SECTION 10 - POLES

VERSION 2.3

SECTION 10 – POLES

10.1 Wood Poles – New Sizes – Pressure Impregnated Wood Poles

LENGTH (m)	Nominal Working Stress	Nominal Breaking Load	Stock Item No.	S3 Grade Timber		S4 Grade Timber		Approx. Dry Mass (kg)	Min. Sinking Depth (m) With FCR and NO drum	Min. Sinking Depth (m) With Natural Backfill or Drum foundation
				Min. Dia. Tip (mm)	Min. Dia. 2m from butt (mm)	Min. Dia. Tip (mm)	Min. Dia. 2m from butt (mm)			
9.5	4	17	325223	209	280	234	305	554	1.55	2.05
	6	25	325224	249	320	279	350	746	1.55	2.05
	8	33	325225	279	350	314	385	916	1.55	2.05
11.0	4	17	325232	208	293	236	320	681	1.7	2.2
	6	25	325233	251	335	286	370	937	1.7	2.2
	8	33	325234	286	370	321	405	1142	1.7	2.2
12.5	4	17	325240	215	310	245	340	853	1.85	2.35
	6	25	325241	260	355	280	385	1094	1.85	2.35
	8	33	325242	295	390	330	425	1400	1.85	2.35
14.0	4	17	325248	217	325	242	350	978	2.0	2.5
	6	25	325249	262	370	297	405	1361	2.0	2.5
	8	33	325250	297	405	337	445	1680	2.0	2.5
15.5	6	25	325261	266	385	301	420	1587	2.15	2.65
	8	33	325262	306	425	341	460	1949	2.15	2.65
	10	42		336	455	376	495	2244	2.15	2.65

Notes:

1. S3 grade timbers include species MS, BG and ST. S4 grade timbers include species AA, WP, MA and MN. Timber species can be determined from pole identification disk. If in doubt as to species or grade, assume S4.
2. Minimum sinking depths apply for poles that are either very lightly loaded or in ground such as rock or hard clay.
3. Minimum sinking depths apply when foundation is compacted at least every 500mm.

Pressure Impregnated Wood Poles – Old Sizes

LENGTH (m)	NOMINAL WORKING STRESS (kN)	STOCK ITEM NO.	ITEM NO.	MIN. POLE DIAMETER (mm)		MINIMUM DEPTH IN GROUND 'D' (mm)	DRY MASS OF AVERAGE SIZE P.I. POLE (APPROX) (kg)
				TIP	2m FROM BUTT		
8	6			202	286	LINE POLE 1500 STAY POLE 1800	390
	8			226	325	1800	470
	10			250	357	1800	560
9	4	325219	115D	202	274	1500	400
	6	325221	115E	239	310	1650	540
	8	325222	115F	272-344	344-392	1800	665
10.5	4	325228	115G	208	293	1650	525
	6	325230	115H	247	331	1800	705
	8	325231	115J	282-366	366-414	1800	850
12	4	325235	115K	215	310	1800	665
	6	325237	115L	255	350	1800	875
	8	325239	115M	290-366	385-430	1800	1050
13.5	4	325243	115N	223	331	2000	850
	6	325245	115P	269	377	2000	1090
	8	325247	115Q	299-366	407-455	2000	1300
15	6	325256	115R	269	388	2100	1175
	8	325258	115S	299	419	2100	1485
	10	325260	115T	326-374	446-493	2100	1720

NOTES

1. POLE STRENGTH GRADE MAY BE S3 OR S4.

   S3 GRADE TIMBERS INCLUDE SPECIES MS, BT, MD AND ST.
   S4 GRADE TIMBERS INCLUDE SPECIES AA, WP, MA AND MN

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS
ORIGINAL ISSUE

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	-
DATE APPROVED	19/FEB/19

TITLE: PRESSURE IMPREGNATED WOOD POLES
OLD SIZES

SCALE: NTS

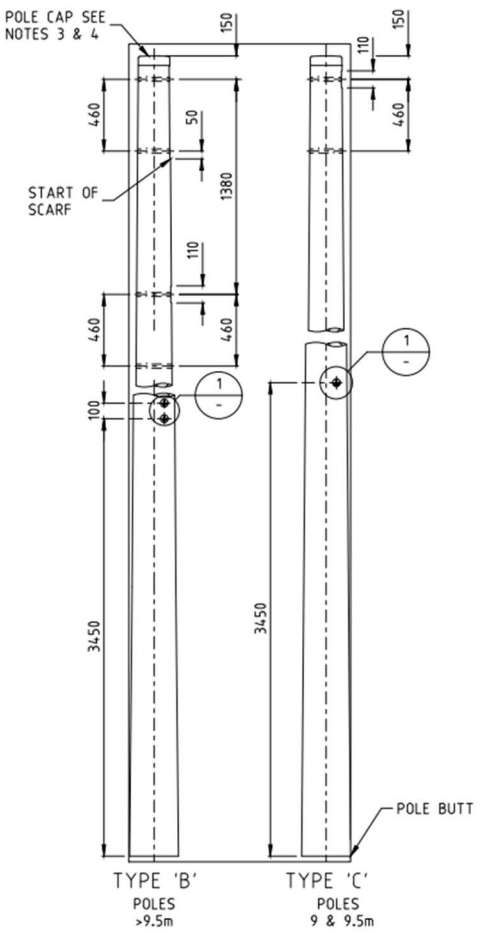
A4

D - OHC - K002 - SD - 001

REVISION: A

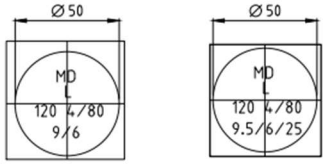
10.2 Wood Pole Drilling and Fit-out Dimensions – Regular Poles

CAUTION : Printed document is uncontrolled.



NOTE:
LETTERS ARE 6mm NOMINAL HEIGHT
MATERIAL: AL ALLOY (ANODISED IN CCA TREATED POLES)
POLE IDENTIFICATION DISC MARKING

TIMBER SPECIES (SEE TABLE BELOW)
TREATMENT PLANT IDENTIFICATION
IMPREGNATION BATCH No MONTH/YEAR
POLE LENGTH (m)/NOMINAL WORKING LOAD (kN)/NOMINAL BREAKING LOAD (kN)



OLD SIZES NEW SIZES

DETAIL 1

POLE IDENTIFICATION DISC

NOTES
1. POLE ENDS CUT SQUARE TO SPECIFIED LENGTH.
2. SCARF WIDTH TO BE 60mm.
3. ALL POLE HEADS TO BE FITTED WITH STANDARD POLE CAP SIZE TO SUIT. FIX WITH SIX STAINLESS STEEL M5 45MM BUTTON HEAD SELF DRILLING SCREWS OR EQUIVALENT.
4. SPARE.
5. ALL HOLES TO BE DIA 22 THROUGH CENTRELINE.
6. BORE DIA 50 HOLE 12 DEEP AT A 45 DEGREE ANGLE FROM THE CENTRE LINE OF THE POLE AND AT DISTANCE 'A' FROM THE POLE BUTT. SEE TABLE AND INSERT POLE IDENTIFICATION DISC.
7. POLE TOP ENDS FOR POLES 13.5m AND ABOVE MAY REQUIRE TO BE SCARFED TO FIT POLE CAP AND/OR Mk 10 DOUBLE PIN STRAIN PLATE SCARFED AREA TO BE PROTECTED WITH GREASE SI No 21.20.26

SPECIES BRAND	SPECIES	STRENGTH CLASS
MD	BROWN TOP STRINGY BARK	S3
AA	ALPINE ASH/GUM TOP S.BARK	S4
WP	WHITE PEPPERMINT	S4
MA	MOUNTAIN ASH	S4
BG	SOUTHERN BLUE GUM	S3
MN	WHITE GUM	S4
ST	TASMANIAN IRONBARK	S3

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS
ORIGINAL ISSUE
NOTES 3 AND 5 MODIFIED NOTE 4 REMOVED.
B 000000 B.PAPALIA R.GRIFFITHS 12/03/2024
M.COOPER 12/03/2024
B.PAPALIA 12/03/2024

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	A KETLEY
DATE APPROVED	19/FEB/19

TITLE
PRESSURE IMPREGNATED WOOD POLES\P
DRILLING & FITOUT DIMENSIONS
REGULAR POLES

SCALE NTS
A4
REVISION B

D - OHC - K003 - SD - 001\P

DWG STATUS AS INSTALLED

EMF/PDF CREATION DATE 08/03/2024
BM DWG NO D - OHC - K003 - SD - 001 BM REV B

10.3 Titan Poles

Current Types

These are hollow, round, fibre-reinforced spun concrete construction, manufactured by Dulhunty Poles. They are non-conductive, fire-resistant, and impervious to decay. Poles of 14m length or more comprise two pieces, normally supplied assembled for TasNetworks; the 12.5m poles are a single piece.

Length	Strength		SI Number	Mfr Product Code	Min. Sinking Depth	Diameter			Typ. Weight	Max. Weight
	WS	Ult				Tip	GL	Butt		
(m)	(kN)	(kN)			(m)	(mm)	(mm)	(mm)	(kg)	(kg)
12.5	8	16	325002	P12516HTT1M	1.85	315	434	460	650	700
	12	24	325003	P12524HTT1M		325	452	480	880	950
14	8	16	325004	P14016HTT2M	2.00	315	409	438	950	1000
	12	24	325005	P14024HTT2M		325	377	438	1160	1250
15.5	12	24	325006	P15524HTT2M	2.15	325	412	465	1425	1500

Pole Identification

The metal tags are 75mm x 50mm and placed 2m above the nominal groundline of the pole and another on the butt. The information included on the ID tag is:

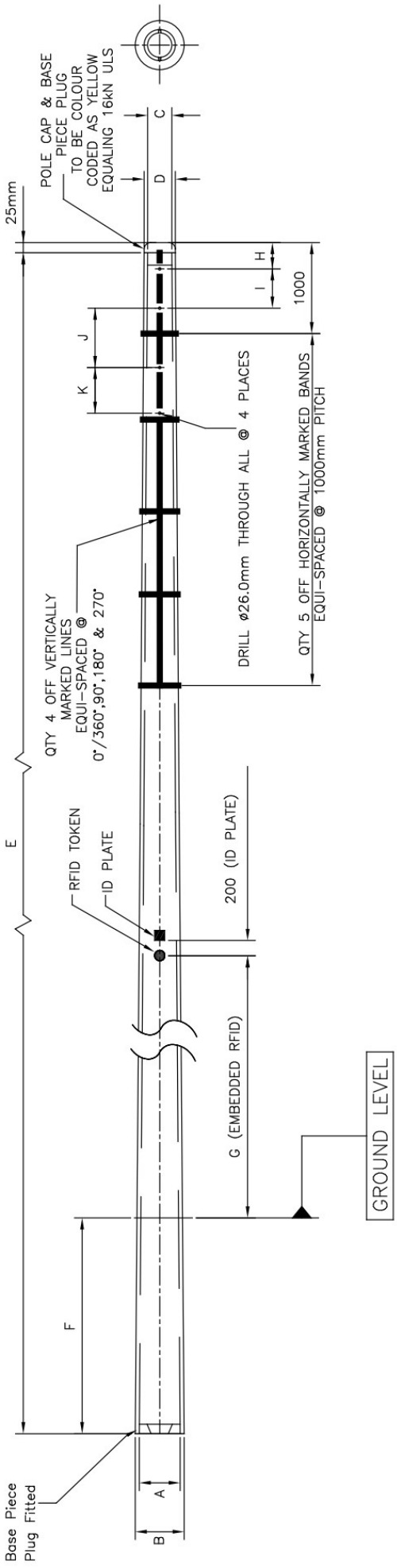
- Manufacturer
- Pole length
- Pole ultimate strength
- Product code
- Month and year of manufacture
- Name of customer
- Weight
- Serial number

Attach TasNetworks Pole ID with silicone adhesive.

