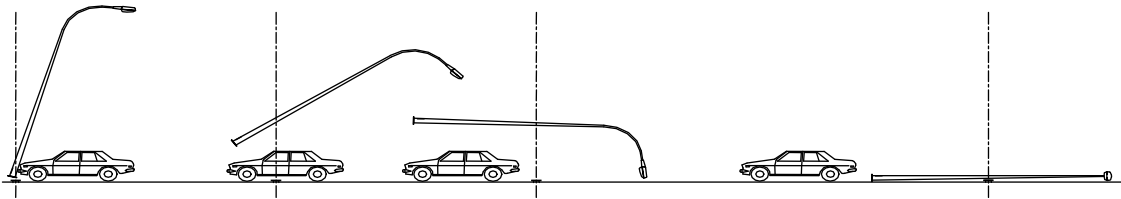


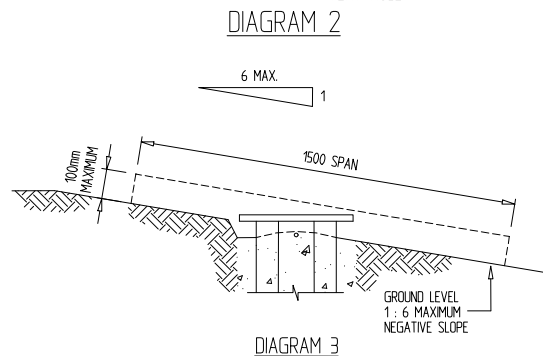
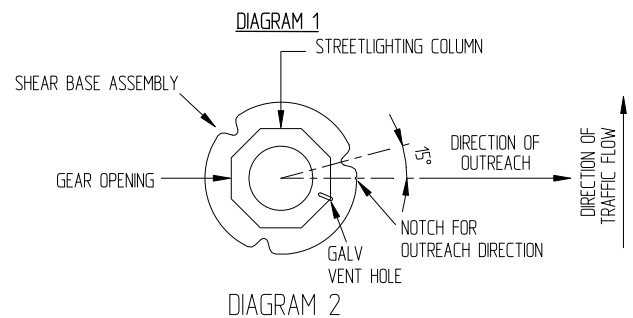
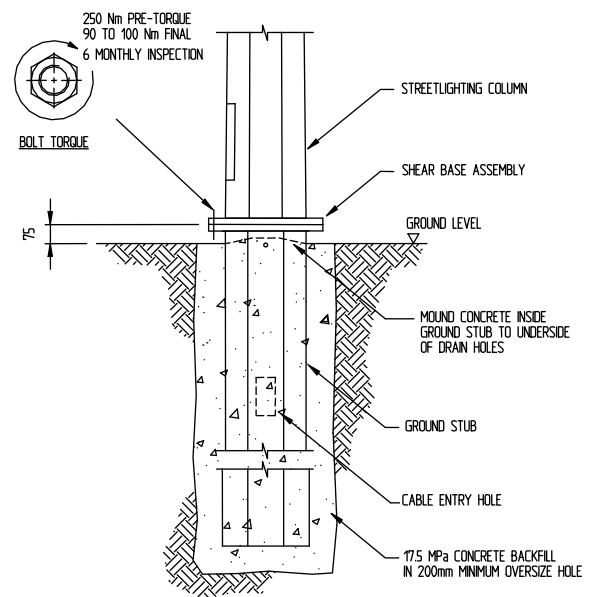
## SHEAR BASE POLES – ASSEMBLY, INSTALLATION AND MAINTENANCE

Shear base (Slip Base) poles are a very effective way to reduce the probability of severe injury to vehicle occupants. A characteristic of shear base poles is that, when impacted at normal urban operating traffic speeds, they are generally dislodged from their original position.



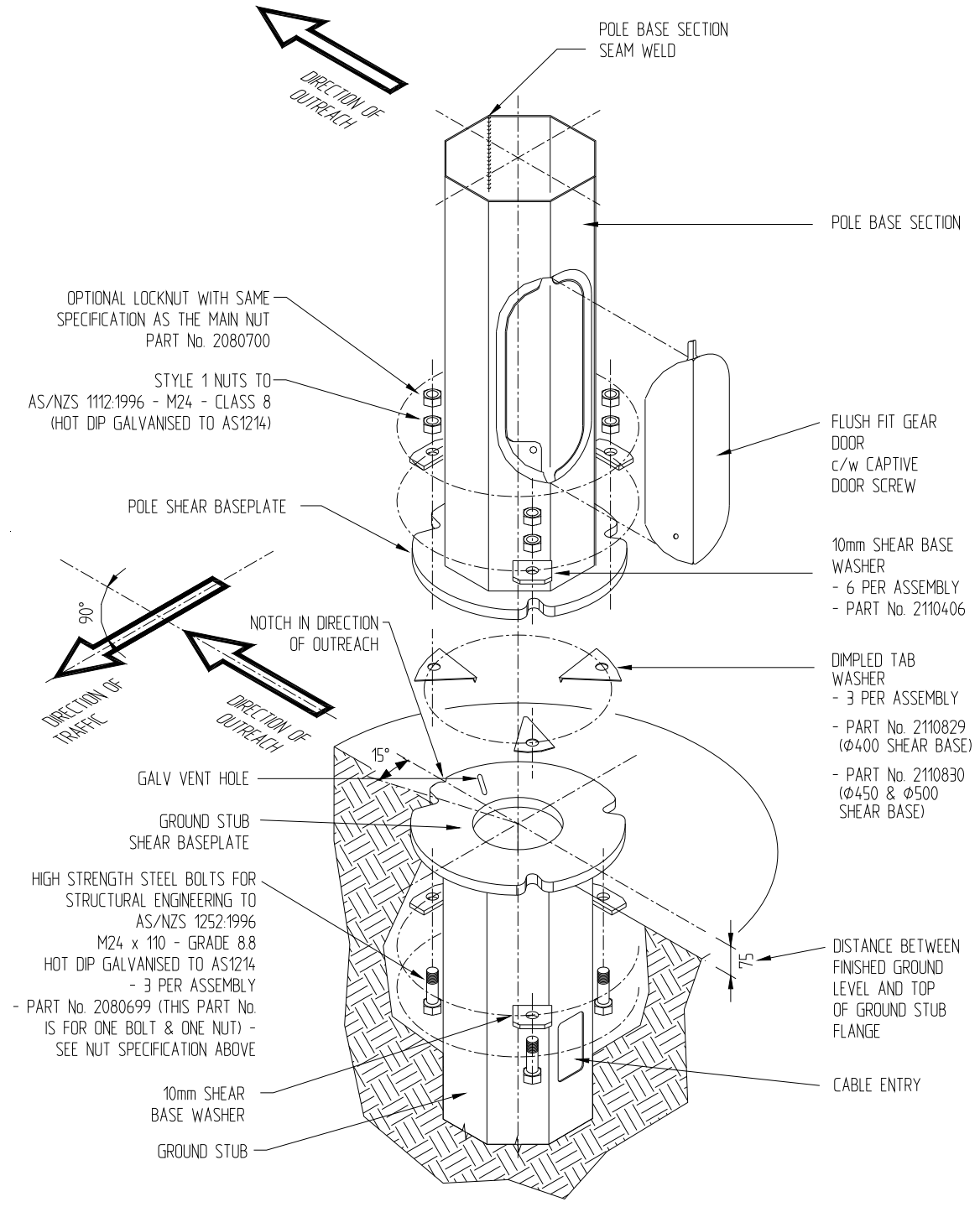
To ensure that a shear base pole performs in the designed manner, it is important that the pole be installed correctly.

- Alignment of the shear base flange to the traffic flow should be as per [diagram 2](#). Ensure that the flange is leveled.
- The ground stub should be backfilled with concrete to the outside ground level using 17.5 MPa concrete. To delay corrosion concrete can be put on the inside of the ground stub. However, if concrete is placed inside the ground stub, **it is very important** that the level should be just below the drainage holes near the top of the stub, with the top mounded to aid in water drainage. This prevents water from permanently sitting inside the stub, leading to accelerated corrosion – see [diagram 1](#). Ensure that the top face of the flange is cleaned of any concrete following pouring.
- Prior to erection ensure that all components are present and clean – [diagram 4](#).
- Position the tab washers on the lower flange and ensure that the tabs are correctly engaged inside the inner edge of the flange. This is critical to the functioning system.
- Position the pre-assembled pole over the ground stub flange, ensuring that the tab washers are not knocked out of alignment.
- Terrain in the vicinity of the shear base ground stub must be graded to allow a vehicle to pass over the stub without interference, and also to avoid the vehicle becoming airborne prior to impacting the column. Generally a negative slope of 1:6 should not be exceeded. The ground stub should not protrude more than 75mm on horizontal ground conditions or 100mm above the ground line over a horizontal span of 1.5m – see [diagram 1 and 3](#) (Transit – State Highway Geometric Design Manual).
- Lubricate the M24 x 110mm bolts with a suitable lubricant such as Loctite™ Heavy Duty Anti-seize stick, Loctite™ Silver Grade Anti-Seize Lubricant pouch or Holts Lube Stick. Ensure that all parts of the thread are covered. For easy installation insert the bolts so that the nuts are facing upwards, see [diagram 4](#) and then tighten to 250Nm minimum torque. **Slacken off and re-torque to 90-100 Nm immediately or, at the very least, before the road is opened.** If the bolts are left tighter than about



90-100Nm, the shear base will not perform as required in the event of being struck. Correct alignment of all components should be checked at this stage. Using locknuts is also recommended.

- The shear base connection is to be inspected every 6 months, or after significant weather events (severe wind speeds). