2.8 LATERAL AND VERTICAL CLEARANCE ON UNDERPASS

Lateral clearance is the distance between the extreme edge of the carriageway to the face of the nearest support whether it is a solid abutment,pier or column.

Vertical clearance stands for the height above the highest point of the travelled way

- Minimum width clearance of 5m should be ensure over the full width of roadway.
- The vertical clearance should be measured with regard to the highest point of carriageway.
- Allowance for any future raising of pavement is also be made.

Underpass:

It implies a short passage beneath a grade separated structure to carry one or more streams of traffic.An underpass, or subway, is a tunnel containing a road or pedestrian passageway running underneath a road or railway. Underpasses can also be constructed to allow wildlife to pass safely under a transport corridor.

Construction Methods

There are three main methods for constructing underpasses:

- Precast concrete units.
- In situ concrete.
- Thrust-bored units.

Precast concrete units are often manufactured as standard units and can be provided to site as complete box-like open-ended sections, portal frame segments, or as separate wall and roof units.

Box units are typically jointed using a pre-formed sealant strip in a socket and spigot joint. Connection plates in the floor and roof are used to bolt together the units.

Portal frame units, which are pre-stressed, require the lower waterproofing membrane to be placed on a concrete slab, with continuous concrete bearing pads (usually 300 mm wide x 25

mm deep) are laid on top. The units are then placed in position, with lubrication applied to reduce stress-induced friction.

Wall and roof unit systems comprise precast units that are placed in position with the floor laid in situ using the units as shuttering. The roof units are then placed and the in situ loading slab poured, with loading requirements determining the thickness.

Thrust-bored units require a suspension of bentonite as lubrication. As a means of transmitting the thrust load, the units must have direct edge contact rather than the pre-formed sealing strip. This jointing method should allow edge contact for jacking, but be capable of receiving a sealing compound from the inner face. This is possible by forming a rebated joint filled with mortar prior to applying the sealant.

In situ concrete underpasses are constructed using the same methods as any underground tunneling construction.