

Guidelines for Marking of Defective Items in Audit Inspection Checklist

Site Establishment

◆ Excavation permitted under the Permit

- (1) a.
 1. Excavation outside the horizontal extent permitted under the Permit
 2. Depth of excavation exceeded the depth permitted under the Permit
- (2) a. Site fenced off and opened exceeds
 1. trench length restriction imposed by TD or Police; or
 2. other trench length permitted by HyDwhichever is shorter, at the permit period assessment stage.

◆ Publicity board

- (3) a. No permit (or any permit extension) is displayed on sign face of notice boards for pedestrian and/or back of publicity boards for motorist.
 - b. No temporary traffic arrangement plans as agreed by TD and/or Police is available for inspection upon request.
- (4) a.
 1. Type 'A' small publicity board is not used as the site does not appear to be divided into separate sections with different completion dates.
 2. Type 'B' small publicity board is not used as the site is divided into separate sections with different completion dates, where a separate section should normally be not less than–
 - 100m long on urban roads with shop frontages, or
 - 200m long on roads with through traffic with no shop frontages.
- b. The following information is not provided–
 1. name and/or logo of “the promoter of the works”.
 2. cartoon figure and the apology statement.
 3. telephone number manned 24 hours a day by “the promoter of the works” for enquiry/complaint.
 4. description of works (refer to Drg no. H 6147 or Permittee’s drawings approved by the Authority).
 5. commencement date, original completion date and anticipated completion date for a section and/or all sections of work where appropriate.
- c. The following detail(s) is(are) not provided as per Drgs no. H 6144-7 or Permittee’s drawings approved by the Authority–
 1. aluminium backing plate (conforming to BS EN485) of 3mm thick.
 2. plastic backing plates (the face shows no signs of deterioration, such as cracking, scaling, blistering, delamination and corrosion) and correct sign colours to BS5252F (1976).
 3. the face of the board is reflectorized (constructed with Class Ref 1 reflective materials to BS EN 12899-1).
 4. size of the board.
 5. size of the figure.
 6. size of the cartoon logo.
 7. size of the telephone figure.
 8. size of lettering.
 9. the information shall be in English and Chinese in printed words, i.e. not free-hand writing.
 10. the information shall be clear and legible.

- d. The board is not securely mounted on a stable structure (e.g. temporary barrier, hoarding or railing).
 - e. The board is not displayed at a prominent location and orientated towards pedestrians for public's reference.
 - f. No. of board(s) is(are) not provided in accordance with the following requirement(s)–
For a work site (including decked areas) less than 50m in length,
 1. one publicity board shall be provided.For a work site (including decked areas) longer than 50m in length,
 2. publicity boards shall be provided at ends of the site.
 3. publicity boards shall be provided along the site at a maximum spacing of 50m.
- (5) a.
1. Type 'A' publicity board for motorists is not used as the site does not appear to be divided into separate sections with different completion dates.
 2. Type 'B' publicity board for motorists is not used as the site is divided into distinct sections with different completion dates, where a distinct section should normally be–
 - not less than 100m long on urban roads with shop frontages, or
 - not less than 200m long on roads with through traffic with no shop frontages.
 - a road section fronting a street block or between two road junctions.
 - works on each of the two bounds of carriageway or a divided road.
- b. The following information is not provided–
1. name and/or logo of “the promoter of the works”.
 2. cartoon figure and the apology statement.
 3. telephone number manned 24 hours a day by “the promoter of the works” for enquiry/complaint.
 4. commencement date, original completion date and anticipated completion date for a section and/or all sections of work where appropriate.
- c. The following detail(s) is(are) not provided as per Drgs no. H 6146-49 or Permittee's drawings approved by the Authority–
1. the 3 mm thick aluminium backing plate (conforming to BS EN485)
 2. the faces of the board and insert plates constructed with Class Ref 1 reflective materials to BS EN 12899-1.
 3. correct sign colours to BS 5252F (1976).
 4. size of the board.
 5. size of the logo.
 6. size of the cartoon figure.
 7. size of the telephone figure.
 8. size of lettering.
 9. the information shall be in English and Chinese in printed words, i.e. not free-hand writing.
 10. the information shall be clear and legible.
- d. The board is not supported as per Drgs no. H 6165-67 or Permittee's drawings approved by the Authority.
- e. The board is not displayed at a prominent location inside the site oriented towards approaching motorists.

- f. No. of board(s) is(are) not provided in accordance with Guidance Notes No. RD/GN/019–

For type ‘A’ publicity board,

1. One number of type ‘A’ publicity board shall be provided where the length of carriageway affected is less than 100m of a straight stretch of road.
2. Where the work site is longer than 100m, each bound of traffic should have a type ‘A’ publicity board to display the required information. Additional publicity boards should be provided at 100m spacing in prominent locations for projects along a straight stretch of road or after turning a bend.

For type ‘B’ publicity board, one number of publicity board shall be provided at each distinct section with a different completion date, where a distinct section should normally be–

3. a road section not less than
 - 100m on urban roads with shop frontages, or
 - 200m on roads with through traffic without shop frontages.
4. a road section fronting a street block or between two road junctions.
5. works on each of the two bounds of carriageway or a divided road.

(For works with anticipated carriageway occupation period less than one month or works not on major roads (expressways, trunk roads, primary distributors and district distributors), no publicity board for motorists is required)

Note: When the original anticipated carriageway occupation period has been extended more than one month, publicity board for motorist should be provided in accordance with Guidance Notes No. RD/GN/019.

- g. The board is not located at least 25m clear of any temporary or permanent traffic signs or signals. The board is erected such that it will cause danger to any road users.
 - h. The board is not erected to a height such that its line of sight is not obstructed by materials or plants on site.
- (6) a. The information on board such as anticipated completion date for a section and/or all sections of work, as the case may be, is not updated.
- (7) a. No one answers a call when it is made by dialing the telephone number. Spot-check for the compliance of this item will be conducted by the audit staff.

◆ Existing works and installations

- (8) a. Any apparent ground movement or damage of roads, buildings, slopes and any other structures, or services under or above ground adjacent to or within the site is observed/identified.
- (9) a. Written proof of such notification to the concerned utility undertakers cannot be produced upon request.
- (10) a. Access to the utility pits and opening of the pit covers is obstructed.
- (11) a. Access to fire hydrants and valves is obstructed.
 - b. Reasonable access to watermains, stormwater drains and sewers, manholes, channels, gullies and other street hardware is not available when required.
- (12) a.
 - 1. Street name plates, street furniture, and mail boxes are removed, covered or relocated without the consent of the Authority. The approval documents from relevant Authority are not available for inspection.
 - 2. Traffic aids are removed, covered or relocated without the consent of TD. The approval documents from relevant Authority are not available for inspection.
 - b.
 - 1. Drainage facilities (e.g. surface channels, drainage intakes, catchpits, gullies, and the downstream drainage system, etc.) are removed, covered or relocated without the consent of the Authority. The approval documents from relevant Authority are not available for inspection.
 - 2. Proper functions of these facilities are affected by site operations / equipment / activities (e.g. site materials are being washed into these facilities). The approval documents from relevant Authority are not available for inspection.

