



**ANCHOR CAGE ASSEMBLY AND FOOTING SETTING OUT**

**INSTALLATION DETAILS**

**SEQUENCE OF INSTALLATION:**

- ① Locate pole position relative to the roadway after check for services and determine crossfall.
- ② Dig/bore and excavate hole.
- ③ Determine finished surface level and suspend anchor bar cage in correct position relative to the finished surface level.
- ④ Threads to be protected and conduit plugged before pouring concrete.
- ⑤ Pour concrete footing to within 190 of top of anchor bar cage and allow to set.
- ⑥ Locate pole 60 above finished footing level. Ensure structural washers are placed on top of levelling nuts.
- ⑦ Level pole, finger tighten M33 high strength fixing nut and M33 high strength temporary nut on each threaded bar on base plate.
- ⑧ Immediately form mortar pad under base plate using one of the following methods. Mix and apply mortar in accordance with manufacturer's specifications. Mortar pad edges bevelled as shown.
  - (a) Pack Parchem Conbextra HES mortar or approved equivalent in place. Mortar mix to be in plastic consistency, or
  - (b) Pour Pachem Conbextra HES grout or approved equivalent in place. Grout mix to be in flowable consistency.
- ⑨ Wait until mortar has achieved final set in accordance with manufacturer's specifications before tensioning nuts.
- ⑩ Remove temporary nuts from top of base plate.
- ⑪ Tension the remaining nuts to 135 Nm minimum.

**NOTES:**

1. Finished surface level must be determined prior to commencement of anchor cage installation.
2. In collapsing soils, top of footing may be formed using 600 x 600 x 150 deep boxing or 600 dia. Formatube.
3. A seven day minimum curing period for N25/20 concrete must be allowed for mast arm footings before erecting mast arms.
4. Poor soil consists of any of the following: Soft clay, loose sand and soft sand/clay mixes.
5. For anchor cages with lengths between 2000 and 3000, refer Standard Drawings 1404 and 1680.
6. A template must be used to ensure bars in footing are in the correct position during placement of concrete. Suggested size of template – 6 thick steel plate.
7. Minimum depth of cover to conduit is 600. Only where there is a localised conflict with other underground services may the depth of conduit be decreased to a minimum of 375. In which case the conduit must be protected with a minimum 300 x 75 nominal thick concrete capping layer and concrete conduit protection 1:4 mix. The Superintendent must give his written approval for this departure from the standard.
8. Dimensions are in millimetres unless shown otherwise.

**ASSOCIATED DEPARTMENTAL DOCUMENTS:**

- Standard Drawings
- Specifications

**REFERENCED DOCUMENTS:**

- Departmental Standard Drawings:
- 1404 Traffic Signals – Mast Arm Anchor Cage Fabrication Details
  - 1420 Traffic Signals – Traffic Signals Components
  - 1427 Traffic Signals – 'U' Series Mast Arm Installation Details
  - 1680 Traffic Signals/Road Lighting – Extension to Light Pole and Mast Arm Anchor Cages
  - 1699 Traffic Signals/Road Lighting/ITS – Parts List

**Departmental Specifications:**

- MRTS70 Concrete
- MRTS91 Conduits and Pits
- MRTS92 Traffic Signal and Road Lighting Footings
- MRTS93 Traffic Signals

**Australian Standards:**

- AS 1275 Metric screw threads for fasteners
- AS/NZS 3000 Electrical Installations (Wiring Rules)

FOOTING DETAILS					
Footing Location	Minimum Depth of Footing (D)		Minimum Diameter of footing (W)	Bar Length Refer Note 5	
	Av. Good Soil	Poor Soil Refer Note 4		Av. Good Soil	Poor Soil Refer Note 4
Flat surface including and up to 1:6 batter slope	1900	2300	600	2000	2000
Batter slope from 1:6 up to and including 1:3 slope	2400	2900		2500	3000

The purpose of this drawing is to provide typical standard details. The fitness for purpose of this drawing for a specific project shall be determined and certified by an RPEQ Engineer. Additional project specific details may be required to be included in the scheme drawings.

**INSTALLATION OF CONDUITS AND PITS IS THE RESPONSIBILITY OF THE LICENSED ELECTRICAL CONTRACTOR**

Department of Transport and Main Roads		TRAFFIC SIGNALS	
A3		Standard Drawing No	
Not to Scale		1403	
		Date 7/2020	