



Essex County
Fire & Rescue Service

TECHNICAL FIRE SAFETY GUIDANCE NOTE

Access for Fire Appliances

The Essex Police, Fire and Crime Commissioner Fire and Rescue Authority (Authority).

This Guidance Note covers the access arrangements needed for fire appliances to get close enough to a building to fight fire. It details such requirements as minimum road widths, turning circles, road humps and projections from buildings. It is primarily aimed at developers and architects for planning reference, but may be useful to anyone who has concerns about fire service access to a building.

If you require any further guidance on the advice given or require advice on another topic please telephone 01376 576000 and ask for the nearest Technical Fire Safety office, or visit our web site at <http://www.essex-fire.gov.uk>

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1 INTRODUCTION

- 1.1 This Guidance Note has been prepared to give advice on the provisions necessary to provide adequate Fire Service access for appliances to and around buildings. The information provided is based around compliance with the Building Regulations 2000 Approved Document B Volume 1: Dwellinghouses (2006 edition), B5, Section 11, Access and facilities for the fire service and Volume 2: Buildings Other Than Dwellinghouses (2006 edition amended 2007), B5, Section 16, Access and facilities for the fire service. Compliance with this guidance note should enable the requirements of the Building Regulations to be met, though should you wish to review the full content of the relevant content of Approved Document B, this link will allow you to do so:

[Planning Portal - Approved Document B](#)

2 OTHER AUTHORITIES YOU MAY NEED TO CONSULT

- 2.1 As the local authority administers the Building Regulations and local Essex Building Acts, they should be consulted.

3 GENERAL

- 3.1 Access roads may be public highways, private roads, footpaths or specially strengthened and defined routes through the land surrounding the buildings. The recommendations for pumping appliances, turntable ladders/aerial platforms and special large appliances are as follows:

Appliance Type	Min. width of road between kerbs(m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min. clearance height (m)	Min. carrying capacity (tonnes)
Pump	3.7	3.1	17.8	19.2	3.7	15.0
High Reach	3.7	3.1	26.0	29.0	4.0	26.0
Special Appliance	4.0	3.1	26.0	29.0	4.27	32.0

Table 1 - Typical vehicle access route specification

- 3.2 Because the weight of high and special reach appliances is distributed over a number of axles, it is considered that their infrequent use of a carriageway or route designed to 15.0 tonnes should not cause damage. It would therefore be reasonable to design the road base to 15.0 tonnes, although structures such as bridges should have the full 32.0 tonnes capacity.