◆ **Lighting, signing and guarding**

(13) a. Length of approach/exit taper is not in accordance with the following requirement, or is not provided as agreed with relevant authorities–

Width of hazard (m) including lateral safety clearance zone		2.4	2.7	3.0	3.4	3.7	4.3	4.9	5.5	6.1	6.7	7.3
Speed Limit (km/h)		Approach Taper Length (m)										
1.	80 or above	60	69	76	84	91	108	122	138	152	168	182
2.	70	45	51	58	63	69	78	90	102	114	126	138
3.	Below 70	30	34	38	42	46	52	60	68	76	84	90

4. (Obsoleted)

5. Where traffic control, either by use of portable traffic light signals or Stop/Go signs, is used, a much shorter approach taper formed at 45° to the line of the road is required. (i.e. approach taper length = obstruction width)
6. At the end of temporary carriageway restriction, the exit taper shall be formed at 45° to the line of the road. (i.e. exit taper length=obstruction width)
* In general, width of hazard is the width of obstruction in carriageway (c/w)
7. Approach tapers shall not be used for entering or exiting the works site.

b. Site boundaries not delineated with cones and cylinders in accordance with the following requirement–

Minimum Height of Traffic Cone/Cylinder

1. 750mm high for roads with speed limit of 70 km/h or below
2. 1000mm high for roads with speed limit of 80 km/h or above

Maximum Spacing of Traffic Cone/Cylinder

A) At tapers	
3. normal approach tapers	2m
4. 45° approach tapers where traffic control is used or temporary pedestrian ways adjoins a c/w	1m
5. end tapers	1m
B) Along edges of temporary pedestrian ways encroaching onto c/w and traffic diversion routes not along existing traffic lanes	
6. both sides of temporary traffic lane diversions not along the edges of the existing traffic lanes	2m
7. edges of temporary pedestrian ways encroaching onto a c/w	1m
C) Along and parallel to the edges of existing traffic lanes	
8. for roads with speed limit up to but not more than 50 km/h	3m
9. for roads with speed limit of 70-80 km/h, or at tight bends and near slip roads with speed limit over 80 km/h	4.5m
10. for roads with speed limit over 80 km/h, or expressways, except at tight bends or near slip roads	9m
D) Within site area for works on carriageway	
11. The interface of longitudinal safety clearance zone and works area	1m

c. Road hazard warning lanterns are not provided in accordance with the following requirement–

Lantern Type

1. low intensity battery operated lamps of the flashing type to delineate temporary edge of carriageways, footways or cycleways. (The lanterns shall comply with the requirements of BS3143-2:1990 or equivalent.)
2. high intensity battery operated beacons of the flashing type to draw drivers' attention to hazard.
 - used at approach taper
 - used in conjunction with advance warning signs (in particular to supplement signs indicating the beginning of a temporary diversion on expressways or roads other than expressways with speed limit over 80 km/h).
 Revolving lanterns to draw drivers' attention in works on expressway by placing at entry/exit points of lane closure and mounting on vehicles. (The lanterns shall comply with the requirements of BS 3143-4:1985 or equivalent.)

Lantern Height

3. Lanterns shall face oncoming vehicles and shall be mounted on stands or cones, with the centre of lens not exceeding 1.2m above the road surface, except that on roads with speed limit of over 70km/h, mounting on cones is the only acceptable method.

Maximum Lantern Spacing

- | | |
|--|-----|
| A) At tapers | |
| 4. normal approach tapers | 8m |
| 5. 45° approach tapers where traffic control is used | 1m |
| 6. End tapers | 4m |
| B) Along edges of temporary pedestrian ways adjoining and encroaching onto c/w and traffic diversion routes not along existing traffic lanes | |
| 7. both sides of temporary traffic lane diversions not along the edges of the existing traffic lanes | 4m |
| 8. edge of temporary pedestrian ways adjoining and encroaching onto a c/w | 4m |
| C) Along and parallel to existing traffic lanes | |
| 9. For roads with speed limit up to but not more than 50 km/h | 3m |
| 10. For roads with speed limit of 70km/h to 80 km/h, or at tight bends and near slip roads with speed limit over 80km/h. | 9m |
| 11. For roads with speed limit over 80 km/h or expressways, except at tight bends or near slip roads. | 18m |
| 12. placed midway between successive traffic cones | |
| D) At barriers used to fence off the obstruction from pedestrian/cyclists flow | |
| 13. the maximum spacing of each lantern at rail shall not be more than 4 m | |
| 14. at least 1 lantern to be provided near each corner of the delineated area | |
- d. Traffic signs are not correctly provided in the aspects of type, size, location, height and orientation.

Advance Warning Signs

1. TS491 – “Road Works Ahead”
2. TS415 – “Road Narrows on Both Sides Ahead”
3. TS416/417 – “Road Narrows on Right Ahead” / “Road Narrows on Left Ahead”
4. TS492-497 – “Lane Closed Ahead” for each lane closure” for 3 lanes c/w
5. TS499-500 – “Right/Left Lane Closed Ahead” for 2 lanes c/w
6. TS503 & 504 – “Temporary sharp deviation” & “Barricade”

Regulatory Signs

7. TS109/110 – “Keep Left/Right”
8. (Obsoleted)
9. TS107/108 – “Turn Left/Right”
10. TS111/112 – Turn Left/Right Ahead”
11. TS106 – “Ahead Only”

Signs for Pedestrians

12. TS510 – “Crossing Not in Use”
13. TS511-513 – “Route for Pedestrians”

Signs for Traffic Control

14. TS409 & 219 – “Traffic Signals Ahead” & “When Red Light Shows Wait Here”
15. TS103/104 & 509 – “Stop/Go Sign” & “Traffic Control Ahead”

End of Road Works

16. TS491 & 767 – “End of Road Works”

Diversion Signs

17. TS501/502 – “Diversion to Another Carriageway to Right/Left Ahead”
18. TS220 & 508 – “Road Closed” & Road Ahead Closed”
19. “Diversion Ahead”, “Diversion”, “Diverted Traffic” & “Diversion Ends”

Miscellaneous

20. TS505 & 506 – “Ramp” & “Ramp Ahead”
21. TS407 – “Two Way Traffic”
22. TS434, 488 & 489 – “Uneven Road Surface”, “Loose Chippings Ahead” & “Slippery Road”
23. TS737 & 738 – “Reduce Speed Now” & “Single File Traffic” supplement to “Road Narrows” signs

Special Temporary Warning Signs

24. “Slow, Road Works”
25. “Reduce Speed Now, Works Ahead”

26. “Slow, Sharp Bend Ahead”
(Special temporary warning signs are required when there is : (a) diversion of vehicular traffic away from original carriageway onto a temporary pavement through a work site; (b) temporary complete closure of a section of carriageway; or (c) road construction projects involving one or more traffic lanes of length longer than 100m being fenced off for one month or more.)

Temporary Directional and Other Worded Signs

27. These signs should have black legends and borders on a yellow background, and comply with paragraphs 4.4 to 4.7 of the CoP for LSG and the visibility requirement of the “Transport Planning and Design Manual”.

Flashing Arrow Sign (FAS)

28. Signface details and luminance requirements of FAS should be in accordance with Appendix E of the CoP for LSG.
29. The mounting height (measured from the road surface to the bottom of sign) shall not be less than 2.4m on a vehicle or be less than 1.5m on a trailer.
30. For works on expressway, high speed roads and roads with speed limit of 70km/h or above, the mounting height of a FAS on vehicles shall not be less than 3.3m.
31. For indicating lane closure on expressways, high speed roads and roads with speed limit of 70 km/h or above, FAS shall be placed on top of the barricade sign.

Signs on Tramway Tracks

32. “No Entry Except Trams”

Signs for Cyclists

33. TS227 – “Cycling Restriction”
34. TS228 – “End of Cycling Restriction”
35. TS480 & 483 – “Cyclists Dismount”

Informatory Sign

36. TS602 – “Pass Either Side”

Temporary Variable Message Signs (VMS)

37. Temporary VMS conforming to BS EN 122966-1:2014 and with optical performance Level 1 as defined in TR 2516B “Performance Specification for Discontinuous Variable Message Sign” shall be used for road works on expressways with hard shoulders of width no less than 3m in addition to advance warning signs.
38. Temporary VMS shall be approximately 1100 mm wide and 1100 mm high.

39. Temporary VMS shall be with automatic dimming control and capable of displaying bilingual text messages and graphical messages to provide information of lane closure ahead.
40. To provide additional warning, a temporary VMS mounted on a vehicle, a trailer or a frame shall be placed at least 200m in advance of the first advance warning sign on the hard shoulder of an expressway.

e. Advance warning signs and “End of Road Works” sign are not placed in accordance with the following requirement–

Speed Limit (km/h)	Advance Warning Signs in Advance of Road Work			“End of Road Works” Sign
	Distance of the first sign (m)	Minimum number of signs	Minimum visibility distance of driver to the first sign (m)	Distance beyond the work (m)
1. Expressways	600	3	80	45 – 90m
2. over 80	300 – 600	3	80	45 – 90m
3. 70-80	100 – 300	3	70	30 – 35m
4. 50-Below 70	40 – 100	2	60	30 – 35m
5. up to 50	40 – 100	2	60	10 – 30m

- f. 1. Continuous temporary tubular barriers are not provided on those sides of an obstruction/excavation to restrict pedestrian flows or access, whether or not there is any special reason to expect blind and visually impaired people passing that location.
2. Fixing details on barriers for road hazard warning lantern is not in accordance with Drg. no. H 6151 (The lantern should shield the fixing plate and bolt from the pedestrians, and when a lantern is not mounted, the steel plate must not protrude above the top rail. For plastic barrier, no part of the mounting mechanism shall protrude above the top rail after removal of the lantern))
- g. 1. Traffic control equipment, either portable traffic signals or Stop/Go signs, is not used to operate alternate one-way traffic where the minimum width of a single carriageway for normal two-way traffic is less than 5.5m.
2. Portable light signals are not used in the following situations–
 - where the length of control exceeds 30m;
 - where the length of control is less than 30m and the view of oncoming traffic is obscured; or
 - during the hours of darkness, irrespective of the length of control.

3. In the case of “Stop/Go” signs are used, they are not operated in accordance with the following requirements–
 - 2 signs, one at either end of the control length, shall be operated where the control length is not less than 15m; or
 - 1 sign, located centrally at the control length, shall be operated where the control length is less than 15m; and
 - the signs must be constructed in retroreflective materials and mounted between 1.5 and 2.5m above the carriageway surface.
 4. Truck mounted attenuator (TMA) is not mounted at the rear end of a shadow vehicle to protect road works personnel in the works areas in front or to escort works vehicles when performing mobile operation activities for lane closure and mobile operations on expressways, high speed roads and other roads with speed limit of 70km/h or above.
 5. Typical rear details of works vehicles / shadow vehicles with or without TMA on expressways, high speed roads and other roads with speed limit of 70km/h or above should be in accordance with Appendix D of CoP for LSG.
- h. Water-filled barriers without stipulated containment level (may be used as an alternative to pedestrian barriers and cones to separate the trafficked carriageway from adjacent footway or work zone) are not provided in accordance with the following requirements:
1. The barriers should be proprietary-made water fillable plastic containers with device for interlocking adjoining container units..
 2. The height of barriers shall not be less than 800mm. For use as an alternative to temporary tubular barriers, the height of the temporary barriers should not be less than 900mm and should comply with the general requirements on temporary tubular barriers in the CoP for LSG.
 3. The barriers should be placed in alternate red and white colours such that they stand out conspicuously in contrast to the works behind them and are visible by day and night.
 4. Top surface of the water-filled barrier shall be smooth and shall be capable of providing guiding and support to pedestrians, otherwise a separate handrail shall be provided.
 5. Water-filled barriers shall filled with water at least up to the minimum water level according to the operating instruction of the manufacturer. Minimum and maximum water level marks shall be conspicuously imprinted on the barriers to facilitate checking of water level.
- i. Works on Expressway are not in accordance with the following requirements:
1. Size of warning sign to be 1200mm.
 2. First advance warning sign to be placed 600m ahead.
 3. 1000mm high cones to be used.
 4. (Obsoleted)
 5. Cone spacing to be 9m parallel to traffic lane (18m for short duration day time works not at tight bends nor near slip roads).
 6. Approach and end taper cone spacing to be 2m and 1m respectively.
 7. Temporary tubular barriers not to be used.

8. High intensity battery operated beacons to be used along tapers and in conjunction with advance warning signs.
 9. Road hazard warning lanterns to be mounted on cones 1.2m above road surface.
 10. Flashing arrow signs (FAS) to be used with barricade signs to indicate beginning of temporary diversion.
 11. Slow moving works vehicle to be mounted with FAS.
 12. High visibility clothing, incorporating retroreflective stripes or patches, to be worn by workers.
 13. Minimum 1.2m lateral safety clearance to be maintained.
 14. The paintwork of the vehicle used must be kept in good repair and the vehicle remains conspicuous to other traffic. The name of the contractor must be marked in black in at least one prominent position on each side of the vehicle.
 15. 50m longitudinal safety clearance to be maintained.
 16. Shadow vehicle with TMA in front of the 50m longitudinal safety zone to be placed before the works area as guarding provision
- j. Works on Tramway Track are not in accordance with the following requirements:
1. At the sides where the passage of trams will be obstructed, barriers to fence off the works area and traffic cones to form tapers should not apply.
 2. Conspicuous signs not less than 1m above the road surface should be displayed to give to any person adequate warning of the danger.
 3. Temporary road humps should be provided across the tramway track where additional warning to motorists is necessary.
- k. Temporary Safety Barriers with stipulated containment level are not provided in accordance with the CoP for LSG
1. Temporary Safety Barrier With Stipulated Containment Level is not provided on carriageways with the conditions specified in CoP for LSG Clause 5.24.
 2. Temporary safety barriers with containment level assembly and individual component must meet BS EN 1317-2:2010 containment level T2 or above. The containment level of temporary safety barriers shall be marked on the barriers for identification.
 3. Temporary safety barriers with containment level, if in form of water filled barriers, must be filled with water according to the manufacturer's recommendation.
 4. Temporary safety barriers with containment level shall stand out conspicuously and shall be provided with road hazard warning lanterns.
- (14) a. Condition/quality of signs found non-compliance with the following requirement–
1. Backing plates of signs must conform to one of the following :

- Aluminium plate shall comply with the requirements of BS EN 485-3:2003 or BS EN 485-4:1994, together with the requirements of BS EN 485-2:2004.
 - Plastic shall comply with the requirement on impact test in the CoP for LSG.
 - Temporary signs for emergency purposes and used for less than 24 hours may be mounted on flexible plastic board or other similar material. (The material should be strong enough to withstand normal wind load without excessive bending).
2. Sign-faces shall be reflective (All sign faces should be constructed in “Class Ref RA2” retroreflective material conforming to BS EN 12899-1:2007) In particular, ASTM D4956-16 “Type IX” retroreflective material shall be used for the signs mounted at the rear end of a works vehicle or shadow vehicle.
 3. The backing plate of a sign shall be fabricated from an aluminium plate of 3mm minimum thickness.
 4. Name of contractor must appear in both Chinese and English on the back of each sign. Relevant information of the works (including contract number, name of the promoter and/or contractor of the works, and telephone number for answering enquiries and complaints on the works) shall also be appeared on the back of sign in particular for signs or message boards placed far away from the works site.
 5. Clean and clear from damage with message clearly legible.
 6. Signs should be provided with stands so that they are held in a rigid position with at least 300mm above the adjacent roadway. (e.g. it should not be easily moved or rotated by the air turbulence of moving vehicles)
 7. Signs mounted on lighting columns should be smaller than 0.4m², be securely fixed without damage to the column, and be positioned so as not to obstruct access to the joint box.
 8. All corners of a sign plate shall be rounded to a radius of not less than 18 mm unless otherwise stipulated in the relevant standard drawing(s) published by TD or HyD.
 9. All edges of a sign plate shall be ground to ensure that they are free from sharp edges, burrs, raggedness and tears.
- b. Condition/quality of traffic cones or cylinders found non-compliance with the following requirement–
1. The white portion must be retroreflective and the red portion may be retroreflective or have a fluorescent finish.
 2. Cones or cylinders should not become inconspicuous due to the reflectorised finish covered with dirt.
 3. Cones or cylinders should not be damaged or toppled. (They shall comply with BS EN 13422:2004. Cones must have heavy duty rubber bases and the weight of the whole 750mm and 1000mm cones shall not be less than 3.85kg and 6kg respectively).
 4. The use of bags filled with sand as ballast is not acceptable.
 5. Traffic cones or cylinders when used on one site shall be of the same height.
- c. Condition/quality of temporary tubular barriers found non-compliance with the following requirement–
1. Barriers should be hooked/fastened at ends of barriers to form continuous barriers which clearly separate pedestrians, cyclists from the works and trafficked carriageway and warn pedestrians and cyclists of their presence.

2. Temporary tubular barriers shall be painted so that they stand out conspicuously in contrast to the obstruction/excavation behind and are visible in day and night.
 3. Barriers shall be stable under adverse weather conditions and be substantial, and should not be easily toppled or moved by pedestrians or slipstreams of moving traffic.
 4. Temporary tubular barriers should be made of metal or plastic and should be designed to restrict pedestrian access effectively and not to obstruct visibility. Temporary tubular barriers should have handrails of at least 900mm but not exceeding 1150mm above ground, which should be reasonably smooth and rigid for guiding and providing some measure of support to pedestrians and be provided with tapping rails at not more than 280mm above ground.
 5. Temporary tubular barriers placed on carriageways adjacent to running traffic lanes shall be of the plastic type and be guarded by a line of traffic cones.
 6. Temporary tubular barriers with detachable horizontal members made of hard objects such as timber or steel poles should not be used.
 7. Temporary tubular barriers shall not be used on the carriageways of expressways and roads with speed limit over 80 km/h.
- d. Condition/quality of road hazard warning lanterns found non-compliance with the following requirements–
1. All lanterns must be yellow in colour with amber lenses.
 2. Each lantern shall be fitted with a supplementary reflector of at least 50cm² in area which must appear under headlamp illumination to be of a similar colour to the light emitted by the lantern.
 3. Lanterns should show an intermittent or revolving light.
 4. Lanterns/beacons shall flash or revolve at the rate of 90 -150 times per minute and should be kept operating at all times when the temporary diversion is in place. (Low intensity battery operated lamps to delineate temporary edge of carriageways or footways should comply with the requirements of BS 3143-2:1990 or equivalent. High intensity battery operated beacons to draw drivers' attention to hazards should comply with the requirements of BS 3143-4:1985 or equivalent.)
 5. The use of revolving lanterns to draw drivers in works on expressway by placing at entry/exit points of lane closure and mounting on vehicles should be in accordance with Appendices C & E respectively of the CoP for LSG. (The lanterns should comply with the requirements of BS 3143-4:1985 or equivalent.)
 6. During the hours of darkness or at times of poor visibility, all obstructions or road works must be properly lit with prescribed road hazard warning lanterns to indicate the limits of the works to the road users.

◆ **Temporary traffic arrangement and control**

- (15) a. Name and contact telephone number of the responsible technician are not displayed at the back of temporary traffic light signal
- b. No one answers a call when it is made by dialing the telephone number. Spot-check for the compliance of this requirement will be conducted by the audit staff.
- (16) a. 1. Sufficient length of approach taper according to (13)a is not provided; and
2. Exit taper is formed at 45° to the line of the road. (i.e. exit taper length=obstruction width)
- b. 1. Continuous barriers (i.e. hooked/fastened at ends of barriers to resist gentle push) are not provided on those sides of an obstruction/excavation to restrict pedestrian flow or access, whether or not there is any special reason to expect blind and visually impaired people passing that location.
2. Fixing details on barriers for road hazard warning lantern is not in accordance with Drg. no. H 6151 (The lantern should shield the fixing plate and bolt from the pedestrians, and when a lantern is not mounted, the fixing plate must not protrude above the top rail.)
- c. 1. Barriers/barricades are not provided to prevent pedestrians, in particular the blind and visually impaired people, from accessing to the carriageway.
Traffic cones are not provided in accordance with the following requirements–
2. type (the white portion must be retroreflective and the red portion may be retroreflective or have a fluorescent finish)
3. size (750 mm high minimum)
4. spacing at tapers and along temporary pedestrian ways (i.e. 1m max. spacing)
- d. The traffic sign(s) is (are) not provided in accordance with the requirements of Figure 5.3 in the CoP for LSG:–
1. “Road Works Ahead”
2. “Road Narrows on Right Ahead”
3. “Road Narrows on Left Ahead”
4. “Keep Right”
5. “Route for Pedestrians”
6. “End of Road Works”
7. condition of signs - clean and clear from damage with message clearly legible
- e. Road hazard warning lanterns are not provided in accordance with CoP for LSG:–
1. type
 - low intensity battery operated lamps to delineate temporary edge of carriageways, footways or cycleways
 - high intensity battery operated flashing beacons to draw drivers’ attention to hazard (e.g. used at lead-in tapers, in conjunction with advance warning signs and at end of exit taper).
2. height
 - mounted on stands or cones with a maximum of 1.2m above the ground when provided on carriageways
3. spacing along the line of the obstructions
 - the maximum spacing of each lantern at rail should not be more than 4 m; and
 - at least 1 lantern to be provided near each corner of the delineated area
4. spacing along edges of temporary pedestrian way adjoining and encroaching onto a carriageway
 - placed at a maximum spacing of 4m.
- f. Road hazard warning lanterns are not working in accordance with the following requirements–
1. lanterns should show an intermittent or revolving light during the hours of darkness.
2. flashing beacons should flash or revolve at the rate of 90 -150 times per minute and should be kept operating at all times when the temporary diversion is in place.

- g. A minimum of 1m wide temporary platform with a ramp of 1 in 6 max. gradient at both ends (details shown in Drg. no. H 1133) is not provided as reasonably practicable for persons in wheelchair.
- (17) a. Temporary road markings are not provided in accordance with the Road Traffic (Traffic Control) Regulations.
- 1. type
 - 2. colour
 - 3. line width
 - 4. line length
 - 5. gap between lines
- b. Temporary road markings are found not reflectorised.
- (18) a. For existing road markings only required to be covered temporarily, they are not masked with proprietary black tape.
- b. For existing road markings made redundant by reason of work, they are not removed nor masked with proprietary black tape.
- c. Where an existing road marking is masked with proprietary black tape or removed by grinding, the black tape or the grinding operation is not applied over a rectangular area covering the marking but just the shape of it.

