

Surveyor - General's Direction

No. 1

Approved Permanent Survey Marks

Version 4.0 August 2025



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Surveyor-General's Direction No. 1
Approved Permanent Survey Marks

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Spatial Services
A Unit of the Department of Customer Service
346 Panorama Avenue
Bathurst NSW 2795
T: (02) 6332 8287w
spatial.nsw.gov.au

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Enquiries:

Any enquiries regarding this Direction should be forwarded to
[Spatial Services Customer Hub](#).

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Document Approval:

Approved By:



Narelle Underwood

Surveyor-General of NSW

Date of Approval:

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1. Preamble

Under the *Surveying and Spatial Information Act 2002* (the Act), the Surveyor-General of NSW is responsible for the establishment of the State control survey. The State control survey is realised through physical monumentation on the ground with permanent survey marks.

The form and style of permanent survey marks are prescribed by Section 47 of the *Surveying and Spatial Information Regulation 2024* (the Regulation) and must be as those shown in Schedule 4 of the Regulation.

The Department of Customer Service - Spatial Services (Spatial Services), on behalf of the Surveyor-General of NSW, carries out the procurement, distribution, sales and tracking of permanent survey mark hardware in NSW.

2. Introduction

A permanent survey mark is a stable and durable mark of a permanent nature that is uniquely identified by a combination of letters and numbers. These identifiers are used to store attributes of the mark, such as co-ordinates, height, characteristics and location details within the records of Spatial Services, made publicly available through the Survey Control Information Management System (SCIMS). For more information on SCIMS please see [Surveyor-Generals Direction No. 4 - Interpreting the Control Information Management System](#).

Permanent survey marks provide the basic framework for all types of surveys to be brought onto a common network, the State control survey.

The diagrams in [section 6](#) show the survey mark types approved by the Surveyor-General and gazetted as permanent survey marks.

3. Purchasing permanent survey marks

Permanent survey mark hardware is available to be purchased from distributors as outlined in [Appendix 7.3](#) distribution centres. Purchasing permanent survey mark hardware is made by account, with invoices sent out on the following month of the date of issue. Prices are updated regularly and published on the Spatial Services website. https://www.spatial.nsw.gov.au/publications/information_sheets

Due to resourcing and building security requirements you are required to contact distributors in advance of any order. Most products can be couriered at additional expense (with limits on quantities due to weight). Cast iron cover boxes are only available via pick up from distributors due to weight and size limitations. Options for a bulk delivery of a minimum of 50 cast iron cover boxes is available on request. There must be adequate access at the delivery location to manoeuvre and store the oversized packing crate.

For further information or advice, contact:

SCIMS & CORS Unit
Spatial Services – Department of Customer Service
Telephone: 1300 211 253
Email: SCIMS@customerservice.nsw.gov.au

4. Notification of placement

Section 73 of the Regulation requires that the Surveyor-General be notified within 2 months or at the time of deposited plan lodgement with NSW Land Registry Services, on a mark being inserted.

This notice is performed as per the instructions outlined in [Surveyor-General's Direction No. 2 - Preparation of Locality Sketch Plans](#). Wherever permanent survey marks are placed in rural locations or in other areas deemed appropriate, a survey plaque should be located nearby to assist with the discovery of the permanent survey mark, see [section 5](#) for more details.

5. Survey plaques

Survey plaques are designed to help preserve and protect permanent survey marks by aiding their identification and location. The purpose of the plaque is to advise that there is a permanent survey mark in the vicinity, assist the location of the permanent survey mark and provide a warning that there is a penalty for the destruction of the mark. A diagram of a survey plaque is provided in [Appendix 7.2](#). Survey plaques are available from the permanent survey mark distributors as listed in [Appendix 7.3](#).

It is recommended that:

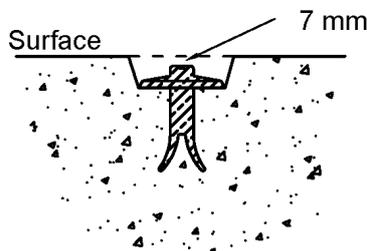
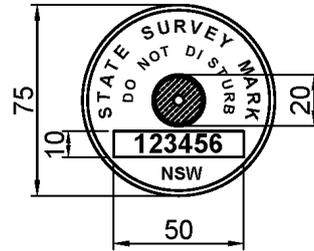
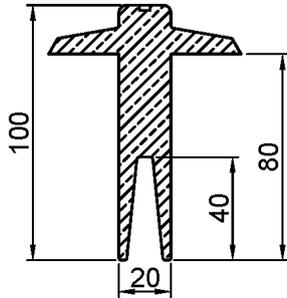
- The plaque should be placed, wherever possible, to face in the direction of the permanent survey mark
- The plaque should be fixed to a star picket or length of white PVC pipe of minimum diameter 90 mm securely embedded in the ground
- The consent of the relevant service authority or property owner should be sought where it is intended to attach the plaque to piece of service supply infrastructure or other localised feature, e.g. fence post
- The plaque and post (if used) should be located so that no hazard is created to the public or livestock
- The bearing and distance from the permanent survey mark to the plaque should be included on the sketch plan and stamped on the plaque if possible.

Sensible usage of these plaques should ensure a greater awareness of these marks and save time when locating permanent survey marks.

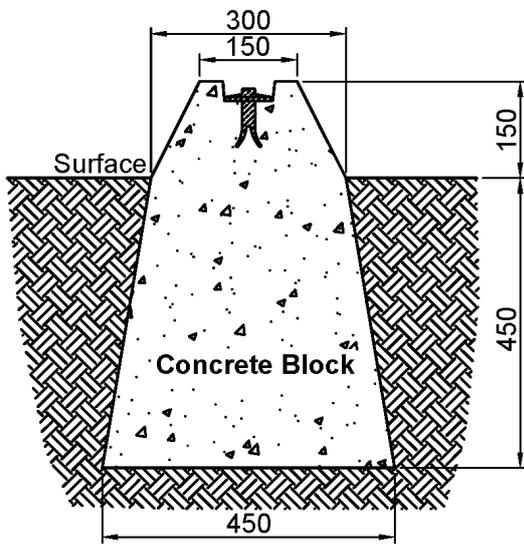
Note: Care should be taken when installing the galvanised star picket or PVC pipe to not disturb any underground services in the area.

6. Permanent survey mark diagrams

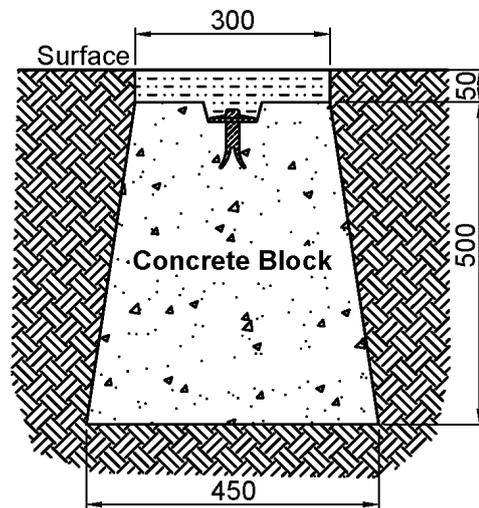
6.1 Permanent survey mark type 1 (State Survey Mark - Rural)



NOTE: All Type 1 marks are to be recessed, regardless of placement medium.



