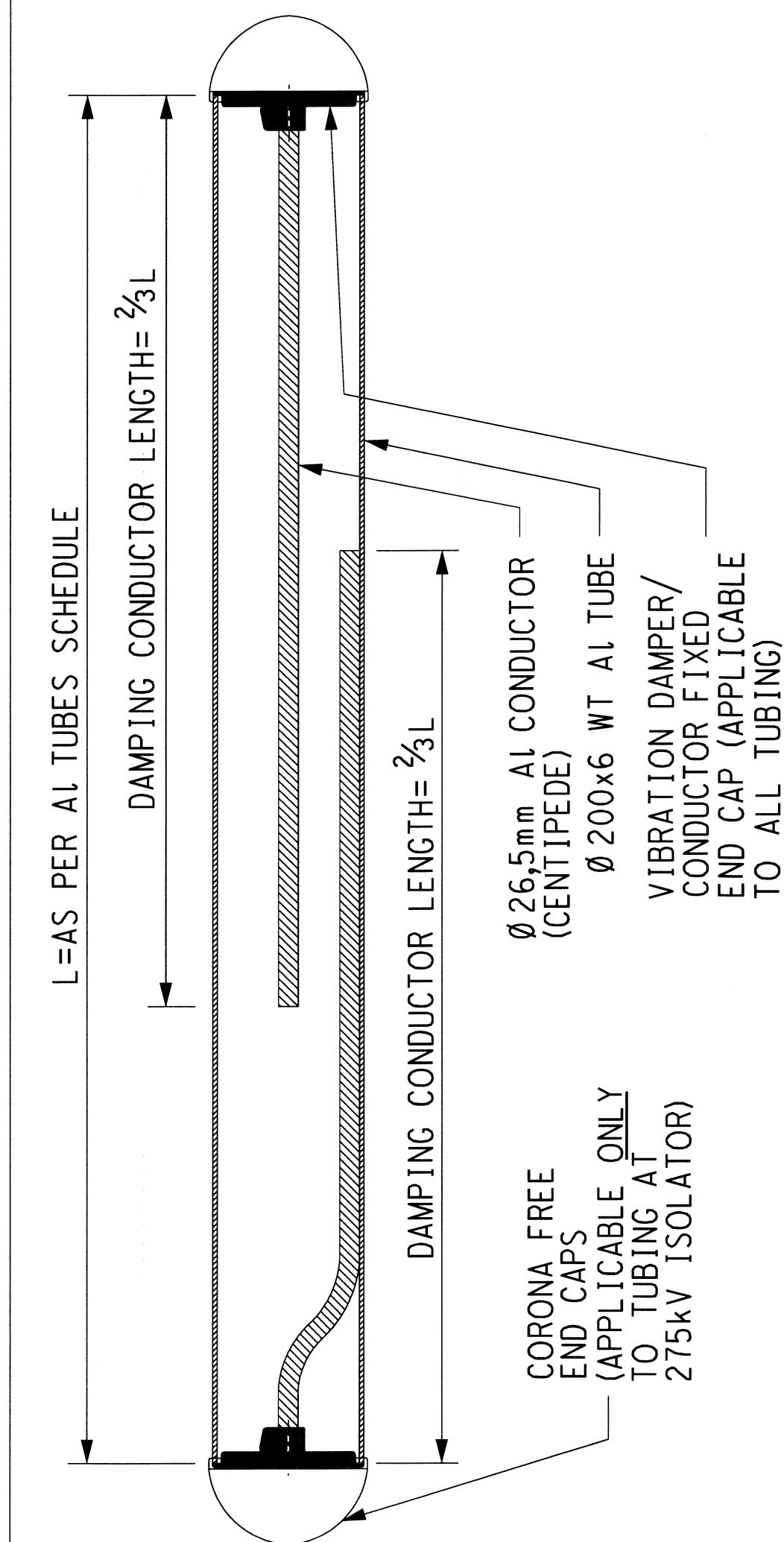
SCHEDULE 'F' 88kV BYPASS – GANTRY SECTION GANTRY'S 1 - 5			
TRAIN INSULATOR ASSEMBLY SCHEDULE			42sf ASSYS
DESCRIPTION	Mk	ITEM	QTY/ASSY TOTAL
-BOLT (M16) (0.54/644 Sh 1)	a.		1 42
LEWIS BALL (BOLT TYPE)	b.	CB-120	1 42
OLYMERIC INSULATOR ASSY 88kV/7 DISC/999 LG/31mm/kV)	c.		1 42
COCKET CLEVIS (BOLT TYPE)	d.	SC-120	1 42
WKE PLATE	e.	YP-1	1 42
WISTED CLEVIS TONGUE (BOLT TYPE)	f.	TCT120/38	2 84
TRAIN CLAMP (PISTOL TYPE)	h.	STA-30/40	2 84