◆ **Vehicular and pedestrian facilities**

- (19) a. 1. Operations in connection with the work of the Permittee are found interfering unnecessarily or improperly with the convenience of the public or the access to public/private roads or footpath or right-of-ways to or of properties whether in the possession of Government or of any other person.
2. Disruption to existing tactile guide paths occur as a result of the works without reprovision of temporary tactile guide paths of the affected section, or devising appropriate alternative methods for guiding visually impaired persons passing the obstruction or excavation.
- (20) a. 1. A minimum clear footway width of 1.5m in general is not provided and maintained for pedestrians except the following :
- (i) the affected footway is of a short length and with prior permission from TD/Police; or
 - (ii) emergency works constrained by site conditions in which cases the authorities should be consulted as soon as possible.
2. Obsoleted
3. Obsoleted
4. When works are carried out on the cycleway, a desirable minimum clear width of 1.8m is not maintained for cyclists to dismount and wheel their bicycles or tricycles passing the works area in two-way directions, or no appropriate alternative route is provided, unless the authorities are consulted.
- b. No adequate alternative pedestrian diversion route is provided where it is not practicable to provide the minimum unobstructed footway width (except arrangement endorsed by TD/Police due to physical constraint on site).
- c. Pedestrian access to or of properties is not properly established & maintained.

- d. 1. A minimum unobstructed carriageway width of one traffic lane is not provided & maintained for vehicular access.
 2. A minimum unobstructed carriageway width of 5.5m is not provided & maintained on a single carriageway for two-way traffic.
 3. A minimum unobstructed carriageway width of 3m is not provided & maintained with operation of traffic control by portable traffic light signals or Stop/Go signs.
 - e. A minimum unobstructed width of one traffic lane is not properly maintained for vehicular access (including run-in) to or of properties.
 - f. Length of approach/exit taper is not in accordance with the temporary traffic arrangement plans as agreed by TD and/or Police.
 - g. Traffic signs are not correctly provided in the aspects of type, size, location, height, orientation and number in accordance with the temporary traffic arrangement plans as agreed by TD and/or Police.
 1. type
 2. size
 3. location
 4. height
 5. orientation
 6. number
 - h. Approval of TD for occupying parking place/space on road is not available upon request.
- (21) a. Emergency exit or emergency vehicular access is found obstructed.

◆ **Unattended site**

- (22) The audit staff shall need to record whether an excavation site is being actively worked on and if not, whether display board(s) explaining reason(s) for the road works not being actively worked on at site is erected. An excavation site which is not being actively worked on and without the display board(s) erected is defined as an unattended site. When an excavation is found left open without being actively worked on with no display board(s) erected in morning inspection, a follow-up inspection in afternoon on the same day **must** be conducted to complete the checking of this item. If the site is still not being actively worked on and without the display boards erected in the follow up inspection, AIMS will automatically record a NC of unattended site for this item.

If a site is unattended due to inclement weather, unless Amber/Red/Black rainstorm warning thunderstorm warning, flood warning or Typhoon Signal No. 3 or above is hoisted or 3 hours after the lowering of these warnings/signals, a display board explaining the reason is required.

- (23) a. Excavation not to be actively worked on (except prior approval obtained from the Authority) is not covered by steel plates/ or decking safely and reasonably nuisance-free so as to allow the area to be reopened for the safe and reasonably nuisance-free passage of vehicular or pedestrian traffic.
- b. Idle site is defined where an excavation site is not being actively worked on but with display board(s) erected explaining reason for the road works not being actively worked on at site. Idle site (except prior approval obtained from the Authority) exceeding 14 consecutive working days (excluding Sunday and General Holiday) and does not allow the area to be reopened for the safe and reasonably nuisance-free passage of vehicular or pedestrian traffic. This requirement is not applicable to slope works where the excavation permit is solely applied for hoarding erection not affecting public roads.

The audit staff shall record whether the site is left idle during audit inspection. AIMS will record a NC for this item if the excavation site has been left idle exceeding 14 consecutive working days counting from the date of the last audit inspection provided it recorded an idle site incident.

- (24) a. The following information is not provided–
1. name and/or logo of “the promoter of the works”.
 2. cartoon figure and the apology statement.
 3. telephone number of “the promoter of the works” for enquiry/complaint.
 4. reason for leaving the site idle.
 5. anticipated date of work resumption.
 6. standard phrase, “Works temporarily suspended”.
- b. The following detail(s) is(are) not provided as per Drg nos. H 6133-4 or Permittee’s drawings approved by the Authority–
1. aluminium backing plate (conforming to BS EN485) of 3mm thick.
 2. plastic plates (the face shows no signs of deterioration, such as cracking, blistering, delamination and corrosion).
 3. the face of the board is reflectorized (constructed with Class Ref 1 reflective materials to BS EN 12899-1).
 4. size of the board.
 5. size of the logo.
 6. size of the cartoon figure.
 7. size of the telephone figure.
 8. size of lettering.
 9. the information shall be in English and Chinese in printed words, i.e. not free-hand writing.
 10. the information shall be clear and legible.
- c. The board is not securely mounted on a stable structure (e.g. temporary barrier, hoarding or railing).
- d. The board is not erected at a prominent location orientated towards pedestrians for the public’s reference.
- e. No. of board(s) is(are) not provided in accordance with the following requirement(s)–
- For a work site (including decked areas) less than 50m in length,
1. one display board shall be provided.
- For a work site (including decked areas) longer than 50m in length,
2. display boards shall be provided at ends of the site.
 3. display boards shall be provided along the site at a maximum spacing of 50m.
- f. Idle site reason shown on the display board(s) is not in accordance with the current version of Drg. no. H6134 and without prior approval granted by the Authority. The current version of Drg. no. H6134 contains a hyperlink connected to the List of Standard Reasons for Idle Site on Highways Department’s website.
- g. The reason for idle site displayed on site manifestly does not reflect the genuine situation of the idle site.
- h. Works resumption date shown on the display board(s) is not legitimate or exceeds 14 consecutive working days beyond the date of audit inspection in the following way(s) –
1. works resumption date had lapsed on the date of audit inspection,
 2. works resumption date left blank on the display board(s) with the following exemptions:
 - (i) Work at Night Time Only;
 - (ii) Work on Saturday, Sunday and General Holiday Only.
 - (iii) Underground pipeworks / cabling works in progress (for trenchless works only)
 3. works resumption date displayed on site exceeds 14 consecutive working days beyond the date of audit inspection without prior approval granted by the Authority unless the entire area is reopened for the safe and reasonably nuisance-free passage of vehicular or pedestrian traffic.
- i. When a site is actively worked on, the public is misled by the erection of a display board(s) explaining the reason for road works not being actively worked on at site.