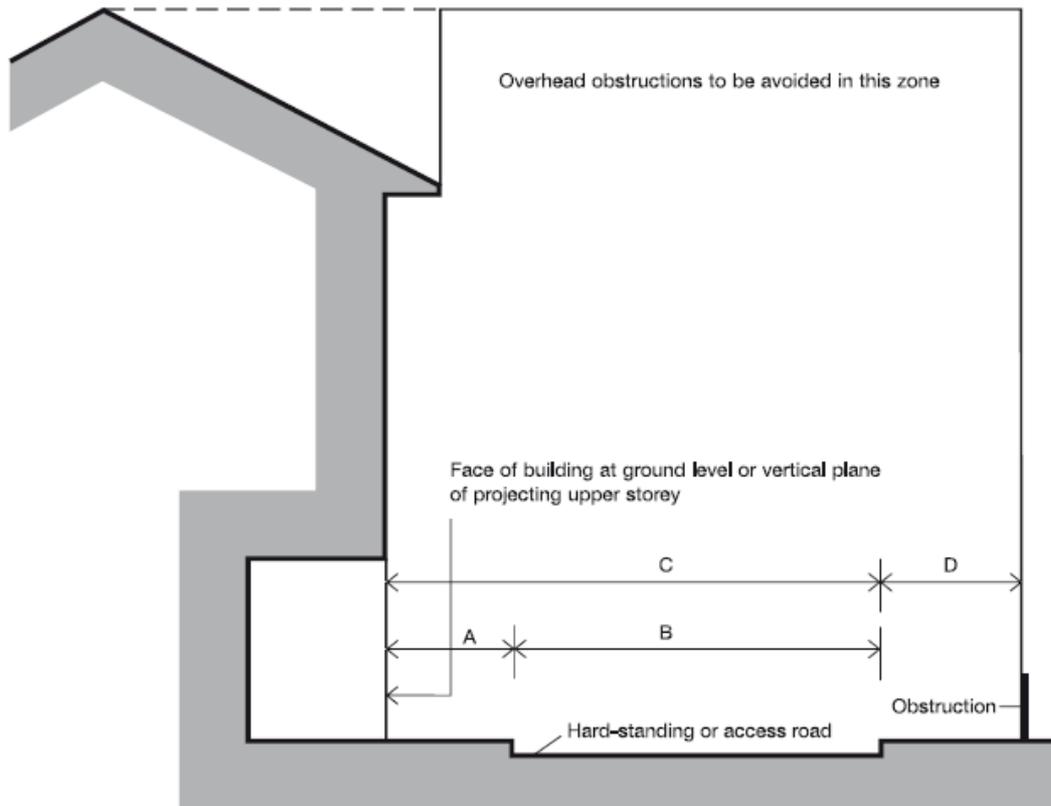
4 ACCESS

Access for pumping appliances

- 4.1 Access roads for pumping appliances should be provided with 6m working area(s) at appropriate locations where appliances are to be positioned and used around the building.

Access for turntable ladder or hydraulic platform

- 4.2 Where access for an aerial appliance is specified, the designated hard standing working area should be positioned with its nearest edge a maximum of 2 metres from the face of the building and its furthest edge a minimum of 10 metres from the building. This will enable all types of appliance to operate at their optimum height and reach. (See diagram 1 below). Roads, including any inspection covers and public utility service pits, should be capable of carrying the weights set out in Table 1.



	Type of appliance	
	Turntable ladder dimension (m)	Hydraulic platform dimension (m)
A, Maximum distance of near edge of hard-standing from building	4.9	2.0
B, Minimum width of hardstanding	5.0	6.1
C, Minimum distance of further edge of hard-standing from building	10.0	7.5
D, Minimum width of unobstructed space (for swing of appliance platform)	NA	2.2

Notes:

- 1 Hard-standing for high reach appliances should be as level as possible and should not exceed a gradient of 1 in 12. 2 The hardstanding should be capable of withstanding a point load of 8.3kg/cm² to accommodate jacks.

Diagram 1

Access road gradients

- 4.3 Gradients on any access road to be used by fire appliances should be no greater than 1 in 4 (25%). The approach and departure angles to any gradient should not exceed 12°.

5 TURNING AND SWEEP CIRCLES OF APPLIANCES

- 5.1 When providing access for appliances, allowance should be made for an appliance's turning negotiated, and sweep circles should not be obstructed above kerb height.
- 5.2 Appendices 1 and 2 show the relevant details of pumping appliances, turntable ladders, aerial platforms and special appliances.

6 DEAD END ACCESS

- 6.1 Turning facilities should be provided in any dead end access route that is more than 20m long (see Diagram 2). This can be a hammerhead or turning circle designed on the basis of Table 1 under Section 3.1.

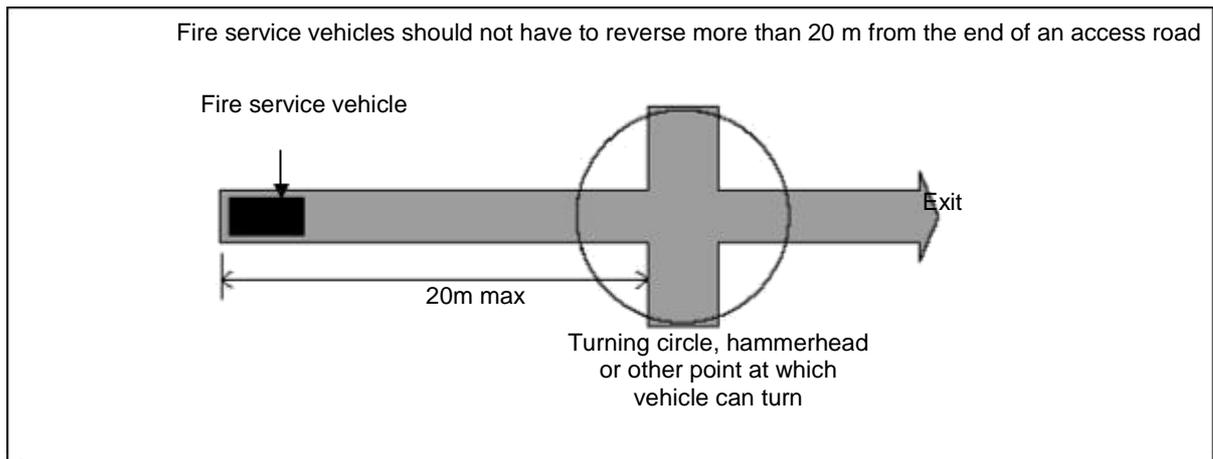


Diagram 2

7 OBSTRUCTION TO ACCESS

- 7.1 All access roads for Fire Service appliances should be kept clear of any obstructions. It may, however, be considered necessary to restrict unauthorised entry and various arrangements are set out below.
- 7.2 Before any obstructions are installed the proposed arrangements should be agreed with the Technical Fire Safety office at the appropriate Group SDP, see appendix 3.

8 POSTS AND BOLLARDS

- 8.1 Siting of bollards must not obstruct the use of hydrants.

Fixed and removable posts or bollards

- 8.2 When considering the type of post or bollard to be used, either fixed or removable, it is particularly important to bear in mind the type of scheme being considered.
- 8.3 If the scheme is a simple environmental improvements scheme in a thoroughfare it may be acceptable for a row of fixed bollards to be spaced along the kerb line. If this is not acceptable to the traffic authority, there are a number of options:
- (a) Intermediate bollards of a lower height i.e., below 230mm in height.
 - (b) A removable bollard - one only for any access route. Removable bollards may be of galvanised steel tube. They should be secured in position with a standard padlock or GERDA key.

Collapsible posts or bollards

- 8.4 Collapsible post and bollards are acceptable in certain cases provided they do not project more than 150mm above ground level when folded and are not of such a type that an appliance passing over one end of the collapsed bollard will raise the other end and foul the appliance. Collapsible posts may be of iron pivoted near the ground. They should be secured by a standard padlock or GERDA key.

Flexible posts or bollards

- 8.5 Any proposal to use flexible bollards of a new or improved design should be referred (with particulars of the design) to the Technical Fire Safety office at the appropriate Group SDP, see appendix 3.

9 WIDTH RESTRICTIONS

- 9.1 Closure of the roadway by a lockable gate or removable post(s) is not permitted where the restriction extends the attendance time to an unacceptable level. A raised paved area of any sort in the centre section of a width restriction is not acceptable except where it forms a control island with posts to prevent traffic mounting the pavement. It should have a kerb height not exceeding 100mm. It is essential to ensure that these posts are easily removable.
- 9.2 Any gate or removable post(s) must be secured only at one point and with a standard padlock or GERDA key.
- 9.3 If an appliance would have to mount the pavement to pass a restriction there should be no obstructions in the form of shop blinds, trees or street furniture which might impede its passage. The total width available for the passage of appliances, i.e., combined width of road and pavement, must not be less than 3.1m with a straight approach. Where the approach is at an angle up to 5m may be necessary.

10 GATE BARRIERS

- 10.1 Barriers are not acceptable on through routes and only one barrier is acceptable on a route to an estate. Thus, if a barrier is provided on an estate, the route from the local fire station to that estate must not be additionally obstructed in any way.
- 10.2 Tests have shown that at least a minute is lost through the appliance and crew negotiating their way through a barrier through stopping, dismounting, removing obstruction, remounting and proceeding. This assumes that the lock is in good order and the obstruction easily removed.
- 10.3 Most types of gate barrier are acceptable if they meet the following criteria:-
 - (a) They must be quickly and easily openable by Service personnel.
 - (b) They must be only secured at one point by a standard padlock.
- 10.4 Any proposal to install electrically operated barriers should be referred to the Technical Fire Safety office at the appropriate Group SDP, see appendix 3. Measures should be taken to ensure that parking will not take place in the immediate vicinity of a barrier and where it is known that parking is likely to take place, the scheme should not be allowed.

11 SPEED CONTROL HUMPS

- 11.1 The Highways (Road Humps) Regulations 1999 stipulate precise and demanding criteria for the construction, siting and signing of road humps on public roads.
- 11.2 Regulation 3(b) of the Highways (Road Humps) Regulations 1999 confirms the Authority should be consulted when a borough proposes introducing a road hump scheme.
- 11.3 Written notification of the final scheme details should be presented to the Authority at least one month prior to implementation. Such notification would enable the Authorities Officers to consider and introduce any contingency arrangements that may be possible.
- 11.4 Proposals to amend any part of an existing scheme should be subject to further notification and consultation in order that Officers may consider the full implications of the revised scheme and with regard to any adjacent traffic management schemes.
- 11.5 Although the Authority is supportive of the aims of traffic management schemes it should be remembered that each road hump delays a fire appliance by approximately ten seconds. (Six humps represent a delay of one minute). Every consideration should be given to the introduction of other traffic calming measures in place of road humps with road humps only being used to complement the total scheme.

- 11.6 A typical location for a road hump system would be a long and fairly straight secondary road situated in a residential area. The Authorities case will then need to be based on the distance from the nearest station and whether the road on which the humps are to be constructed is one which is essential for access and for which no suitable alternative is available. Additional factors to be considered include:-
- (a) **Type of road humps:** Round top humps are preferred to those with a flat top.
 - (b) **Size:** Humps of 50mm high are preferable to those of 75mm or 100mm high. The overall length of a specific type of hump should be as near to the recommended minimum as possible.
 - (c) **Distance between humps:** In general, the Authority would prefer the maximum possible distance between humps. However, there may be specific sections of a road on which it is desired to achieve a more defined speed limitation and which consequently will result in closer positioning of humps. Accordingly, such measures should not apply to the whole length of the road.
 - (d) **Number of humps:** The removal of previous restrictions on the number of humps in a series may lead to a tendency to identify road(s), which though worthy of the installation of road humps, could result in unnecessarily extensive series of road humps. This tendency should be avoided and humps only installed where their specific benefits have been identified.
 - (e) **Location of road humps:** Generally, the placement of road humps within close proximity of bus stops, round-a-bouts, road junctions and on dual carriageways are likely to lead to speed reductions, but correspondingly heavier traffic congestion which would, invariably, further delay appliances attending emergency incidents. Therefore, such proposals would be discouraged.
 - (f) **Speed Tables:** The Highways (Road Humps) Regulations 1999 indicate a minimum length for a road hump but not a maximum length. This allows a road to be raised for a considerable distance to provide a flat topped table, which are known as Speed Tables.
- 11.7 Speed Cushions are normal road humps with gaps to allow the passage of large vehicles, e.g. fire appliances and buses. Conditions a) – f) above also apply to speed cushions although they are generally more acceptable to the Fire Authority.

12 PEDESTRIANISED AREAS

- 12.1 A clearly defined fire path at least 3.7m wide, and capable of supporting the weight of a Service pumping appliance, i.e., maximum 14.0 tonnes, is required through a pedestrianised area. (This may be indicated by the use of different coloured concrete or different paving patterns). Where tall buildings abut, the fire path will need to be 6.1m wide for use by turntable ladders or hydraulic platforms with a working width of 8m, as per diagram 1, and capable of taking a maximum weight of 32.0 tonnes.
- 12.2 The siting of the fire path should take into account building design features, e.g., canopies, extended shop fronts, etc. (these features may affect the positioning and operational use of turntable ladders, hydraulic platforms and/or extension ladders).
- 12.3 No seating, trees or flower beds should obstruct the fire path and no street furniture e.g., lamp posts, should be allowed which could foul the ladders etc., on appliances.
- 12.4 If appliance access to a pedestrianised area crosses a kerb, it should be ramped with a steady incline for a minimum length of 500mm with the difference in levels not exceeding 100mm and both ends inset.

