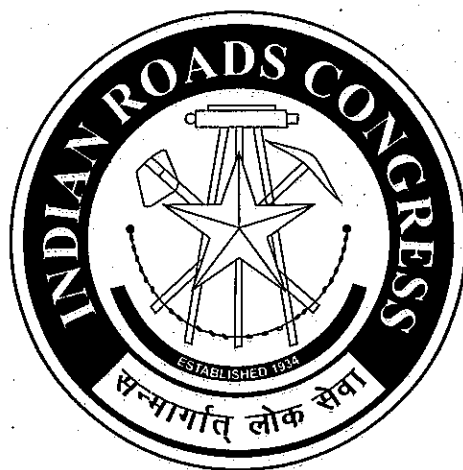


IRC:12-2009

**GUIDELINES FOR ACCESS,  
LOCATION AND LAYOUT OF ROADSIDE  
FUEL STATIONS AND SERVICE STATIONS  
(THIRD REVISION)**



**INDIAN ROADS CONGRESS  
2009**

**GUIDELINES FOR ACCESS, LOCATION AND  
LAYOUT OF ROADSIDE FUEL STATIONS  
AND SERVICE STATIONS  
(THIRD REVISION)**

**1 INTRODUCTION**

1.1 The Recommended Practices for Motor-Fuel Filling Stations and Motor Fuel Filling-Cum-Service Stations were initially published as separate documents in the year 1954 and 1962 respectively. These were later converted into metric units in 1967. These two separate documents were revised and merged in a single document namely "Recommended Practice for Location and Layout of Roadside Motor Fuel Filling and Motor Fuel Filling-cum-Service Stations" and was published as a single document as IRC:12 in the year 1983.

1.2 The Ministry of Shipping, Road Transport and Highways (MOSRT&H) revised substantially the norms for location, layout and access to fuel stations along the National Highways keeping in view the increased speed of vehicles and greater need for road safety due to development of National Highways network under various phases of National Highway Development Project (NHDP) and other development works on National Highways. These norms were circulated in October, 2003. These norms were finalized in consultation with the Ministry of Petroleum and the oil companies.

1.3 The Transport Planning, Traffic Engineering and Road Safety Committee (H-1) decided that the draft for the revised standard might be updated by incorporating the present guidelines of MOSRT&H by Shri S.B. Basu. The draft was modified as per the provisions of latest MOSRT&H Guidelines and also subsequent experiences gained while processing the applications for setting up of fuel stations by the side of National Highways. The draft was considered and approved by the Transport Planning, Traffic Engineering and Road Safety Committee (H-1) in its meeting held on 4<sup>th</sup> November, 2008 subject to some modifications. The draft was modified and finalized by S/Shri S.B. Basu, Chief Engineer (Retd.) and Sudip Chaudhury, Superintending Engineer, Deptt. of Road Transport & Highways. The Highways Specifications and Standards (HSS) Committee approved this document in the fifth meeting held on 23<sup>rd</sup> November, 2008. The Executive Committee in its meeting held on 30<sup>th</sup> November, 2008 approved this document. Finally the Council approved this document in their meeting held on 13<sup>th</sup> December, 2008 at Kolkata. The names of the personnel of Transport Planning, Traffic Engineering and Road Safety Committee (H-1) are given below:

Sharma, S.C.	.....	Convenor
Reddy, Dr. T.S.	.....	Co-Covenor
Jalihal, Dr. Santosh A.	.....	Member-Secretary

*Members*

Bahadur, A.P.	Chahal, H.S.
Basu, S.B.	Gupta, D.P.
Chandrasekhar, Prof. B.P.	Kadiyali, Dr. L.R.
Chandra, Dr. Satish	Kumar, Kamlesh
Chakraborty, Partho	Lal, R.M.
Mittoo, J.K.	Sanyal, D.
Murthy, P.R.K.	Sarkar, J.R.
Mutreja, K.K.	Sikdar, Dr. P.K.
Rao, Prof. K.V. Krishna	Singh, Nirmal Jit
Raju, M.P.	Tiwari, Dr. Geetam
Ranganathan, Prof. N.	Upadhyay, Mukund

The Director, HRS

*Corresponding Members*

Issac, Prof. K. Kuncheria K.	Karjinini, Vilas
Kumar, Arvind	Kumar, Prof. Shantha Moses

Parida, Dr. M

*Co-Opted Members*

Gangopadhyay, Dr. S.

*Ex-Officio Members*

President, IRC	(Mina, H.L.)
Director General (RD), MOSRT&H	—
Secretary General, IRC	(A.N. Dhodapkar)

## 2 BASIC PRINCIPLES

The governing consideration for setting up fuel stations is to ensure free flow of traffic on the road along the fuel stations, minimum interference by the vehicles using the facilities and to ensure safety of the vehicles on the road.

## 3 SCOPE

3.1 Petrol/Diesel/Gas fuel stations and service stations with or without Rest Area Amenities etc. are hereinafter referred to as Fuel Stations.

3.2 These norms are applicable to all Fuel Stations with or without other user facilities of rest areas, along un-divided carriageway and divided carriageway sections of all categories of roads i.e.

National Highways, State highways, Major District Roads and Rural roads in plain, rolling and hilly terrain, and passing through rural and urban stretches including towns and cities. For this purpose hilly or mountainous terrain would be, when the cross slope of the country is more than 25%. The urban stretches, only for the purpose of this guidelines, would be, where a highway passes through towns or cities which have been notified as Municipalities or Municipal Corporations.

#### 4 GENERAL CONDITIONS OF SITING

4.1 The fuel stations shall generally be a part of the rest area complex along the highways. Rest areas should have various amenities for users, e.g. places for parking, toilets, restaurants, rest rooms, kiosks for selling sundry items, bathing facilities, repair facilities, creche etc. These aspects should be incorporated while planning for improvement and upgradation of highway/road sections and/or planning for new fuel stations along the highways/roads. The rest area complex can be planned subject to their commercial viability.

4.2 It should be ensured that the location of the proposed fuel station does not interfere with future improvements of the highway/road and the nearby intersections/junctions.

4.3 The fuel stations would be located where the highway alignment and profile are favourable i.e. where the ground is practically level, there are no sharp curves or steep grades (more than 5%) and where the sight distances would be adequate for safe traffic operation. The proposed location should not interfere with placement and proper functioning of highway signs, signals, lighting or other devices that affect traffic operation.

4.4 While considering the proposal for new fuel stations, it would be ensured that the fuel stations on a corridor are well distributed on both sides of the highways so that vehicles normally do not have to cut across the traffic to reach them. The fuel stations would be serving only the traffic moving on the adjacent lane. For the vehicles traveling in the lanes in opposite direction, separate fuel stations need to be planned for which permission would be considered keeping also in view of its location and distance norms.

4.5 In order to provide safe length for weaving of traffic, fuel stations along highways/roads shall be located at the minimum distance from an intersection (gap in the central median be treated as intersection), as given below. For single carriageway section, these minimum distances would be applicable for both sides. All the distances shall be measured between the tangent points of the curves of the side roads at intersections/the median openings and the access/egress roads of the fuel stations, as is applicable, in a direction parallel to the centre line of the nearest carriageway of the highway.

The above mentioned distances are applicable for setting up of fuel stations along National Highways, State Highways and Major District Roads. In case of fuel stations along the Rural Roads in plain and

rolling terrain; the distance from the intersection with NHs/SHs/MDRs can be reduced to 300 m in place of 1000 m depending on the level of traffic.

4.5.1 Non-urban (Rural) stretches

1) Plain and Rolling Terrain

- |  |        |
|--|--------|
| (i) Intersection with NHs/SHs/MDRs/City Roads                                      | 1000 m |
| (ii) Intersection with Rural Roads/approach roads to private and public properties | 300 m  |

2) Hilly/Mountainous Terrain

- |   |       |
|---|-------|
| (i) Intersection with NHs/SHs/MDRs                | 300 m |
| (ii) Intersection with all other roads and tracks | 100 m |

