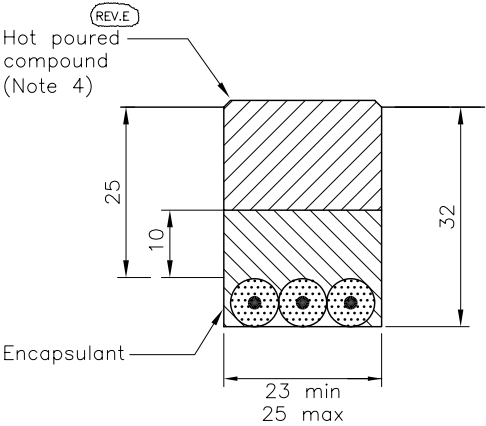


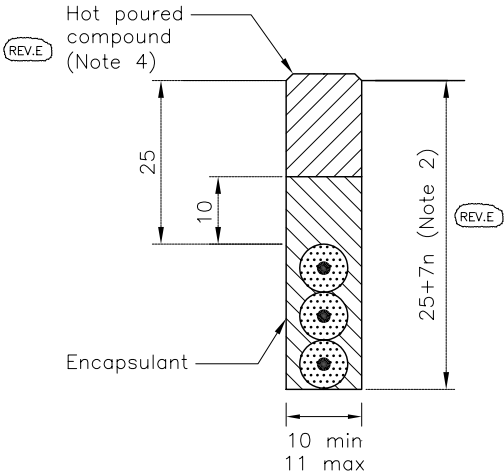
FOR LOOPS LAID IN REINFORCED
CONCRETE CONSTRUCTION

TYPE S1



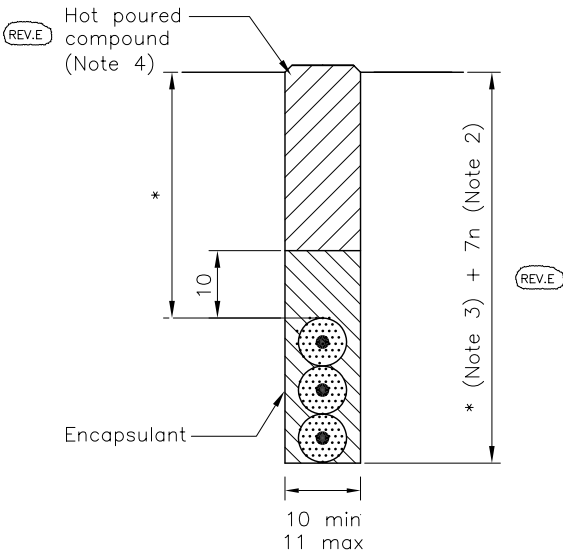
FOR LOOPS LAID IN
NON-REINFORCED CONCRETE
CONSTRUCTION

TYPE S2



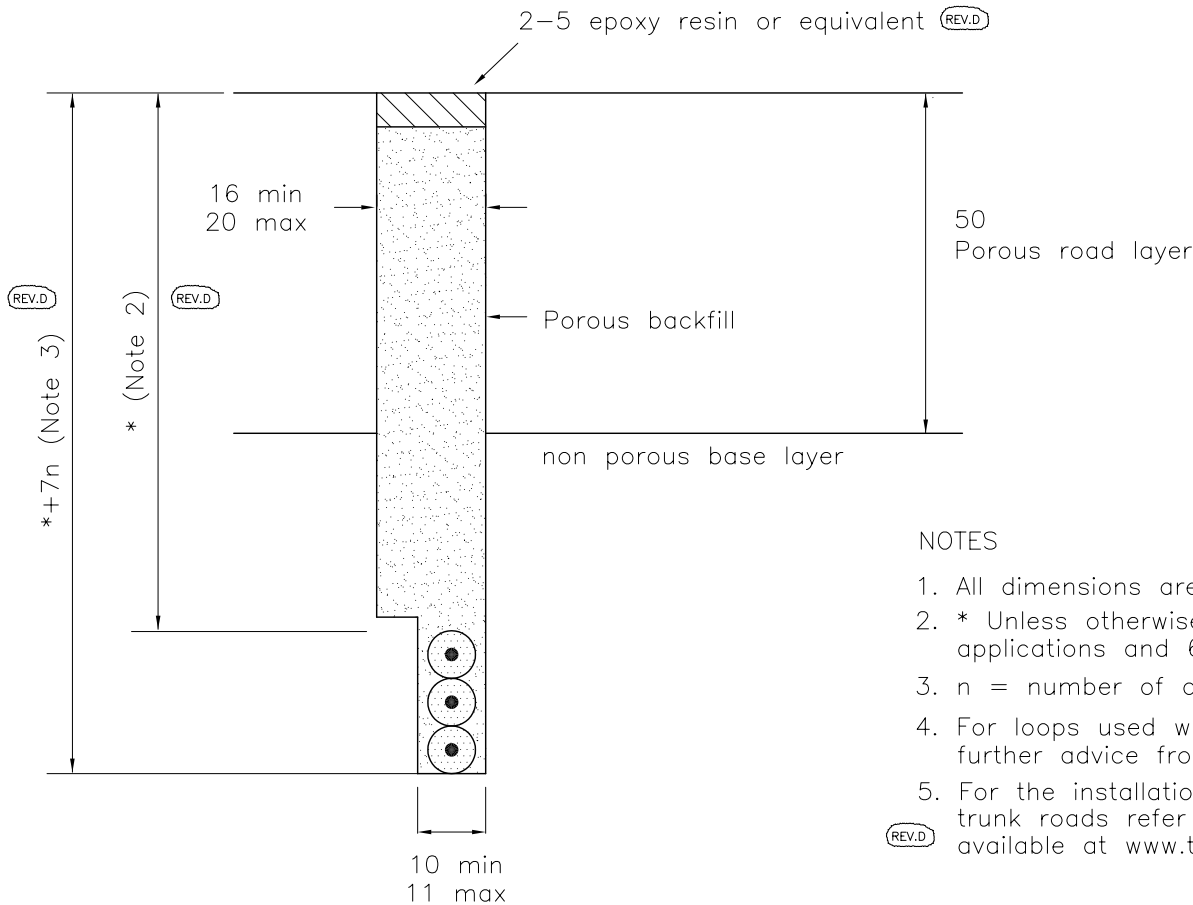
FOR LOOPS LAID IN
FLEXIBLE CONSTRUCTION
(EXCLUDING POROUS SURFACES)

TYPE S3



- NOTES
1. All dimensions are in millimetres.
 2. n = Number of cables in the slot.
 3. * = Unless otherwise specified to be 80 for motorway applications and 65 for all-purpose roads.
 4. Hot poured compound shall be oxidised grade bitumen to BS EN 13304 Grade S85/40 or Grade S85/25.
 5. Loop tail slot width shall be 16 (+4/-0) where twisted loop tail pairs occupy the slot.
 6. NMCS = National Motorway Communications System.
 7. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS DETECTOR LOOP SLOT DETAILS-SHEET 1	Drawing No.
		D	Nov 03		
		C	Sept 03		G1
		A	Dec 91		
		Issue	Date		

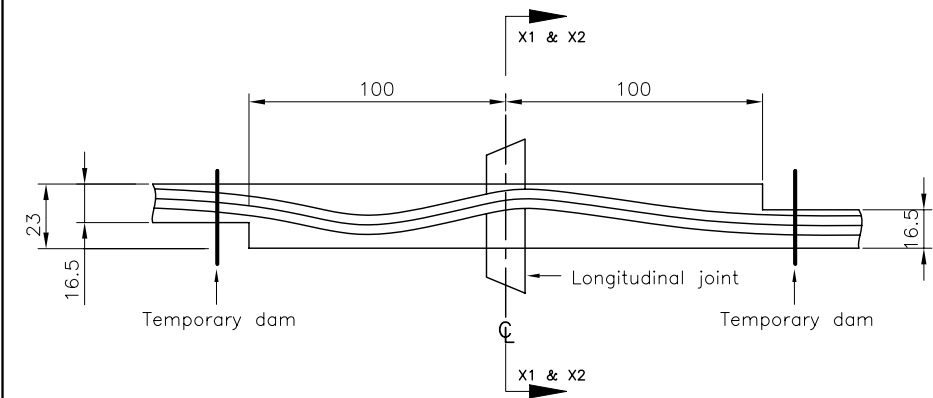


NOTES

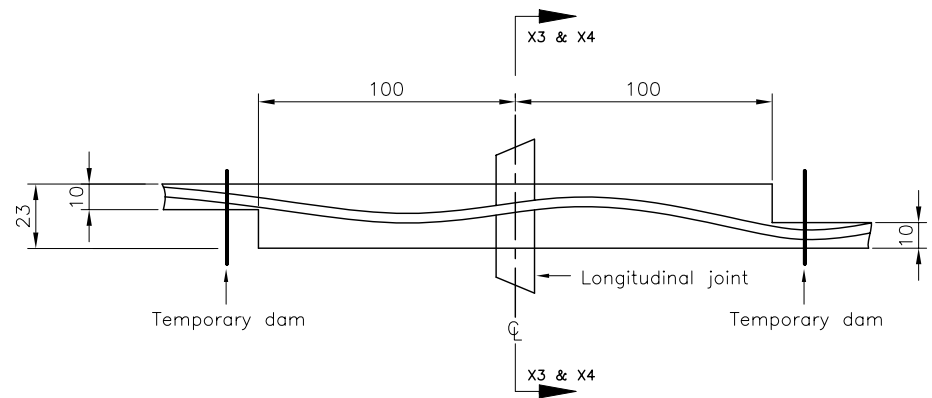
1. All dimensions are in millimetres.
2. * Unless otherwise specified to be 80 for motorway applications and 65 for all-purpose roads.
3. n = number of cables in the slot.
4. For loops used with Automatic Data Collection equipment seek further advice from the Overseeing Organisation.
5. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

SLOT PROFILE – POROUS ROAD SURFACES

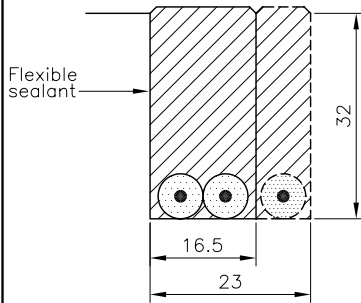
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS DETECTOR LOOP SLOT DETAILS-SHEET 2	Drawing No.
		C	Nov 03		
		B	Aug 02		G2
		A	Dec 91		
		Issue	Date		



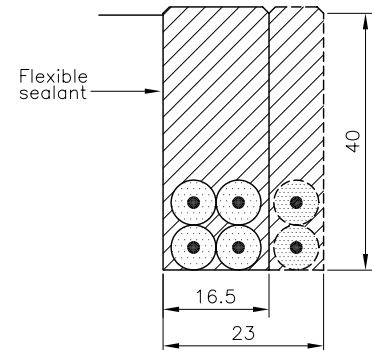
TYPE X1 & X2 (PLAN)



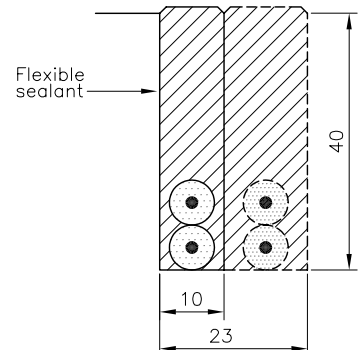
TYPE X3 & X4 (PLAN)



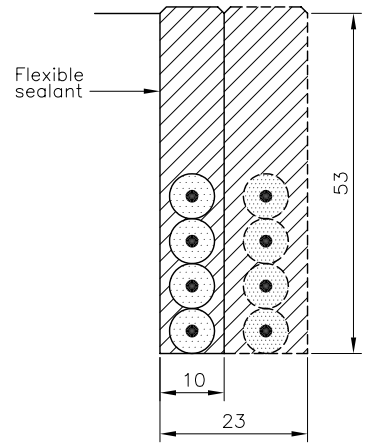
X1 SECTION



X2 SECTION



X3 SECTION

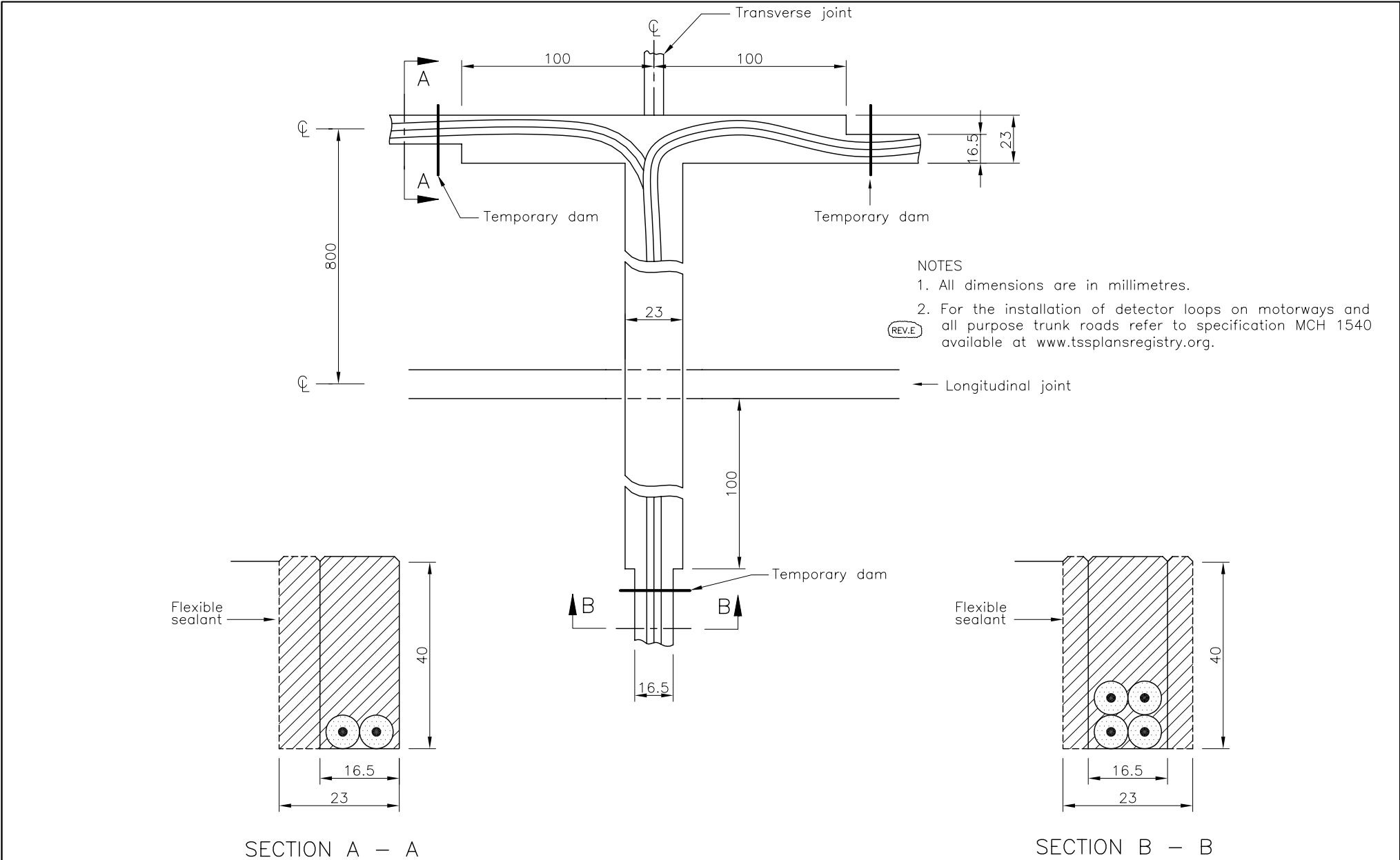


X4 SECTION

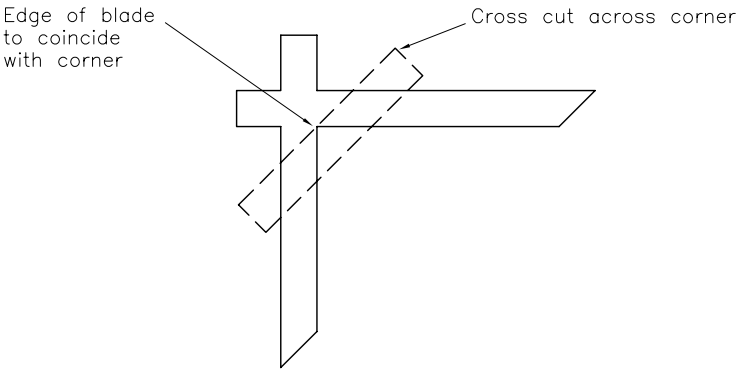
- NOTES
1. All dimensions are in millimetres.
 2. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.E

