

A

B

C

D

E

F

G

H

A

B

C

D

E

F

G

H

**GENERAL NOTES**

- G1. STABILITY OF THE BUILDINGS, TRANSFORMERS & OTHER EQUIPMENT & FOUNDATIONS DURING CONSTRUCTION & THE CONSEQUENCES OF EXCAVATION IN THE VICINITY OF ADJACENT STRUCTURES ARE THE BUILDER'S RESPONSIBILITY.
- G2. ALL PROPRIETARY ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- G3. ALL WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE CURRENT STANDARDS AUSTRALIA CODES AND BUILDING CODE OF AUSTRALIA.
- G4. DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES.
- G5. ALL LEVELS ARE IN METRES ON AUSTRALIAN HEIGHT DATUM UNLESS NOTED OTHERWISE.
- G6. HANDLE & DISPOSE OF ALL CONTAMINATED MATERIAL IN ACCORDANCE WITH RELEVANT WH&S ACTS & REGULATIONS AND EPA REQUIREMENTS.
- G7. **IN CASE OF DOUBT - ASK**

**EARTHING NOTES**

- E1. STRUCTURES AND FOOTINGS SHALL BE EARTHED IN ACCORDANCE WITH THE REQUIREMENTS OF NS222.
- E2. THE STEEL REINFORCEMENT IS TO BE WELDED TO FORM A CONTINUOUS ELECTRICAL PATH DESIGNATED AS A PERIMETER EARTH RING. A MINIMUM OF ONE (1) EARTH BOND IS TO BE CONNECTED TO THE PERIMETER EARTH RING IN ACCORDANCE TO THE SPECIFIED METHOD. REFER TO SITE SPECIFIC EARTHING DRAWINGS FOR DETAILS OR CONTACT 'EARTHING AND INSULATION CO-ORDINATION'.
- E3. AUSGRID TO SUPPLY EMBEDDED EARTH BOND.
- E4. ALL WELDS TO BE IN ACCORDANCE TO AUSGRID'S EARTHING SPECIFICATION AND TO BE MINIMUM OF 75mm IN LENGTH.
- E5. THE EMBEDDED EARTHING SHALL BE INSPECTED BY AUSGRID EARTHING ENGINEER PRIOR TO POURING CONCRETE. THIS SHALL CONSTITUTE A HOLD POINT.
- E6. FOR EARTHING SAFETY REFER TO THE REQUIREMENTS OF NS222 SECTION 6.0 AND NS222 ANNEXURE C. IF ANY ADDITIONAL SITE SPECIFIC EARTHING SAFETY ADVICE IS PROVIDED, IT SHALL TAKE PRECEDENCE.
- E7. BARE EARTHING CONDUCTORS ARE NOT TO BE INSTALLED/CAST IN CONCRETE. THEY MUST BE ROUTED AROUND FOOTINGS/SLABS BEING INSTALLED.