4.5.2 Urban stretches

1. Plain and Rolling Terrain

- |  |       |
|--|-------|
| (a) Urban Area with population of more than 20,000 and less than one lakh.           |       |
| (i) Intersection with any category of roads of carriageway width of 3.5 m and above. | 300 m |
| (ii) Intersection with roads of carriageway width of less than 3.5 m                 | 100 m |
| (b) Urban Area with population of one lakh and above.                                |       |
| (i) Intersection with any category of road (irrespective of carriageway width        | 100 m |

2. Hilly and Mountainous terrain.

- |  |       |
|--|-------|
| (i) Intersection with any category of road (irrespective of carriageway width) | 100 m |
|--|-------|

4.5.3 **There shall not be any median gap on a divided carriageway within a distance of 300 m on each side of the fuel station.** This minimum distance i.e. 300 m shall be measured between the start of the median gap and the nearest tangent point of the access/egress road of the fuel station, as is applicable, in a direction parallel to the centre line of the nearest carriageway of the highway. This stipulation shall be applicable for such median gaps, which are located neither in front of nor in proximity of any intersection or intersecting roads. For intersecting road median gaps or median gaps in proximity of intersections, the provisions stipulated under para 4.5.1 and para 4.5.2 shall apply.

4.6 The minimum distance between two fuel stations would be as given below:

4.6.1 Plain and rolling terrain in non-urban (rural) areas

- |      |  |  |
|------|--|--|
| (i)  | Undivided carriageway (for both sides of carriageway)                    | 300 m<br>(including deceleration and acceleration lanes).  |
| (ii) | Divided carriageway (with no gap in median at this location and stretch) | 1000 m<br>(including deceleration and acceleration lanes). |

4.6.2 Hilly/mountainous terrain and urban stretches

- |      |  |                  |
|------|--|------------------|
| (i)  | Undivided carriageway (for both sides of carriageway)                    | 300 m<br>(clear) |
| (ii) | Divided carriageway (with no gap in median at this location and stretch) | 300 m<br>(clear) |

**Note:** (i) The minimum distance of 300 m between two fuel stations on both sides of the road is applicable for undivided carriageway only. In case of divided carriageway, with no gap in medians, the distance restriction is not applicable on the opposite side of the fuel station and the minimum distance between two fuel stations on the same side shall be 1000 m.

(ii) The distance between the fuel stations shall be measured between the tangent points of the access/egress roads of the fuel stations, as is applicable, in a direction parallel to the centre line of the nearest carriageway of the highway.

4.6.3 If two or more fuel stations are to be sited in close proximity for some reasons, these would be grouped together to have a common access through a service road of 7.0 m width and connected to the highway through acceleration, deceleration lanes. From these considerations, the permission for the new fuel stations would be considered only if it is either in proximity to the existing one so that the common access can be provided or the new one located at distance of more than 1000 m. Any objection from the existing fuel station owner against granting of access permission from the highway for the proposed new fuel station are to be overruled and access to all fuel stations in case of clustering, shall invariably be from the service road only.

4.6.4 For installation of new fuel station within the 1000 m or 300 m distance of existing fuel station as the case may be, new entrant would be responsible for construction and maintenance of the common service road, deceleration and acceleration lanes, drainage and traffic control devices. Wherever, available ROW is inadequate to accommodate such service roads, deceleration/

acceleration lanes, etc. the additional land by the side of ROW to accommodate such service roads shall also be acquired by the new entrant Oil Company. In case of hilly/mountainous terrain, common service roads at all such locations may not be possible as per the site conditions and, therefore, common access through service roads would not be a pre-condition.

4.7 The fuel station shall not be located within a distance of 1000 m from any barrier including that of toll plaza, and railway level crossing. No check barrier /toll plaza should be erected within 1000 m of a fuel station. However, if such barriers are located on service roads only and are separated from the main carriageway, then this requirement shall not apply. Fuel Stations should be located at a minimum distance of 200 m and 500 m from the start of an approach road of a Road Over Bridge (ROB) and the start of a grade separator or a ramp respectively.

## 5 PLOT SIZE FOR FUEL STATION

5.1 The minimum size and shape of the plot for the fuel station would need to be such that it suitably accommodates fuel pumps, offices, stores, compressor room, air pump and kiosks without causing any hindrance to the movement of vehicles of expected maximum dimensions, within fuel stations and in the access area. Sufficient space would need to be available to accommodate the number of fuel pumps to cater to the expected number of vehicles in peak time at this location so that the vehicles do not spill on to the access area. The air pump and kiosks for pollution control measurements be installed at some distance from the fuel pumps so that the vehicles requiring these services do not cause hindrance to the free movement of vehicles entering or exiting for refueling.

5.2 From these considerations, the minimum size of the plot for fuel station along highways/ roads shall be as follows:

- |   |                                |
|---|--------------------------------|
| (i) On undivided carriageway in plain and rolling terrain | 35 m (frontage) x 35 m (depth) |
| (ii) On divided carriageway in plain/rolling terrain      | 35 m (frontage) x 45 m (depth) |
| (iii) In hilly and mountainous terrain                    | 20 m (frontage) x 20 m (depth) |
| (iv) In urban stretches                                   | 20 m (frontage) x 20 m (depth) |

*Note:* The proposed plot of new fuel stations should be such that the minimum plot size stipulated as above can be accommodated.

5.3 For fuel station being part of the rest area complex, the area required for other facilities, such as parking, restaurant, rest rooms, toilets, kiosks for selling sundry items, bathing facilities, repair facilities etc. would be extra but such integrated facilities shall have a single common access/egress.

## 6 ACCESS LAYOUT

### 6.1 Access for New Fuel Stations along Un-divided and Divided Carriageway Sections

6.1.1 The access to the fuel stations along the highway/road shall be through deceleration and acceleration lanes. The deceleration and acceleration lanes may be dispensed with for the fuel stations located along urban roads, rural roads and roads in hilly and mountainous terrain. The access to the fuel stations located on highways with service road shall be only through that service road.

6.1.2 The deceleration lane would take off from the edge of the shoulder taken up to the edge of the Right of Way (ROW) of the highway/road, beyond which, the boundary of fuel station shall start. Its minimum length would be 70 m measured along the traveled direction of highway. Its width would be minimum 5.5 m. The shoulder of 2.25 m would be provided towards the outer side of the access /egress (i.e. on the side farthest from the carriageway) for this deceleration lane.

6.1.3 The acceleration lane would take off from the edge of the fuel station on exit side having minimum length of 100 m with parallel type layout. Its starting stretch of 70 m length would be with a curvature of minimum radius of 650 m and the remaining 30 m length would be tapered so as to facilitate vehicles coming out of fuel station, merging with fast moving through traffic on main carriageway, in a safe and efficient manner. Wherever, available ROW is inadequate to accommodate the service roads and/or deceleration/acceleration lanes in plain and rolling terrain of non-urban stretches, the additional marginal land by the side of ROW to accommodate the deceleration/acceleration lanes shall be acquired by the owner of the fuel station. In case of widening to 4/6 lanes in near future, the matter shall be dealt on case to case basis.

6.1.4 A separator island would be provided in front of the fuel station so that no right turning takes place. The length of this separator island would be determined on the basis of the intersecting points of the edge line of the separator island with the line drawn along the edge of chevron markings as indicated in Figs. 1 to 4 of these norms. Its shape for isolated fuel station would be as shown in Figs. 1 and 3, and that for the cluster of fuel stations with common service roads, as shown in Figs. 2 and 4. It would have minimum width of 3 m. The width of approaches connecting deceleration and acceleration lanes, along the separator island should be 5.5 m.

6.1.5 There would be buffer strip from the edge of the ROW and would extend minimum 3 m inside the fuel station plot. Its minimum length would be 12 m. In urban/hilly or mountainous areas, minimum length of buffer strip may be reduced to 5 m keeping minimum width of opening at entry and exit to 7.5 m. No structure or hoarding except the approved standard identification sign on pole would be permitted, which may be provided outside the ROW. The buffer strip as well as the separator island would be provided with kerb of minimum 275 mm height to prevent vehicles from crossing it or using it for parking purposes.

The buffer strip in the approach zone should be suitably shaped to cover extra area in the approach zone after provision of acceleration, deceleration lane and connecting approaches and should be properly turfed for aesthetic landscaping.