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS DETECTOR LOOP SLOT DETAILS-SHEET 3	Drawing No.
		D	Nov 03		
		C	Sept 03		G3
		A	Dec 91		
		Issue	Date		



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS DETECTOR LOOP SLOT DETAILS-SHEET 4	Drawing No.
		D	Nov 03		
		C	Sept 03		G4
		A	Dec 91		
		Issue	Date		

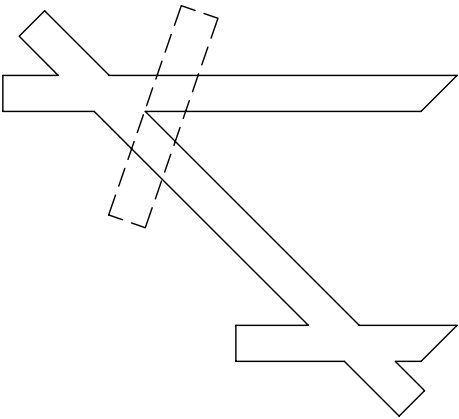


CROSS CUT 90° ANGLE

NOTES

1. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.D



CROSS CUT 45° ANGLE

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS CROSS CUTTING CORNERS OF SLOTS	Drawing No.
		C	Nov 03		G5
		B	Aug 02		
		A	Dec 91		
		Issue	Date		

INSTALLATION TEST CERTIFICATE FOR INDUCTIVE LOOP DETECTORS

Site address/reference:
.....
.....

Contractor:
Drawing number:
Date tested:

Weather Conditions:
.....
Temperature:

LOOP TESTS	Loop tail length	TEST 1 Series resistance. Measured into loop tails.		TEST 2 Resistance to earth of loop tails. Measured at 500V DC with all conductors connected together.		TEST 3 Inductance. Measured into loop tails.	Calculated Inductance <small>(REV.C)</small>
	metres	Max. 5 Ohms		Min. 100 Megohms		μ H	μ H
Designation		Reading	Pass/Fail	Reading	Pass/Fail		

COMPLETE CIRCUIT TESTS	Feeder length	TEST 1 Series resistance. Measured into feeder and loop tails.		TEST 2 Resistance to earth of cable armouring (armouring not connected).		TEST 3 Resistance to earth of cable armouring (armouring connected at detector housing).		TEST 4 Resistance to earth of feeder and loop tails. Measured at 500V DC with all conductors connected together.		TEST 5 Inductance. Measured into feeder and loop tails.
	metres	Max. 5 Ohms		Min. 100 Megohms		Max. 0.5 Ohms		Min. 100 Megohms		μ H
Designation		Reading	Pass/Fail	Reading	Pass/Fail	Reading	Pass/Fail	Reading	Pass/Fail	

Loop Dimensions

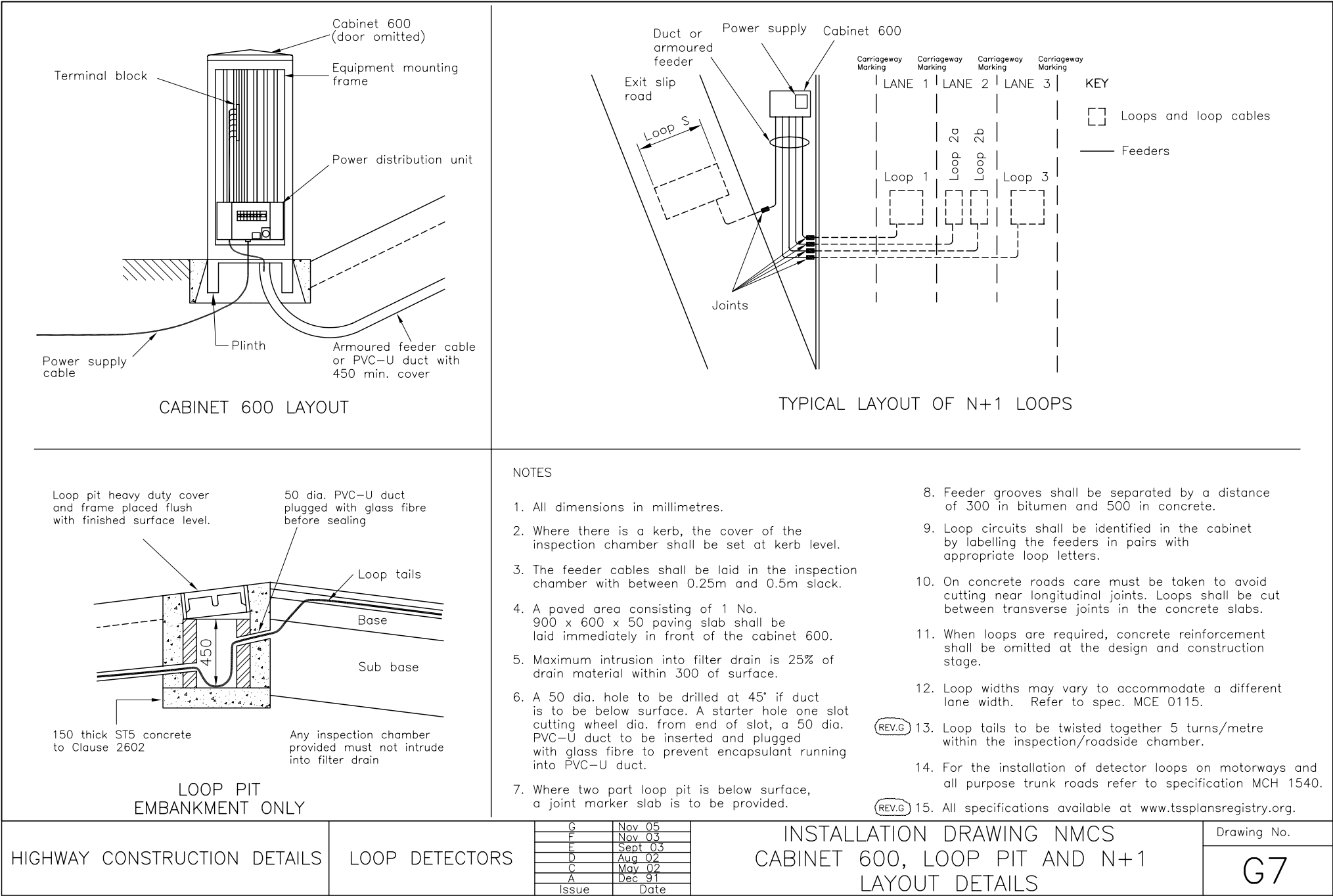
Test equipment used

Resistance Make..... Type.....
Inductance Make..... Type.....

(REV.C) I certify that this equipment has been installed and tested in accordance with specification MCH 1540 available at www.tssplansregistry.org.

(REV.C) Signed on behalf of the Contractor..... Company.....Date.....

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS			INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS TEST CERTIFICATE	Drawing No.
		C	Nov 05		G6
		B	Sept 03		
		A	Aug 02		
		Issue	Date		



Loop pit heavy duty cover and frame placed flush with finished surface level.

50 dia. PVC-U duct plugged with glass fibre before sealing

Loop tails

Base

Sub base

150 thick ST5 concrete to Clause 2602

Any inspection chamber provided must not intrude into filter drain

NOTES

1. All dimensions in millimetres.
2. Where there is a kerb, the cover of the inspection chamber shall be set at kerb level.
3. The feeder cables shall be laid in the inspection chamber with between 0.25m and 0.5m slack.
4. A paved area consisting of 1 No. 900 x 600 x 50 paving slab shall be laid immediately in front of the cabinet 600.
5. Maximum intrusion into filter drain is 25% of drain material within 300 of surface.
6. A 50 dia. hole to be drilled at 45° if duct is to be below surface. A starter hole one slot cutting wheel dia. from end of slot, a 50 dia. PVC-U duct to be inserted and plugged with glass fibre to prevent encapsulant running into PVC-U duct.
7. Where two part loop pit is below surface, a joint marker slab is to be provided.
8. Feeder grooves shall be separated by a distance of 300 in bitumen and 500 in concrete.
9. Loop circuits shall be identified in the cabinet by labelling the feeders in pairs with appropriate loop letters.
10. On concrete roads care must be taken to avoid cutting near longitudinal joints. Loops shall be cut between transverse joints in the concrete slabs.
11. When loops are required, concrete reinforcement shall be omitted at the design and construction stage.
12. Loop widths may vary to accommodate a different lane width. Refer to spec. MCE 0115.
13. Loop tails to be twisted together 5 turns/metre within the inspection/roadside chamber.
14. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540.
15. All specifications available at www.tssplansregistry.org.

G	Nov 05
F	Nov 03
E	Sept 03
D	Aug 02
C	May 02
A	Dec 91
Issue	Date

INSTALLATION DRAWING NMCS

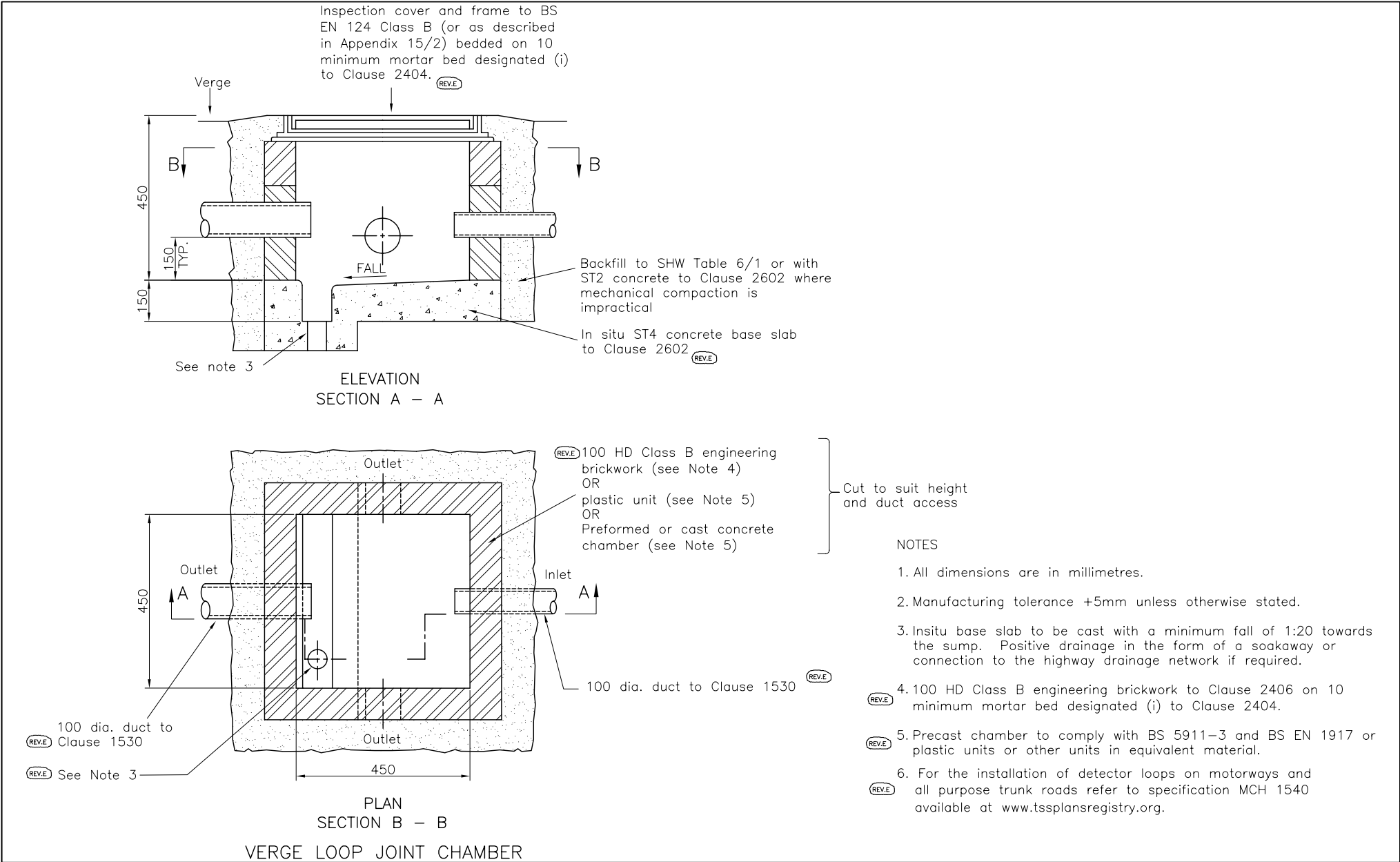
CABINET 600, LOOP PIT AND N+1 LAYOUT DETAILS

Drawing No.

