POLE DATA AND STRENGTH									WIND ON FACE (N)					
POLE DATA							POLE STRENGTH		TERRAIN CATEGORY 2				TERRAIN CATEGORY 1	
POLE TYPE (LINE)	LENGTH OF POLE	LENGTH IN GROUND	LENGTH ABOVE GROUND	MATERIAL SECTION	STANDARD DRAWING	ITEM NUMBER	MAX. PERMISSIBLE (kN) FORCE AT TOP OF POLE		REGION A AND B 1200 Pa		REGION C 1583 Pa		REGION C 2055 Pa	
METRES	METRES	METRES	METRES	mm			STRONG DIRECTION	WEAK DIRECTION	STRONG DIRECTION	WEAK DIRECTION	STRONG DIRECTION	WEAK DIRECTION	STRONG DIRECTION	WEAK DIRECTION
9.0 SERVICE	9.000	1.700	7.300	165 x 4.9 CHS	S01-01-01-39	8938	-	-	623		717		785	
10.5 SERVICE	10.500	1.700	8.800	165 x 4.9 CHS	S01-01-01-39	8920	-	-	751		865		946	
10.5 B	10.500	1.800	8.700	150 x 75 PFC	S01-01-01-08 S01-01-01-31	298448 503619	15.8	4.7	1739	1972	2294	2602	2979	3378
10.5 C	10.500	1.800	8.700	200 x 75 PFC	S01-01-01-08 S01-01-01-31	299107 503624	20.7	8.1	2456	1972	3239	2602	4205	3378
10.5 D	11.850	3.150	8.700	250 x 90 PFC	S01-01-01-11 S01-01-01-32	298471 503630	32.5	14.5	3167	2298	4177	3032	5423	3936
12.0 B	12.000	2.000	10.000	150 x 75 PFC	S01-01-01-09 S01-01-01-33	298455 503620	13.8	4.1	1998	2206	2635	2910	3421	3777
12.0 C	12.000	2.000	10.000	200 x 75 PFC	S01-01-01-09 S01-01-01-33	299115 503628	18.0	7.1	2810	2206	3706	2910	4811	3777
12.0 D	13.150	3.150	10.000	250 x 90 PFC	S01-01-01-12 S01-01-01-34	298489 503625	28.6	12.6	3634	2607	4793	3439	6223	4465
13.5 B	13.500	2.100	11.400	150 x 75 PFC	S01-01-01-10 S01-01-01-35	298463 503627	12.2	3.6	2277	2459	3003	3244	3899	4211
13.5 C	13.500	2.100	11.400	200 x 75 PFC	S01-01-01-10 S01-01-01-35	299123 503627	15.9	6.2	3190	2459	4208	3244	5463	4211
13.5 D	14.550	3.150	11.400	250 x 90 PFC	S01-01-01-13 S01-01-01-36	298497 503629	25.7	11.1	4128	2936	5445	3873	7069	5027
15.0 B	15.000	2.500	12.500	150 x 75 PFC	S01-01-01-22	401336	12.1	2.9	2496	2666	3293	3517	4275	4565
15.0 C	15.000	2.500	12.500	200 x 75 PFC	S01-01-01-22	401342	14.6	4.6	3496	2666	4612	3517	5987	4565
15.0 D	15.656	3.150	12.506	250 x 90 PFC	S01-01-01-23	401342	25.7	8.8	4507	3274	5946	4319	7719	5607
16.5 D	16.500	3.150	13.350	250 x 90 PFC	S01-01-01-14	298505	21.6	10.1	4825	3451	6365	4552	8263	5910
18.5 D	18.500	3.500	15.000	250 x 90 PFC	S01-01-01-15	299396	32.4	8.4	5138	4462	6778	5887	8798	7642

NOTES:

1. DESIGN DATA COMPLIES WITH S01-04-04-01 POWER SERVICES, LINE/SERVICE POLE INSTALLATION, CIVIL WORKS

NO	DESCRIPTION	DRN	DATE	CKD	APPD
7	AMEND TABLE DATA AND DATA.	J.R.	SEP'25	B.B.	B.V.
6	AMEND TABLE DATA. ADD NOTE 1. AMEND SHEET 2.	C.C	FEB'22	B.V.	B.C.
5	COLUMN ADDED POLE LENGTH ABOVE GROUND	C.C.	FEB'19	I.B.	B.C.
4	DRAWING TITLE AMENDED	I.B.	SEP'02	A.T.	B.C.
3	WIND LOADING UPDATED	A.T.	SEP'02	B.C.	S.C.
2	ROUND POLE DATA ADDED	C.C.	SEP'02	A.T.	S.C.
1	DRAWING SPLIT INTO TWO SHEETS	A.S.	SEP'02	R.S.	S.C.
0	ISSUED FOR CONSTRUCTION	A.S.	SEP'02	M.B.	M.B.

AMENDMENTS

PowerWater
NORTHERN TERRITORY

DES	M.BOCK
DRN	C.COPPINS
CKD	M.BOCK
APPD	-
SCALE	N.T.S.
ISSUED	AUGUST 2002
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

DESIGN DATA
SINGLE AND TWO PIECE BOLTED POLES
POLE AND FOUNDATION STRENGTH
(SHEET 1 OF 3)

A3

DRAWING NUMBER S01-04-01-21__1

CAD PRODUCT - DO NOT AMEND MANUALLY

7 AMDT

POLE DATA AND STRENGTH							FOUNDATION STRENGTH - EQUIVALENT POLE TOP LOADING (kN)														
POLE DATA			POLE STRENGTH		DEFLECTION	SOIL TYPE	COHESIVE									COHESIONLESS					
POLE TYPE (LINE)	LENGTH OF POLE	MATERIAL SECTION	MAX. PERMISSIBLE (kN) FORCE AT TOP OF POLE		DEFLECTION AT TOP OF POLE AT MAX PERMISSIBLE LOAD STRING DIR. (mm)	SOIL QUALITY	GOOD			MEDIUM			POOR			GOOD			MEDIUM			POOR		
METRES	METRES	mm	STRONG DIRECTION	WEAK DIRECTION		DIA (mm)	750	900	1200	750	900	1200	750	900	1200	750	900	1200	750	900	1200	750	900	1200
10.5 B	10.500	150 x 75 PFC	15.8	4.7	103	Black square = geometrically incompatible	14.7	20.3	20.9	5.4	7.5	8.7	1.0	1.4	1.4	3.7	5.7	6.4	2.2	3.4	3.8	1.1	1.7	2.0
10.5 C	10.500	200 x 75 PFC	20.7	8.1	105		14.7	20.3	20.9	5.4	7.5	8.7	1.0	1.4	1.4	3.7	5.7	6.4	2.2	3.4	3.8	1.1	1.7	2.0
10.5 D	11.850	250 x 90 PFC	32.5	14.5	109		56.9	72.2	81.9	20.8	26.5	30.1	3.8	4.8	5.5	22.3	30.4	36.1	12.9	17.7	21.2	6.5	9.0	10.8
12.0 B	12.000	150 x 75 PFC	13.8	4.1	135		17.1	23.1	24.4	6.3	8.5	8.9	1.1	1.5	1.6	4.6	7.0	8.0	2.7	4.1	4.7	1.4	2.1	2.4
12.0 C	12.000	200 x 75 PFC	18.0	7.1	137		17.1	23.1	24.4	6.3	8.5	8.9	1.1	1.5	1.6	4.6	7.0	8.0	2.7	4.1	4.7	1.4	2.1	2.4
12.0 D	13.150	250 x 90 PFC	28.6	12.6	139		50.7	64.4	73.2	18.6	23.6	26.9	3.4	4.3	4.9	19.9	27.2	32.4	11.6	15.9	19.0	5.8	8.0	9.7
13.5 B	13.500	150 x 75 PFC	12.2	3.6	177		17.2	23.1	24.6	6.3	8.5	9.0	1.2	1.5	1.6	4.8	7.2	8.3	2.8	4.3	4.9	1.4	2.2	2.5
13.5 C	13.500	200 x 75 PFC	15.9	6.2	179		17.2	23.1	24.6	6.3	8.5	9.0	1.2	1.5	1.6	4.8	7.2	8.3	2.8	4.3	4.9	1.4	2.2	2.5
13.5 D	14.550	250 x 90 PFC	25.7	11.1	176		45.4	57.8	65.7	16.6	21.2	24.1	3.0	3.9	4.4	17.9	24.5	29.1	10.4	14.3	17.1	5.2	7.2	8.7
15.0 B	15.000	150 x 75 PFC	12.1	2.9	178		24.3	31.8	35.0	8.9	11.7	12.8	1.6	2.1	2.3	7.9	11.3	13.3	4.6	6.6	7.8	2.3	3.4	4.0
15.0 C	15.000	200 x 75 PFC	14.6	4.6	171		24.3	31.8	35.0	8.9	11.7	12.8	1.6	2.1	2.3	7.9	11.3	13.3	4.6	6.6	7.8	2.3	3.4	4.0
15.0 D	15.656	250 x 90 PFC	25.7	8.8	159		41.8	53.4	60.7	15.3	19.6	22.3	2.8	3.6	4.1	16.5	22.7	27.0	9.6	13.2	15.9	4.8	6.7	8.1
16.5 D	16.500	250 x 90 PFC	21.6	10.1	278		39.6	50.5	57.4	14.5	18.5	21.1	2.6	3.4	3.8	15.7	21.5	25.6	9.1	12.5	15.0	4.6	6.3	7.7
18.5 D	18.500	250 x 90 PFC	32.4	8.4	213				66.3			24.3			4.4			32.0			18.8			9.5