6.1.6 The radius for turning curve would be 13 m and that for non-turning curve be from 1.5 to 3 m so as to check over speeding while entering or exiting the fuel station. Wherever, available ROW is inadequate, the additional marginal land by the side of ROW shall be acquired by the owner of the fuel station to provide prescribed turning radius.

6.1.7 The pavement of the access roads including deceleration, acceleration lanes and connecting approaches would have sufficient strength for the expected traffic for the design period. It would have minimum pavement composition of 150 mm thick Granular Sub Base (GSB) overlaid by three layers of Water Bound Macadam (WBM) (other than WBM-Grading No.1), Wet Mix Macadam (WMM) each of 75 mm thickness topped by 50 mm thick Bituminous Macadam (BM) and 25 mm thick Semi Dense Bituminous Carpet (SDBC).

6.1.8 A typical access layout for the new fuel station with relevant details for deceleration and acceleration lanes, connecting approaches, separator island, buffer strip, drainage, signs and markings on un-divided carriageway section of highway would be as shown in Figs.1 and 3 of these norms.

6.1.9 The typical access layout for cluster of fuel stations, with details for deceleration lane, service road and acceleration lane etc. would be as shown in Figs. 2 and 4 of these norms.

6.2 The typical layout for fuel station and signs and marking along highways in hilly/mountainous terrain and in urban stretches is given in Fig. 5.

## 7 DRAINAGE

There shall be adequate drainage system on the access to the fuel station and inside its area so as to ensure that surface water does not flow over the highway or any water logging takes place. For this purpose, the fuel station and access area would be at least 300 mm below the level at the edge of the shoulder on the highway. The surface water from fuel station and access road would need to be collected in a suitable underground drainage system and led away to a natural course through culvert. Only slab culvert with iron grating of adequate strength shall be constructed in the approaches so that surface water is drained through the openings of in the grating. Construction of pipe culverts shall not be permissible for this purpose. The drainage arrangement would be either by the method mentioned above or as per the satisfaction of the Highway/Road Authorities. The applicant has to prepare separate detailed drawings indicating the drainage arrangements and to be submitted along with the application for permission.

