

1993—No. 459

**SURVEY CO-ORDINATION ACT 1949—REGULATION**

(Survey Co-ordination Regulation 1993)

NEW SOUTH WALES



*[Published in Gazette No. 97 of 1 September 1993]*

HIS Excellency the Governor, with the advice of the Executive Council, and in pursuance of the Survey Co-ordination Act 1949, has been pleased to make the Regulation set forth hereunder.

GEORGE SOURIS, M.P.,  
Minister for Land and Water Conservation.

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**Citation**

1. This Regulation may be cited as the Survey Co-ordination Regulation 1993.

**Commencement**

2. This Regulation commences on 1 September 1993.

**Definitions**

3. In this Regulation:

“**Form**” means a form set out in Schedule 1;

“**State Control Survey**” means a comprehensive set of points marked, under the supervision of the Surveyor-General, by monuments of standard form, being points of known horizontal position and height throughout the State;

“**the Act**” means the Survey Co-ordination Act 1949.

**Survey register to be kept by proper officer (sec. 4 (2))**

**4. (1)** The proper officer of a public authority must keep a register (called a “survey register”) in which he or she is to enter:

- (a) a list of the surveys carried out by the authority of a type specified in a notice given to the proper officer under section 4 (2) of the Act; and
- (b) such particulars of the plans made, obtained or held by the authority relating to those surveys as are specified in the notice.

**(2)** The proper officer is to add to or amend entries in the survey register from time to time to ensure they are current and accurate.

**List to be sent to Surveyor-General (sec. 4 (2))**

**5.** Any list of surveys and particulars of plans relating to those surveys forwarded to the Surveyor-General under section 4 (2) of the Act is to be set out in a form approved for the time being by the Surveyor-General and is to be certified by the proper officer of the public authority concerned to be correct and complete in accordance with the form.

**Field notes**

**6. (1)** The proper officer of a public authority must take all reasonable steps to ensure that field notes made for the purpose of a relevant survey are given reference numbers and are indexed and maintained in good order.

**(2)** The Surveyor-General may request the proper officer, by notice in writing, to produce the field notes of any relevant survey.

**(3)** A proper officer who receives a notice under this clause must in accordance with the notice produce for examination and inspection by the Surveyor-General all field notes of any relevant survey specified in the notice.

**(4)** In this clause, “**relevant survey**” means a survey carried out by or on behalf of the authority, a plan relating to which is sent to, or is set out on any list of plans sent to, the Surveyor-General or is a recorded plan.

**Notice of intention to commence survey (sec. 5)**

**7.** For the purposes of section 5 of the Act, the prescribed form of notice by a public authority of its intention to commence a survey is Form 1.

**Notice of completion of survey (sec. 6 (1))**

8. A public authority affected by any requirements of the Surveyor-General under section 6 (1) of the Act in relation to a survey is to notify the Surveyor-General of the completion of the survey in accordance with a form approved for the time being by the Surveyor-General.

**Standard datum (sec. 6 (1) (a))**

9. For the purposes of section 6 (1) (a) of the Act, the standard datum as to levels is the Australian Height Datum within the meaning of the Survey Practice Regulation 1990.

**Prescribed permanent marks (sec. 6 (1) (b))**

10. (1) For the purposes of section 6 (1) (b) of the Act, a permanent mark of a kind described in Schedule 2 is a permanent mark of the prescribed kind.

(2) A permanent mark of a kind referred to in Schedule 2 must be designed, constructed and placed as described in that Schedule.

**Sketch plan showing location of permanent marks (sec. 6 (1) (c))**

11. (1) For the purposes of section 6 (1) (c) (ii) of the Act, a sketch plan showing the position of a permanent mark placed by a public authority is to be made in a form approved for the time being by the Surveyor-General.

(2) The sketch plan is to show the kind of mark placed and its detailed location relative to surrounding physical features (such as approximate distance from cross streets, buildings, kerb and guttering, hydrants and electric lamp poles).

**Conventional signs on plans (secs. 6 and 8)**

12. (1) The conventional signs set out in Schedule 3 are to be used to indicate, on plans required by the Act to be sent to the Surveyor-General, the matters to which the signs relate.

(2) The signs used in the current practice for the time being of the Department of Conservation and Land Management are to be used on such plans to indicate the types of boundaries not included in the signs set out in Schedule 3.

(3) The signs used in the current practice for the time being of the National Mapping Council are to be used on such plans to indicate cultural and natural features not included in the signs set out in Schedule 3.

#### **Standards of measurements of surveys (sec. 6 (3))**

13. (1) A public authority which carries out a survey, or on behalf of which a survey is carried out, must ensure that the person who carries out the survey complies with clause 14 of the Survey Practice Regulation 1990 (which deals with the accuracy of measuring equipment).