NOTES:

1. REFER TO SHEET 3 FOR FOUNDATION STRENGTH OF SERVICE POLE

NO	DESCRIPTION	DRN	DATE	CKD	APPD
7	SHEET 1 AMENDED DATA ADDED. PREVIOUS DATA TRANSFERRED TO SHEET 3.	J.R.	SEP'25	B.B.	B.V.
6	AMEND NOTE 9. DELETE IT SUPERSEDED CROSSARMS. AMENDED CROSSARM STRENGTH ITEM 298562, AMENDED.SHEET 1.	C.C.	FEB'22	B.V.	C.C.
5	AMENDED SHEET 2	C.C.	FEB'18	I.B.	B.C.
4	DRAWING SHEET 1 AMENDED	C.C.	MAY'18	I.B.	B.C.
3	DRAWING TITLE AMENDED, NOTES ADDED AND AMENDED	I.B.	MAY'16	A.T.	B.C.
2	NOTE 4 UPDATED	A.T.	MAY'12	B.C.	S.C.
1	DRAWING SPLIT INTO TWO SHEETS	A.S.	APR'07	R.S.	S.C.
0	ISSUED FOR CONSTRUCTION	A.S.	SEP'02	M.B.	M.B.

AMENDMENTS

PowerWater
NORTHERN TERRITORY

DES	M.BOCK
DRN	C.COPPINS
CKD	M.BOCK
APPD	-
SCALE	N.T.S.
ISSUED	AUGUST 2002
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

DESIGN DATA
SINGLE AND TWO PIECE BOLTED POLES
POLE AND FOUNDATION STRENGTH
(SHEET 2 OF 3)

A3

DRAWING NUMBER S01-04-01-21_2

7 AMDT

CAD PRODUCT - DO NOT AMEND MANUALLY

CROSSARM STRENGTHS AND DEFLECTION

CROSSARM DATA			CROSSARM STRENGTH	DEFLECTION
CROSSARM TYPE	ITEM NUMBER	MATERIAL SECTION (mm)	MAX. PERMISSIBLE FORCE AT EACH END OF CROSSARM (kN)	DEFLECTION AT MAX. FORCE (mm)
			STRONG DIRECTION	
LV - LINE 4 WIRE	298562	125 x 65 x 4 CC DURAGAL	8.2	6.4
LV - TRUNCATED DEVIATION	298570	150 x 75 x 5 CC DURAGAL	5.5	8.1
LV - TERMINATION 4 WIRE	298588	150 x 75 x 5 CC DURAGAL	8.9	3.1
LV - TRANSPOSITION & CABLE TERMINATION	298604	150 x 75 x 5 CC DURAGAL	5.8	7.3

GEOTECHNICAL CLASSIFICATION METHODOLOGY

SOIL GROUP	TYPE	STRENGTH OR CONSISTENCY	SOIL CHARACTERISTICS	MOISTURE CHARACTERISTICS
GOOD SOIL	COHESIVE (CLAY)	HARD	CAN BE INDENTED WITH DIFFICULTY BY THUMBNAIL.	SOILS WITH GOOD SURFACE WATER DRAINAGE AND FOOTING NORMALLY ABOVE THE WATER TABLE
	COHESIONLESS (SAND OR GRAVEL)	DENSE	WHEN COMPACTED IN SITU, FORMS SOME CLUMPS. TAKE A FOOTPRINT LESS THAN 10mm DEEP.	
MEDIUM SOIL	COHESIVE	STIFF	CANNOT BE MOULDED BY FINGERS. CAN BE INDENTED BY A THUMBNAIL.	SOILS WITH REASONABLE SURFACE WATER DRAINAGE.
	COHESIONLESS	MEDIUM DENSE	CRIMBLES IN HAND WITH SOME PRESSURE. TAKE A FOOTPRINT OF LESS THAN 10mm.	
POOR SOIL	COHESIVE	SOFT	CAN BE MOULDED BY LIGHT FINGER PRESSURE.	SOILS TEND TO ABSORB LARGE AMOUNT OF WATER, PROVIDED THESE DO NOT DEVELOP INTO SLUSH.
	COHESIONLESS	LOOSE	RUNS OR CRUMBLES VERY EASILY IN HAND. TAKES A FOOTPRINT MORE THAN 10mm DEEP.	
ROCK	VERY LOW STRENGTH		MATERIAL CRUMBLES UNDER FIRM BLOWS WITH THE SHARP END OF A PICK, CAN BE PEELED WITH A KNIFE, TOO HARD TO CUT A TRIAXIAL SAMPLE BY HAND. PIECES UP TO 30mm THICK CAN BE BROKEN BY FINGER PRESSURE.	
	LOW STRENGTH		EASILY SCORED WITH A KNIFE, INDENTATIONS 1mm TO 3mm SHOWN IN THE SPECIMEN WITH FIRM BLOWS OF THE PICK POINT, HAS A DULL SOUND UNDER THE HAMMER. A PIECE OF CORE 150mm LONG BY 50mm DIAMETER MAY BE BROKEN BY HAND. SHARP EDGES OF THE CORE MAY BE FRIABLE AND BREAK DURING HANDLING.	

NOTES:

