

- NOTES:**
- REFER TO S01-02-03-11, S01-02-03-12 OR S01-02-03-13 FOR UNDERGROUND EARTHING DETAILS. IF EARTHING RESISTANCE EXCEEDS 30 OHMS WITH ALL CMEN/MEN CONNECTIONS REMOVED, THE POLE NEEDS TO BE ASSESSED IN ACCORDANCE WITH EG0/AS7000.
 - BOND SWITCH EARTH TO NEAREST SURGE ARRESTOR EARTH STUD VIA 70 SQMM YELLOW/GREEN INSULATED COPPER CABLE.
 - FIT SERVICE FUSE HOLDER WITH 63A FUSE.
 - REFER TO SHEET 2 FOR ALTERNATIVE POWER SUPPLY ARRANGEMENTS.
 - RUN THE CONTROL CABLE UP THE MIDDLE OF THE POLE, EXCESS CONTROL CABLE TO BE LOOPED NEAR THE SWITCH.
 - FOR A NON-AUTOMATED INSTALLATION, ITEMS 12, 17, 18, 19 AND 20 ARE NOT REQUIRED.
 - FOR DETAILS ON SCADA AND COMMUNICATIONS REQUIREMENTS, REFER TO S01-02-07-16.
 - CONTROL BOX POWER SUPPLY CABLE SHALL BE PROTECTED BY 20MM DIAMETER ANACONDA CONDUIT SECURED WITH HALF SADDLES TO THE POLE AT 1000MM INTERVALS. ALL OPEN ENDS OF CONDUITS SHALL BE POINTING TOWARDS THE GROUND.
 - SOURCE LV SUPPLY FROM A TRANSFORMER WHICH IS UPSTREAM OF THE SWITCH.
 - THE USE OF ITEM 7 REMOTE NGK GBS AND CONTROL BOX IS PUT ON HOLD UNTIL FURTHER NOTICE. USE ITEM 23 MANUAL OPERATION NGK GBS FOR NEW INSTALLATIONS.
 - A CLEARANCE OF 1800mm IS REQUIRED ON ALL GREENFIELD INSTALLATIONS THIS REQUIREMENT DOES NOT APPLY TO BROWN FIELD INSTALLATIONS UNLESS THE CLEARANCE CAN BE ACHIEVED WITHOUT POLE REPLACEMENT.

ITEM	QTY	DESCRIPTION	ITEM No.	DWG NUMBER
14	2	22KV POST TOP INSULATOR STUD	300517	S01-01-04-44
13	2	22KV POST TOP INSULATOR	300467	S01-01-03-10
12	1	LV SERVICE FUSE HOLDER	241109	S01-01-04-49
11	1	LV TRANSFORMER AND CABLE TERMINATION 4 WIRE	298604	S01-01-02-12
10	4	FLAT CROSSARM BRACES	298687	S01-02-01-49
9	4	LV INSULATOR PINS TYPE LP AND LPN	-	S01-02-01-03
8	1	LINE POLE	-	-
7	1	REMOTE OPERATED NGK GBS (REFER NOTE 10)	400812	S01-01-06-17
6	6	HV SURGE ARRESTORS	-	S01-01-04-19
5	1	NGK GBS HANGING BRACKET	400813	S01-01-06-17
4	1	FIBREGLASS HV TERMINATION CROSSARM	414398	S01-01-02-10
3	2	FIBREGLASS CROSSARM SHACKLE PLATE	406938	S01-01-04-37
2	6	22KV STRAIN INSULATOR ASSEMBLY	-	S01-01-03-09
1	6	DISCONNECT TEE	2295	S01-01-04-10

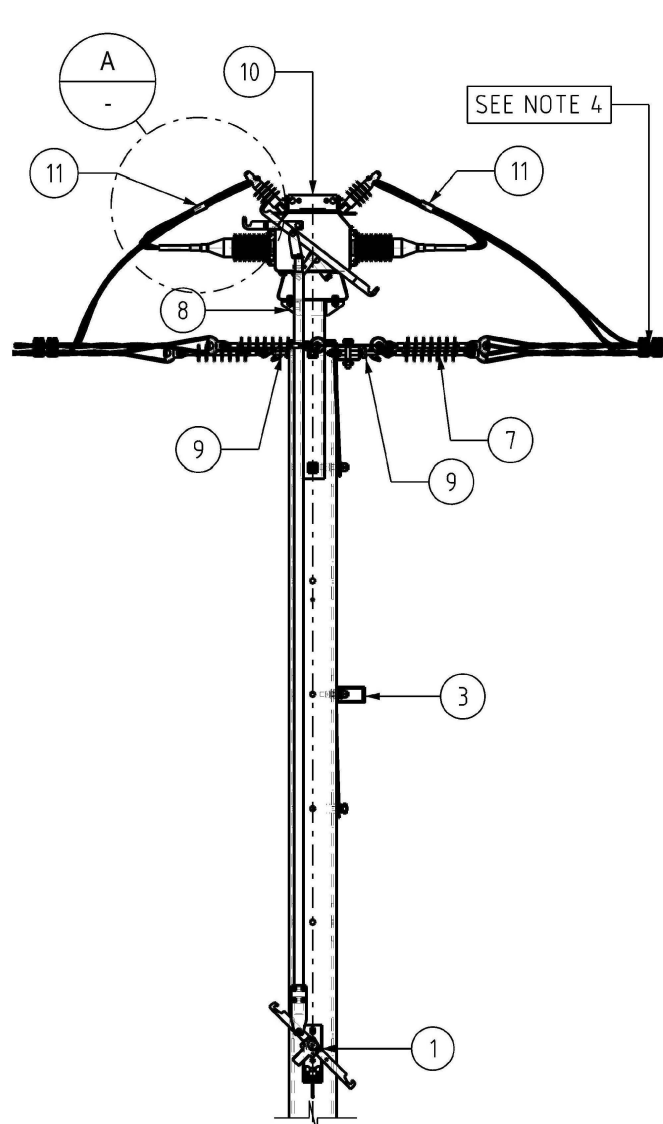
ITEM	QTY	DESCRIPTION	ITEM No.	DWG NUMBER
24	1	5 WIRE LV TX CROSSARM	406610	S01-01-02-20
23	1	MANUAL OPERATION NGK GBS (REFER NOTE 10)	400823	S01-01-06-17
22	2	SURGE ARRESTOR MOUNT	413103	S01-01-06-17
21	AR	70 SQMM YELLOW/GREEN INSULATED COPPER CABLE	401059	S02-01-01-23
20	1	63 AMP SERVICE FUSE	10322	-
19	AR	20MM ANACONDA CONDUIT FOR POWER SUPPLY CABLE	-	-
18	AR	2.5 SQMM LV INSULATED CABLE FOR POWER SUPPLY	2725	S02-01-01-14
17	1	NGK GBS CONTROL ENCLOSURE, INCLUDES BATTERY, BATTERY CHARGER, RADIO AND 10M OF CONTROL CABLE	402362	-
16	12	BELL MOUTHED LUGS FOR 150 SQMM FLEX CABLE	402692	S02-01-02-11
15	AR	150 SQMM EPR INSULATED FLEXBLE COPPER CABLE	300368	S02-01-01-34

NO	DESCRIPTION	DRN	DATE	CKD	APPD
25	AMENDED SHEET 2.	P.BH.	AUG'23	B.V.	B.C.
24	AMENDED SHEET 2.	P.BH.	JUN'23	B.V.	B.C.
23	AMEND SHEET 2	C.C.	MAR'22	B.V.	B.C.
22	SHEET 2 AMENDED.	C.C.	MAY'21	B.V.	B.C.
21	SHEET 3 AMENDED.	H.E.	OCT'20	B.V.	B.C.
20	SHEETS 4 & 5 WATERMARK ADDED	CWM	JUN'20	B.V.	H.E.
19	PAGE 4 & 5 ADDED. PAGE 3 UPDATED	H.E.	MAR'20	B.C.	B.C.
18	ITEM 11 UPDATED.	K.T.	FEB'20	B.C.	H.E.
17	TITLEBLOCK & DRAWING NUMBER FORMATTED.	C.C.	JAN'19	C.C.	C.C.
16	LV ARM AMENDED & SHEET 1,2,3.	I.B.	OCT'18	B.V.	B.C.

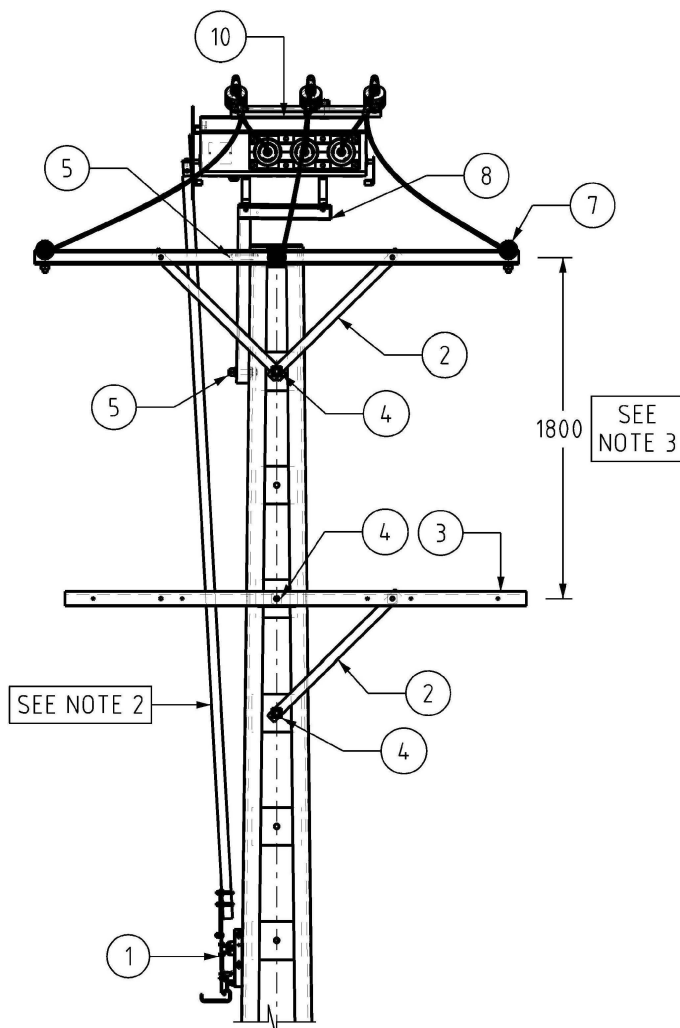

PowerWater
 NORTHERN TERRITORY

DES		POWER STANDARD DRAWING	
DES	A.TAYLOR	ASSEMBLIES FOR UNIVERSAL POLE CONSTRUCTION SF6 GAS LOAD BREAK SWITCH (SHEET 1 OF 5)	
DRN	J.COPPINS	SCALE	N.T.S.
CKD	A.TAYLOR	ISSUED	MARCH 2011
APPD	A.TAYLOR	ALL DIM. IN mm	A3
DRAWING NUMBER		S01-02-07-11_1	
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	

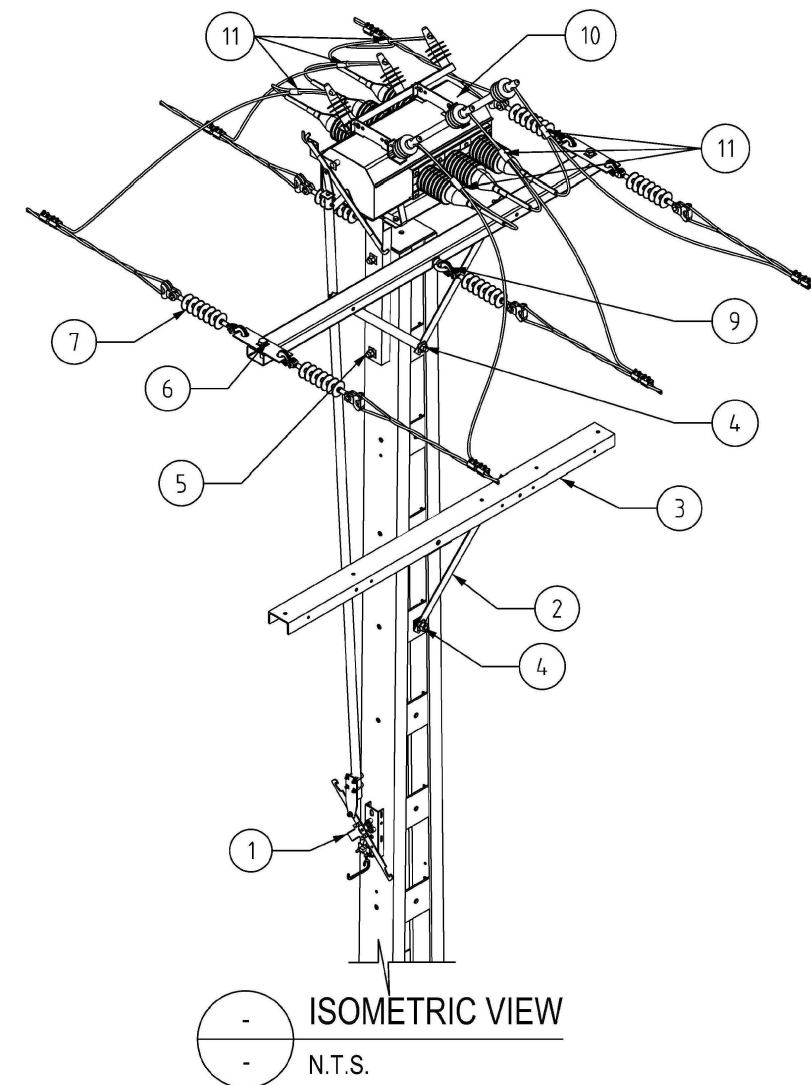
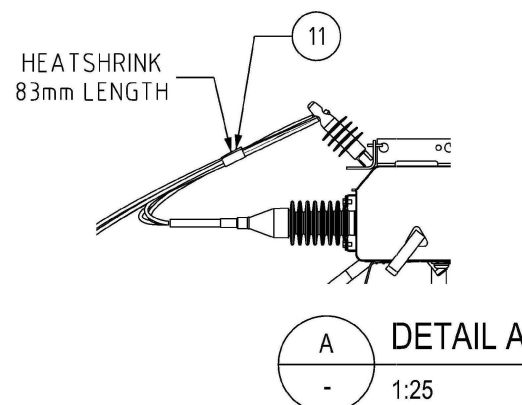




FRONT VIEW
1:40



SIDE VIEW
1:40



ISOMETRIC VIEW
N.T.S.