(2) A survey carried out by or on behalf of a public authority using data obtained from one or more satellites must be carried out in accordance with a procedure approved by the Surveyor-General.

#### **Standards of accuracy of surveys (sec. 6 (3))**

14. For the purposes of section 6 (3) of the Act, the prescribed standard of accuracy of a survey carried out by or on behalf of a public authority is:

- (a) if the survey is carried out for inclusion in the State Control Survey, the standard specified in Table 1 to clause 16 for the class of survey that the Surveyor-General considers appropriate; and
- (b) if the survey is carried out for any other purpose, the standard specified in Table 2 to that clause for the class of survey which the public authority considers appropriate.

#### **Central plan register (sec. 8 (1))**

15. For the purposes of section 8 (1) of the Act:

- (a) the prescribed form the central plan register is Form 2; and
- (b) the prescribed particulars are the particulars set out in that Form; and
- (c) the prescribed classifications are those determined in accordance with clause 16.

#### **Classification of surveys (sec. 8 (1))**

16. (1) This clause applies to surveys the plans relating to which are or will become recorded plans.

(2) A survey carried out for inclusion in the State Control Survey is classified as a First, Second or Third Order survey according to whether the standards of accuracy achieved in the survey are those specified in the

column headed “First Order”, “Second Order” or “Third Order” in Table 1 to this clause. Any such survey that achieves standards of accuracy less than those specified is classified as a Fourth Order survey.

(3) A survey carried out for any other purpose which achieves a standard of accuracy specified in Table 2 to this clause is classified as a survey of the class specified opposite the standard.

(4) For the purpose of classifying surveys in accordance with Table 2:

- (a) in a closed traverse, the ratio of the misclose to the perimeter must not exceed the ratio shown opposite the appropriate class, the misclose being determined as  $\sqrt{a^2 + b^2}$ , where **a** is the error in eastings and **b** is the error in northings; and
- (b) in the lines of levels, the difference between the forward and backward runs of levels must not exceed  $e\sqrt{km}$ , where **e** is the allowance difference per kilometre and **km** is the total number of kilometres levelled; and
- (c) if the standard of accuracy of a survey is between any of the standards specified in the Table, the lower standard determines the class of the survey.

**TABLE 1**

*Surveys for inclusion in the State Control Survey*

(a) Horizontal Control

Triangulation	Class of survey		
	First Order	Second Order	Third Order
Triangle misclosure not to exceed:			
Average .....	1"	3"	5"
Maximum .....	3"	5"	10"
Check on base .....	1:25,000	1:10,000	1:5,000
Probable error of base not to exceed	1:1,000,000	1:500,000	...
Estimated actual error not to exceed	1:300,000	1:150,000	...
Laplace azimuths, probable error not to exceed .....	0.3"	0.5"	...
Horizontal control surveys of a lower accuracy than the above are classified as Fourth Order surveys			

Traverses	Class of survey		
	First Order	Second Order	Third Order
Position check not to exceed .....	1:25,000	1:10,000	1:5,000
Probable error of an angle not to exceed .....	1.5"	3"	6"
Astronomic azimuth, probable error not to exceed .....	0.5"	2.0"	5"
Horizontal control surveys of a lower accuracy than the above are classified as Fourth Order surveys			

(b) Vertical Control

	Class of survey		
	First Order	Second Order	Third Order
Difference between forward and backward runs of levels, where km is the length of the section in kilometres, not to exceed .....	$0.004\sqrt{\text{km}}$	$0.008\sqrt{\text{km}}$	$0.012\sqrt{\text{km}}$
Surveys with control levels of a lower accuracy than the above are classified as Fourth Order surveys			

**TABLE 2**

*Other Surveys*

Standard of Accuracy	Class of survey
(a) Horizontal Surveys	
Where the standard of accuracy is equivalent to an error of closure not less than:	
1:15 000 .....	A
1:10 000 .....	B
1:8 000 .....	C
1:6 000 .....	D
1:4 000 .....	E
1:2 000 .....	F
1:1 000 .....	G
1:500 .....	H
or lesser accuracy .....	K

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Standard of Accuracy	Class of survey
(b) Vertical Surveys	
Surveys where the difference between the forward and backward runs of levels does not exceed:	
0.004 metre per kilometre .....	1
0.012 metre per kilometre .....	2
Surveys where the error of any spot level does not exceed 0.3 metre	3
Surveys where the error of any spot level does not exceed 1 metre .....	4
Surveys where the error of any spot level exceeds 2 metres	5
Where the error in level of 90 per cent. of contour lines on any plan:	
does not exceed one-half the contour interval .....	X
is greater than one-half the contour interval .....	Y
<i>Note.</i> It is appropriate, in vertical surveys, to classify the surveys by both numeral and letter.	