**Ground level SSM
(Rural areas ONLY)**

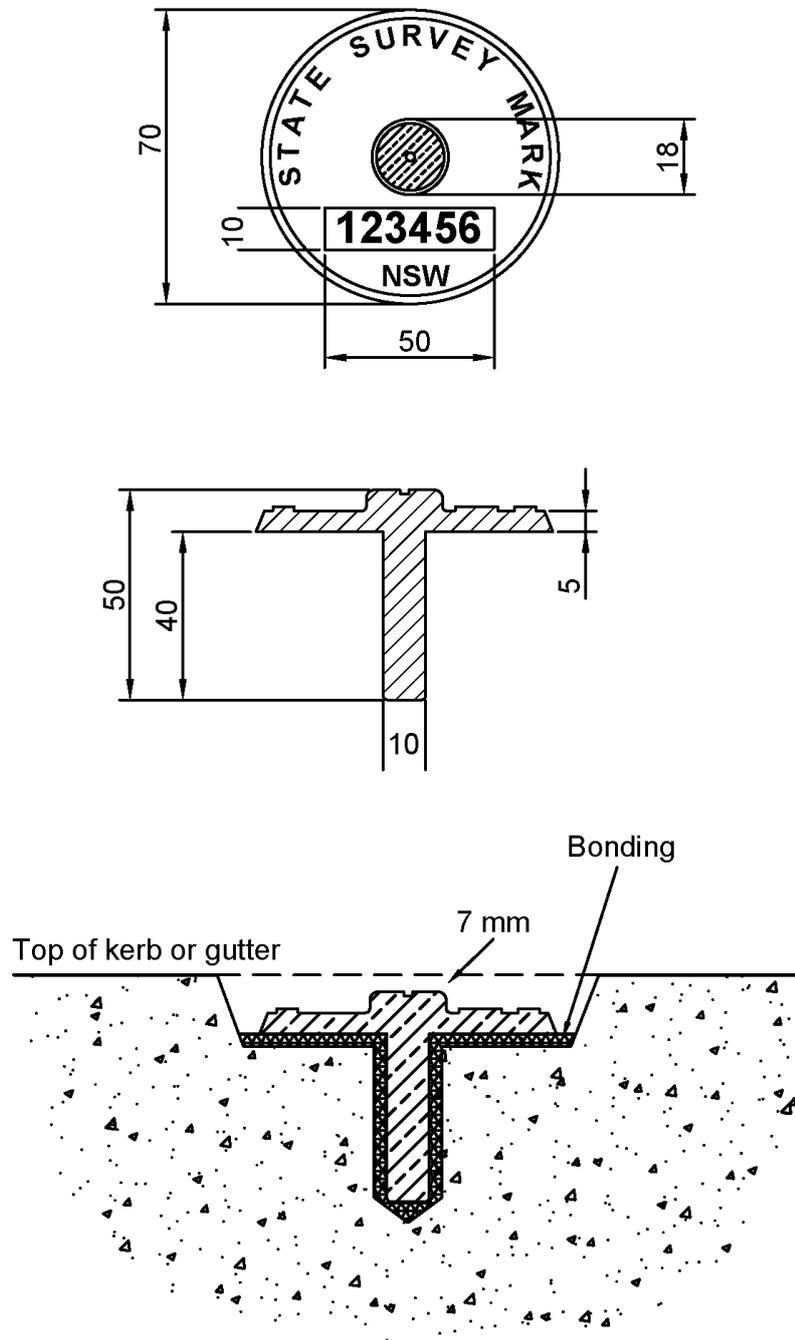


Sub-surface SSM

NOTE: Where an existing structure or solid rock is unavailable the mark is to be placed in the top of a concrete block and cast in situ. The block must have a volume of concrete of at least 0.07 cubic metres (7 x 20 kg bags of concrete) and shaped as indicated above.

6.2 Permanent survey mark type 2 (State Survey Mark - Urban)

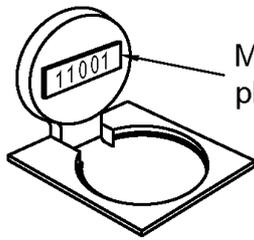
Dimensions are in millimetres



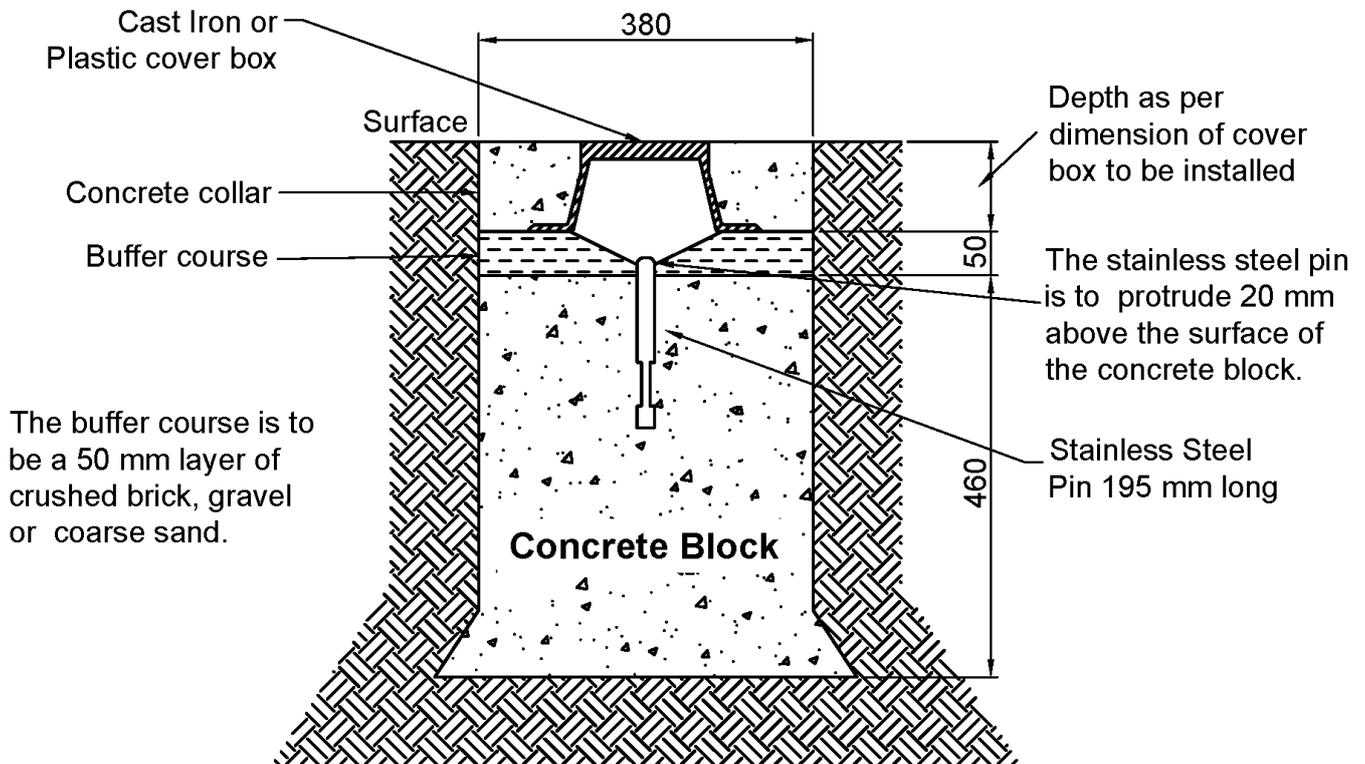
Fixation is by drilling and bonding with a suitable epoxy- resin compound

6.3 Permanent survey mark type 4 (Urban Type)

Dimensions are in millimetres



Mark number on brass plate inside lid of cover box



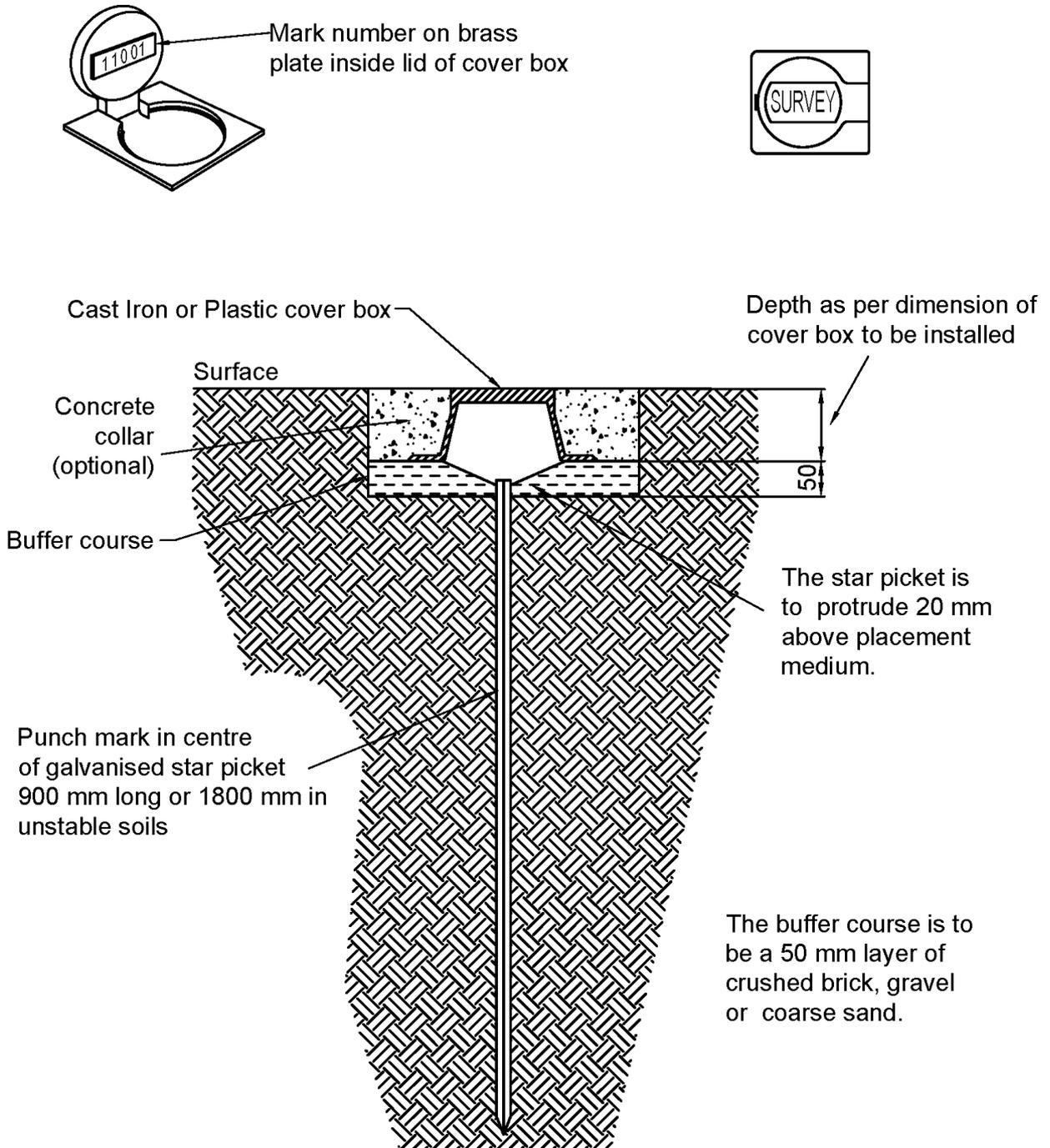
NOTE: Minimum size of concrete 460 mm deep by 380 mm square and enlarged at the bottom. Minimum volume of concrete of at least 0.07 cubic metres (7 x 20 kg bags of concrete).

Where solid rock is met the depth may be varied. In localities where the ground is unstable the dimensions must be increased.

Plastic cover box not to be used in trafficable areas.

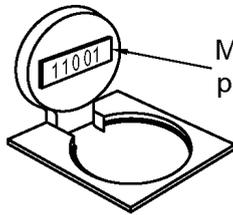
6.4 Permanent survey mark type 6 (Non-Urban Type)

Dimensions are in millimetres

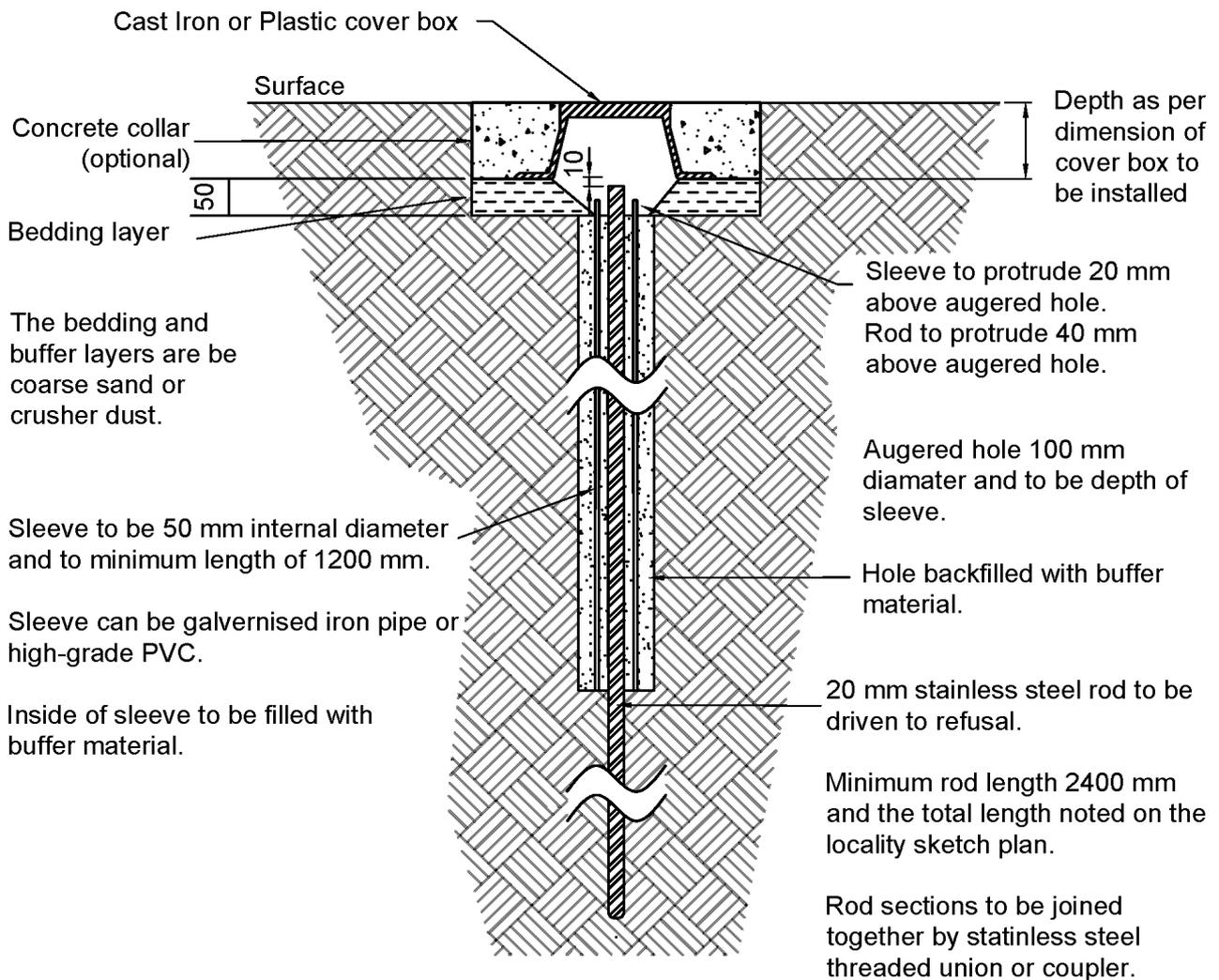


6.5 Permanent survey mark type 8 (Dept of Water Resources "Type" C)

Dimensions are in millimetres



Mark number on brass plate inside lid of cover box



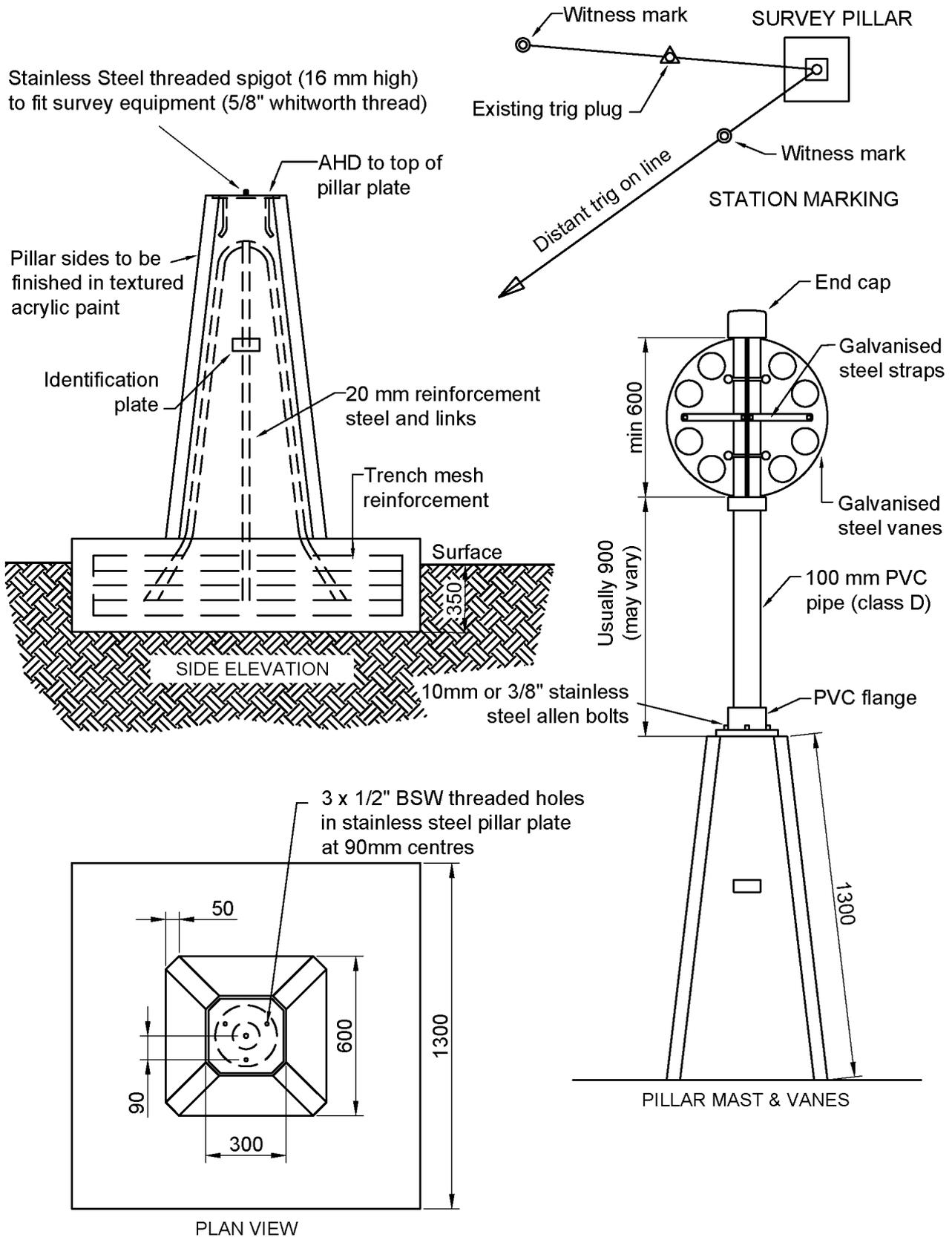
NOTE: This mark type may only be established to a maximum Horizontal Class of D. Vertical Class remains unrestricted.

If the placement medium is deemed to be soft or more likely to react, then increasing the lengths of the rod and sleeves is advised.

Plastic cover box not to be used in trafficable areas.

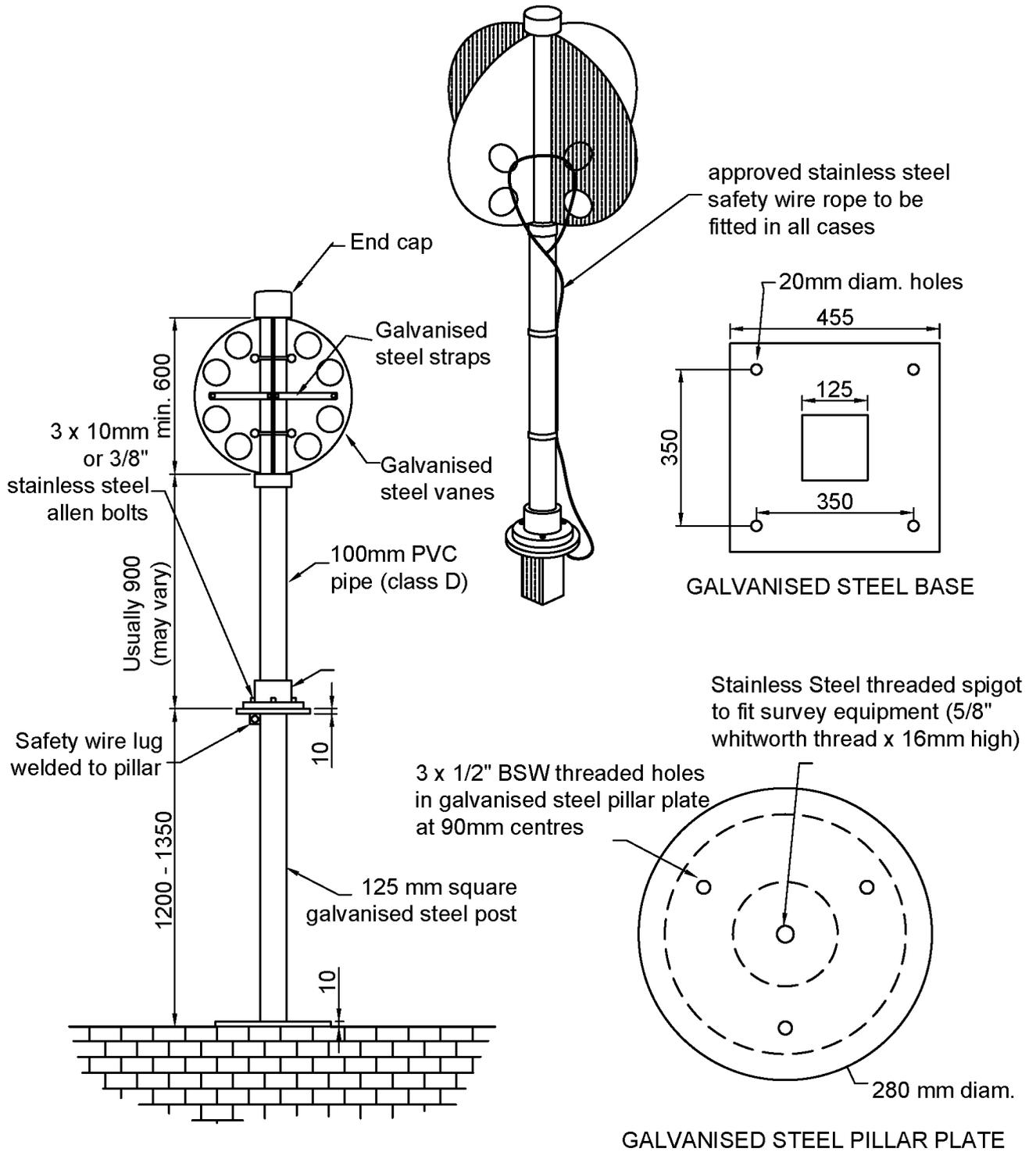
6.6 Permanent survey mark type 9 (Trigonometrical Station)

Dimensions are in millimetres



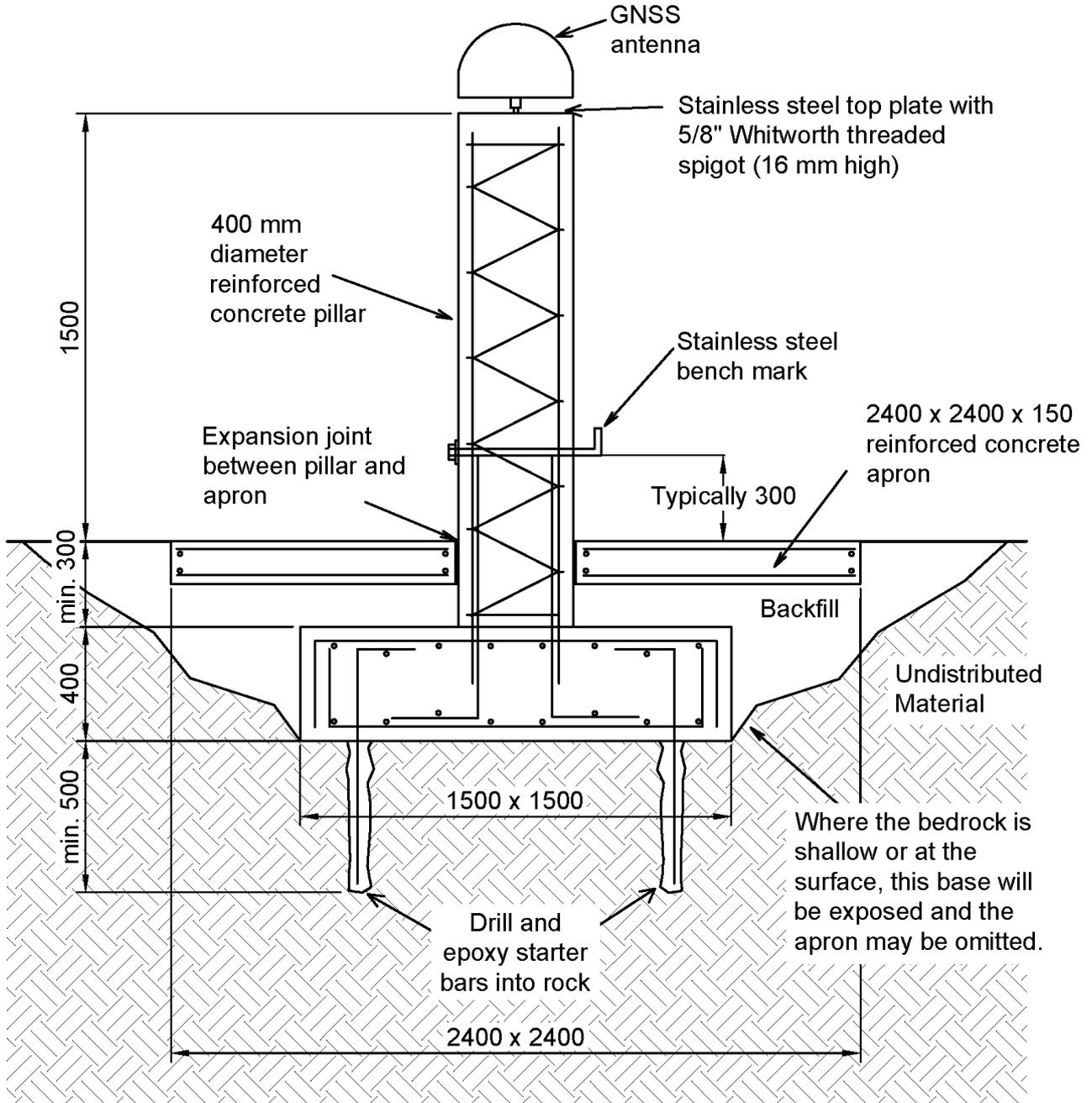
6.7 Permanent survey mark type 10 (Rooftop Pillar)