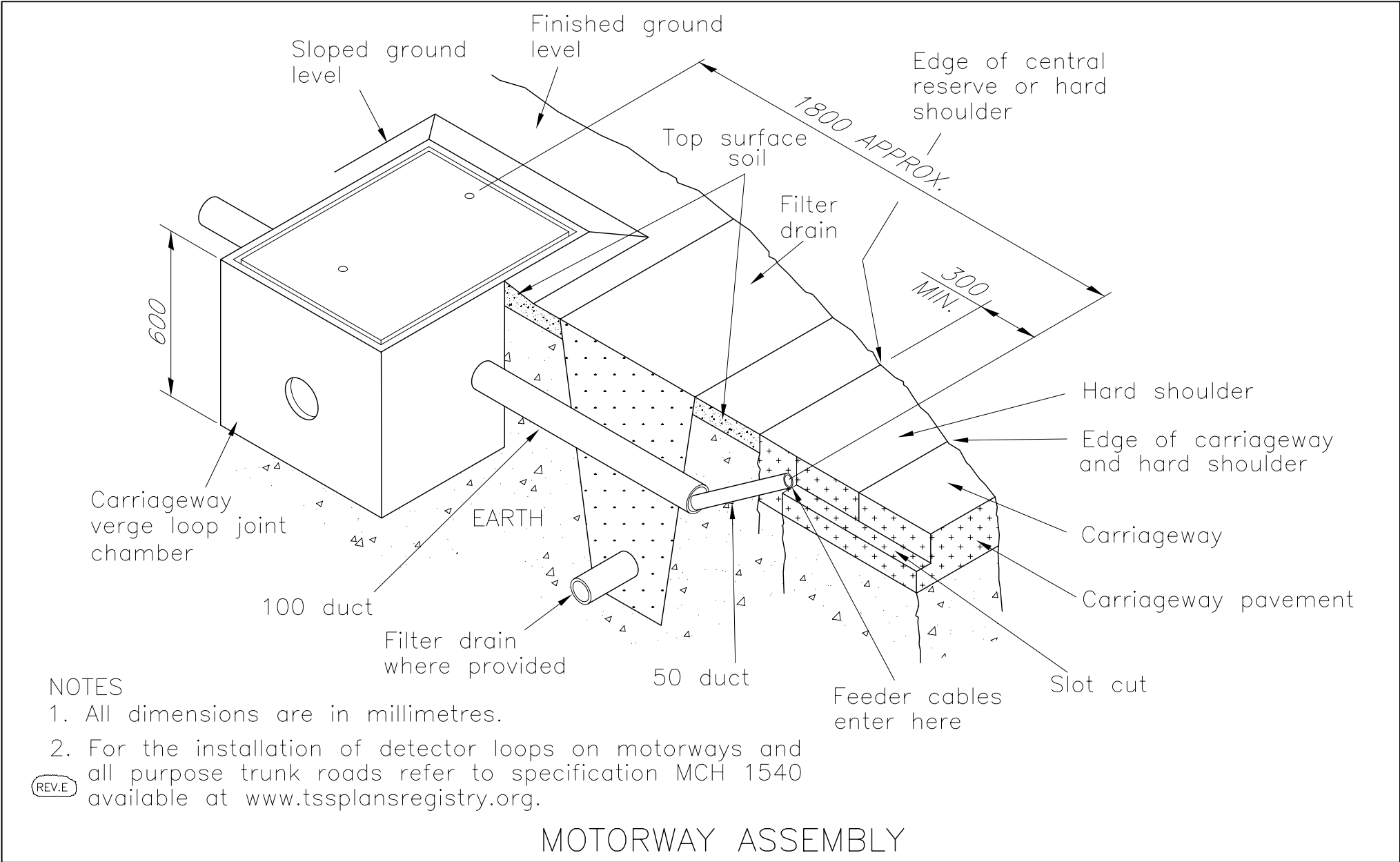
G7

HIGHWAY CONSTRUCTION DETAILS

LOOP DETECTORS



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS LOOP JOINT CHAMBER - SHEET 1	Drawing No.
		D	Nov 03		
		C	Aug 02		G8
		A	Dec 91		
		Issue	Date		

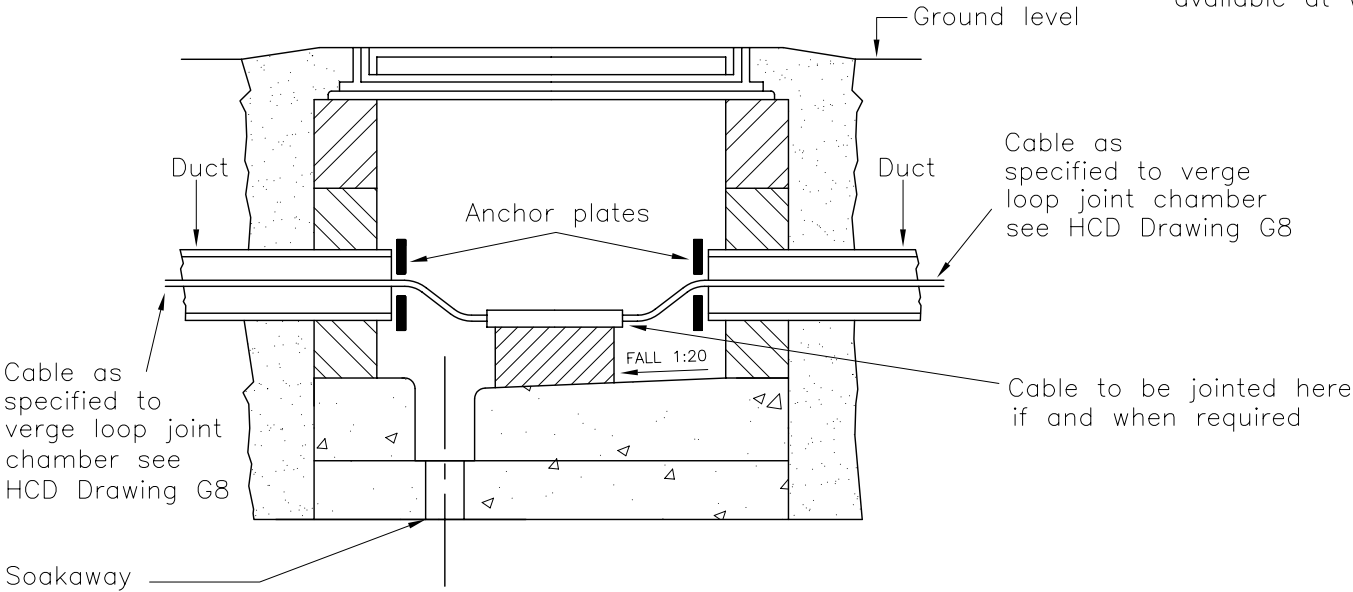


HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS LOOP JOINT CHAMBER – SHEET 2	Drawing No.
		D	Nov 03		
		C	Aug 02		G9
		A	Dec 91		
		Issue	Date		

NOTES

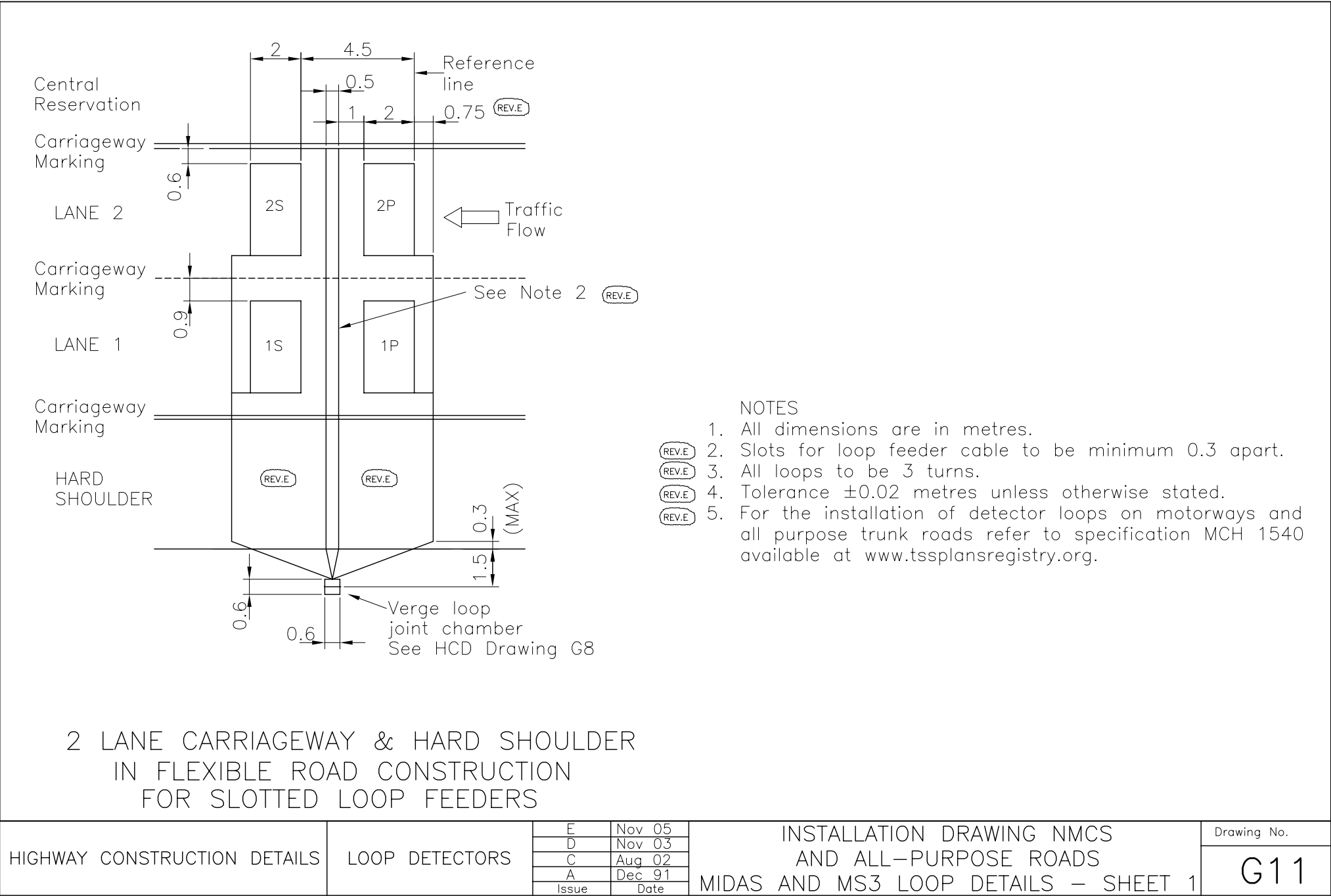
- 1. This arrangement may not be suitable for all site conditions. The scheme designer shall tailor other arrangements to suit individual locations.
- 2. Cable identification shall be fitted during installation.
- 3. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV E

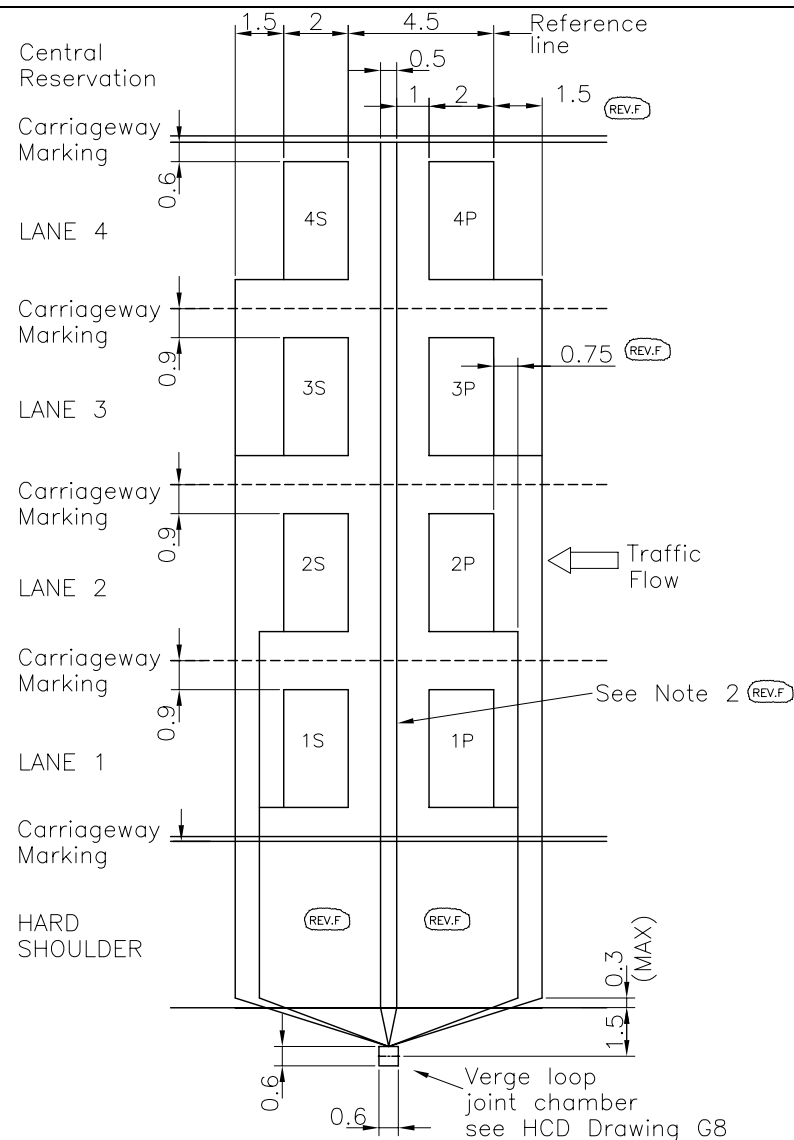


SECTIONAL ELEVATION OF CENTRAL RESERVE CHAMBER

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS LOOP JOINT CHAMBER – SHEET 3	Drawing No.
		D	Nov 03		
		C	Aug 02		G10
		A	Dec 91		
		Issue	Date		



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS MIDAS AND MS3 LOOP DETAILS – SHEET 2	Drawing No.
		D	Nov 03		G12
		C	Aug 02		
		A	Dec 91		
		Issue	Date		



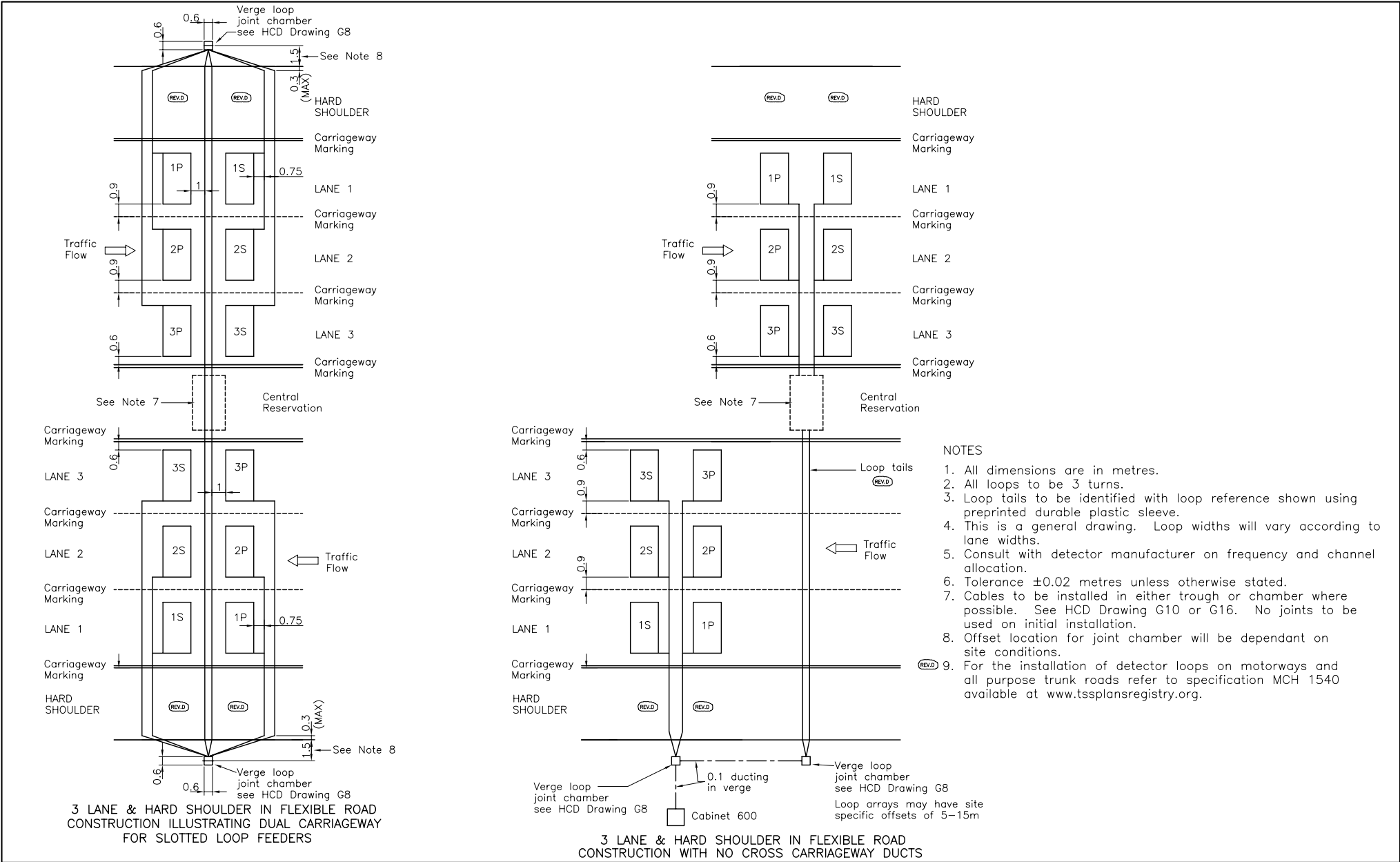
4 LANE CARRIAGEWAY & HARD SHOULDER IN FLEXIBLE ROAD CONSTRUCTION FOR SLOTTED LOOP FEEDERS

- NOTES
1. All dimensions are in metres.
 2. Slots for loop feeder cable to be minimum 0.3 apart.
 3. All loops to be 3 turns.
 4. Tolerance ± 0.02 metres unless otherwise stated.
 5. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

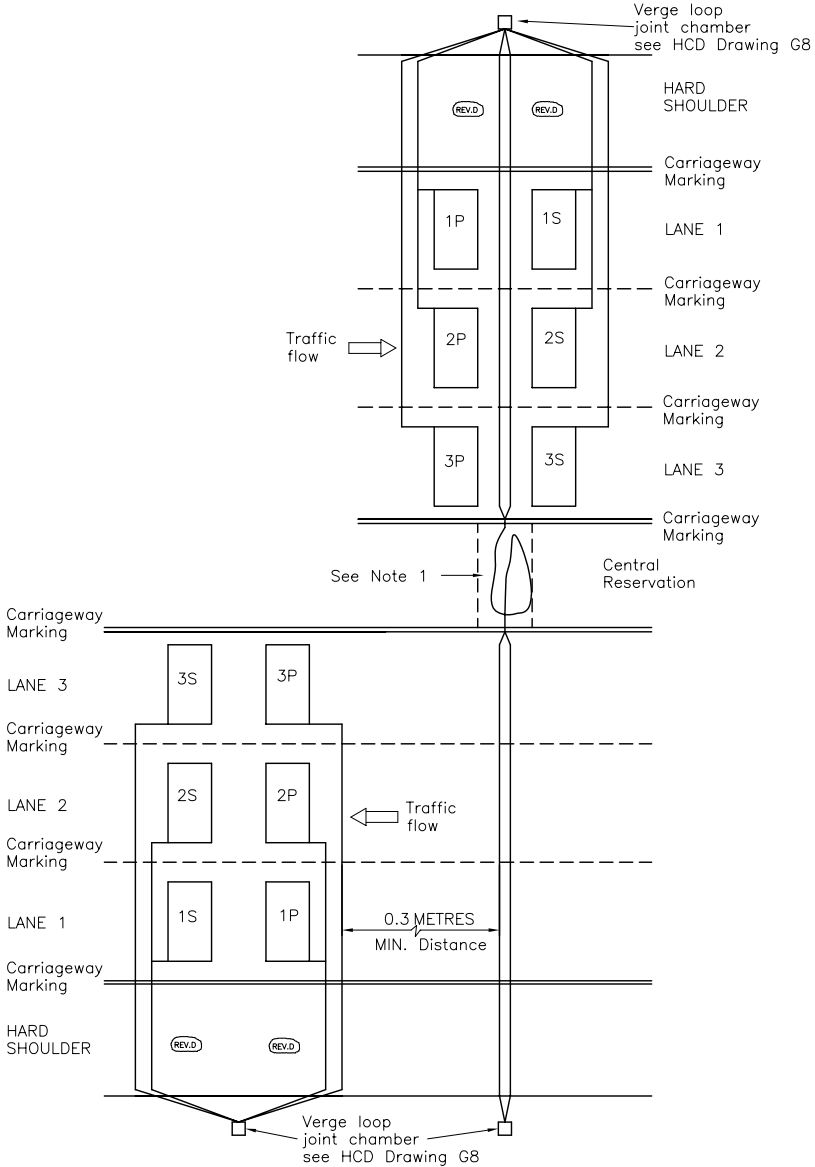
F	Nov 05
E	Nov 03
D	Aug 02
C	May 02
B	Aug 94
A	Dec 91
Issue	Date

INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS MIDAS AND MS3 LOOP DETAILS – SHEET 3

Drawing No.
G13



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS MIDAS AND MS3 LOOP DETAILS – SHEET 4	Drawing No.
		C	Nov 03		
		B	Aug 02		G14
		A	Dec 91		
		Issue	Date		



STAGGERED LOOP LAYOUT ARRANGEMENT
FOR SLOTTED LOOP FEEDERS

NOTES

1. Cables to be installed in either trough or chamber where possible. See HCD Drawing G10 or G16. No joints to be used on initial installation.
2. Dimensions to be as HCD Drawing G14.
3. Tolerance ± 0.02 metres unless otherwise stated.
4. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org

HIGHWAY CONSTRUCTION DETAILS

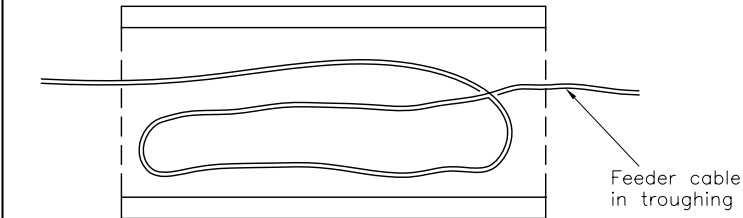
LOOP DETECTORS

D	Nov 05
C	Nov 03
B	Aug 02
A	Dec 91
Issue	Date

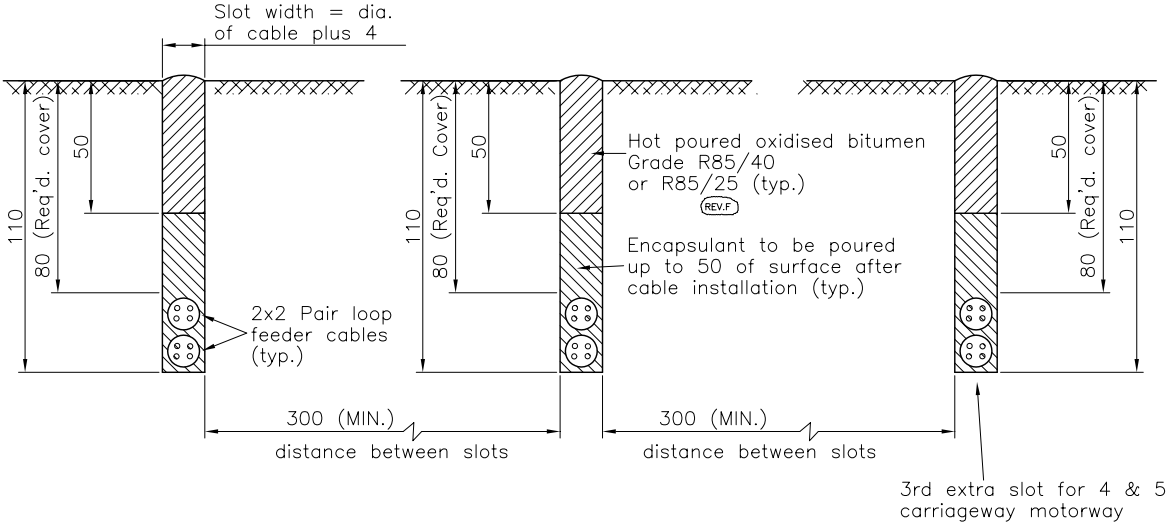
INSTALLATION DRAWING NMCS AND
ALL-PURPOSE ROADS
MIDAS AND MS3 LOOP DETAILS – SHEET 5

Drawing No.

G15



PLAN ELEVATION OF CENTRAL RESERVATION TROUGH

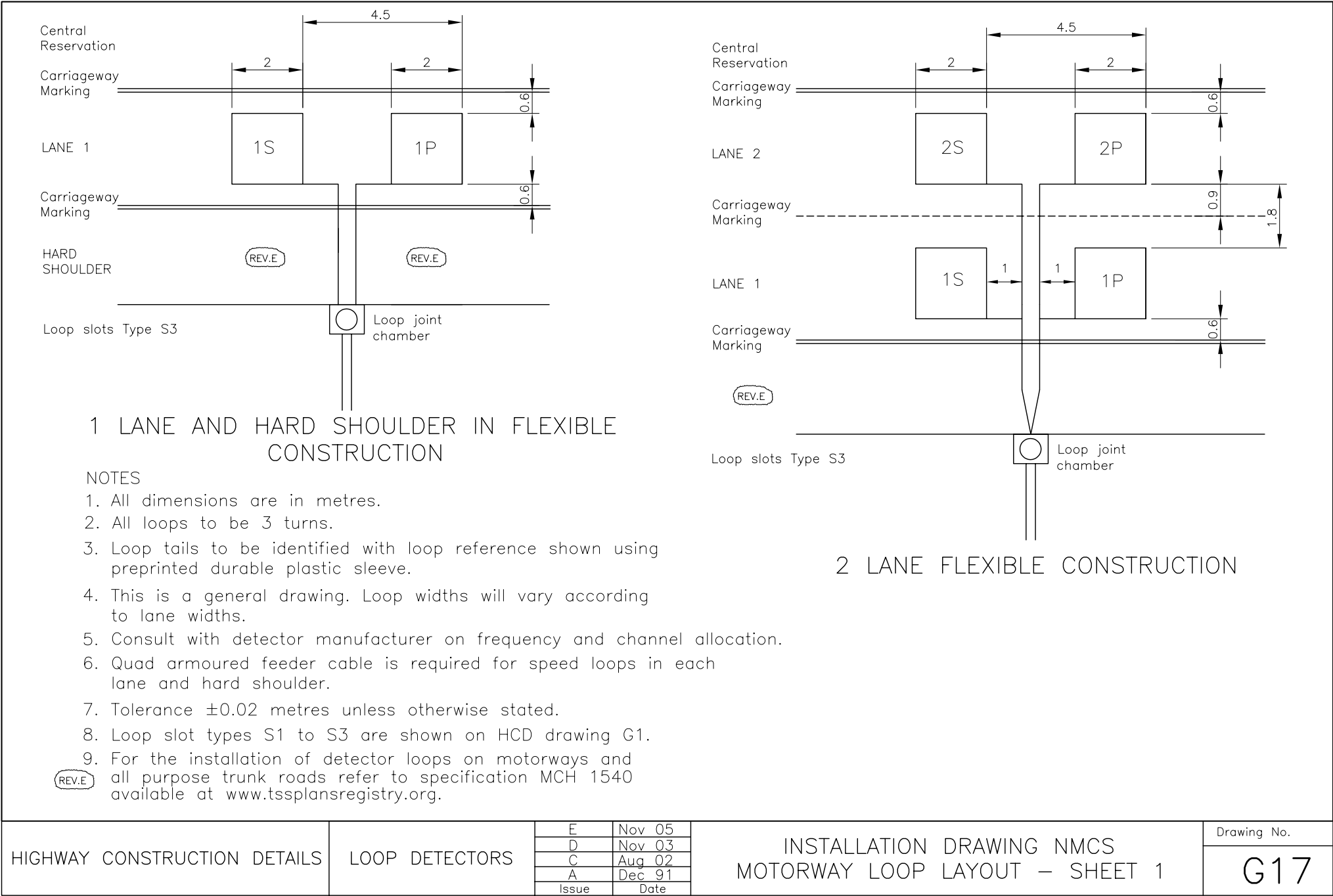


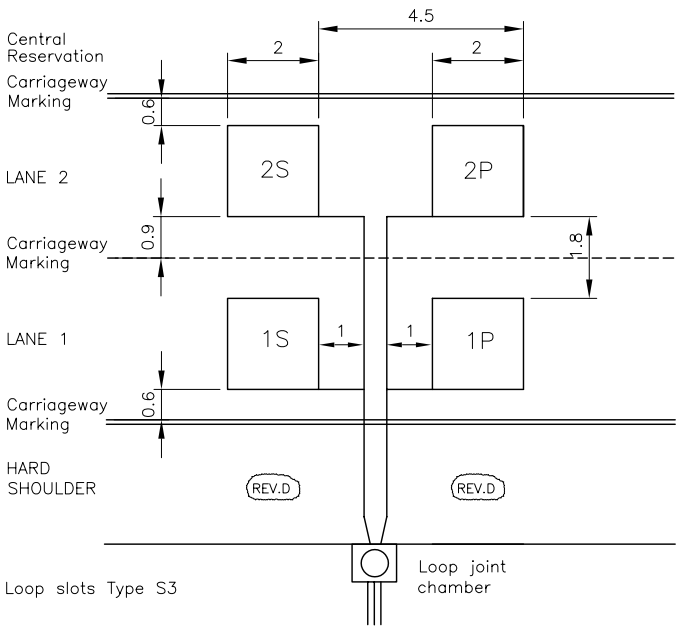
FEEDER CABLE SLOTS FOR UP TO 5 LANES & HARD SHOULDER (BITUMINOUS ROAD SURFACE) FOR SLOTTED LOOP FEEDERS