13 STANDARD PADLOCKS

- 13.1 Fire Brigade padlocks and keys are generally available from hardware suppliers. Please refer to the telephone directory for your nearest outlet. For GERDA locks consult their website (www.gerdasecurity.co.uk).

14 ACCESS FOR BUILDINGS

- 14.1 Access to the exteriors of the building is needed to enable high reach appliances to be used and pumping appliances to supply water and equipment for fire fighting and rescue activities. These access requirements increase with the building size and height. The vehicle access requirements which follow do not apply to buildings with fire mains. In buildings fitted with fire mains pumping appliances need access to the perimeter at points near the mains where fire fighters can enter the building and where in the case of dry mains a hose connection will be made from the appliance to pump water into the main.
- 14.2 The vehicle access requirements described in Table 2 for buildings without fire mains, do not apply to blocks of flats & maisonettes because access is required to each individual dwelling, or to buildings with fire mains.

Buildings not fitted with fire mains

- 14.3 There should be vehicle access for a pumping appliance to small buildings (those of up to 2000m² with a top storey up to 11m above ground level) to either:
- (a) 15% of the perimeter, or
 - (b) Within 45m of every point on the projected plan area (or "footprint" (See diagram 3) of the building, whichever is the less onerous.

Note: For single-family dwelling houses, there should be vehicle access for a pump appliance to within 45m of all points within the dwelling house.

There should be vehicle access for a pump appliance to blocks of flats/maisonettes to within 45m of all points within each dwelling.

Blocks of flats/maisonettes not able to comply with the requirement for access to within 45m of all points within each dwelling, should be provided with a firefighting main and access for a pumping appliance to within 18m of each fire main inlet connection point.

Vehicle access to buildings that do not have fire mains should be provided in accordance with Table 2.

Every elevation to which vehicle access is provided should have a suitable door, not less than 750mm wide, giving access to the interior of the building.

Table 2

Fire service vehicle access to buildings (excluding blocks of flats) not fitted with fire mains			
Total floor area of ⁽¹⁾ building m ²	Height of floor (m) of top storey above ground ⁽²⁾	Provide vehicle access ⁽³⁾ to	Type of appliance
up to 2000	up to 11 over 11	see paragraph 14(b) above 15% of perimeter	Pump high reach
2000-8000	up to 11 over 11	15% of perimeter 50% of perimeter	Pump high reach
8000-16000	up to 11 over 11	50% of perimeter 50% of perimeter	Pump high reach
16000-24000	up to 11 over 11	75% of perimeter 75% of perimeter	Pump high reach
over 24000	up to 11 over 11	100% of perimeter 100% of perimeter	Pump high reach

Table 2 Notes:

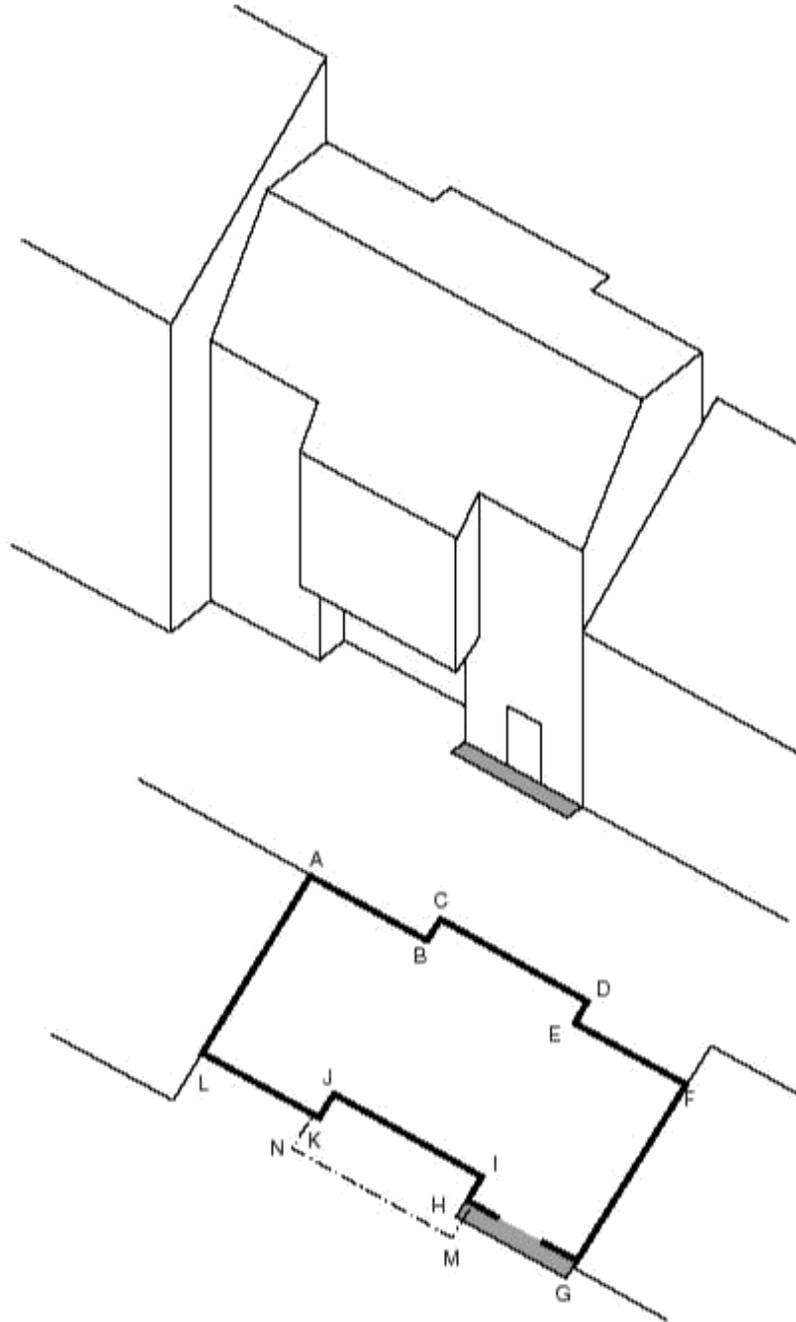
1. The total floor area is the aggregate of all the floors in the building (excluding basements).
2. In the case of storage buildings, height should be measured to mean roof level.
3. Perimeter is described in Diagram 3.

Note: BS9991:2015 Ref 50.1.2 Exception;

Where sprinklers in accordance with BS 9251:2014 or BS EN 12845 are fitted throughout a house or block of flats:

- a) the distance between the fire appliance and any point within the house (in houses having no floor more than 4.5 m above ground level) may be up to 90 m;
- b) the distance between the fire and rescue service pumping appliance and any point within the house or flat may be up to 75 m (in houses or flats having one floor more than 4.5 m above ground level).

Diagram 3



Plan of building AFGL where AL and FG are walls in common with other buildings.
The footprint of the building is the maximum aggregate plan perimeter found by the vertical projection of any overhanging storey onto a ground storey (i.e. ABCDEFGHMNKL).

The perimeter of the building for the purpose of Table 2 is the sum of the length of the two external walls, taking account of the footprint i.e. (A to B to C to D to E to F) + (G to H to M to N to K to L).

If the dimensions of the building were such that Table 2 requires vehicle access, the shaded area illustrates one possible example of 15% of the perimeter. Note: There should be a door (min. 750mm in width) into the building in this length.

If the building does not have walls in common with other buildings, the lengths AL and FG would be included in the perimeter.

Buildings fitted with fire mains

- 14.4 In the case of a building fitted with dry fire mains there should be access for a pumping appliance to within 18m of each fire main inlet connection point. The inlet should be visible from the appliance.
- 14.5 In the case of a building fitted with wet mains the pumping appliance access should be to within 18m, and within sight of, a suitable entrance giving access to the main, and in sight of the inlet for the emergency replenishment of the suction tank for the main.