Dimensions are in millimetres



6.8 Permanent survey mark type 11 (Tier 2 CORS Pillar)

Dimensions are in millimetres

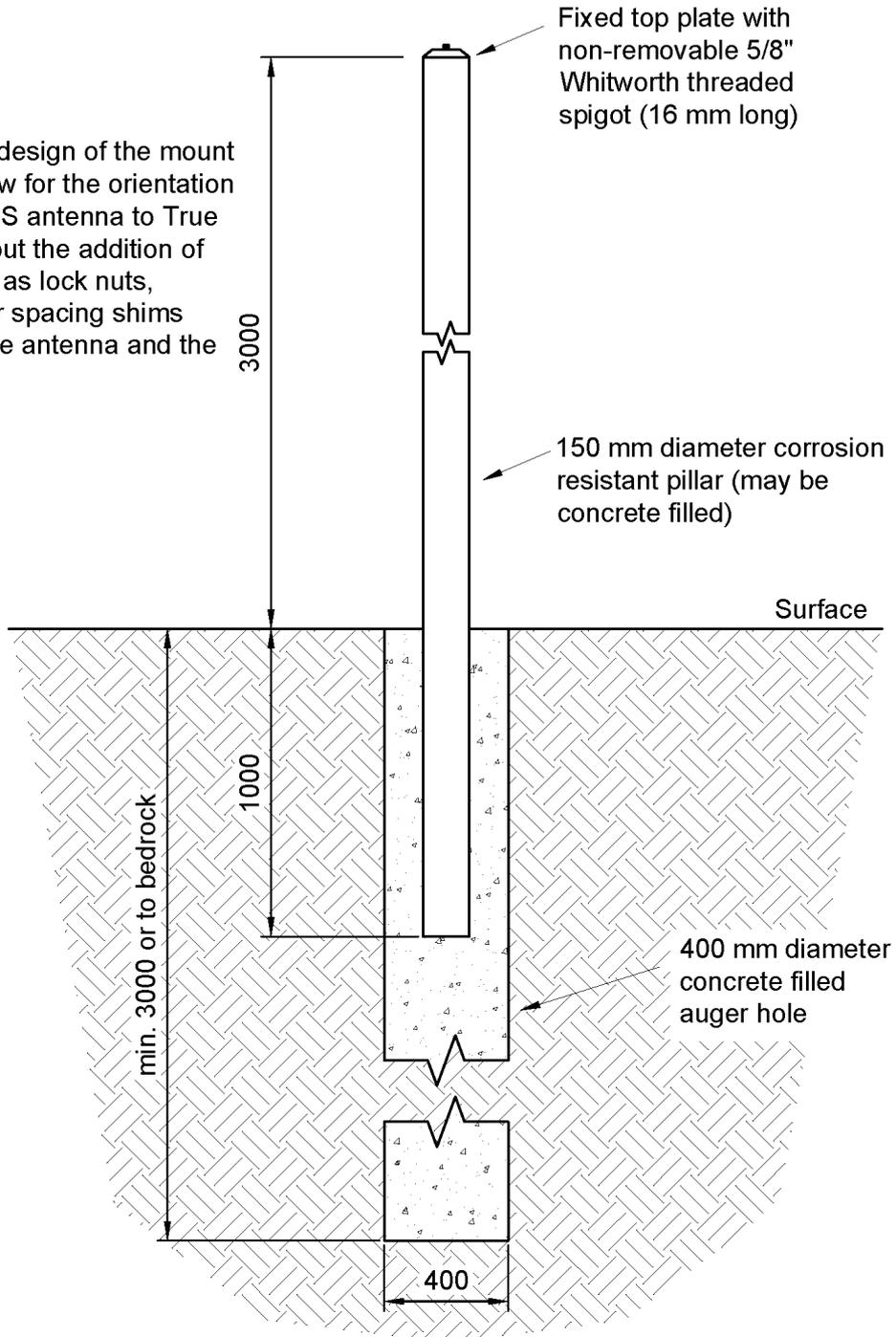


NOTE: The installation of this type PSM will also require cables, antenna, receiver power supply and ancillary equipment necessary for ongoing measurements.

6.9 Permanent survey mark type 12 (Tier 3 CORS Pillar – Freestanding)

Dimensions are in millimetres

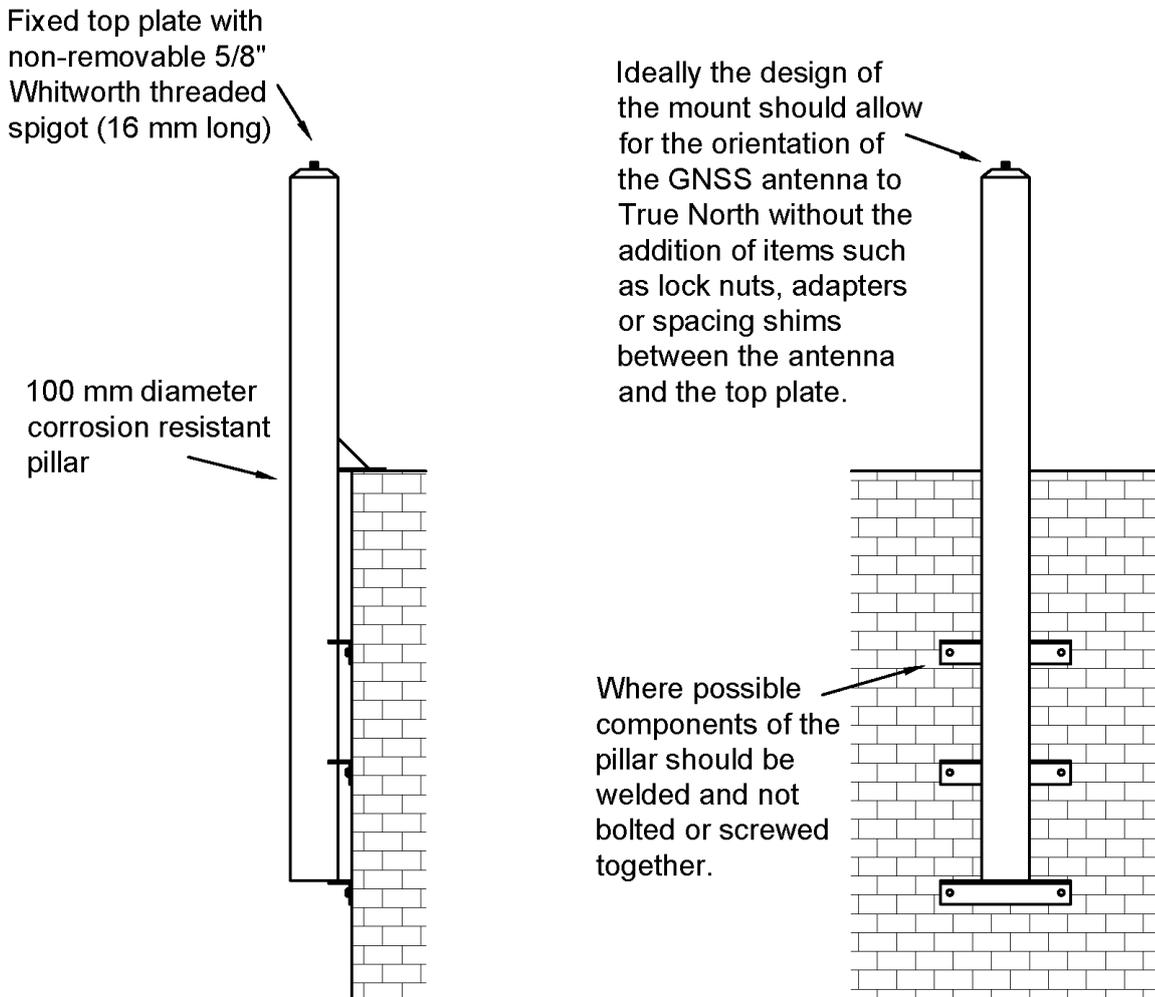
Ideally the design of the mount should allow for the orientation of the GNSS antenna to True North without the addition of items such as lock nuts, adapters or spacing shims between the antenna and the top plate.