SCHEDULE 'C'	88K1 BYPASS - GANTRY SECTION	GANTRY'S 1&2
E/WIRE CONN ASSY SCHEDULE (THROUGH CONDUCTOR) FOR ASSY'S	ITEM	QTY ASSY'S TOTAL
STRAIN CLAMP-PISTOL (3-BOLT STEEL)	a, D-402	1
TWISTED CLEVIS TONGUE (BOLT TYPE)	b, TC120/38	1
U-BOLT (M6) (0.54/644 Sh-I)	c,	1

SCHED. '0'	88K BPASS-G'TRY SECN	FDR 11 & G'TRY 3	G-2	
E/WIRE	CONN ASSY'S SCHEDULE (COND TERMINATION)	4647 ASSY'S	QTY/ASSY	TOTAL
	DESCRIPTION	WM	ITEM	
	STRAIN CLAMP-PISTOL (3-BOLT S'YCLE)	a.	d.-402	1 4
	TWISTED CLAMP TONGUE (BOLT TYPE)	b.	TC120/38	1 4
	TWISTED TONGUE OVAL EYE	d.	1T0E-120	1 4
	TWISTED SHAKLE (BOLT TYPE)	e.	5H8/T-120	1 4
	PG CLAMP (EXTRUDED)	f.	286/E-B1	1 4