NOTES:

1. THE PREFERRED OPTION IS TO INSTALL THE MANUAL OPERATION STANDARD GBS OVER THE MANUAL OPERATION COMPACT GBS WHEN AVAILABLE.
2. ACTUATION ARM SHALL BE USED ON POLES 13.5 METERS AND ABOVE
3. A CLEARANCE OF 1800MM BETWEEN HV AND LV CROSSARMS IS REQUIRED ON ALL GREENFIELD INSTALLATIONS. THIS REQUIREMENT DOES NOT APPLY TO BROWNFIELD INSTALLATIONS UNLESS THE CLEARANCE CAN BE ACHIEVED WITHOUT POLE REPLACEMENT
4. TEE CONNECTOR ARE REQUIRED ON ALL BACK BONE FEEDERS.
5. HOT DIPPED GALVANISED CROSSARMS TO BE USED ON WELDED CONSTRUCTIONS REFER S01-01-02-20
6. IN ORDER TO MAINTAIN CABLE ALIGNMENT & CLEARANCES, USE HEATSHRINK FROM THE SAME PHASE BETWEEN AERIALS & LIGHTNING ARRESTERS, AND LIGHTNING ARRESTERS & HV BUSHINGS.

ITEM	QTY	DESCRIPTION	ITEM NUMBER	DRG. REF.
11	2	HEATSHRINK 75-22mm DIAMETER, 250mm LENGTH	3269	S02-01-02-15
10b	1	MANUAL OPERATION COMPACT GBS	504665	S01-01-06-17
10a	1	MANUAL OPERATION STANDARD GBS	400823	S01-01-06-17
9	2	18KN EYE NUT	298711	S01-01-04-41
8	1	NGK GBS TOP MOUNTED BRACKET	504548	S01-01-06-19
7	3	22KV 70KN STRAIN INSULATOR ASSEMBLIES	-	S01-01-03-09
6	2	SHACKLE STRAP	406938	S01-01-04-37
5	3	M24 THREAD ROD	300152	S01-01-04-43
4	3	M24 BOLT 50MM LONG	114629	S01-01-04-43
3	1	LV -TX CROSSARM	298604	S01-01-02-12
2	3	ANGLE CROSS ARM BRACE	414398	S01-02-01-52
1	1	ACTUATION ARM (4m)	504461	S01-01-04-56
	1	ACTUATION ARM (6M) FOR POLES >16.5M	504462	S01-01-04-56

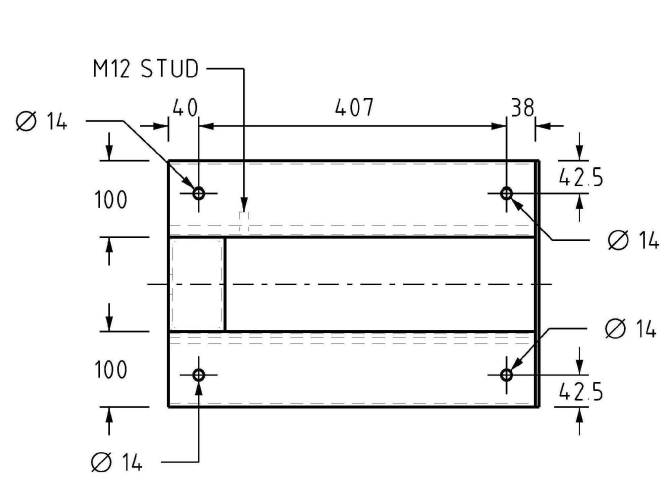
MATERIAL SCHEDULE

NO	DESCRIPTION	DRN	DATE	CKD	APPD
5	AMENDED ITEM 11. ADVISED HEATSHRINK LENGTH.	P.BH.	AUG'23	B.V.	B.C.
4	CORRECTED ITEM NUMBER OF ITEM 10b.	P.BH.	JUN'23	B.V.	B.C.
3	AMEND NOTE 1. ADD MANUAL OPERATION COMPACT GBS AS AN OPTION.	C.C.	MAR'22	B.V.	B.C.
2	ADDED NOTE 6 & ITEM 11.	C.C.	MAY'21	B.V.	B.C.
1	TITLE UPDATED.	H.E.	JUN'20	B.V.	H.E.
0	ISSUED FOR CONSTRUCTION.	C.C.	MAY'20	B.V.	B.C.

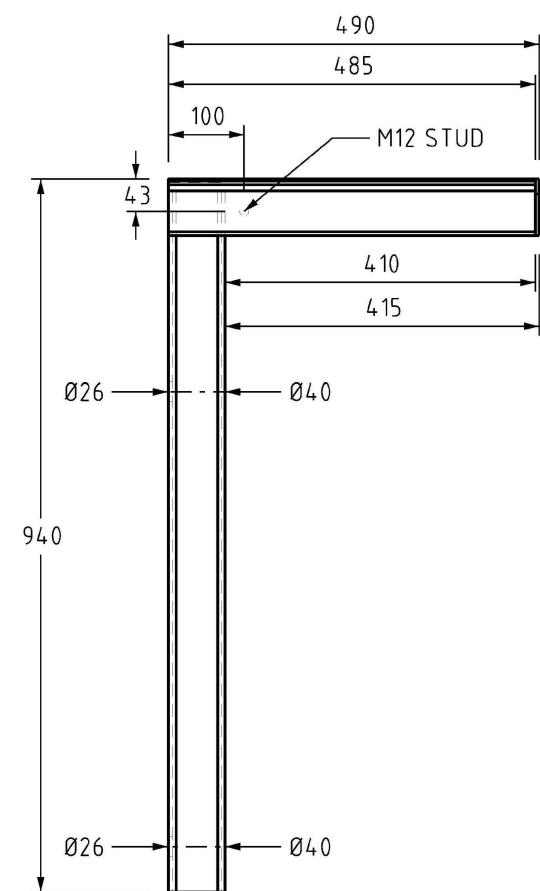
AMENDMENTS



DES	B.CHEUNG	POWER STANDARD DRAWING		
DRN	C.COPPINS	ASSEMBLIES FOR UNIVERSAL POLE CONSTRUCTION SF6 GBS TOP MOUNT ARRANGEMENT WITH ACTUATION ARM INSTALLATION DETAILS (SHEET 2 OF 5)		
CKD	B.VANDERSTELT	A3	DRAWING NUMBER	S01-02-07-11_2
APPD	B.CHEUNG			
SCALE	AS SHOWN	CAD PRODUCT - DO NOT AMEND MANUALLY		
ISSUED	MAY 2020	AMDT		
ALL DIM. IN mm				
DRAFTING STANDARD TO A.S.1100				