1. REFER TO GEOTECHNICAL CLASSIFICATION METHODOLOGY TABLE FOR DEFINITION OF GOOD/MEDIUM/POOR SOIL AND ROCK.
2. FOUNDATION STRENGTHS ARE BASED ON A GEOTECHNICAL STRENGTH REDUCTION FACTOR OF 0.5 AND FOR DIAMETER OF 900mm AND ABOVE, FOUNDATION DEPTHS HAVE BEEN CALCULATED ASSUMING 200mm ADDITIONAL PILE LENGTH BELOW THE BOTTOM OF THE POLE (BESSER BLOCK WIDTH).
3. REGION C SYNOPTIC WIND LOADING IS TO BE USED WITHIN 50km OF COASTLINE. FOR OTHER REGIONS USE REGION A AND B WIND LOADING.
4. AT THE DISCRETION OF PWC'S APPROVAL, REFER DRAWING S01-04-01-17 FOR USE OF STAYS WHERE DESIGN POLE TOP LOADING EXCEEDS FOOTING OR POLE STRENGTH, AND FOR POLE WIND LOADS.
5. THE POLE AND FOUNDATION STRENGTH TABLES (SHEET 1 AND 2) APPLIES TO BOTH STANDARD ONE PIECE AND TWO PIECE BOLTED POLES.
6. AS STATED IN THE POLE AND FOUNDATION STRENGTH TABLES (SHEET 1 AND 2) THE MAXIMUM PERMISSIBLE POLE TOP FORCE EQUALS 50% OF PERMANENT DEFORMING FORCE FOR ALL POLE TYPES. THIS PERMANENT DEFORMING FORCE DOES NOT INCLUDE WIND LOADING ON POLE.
7. THE OVERALL CALCULATED FORCE SHALL NOT EXCEED THE MAXIMUM PERMISSIBLE VALUE STATED IN POLE AND FOUNDATION STRENGTH TABLES (SHEET 1 AND 2) FOR ANY POLE TYPE.
8. AS PER THE DESIGN GUIDELINES, DESIGN SHALL ALSO INCORPORATE THE FOLLOWING CRITERIA TO CALCULATE TENSION, SAG AND SPAN:
   - × MAX WIND SPEED AND PRESSURE IN THE SPECIFIC WIND REGION.
   - × MAX/MIN TEMPERATURE IN THE SPECIFIC REGION.
9. THE POLE SELECTION AND ITS PERFORMANCE SPECIFICATION (MAX PERMISSIBLE FORCE AT TOP OF POLE) SHALL ALWAYS EXCEED THE DESIGN CALCULATION (APPLY LIMIT STATE DESIGN AS7000).
10. THE POLE FOOTING DIAMETER SHALL BE EXCAVATED LARGE ENOUGH TO ENSURE THAT A MIN OF 100mm CONCRETE IS BETWEEN ALL STEEL SURFACES AND SURROUNDING SOIL EXCEPT AT CONCRETE BESSER BLOCK (REFER S01-04-04-01 POWER SERVICES, LINE/SERVICE POLE INSTALLATION, CIVIL WORKS).
11. GOVERNED BY POLE CAPACITY.

POLE DATA AND STRENGTH						SOIL TYPE	FOUNDATION STRENGTH - EQUIVALENT POLE TOP LOADING (kN)					
POLE DATA			POLE STRENGTH		DEFLECTION		COHESIVE			COHESIONLESS		
POLE TYPE (LINE)	LENGTH OF POLE	MATERIAL SECTION	MAX. PERMISSIBLE (kN) FORCE AT TOP OF POLE		DEFLECTION AT TOP OF POLE AT MAX PERMISSIBLE LOAD (mm)	SOIL QUALITY	GOOD	MEDIUM	POOR	GOOD	MEDIUM	POOR
METRES	METRES	mm	STRONG DIRECTION	WEAK DIRECTION		DIA (mm)	450	450	450	450	450	450
8938	9.000	165 O.D. x 4.9 THK.	3.0	3.0	240		3.0[11]	3.0[11]	0.8	2.6	1.5	0.8
8920	10.500	165 O.D. x 4.9 THK.	2.5	2.5	420		2.5[11]	2.5[11]	0.7	2.2	1.3	0.7

NO	DESCRIPTION	DRN	DATE	CKD	APPD
0	ADDED NEW SHEET. ADDED GEOTECHNICAL DATA.	J.R.	SEP'25	B.B.	B.V.

AMENDMENTS

PowerWater NORTHERN TERRITORY

DES	M.BOCK
DRN	C.COPPINS
CKD	M.BOCK
APPD	-
SCALE	N.T.S.
ISSUED	SEPTEMBER 2025
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

DESIGN DATA
SINGLE AND TWO PIECE BOLTED POLES
POLE AND FOUNDATION STRENGTH
(SHEET 3 OF 3)

A3

DRAWING NUMBER S01-04-01-21_3

CAD PRODUCT - DO NOT AMEND MANUALLY

0 AMDT