NOTE: the installation of this type PSM will also require cables, antenna, receiver power supply and ancillary equipment necessary for ongoing measurements.

6.10 Permanent survey mark type 13 (Tier 3 CORS Pillar – Wall Mounted, no eaves)

Dimensions are in millimetres



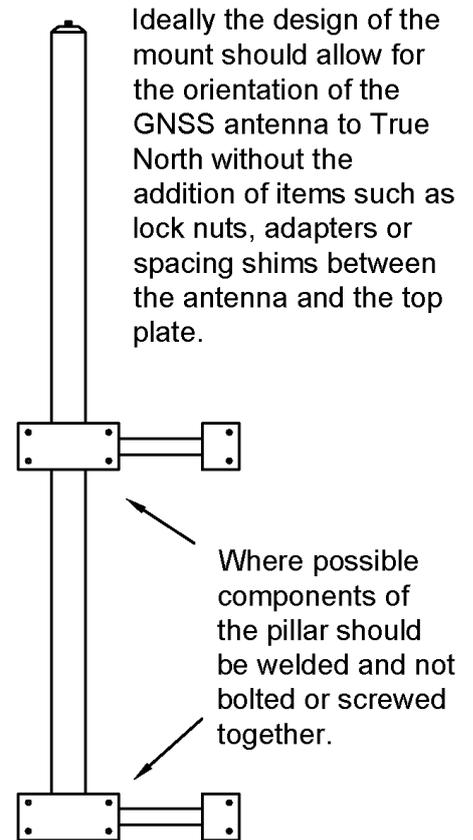
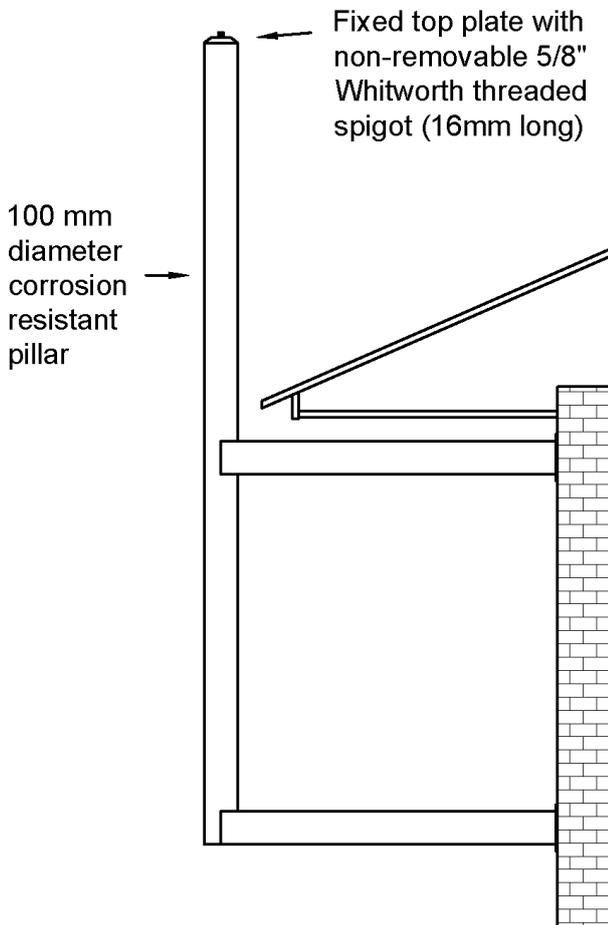
The mount should be securely attached to a building (preferably masonry) using corrosion resistant chemical type anchors (e.g. polymer glue, epoxy, etc) or through bolted where appropriate. The use of expansion type anchors should be avoided.

NOTE: Antenna mount type and dimensions vary according to constraints of the building.

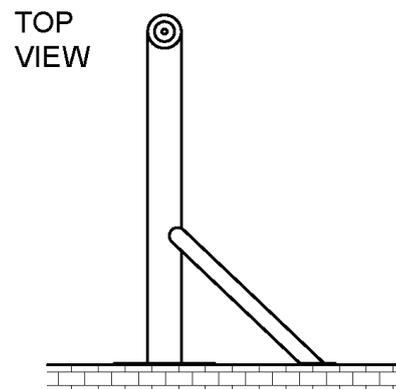
The installation of this type PSM will also require cables, antenna, receiver power supply and ancillary equipment necessary for ongoing measurements.

6.11 Permanent survey mark type 14 (Tier 3 CORS Pillar – Wall Mounted)

Dimensions are in millimetres



The mount should be securely attached to a building (preferably masonry) using corrosion resistant chemical type anchors (e.g. polymer glue, epoxy, etc) or through bolted where appropriate. The use of expansion type anchors should be avoided.

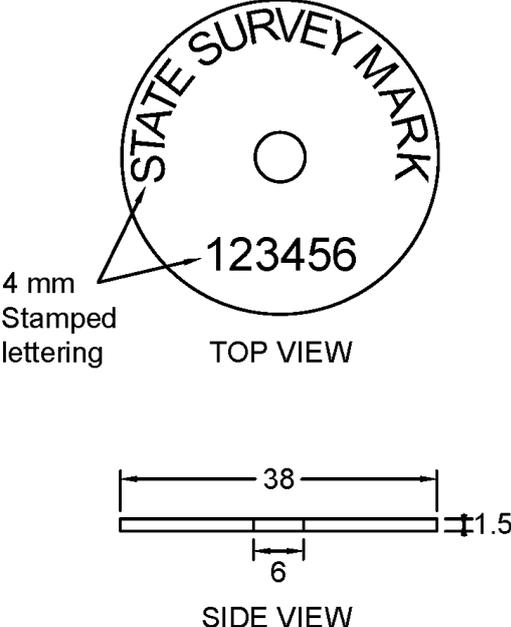
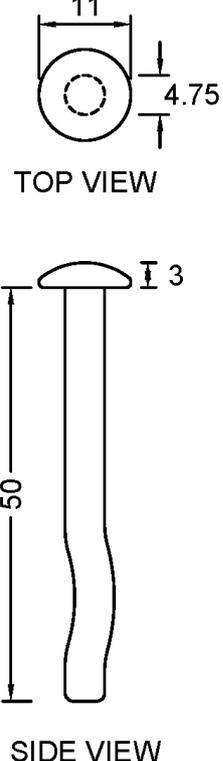
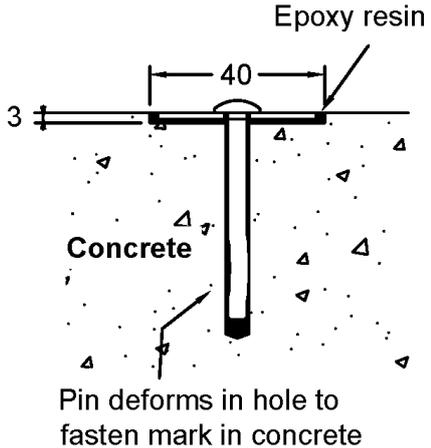


NOTE: Antenna mount type and dimensions vary according to constraints of the building.

The installation of this type PSM will also require cables, antenna, receiver power supply and ancillary equipment necessary for ongoing measurements.

