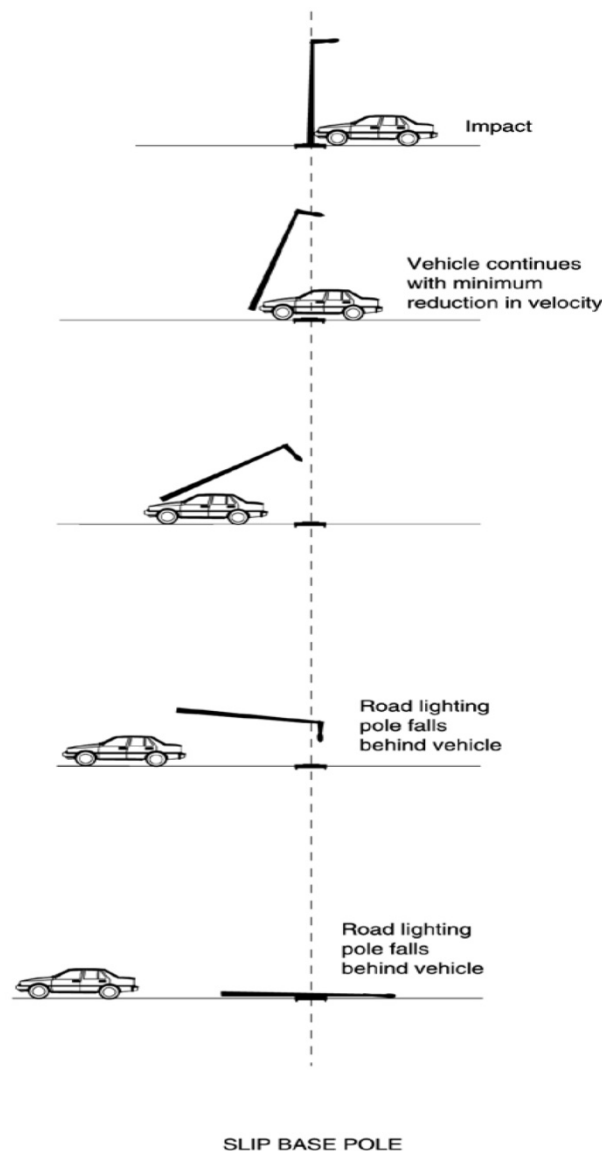


ASSEMBLY & MAINTENANCE

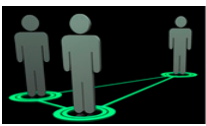
FOR SLIP BASE POLES

1.0 GENERAL

Slip base poles are a frangible system and are an effective way to reduce the probability of injury to vehicle occupants. A characteristic of slip base poles is that, when impacted at normal operating traffic speeds, they are generally dislodged from their original position, allowing a vehicle to pass through with low loss of speed. The columns then generally land within the area of their original position.



To ensure that slip base poles perform as they were designed to, it is important that they are installed correctly.



ASSEMBLY & MAINTENANCE

FOR SLIP BASE POLES

2.0 INSTALL PROCEDURE

- 2.1 When installing the ground stub, the slip base flange alignment to the traffic flow, should be as per *diagram 2*. It is also important that the flange is level (in all directions)

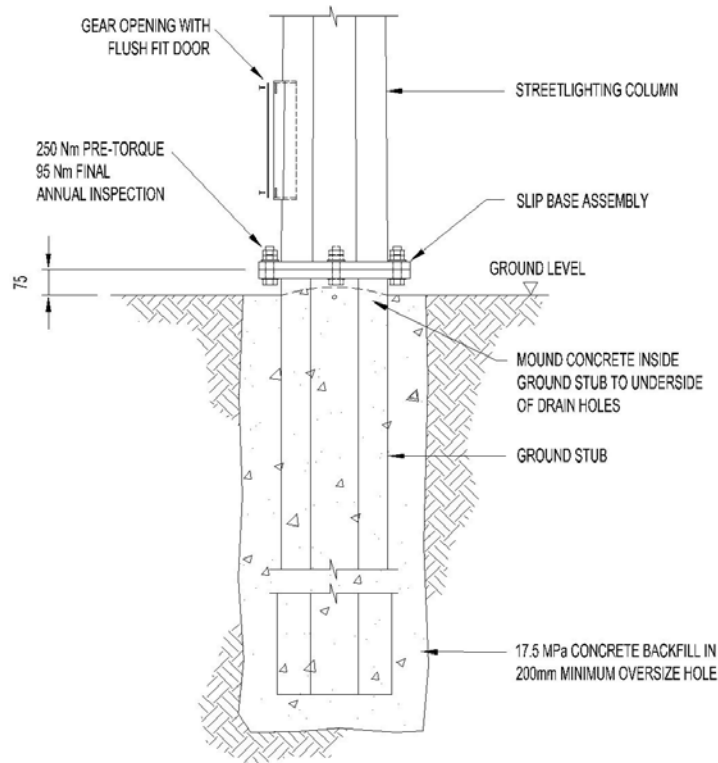


DIAGRAM 1

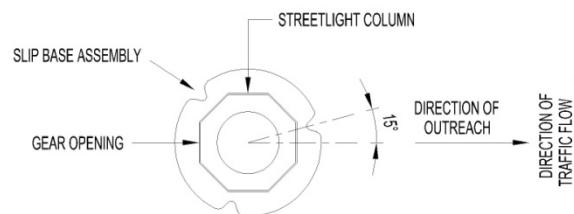
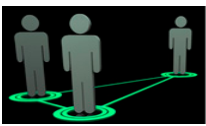


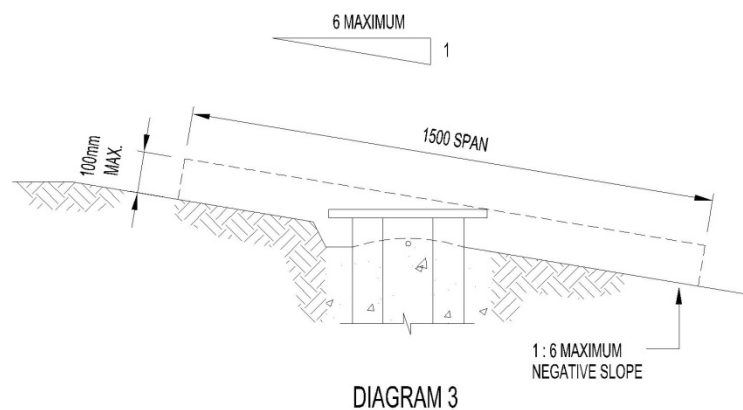
DIAGRAM 2

- 2.2 The ground stub should be backfilled with concrete to the outside ground level using 17.5 Mpa concrete. If placing concrete inside the ground stub, please ensure that the level of the concrete is just below the drain holes in the ground stub. This is to prevent water/moisture pooling inside and in so doing, accelerate the corrosion process. It is preferable that the inside center of the concrete also be "domed" to create a fall to the drain holes. Ensure any concrete is cleaned off the ground stub flange face.



ASSEMBLY & MAINTENANCE FOR SLIP BASE POLES

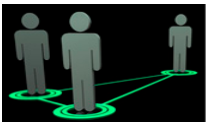
- 2.3 The ground around the slip base should be leveled so that the maximum protrusion of the ground stub flange is 75mm above finished ground level - *diagram 1*. This is to ensure that vehicles pass over the stub without interference, and to prevent vehicles from becoming airborne prior to impacting the column.
- In the event of negative sloping ground conditions, a negative slope of 1:6 (16.7°) should not be exceeded and the maximum protrusion of the ground stub should not exceed 100mm above the ground line over a horizontal span of 1.5m. See - *diagram 3* (NZTA - State Highway Design Manual, Section 7)



- 2.4 Once concrete has cured, ensure that all componentry needed (*diagram 4*) are present and clean. If the slip washer is damaged or kinked, do not use it. For an assembly guide of the column itself, see GESS LTD DOCUMENT NO **GVTG-001**
- 2.5 Position the slip washer on the lower flange and then position the pre-assembled pole over the groundstub flange. Ensure that the slip washer is not knocked out of alignment.
- 2.6 Lubricate the threads of the M30 x 120mm bolts with a suitable heavy duty lubricant (Loctite™ or Holts). Insert bolts facing up (i.e. the nuts are on top) - *diagram 4*. Tighten the nut to a minimum of 250Nm. **Loosen the nut, then re-torque to 95Nm.** If the nuts are left tighter than 100Nm, the slip base WILL NOT perform as required when struck. Once the nuts are torqued to 95nm, fit the lock nuts.

3.0 **MAINTENANCE AND INSPECTIONS**

- 3.1 Maintenance Inspections of installed poles should be conducted regularly with a minimum prudent schedule of one week after installation, one month after installation, 6 months after installation, and annually thereafter. It is also advisable to check the installation after any severe weather event. The bolts in particular need to be checked for any signs of fatigue cracking, corrosion etc. If there is any sign of damage to the bolts or nuts, they must be replaced. For a bolt retrofit guide, see GESS LTD DOCUMENT NO **GVTG-003**
- 3.2 The area around and underneath the pole base should be kept clean and clear in order to help reduce moisture and minimize corrosion. Check the pole for corrosion and deterioration of the finish and vertical alignment.