Titan Poles

12.5m Single-Piece Poles

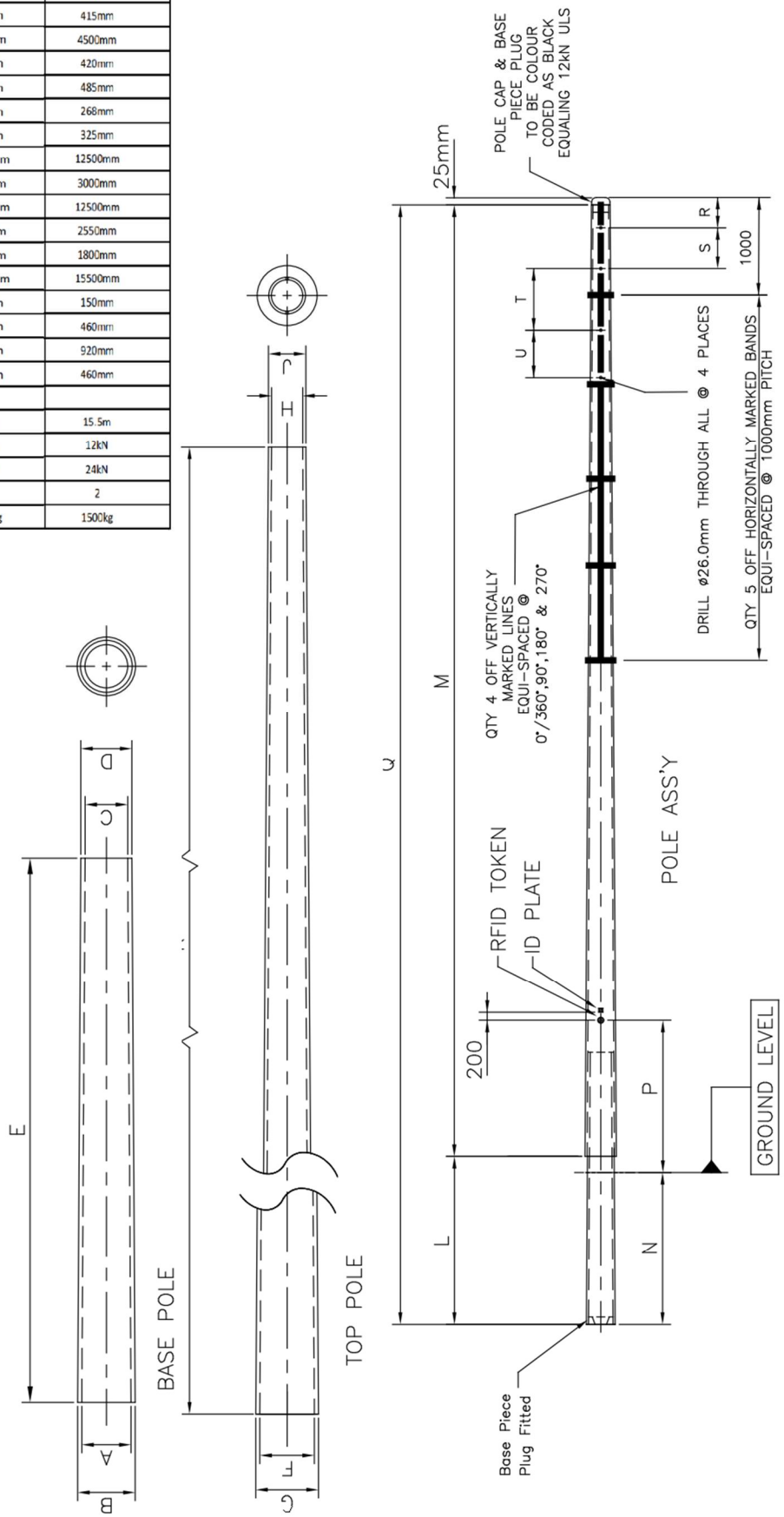
Section	Description	16kN ULS	24kN ULS
Single Piece Pole	Base Diam Internal 'A'	420mm	420mm
	Base Diam External 'B'	460mm	480mm
	Tip Diam Internal 'C'	268mm	268mm
	Tip Diam External 'D'	315mm	325mm
	Length 'E'	12500mm	12500mm
Assembly	Burial Depth 'F'	2250mm	2250mm
	Ground to RFID 'G'	1800mm	1800mm
	Hole Pattern Dim 'H'	150mm	150mm
	Hole Pattern Dim 'I'	460mm	460mm
	Hole Pattern Dim 'J'	920mm	920mm
	Hole Pattern Dim 'K'	460mm	460mm
Specification	Pole Length	12.5m	12.5m
	Working Load	8kN	12kN
	Ultimate Load	16kN	24kN
	Pieces	1	1
	Maximum Weight	700kg	950kg



Titan Poles

14.0 and 15.5m Two-Piece Poles

Section	Description	14m 16kN ULS	14m 24kN ULS	15.5m 24kN ULS
Base	Base Diam Internal 'A'	347mm	347mm	365mm
	Base Diam External 'B'	438mm	438mm	465mm
	Tip Diam Internal 'C'	315mm	288mm	315mm
	Tip Diam External 'D'	405mm	368mm	415mm
	Length 'E'	2750mm	2750mm	4500mm
Top	Base Diam Internal 'F'	420mm	420mm	420mm
	Base Diam External 'G'	475mm	485mm	485mm
	Tip Diam Internal 'H'	268mm	268mm	268mm
	Tip Diam External 'J'	315mm	325mm	325mm
	Length 'K'	14000mm	14000mm	12500mm
Assembly	Base to Joint 'L'	1500mm	1500mm	3000mm
	Joint to Top 'M'	12500mm	12500mm	12500mm
	Burial Depth 'N'	2400mm	2400mm	2550mm
	Ground to RFID 'P'	1800mm	1800mm	1800mm
	Overall Length 'Q'	14000mm	14000mm	15500mm
	Hole Pattern Dim 'R'	150mm	150mm	150mm
	Hole Pattern Dim 'S'	460mm	460mm	460mm
	Hole Pattern Dim 'T'	920mm	920mm	920mm
	Hole Pattern Dim 'U'	460mm	460mm	460mm
Specification	Pole Length	14m	14m	15.5m
	Working Load	8kN	12kN	12kN
	Ultimate Load	16kN	24kN	24kN
	Pieces	2	2	2
	Maximum Weight	1000kg	1250kg	1500kg



Titan Poles

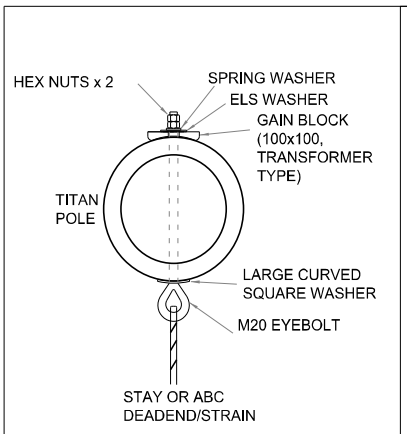
Special Considerations

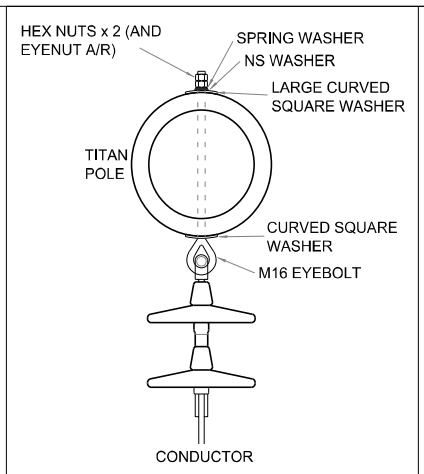
Foundation material in contact with Titan poles should be free of rocks (FCR preferred).

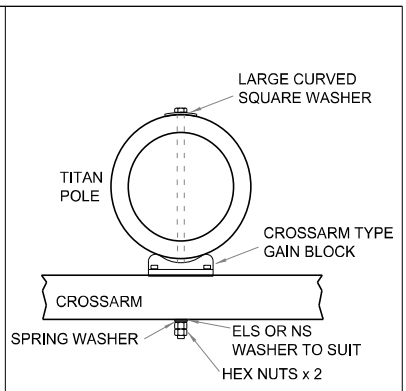
Special care is required when transporting, drilling and attaching to concrete poles.

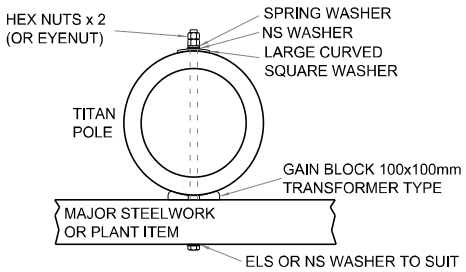
To spread load and prevent crushing of the hollow pole, large, curved washers or gain blocks must be used where constructions attach to the pole. Volute washers are not required as with wood poles; spring washers should be used instead. The APLs below provide for additional materials that would not be included if the construction APL is for a wood pole.

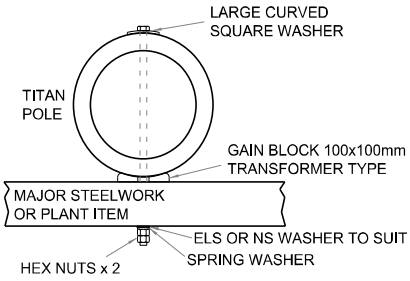
Attachment Type	Application	Extra Hardware Required compared with Wood Pole				APL
		Description	Item Ref	Stock Item No.	Qty	
M20 Eyebolt or Kingbolt	Stay attachment, ABC strain or dead end, Plant item, Major Steelwork	100x100mm gain block, transformer type		323306	1	TITANAT1
		75x75mm square curved M20 washer		066805	1	
		Spring washer M20	T205B		1	
M16 Eyebolt	Conductor termination on pole rather than crossarm	75x75mm square curved M16 washer		066806	2	TITANAT2
		Spring washer M16	T205A		1	
Crossarm, M16 Kingbolt	Gain block already provided	75x75mm square curved M16 washer		066806	1	TITANAT3A
		Spring washer M16	T205A		1	
	Added gain block 100x100mm	100x100mm gain block, crossarm type	T208A		1	TITANAT3B
		75x75mm square curved M16 washer		066806	1	
		Spring washer M16	T205A		1	
	Added gain block 125x125mm	125x125mm gain block, crossarm type	T208B		1	TITANAT3C
		75x75mm square curved M16 washer		066806	1	
		Spring washer M16	T205A		1	











ALTERATIONS: ORIGINAL ISSUE

TasNetworks

DRAWN	ELECTRO
DESIGNED BY	B.MAYBERRY
CHECKED BY	K.GOSDEN
APPROVED BY	
DATE APPROVED	

TITLE: TITAN POLES KING BOLT HARDWARE REQUIREMENTS

SCALE: NTS

A4

D - OHC - K020 - SD - 001

REVISION: A

Titan Poles

Generally, no holes are allowed in the lower third of the pole, and hole numbers/placement in mid and upper sections should be limited as shown below. Any proposed deviations from this should be referred to Asset Engineering or Dulhunty Poles Pty Ltd. (Holes for supporting transformer or regulator platforms, cable, or conduit attachments or minor tek screws are acceptable.)