15 WATER MAINS AND HYDRANTS

- 15.1 Building development in congested districts sometimes necessitates the closing of thoroughfares and the disestablishment of water mains. It will be necessary to decide in such cases whether any hydrants affected may be abolished or whether they should be refixed in new positions. The cost of such work will normally be borne by the developer, but the cost of any necessary renewal of a statutory hydrant installed on a main for which the water authority is responsible will be borne by the Authority.
- 15.2 The cost of additional statutory fire hydrants will be borne by the Authority. It may not be practicable, however, owing to the absence of statutory mains within the development area, to provide adequate cover by the installation of statutory fire hydrants. In such cases it may be expedient to install private fire hydrants sealed in preference to metered (this will be decided by the water authority) and normally fed by a main at least 100mm in diameter. The Authority will advise on such installations on receipt of three copies of the site plan.
- 15.3 Private hydrants should be underground hydrants of wedge gate valve or screwdown pattern to conform to current British Standard. They should be installed in footways immediately adjoining the access roads referred to and must be installed so that the outlet is not more than 300mm below ground level. The positions of the hydrants should be indicated by standard plates as detailed in current British Standards.
- 15.4 When new mains are to be laid by the water authority, consideration must be given to proposed size in relation to firefighting requirements and it may be necessary for the Fire Authority, to exercise its powers under Section 42 of the Fire and Rescue Services Act 2004.
- 15.5 For other general enquiries relating to hydrant matters within the Essex, please contact the Essex County Fire and Rescue Service Water Section on 01376 576349.
The postal address is:

Essex County Fire and Rescue Service
Water Services Section
Kelvedon Park
Rivenhall
Witham
Essex
CM8 3HB.

The section's general mailbox is water.section@essex-fire.gov.uk

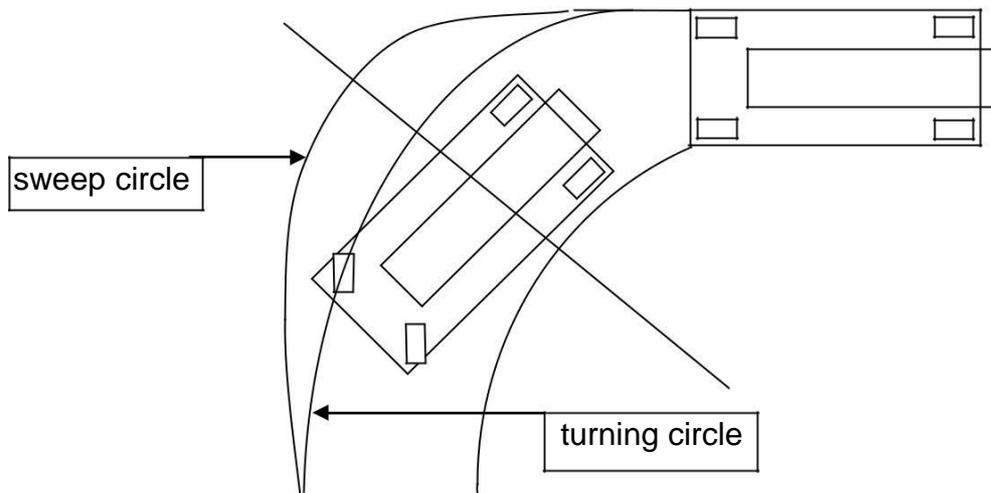
16 BRITISH STANDARDS

- 16.1 The Standard or Code to be followed will normally be that current at the time the Authority is consulted subject to any specific requirement contained in a statutory consent or approval relating to a development.

APPENDIX 1- DETAILS OF PUMPING APPLIANCES

Maximum length	7.9m
Maximum height	3.3m
Maximum width	2.5 m
Maximum weight	15.0 tonnes
Maximum length wheel base	4.4m
Track rear wheels	1.25 m
Ground clearance	140 mm

Turning and sweep circles



NB: Not to scale

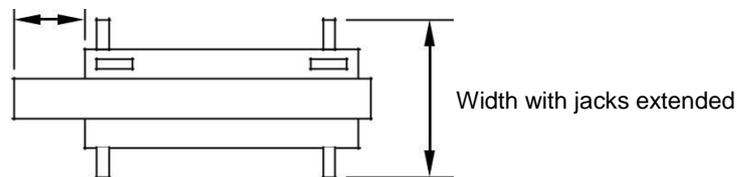
This diagram shows the path of the appliance and is not intended to indicate kerb lines.