**STRUCTURAL STEELWORK NOTES**

- GENERAL**
- S1. FABRICATE & ERECT ALL STRUCTURAL STEELWORK IN ACCORDANCE WITH AS 4100, AS 1554, AS 1101.3 & THE SPECIFICATION.
  - S2. VERIFY ALL SETTING OUT DIMENSIONS BEFORE STARTING WORK.
  - S3. DO NOT OBTAIN DIMENSIONS BY SCALING THE STRUCTURAL ELEMENTS.
  - S4. WHERE QUANTITIES ARE STATED, THEY ARE FOR ONE COMPLETE STRUCTURE.
- MATERIALS**
- S5. UNLESS NOTED OTHERWISE USE
    - (a) 10mm THICK GUSSET, FIN & END PLATES WELDED ALL ROUND.
    - (b) ALL FILLET WELDS TO BE 6mm CONTINUOUS, CATEGORY GP.
    - (c) ALL BUTT WELDS SHALL BE FULL PENETRATION, CATEGORY SP.
    - (d) ALL HOLDING DOWN BOLTS ARE TO BE GRADE 4.6/5 TO AS 1111.
    - (e) ALL BOLTS AND HOLDING DOWN BOLTS TO BE HOT DIP GALVANISED TO AS 1214.
    - (f) ALL WELDING SHALL COMPLY WITH SAA STRUCTURAL STEEL WELDING CODE AS 1554 UNLESS OTHERWISE SPECIFIED.
    - (g) ALL COMPOUND MEMBERS, BASE PLATES, CAP PLATES, END PLATES, GUSSET PLATES, FIN PLATES, STIFFENERS, BATTEN PLATES & LACINGS INCLUDING OTHER FITMENTS SHALL BE 6mm CONTINUOUS FILLET WELDED TO THEIR RESPECTIVE MEMBERS UNLESS OTHERWISE SPECIFIED.
  - S6. IF COMMERCIAL CLASS BOLTS ARE SPECIFIED, THEY SHALL BE HEXAGON HEAD.
  - S7. WELDS ARE TO BE GROUND FLUSH WHERE SURFACE IS TO BE TRAFFICABLE.
  - S8. CHIP ALL WELDS FREE OF SLAG.
  - S9. CONTRACTOR IS TO CONFIRM WITH SUPERINTENDENT WHERE EXPOSED WELDS ARE TO BE GROUND FLUSH.
  - S10. DO NOT GROUT UNDER BASE PLATES OF STRUCTURAL STEEL SUPPORTING ELECTRICAL EQUIPMENT UNTIL ERECTION OF EQUIPMENT IS COMPLETE.
- FINISHES**
- S11. ALL STEELWORK IS TO BE HOT DIP GALVANISED TO AS 4680 AFTER FABRICATION. GALVANISING MINIMUM AVERAGE COATING THICKNESS AND MASS TO BE IN ACCORDANCE WITH AS 4680 TABLE 1. AVERAGE THICKNESS SHALL BE DETERMINED IN ACCORDANCE WITH AS 2312. ALL SECTIONS SEALED WITH END OR BASE PLATES TO BE PROVIDED WITH 25mm DIA VENT HOLE EACH END IN AN INCONSPICUOUS LOCATION.
  - S17. WELDS & AREAS WHERE GALVANISING HAS BEEN DAMAGED TO BE TREATED WITH ZINCIFIX OR EQUIVALENT APPROVED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

**CONCRETE NOTES:**

C1. ALL CONCRETE MUST BE IN ACCORDANCE WITH THE CURRENT AS CODE 3600. ALL CONCRETE TO BE MANUFACTURED AND SUPPLIED IN QUALITY CONTROLLED CERTIFIED PLANT, IN ACCORDANCE WITH AS 1379. NO SITE MIXING PERMITTED. CONCRETE TESTS AS REQUIRED BY AS 1379 - CERTIFICATES TO BE PROVIDED AS FOLLOWS:

ITEM	REQUIREMENT
- SLUMP	- AS PER CODE
- 7 DAY STRENGTH	- IF REQUIRED
- 28 DAY CHARACTERISTIC STRENGTH	- FIRST TRUCK, 3rd TRUCK AND EVERY 5th TRUCK FOLLOWING BUT NOT LESS THAN CODE
- FLEXURAL STRENGTH	- FOR PAVING SLABS WHERE FLEXURAL STRENGTH IS SPECIFIED
- CHLORINE & SULPHATE CONTENT	- AS PER CODE
- DRYING SHRINKAGE	- AS PER CODE
- AIR CONTENT	- NOT REQUIRED

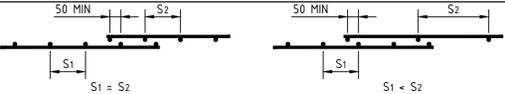
C2. CONCRETE QUALITY WATER/CEMENT RATIO SHALL NOT BE GREATER THAN 0.45. NO WATER TO BE ADDED ON SITE.

ELEMENT	MAX. NOM. AGG. SIZE	SLUMP	CHARACTERISTIC STRENGTH F <sub>c</sub> (AS 3600) AT 28 DAYS	MAXIMUM SHRINKAGE STRAIN με
FOOTINGS	20 mm	80 mm	32 MPa	650

C3. CLEAR CONCRETE COVER IN mm TO REINFORCEMENT UNLESS NOTED OTHERWISE.

ELEMENT	FORMED & SHELTERED	FORMED & EXPOSED	NOT FORMED AND CAST AGAINST EARTH
FOOTINGS	40 mm	45 mm	65 mm

- C4. NO ADMIXTURES ARE TO BE ADDED TO CONCRETE WITHOUT THE PRIOR WRITTEN APPROVAL OF THE AUSGRID STRUCTURAL ENGINEER.
- C5. CONCRETE SHALL NOT BE POURED ON HOT WINDY DAYS WITH EVAPORATION RATES GREATER THAN 15 l/m<sup>2</sup>/hr. WHERE THE EVAPORATION RATE IS ABOVE 0.6 l/m<sup>2</sup>/hr ALIPHATIC ALCOHOL (E.G. CONFILM) SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS TO PREVENT PLASTIC SHRINKAGE CRACKING.
- C6. ALL CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING CONCRETE TO ENSURE THE PREVENTION OF CRACKING AND TO SATISFY THE REQUIREMENTS OF STRENGTH, SERVICEABILITY AND DURABILITY. ALL CONCRETE SURFACES TO BE KEPT CONTINUOUSLY WET FOR 7 DAYS AND THEN ALLOWED TO GRADUALLY DRY OUT. THE USE OF SPRAYED MEMBRANE-FORMING CURING COMPOUNDS COMPLYING WITH AS 3799 SHALL BE PERMITTED, SUBJECT TO PRIOR APPROVAL BY THE AUSGRID STRUCTURAL ENGINEER.
- C7. A 3RD PARTY PROCESSOR CERTIFICATION (ACRS OR EQUIVALENT) MUST BE SUPPLIED WITH ALL STEEL REINFORCEMENT AT PROCUREMENT TO GUARANTEE CONFORMANCE TO AUSTRALIAN STANDARDS AND BEFORE ANY CONCRETE IS POURED.
- C8. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN & SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- C9. LAPS IN MESH SHALL BE MADE SO THAT THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED. SEE SKETCH BELOW:



- C10. ALL REINFORCEMENT TO BE ACCURATELY PLACED IN POSITION SHOWN & TIED & ADEQUATELY SUPPORTED TO GIVE SPECIFIED COVER.
- C11. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- C12. DEPTH OF BEAM IS GIVEN FIRST & INCLUDES SLAB THICKNESS.
- C13. CONDUITS PIPES ETC. MUST NOT BE PLACED IN CONCRETE COVER & NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE ALLOWED UNLESS APPROVED IN WRITING BY THE AUSGRID STRUCTURAL ENGINEER.
- C14. ALL TIE RODS WHERE NOT SHOWN ON THE DRAWING SHALL BE N12-200. PROVIDE N12 TIES AS REQUIRED TO SUPPORT REINFORCEMENT BARS IF STANDARD BAR CHAIRS ARE OF INADEQUATE HEIGHT.
- C15. ALL BAR CHAIRS TO BE PLASTIC OR CONCRETE TYPE UNLESS NOTED OTHERWISE. STEEL BAR CHAIRS PERMITTED IN SWITCHYARD FOOTINGS ONLY.
- C16. CONCRETE ELEMENTS SHALL BE FINISHED IN ACCORDANCE WITH AS 3610 AS FOLLOWS (OTHERWISE AS ON DWG):

ITEM	FORMED SURFACE FINISH (AS3610)	UNFORMED SURFACE FLATNESS (TOLERANCE CLASS)	UNFORMED SURFACE FINISH METHOD
FOOTINGS - FORMED SURFACE	CLASS 4	C	WOOD FLOAT
FOOTINGS - UNFORMED SURFACE	CLASS 3	B	STEEL TROWEL

C17. UNFORMED SURFACE FLATNESS TOLERANCE SCHEDULE.