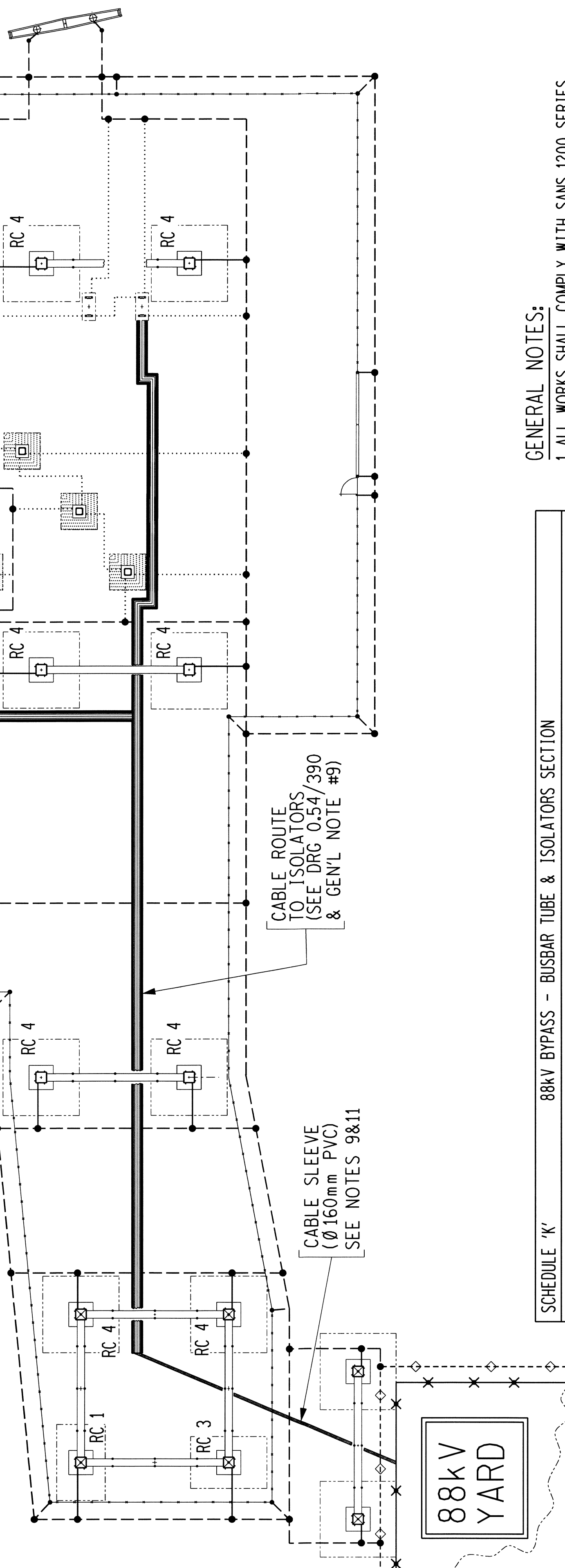
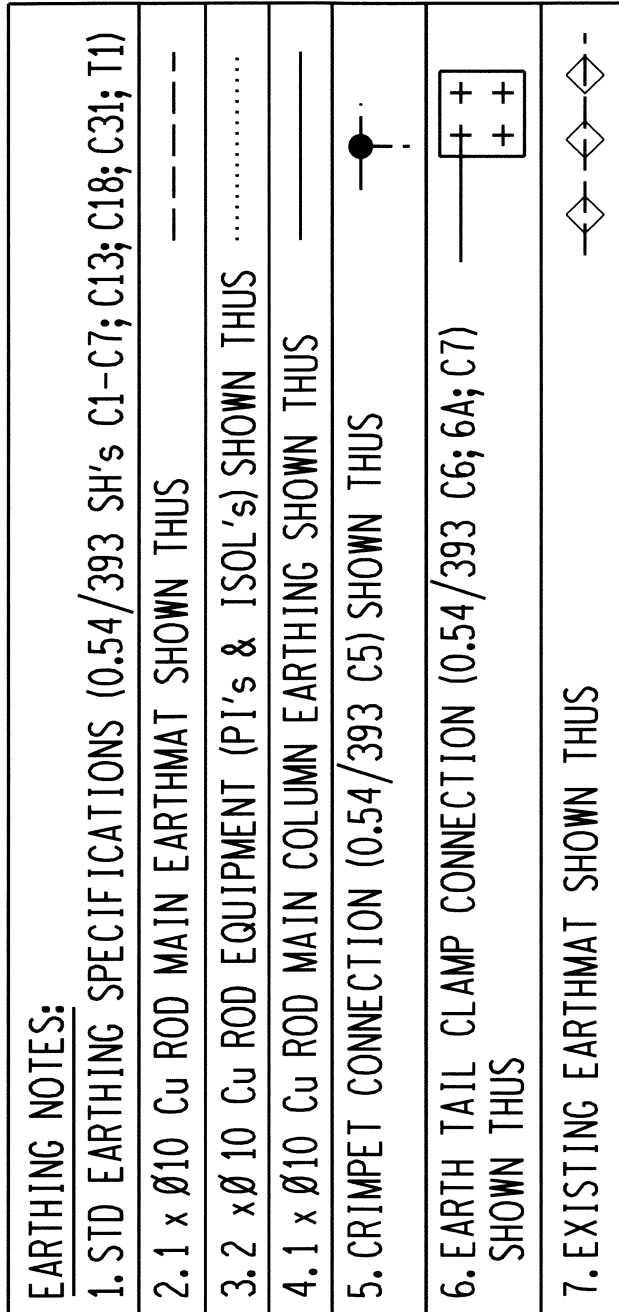
SCHEDULE 'W'	DETAIL 'X' - 275K DROPPER CONNECTION
SPECIAL CLAMP SCHEDULE	
SPACER CLAMPING ARBCT - SECTION X-X	
CLAMP	UT-Tree Type Clamp
CONDUCTOR	CENTPEDE
	400mm <sup>2</sup>
DROPPER CLAMPING ARBCT - SECTION Y-Y	
	UT-Tree Palm Clamp
	60T
CLAMP	COMPRESSION T-CAMP (made as a special) BASED ON ROB LATHING NO. 82503-00
	60T
	SPACER CLAMP (NON CURRENT)IS-20
	36T