**Particulars noted on plans by Surveyor-General (sec. 8 (2))**

**17.** For the purposes of section 8 (2) of the Act, the prescribed particulars to be marked or stamped on each plan are:

- (a) the words “Survey Co-ordination Act 1949 New South Wales”; and
- (b) the plan’s recorded plan number in the central plan register ; and
- (c) the classification of the survey from which the plan was prepared; and
- (d) the date that the plan was recorded in the register; and
- (e) the initials of the person by whom the plan was marked or stamped.

**Notification of alterations to recorded plans (sec. 8 (5))**

**18.** For the purposes of section 8 (5) of the Act:

- (a) the notification of any alterations to a recorded plan is to be made in accordance with the form approved for the time being by the Surveyor-General; and
- (b) any plan showing those alterations and forwarded to the Surveyor-General must be drawn to the same scale as the original recorded plan, or to a larger scale if the details of the alterations would otherwise be too small.

**Connections to permanent marks (sec. 11 (3))**

19. For the purposes of section 11 (3) of the Act, all connections to permanent marks must conform to the same standard of accuracy as the survey being connected, unless the Surveyor-General otherwise directs.

**Protection of permanent marks by public authorities**

20. A public authority must take all necessary steps to ensure that a permanent mark is not damaged or obscured as a result of any work carried out by the authority during the construction, alteration or resurfacing of any road, footpath or other place.

**Report of destruction etc. of permanent marks (sec. 16)**

21. For the purposes of section 16 of the Act, a report by a surveyor, or a notification by the proper officer of a public authority, concerning an irregularity in the position, or the destruction, removal or condition of disrepair, of a permanent mark must include:

- (a) the number of the mark; and
- (b) the location of the mark; and
- (c) if known, the name of the person responsible for the interference with, or destruction of, the mark and the date when the interference or destruction occurred.

**Removal or alteration of permanent marks for building reconstruction etc. (sec. 20)**

22. (1) In order to avoid the commission of an offence under section 20 (1) of the Act:

- (a) a person intending to remove or alter a permanent mark must give written notice to the Surveyor-General of the intention not less than 14 days prior to the intended removal or alteration; and
- (b) the person must take all necessary steps to ensure that any reasonable directions given by the Surveyor-General for the preservation of the position of the permanent mark, its replacement, its re-establishment or the alteration of its number, are complied with.



(2) The costs incurred by a person in complying with directions given under this clause are to be met by the Surveyor-General, or the public authority responsible for the maintenance of the permanent mark, under section 14 (4) of the Act.

### **Repeal**

23. The Survey Co-ordination Regulations 1951 are repealed.

### **Transitional**

24. (1) Any departmental register kept under the 1951 Regulations is taken to be a survey register kept under this Regulation.

(2) Any notice given to the Surveyor-General under section 20 of the Act in accordance with the 1951 Regulations, and any direction given by the Surveyor-General in response to that notice, in force immediately before the commencement of this Regulation is taken to be a notice or direction given under this Regulation.

(3) If anything done or commenced in accordance with the 1951 Regulations before the commencement of this Regulation, and still having effect or not completed immediately before that commencement, could have been done or commenced in accordance with this Regulation if this Regulation had been in force when the thing was done or commenced:

- (a) the thing done continues to have effect; and
- (b) the thing commenced may be completed,

as if it had been done or commenced in accordance with this Regulation.

(4) In this clause, “**the 1951 Regulations**” means the Survey Co-ordination Regulations 1951.

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**SCHEDULE 1—FORMS**

(Cl. 3)

**Form 1**

(Cl. 7)

**NOTICE OF INTENTION TO SURVEY**

Survey Co-ordination Act 1949

(Sec. 5)

Public authority .....

Proper officer .....

The above authority intends to carry out the survey described below:

**Locality:**

Topographical map ref:(or CMA map area) .....

City/ town/ village/ suburb .....

Local government area .....

Location # .....

# (Indicate extent of survey and attach diagram)

**Type of survey:**

\* [ ] Horizontal control [ ] Vertical control [ ] Cadastral  
[ ] Other (please describe type) .....

**Co-ord. system:**

\* [ ] ISG [ ] AMG [ ] Other

**Height datum:**

\* [ ] AHD [ ] Standard [ ] Other

**Marking:**

\* [ ] Prescribed [ ] Substantial [ ] Temporary

**Estimated date of commencement:** .....

**Survey to be carried out by:** .....

\* (Tick appropriate box)

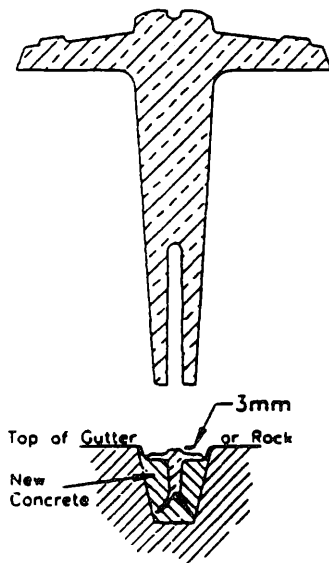
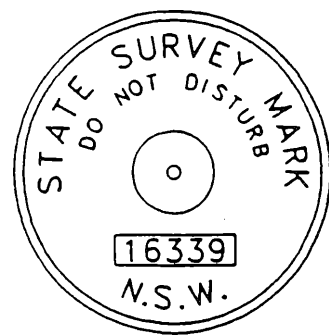


SCHEDULE 2—PERMANENT MARKS

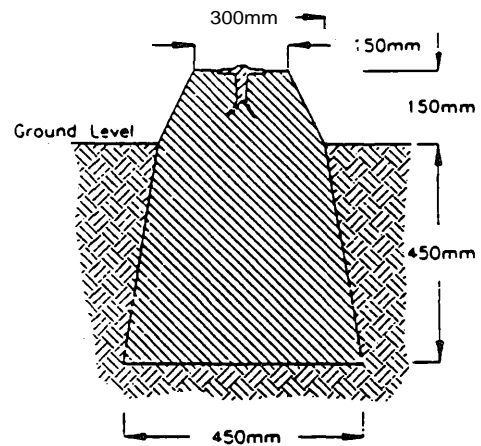
(Cl. 10)

PERMANENT MARK TYPE 1

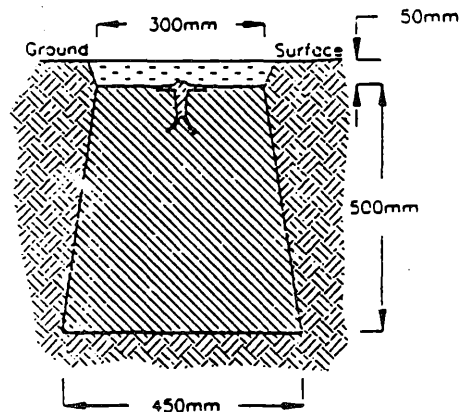
(State Survey Mark)



SSM in Gutter or Rock



Ground Level SSM (Rural Areas only)

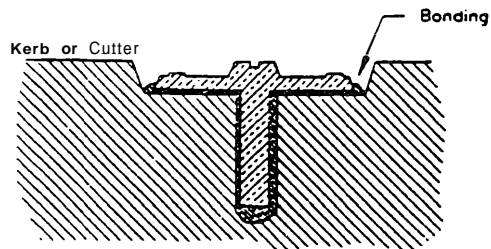
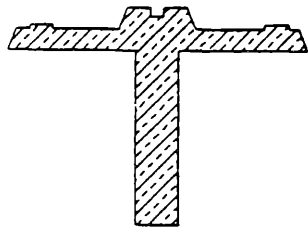
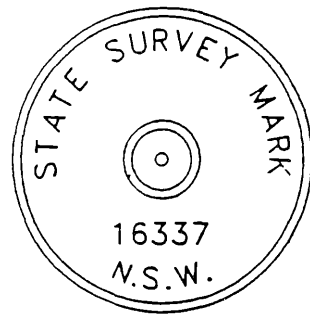


Sub-Surface SSM

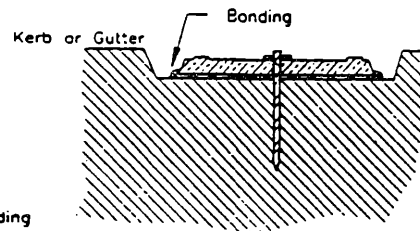
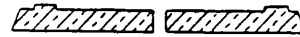
Note-

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*, having a volume of at least 0.07 cubic metres, and shaped as shown above.

PERMANENT MARK TYPE 2  
(State Survey Mark)



PERMANENT MARK TYPE 3  
(State Survey Mark)



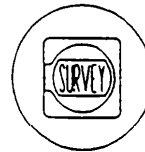
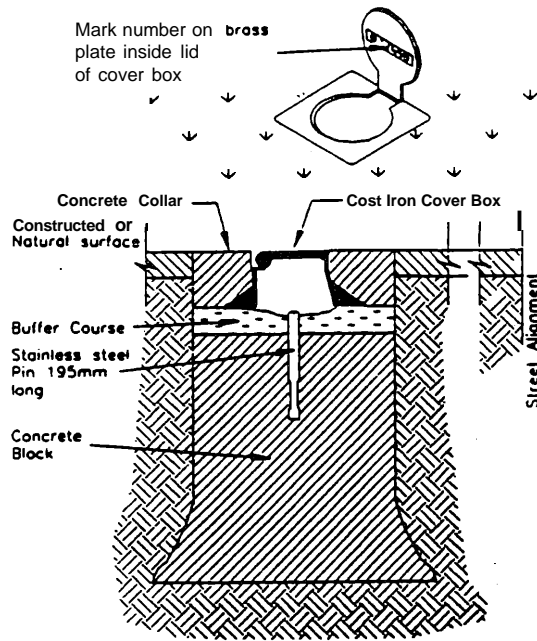
NOTE :-

Where on existing structure (kerb & gutter or solid rock) is available, these marks may be used in lieu of the larger SSM

Fixation is by drilling and bonding with an approved epoxy-resin compound or fixed by power driven stainless steel nail & brass washer of minimum length 40mm with plate bonded to concrete

PERMANENT MARK TYPE 4

(Urban Type)



PERMANENT MARK

Minimum size of concrete 460mm deep by 380mm square enlarged at the bottom. Where solid rock is met with, depth may be varied

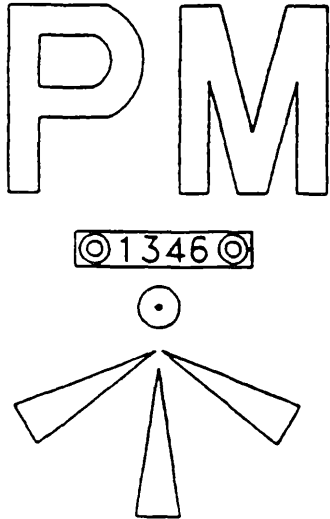
In localities where ground is unstable the dimensions must be increased.

The stainless steel pin is to protrude 50mm above the surface of the concrete block

The buffer course is to be a 50mm layer of crushed brick gravel or coarse sand.

## PERMANENT MARK TYPE 5

(In Rock)

PERMANENT MARK  
IN ROCK

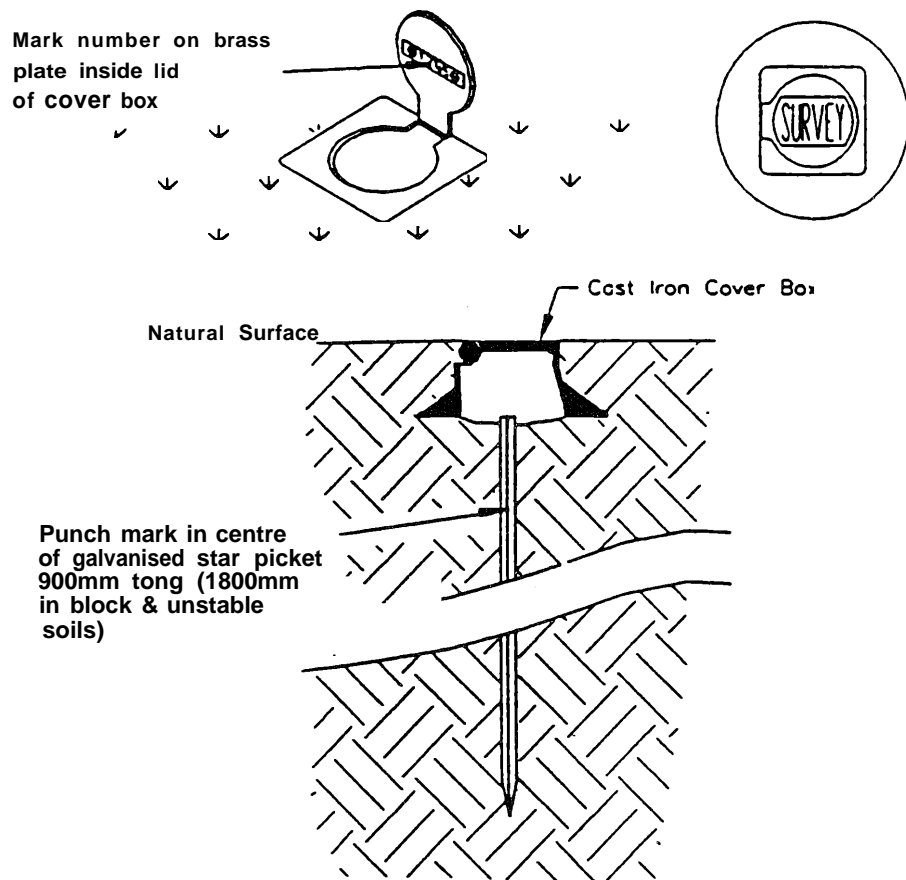
The pin and plate is to be fixed by grouting with a 3:1 sand-cement mixture, or with epoxy resin mixed to the manufacturers specifications.