- NOTES
- 1. All dimensions are in millimetres.
 - 2. Feeder cable to be looped to enable jointing if required in future.
 - 3. The above arrangement may not be suitable for all site conditions. The scheme designer shall tailor other arrangements to suit individual locations.
 - 4. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.F

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	F	Nov 05	INSTALLATION DRAWING NMCS AND ALL-PURPOSE ROADS MIDAS AND MS3 LOOP DETAILS – SHEET 6	Drawing No.
		E	Nov 03		
		D	Sept 03		G16
		C	Aug 02		
		A	Dec 91		
		Issue	Date		

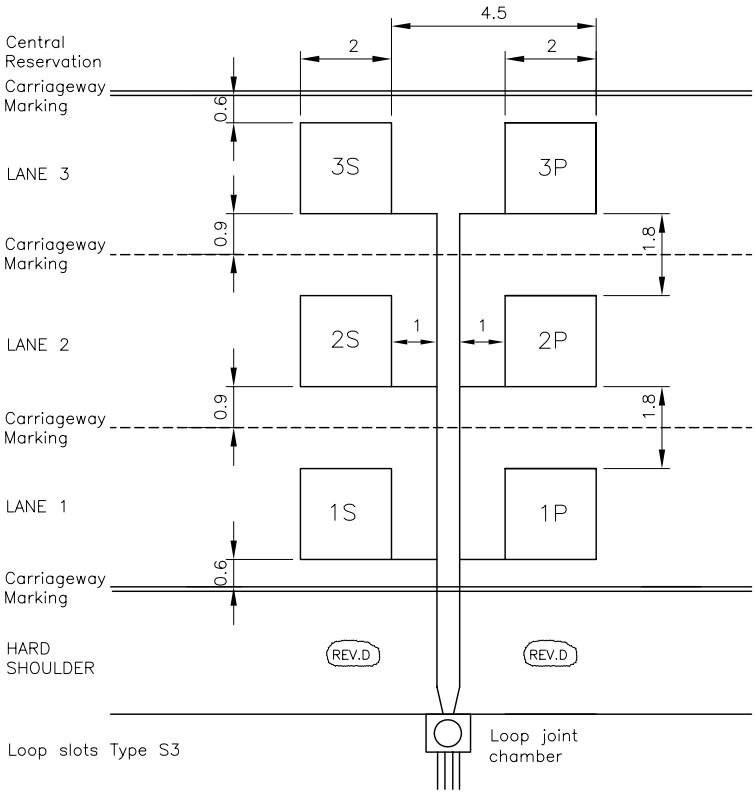




2 LANE AND HARD SHOULDER IN FLEXIBLE CONSTRUCTION

NOTES

1. All dimensions are in metres.
2. All loops to be 3 turns.
3. Loop tails to be identified with loop reference shown using preprinted durable plastic sleeve.
4. This is a general drawing. Loop widths will vary according to lane widths.
5. Consult with detector manufacturer on frequency and channel allocation.
6. Quad armoured feeder cable is required for speed loops in each lane.
7. Tolerance ± 0.02 metres unless otherwise stated.
8. Loop slot types S1 to S3 are shown on HCD drawing G1.
9. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.



3 LANE AND HARD SHOULDER IN FLEXIBLE CONSTRUCTION

HIGHWAY CONSTRUCTION DETAILS

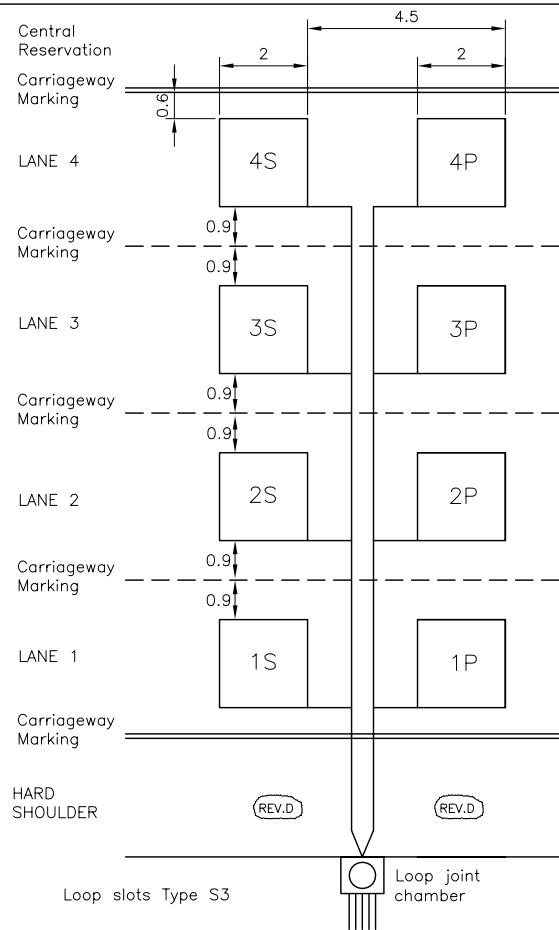
LOOP DETECTORS

D	Nov 05
C	Nov 03
B	Aug 02
A	Dec 91
Issue	Date

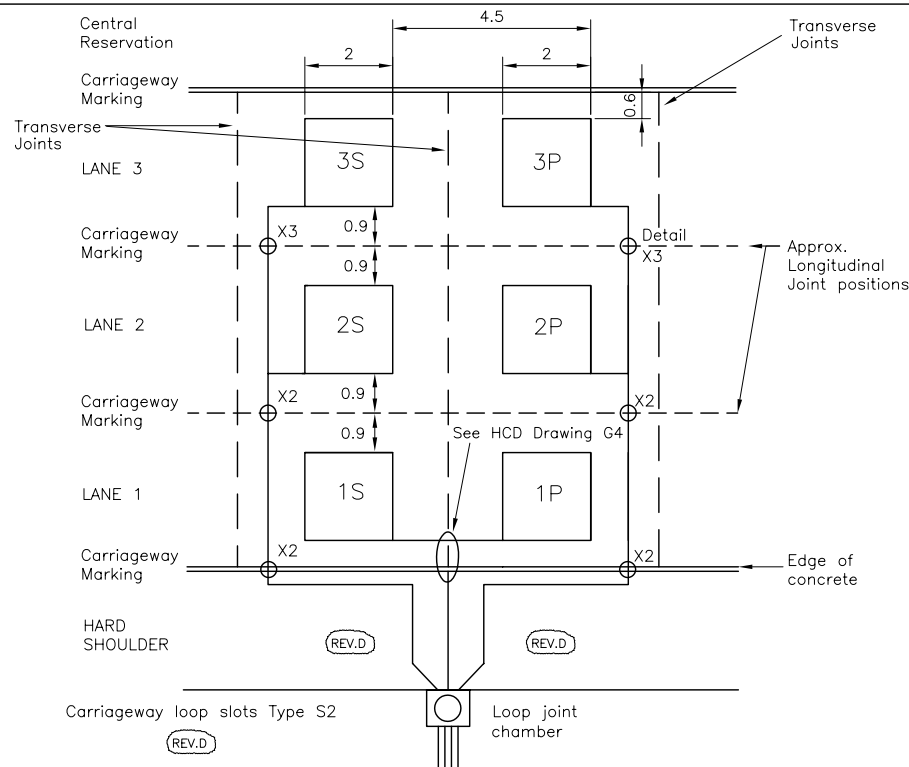
INSTALLATION DRAWING NMCS
MOTORWAY LOOP LAYOUT – SHEET 2

Drawing No.

G18



4 LANE AND HARD SHOULDER IN FLEXIBLE CONSTRUCTION

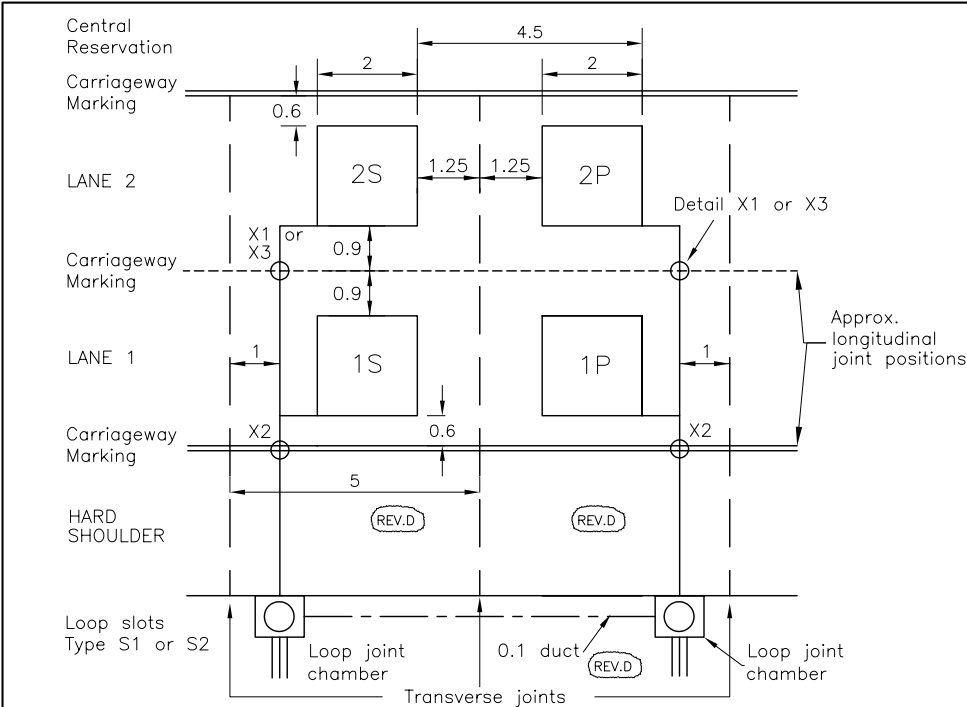


3 LANE CONCRETE WITH FLEXIBLE CONSTRUCTION
HARD SHOULDER

NOTES

1. All dimensions are in metres.
2. All loops to be 3 turns.
3. Loop tails to be identified with loop reference shown using preprinted durable plastic sleeve.
4. This is a general drawing. Loop widths will vary according to lane widths.
5. Consult with detector manufacturer on frequency and channel allocation.
- (REV.D) 6. Quad armoured feeder cable is required for speed loops in each lane.
7. Tolerance ± 0.02 metres unless otherwise stated.
8. Details X2 and X3 are shown on HCD drawing G3.
9. Loop slot types S1 to S3 are shown on HCD drawing G1.
- (REV.D) 10. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

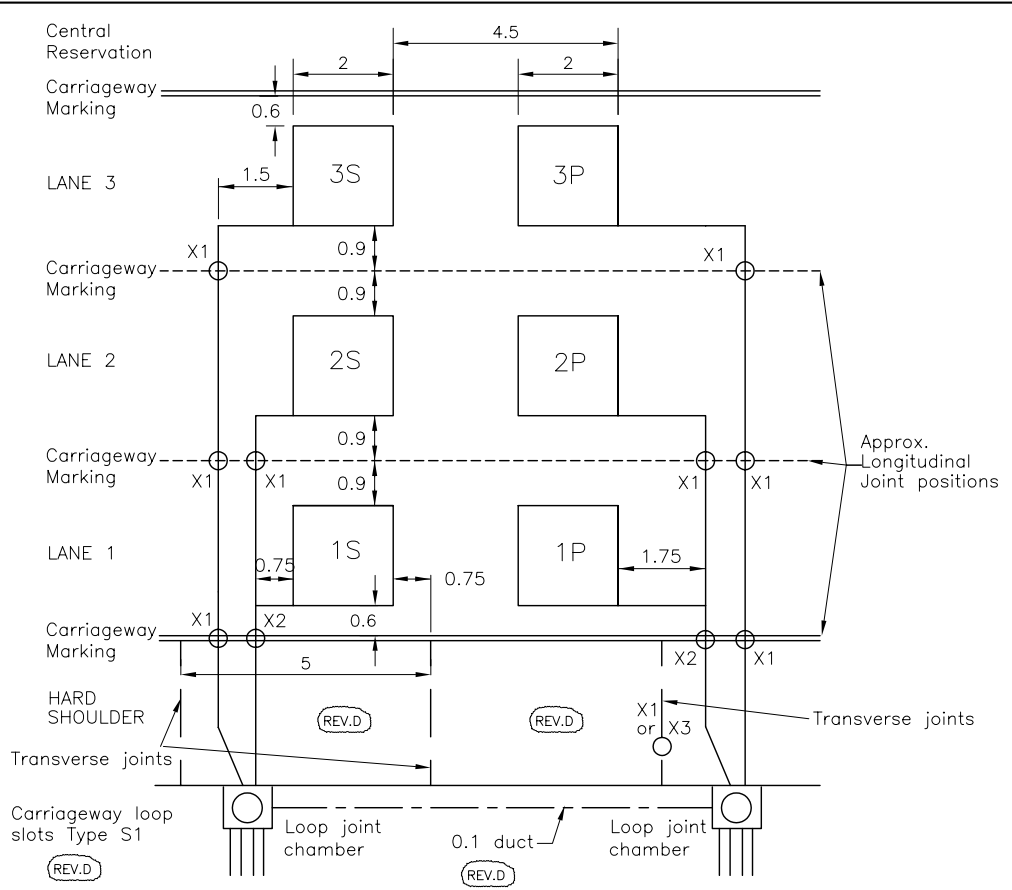
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS MOTORWAY LOOP LAYOUT – SHEET 3	Drawing No.
		C	Nov 03		
		B	Aug 02		G19
		A	Dec 91		
		Issue	Date		



2 LANE AND HARD SHOULDER IN CONCRETE
OR CONTINUOUS REINFORCED CONCRETE

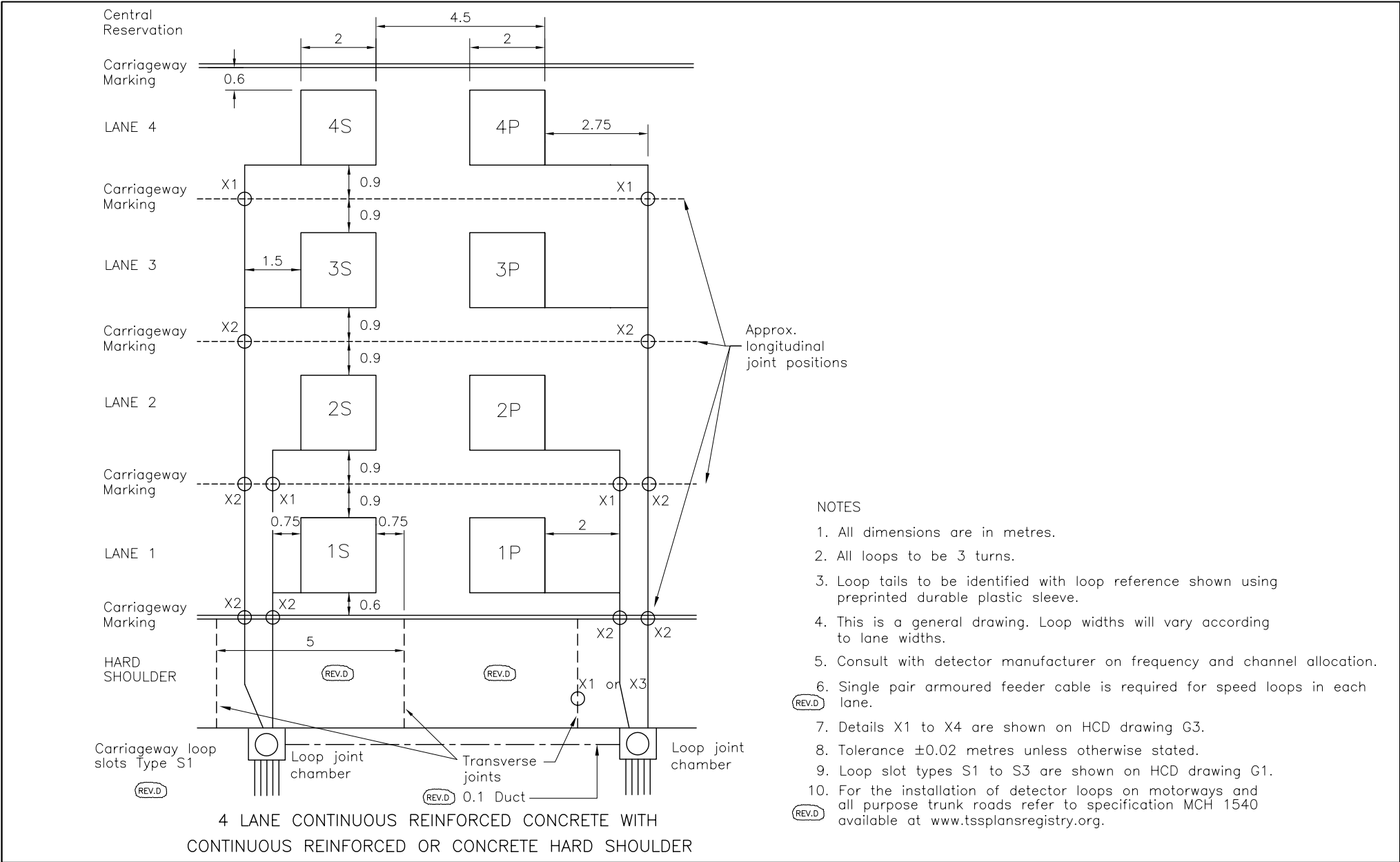
NOTES

- 1. All dimensions are in metres.
- 2. All loops to be 3 turns.
- 3. Loop tails to be identified with loop reference shown using preprinted durable plastic sleeve.
- 4. This is a general drawing. Loop widths will vary according to lane widths.
- 5. Consult with detector manufacturer on frequency and channel allocation.
- 6. Single pair armoured feeder cable is required for speed loops in each lane.
- 7. Tolerance ± 0.02 metres unless otherwise stated.
- 8. Details X1, X2 and X3 are shown on HCD drawing G3.
- 9. Loop slot types S1 to S3 are shown on HCD drawing G1.
- 10. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

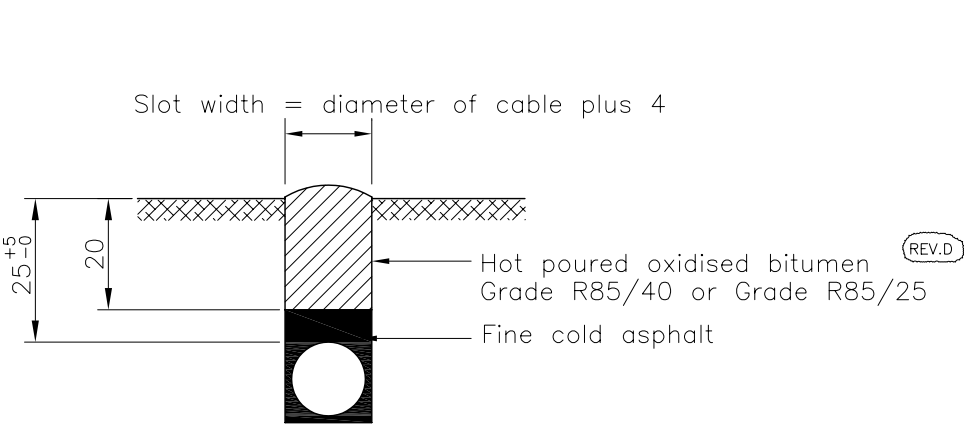


3 LANE CONTINUOUS REINFORCED CONCRETE WITH
CONTINUOUS REINFORCED OR CONCRETE HARD SHOULDER

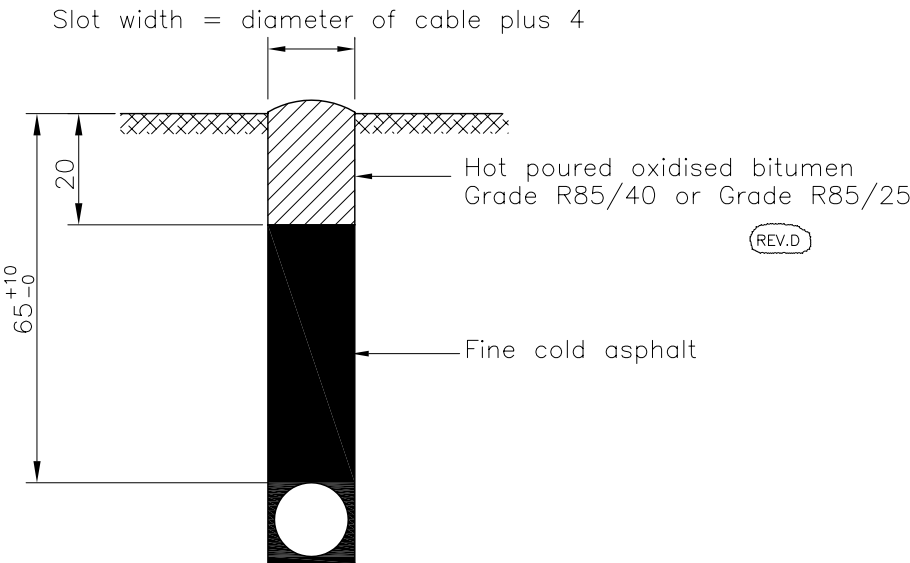
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS MOTORWAY LOOP LAYOUT – SHEET 4	Drawing No.
		C	Nov 03		
		B	Aug 02		G20
		A	Dec 91		
		Issue	Date		



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	INSTALLATION DRAWING NMCS MOTORWAY LOOP LAYOUT – SHEET 5	Drawing No.
		C	Nov 03		
		B	Aug 02		G21
		A	Dec 91		
		Issue	Date		



CONCRETE ROAD SURFACE

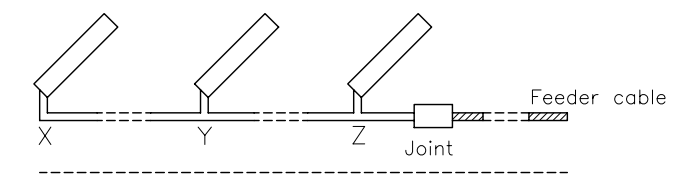


BITUMINOUS ROAD SURFACE

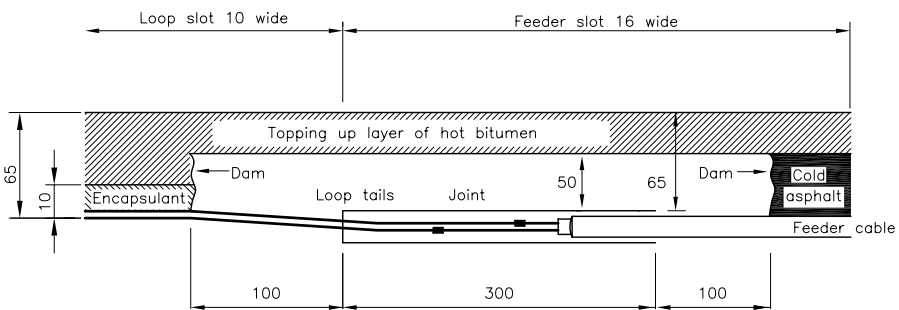
- NOTES
1. All dimensions are in millimetres.
 2. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.D

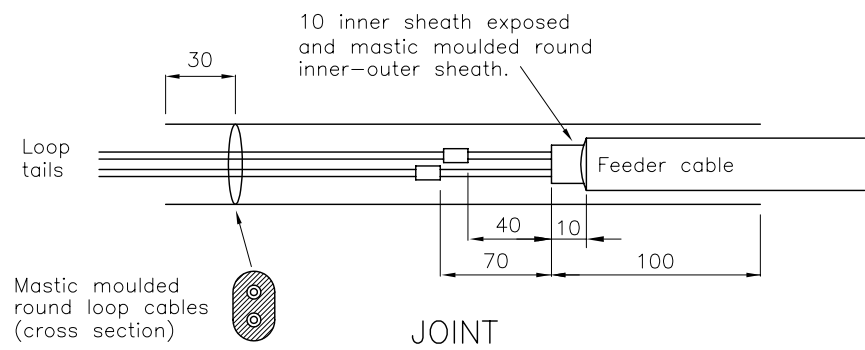
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	LOOP (INDUCTIVE) ALL-PURPOSE ROADS DETAILS OF FEEDER CABLE SLOTS	Drawing No.
		C	Nov 03		
		B	Aug 02		G22
		A	Dec 91		
		Issue	Date		



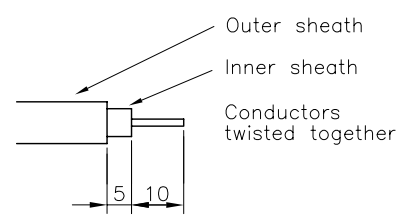
LAYOUT OF LOOPS AND FEEDER CABLE



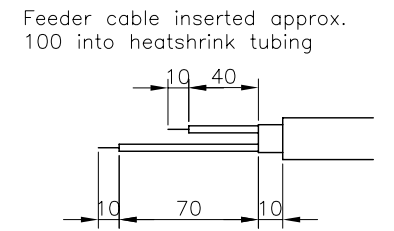
DETAILS OF JOINT SLOT



JOINT



LOOP CABLE DETAIL

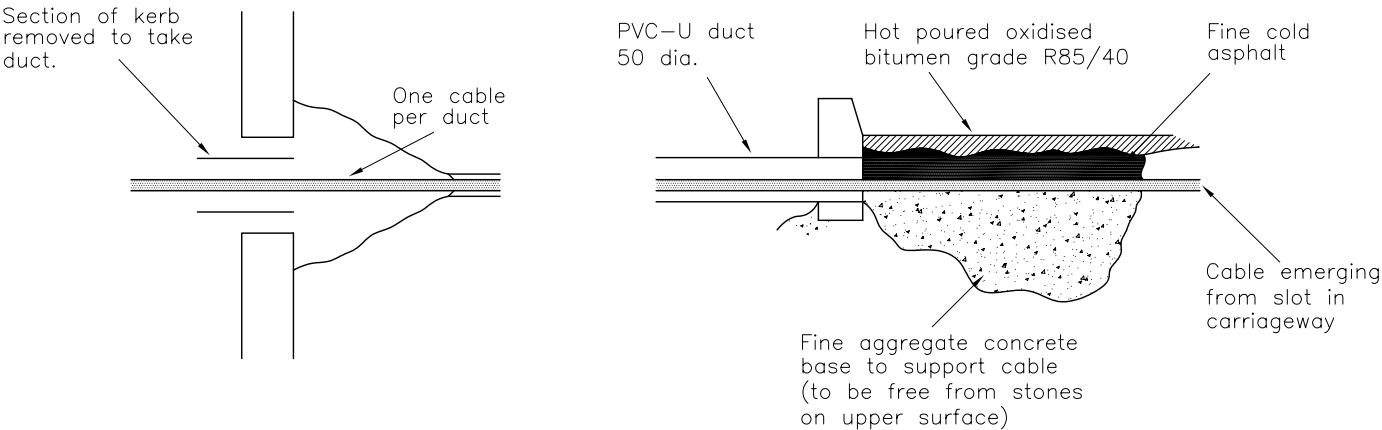


FEEDER CABLE DETAIL

- NOTES
- 1. All dimensions are in millimetres.
 - 2. The width of the joint slot shall be 10 greater than the width for the completed joint.
 - 3. Details of feeder cable slots are shown on HCD Drawing G22.
 - 4. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.
- REV.E

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	E	Nov 05	LOOP (INDUCTIVE) ALL-PURPOSE ROADS DETAIL OF SLOT FOR CABLE JOINT	Drawing No.
		D	Nov 03		
		C	Sept 03		G23
		A	Dec 91		
		Issue	Date		

OPTION 1

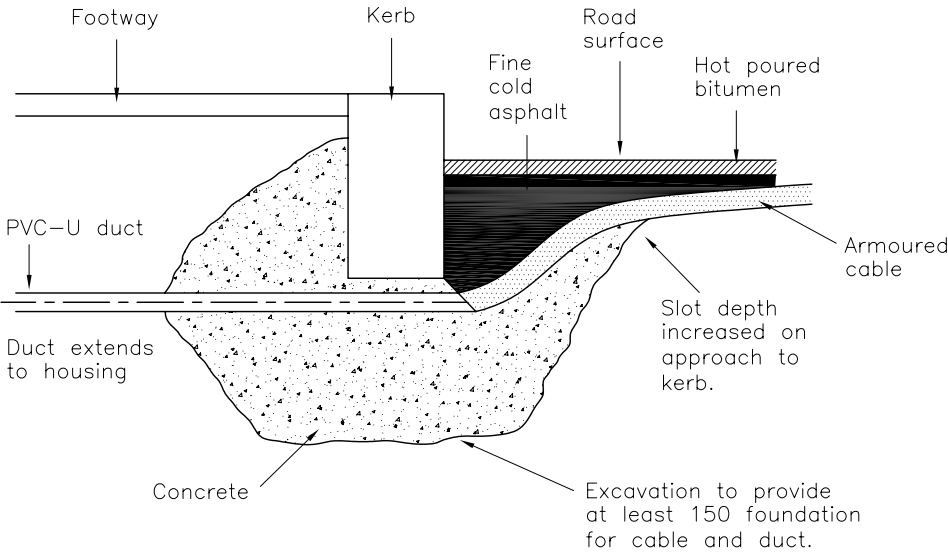


NOTES

- 1. All dimensions are in millimetres.
- 2. For option 3 see HCD Drawing G25.
- 3. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.D

OPTION 2



HIGHWAY CONSTRUCTION DETAILS

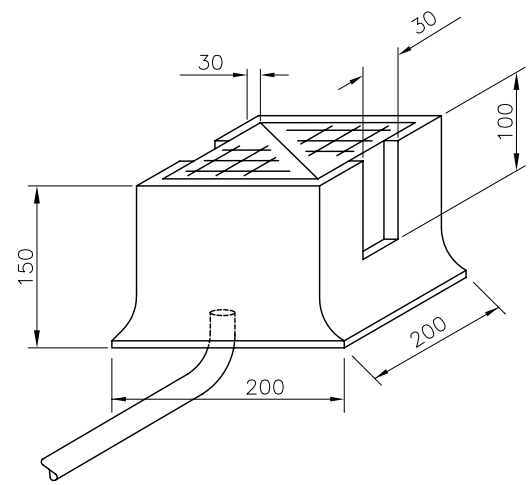
LOOP DETECTORS

D	Nov 05
C	Nov 03
B	Aug 02
A	Dec 91
Issue	Date

LOOP (INDUCTIVE) ALL-PURPOSE ROADS
DETAIL OF CABLE ENTRY TO THE FOOTWAY

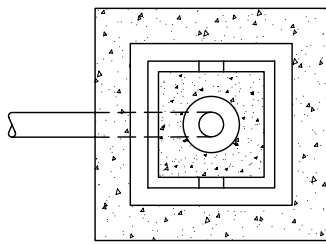
Drawing No.

G24

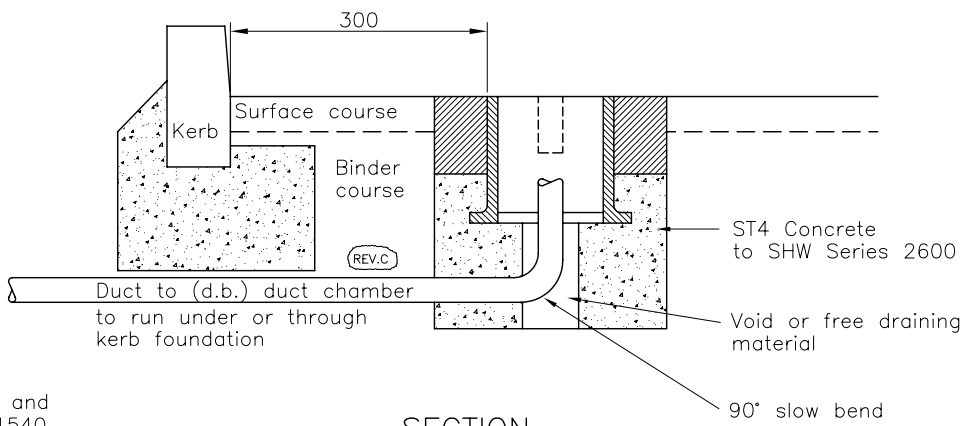


ISOMETRIC SKETCH

OPTION 3



PLAN



SECTION

NOTES

- 1. All dimensions are in millimetres.
- 2. For options 1 and 2 see HCD Drawing G24.
- 3. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

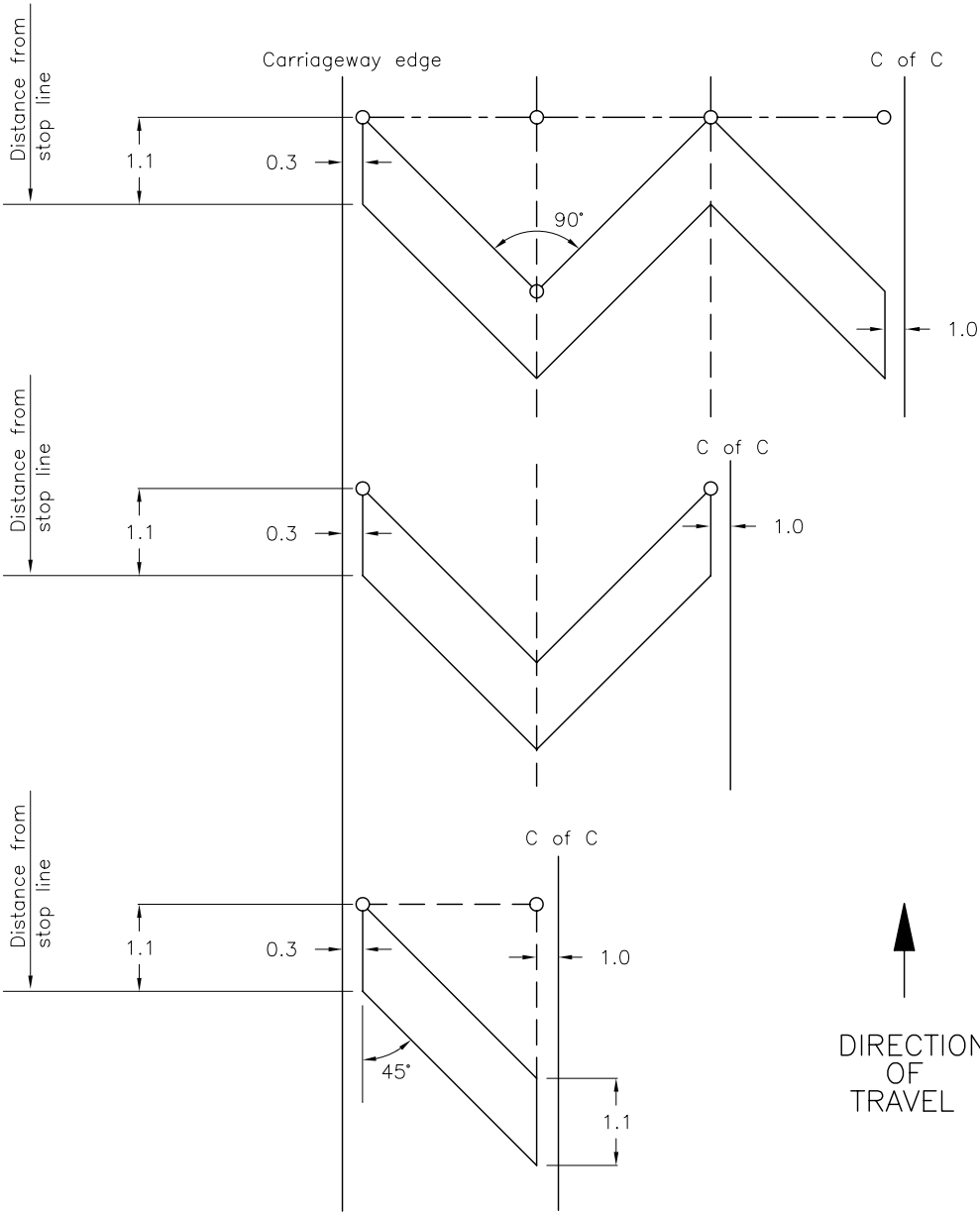
REV.C

REV.C

CARRIAGEWAY CHAMBER FOR DETECTOR LOOP TAILS (L.B.)

End of duct to be below the slots
Base to be able to drain
Slots to be parallel to kerb line

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS			LOOP (INDUCTIVE) ALL-PURPOSE ROADS DETAIL OF CARRIAGEWAY CHAMBER	Drawing No. G25
		C	Nov 05		
		B	Nov 03		
		A	Aug 02		
		Issue	Date		

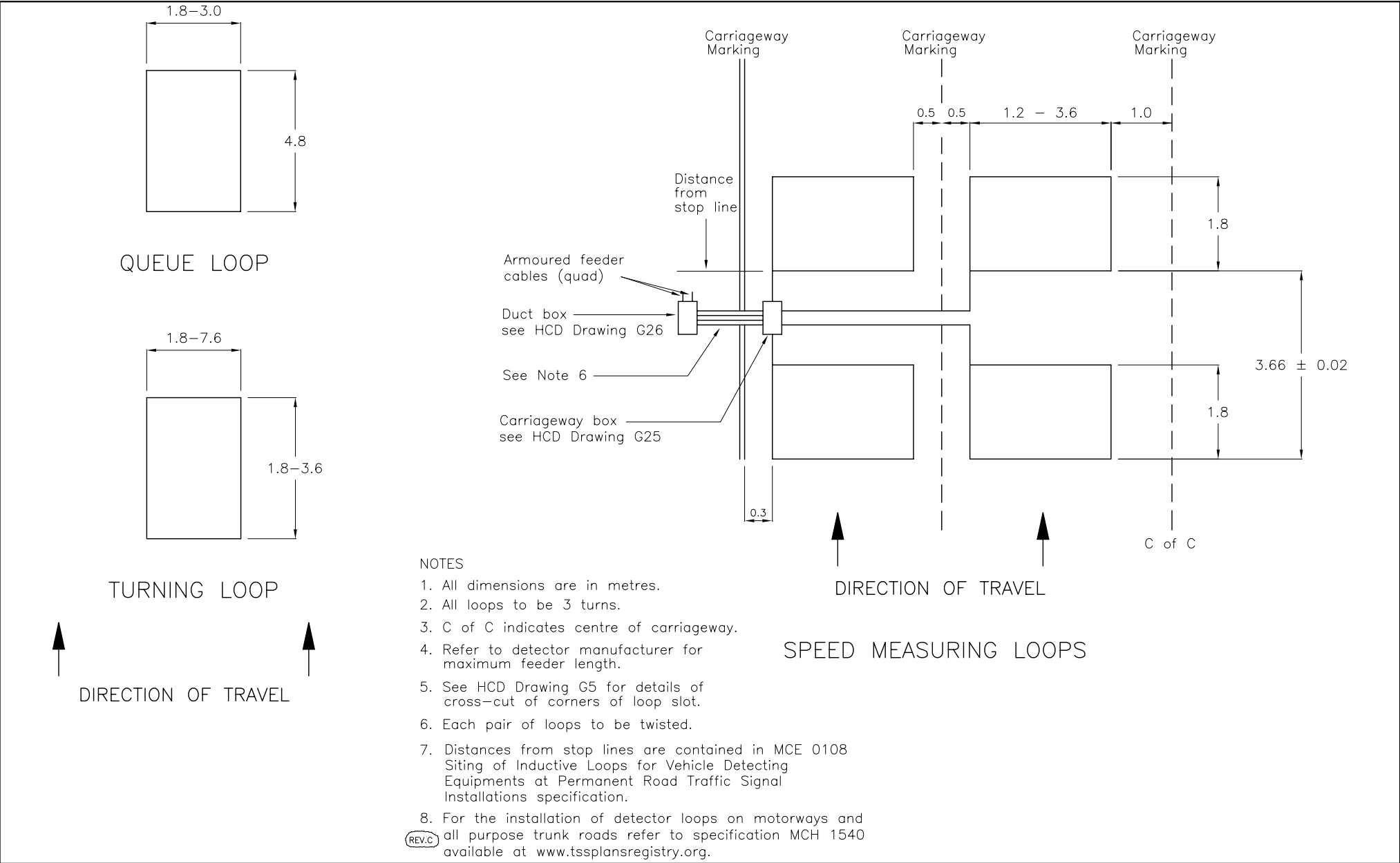


NOTES

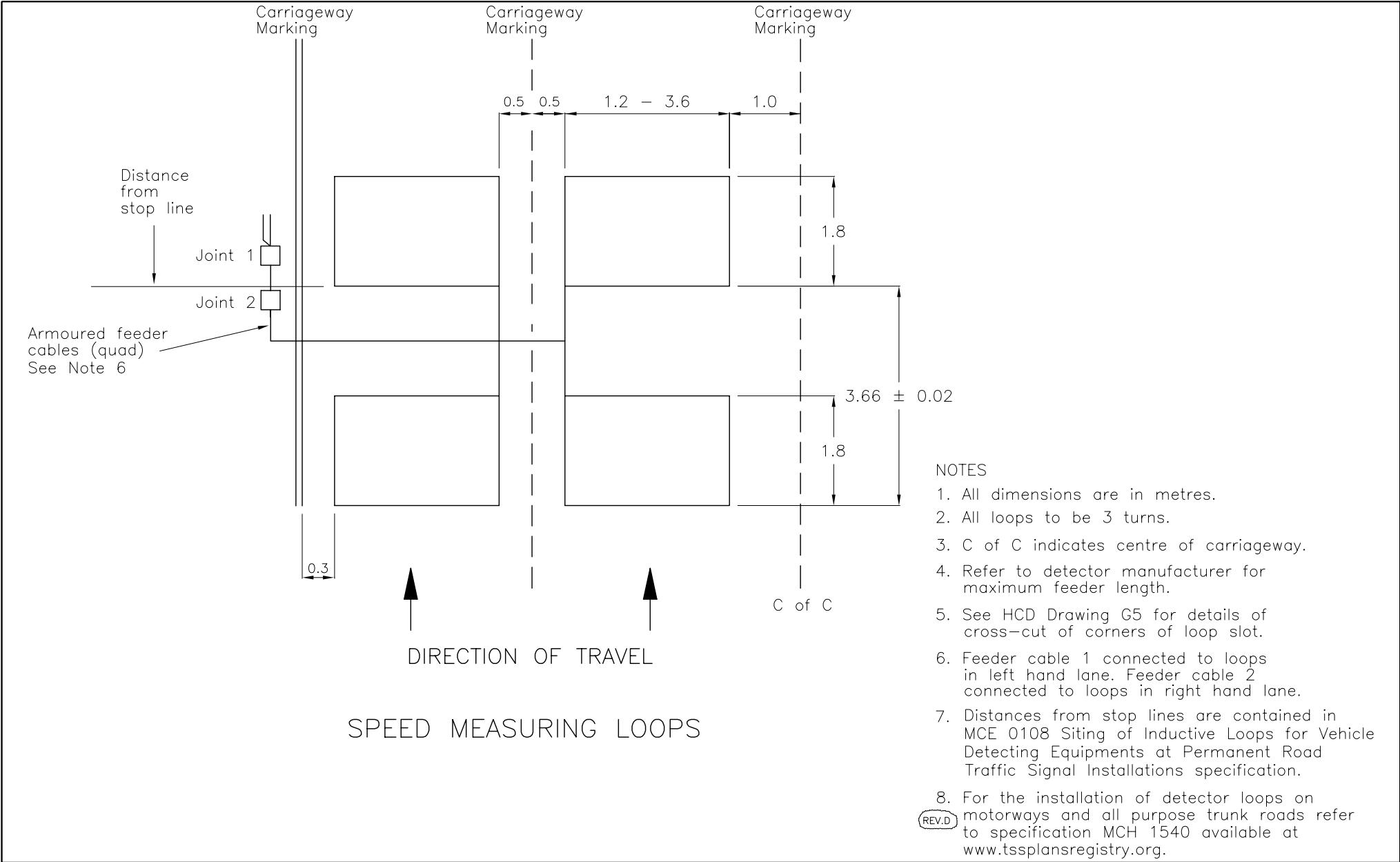
1. All dimensions are in metres.
2. All loops to be 3 turns.
3. C of C indicates centre of carriageway.
4. See HCD Drawing G5 for details of cross-cut of corners of loop slot.
5. Loop configurations shown on this drawing are for control of traffic signals.
6. Distances from stop lines are contained in MCE 0108 Siting of Inductive Loops for Vehicle Detecting Equipments at Permanent Road Traffic Signal Installations specification.
7. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.C