ASSEMBLY & MAINTENANCE

FOR SLIP BASE POLES

- 3.3 In addition, road lighting poles can suffer damage from both major and minor incidents. They are to be replaced when any of the following damage is evident:
- Horizontal cut(s) or tear(s) exist and exceeds 20% of the pole circumference; or
 - Deformation of pole due to impact exceeds 20% of the pole diameter; or
 - Door cannot be securely fastened or is damaged to the extent it cannot be replaced or repaired, (even if the pole is not damaged).

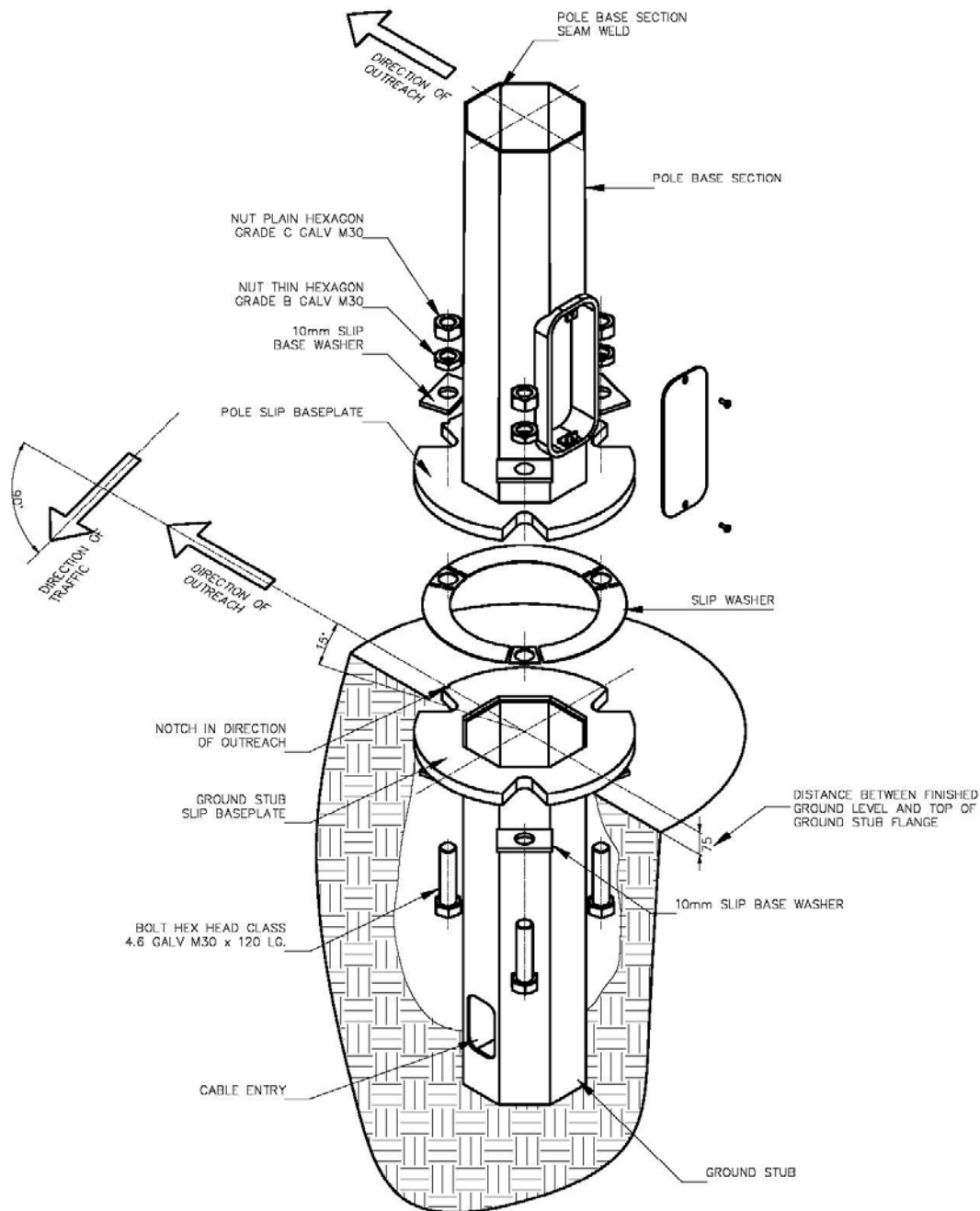


DIAGRAM 4