- (25) a. The following information is not provided–
1. name and/or logo of “the promoter of the works”.
 2. cartoon figure and the apology statement.
 3. telephone number of “the promoter of the works” for enquiry/complaint.
 4. reason for leaving the site idles.
 5. anticipated date of work resumption.
 6. standard phrase, “Works temporarily suspended”.
- b. The following detail(s) is(are) not provided as per Drg no. H 6133, 6134, 6138 or Permittee’s drawings approved by the Authority–
1. the 3mm thick aluminium backing plate (conforming to BS EN485)
 2. sign face and insert plates constructed with Class Ref 1 reflective materials to BS EN 12899-1.
 3. correct sign colours to BS 5252F (1976).
 4. size of the board.
 5. size of the logo.
 6. size of the cartoon figure.
 7. size of the telephone figure.
 8. size of lettering.
 9. the information shall be in English and Chinese in printed words, i.e. not free-hand writing.
 10. the information shall be clear and legible.
- c. The board is not supported as per Drg nos. H 6165, 6166 and 6167.
- d. The board is not erected at a prominent location inside the site oriented towards approaching motorists.
- e. No. of board(s) is(are) not provided in accordance with Guidance Notes No. RD/GN/024–
1. one number of display board shall be provided.
 2. additional display board(s) shall be provided at prominent locations along the site where the length of carriageway affected is not less than–
 - 100m on roads with shop frontages, or
 - 200m on roads without shop frontages.
 - For works crossing two bounds of traffic on a dual carriageway or a divided road, each bound shall have one display board for explaining the reason for leaving the siteidle.
- (For works with anticipated carriageway occupation period less than one month or works not on major roads (expressways, trunk roads, primary distributors and district distributors), no display board for motorists is required.)
- Note: When the original anticipated carriageway occupation period has been extended more than one month, display board for motorist should be provided in accordance with Guidance Notes No. RD/GN/024.
- f. The board is not located at least 25m clear of any temporary or permanent traffic signs or signals. The board is erected such that it will cause danger to road users.
- g. The board is not erected to a height such that its line of sight is not obstructed by materials or plants on site.
- h. Idle site reason shown on the display board(s) is not in accordance with the current version of Drg.no. H6134 and without prior approval granted by the Authority. The current version of Drg. no. H6134 contains a hyperlink connected to the List of Standard Reasons for Idle Site on Highways Department’s website.
- i. The reason for idle site displayed on site manifestly does not reflect the genuine situation of the idle site.

- j. Works resumption date shown on the display board(s) is not legitimate or exceeds 14 consecutive working days beyond the date of audit inspection in the following way(s) –
1. works resumption date had lapsed on the date of audit inspection,
 2. works resumption date left blank on the display board(s) with the following exemptions:
 - (i) Work at Night Time Only;
 - (ii) Work on Saturday, Sunday and General Holiday Only.
 - (iii) Underground pipeworks / cabling works in progress (for trenchless works only)
 3. works resumption date displayed on site exceeds 14 consecutive working days beyond the date of audit inspection without prior approval granted by the Authority unless the entire area is reopened for the safe and reasonably nuisance-free passage of vehicular or pedestrian traffic.
- k. When a site is actively worked on, the public may be misled by the erection of a display board(s) explaining the reason for road works not being actively worked on at site.

◆ Site cleanliness

- (26) a. Litter/rubbish is found in the fenced off site.
- b. Debris/construction waste generated from work is not removed off site.
 - c. Excavation/construction material or plant (including any temporary work) which are not to remain on site after completion of work is not removed after site vacation.
- (27) a. Excavation/construction debris spilled over adjacent land is not removed.
- b. Excavation/construction material is washed away onto adjacent land is not cleaned up.
- (28) a.
 1. unused buckets/containers not stored in places with cover.
 2. disused carts for transporting concrete not turned upside down.
 3. water storage containers not covered with lids.
 4. construction materials (including pipes, steel bar, paving blocks and metal boxes etc.) not stacked orderly according to their shapes and not covered up so that water would not be trapped by them.
- (29) a. Generation of dust is observed and the following dust suppression measures are not taken on site.
1. pre-cut material off site which is prone to dust generation;
 2. using vacuum cleaner at source of dust; or
 3. screen and cover loose materials.
 4. clean up mud and slurry spills before they dry up and become airborne;
 5. spray earthwork materials with water to prevent dust generated from the site.
- b. Dump trucks (except loaded with wet soil) not covered properly before leaving the site.

Location of Utilities

◆ Use of non-destructive detectors

- (30) a. Site record photos and investigation results of using non-destructive underground services detectors to locate underground services in or near the proposed excavation area are not available upon request when related complaints received or incidents for damage of underground services occurred.

◆ **Trial pits**

- (31) a. Site record photos and investigation results of hand-dug trial pits or any suitable investigation prior to using mechanical plant for road breaking and excavation are not available upon request when related complaints received or incidents for damage of underground services occurred.

Excavation and Service Installation

◆ **Break up road surface, remove spoil and protect trees**

- (32) a. Site supervising personnel are not provided to oversee the operation of mechanical plant
b. Excavation close to or around underground services and installations is—
1. not carried out by hand digging method
2. not in accordance with guidelines and codes of practices issued by the relevant authorities
- (33) a. Approval for pruning, felling, transplanting, drilling, lopping, cutting or any other forms of damaging of any trees is not available upon request when pruning, felling, transplanting, drilling, lopping, cutting or any other forms of damaging of any trees is observed.
b. Records of informing the relevant maintenance authorities are not available upon request when tree damage has been arisen out of the execution or as a consequence of the work.
- (34) When material unsuitable for backfilling (e.g. concrete debris, materials of concrete and bituminous pavement breaking, etc.) is found on site, take a record and conduct another inspection in the following day to check if the material has not been removed off site.

◆ **Trench excavation and shoring installation**

- (35) a. Adequate support is not installed in a timely manner and ahead of excavation for trench with a depth greater than 1.2m. (Typical shoring arrangements are shown in Appendix A of Guide to Trench Excavations)
b. Adequate safe access to and egress from any trench deeper than 300mm is not provided and properly maintained.
c. Safe method of removing/withdrawing strut/support (e.g. only the minimum practicable number of struts/supports should be removed) during lowering of pipe/equipment or backfilling is not used.
- (36) a. 1. Flooding is observed in trench and there are no/inadequate pumps of sufficient capacity working on site when required during inclement weather.
2. No proper sumps, preferably lined with concrete, are provided for trench opened up in the wet season.
b. Upstands along either side of trench are not provided. (Typical detailed arrangements are shown in Figure B1 of Guide to Trench Excavations)
c. Gaps/voids between support and the vertical trench sides are not filled up to ensure water cannot get in. (Photos showing examples of good practice are given in Appendix B of Guide to Trench Excavations)
- (37) a. During restricted hours imposed by the Authority,
1. excavation is not properly plated over
2. obstruction (e.g. barrier, cone, sign, material or plant etc.) is not removed such that the full number of traffic lanes of carriageway/sufficient footway is not available for the safe and free passages of vehicular traffic/pedestrians.