IRC:12-2009

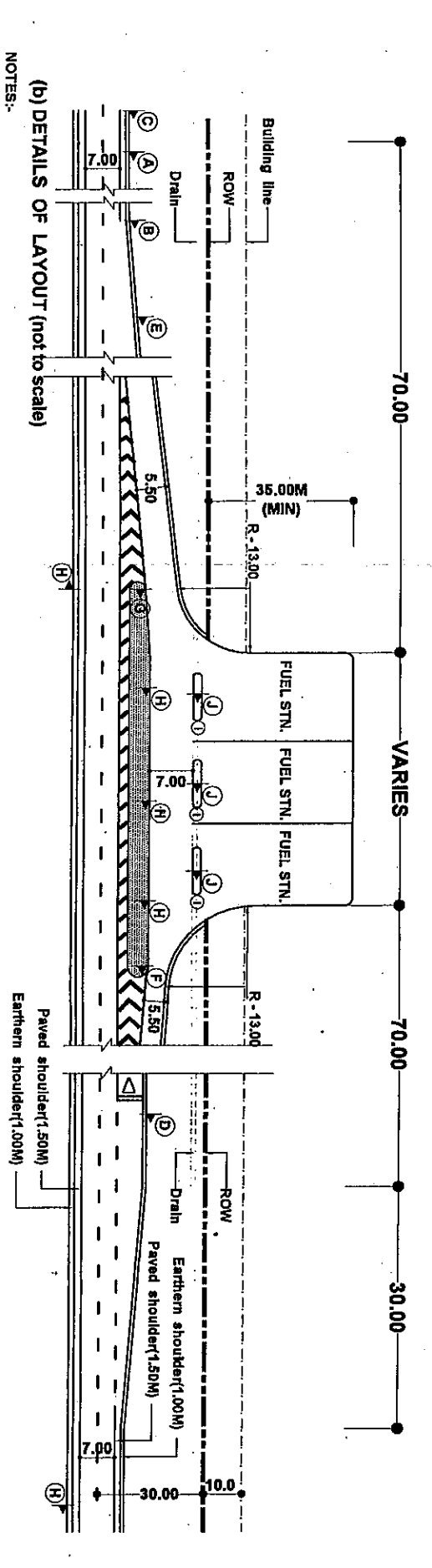
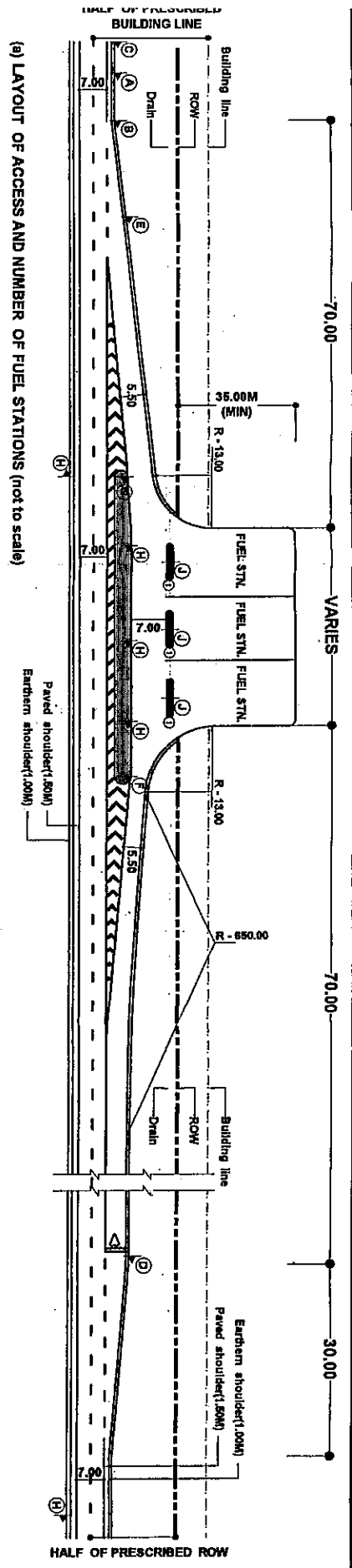
these norms in terms of its location, access layout and signs and markings. It shall also be the responsibility of the applicant/owner of Fuel Station to provide the prescribed layout for access as given in Figs. 1 to 5, as the case may be, while preparing the layout. The applicant has to submit a clearly drawn layout for the proposed fuel station as per the guidelines/standard as indicated above.

10.2 The Highway Agency may prescribe for a license deed to be signed between the oil company who wants to set up a new fuel station and the highway agency and also a suitable amount as license fee in consideration of the agreement.

10.3 Non-conformity or any default in respect of the norms as mentioned above and non-maintenance of deceleration lane, acceleration lane, service road, drainage system, channelizers, markings, signs and other traffic control devices in good operating conditions would make the fuel station liable to be de-energized. In cases of clustered fuel stations responsibility for default or non-conformity will attract such penalty and would be determined through a joint inspection of the highway authority and the oil companies concerned.

---





**(b) DETAILS OF LAYOUT (not to scale)**

NOTES:-  
 1. (1) THE LAYOUT FOR ENTRY, EXIT BUFFER STRIP, FUEL, PUMPS AND BUILDING ETC. WOULD BE AS PER FIG. 1

2. ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM OR LITH OF 75 MM EACH OR WMM OF 150MM, SOMM BR AND 25MM SDSC.

3. ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1987.

4. ALL TRAFFIC SIGNS SHOULD BE AS PER IRC: 67:2001 AND IRC:SP-45:2001. IN CASE OF A FUEL STATION LOCATED ON THE OTHER SIDE OF TRAVEL DIRECTION, THE USER SHOULD BE INFORMED OF THE LOCATION OF THE FUEL STATION IN FISHER DIRECTION OF TRAVEL THROUGH INFORMATION SIGN AS AT (C) OF THE TABLE OF THIS DRAWING.

5. THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION ITS MINIMUM WIDTH SHOULD BE 3M.

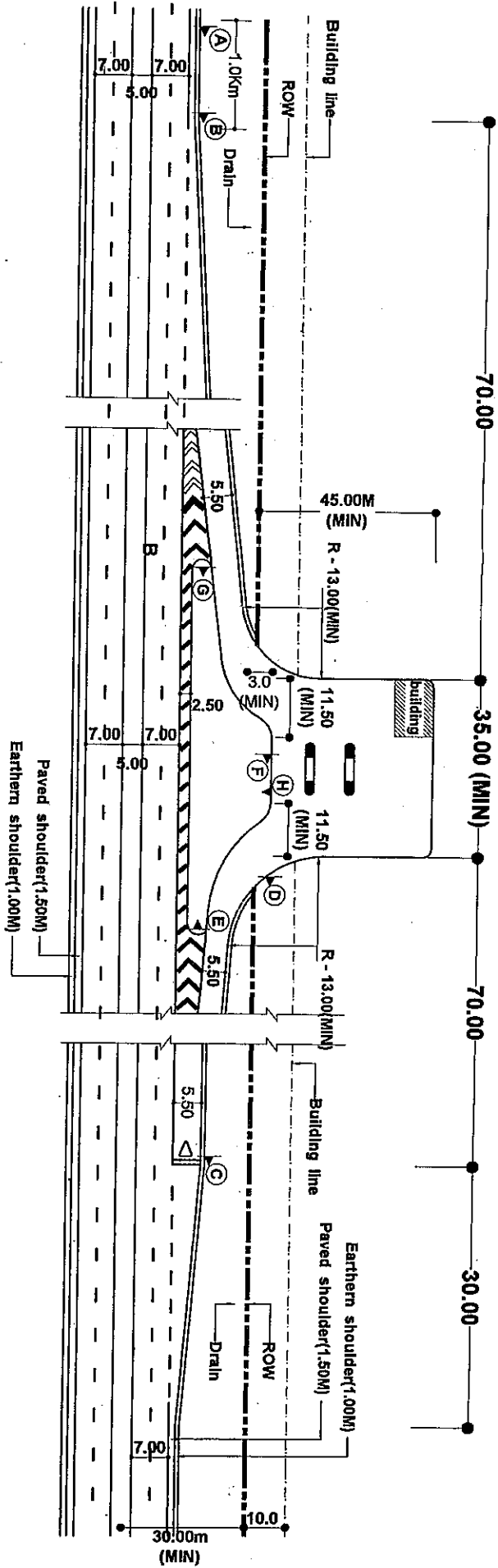
6. THE SEPARATOR ISLAND AND BUFFER STRIP SHALL BE TYPED WITH PROVISION OF 25MM HIGH CURB.

7. SLAB CULVERTS WITH GRATINGS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES TO CATER TO THE EXPECTED DISCHARGE.

8. ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

<b>(A)</b> - Fuel Station Ahead at 1km & 500m	<b>(D)</b> - Giveaway	<b>(G)</b> - Compulsory Direction Control
<b>(B)</b> - Fuel Station	<b>(E)</b> - One Way	<b>(H)</b> - No Right Turn
<b>(C)</b> - Fuel Station Ahead	<b>(F)</b> - No Entry	<b>(I)</b> - No Left Turn
<b>(J)</b> - Fuel Station Board		

Fig.2 ACCESS TO NUMBER OF FUEL STATIONS ON UNDIVIDED 7.0M WIDE CARRIAGEWAY SECTION - Plain & Rolling Terrain (Rural section)