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

PERMANENT MARK TYPE 6

(Non Urban Type)

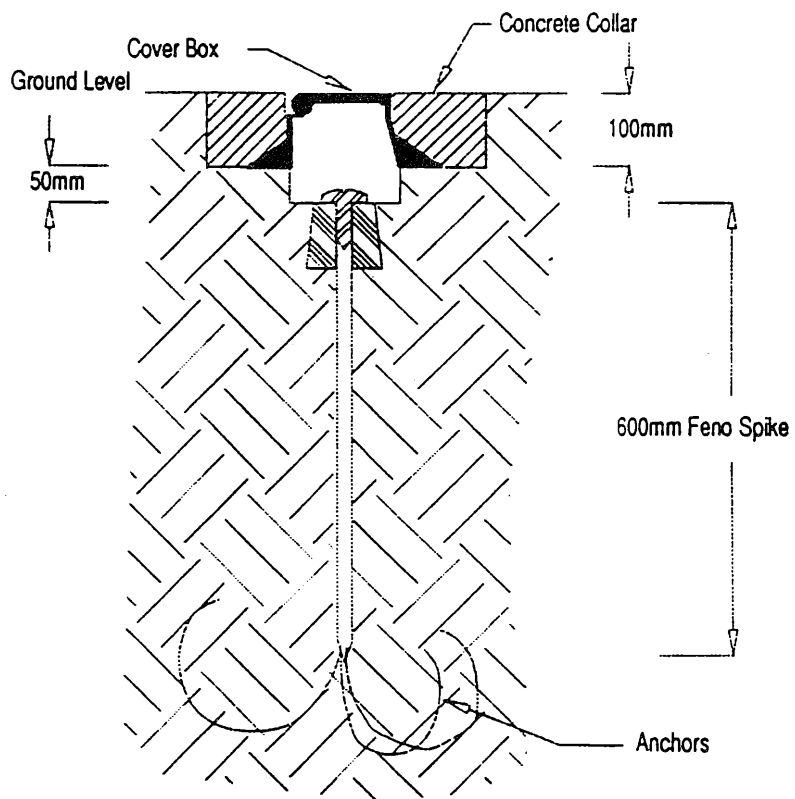
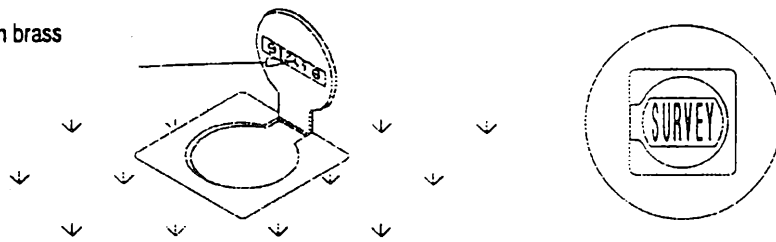


**NOTE:-** The above are minimum specifications  
It is preferable that a concrete collar be added.



PERMANENT MARK TYPE 7  
(Feno Spike with Cover Box)

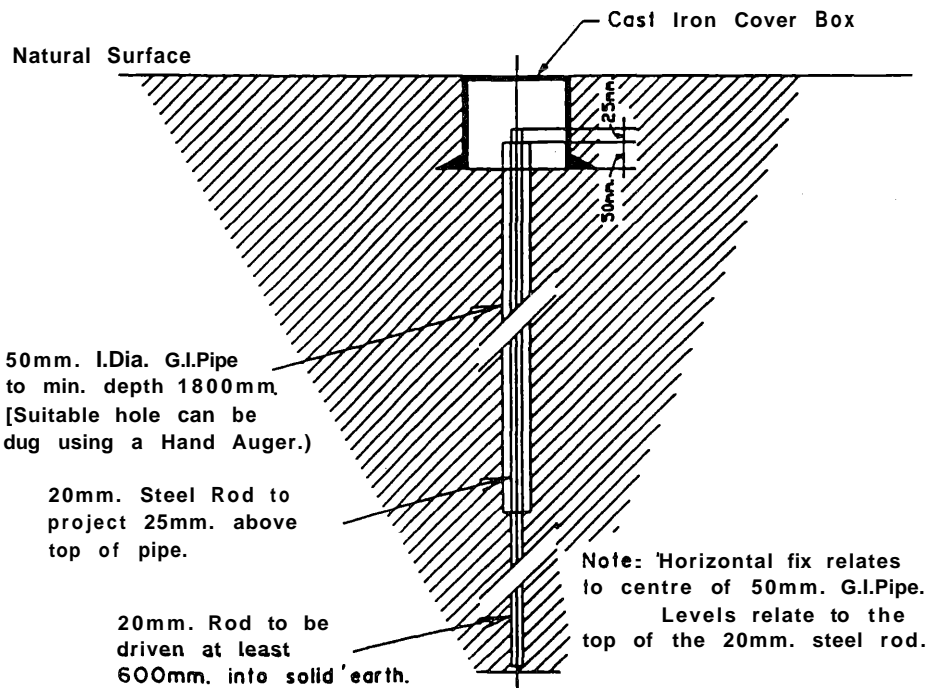
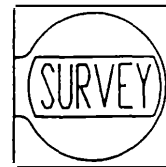
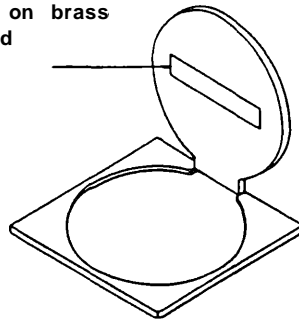
Mark number on brass  
plate inside lid  
of cover box