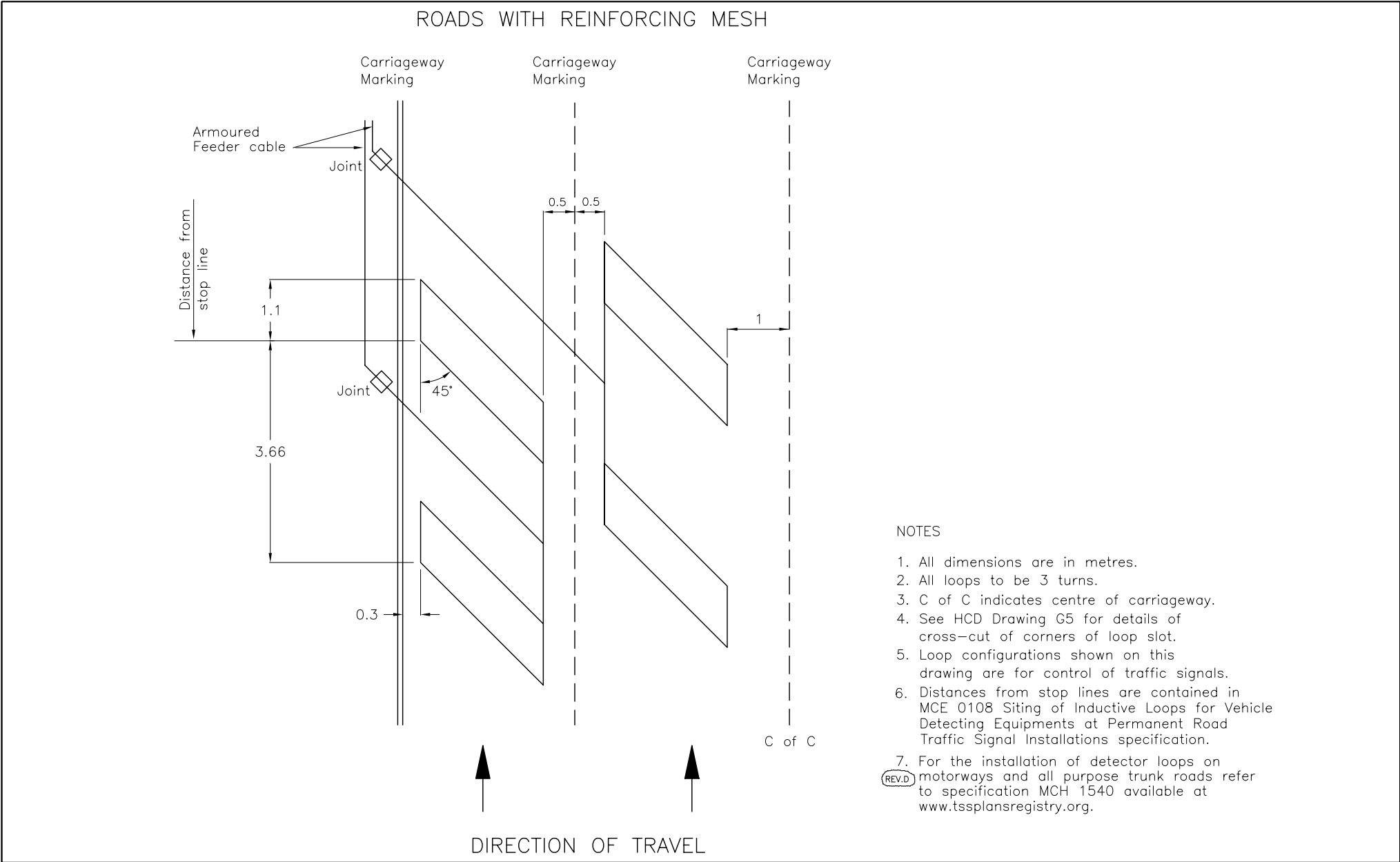
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	C	Nov 05	LOOP (INDUCTIVE) ALL-PURPOSE ROADS CHEVRON LOOPS	Drawing No.
		B	Nov 03		
		A	Aug 02		G27
		Issue	Date		



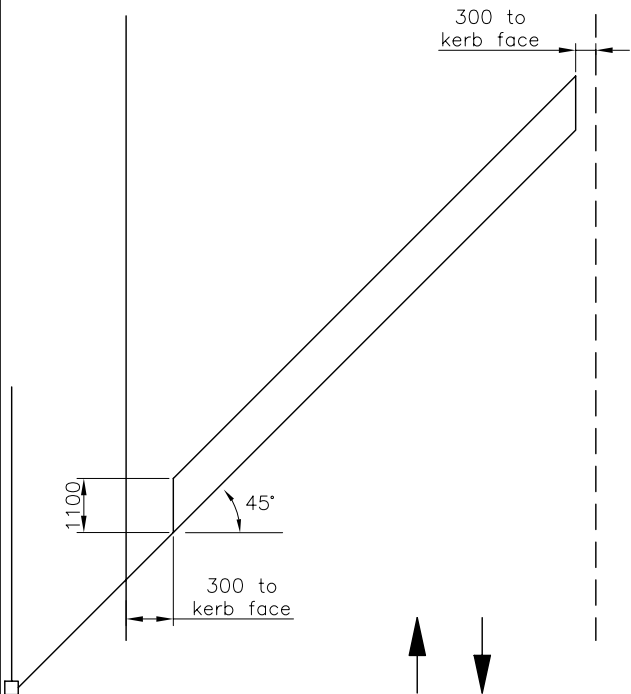
HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS			LOOP (INDUCTIVE) ALL-PURPOSE ROADS TURNING, QUEUE AND SPEED MEASURING LOOPS – SHEET 1	Drawing No.
		C	Nov 05		G28
		B	Nov 03		
		A	Aug 02		
		Issue	Date		



HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	LOOP (INDUCTIVE) ALL-PURPOSE ROADS SPEED MEASURING LOOPS – SHEET 2	Drawing No.
		C	Nov 03		
		B	Sept 03		G29
		A	Aug 02		
		Issue	Date		

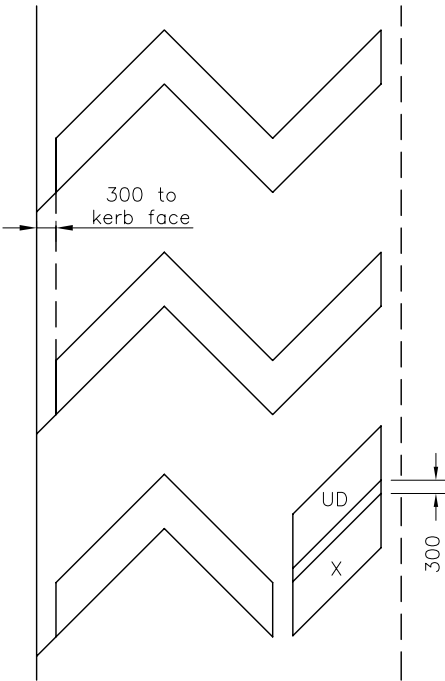


HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS	D	Nov 05	LOOP (INDUCTIVE) ALL-PURPOSE ROADS SPEED MEASURING LOOPS – SHEET 3	Drawing No.
		C	Nov 03		G30
		B	Sept 03		
		A	Aug 02		
		Issue	Date		

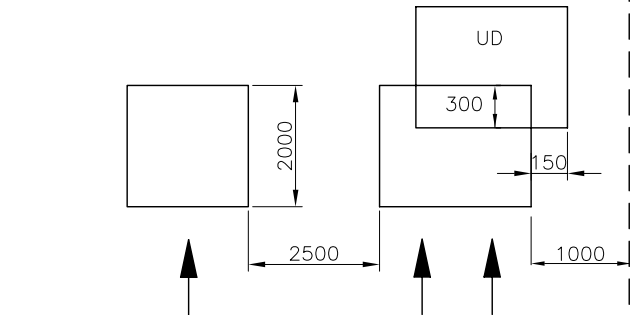


ALL RED LOOP(S)

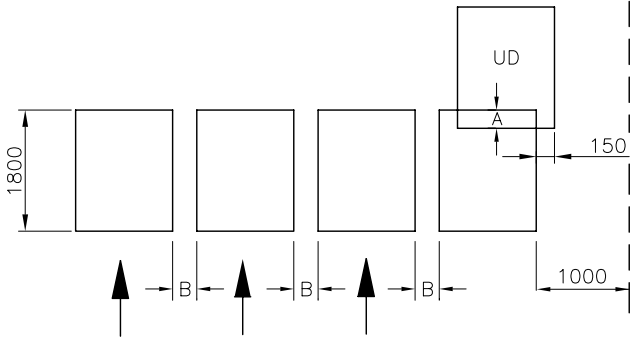
- NOTES
1. All dimensions are in millimetres.
 2. All loops to be 3 turns.
 3. Refer to detector manufacturer for maximum feeder length.
 4. See HCD Drawing G5 for details of cross-cut of corners of loop slot.
 5. Loop configurations shown on this drawing are for control of traffic signals.
 6. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.



UD loop overlaps X loop by 300 in direction of travel.



SCOOT LOOP DIMENSIONS



Dimension A = 270
Dimension B = Refer to Highways Agency specification MCE 0115

COUNT LOOP DIMENSIONS

HIGHWAY CONSTRUCTION DETAILS

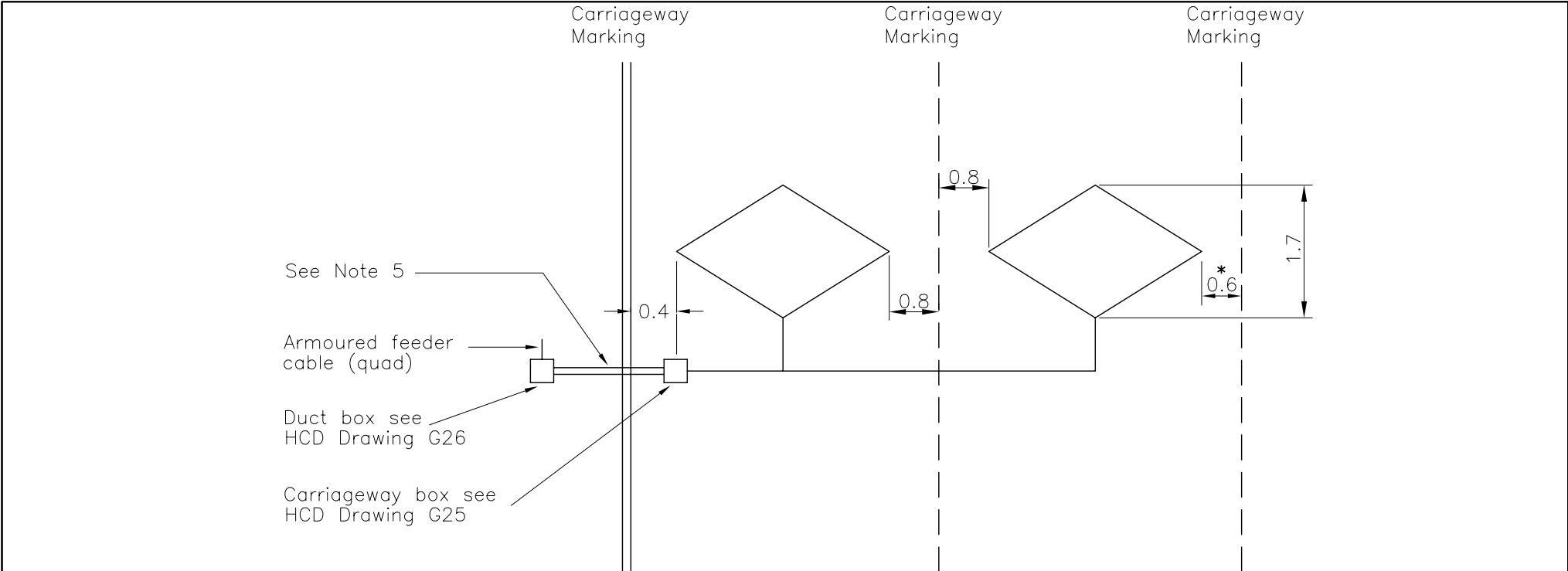
LOOP DETECTORS

C	Nov 05
B	Nov 03
A	Aug 02
Issue	Date

LOOP (INDUCTIVE) ALL-PURPOSE ROADS
TYPICAL LOOP CONFIGURATION
WITH UD DIMENSIONS

Drawing No.

G31



NOTES

- 1. All dimensions are in metres.
- 2. All loops to be 3 turns.
- 3. * Denotes where there is a central reserve the dimension may be reduced to 0.4m.
- 4. See HCD Drawing G5 for details of cross-cut of slot.
- 5. Each pair of loop tails to be twisted together.
- 6. For the installation of detector loops on motorways and all purpose trunk roads refer to specification MCH 1540 available at www.tssplansregistry.org.

REV.C

HIGHWAY CONSTRUCTION DETAILS	LOOP DETECTORS			LOOP (INDUCTIVE) ALL-PURPOSE ROADS MOVA LOOPS	Drawing No.
		C	Nov 05		G32
		B	Nov 03		
		A	Aug 02		
		Issue	Date		