Top 1/3 of pole:

- Minimum vertical spacing between holes sets should be 200mm.
- Maximum of 3 holes in a circumference at same vertical level of pole.
- Maximum hole diameter 38mm.

Mid 1/3 of pole:

- Max 2 holes in circumference at same vertical level of pole.
- Min vertical spacing between hole sets 200mm.
- Max hole diameter any hole 38mm, max number holes > 26mm = 2
- Min vertical spacing for holes > 26mm = 1000mm

Nuts should be tightened using a torque wrench to avoid overtightening – see table below.

Bolt size	Tightening torque 4.6 grade bolts		
	medium (80% yield)	High (95% yield)	20% over tightening allowance
M12	30 N.m	35 N.m	42 N.m
M14	40 N.m	47 N.m	56 N.m
M16	60 N.m	71 N.m	85.2 N.m
M20	140 N.m	160 N.m	192 N.m
M24	250 N.m	295N.m	354 N.m

10.4 Stobie (Steel/Concrete) Poles

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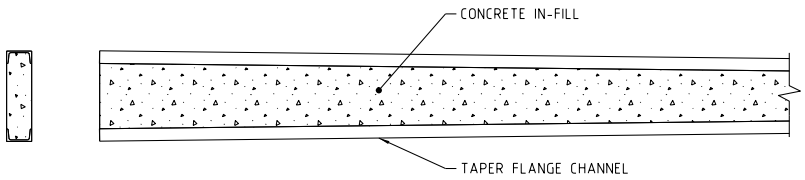


THE STOBIE POLE CONSISTS OF TWO ROLLED STEELS SECTIONS WITH CONCRETE IN-FILL. THE STEEL SECTIONS ARE CONSIDERED TO CARRY THE FULL BENDING AND COMPREHENSIVE LOADS. THE CONCRETE AND BOLTS BETWEEN THE STEEL SECTIONS PROVIDE RESTRAINT AGAINST BUCKLING OF THE STEEL SECTIONS UNDER COMPRESSIVE LOAD. THE BOLTS ALSO SERVE TO TRANSMIT SHEAR LOADS FROM THE STEEL TO THE CONCRETE.

THE LONG (MAJOR) AXIS OF THE POLE SHOULD BE ORIENTED IN THE DIRECTION OF THE RESULTANT TIP LOAD. THUS, FOR TERMINATION OR STRAIN POLES, THE LONG AXIS IS ALIGNED WITH THE LINE CONDUCTORS, BUT FOR INTERMEDIATE POLES, THE LONG AXIS IS SET AT RIGHT ANGLES TO THE LINE CONDUCTORS.

MARK NO.	POLE LENGTH (m)	STEEL SECTION (mm)	MASS (kg)	APPROX. CoG (m)	EMBEDMENT (mm)
1	9	102x51 TFC	830	4.2	1600
3	9	127x64 TFC	1100	4.2	1700
7	10.5	127x64 TFC	1375	4.8	1700
11	10.5	152x76 TFC	1635	4.8	1800
16	12	152x76 TFC	1850	5.5	2000
20	13	152x76 TFC	1980	6	2000

*CoG = CENTRE OF GRAVITY - FOR LIFTING PURPOSES

THE TABLE ABOVE APPLIES TO EXISTING STOBIE POLES WITHIN TASNETWORKS. PARAMETERS FOR ANY NEW STOBIE POLES TO BE USED SHOULD BE SOURCED FROM SA POWER NETWORKS.

NOTE: SPECIAL EARTHING ARRANGEMENTS MAY BE REQUIRED FOR HV CONDUCTIVE POLES.

CONCRETE FOUNDATIONS TO BE USED WITH THESE POLES.

OBSOLETE - FOR REFERENCE ONLY

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

EMF/PDF CREATION DATE 19/FEB/19

ALTERATIONS
ORIGINAL ISSUE
B. MINOR CHANGES. MARKED OBSOLETE

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	A KETLEY
DATE APPROVED	19/FEB/19