- (38) a. Excavation materials used for backfilling is not properly contained by vertical boards or suitable containers within the fenced off site and is not prevented from being washed away by rain.
- (39) a. Excavated materials are not removed off site for the necessity of maintaining pedestrian or vehicular access within the next day of notification by the Authority, i.e. found on site during the inspection in the following day after the next day of notification. (unless application for other time limit is lodged by the Permittee with the Authority within the next day of notification)
- (40) a. 1. Temporary pedestrian crossing (e.g. Drg no. H 1132) or other approved means over trench is not provided to maintain access to adjoining premises.
2. Railings/barriers are not provided on both sides of crossing.
- b. Temporary decking is not securely fixed as rocking or sliding under pedestrian flow is observed.
- c. Significant deflection of temporary decking under pedestrian load is observed.
- (41) a. Vehicle crossing over trench opening is not provided for concrete carriageway in accordance with the following requirement(s) of Drg nos. H 6136/1 and 6136/2–
1. top surface of steel plate treated with anti-skid dressing and marked with alternate black and yellow diagonal strips of 300mm wide.
 2. yellow markings shall have resistance and reflective characteristics equivalent to common thermoplastic road markings.
 3. other surfaces treated with protective painting.
 4. chamfer edges provided at ends of decking (if decking flushed with carriageway is not stipulated).
 5. name of roadwork undertaker marked on the steel plate for easy identification.
 6. steel channel details at underside of steel plate as per Drg no. H 6136/2 shall be adopted for trench width of 900mm or more.
 7. steel plate flushed with road surface as per Drg no. H 6136/1.
 8. steel plates shall be securely fixed together to prevent dislocation for decking with multiple steel plates.
 9. gaps between adjoining steel plates shall not be more than 5mm.
 10. surface of the steel plates shall not be higher than, and shall not be more than 3 mm lower than, the surface of the adjacent pavement/steel plates for steel plate flushed with road surface as per Drg. No. H6136/1.
- b. Temporary decking is not securely fixed as rocking or sliding under vehicular traffic is observed.
- c. Significant deflection of steel plate under vehicular load is observed.
- (42) a. Vehicle crossing over trench opening is not provided for bituminous carriageway in accordance with the following requirement(s) of Drg no. H 6135–
1. top surface of steel plate treated with anti-skid dressing and marked with alternate black and yellow diagonal strips of 300mm wide.
 2. yellow markings shall have resistance and reflective characteristics equivalent to common thermoplastic road markings.
 3. other surfaces treated with protective painting.
 4. (obsolete requirement).
 5. Steel plate flushed with road surface.
 6. name of roadwork undertaker marked on the steel plate for easy identification.
 7. steel channel details at underside of steel plate as per Drg no. H 6136/2 shall be adopted for trench width of 900mm or more.
 8. steel plates shall be securely fixed together to prevent dislocation for decking with multiple steel plates.
 9. gaps between adjoining steel plates shall not be more than 5mm.
 10. surface of the steel plates shall not be higher than, and shall not be more than 3 mm lower than, the surface of the adjacent pavement/steel plates.

- b. Temporary decking is not securely fixed as rocking or sliding under vehicular traffic is observed.
- c. Significant deflection of steel plate under vehicular load is observed.

◆ **Support and protect utilities**

- (43) a. Ground movement adjacent to installations and services due to excavation is observed.
- b. Service across trench is not properly supported by either propping from underneath or hangers suspended from ground surface.
- c. Warning signs to prevent damaging other existing services within the excavation site are not provided (e.g. warning tapes, waterproof crayon/paint for marking location/depth).

◆ **Service installation**

- (44) a. Without prior approval to deviate from this requirement granted by the Authority, the following minimum depth measured vertically to the top of the underground services or installations including pipes, cables, ducts, joints, etc. is not provided—
For services other than high tension power cables of 33 kV or above laid under part of the street which is not carriageway (non-carriageway) including footway, cycle track, verge, side lane and back lane,
 - 1. 450 mm from the finished surface of the non-carriageway
 - 2. 900 mm from the finished surface of the non-carriageway if installations occupy more than half the combined width of the non-carriageway (for the purpose of measuring the combined width, adjoining non-carriageway parts including footway, cycle track, verge, side lane and back lane will be counted)
 - 3. 300 mm for non-energized underground services, which include telecommunication cables laid in ducts but exclude power cables, water mains and gas mains with a max. of 2 cable ducts of nominal diameter 115mm or less provided that conspicuous identification devices in the form of plastic caution tape of not less than 100 mm wide with the utility company's name or abbreviation clearly imprinted on it are provided continuously above the ducts. When entrusted works are involved where the Permittee undertakes to lay or place telecommunication cables in ducts on behalf of other(s), the number of cable ducts to be laid for each telecommunication utility undertaking shall not exceed two and these cable ducts shall also be laid in compliance with the requirements stipulated above;
For services other than high tension power cables of 33 kV or above laid under carriageway,
 - 4. 900 mm from the finished surface of the carriageway
For high tension power cables of 33 kV or above laid under part of the street which is not carriageway (non-carriageway) including footway, cycle track, verge, side lane and back lane,
 - 5. 1000 mm from the finished surface of the non-carriageway
For high tension power cables of 33 kV or above laid under carriageway,
 - 6. 1000 mm from the finished surface of the carriageway
- (45) a. Without prior approval to deviate from this requirement granted by the Authority, a minimum depth of 1500 mm measured vertically from the finished surface of the carriageway to the top of the underground services or installations running along the "Kerb Zone" is not provided. ("Kerb Zone" is made up of the part of the street which is not carriageway including footway, cycle track, verge, side lane and back lane within 300 mm from the kerb line and the part of the carriageway within 2000 mm from the kerb line)

According to UTLC Paper No. 1/2012, the audit observation in regard of items (44) and (45) above will not be shown in the inspection report of AIMS. Notwithstanding, the record of suspected shallow depth services whenever observed on site will be kept. The observation results will be referred to Enforcement Team (ET) and Excavation Permit Processing Team

(XPPT) for reference. Upon receipt of CN submission, ET in collaboration with XPPT may consider verifying the depth of services in question through opening of manhole cover and/or excavating trial pit. Prosecution will be instituted where appropriate. The responsible permittee will be required to rectify revealed NC with minimum depth requirements no matter prosecution is instituted or not.

Backfilling and Reinstatement

◆ Backfilling

- (46) a. Each layer of backfill material is not properly compacted with appropriate plant such as a power rammer, vibratory plate or vibratory roller to the road formation.
- (47) a.
 - 1. Backfill material is found containing broken concrete, bricks, clay, bituminous material, and materials susceptible to spontaneous combustion, perishable materials or debris.
 - 2. Backfill material is found exceeding 75mm maximum particle size.
- (48) a. Power compaction is used not until 300mm cover of selected fine fill has been suitably placed and compacted by hand rammer for backfilling adjacent to gas plant and watermains.
- (49) a. Heavy excavator or compaction roller is found passing over buried utility installations and plants with less than 1m overburden cover, especially when the road surface is removed.
- (50) a. Compacted backfill and granular sub-base are not placed to the formation level as per Drg no. H 1131.

◆ Pavement reinstatement

- (51) a. No saw cut is carried out along reinstatement limits.

- b. Sub-base layer reinstatement is not constructed in accordance with the following requirements—

Material type and thickness

Type of pavement	Sub-base material	Thickness
1. Bituminous carriageway	granular sub-base	same as the adjoining pavement but subject to a minimum thickness of 150mm
2. Concrete carriageway	granular sub-base; or lean concrete (used only where the existing construction is of the same material)	same as the adjoining pavement but subject to a minimum thickness of 150mm same as the adjoining pavement but subject to a minimum thickness of 150mm
3. Concrete/paving block footway	granular sub-base	same as the adjoining pavement but subject to a minimum thickness of 75mm
4. Bituminous footway/cycle track	granular sub-base; or bituminous sub-base	same as the adjoining pavement but subject to a minimum thickness of 75mm same as the adjoining pavement but subject to a minimum thickness of 75mm
5. Run-in	granular sub-base	same as the adjoining pavement but subject to a minimum thickness of 150mm

Compaction

6. compaction of granular sub-base material shall be carried out in accordance with section 2.4.2 of Guidance Notes No. RD/GN/014.
7. compaction of lean concrete shall be carried out in accordance with section 2.4.3 of Guidance Notes No. RD/GN/014.