TOP VIEW
1:10

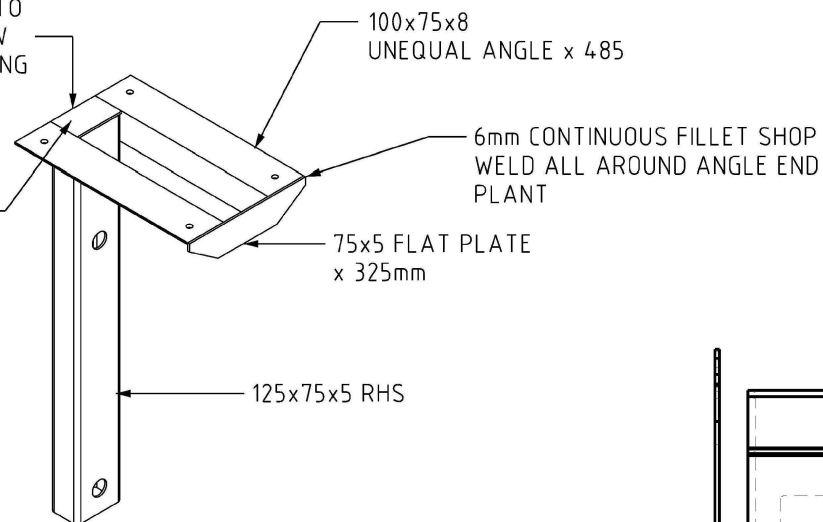


FRONT VIEW
1:10

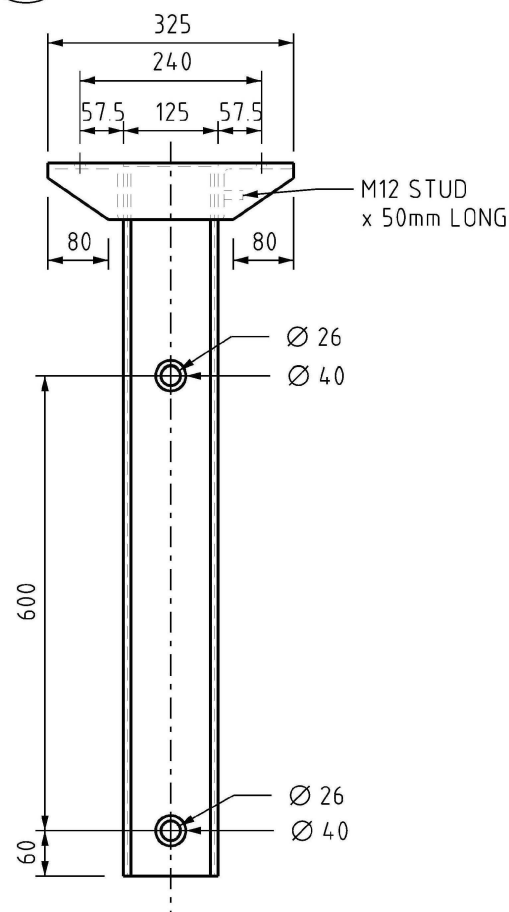
NGK GBS TOP MOUNTED BRACKET

5mm CAP PLATE FULLY WELDED TO TOP AND BOTTOM OF RHS, ALLOW FOR WEEP HOLES FOR GALVANISING

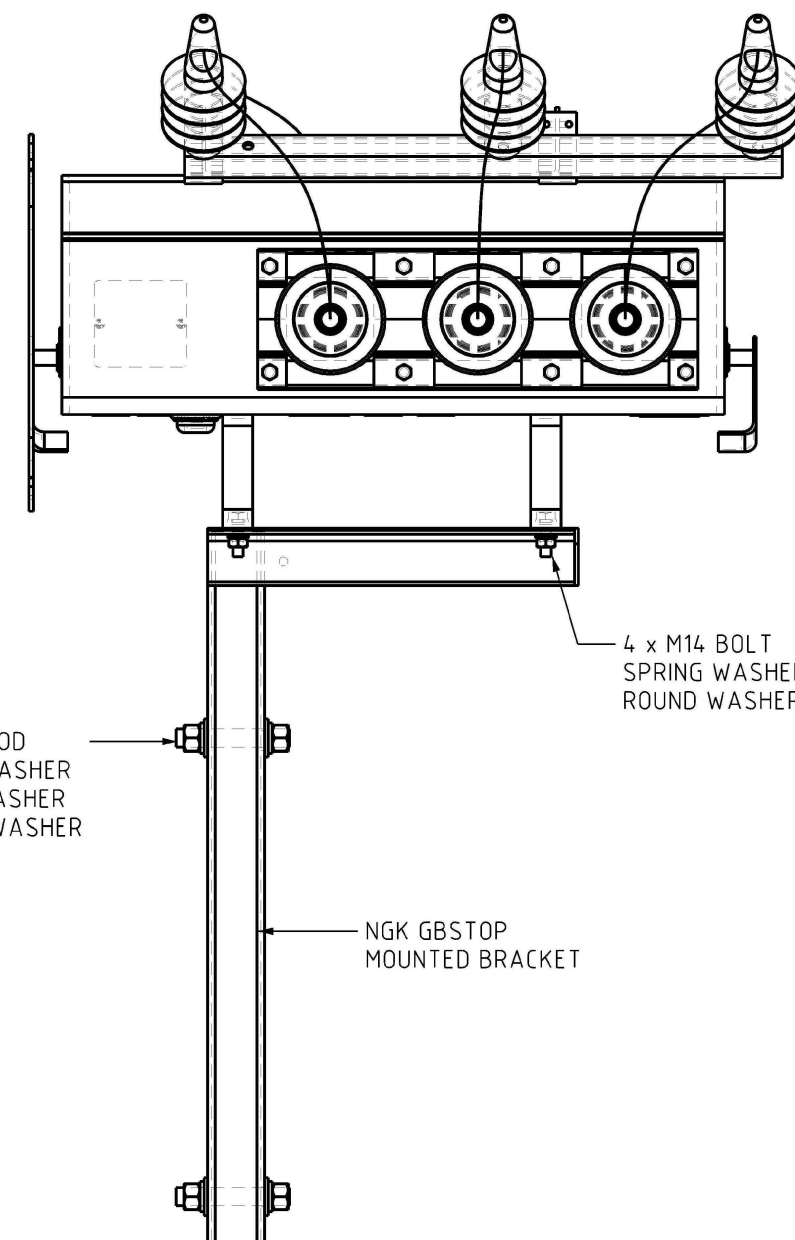
6mm CONTINUOUS FILLET SHOP WELD ALL AROUND ANGLE TO RHS



ISOMETRIC VIEW
N.T.S.