## FOUNDATION DETAIL NOTES

DUE TO DOLOMITIC CONDITIONS PLEASE REFER  
TO FOUNDATION SCHEDULE AND GENERAL NOTES(3;12&13)

888kV BYPASS EARTHMAT & CABLE ROUTE LAYOUT	
SCHED '1' 888V BYPASS – GANTRY SECTION & LIVE CHAMBER	
MAIN EARTHMAT – EARTHING & HARDWARE	SCHEDULE
DESCRIPTION	QTY
CRIMPED JOINTS (ROD TO ROD)	124
EARTH ISOLATORS & POST	167
CLAMPS GANTRY STEELWORK	12
FENCE	20
Ø 10mm Cu ROD (ISOL.SP.1% GANTRY.SP. FENCING)	1338m



SCHEDULE 'K'	88kW BYPASS – BUSBAR TUBE & ISOLATORS SECTION									
	SUPPORT STEELWORK AND FOUNDATION SCHEDULE									
	DESCRIPTION	QTY	SUPPLY (517K DRG)	QTY	SUPPLY CAP (517K DRG)	QTY	EDN (DRG)	QTY	REMARKS	
	6m SUPPLY (DITL's 'B'-E)	8	0.54/5573	8	0.54/306	4	0.54/4126	8	TUBE/P/ SUPPTS 275KW ISOLATOR	
					0.54/8424	4				
	3m SUPPLY (DITL 'F')	9	0.54/8423	9	0.54/8423	9	0.54/4319	9	TUBE/P/ SUPPTS 88kW DROPPERS	
	ISOLATOR SUPPLY	1	0.54/7664 #	1	N/A	-	0.54/7514 Δ	1 SET	275KW ISOLATOR	
	ISOLATOR SUPPLY	1	0.54/7663 #	1	N/A	-	0.54/7513 Δ	1 SET	132kW ISOLATOR	

**SPECIAL NOTES:**

- # ISOLATOR SUPPORT STRUCTURES TO BE SUPPLIED & ERECTED BY TMC SUPPLIER.
- Δ ISOLATOR FOUNDATIONS TO BE ESKOM'S SCOPE OF RESPONSIBILITY.

**NOTES:**

1. OUTFER-EXCAVATE TO 1,0m BELOW FOUNDING LEVEL AND SPOIL TO 95% MOD-ASHTO AT OMC +2%.
2. SPOIL TO BE USED TO REINFORCE FOUNDING.
3. PAVE THE SURFACE ABOVE THE FDN'S TO PREVENT WATER POUNDING AND PENETRATION INTO THE FDN/SOILS.
4. SHAPE NATURAL GROUND TO FALL AWAY FROM THE PLINTH.
5. COMPACT IN-SITU WELL TO 30% MOD-ASHTO.
6. PLACE 70mm RIVERSAND.
7. PLACE 80mm CLASS 25 TYPE SA CONCRETE INTERLOCKING PAVING BLOCKS IN HERRINGBONE PATTERN.
8. SWEET SAND/CEMENT MIXTURE IN ALL JOINTS TO SEAL PAVING.
9. STRUT CONNECTION SHALL BE MADE THE STDS AS SET OUT IN THE RESPECTIVE 0.54 DRG's CITED.