TITLE: STEEL/CONCRETE STOBIE POLES (OBSOLETE) POLE DATA

SCALE: NTS

A4

D - OHC - K004 - SD - 001

REVISION: B

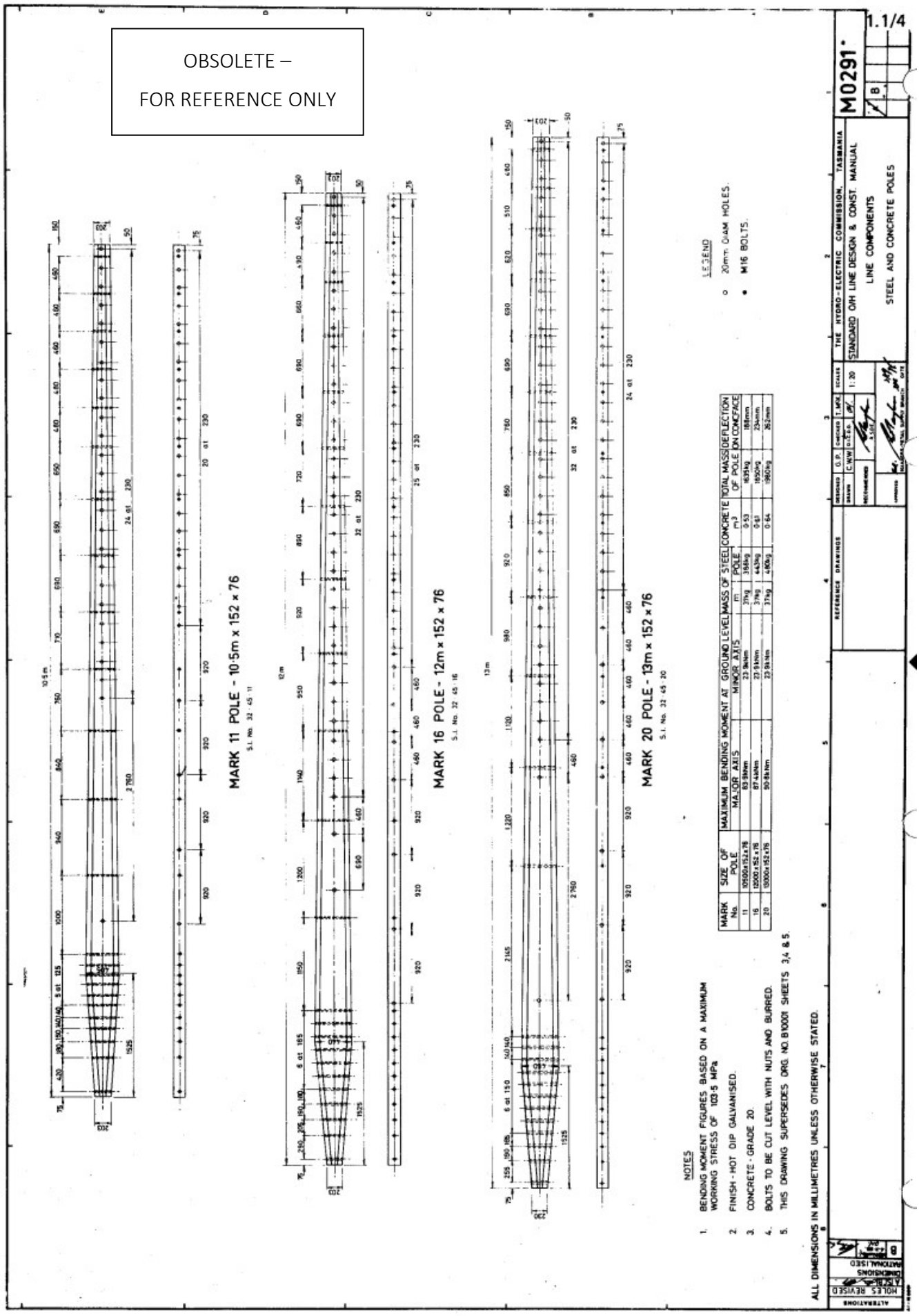
DWG STATUS CONSTRUCTION

BM DWG NO D - OHC - K004 - SD - 001 BM REV B

Stobie Poles

OBSOLETE –

FOR REFERENCE ONLY

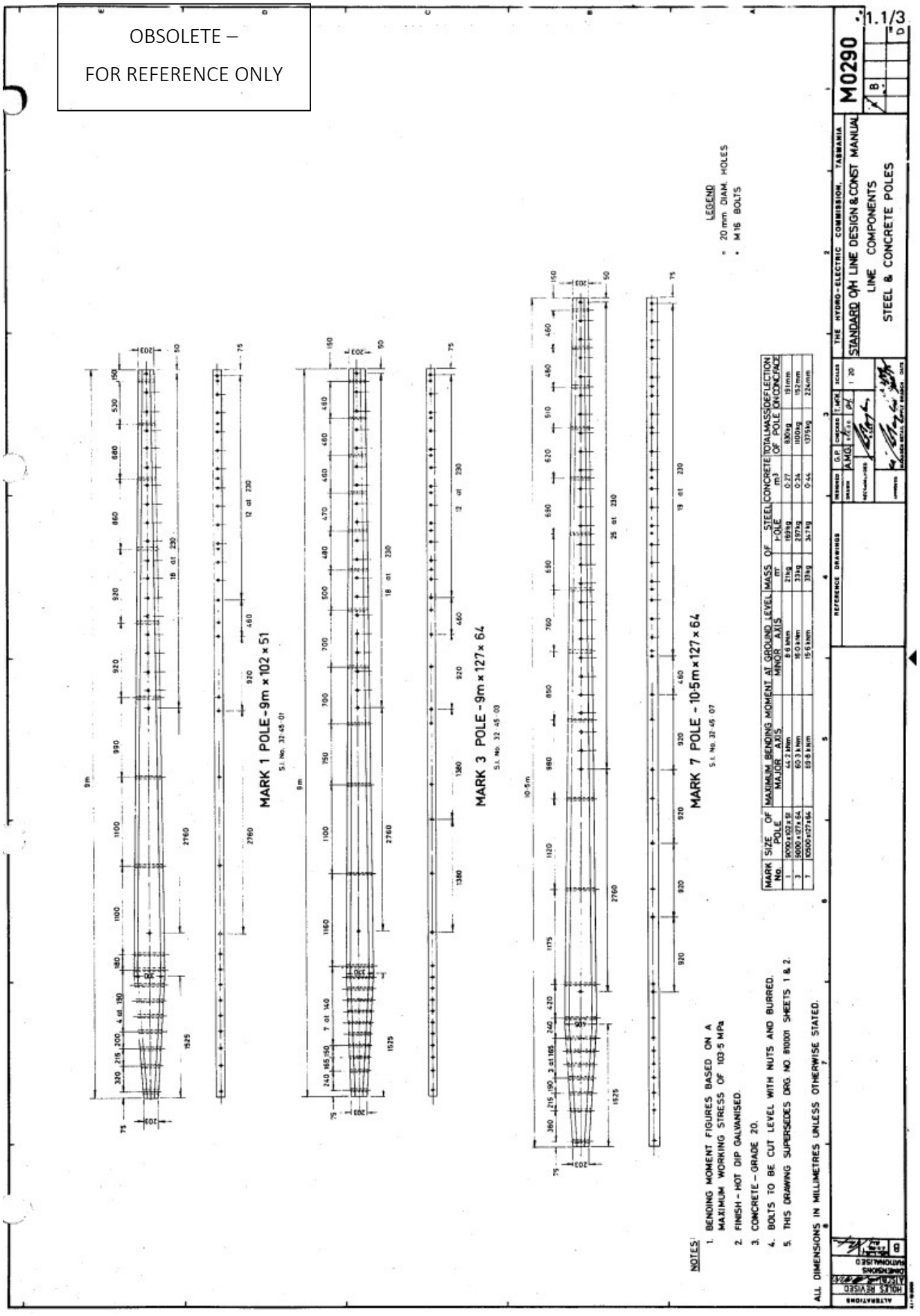


MARK No.	SIZE OF POLE	MAXIMUM BENDING MOMENT AT GROUND LEVEL MAJOR AXIS	MINOR AXIS	MASS OF STEEL m	CONCRETE POLE m³	TOTAL MASS OF POLE	DEFLECTION ON CONFACE
11	10500x152x76	83·3kNm	23·9kNm	379kg	0·53	1635kg	188mm
16	12000x152x76	87·4kNm	23·9kNm	379kg	0·61	1950kg	234mm
20	13000x152x76	90·8kNm	23·9kNm	379kg	0·64	1980kg	262mm

Stobie Poles

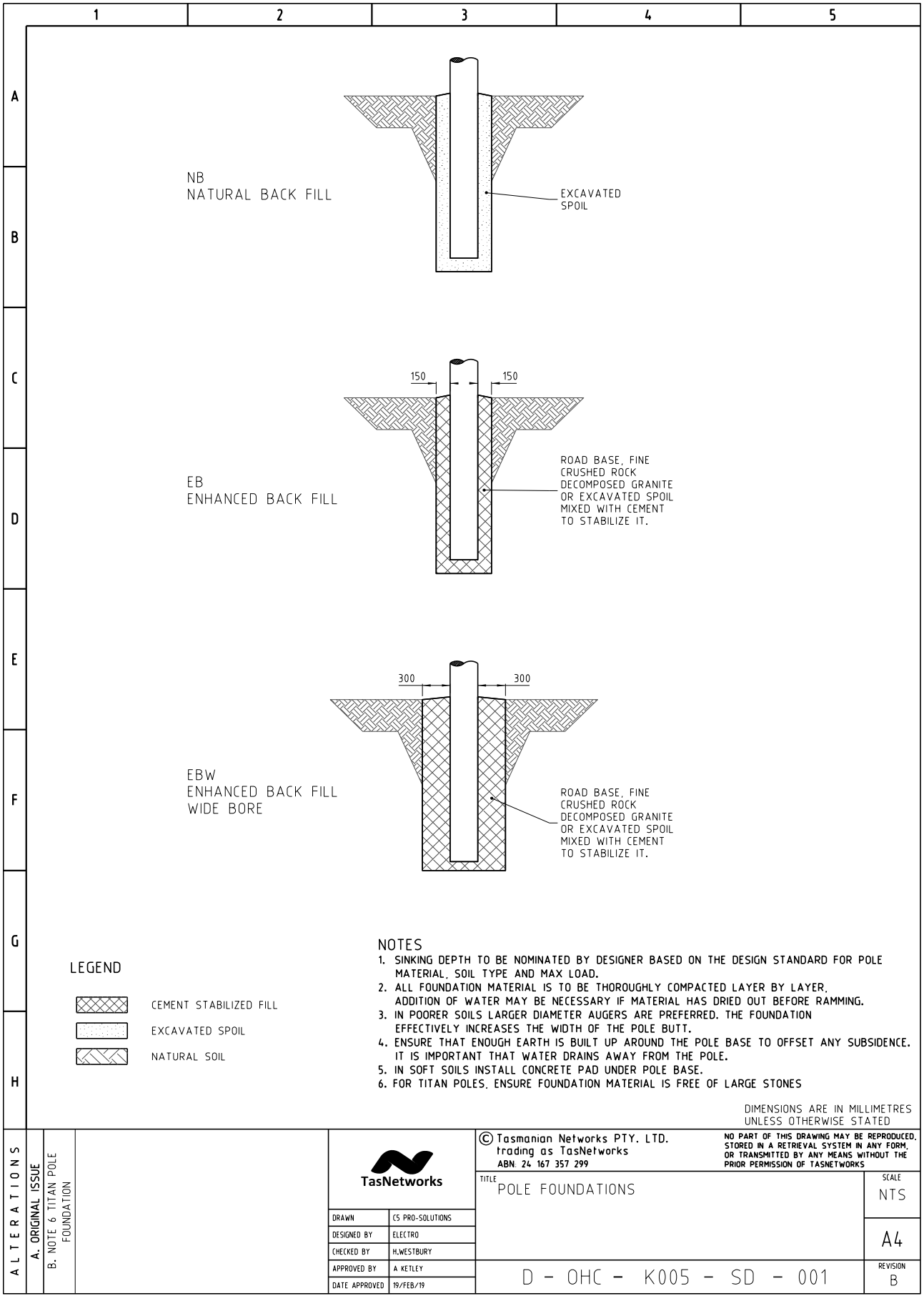
OBSOLETE –

FOR REFERENCE ONLY



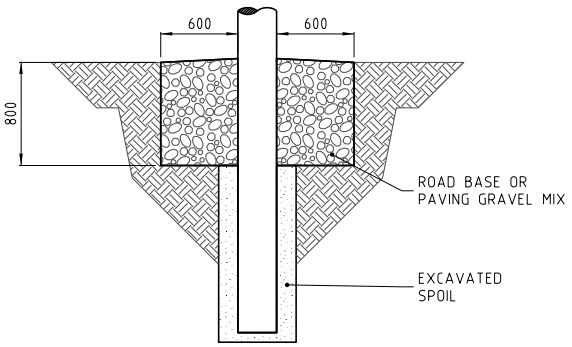
MARK No	SIZE OF POLE	MAXIMUM BENDING MOMENT AT GROUND LEVEL MAJOR AXIS	MINOR AXIS	MASS OF STEEL m³	P-OLE	CONCRETE m3	TOTAL MASS OF POLE	DEFLECTION ON CONCAVE
1	9000 x 102 x 51	44·2 kNm	8·6 kNm	215kg	1695kg	0·27	8305kg	191mm
3	9000 x 127 x 64	60·3 kNm	16·0 kNm	331kg	2671kg	0·24	11001kg	152mm
7	10500 x 127 x 64	69·8 kNm	15·6 kNm	331kg	3467kg	0·44	13751kg	224mm

10.5 Pole Foundations

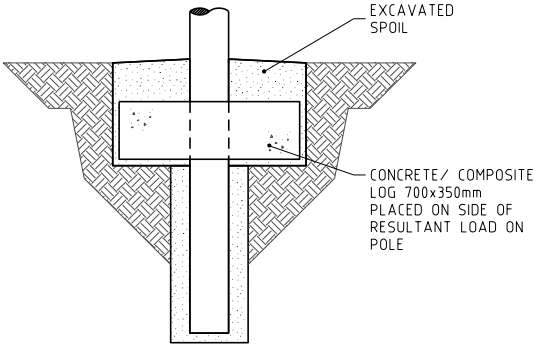


Pole Foundations

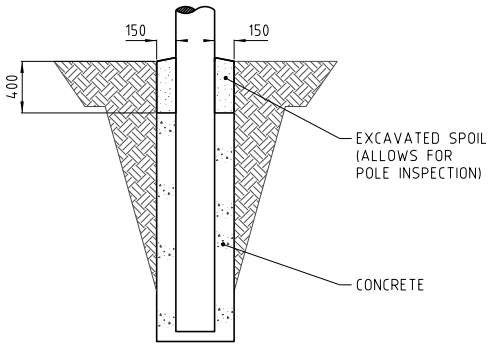
GC
GRAVEL COLLAR
(PRIMARILY USED TO REINFORCE FOUNDATION OF EXISTING POLES)



BL
BREAST LOG/ BLOCK
(USED FOR POLES CARRYING HEAVY PLANT)



CO
CONCRETE
(PRIMARILY FOR USE WITH STEEL/ CONCRETE POLES)
ALLOW 3 DAYS FOR SETTING BEFORE APPLYING FULL LOAD



LEGEND

- EXCAVATED SPOIL
- NATURAL SOIL
- PAVING GRAVEL MIX
- CONCRETE

NOTES

1. SINKING DEPTH TO BE NOMINATED BY DESIGNER BASED ON THE DESIGN STANDARD FOR POLE MATERIAL, SOIL TYPE AND MAX LOAD.
2. ALL FOUNDATION MATERIAL IS TO BE THOROUGHLY COMPACTED LAYER BY LAYER. ADDITION OF WATER MAY BE NECESSARY IF MATERIAL HAS DRIED OUT BEFORE RAMMING.
3. IN POORER SOILS LARGER DIAMETER AUGERS ARE PREFERRED. THE FOUNDATION EFFECTIVELY INCREASES THE WIDTH OF THE POLE BUTT.
4. ENSURE THAT ENOUGH EARTH IS BUILT UP AROUND THE POLE BASE TO OFFSET ANY SUBSIDENCE. IT IS IMPORTANT THAT WATER DRAINS AWAY FROM THE POLE.
5. IN SOFT SOILS INSTALL CONCRETE PAD UNDER POLE BASE.
6. FOR TITAN POLES, ENSURE FOUNDATION MATERIAL IS FREE OF LARGE STONES

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

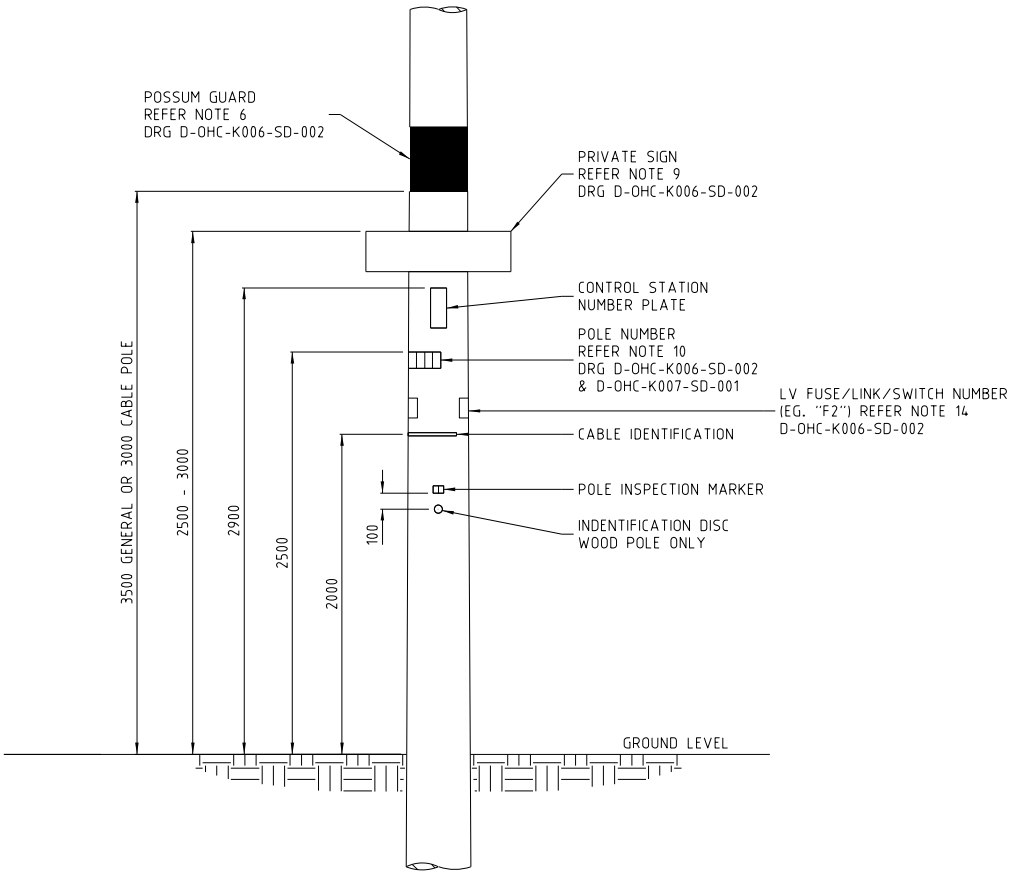
ALTERATIONS
A. ORIGINAL ISSUE
B. NOTE 6 TITAN POLE FOUNDATION

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	A KETLEY
DATE APPROVED	03/APR/19

TITLE: POLE FOUNDATIONS
SCALE: NTS
A4
D - OHC - K005 - SD - 002
REVISION: B

10.6 Pole Base Fittings



DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS
A. ORIGINAL ISSUE
B. LV ISOLATION POINT TABLES ADDED

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	
APPROVED BY	
DATE APPROVED	

TITLE: POLE BASE FITTINGS

SCALE: NTS

A4

D - OHC - K006 - SD - 001

REVISION: B

Pole Base Fittings

NOTES

1. WOOD POLE INDENTIFICATION DISC IS INSTALLED AT POLE TREATMENT PLANT.
2. POLE NUMBERS AND CONTROL STATION NUMBERS PLATES ARE TO BE FIXED ON THE ROAD SIDE FACE OF POLES.
3. WEATHERSEAL NEOPRENE WASHERS PROVIDED TO ENABLE THE EASY CHANGEOVER OF CONTROL STATION NUMBER PLATES AT POLE RENEWAL. THE CLOUT TACKS ARE TO BE DRIVEN NO FURTHER IN THAN FLUSH WITH THE TOP OF THE NEOPRENE WASHERS.
4. TO AVOID DAMAGE TO THE SIGN ON WOOD POLES WITH EXTREME CURVATURE A NEOPRENE WASHER MAY BE LOCATED UNDER THE SIGN AS WELL AS ON TOP OF THE SIGN WITH EACH CLOUT TACK FASTENING.
5. WHEN FIXING THE SIGNS OR NUMBERS TO S/C POLES WITH ADHESIVE, BOTH SURFACES MUST BE CLEAN AND DRY. APPLY ADHESIVE TO BACK OF SIGN. PRESS SIGN ONTO POLE AND ALIGN SIGN. HOLD IN PLACE FOR ONE MINUTE.
6. THE POSSUM GUARD LOCATION MAY BE RAISED TO PROVIDE 1000mm CLEARANCE FROM ANY FENCE OR STRUCTURE OR HEDGE.
7. FOR THE FITTING OF POSSUM GUARDS TO STAYWIRES - SEE STAY DRAWINGS.
8. CABLE ID TAG TO BE INSTALLED WHEN CABLE IDENTIFICATION REQUIRED. TAG TO SHOW THE SOURCE OF THE CABLE.
9. REFER TO DRAWING D-OH1-0729-SD-001 FOR DETAIL OF PRIVATE SIGNS AND D-OH1-0376-SD-001 & 002 FOR BANNERS.
10. THE PREFIX LETTER 'P' FOR PRIVATE AND 'S' FOR SURCHARGE OR STANDBY CHARGE TO BE INSTALLED WHEN REQUIRED.
11. "PRIVATE POLE" TAG TO BE FITTED TO ALL PRIVATE POLES - YELLOW PAINTED TAG S.I. No. 32.33.93
12. THE CURRENT RATING VALUE OF HV SPUR LINE AND LINE FUSES SHOULD BE DISPLAYED 2000mm BELOW THE DO FUSE FITTING.
13. REFER TO NETWORK DIVISION PROCEDURE NP-R-AM-22 FOR PRIVATE ATTACHMENTS TO POLES
14. LV FUSE/LINK/SWITCH NUMBER SHOULD BE LOCATED DIRECTLY UNDER (OR AS CLOSE AS POSSIBLE) TO THE RELEVANT ISOLATION DEVICE ON THE POLE ABOVE THE HIEGHT OF APPROX. 2M.

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS
A. ORIGINAL ISSUE
B. LV ISOLATION POINT LABELS ADDED

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	
APPROVED BY	
DATE APPROVED	

TITLE: POLE BASE FITTINGS

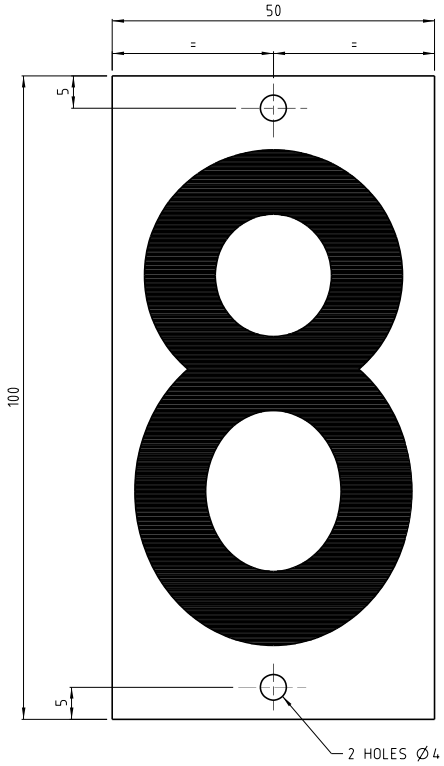
SCALE: NTS

A4

D - OHC - K006 - SD - 002

REVISION: B

10.7 Pole Numbers



NUMERAL/ LETTER	HEIGHT	WIDTH	STROKE WIDTH	SI No
1				32.55.12
2				32.55.13
3				32.55.14
4				32.55.15
5				32.55.16
6				32.55.17
7	80	41	10	32.55.18
8				32.55.19
9				32.55.20
0				32.55.21
A				32.55.22
B				32.55.23
P				32.55.35
F				32.55.24
L				32.55.25
S				32.55.36

MATERIAL: 0.8mm ALUMINIUM ALLOY SHEET.
NUMERAL: BLACK TAPE PAINT.
BACKGROUND: GREY/WHITE REFLECTORISED PVC/PAINT.

NOTES:
1. FORMAT TO BE GENERALLY TO AS1744 SERIES 'C' UNLESS STATED OTHERWISE.
2. WHEN FIXING NUMBERS TO STEEL OR CONCRETE POLES WITH ADHESIVE BOTH SURFACES MUST BE CLEAN AND DRY.