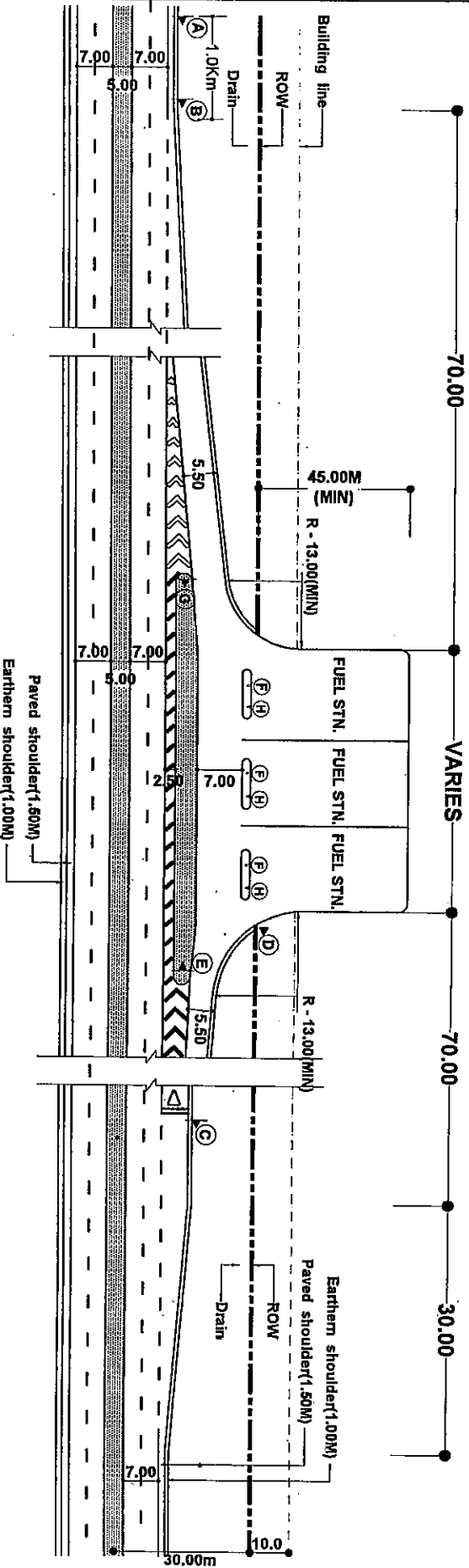
(b) DETAILS OF LAYOUT (not to scale)

**NOTES:-**

- 1 ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM GR 1/1/1 OF 75 MM EACH OR WMM OF 150MM, 50MM BM AND 25MM SDBC.
- 2 ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1997.
- 3 ALL TRAFFIC SIGNS SHOULD BE AS PER IRC: 67-2001 AND IRC:SP-55-2001.
- 4 THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION ITS MINIMUM WIDTH SHOULD BE 3M.
- 5 THE SEPARATION ISLAND AND BUFFER STRIP SHALL BE TURFED WITH PROVISION OF 275MM HIGH KERBS.
- 6 SLAB CURVERTS WITH GRATINGS TO BE PROVIDED IN THE LINE OF STROM WATER DRAIN ON ENTRY AND EXIT APPROACHES. TO CATER TO THE EXPECTED DISCHARGE.
- 7 ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

<b>A</b> - Fuel Station Ahead		<b>E</b> - No Entry	
<b>B</b> - Fuel Station		<b>F</b> - Fuel Station Board	
<b>C</b> - Gateway		<b>G</b> - Compulsary Direction Control	
<b>D</b> - One Way		<b>H</b> - No Right Turn	

Fig.3 ACCESS TO FUEL STATION ON DIVIDED CARRIAGEWAY SECTION - Plain & Rolling Terrain(Rural)



**NOTES:-**

- 1 (7) THE LAYOUT FOR ENTRY, EXIT BUFFER STRIP, FUEL PUMPS AND BUILDING ETC. WOULD BE AS PER FIG.3
- 2 ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM GR II/III OF 75 MM EACH OR WMM OF 150MM, 50MM BM AND 25MM SD8C.
- 3 ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1987.
- 4 ALL TRAFFIC SIGNS SHOULD BE AS PER IRC:57-2001 AND IRC:SP-55-2001.
- 5 THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION ITS MINIMUM WIDTH SHOULD BE 3M.
- 6 THE SEPARATOR ISLAND AND BUFFER STRIP SHALL BE TURRED WITH PROVISION OF 275MM HIGH KERBS.
- 7 SLAB CULVERTS WITH GRATINGS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES, TO CATER TO THE EXPECTED DISCHARGE.
- 8 ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

(b) DETAILS OF LAYOUT (not to scale)

(A) - Fuel Station Ahead	(D) - One Way
(B) - Fuel Station	(E) - No Entry
(C) - Giveway	(F) - Fuel Station Board
(G) - Compulsory Direction Control	(H) - No Right Turn

Fig.4 ACCESS TO FUEL STATION ON DIVIDED CARRIAGEWAY SECTION - Plain & Rolling Terrain(Rural)