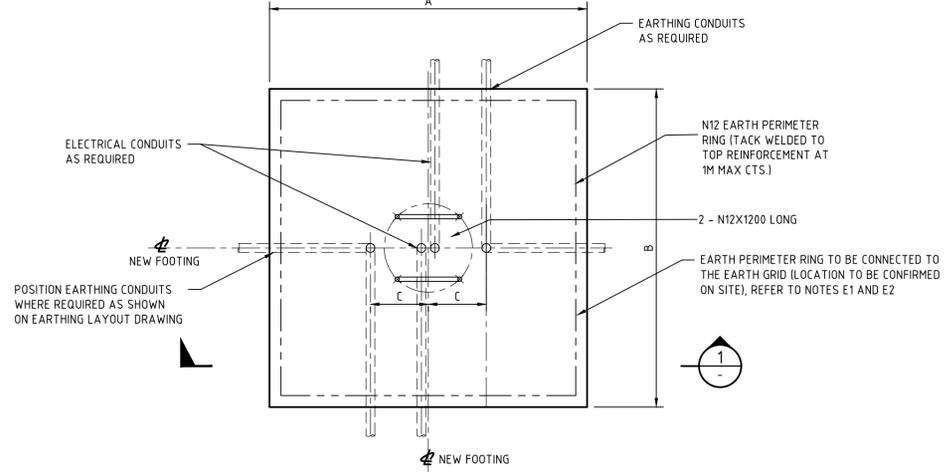
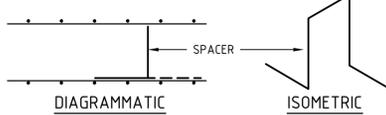
TOLERANCE CLASS	MEASUREMENT	MAXIMUM DEVIATION mm
A	3 m STRAIGHT EDGE	3
B	3 m STRAIGHT EDGE	6
C	600 mm STRAIGHT EDGE	6

- C18. UNFORMED ELEMENTS IN CONTACT WITH THE GROUND (EXCEPT FOR FOOTINGS) SHALL BE SEPARATED WITH A POLYMERIC FILM UNDERLAY TO AS2870 MINIMUM THICKNESS 200 MICRONS.
- C19. EXTERNAL EMBEDDED ITEMS SHALL BE PLACED SO THAT THEY ARE NOT WITHIN THE ZONE OF CONCRETE COVER REQUIRED TO PROTECT THE REINFORCEMENT.
- C20. THE EXPOSED EDGE OF THE CONCRETE SHALL BE FINISHED WITH A 10mm RADIUS CORNER UNO.
- C21. INSPECTION TO VERIFY CORRECT INSTALLATION OF REINFORCING IS REQUIRED BEFORE POURING CONCRETE. CERTIFICATION SHALL BE PROVIDED.

**REINFORCEMENT SYMBOLS**

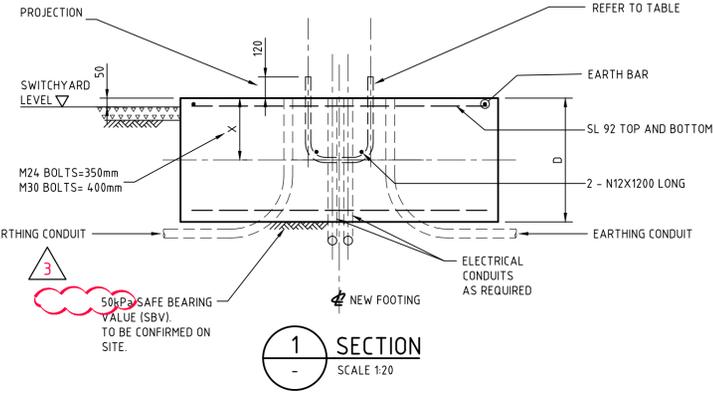
- C22. RL DENOTES RECTANGULAR LOW DUCTILITY REINFORCING FABRIC TO AS/NZS 4671
  - SL DENOTES SQUARE LOW DUCTILITY REINFORCING FABRIC TO AS/NZS 4671
  - R DENOTES STRUCTURAL GRADE ROUND BAR TO AS/NZS 4671
  - N DENOTES 500 GRADE DEFORMED BAR NORMAL DUCTILITY TO AS/NZS 4671
  - C DENOTES COLD WORKED DEFORMED BAR TO AS/NZS 4671
- THE NUMBER FOLLOWING THE SYMBOLS R, N AND C IS THE BAR DIAMETER IN MILLIMETRES

C23. PROVIDE ADDITIONAL REINFORCEMENT SPACERS WHERE REQUIRED TO PROVIDE SUPPORT TO TOP REINFORCEMENT WHERE PROPRIETARY BAR CHAIRS ARE IMPRACTICAL OR NOT AVAILABLE