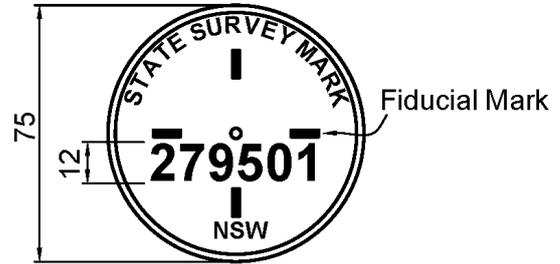
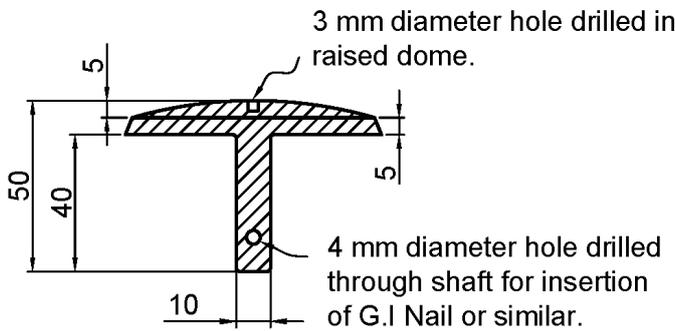
6.12 Permanent survey mark type 15 (State Survey Mark – Urban)

Dimensions are in millimetres

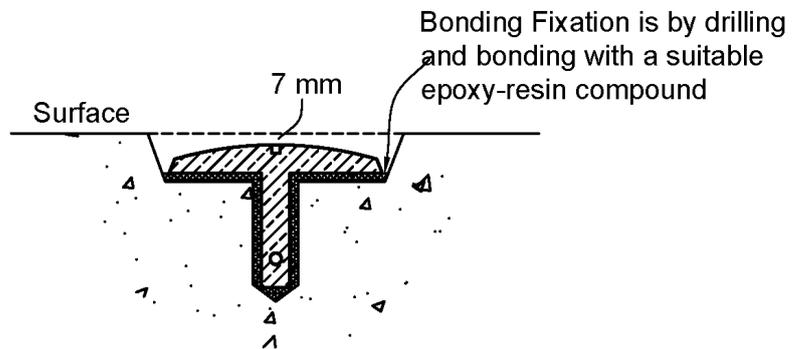
<p style="text-align: center;">Disc Detail</p>  <p style="text-align: center;">Disc & Pin to be marine grade stainless steel</p>	<p style="text-align: center;">Pin Detail</p> 
<p style="text-align: center;">Mark Installation</p> <ol style="list-style-type: none"> 1. Drill 5 mm hole, 60 mm deep (any other size drill hole will not result in a firm, stable mark). 2. Drill 40 mm diameter, 3 mm deep recess for disc. 3. Clean out debris thoroughly. 4. Mix epoxy resin - pour small amount down hole, apply part around disc location. 5. Tap mark in gently to set mark into position. 6. Carefully centre punch mark if required. 7. Remove excess epoxy from surrounding area if required. 	
 <p style="text-align: right;">Pin deforms in hole to fasten mark in concrete</p>	

6.13 Permanent survey mark type 16 (State Survey Mark)

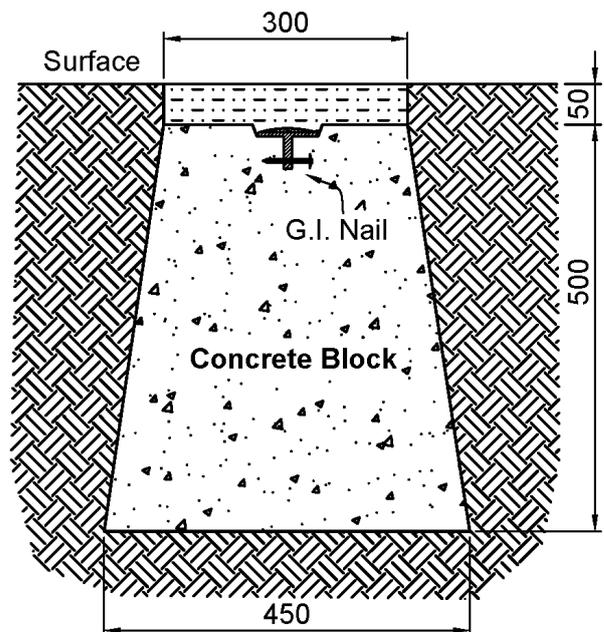
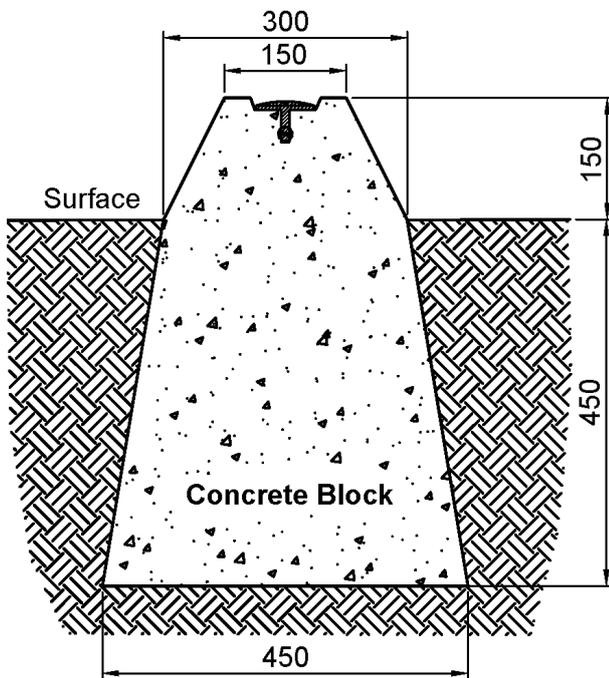
Dimensions are in millimetres



NOTE: All Type 16 marks are to be recessed, regardless of placement medium.



State Survey Mark (Type 16) in existing, durable & stable structure.



State Survey Mark (Type 16) at or above ground level cast insitu.

NOTE: Where an existing structure or solid rock is unavailable the mark is to be placed in the top of a concrete block and cast in situ. The block must have a volume of concrete of at least 0.07 cubic metres (7 x 20 kg bags of concrete) and shaped as indicated above

7. Appendices

7.1 Suitable fixing agents

Below is a list of epoxies which are suitable for bonding the State Survey Mark (SSM) style of permanent survey marks as required.

Product:

- Quickset cement
- Cement mix
- Selley's Epoxy
- Resin Cement repair kit

When choosing a suitable epoxy those with a higher viscosity are recommended.

7.2 Survey plaque



7.3 Distribution centres for permanent survey mark hardware

Mark distribution from all centres must be pre booked for pickup or a courier arranged. Please use the contact details below for orders and bookings.

Armidale

New England Surveying & Engineering
1/161 Rusden Street
Email: info@nese.com.au
Phone: (02) 6772 3141

Bathurst

Spatial Services
346 Panorama Avenue
Email: SCIMS@customerservice.nsw.gov.au
Phone: 1300 211 253

Coffs Harbour

Spatial Services c/o Fair Trading
359 Harbour Drive
Email: Stewart.Folley@customerservice.nsw.gov.au
Phone: (02) 8587 0510

Dubbo

Barnson
1/36 Darling Street
Email: arowe@barnson.com.au
Phone: 1300 227 676

Goulburn

KMJ Surveying Pty Ltd
36 Montague Street
Email: admin@kmjsurveying.com.au
Phone: (02) 4821 1033

Grafton

Clarence Valley Surveys Pty Ltd
86 Victoria Street
Email: admin@cvsurveys.com.au
Phone: (02) 6642 3300

Lismore

Terania Consulting Pty Ltd
Unit 1/124 Woodlark Street
Email: hello@terania.com
Phone: (02) 6616 1478

Moree

SMK Consultants Pty Ltd
39 Frome Street
Email: admin@smk.com.au
Phone: (02) 6752 1021

Newcastle

Spatial Services
Level 2
117 Bull Street, Newcastle West
Email: Andrew.Holt@customerservice.nsw.gov.au
Phone: (02) 9372 7200

Nowra

Spatial Services
5 O'Keefe Avenue
Email: Barry.Jeffery@customerservice.nsw.gov.au
Phone: 0417664841

Sydney

Spatial Services
Level 14
2-24 Rawson Place Haymarket, NSW 2000
Email: SCIMS@customerservice.nsw.gov.au
Phone: 1300 211 253

Tamworth

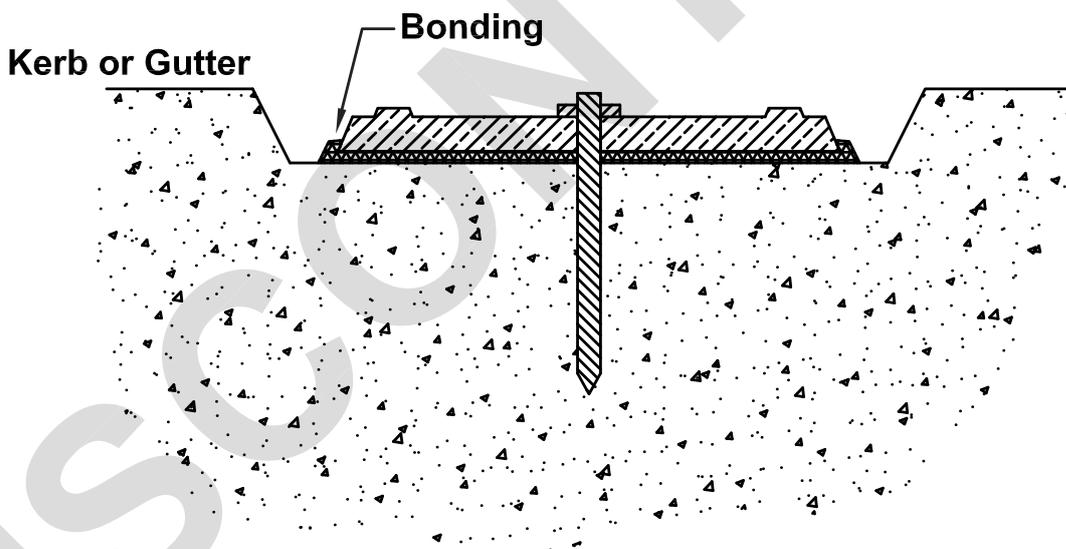
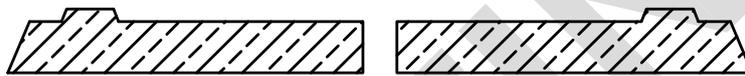
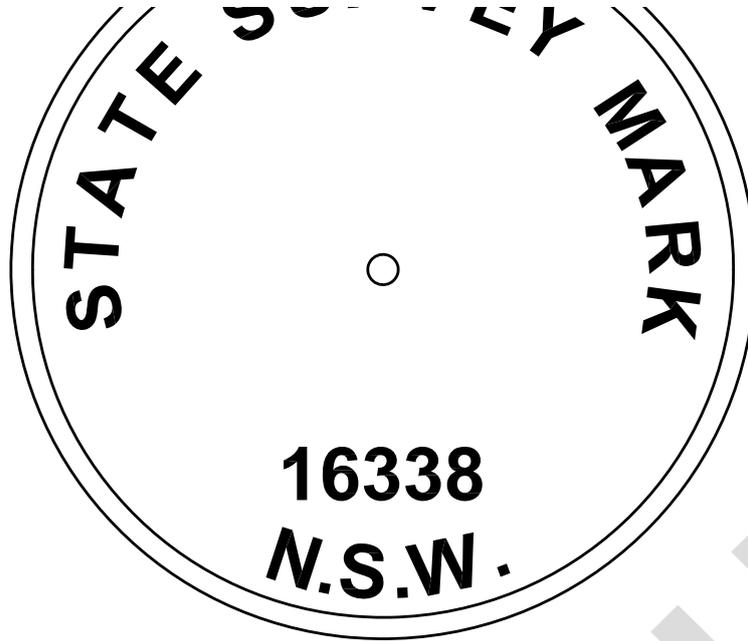
Bath Stewart Associates Pty Ltd
239 Marius Street
Email: office@bathstewart.com.au
Phone: (02) 6766 5966

Wagga Wagga

Wagga Wagga City Council Alan Turner Depot
155 Fernleigh Road, Glenfield Park
Email: Blomfield.David@wagga.nsw.gov.au
Phone: (02) 6971 4627

7.4 Discontinued permanent survey mark diagrams

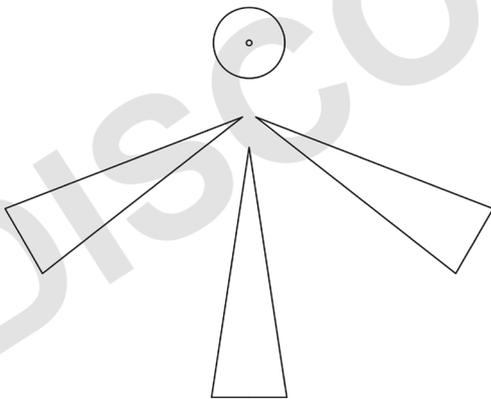
7.4.1 Permanent survey mark type 3 (State Survey Mark)



7.4.2 Permanent Survey Mark Type 5

P M M

1346



PERMANENT MARK IN ROCK

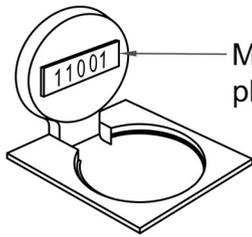
The pin and plate is to be fixed by grouting with a 3:1 sand-cement mixture, or with epoxy-resin mixed to the manufacturer's specifications.

The letters P.M. and the Broad Arrow should be 100mm long and at least 10mm deep cut into the rock.

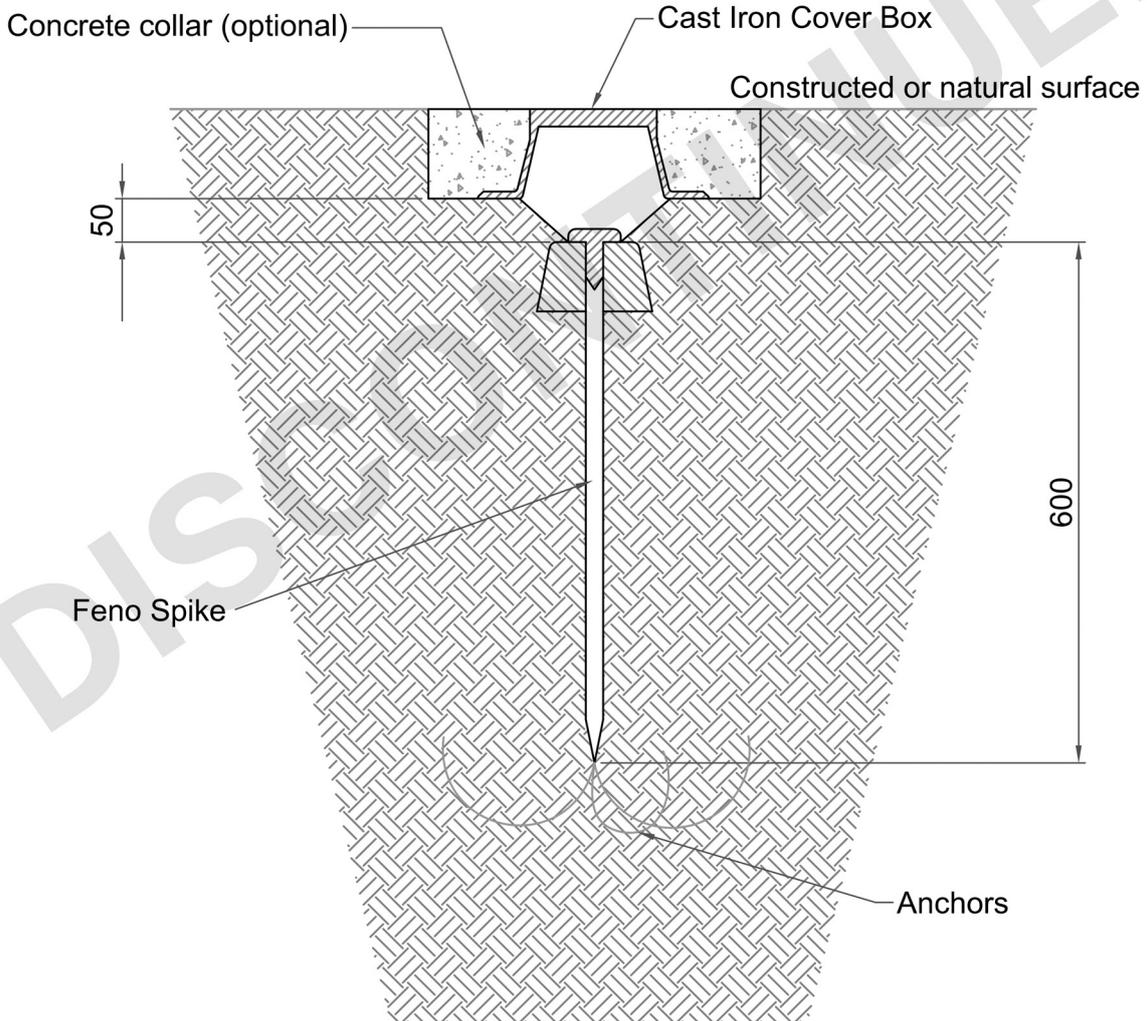
The top of the pin should project at least 5mm above the surface and the number plate should be fitted into a recess so that the top of the plate is at least 2mm below the surface of the rock.

7.4.3 Permanent survey mark type 7 (Feno Spike with Cover Box)

Dimensions are in millimetres



Mark number on brass plate inside lid of cover box



NOTE:- The above are minimum specifications. It is preferable that a concrete collar be added.