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

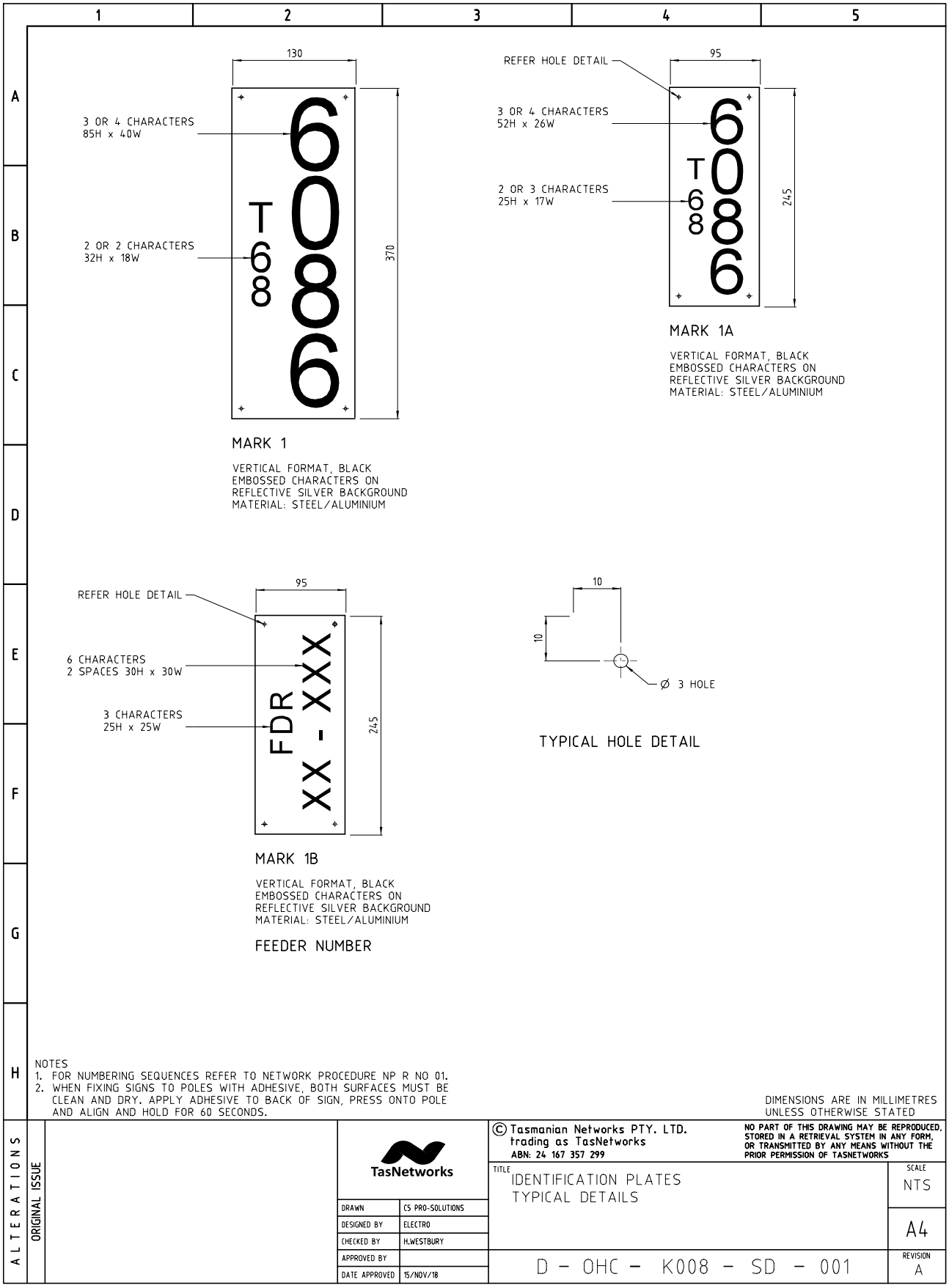
ALTERATIONS
ORIGINAL ISSUE
B. ADDED EXTRA LETTERS

TasNetworks

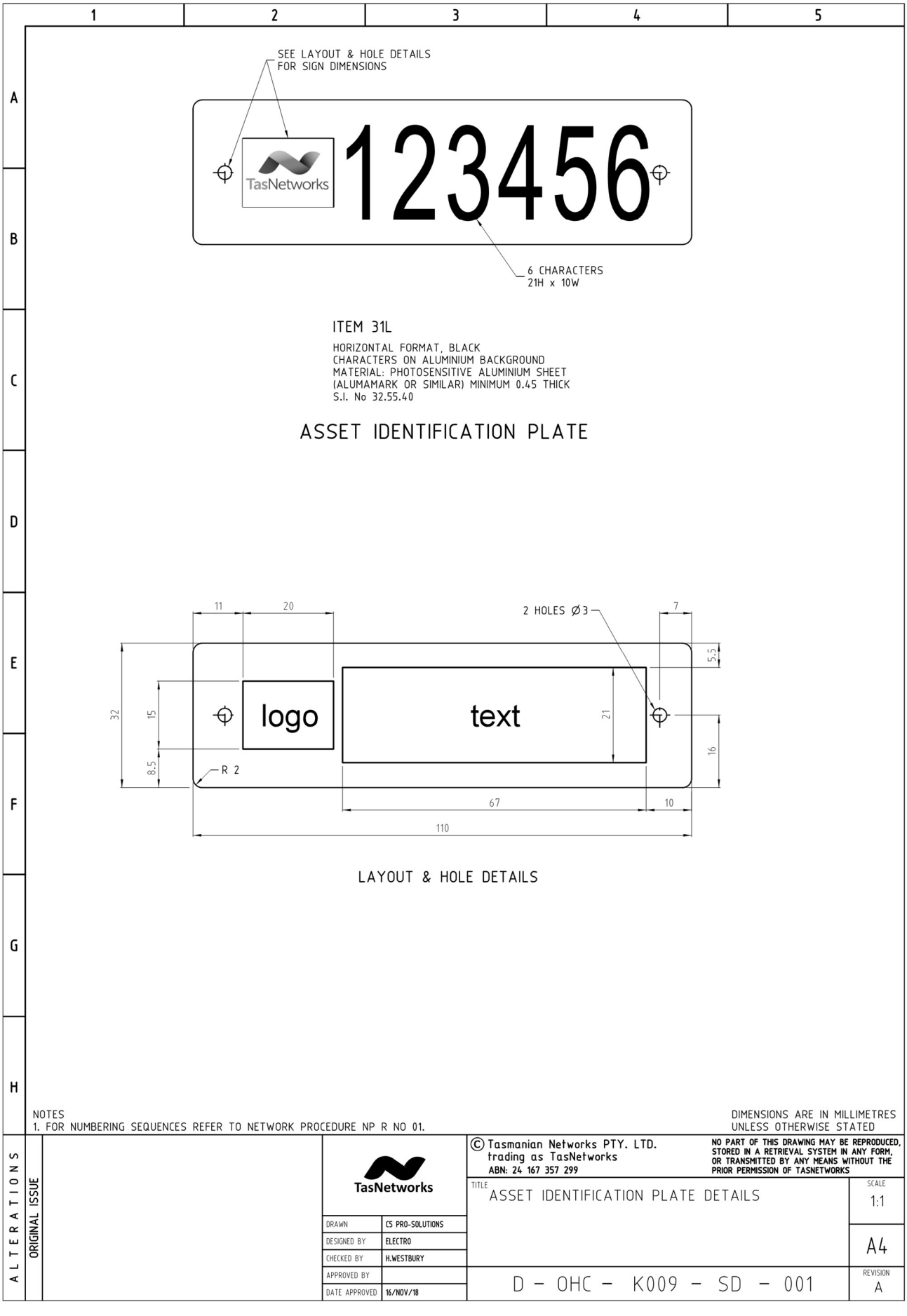
DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	
APPROVED BY	
DATE APPROVED	

TITLE: POLE NUMBERS
SCALE: 1:1
A4
D - OHC - K007 - SD - 001
REVISION: B

10.8 Identification Plates



Identification Plates



ITEM 31L

HORIZONTAL FORMAT, BLACK
CHARACTERS ON ALUMINIUM BACKGROUND
MATERIAL: PHOTOSENSITIVE ALUMINIUM SHEET
(ALUMAMARK OR SIMILAR) MINIMUM 0.45 THICK
S.I. No 32.55.40

ASSET IDENTIFICATION PLATE

LAYOUT & HOLE DETAILS

NOTES
1. FOR NUMBERING SEQUENCES REFER TO NETWORK PROCEDURE NP R NO 01.

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS
ORIGINAL ISSUE

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: ASSET IDENTIFICATION PLATE DETAILS

SCALE: 1:1

A4

D - OHC - K009 - SD - 001

REVISION: A

10.9 Wood Pole Reinstatement

10.9.1 Wood Pole Reinstatement by Staking - Selection Tables

POLE FOUNDATIONS STAKE SELECTION TABLE FOR P.I. WOOD POLES

STAKE CODE AND TYPE TABLE

POLE WORKING STRESS RATING (kN)	POLE LENGTH (m)				
	8.0	9.0	10.5	12.0	13.5
4	1 x MT2	1 x MT2	1 x MT2	1 x MT2S	1 x MT2S
6	1 x MT2	1 x MT2S	1 x MT2S	1 x MT2S	1 x MT2S
8	1 x MT2S	1 x MT2S	1 x MT2S	2 x MT2S	2 x MT2S
10	1 x MT2S	-	-	-	-

LEGEND

MT2 - SINGLE STAKE
MT2S - SINGLE STAKE WITH STIFFENERS INSTALLED IN EACH PIPE
2 X MT2S - DOUBLE STAKES WITH STIFFENERS

THE REINFORCING STAKE, WHEN APPLIED IN ACCORDANCE WITH THE ABOVE TABLE TO THE NOMINATED POLES, WILL REINSTATE THAT POLE TO ITS FULL RATED STRENGTH PROVIDED THAT THE FOOTING WAS ADEQUATE ORIGINALLY. IF INCREASING THE FOOTING STRENGTH IS REQUIRED, THEN USE THE SPECIALISED POLE FOOTING ENHANCEMENT STAKE. THE STAKE CAN BE MADE AVAILABLE BY A SPECIAL REQUEST THROUGH THE THREAD LEADER STRUCTURE AND OVERHEAD LINES.

PHYSICAL PROPERTIES OF POLE FOUNDATION STAKES AND ACCESSORIES

S.I. No	DESCRIPTION	CODE	DIMENSIONS				FAILING MOMENT (kNm)			
			WIDTH (mm)	LENGTH (mm)	WEB THICKNESS (mm)	MASS (kg)	STAKE		STAKE WITH STIFFENERS	
32.54.33	SINGLE POLE STAKE	MT2	327	2700	6	79	140.5	50.3	161	100
32.54.33	DOUBLE POLE STAKE	2 x MT2	327	2700	6	2 x 79	281	100.6	332	200
32.54.34	STIFFENER	S	76	1000						
32.54.35	TUBE CAP	CAP								

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS: ORIGINAL ISSUE

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: WOOD POLE REINSTATEMENT BY STAKING SELECTION TABLES

SCALE: NTS

A4

D - OHC - K012 - SD - 001

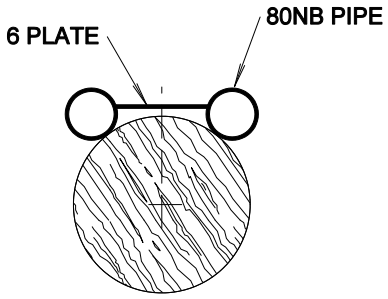
REVISION: A

10.9.2 Wood Pole Reinstatement by Staking - Arrangements

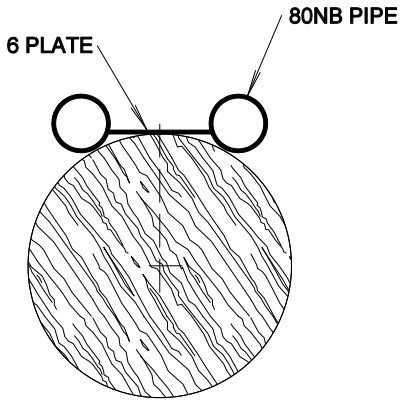
POLE FOUNDATION STAKING SYSTEMS

THE POLE FOUNDATION STAKE CONSISTS OF TWO STEEL TUBES JOIN TOGETHER WITH A WEB OF STEEL PLATE. THE WEB IS OFFSET TO ALLOW FOR A LARGE VARIATION IN POLE DIAMETERS. IF THE POLE IS LESS THAN 300mm THEN LOCATE THE STAKE SO THAT THE WEB IS FURTHEST AWAY FROM THE POLE. IF THE DIAMETER IS GREATER THAN 300mm LOCATE THE WEB CLOSEST TO THE POLE. THIS FEATURE ALLOWS THE STAKE TO HUG THE POLE.
THE DESIGN OF THE STAKE ENSURES THAT A SMOOTH PROFILE IS PRESENTED TO PEDESTRIANS AND THE VISUAL IMPACT IS MINIMAL.
THE STAKE IS INSTALLED TO A DEPTH OF 1500mm.
THE STAKE IS FIXED TO THE POLE VIA 3 X M20 CUP HEAD BOLTS THAT PASS RIGHT THROUGH THE POLE. WASHERS ARE INSTALLED UNDER THE HEAD OF THE BOLT AND UNDER THE NUT TO PREVENT THE NUT PULLING THROUGH THE HOLE.

SMALL DIAMETER POLES
WEB AWAY FROM THE POLE



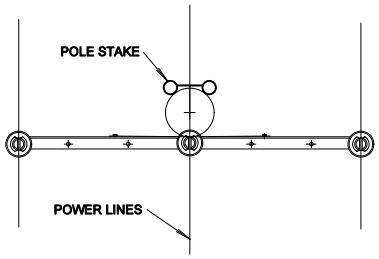
LARGE DIAMETER POLES
WEB CLOSEST TO POLE



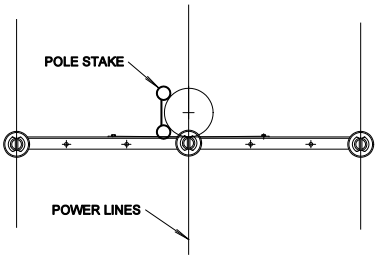
STAKE STIFFENERS CONSISTS OF A ONE METRE LENGTH OF STEEL PIPE THAT IS INSERTED INTO EACH OF THE STAKE TUBES AND POSITIONED SO THAT 500MM IS BELOW GROUND LEVEL AND 500MM ABOVE. THIS IS ACHIEVED BY POURING A PORTION OF DRY CONCRETE MIX INTO THE TOP OF EACH OF THE STAKE TUBES TO A DEPTH OF 1700mm, MEASURED FROM THE TOP OF THE STAKE. THE STIFFENER HAS THE EFFECT OF DOUBLE THE FAILING MOMENT OF THE STAKE AT GROUND LINE ON THE WEAKEST AXIS.