**POLE FOOTING PLAN**

FOR LOCATION OF FOOTINGS REFER TO SITE SPECIFIC FOOTING PLAN. REFER TO APPROPRIATE LAYOUT OF PITS & DUCTS DRAWING FOR DIRECTION OF CONDUITS



**SECTION 1**  
SCALE 1:20

**CIVIL SAFETY NOTES**

- SD1. THE DESIGNER SAFETY REPORT PREPARED BY AUSGRID DESIGNERS IS INTENDED TO MEET THE REQUIREMENTS OF THE WHS ACT (NSW) & CLAUSE 295 OF WHS REGULATION (NSW) - LATEST EDITIONS. **STANDARD DESIGN - DESIGNER SAFETY REPORT - CIVIL/STRUCTURAL WORKS - TRIM REFERENCE 025/90492 SHALL BE READ IN CONJUNCTION WITH THESE DRAWINGS.** THIS DESIGNER SAFETY REPORT CONSIDERS CIVIL/STRUCTURAL DESIGN ISSUES ONLY AND DOES NOT ADDRESS ELECTRICAL, EARTHING ETC WHICH SHOULD BE ADDRESSED BY THE RELEVANT DESIGNER. ATYPICAL RESIDUAL RISKS ARE NOTED IN THE DESIGNER SAFETY REPORT.
  - SD2. CERTIFICATION OF THE COMPLETED WORKS IS REQUIRED IN WRITING FROM THE AUSGRID DESIGN ENGINEER UNLESS OTHERWISE ADVISED IN WRITING BY DEVELOPMENT SERVICES - CIVIL & BUILDING SECTION. CERTIFICATION SHALL BE OBTAINED TO ENSURE COMPLIANCE WITH WH&S SAFETY IN DESIGN LEGISLATION AND NS 261. CERTIFICATION CANNOT BE PROVIDED UNLESS THERE IS COMPLIANCE WITH THE NOMINATED INSPECTIONS. AS A MINIMUM, INSPECTIONS ARE REQUIRED BEFORE WORK IS COVERED UP, I.E., BEFORE A CONCRETE POUR OR BEFORE CLADDING IS INSTALLED. A COMPLETION INSPECTION WILL ALSO BE REQUIRED.
- THIS IS A STANDARD DRAWING SO SITE SPECIFIC SAFETY ISSUES HAVE NOT BEEN CONSIDERED. SITE SPECIFIC ISSUES SHALL BE CONSIDERED BY THE PROJECT DESIGN TEAM. THE SITE SPECIFIC DESIGNER SAFETY REPORT SHALL INCORPORATE ANY UNUSUAL HAZARDS IDENTIFIED IN THE STANDARD DESIGN - DESIGNER SAFETY REPORT.**

**FOOTING DIMENSIONS**

Mast Height (m)	Working Base Moment(kN m)	A (mm)	B (mm)	C (mm)	D (mm)	Ref. Dwg.	Bolt
7	13.75	1500	1500	400	600	162812	4-M24 350PCD
12	22.13	1800	1800	400	600	162812	4-M24 350PCD
15	27.50	1800	1800	550	700	162293	4-M30 500PCD
18	32.25	2100	2100	550	500	162293	4-M30 500PCD
20	41.56	2100	2100	550	700	162293	4-M30 500PCD

AMENDMENTS						
AMD	DATE	DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
1						
2	28/06/2024	CONSTRUCTION ISSUE. NOTES UPDATED. SID NOTES ADDED.	A.S.	P.L.	A.V.	K.G.
3	28/03/2025	DETAILS REVISED, SID TRIM REFERENCE ADDED. ISSUED FOR CONSTRUCTION	J.A.	D.S.	J.M.	K.G.



24 Campbell Street  
SYDNEY NSW 2000

SCALE	AS SHOWN
DESIGNED	DAVID STANBURY
DRAWN	MAX THOMAS
CHECKED	PAUL LOVARINI
APPROVED	KATINA GALLEN
DATE	24 NOVEMBER 2010
TRIM REF	-
PROJECT NUMBER	-

**STANDARD YARD CONSTRUCTION  
STEEL FLANGE MOUNTED LIGHTNING MAST  
CONCRETE PAD FOOTING DETAIL**

DRAWING No **215497** SHEET 1 AMD 3 SIZE A1