SCHEDULE 'J'									
88kV BYPASS – GANTRY SECTION									
GANTRY STEELWORK AND FOUNDATION SCHEDULE									
GANTRY	NO	COL. & BEAM APPCT	COL. & BEAM DT'S	BEAM TYPE	HEIGHT/LOADING	COLUMN	FDN DRG	FDN TYPE	
	1	0.54/330 Rev3	0.54/331 Rev3	STRAIN88/28/2	2, 284m/9kN	2x TYPE 88/H	0.54/5612 Rev1	2x R4	
	2	0.54/330 Rev3	0.54/331 Rev3	2x STRAIN88/28/2	2, 284m/9kN	4x TYPE 88/H	0.54/5612 Rev1	1x R4 1x R2	
BOX SEC'N				2x STRAIN88/28/2	2, 6706m/9kN	4x TYPE 88/H	0.54/5612 Rev1	2x R4	
	3	0.54/330 Rev3	0.54/331 Rev3	STRAIN88/28/2	2, 6706m/9kN	2x TYPE 88/H	0.54/5612 Rev1	2x R4	
	4	0.54/330 Rev3	0.54/331 Rev3	STRAIN88/28/2	2, 6706m/9kN	2x TYPE 88/H	0.54/5612 Rev1	2x R4	
	5	0.54/330 Rev3	0.54/331 Rev3	STRAIN88/28/2	2, 6706m/9kN	2x TYPE 88/H	0.54/5612 Rev1	2x R4	

**NOTES:**

1. OVER-EXCAVATE TO 1,0m BELOW FOUNDING LEVEL AND SPOIL.
2. IMPORT 66 MATERIAL AND COMPACT IN LAYERS OF 150mm TO 95% Mod. AASHTO AT OMC +2%.
3. PAVE THE SURFACE ABOVE THE FDNs TO PREVENT WATER PONDING AND PENETRATION INTO THE FDN SOILS.
  - SHPE NATURAL GROUND TO FALL AWAY FROM THE PLINTH.
  - COMPACT IN-SITU WELL TO 90% Mod. AASHTO.
  - PLACE 20mm RIVERSAND.
  - PLACE 80mm CLASS 25 TYPE SA CONCRETE INTERLOCKING PAVING BLOCKS IN HERRINGBONE PATTERN.
  - SLEW SAND/CEMENT MIXTURE IN ALL JOINTS TO SEAL PAVING.
4. STRICT COMPLIANCE SHALL BE MADE TO THE SET OUT IN THE RESPECTIVE 0.54 DPGs CITED.

5. COLUMNS FOR GANTRIES 1 & 2 ONLY, TO HAVE (CW-8) EARTH/REIN SUPPORTS.

	DRG REV'D TO "FOR CONSTRUCTION" STATUS.	DATE	BY	17324 Sh3	LAYOUT & DETAILS
1				17324 Sh3	
0	FIRST ISSUE			17324 Sh2	KEY PLAN

REV	REVISION DESCRIPTION	DRAWN	CHECK	AUTH	DATE	0.18/	REFERENCE	DRAWINGS
<p>APPROVED BY</p> <p>D DELLY</p> <p> <b>Eskom</b></p> <p>ESKOM HOLDINGS LIMITED</p> <p>REG No</p> <p>2002/015527/06</p>								
DATE	02/06/2014							

CHECKED BY S BUCHNER		ESSELEN	
DATE 02/06/2014 DRAWN BY JE BUCHNER		88KV NATIONAL EPP BYPASS DETAILS: SCHEDULES AND NOTES	
DATE 29/05/2014 SCALE N T S		0.18/17324	
		SHEET NUMBER 4	REVISION 1

SIZE GROUPE	14	15	16
A			