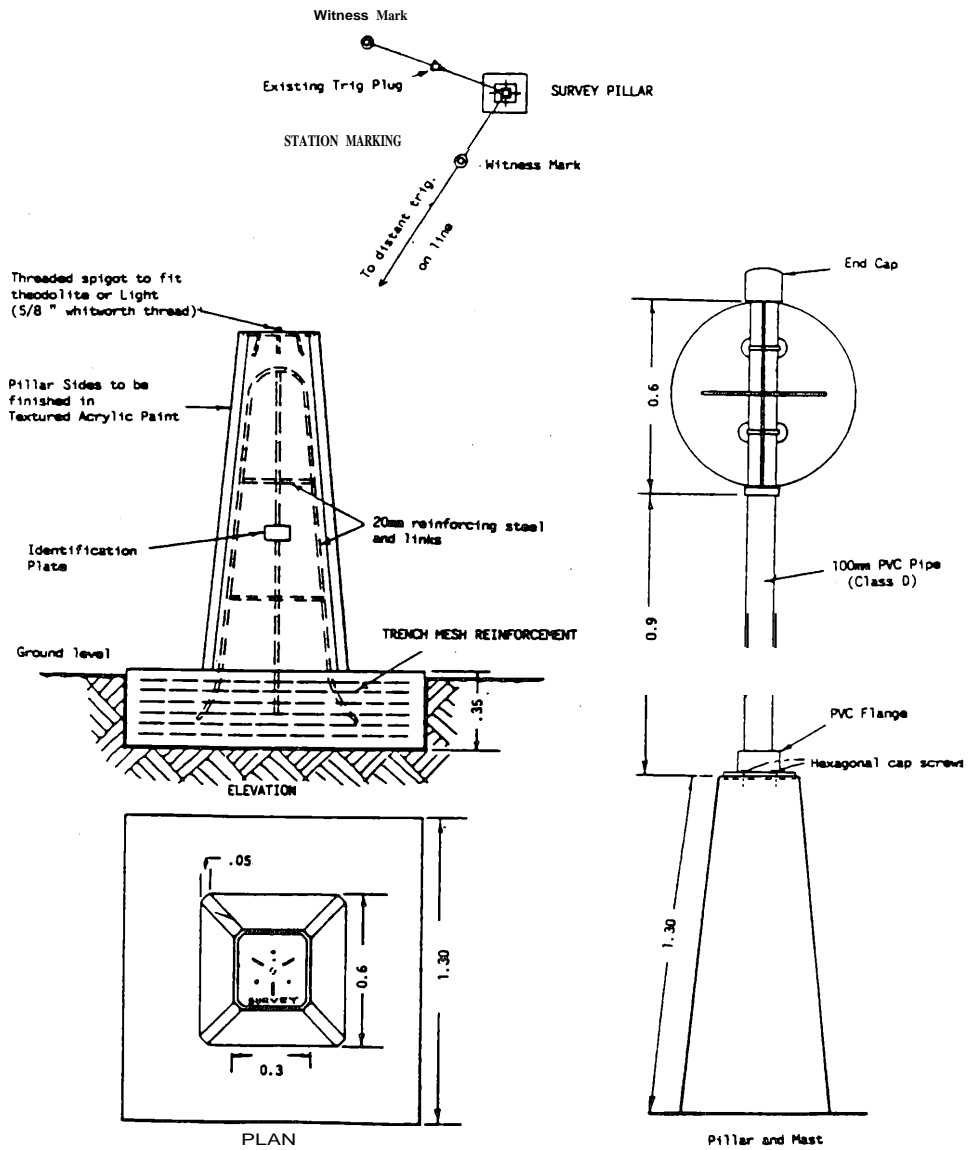
PERMANENT MARK TYPE 8

(D.W.R. "C-Type" Mark)