SIDE VIEW
1:10



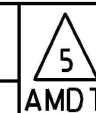
TOP MOUNT ARRANGEMENT

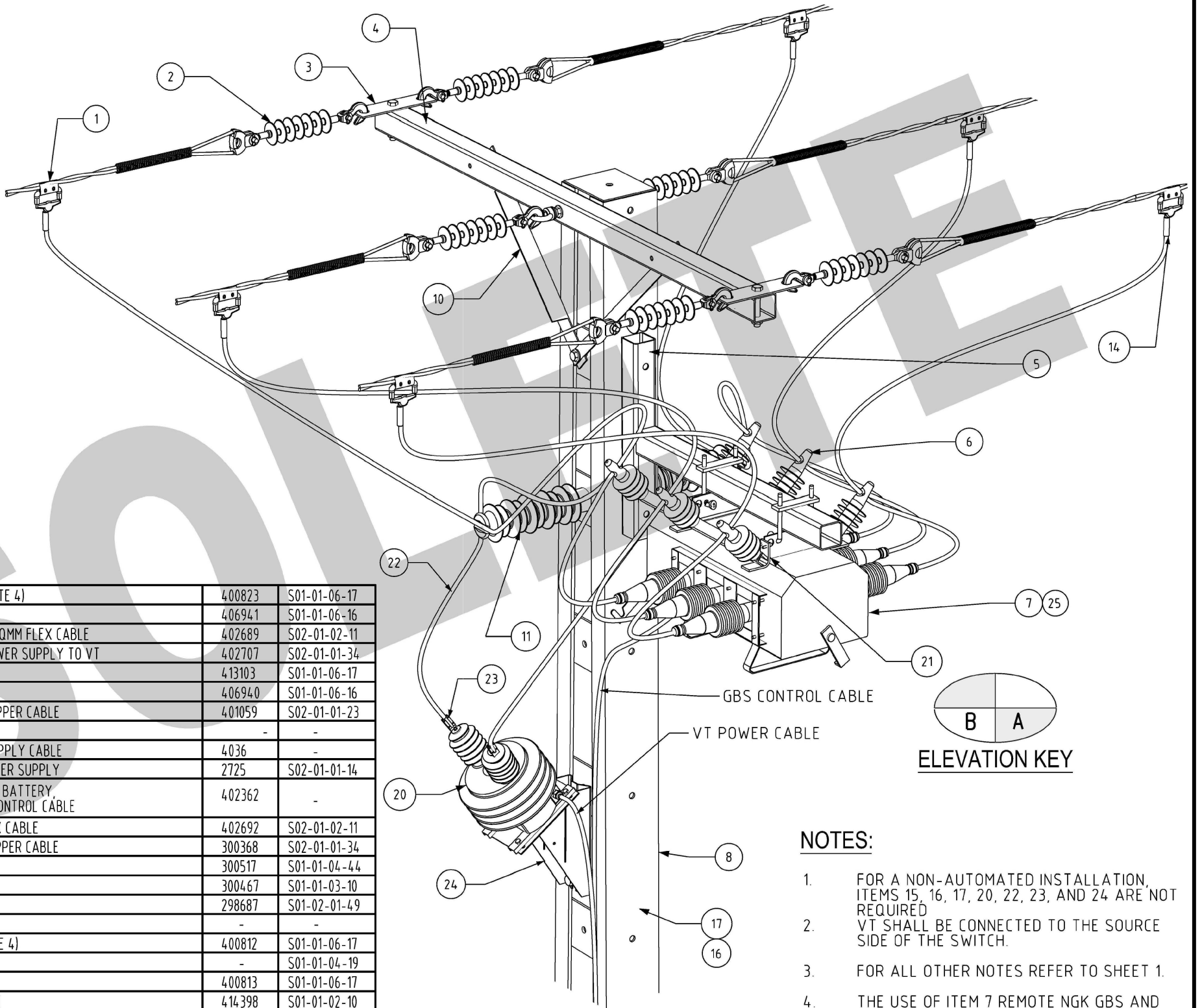
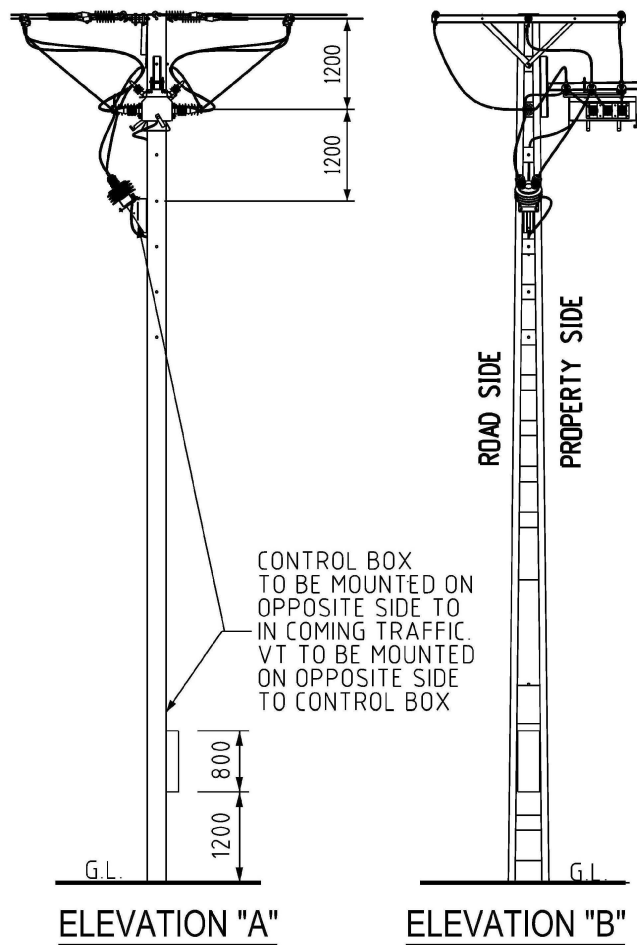
SCALE 1:10

NO	DESCRIPTION	DRN	DATE	CKD	APPD
5	AMENDED SHEET 2.	P.BH.	AUG'23	B.V.	B.C.
4	AMENDED SHEET 2.	P.BH.	JUN'23	B.V.	B.C.
3	AMEND SHEET 2.	C.C.	MAR'21	B.V.	B.C.
2	HOLE DIMENSION AMENDED	C.C.	OCT'20	B.V.	B.C.
1	TITLE UPDATED	H.E.	JUN'20	B.V.	H.E.
0	ISSUED FOR CONSTRUCTION	C.C.	MAY'20	B.C.	B.V.
AMENDMENTS					

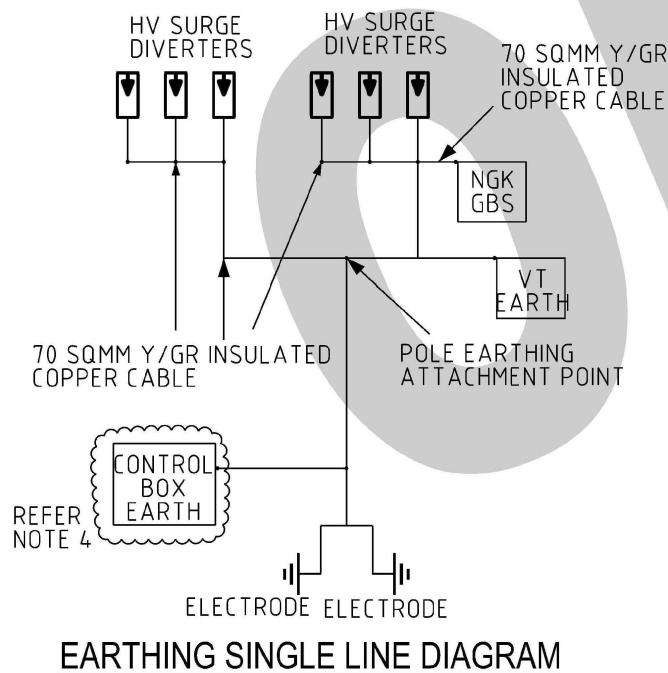


DES		POWER STANDARD DRAWING	
DES	B.CHEUNG	ASSEMBLIES FOR UNIVERSAL POLE CONSTRUCTION	
DRN	C.COPPINS	SF6 GBS TOP MOUNT ARRANGEMENT WITH ACTUATION	
CKD	B.CHEUNG	ARM INSTALLATION DETAILS	
APPD	B.VANDERSTELT	(SHEET 3 OF 5)	
SCALE	AS SHOWN	A3	DRAWING NUMBER
ISSUED	MAY 2020		S01-02-07-11_3
ALL DIM. IN mm			
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	





ITEM	QTY	DESCRIPTION	ITEM NUMBER	DWG No.
25	1	MANUAL OPERATION NGK GBS (REFER NOTE 4)	400823	S01-01-06-17
24	1	VT MOUNTING ADAPTOR BRACKET	406941	S01-01-06-16
23	4	COMPRESSION LUG, BELL MOUTH FOR 35SQMM FLEX CABLE	402689	S02-01-02-11
22	AR	35SQMM FLEX INSULATED CABLE, HV POWER SUPPLY TO VT	402707	S02-01-01-34
21	2	SURGE ARRESTOR MOUNT	413103	S01-01-06-17
20	1	VOLTAGE TRANSFORMER	406940	S01-01-06-16
19	AR	70 SQMM YELLOW/GREEN INSULATED COPPER CABLE	401059	S02-01-01-23
18	-	-	-	-
17	AR	20MM DIAMETER CONDUIT FOR POWER SUPPLY CABLE	4036	-
16	AR	2.5 SQMM LV INSULATED CABLE FOR POWER SUPPLY	2725	S02-01-01-14
15	1	NGK GBS CONTROL ENCLOSURE, INCLUDES BATTERY, BATTERY CHARGER, RADIO AND 10M OF CONTROL CABLE	402362	-
14	12	BELL MOUTHED LUGS FOR 150 SQMM FLEX CABLE	402692	S02-01-02-11
13	AR	150 SQMM EPR INSULATED FLEXIBLE COPPER CABLE	300368	S02-01-01-34
12	2	22KV POST TOP INSULATOR STUD	300517	S01-01-04-44
11	2	22KV POST TOP INSULATOR	300467	S01-01-03-10
10	4	FLAT CROSSARM BRACES	298687	S01-02-01-49
8	1	LINE POLE	-	-
7	1	REMOTE OPERATED NGK GBS (REFER NOTE 4)	400812	S01-01-06-17
6	6	HV SURGE ARRESTORS	-	S01-01-04-19
5	1	NGK GBS HANGING BRACKET	400813	S01-01-06-17
4	1	FIBREGLASS HV TERMINATION CROSSARM	414398	S01-01-02-10
3	2	FIBREGLASS CROSSARM SHACKLE PLATE	406938	S01-01-04-37
2	6	22KV STRAIN INSULATOR ASSEMBLY	-	S01-01-03-09
1	6	DISCONNECT TEE	2295	S01-01-04-10
ITEM	QTY	DESCRIPTION	ITEM NUMBER	DWG No.



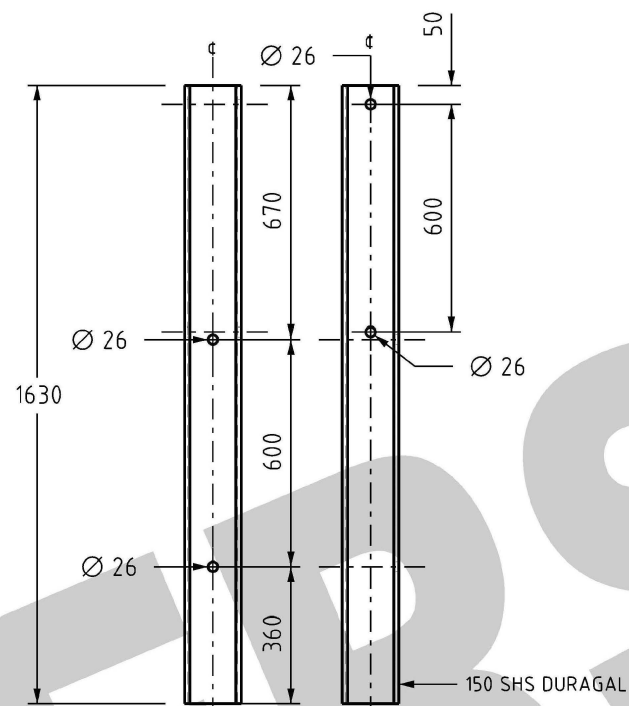
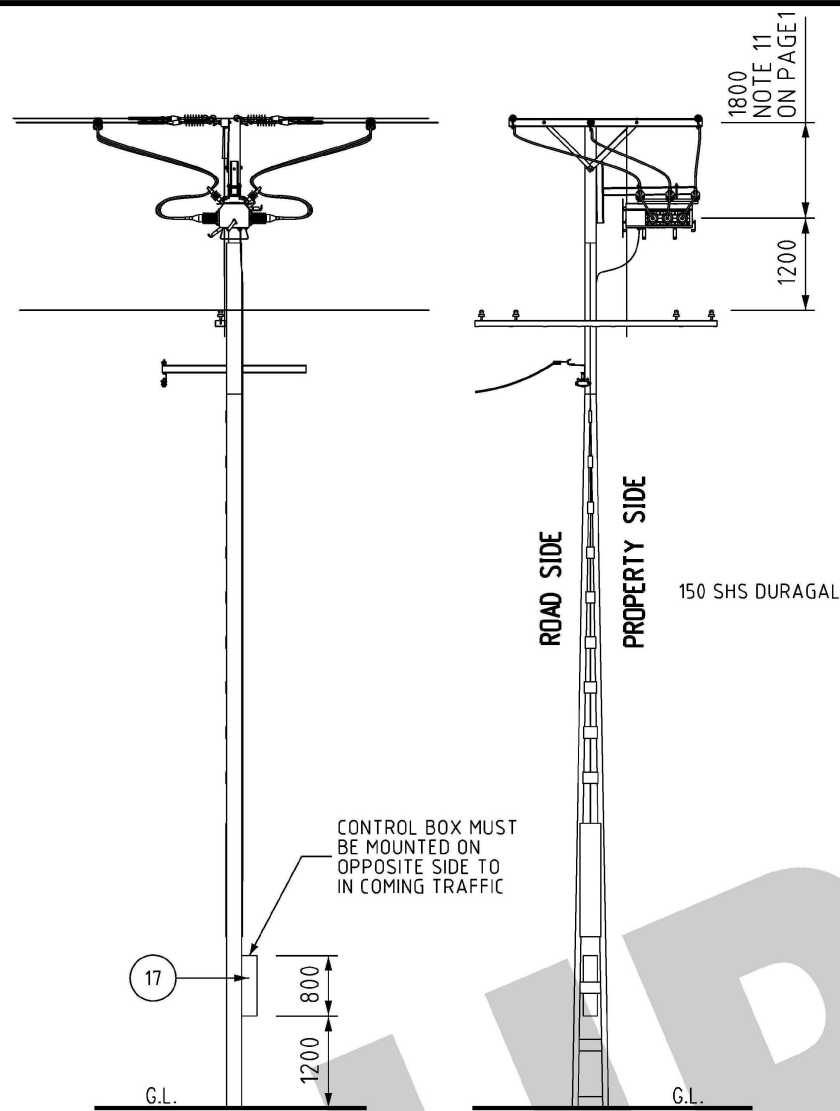
- NOTES:**
- FOR A NON-AUTOMATED INSTALLATION, ITEMS 15, 16, 17, 20, 22, 23, AND 24 ARE NOT REQUIRED
 - VT SHALL BE CONNECTED TO THE SOURCE SIDE OF THE SWITCH.
 - FOR ALL OTHER NOTES REFER TO SHEET 1.
 - THE USE OF ITEM 7 REMOTE NGK GBS AND CONTROL BOX IS PUT ON HOLD UNTIL FURTHER NOTICE. USE ITEM 25 MANUAL OPERATION NGK GBS FOR NEW INSTALLATIONS.

NO	DESCRIPTION	DRN	DATE	CKD	APPD
14	AMENDED SHEET 2.	P.BH.	AUG'23	B.V.	B.C.
13	AMENDED SHEET 2.	P.BH.	JUN'23	B.V.	B.C.
12	AMEND SHEET 2.	C.C.	MAR'22	B.V.	B.C.
11	WATERMARK ADDED. TITLE UPDATED	H.E.	JUN'20	B.V.	H.E.
10	PAGE 4 & 5 ADDED. PAGE 3 UPDATED.	C.C.	MAY'20	B.V.	B.C.
9	TITLEBLOCK & DRAWING NUMBER FORMATTED	K.T.	JAN'19	C.C.	C.C.
8	SHEET 1,2,3 AMENDED	C.C.	OCT'18	B.V.	B.C.
7	ITEM 25 & NOTE 4 ADDED, ELEVATION 'B' AMENDED	C.C.	JUL'13	B.C.	B.C.
6	ITEMS 22, 23, 24 AND NOTE 1 ADDED, ITEM 3, 4 CHANGED	C.C.	NOV'11	B.C.	S.C.
5	ITEM 18 REMOVED, NOTE 3 CHANGED	C.C.	SEP'11	B.C.	S.C.



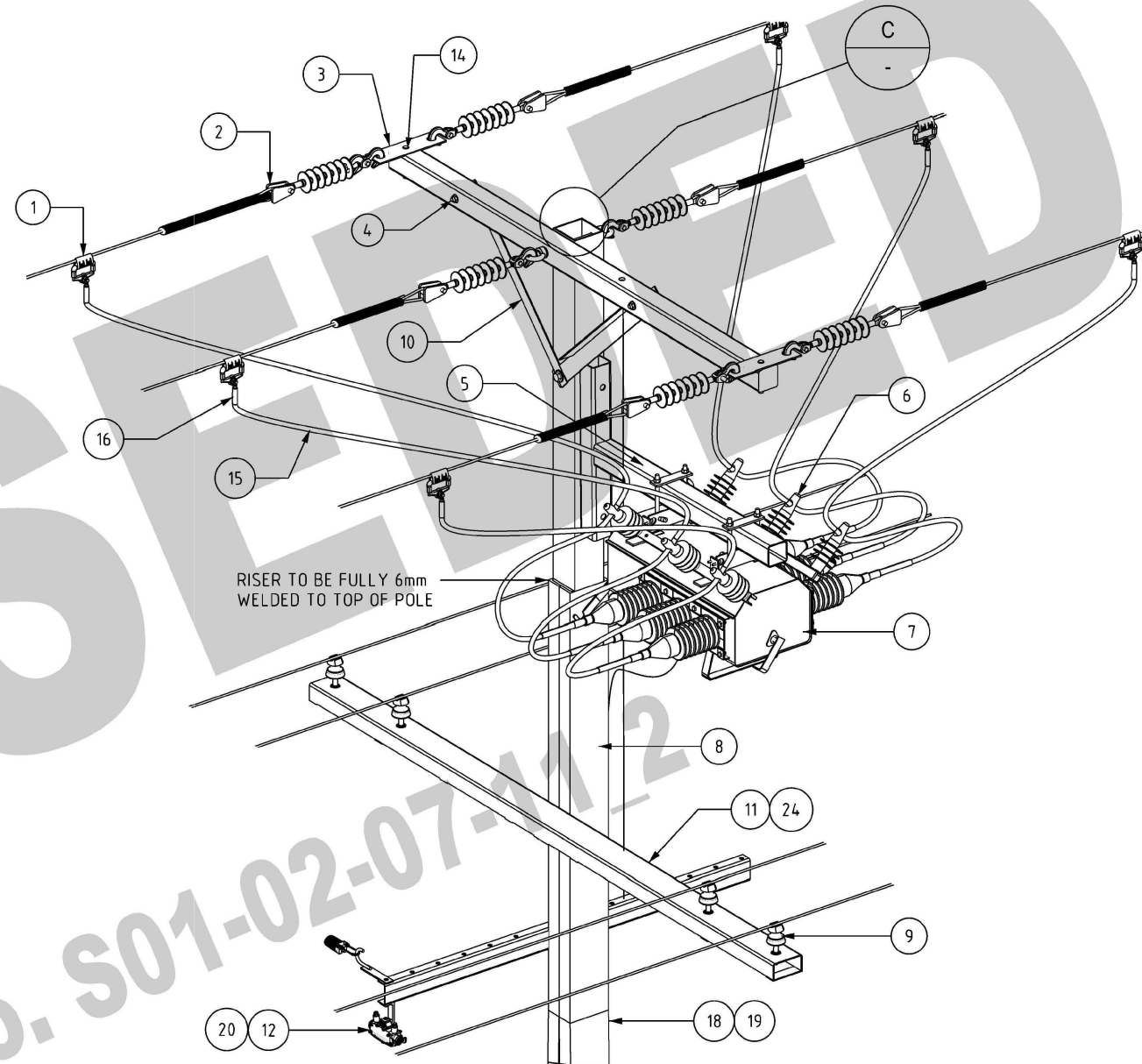
DES		POWER STANDARD DRAWING	
DES	A.TAYLOR	ASSEMBLIES FOR UNIVERSAL POLE CONSTRUCTION SF6 GAS LOAD BREAK SWITCH (SHEET 4 OF 5)	
DRN	J.COPPINS	SCALE	N.T.S.
CKD	A.TAYLOR	ISSUED	MARCH 2011
APPD	A.TAYLOR	ALL DIM. IN mm	A3
DRAWING NUMBER		S01-02-07-11_4	
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	



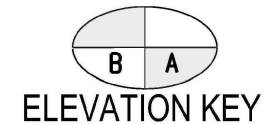


DETAIL "C"
1:20

NOTES
1 REFER TO SHEET 1 FOR ALL NOTES

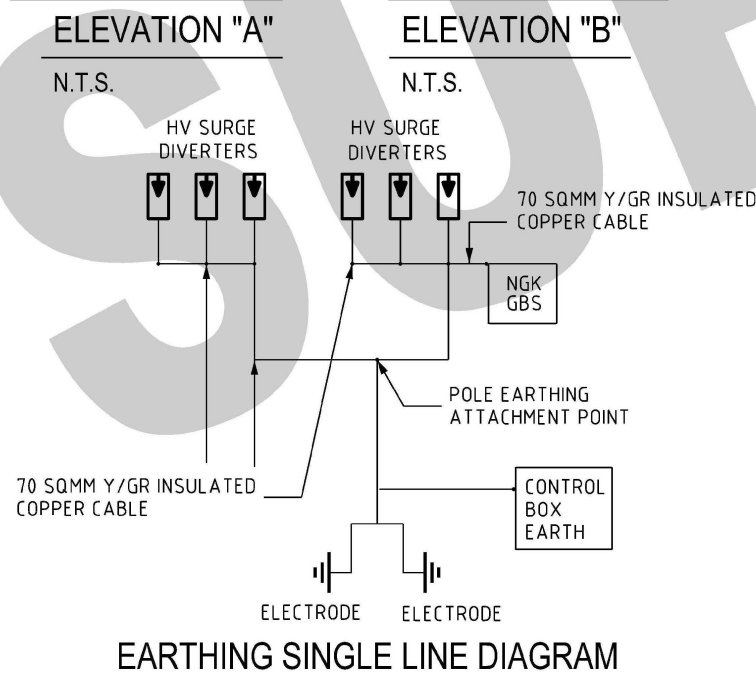


ISOMETRIC VIEW
CONTROL CABLE NOT SHOWN FOR CLARITY



ITEM	QTY	DESCRIPTION	ITEM NUMBER	DWG NUMBER
15	AR	150 SQMM EPR INSULATED FLEXIBLE COPPER CABLE	300368	S02-01-01-34
14	2	M24 BOLT 200 LONG	415095	S01-01-04-43
12	1	LV SERVICE FUSE HOLDER	241109	S01-02-01-49
11	1	4 WIRE LV TX CROSSARM GALV	411558	S01-01-02-12
10	2	CROSSARM ANGLE BRACES	400815	S01-02-01-49
9	4	LV INSULATOR PINS TYPE LP AND LPN	-	S01-02-01-03
8	1	LINE POLE WELDED TYPE	-	-
7	1	REMOTE OPERATED NGK GBS	400812	S01-01-06-17
6	6	HV SURGE ARRESTORS	-	S01-01-04-19
5	1	125x125x1200x6 SHS DURAGAL GBS HANGING BRACKET	400813	S01-01-06-17
4	1	FIBREGLASS HV TERMINATION CROSSARM	414398	S01-01-02-10
3	2	FIBREGLASS CROSSARM SHACKLE PLATE	406938	S01-01-04-37
2	6	22KV STRAIN INSULATOR ASSEMBLY	-	S01-01-03-09
1	6	DISCONNECT TEE	2295	S01-01-04-10

ITEM	QTY	DESCRIPTION	ITEM NUMBER	DWG NUMBER
24	1	5 WIRE TX CROSSARM GALV	411546	S01-01-02-20
23	1	150x150x1480x6 SHS DURAGAL HV RISER	DETAIL "C"	S01-02-07-11_3
22	2	SURGE ARRESTOR MOUNT	413103	S01-01-06-17
21	AR	70 SQMM YELLOW/GREEN INSULATED COPPER CABLE	401059	S02-01-01-23
20	1	10 AMP SERVICE FUSE	-	-
19	-	ANACONDA CONDUIT FOR POWER SUPPLY CABLE	-	-
18	-	LV INSULATED CABLE FOR POWER SUPPLY	-	-
17	1	NGK GBS CONTROL ENCLOSURE, INCLUDES BATTERY, BATTERY CHARGER, RADIO, CONTROL AND POWER CABLE	402362	-
16	12	BELL MOUTHED LUGS FOR 150 SQMM FLEX CABLE	402692	S02-01-02-11



EARTHING SINGLE LINE DIAGRAM

NO	DESCRIPTION
10	AMENDED SHEET 2.
9	AMENDED SHEET 2.
8	AMEND SHEET 2.
7	WATERMARK ADDED. TITLE UPDATED
6	ITEM 24 & PAGE 4 & 5 ADDED. ITEM 13 REMOVED & ITEM 14 AMENDED.
5	TITLEBLOCK & DRAWING NUMBER FORMATTED
4	SWITCH SIDE AMENDED & SHEET 1,2,3
3	ITEM 20 UPDATED, NOTES MOVED TO SHEET 1
2	ISSUED FOR CONSTRUCTION
1	NOTE 6 ADDED

DRN	DATE	CKD	APPD
P.BH.	AUG'23	B.V.	B.C.
P.BH.	JUN'23	B.V.	B.C.
C.C.	MAR'22	B.V.	B.C.
H.E.	JUN'20	B.V.	H.E.
CWM	MAR'20	B.C.	B.C.
K.T.	JAN'19	C.C.	C.C.
C.C.	OCT'18	B.V.	B.V.
A.T.	NOV'11	B.C.	S.C.
A.T.	NOV'11	B.C.	S.C.
A.T.	AUG'11	B.N.	S.C.



DES		POWER STANDARD DRAWING	
A.TAYLOR		ASSEMBLIES FOR WELDED POLE CONSTRUCTION SF6 GAS LOAD BREAK SWITCH (SHEET 5 OF 5)	
DRN J.COPPINS			
CKD A.TAYLOR			
APPD A.TAYLOR			
SCALE AS SHOWN			
ISSUED MARCH 2011			
ALL DIM. IN mm		A3	DRAWING NUMBER S01-02-07-11_5
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	