DOUBLE STAKES ARE USED WHEN THE CAPACITY REQUIRED IS GREATER THAN A SINGLE STAKE WITH STIFFENERS.

PLASTIC CAPS ARE AVAILABLE TO SEAL OFF THE TUBES TO PREVENT RUBBISH BEING INSERTED. THESE SHOULD BE INSTALLED IN ALL URBAN AREAS ESPECIALLY NEAR BUS STOPS, SCHOOLS, PUBLIC CAR PARKS ETC.



PREFERRED LOCATION ON POLE IN RELATION TO POWER LINES.
* MAXIMUM STAKE STRENGTH,
* MINIMAL IMPACT ON PEDESTRIAN TRAFFIC.
* WHERE POSSIBLE LOCATE AWAY FROM TRAFFIC DIRECTION.



ALTERNATIVE LOCATION ON POLE IN RELATION TO POWER LINES.
* MINIMUM STAKE STRENGTH.

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS: ORIGINAL ISSUE

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: WOOD POLE REINSTATEMENT BY STAKING ARRANGEMENTS

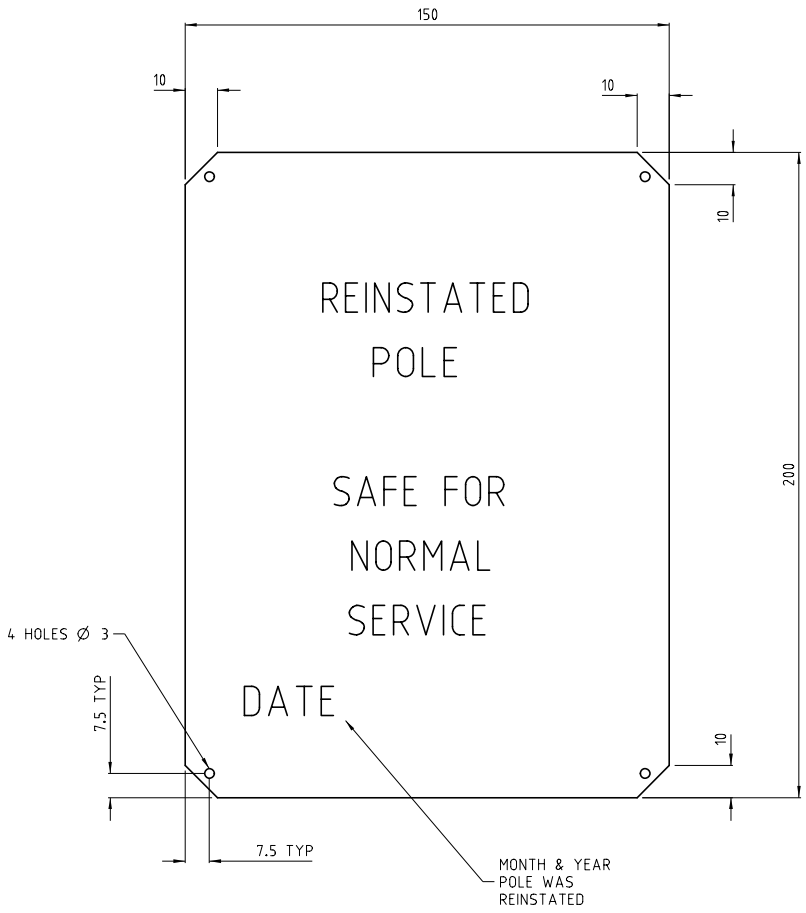
SCALE: NTS

A4

D - OHC - K013 - SD - 001

REVISION: A

10.9.3 Wood Pole Reinstatement Label



ITEM 31K - REINSTATEMENT LABEL

MATERIAL: 0.6mm GALVANISED SHEET STEEL TO AS 1397 GRADE G2 Z275
LETTERING: STAMPED (10MM HIGH)
S.I. No 32.33.89

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS: ORIGINAL ISSUE

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: WOOD POLE REINSTATEMENT LABEL

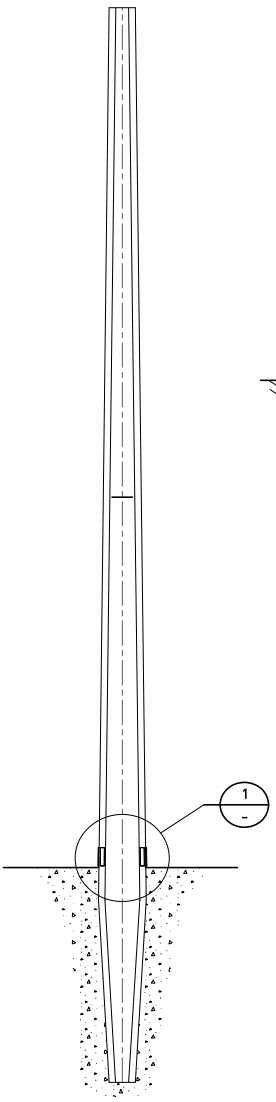
SCALE: 1:2

A4

D - OHC - K016 - SD - 001

REVISION: A

10.10 Stobie Pole Reinstatement



STOBIE MARK 1
SCALE 1:50

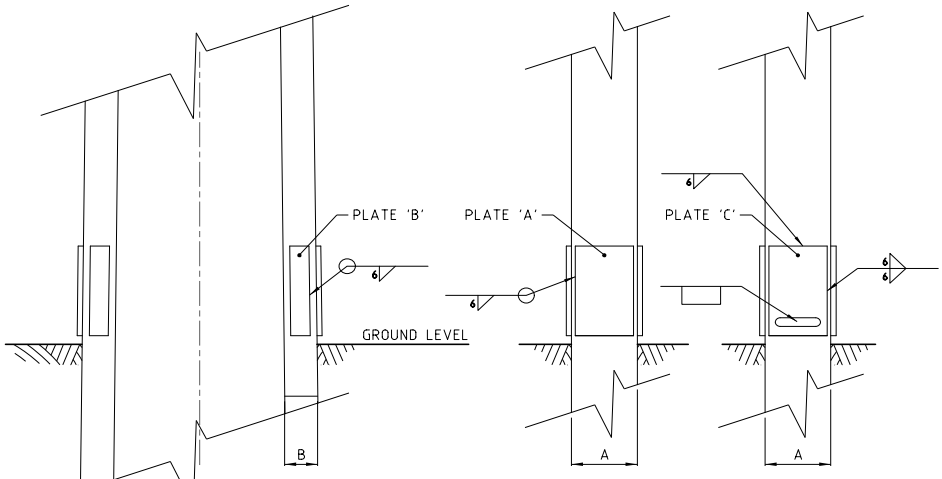
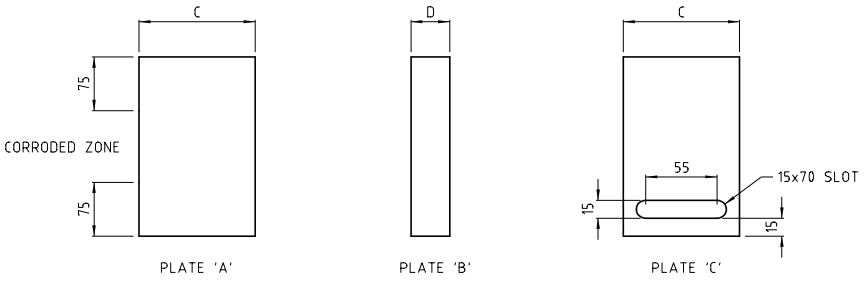


PLATE 'C' OPTION
IF THERE IS INSUFFICIENT SPACE TO WELD BOTTOM EDGE OF PLATE A PLUG WELD MAY BE USED.
(SEE PLATE 'C' DETAIL)

DETAIL 1 / - SCALE 1:10

REPAIR ARRANGEMENT

STOBIE POLE TYPE	A	B	C	D
MARK 1	102	51	90	30
MARK 3 & 7	127	64	115	50
MARK 11, 16 & 20	152	76	140	50



REPAIR PLATE DETAILS
MATERIAL: 10 PLATE TO AS 3678 - 250
SCALE: NTS

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS: ORIGINAL ISSUE

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: STOBIE POLE REINSTATEMENT ARRANGEMENT & DETAILS

SCALE: AS INDICATED

A4

D - OHC - K017 - SD - 001

REVISION: A

Stobie Pole Reinstatement

NOTES
1. ALL WELDING TO BE IN ACCORDANCE WITH AS 1554.1.
2. WELDS TO BE CATEGORY GP.
3. EXTENT OF WELD INSPECTION (REFER TO AS 1554.1) TO BE
   - VISUAL SCANNING - 100% OF WELDS.
   - VISUAL EXAMINATION 10% OF WELDS.
3. E41XX ELECTRODES SHALL BE USED FOR ALL WELDS, PRE APPROVED TO AS 1554.1.
4. CONTRACTOR TO PROVIDE A COMPLETED WELDING PROCEDURE SPECIFICATION USING THE 'WELDING PROCEDURE SPECIFICATION' IN AS 1554.1 APPENDIX C WHICH HAS BEEN APPROVED BY THE WELDING SUPERVISOR.
5. WELDING TO BE CARRIED OUT BY A TRADE-QUALIFIED WELDER WITH WORK TO BE SUPERVISED AND INSPECTED BY A WELDING SUPERVISOR MEETING THE REQUIREMENTS OF CLAUSE 4.12.1 IN AS 1554.1.
6. ON COMPLETION OF THE WORK THE CONTRACTOR SHALL PROVIDE TASNETWORKS WITH A CERTIFICATE LISTING THE POLE UNIQUE ID AND POLE NUMBER WHERE REPAIRS HAVE BEEN UNDERTAKEN, CONFIRMATION THAT WELDS HAVE BEEN COMPLETED AND INSPECTED IN ACCORDANCE WITH THIS DRAWING AND THE WELDING PROCEDURE AND SIGNED BY THE WELDER, WELDING SUPERVISOR AND THE CONTRACTORS REPRESENTATIVE.
7. UNDER NO CIRCUMSTANCES SHALL THE REMAINING THICKNESS OF MATERIAL IN THE CORRODED ZONE BE REDUCED BY GRINDING, SANDING OR ANY OTHER MEANS TO LESS THAN 50% OF THE ORIGINAL THICKNESS. SHOULD THE REMAINING METAL BE LESS THAN 50% THEN CONTACT SENIOR ENGINEER (OVERHEAD) BEFORE PROCEEDING.
8. PRIOR TO WELDING, STEEL SHOULD BE CLEAN AND FREE OF DEBRIS.
9. THE MAXIMUM LENGTH OF PLATE A,B OR C SHALL NOT EXCEED 650mm.

FINISH: PAINT
SURFACE PREPARATION: POWER TOOL CLEAN TO AS1627.2 ST 3. REMOVE ALL DUST. APPLY FIRST COAT BEFORE SURFACE DETERIORATION OCCURS.
PRIMER IN ACCORDANCE WITH PAINT REFERENCE NO AS/NZS 2312 - C04 - HIGH BUILD ALKYD PRIMER TO AS 3750.19 TYPE 2
DULUX LUXAPRIME ZINC PHOSPHATE - PC612 COLOUR LIGHT GREY OR EQUIVALENT PRIMER
TOPCOAT IN ACCORDANCE WITH PAINT REFERENCE NO AS/NZS 2312 - C17 - ALKYD MICACEOUS IRON OXIDE PAINT TO AS 3750.12
DULUX FERRODOR 810 - PC552 COLOUR LIGHT GREY OR EQUIVALENT TOPCOAT.
SYSTEM: 1 X LUXAPRIME ZP @ 75 MICRONS + 2 X DULUX FERRODOR 2 @ 50 MICRONS.