Finished surface

8. on completion of compaction, the sub-base layer shall be well closed, free from compaction planes, ridges, cracks or loose material and free from movement under compaction plant.

- c. Kerbs are not properly constructed as per Drg nos. H 1101, 1102 or 1103.

- d. Bituminous pavement reinstatement is not properly laid and compacted in accordance with the following requirements–
- Laying of bituminous materials
1. bituminous materials shall be laid in accordance with section 2.5.2 of Guidance Notes No. RD/GN/014.
- Compaction of bituminous materials
2. bituminous materials shall be compacted in accordance with section 2.5.3 of Guidance Notes No. RD/GN/014.
 3. Joints with existing surface shall be adequately compacted with the transverse joints being compacted first followed by the longitudinal joints.
- Type & thickness of bituminous surfacing to be put back
4. type & thickness of bituminous surfacing to be put back shall be in accordance with Drg no. H 1129.
- Finished surface
5. the surface of each layer of bituminous material on completion of compaction shall be well closed, free from roller marks, compaction planes, ridges, cracks or loose material and free from movement under compaction plant.
- e. Concrete carriageway reinstatement is not properly constructed in accordance with the following requirements–
- Details as per Drg no. H 1124
1. the concrete road slab to be put back shall be of Grade 40/20 concrete and shall be of the same thickness as the adjoining pavement.
 2. fabric reinforcement shall be C503 long mesh or of the existing type whichever is heavier and shall be laid with the main bars parallel to the longer dimension of the reinstatement area.
 3. mild steel dowel bars of diameter 25mm shall be provided on all sides of the reinstatement area except where it abuts a transverse joint, longitudinal joint or kerb.
 4. miscellaneous details shown in the drawing.
- Joints reinstatement
5. all transverse joints and longitudinal joints removed or damaged by the works shall be reinstated to the same type and alignment as per Drg no. H 1126.
- Concrete placing & compaction
6. the placing and compaction of concrete shall be in accordance with section 2.6.3 of Guidance Notes No. RD/GN/014.
- Finished surface
7. the surface finishing of concrete shall be in accordance with section 2.6.4 of Guidance Notes No. RD/GN/014.
- Concrete curing and protection
8. the curing and protection of concrete shall be in accordance with section 2.6.5 of Guidance Notes No. RD/GN/014.

- f. Concrete footway & run-in reinstatement is not properly constructed in accordance with the following requirements–
Details as per Drg nos. H 1127 and 1128
1. the concrete footway slab to be put back shall be of Grade 30/20 concrete and shall be of the same thickness as the adjoining footway subject to a minimum of 75mm.
 2. the concrete run-in slab to be put back shall be of Grade 40/20 concrete and shall be of the same thickness as the adjoining run-in subject to a minimum of 150mm.
 3. fabric reinforcement shall be C283 long mesh and shall be laid with the main bars parallel to the longer dimension of the reinstatement area.
 4. miscellaneous details shown in the drawing.
- Joint spacing & reinstatement
5. concrete footway shall be laid in bays not exceeding 20m² with a maximum joint spacing of 5m.
 6. footway joints shall be open joints of 3mm~6mm wide and 20mm deep.
- Concrete placing & compaction
7. the placing and compaction of concrete shall be in accordance with section 2.6.3 of Guidance Notes No. RD/GN/014.
- Finished surface
8. the concrete surface shall be brushed finish in the same manner as for concrete carriageway referred to in section 2.6.4 of Guidance Notes No. RD/GN/014.
- Concrete curing
9. the exposed concrete surfaces shall be cured by treating it with an approved curing compound immediately after texturing.
- g. Paving slab/block reinstatement is not properly constructed in accordance with the following requirements–
Details as per Drg no. H 1131
1. the sand course to be put back shall exceed 20mm and not exceed 30mm thick.
 2. the paving slabs/blocks to be put back shall be of the same thickness as the adjoining pavement subject to a minimum of 60mm in footway and 80mm in carriageway or run-in.
 3. miscellaneous details shown in the drawing.
- Laying of paving slab/block
4. paving slabs/blocks shall be laid to the standard stated in section 2.9 of Guidance Notes No. RD/GN/014.
- Finished surface
5. the level of areas paved with paving slabs/blocks shall be within 3mm of the finished level upon completion. The difference in level between any two adjacent slabs/blocks shall not exceed 2mm.
- h. Extent of pavement is not permanently reinstated to the requirement of–
1. Drg no. H 1125 for concrete carriageway
 2. Drg no. H 1128 for concrete footway and run-in
 3. Drg no. H 1130 for bituminous pavement
 4. Drg no. H 1131 for paving slab/block construction
 5. the Authority which is otherwise advised to the Permittee
- (52) a. 1. Concrete staircase is not reinstated to the original details, dimensions, lines, level, etc.
2. The edges of reinstatement are not in a saw-cut straight line.
- (53) a. 1. Masonry steps and granite kerbs are not taken up in whole piece with extreme care and properly stacked on site for re-use.
2. Masonry steps staircase and granite kerbs are not reinstated to the original state and position.
- (54) a. No saw cut is carried out along reinstatement limits. (obsolete requirement)

- b. Pavement is not temporarily reinstated in accordance with Drg no. H 1123–
 1. Compacted backfill to 100mm below the finish road level with a temporary reinstatement of 100mm thick bituminous material for bituminous/concrete carriageway.
 2. Compacted backfill to 20mm below the finish road level with a temporary reinstatement of 20mm thick bituminous material for bituminous/concrete footway & cycle way. Compacted backfill to 100mm below the sub-base level with a temporary reinstatement of 100mm thick bituminous material or grade 40/20 concrete for run in and/or carriageway for paving slab/block pavement.
 3. The temporary reinstatement of footway shall have same surface finishing as permanent reinstatement, unless otherwise agreed by HyD.
 4. Paving slab/block shall be relaid in accordance with latest version of Drg no. H1131. Paving block shall be in same colour code as adjoining block, unless otherwise agreed by HyD. For block-paved pavement with colour patterns, the pattern of temporary reinstatement shall be agreed by HyD.
 5. For carriageway with anti-skid dressing, anti-skid dressing shall be provided when the carriageway is temporarily reinstated.
- c. The following defect(s) is/are identified on temporary reinstatement of pavements including concrete, bituminous and paving slab/block pavements.
 1. Cracking
 2. Subsidence
 3. Loose debris on surface
 4. Pothole
 5. Bumpy surface

◆ **Reinstatement of road markings, traffic signs & street furniture**

- (55) a.
 1. Permanent traffic aids/signs are not correctly reinstated to the original location and orientation. Reference will be made to the approved documents from relevant authorities, past inspection records, etc.
 2. Temporary traffic aids/signs are not completely removed and give misleading information to road users.
- b. Railing is not reinstated to the condition existing before commencement of work.
- c. Permanent road markings are not reinstated to the condition existing before commencement of work.
 1. Thermoplastic road markings is not in accordance with BS 3262
 2. Road markings are not provided in accordance with Road Traffic (Traffic Control) Regulations.
 - type
 - colour
 - line width
 - line length
 - gap between lines
- d. Temporary road markings are not completely removed.
- e. Affected street furniture/installations are not reinstated to the condition existing before commencement of work.
- f. Temporary road markings are not provided in accordance with the Road Traffic (Traffic Control) Regulations.
 1. type
 2. colour
 3. line width
 4. line length
 5. gap between lines
- g. Temporary road markings are found not reflectorised.