Mark number on brass plate inside lid of cover box

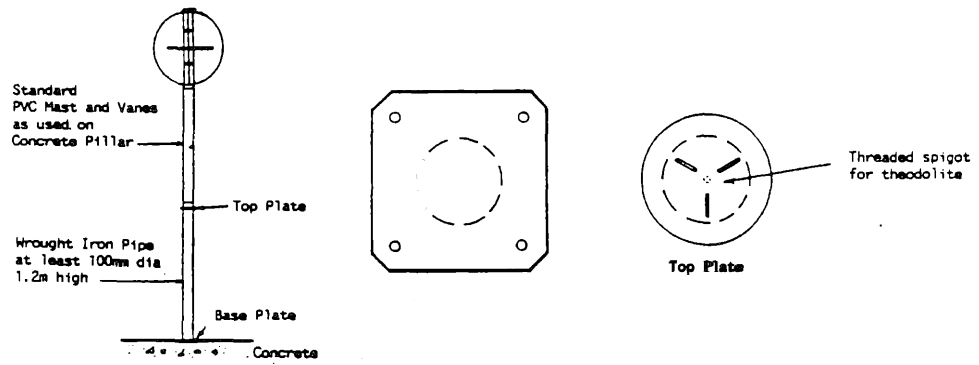


PERMANENT MARK TYPE 9  
(Trigonometrical Station)



PERMANENT MARK TYPE 10  
(Rooftop Pillar)

BEACONS ON ELEVATED STRUCTURE



**1993—No. 459**

**SCHEDULE 3—CONVENTIONAL SIGNS**

(Cl. 12)

**CONVENTIONAL SIGNS TO BE USED ON PLANS**

(Boundaries)

**Cadastral**

County	— x — x —
Parish	— · — · —
City, town or village	— □ — □ —
Town or village under Local Government Act	— T — T —
Suburban	— □ — □ —
Private subdivision	— " — " — " — " — " — " — " —

**Administrative**

State	— + — + —
Territorial Division	— — — —
Land District	— + — + —
Shire	— # — # —
Shire Riding	— + — + —
Municipality (or City under Local Government Act)	— m — m —
Municipality Ward	— w — w —
Urban Area	— u — u —
Pastures Protection District	— o — o —
Proclaimed Survey Area	— s — s —

Note: Where boundaries are concurrent they should be combined as in the following example;  
County, Parish, Land District, Town and Proclaimed Survey Area Boundaries

———— XHTS ————— XHTS —————

CULTURAL FEATURES

**Roads etc**

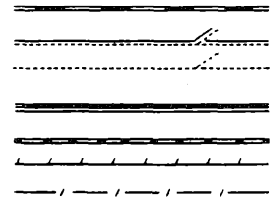
Public road

Survey reserved road

Track

Railway on large scale map  
on small scale map

Fence when on a boundary  
when not on a boundary



**Mapping control stations**

Trigonometrical station, major  
(first and second order)



Trigonometrical station, minor  
(third and lower orders resection points)



**Astronomical station**

Permanent Mark or State Survey Mark  
(Survey Co-ordination Act)



Magnetic observing station



(Name or reference numbers of stations should be shown, Altitudes, Declinations, may also be Indicated where available)

**NOTES**  
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SCHEDULE 1—FORMS

SCHEDULE 2—PERMANENT MARKS

SCHEDULE 3—CONVENTIONAL SIGNS

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**EXPLANATORY NOTE**

The purpose of this Regulation is to repeal and remake, with modifications, the Survey Co-ordination Regulations 1951. The new Regulation makes provision for the following matters:

- the registration by public authorities of surveys carried out by or on behalf of those authorities (and particulars of their related plans) which are the subject of a notice from the Surveyor-General (cl. 4);
- the form in which lists of such surveys and plans are to be sent to the Surveyor-General (cl. 5);
- the indexing and maintenance of field notes made in respect of such surveys (cl. 6);
- notice sent to the Surveyor-General by a public authority of its intention to commence a survey and of its completion of the survey (cll. 7 and 8);
- the prescribed standard datum as to levels and prescribed kinds of permanent marks that may be placed after a survey (cll. 9 and 10);
- sketch plans showing the location of permanent marks (cl. 11);
- the conventional signs to be used on plans sent to the Surveyor-General (cl. 12);
- the prescribed standards of measurement and accuracy of surveys carried out by or on behalf of public authorities (cll. 13 and 14);
- the prescribed form of the central plan register, the classification of surveys recorded in the register and the particulars noted on plans recorded in the register (cll. 15, 16, and 17)
- notice to the Surveyor-General of alterations to recorded plans (cl. 18);
- the standard of accuracy of connections to permanent marks (cl. 19);
- the protection of permanent marks by public authorities and the reporting of irregularities in relation to, or the destruction or disrepair of, permanent marks (cll. 20 and 21);
- notice to the Surveyor-General of the intended removal or alteration of permanent marks for building reconstruction or similar reasons (23).

This Regulation is made under the Survey Co-ordination Act 1949, including section 22 (the general regulation making power) and various other sections mentioned in the Regulation. This Regulation is made in connection with the staged repeal of subordinate legislation under the Subordinate Legislation Act 1989.

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