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS	
ORIGINAL ISSUE	

TasNetworks

DRAWN	C5 PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	
DATE APPROVED	16/NOV/18

TITLE: STOBIE POLE REINSTATEMENT NOTES

SCALE: NTS

A4

D - OHC - K017 - SD - 002

REVISION: A

10.11 Titan Pole Repair

Minor scratching and surface damage will not affect the pole performance provided the damage does not penetrate the outer helical wrapping of the pole which is 1.5 to 3mm thick. Where required such damage may be repaired using an appropriate concrete cement, such as Sika Sikadur 31 or 33.

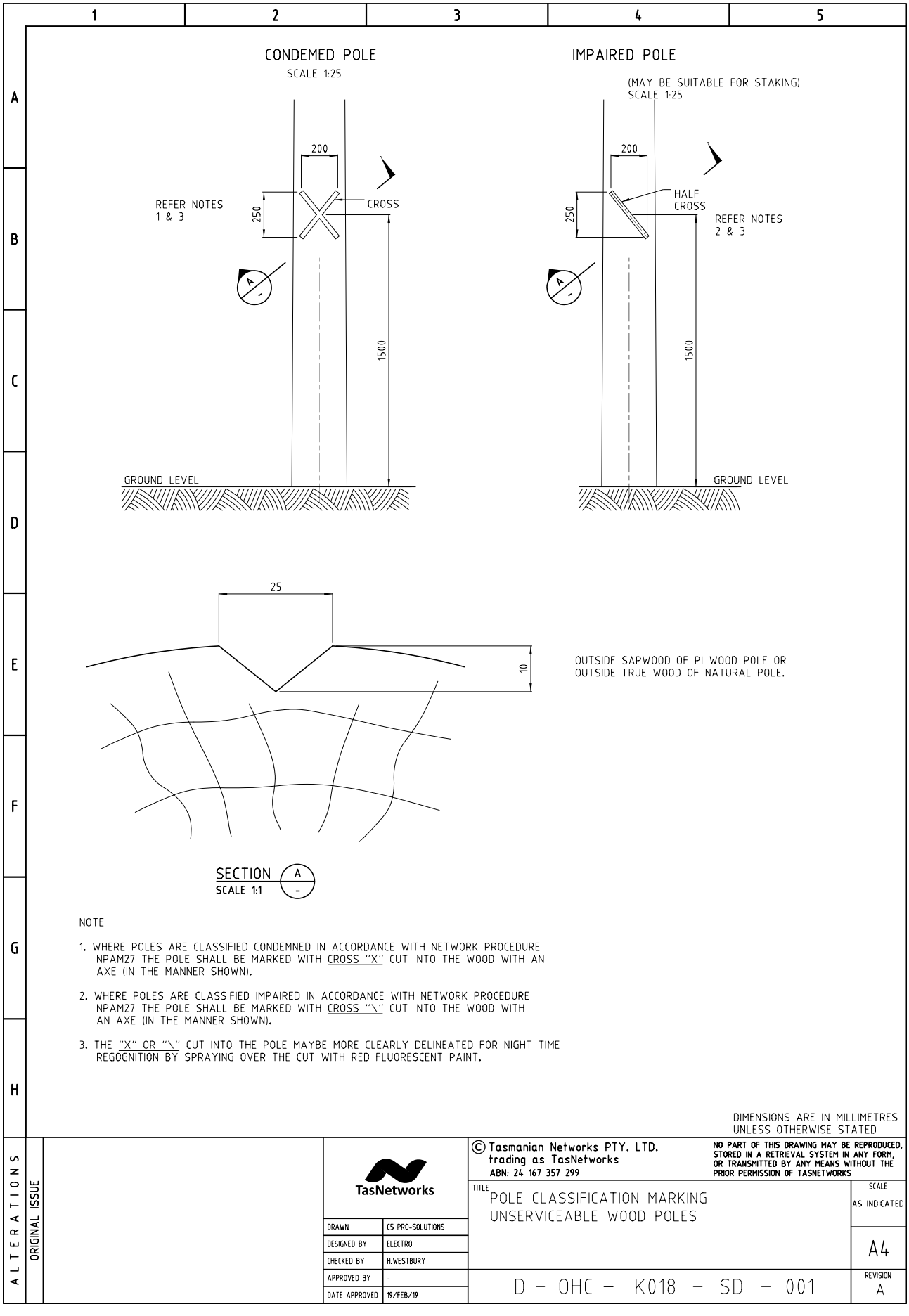
Where damage to the pole is deeper and penetrates into the central layers of the pole the decision on repair will depend on where the damage is and how extensive it is.

- In the top third of the exposed pole, damage that affects less than 25% of the pole circumference may be repaired using Sikadur 31.
- In the middle third of the exposed pole, damage that affects less than 10% of the pole circumference can be repaired by filling with the Sikadur 31.
- In the bottom third of the exposed pole and the upper 75% of the buried pole, any damage beyond surface damage should be referred to a suitably qualified engineer for assessment. Generally, repair of the poles is permitted provided that the hole diameter is not greater than 20% of the circumference of the pole at the point of damage, nor the hole area greater than 30% of the cross-sectional area of the pole at the point of damage. Repair is done by application of a patch supplied by Dulhunty Poles over the damaged area. The patch is glued to the pole and toggle-bolted in the four corners.

Any defects identified on the pole must be reported to the Overhead Lines Team in Asset Engineering to ensure appropriate action is taken.

Typical repair kit materials

10.12 Pole Classification Markings – Unserviceable Wood Poles



NOTE

1. WHERE POLES ARE CLASSIFIED CONDEMNED IN ACCORDANCE WITH NETWORK PROCEDURE NPAM27 THE POLE SHALL BE MARKED WITH CROSS "X" CUT INTO THE WOOD WITH AN AXE (IN THE MANNER SHOWN).
2. WHERE POLES ARE CLASSIFIED IMPAIRED IN ACCORDANCE WITH NETWORK PROCEDURE NPAM27 THE POLE SHALL BE MARKED WITH CROSS "\" CUT INTO THE WOOD WITH AN AXE (IN THE MANNER SHOWN).
3. THE "X" OR "\" CUT INTO THE POLE MAYBE MORE CLEARLY DELINEATED FOR NIGHT TIME REGOGNITION BY SPRAYING OVER THE CUT WITH RED FLUORESCENT PAINT.

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS	
ORIGINAL ISSUE	

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	-
DATE APPROVED	19/FEB/19

TITLE: POLE CLASSIFICATION MARKING
UNSERVICEABLE WOOD POLES

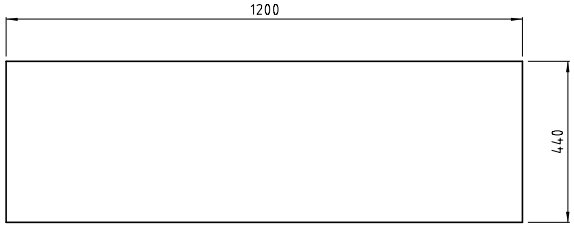
SCALE: AS INDICATED

A4

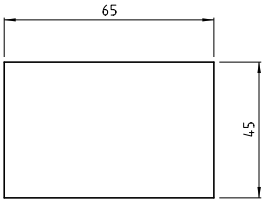
D - OHC - K018 - SD - 001

REVISION: A

10.13 Pole Steelwork Components



ITEM 26B
WOOD POLE POSSUM GUARD
S.I. 18.85.10
MATERIAL: 0.4 G300 AZ150 COLOURBOND SHEET
COLOUR : MIST GREEN TO AS2728
SCALE 1:15

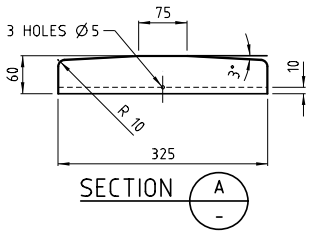


ITEM 31B
MARK 83 - POLE INSPECTION MARKER
S.I. 32.33.83
MATERIAL: 1.0mm ALUMINIUM SHEET 5005H34 TO AS/NZS 1734
SCALE 1:2

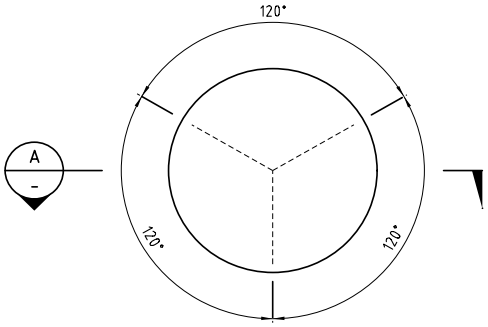
DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS					
ORIGINAL ISSUE		TasNetworks		© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299	NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS
		DRAWN	CS PRO-SOLUTIONS	TITLE POLE STEELWORK COMPONENTS	SCALE AS INDICATED
		DESIGNED BY	ELECTRO		A4
		CHECKED BY	H.WESTBURY		
		APPROVED BY	-	D - OHC - K019 - SD - 001	REVISION A
		DATE APPROVED	19/FEB/19		

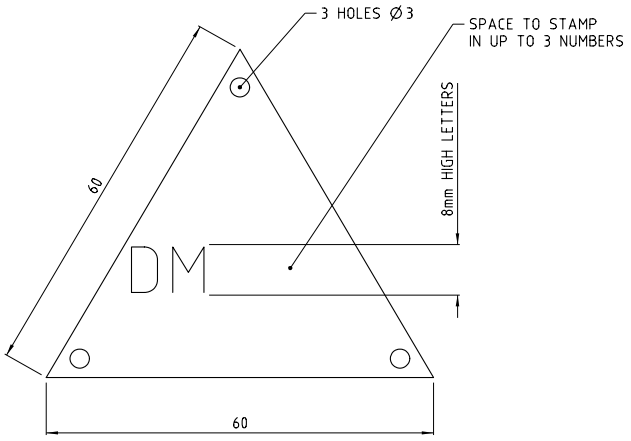
Pole Steelwork Components



ITEM	DIA	S.I. No.
14A	200	32.33.43
14B	225	32.33.44
14C	250	32.33.45
14D	275	32.33.46
14E	300	32.33.47
14F	325	32.33.76



POLE CAP
MATERIAL: GMS 1.0mm (MIN)
SCALE 1:10



ITEM 31C
DEVELOPMENT MAINS TAG
S.I. 32.33.85
MATERIAL: 0.8mm ZINCANNEAL G2S TO AS 1365 and AS 1397
FINISH: PAINTED YELLOW
SCALE 1:1

NOTE
1. HOT DIP GALVANISED TO AS/NZS 4680

DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE STATED

ALTERATIONS
ORIGINAL ISSUE

TasNetworks

DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	-
DATE APPROVED	19/FEB/19

TITLE: POLE STEELWORK COMPONENTS

SCALE: 1:10 U.O.N

A4

D - OHC - K019 - SD - 002

REVISION: A