Width of roadway	3.7m
Turning circle	15.5 m
Sweep circle	17.5 m

APPENDIX 2- DETAILS (AT MAXIMUM) OF AERIAL PLATFORM, TURNTABLE LADDERS AND SPECIAL APPLIANCES

Maximum length	12.0 m
Maximum height	4.5 m
Maximum width	2.55m
Maximum width with jacks out	6.3 m
Laden weight	32.0 tonnes
Maximum axle weight on either front axle	7.5 tonnes
Maximum axle weight on either rear axle	11 tonnes
Maximum length wheel base	5.6m
Track rear wheels	1.25 m
Minimum ground clearance	130 mm

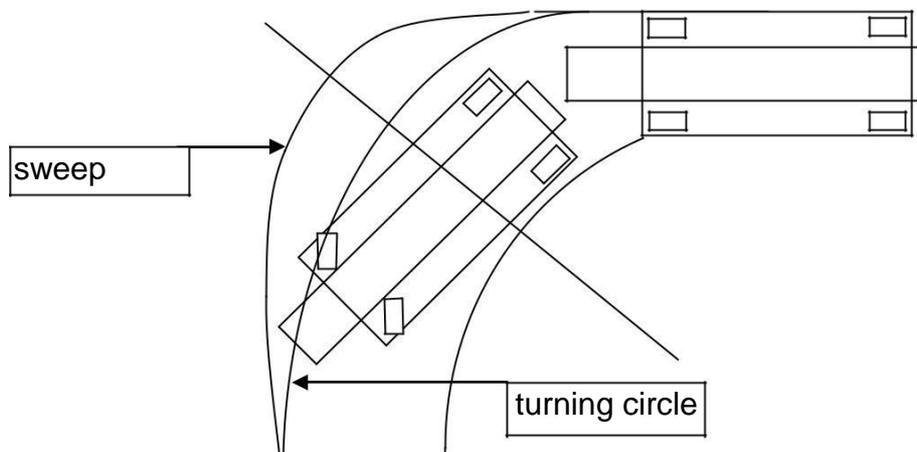
Appliance overhang dimension and width with jacks extended.



NOTE:

Overhang of booms on headrest do not exceed 1.83m from foremost part of the vehicle. Turntable ladders and aerial platforms are fitted with four ground jacks as stabilisers. Under normal working conditions, the weight on the jack should not exceed 14.6 tonnes.

Turning and sweep circles



Not to scale

This diagram shows the path of the appliance and is not intended to indicate kerb lines.

Width of roadway	6.1m
Turning circle	27.5 m
Sweep circle	32.0m

NOTE:

1. The dimensions given in appendix 2 will also accommodate all of the types of 'special' appliances currently in service.
2. Dimensions given are for vehicles in use by the Authority at the time this guidance note was issued. For current information on specifications listed contact the local Group SDP (appendix 3)

APPENDIX 3 – DETAILS OF LOCAL GROUP SDP's

SOUTH WEST GROUP SDP covering Basildon, Brentwood, Epping and Grays Districts	
South West Group Service Delivery Point Fire Station Broadmayne BASILDON Essex SS14 1EH	01376 576700
Email: southwestgroupsdp@essex-fire.gov.uk	
SOUTH EAST GROUP SDP covering Chelmsford, Castle Point, Southend and Rochford Districts	
South East Group Service Delivery Point Rayleigh Weir Fire Station 500 Rayleigh Road BENFLEET Essex SS7 3TR	01376 576500
Email: southeastgroupsdp@essex-fire.gov.uk	
NORTH EAST GROUP SDP covering Colchester, Tendring and Maldon Districts	
North East Group Service Delivery Point Fire Station Cowdray Avenue COLCHESTER Essex CO1 1XT	01376 576600
Email: northeastgroupsdp@essex-fire.gov.uk	
NORTH WEST GROUP SDP covering Harlow, Braintree and Uttlesford Districts	
North West Group Service Delivery Point Harlow Fire Station Fourth Avenue HARLOW Essex CM20 1DU	01376 576800
Email: northwestgroupsdp@essex-fire.gov.uk	

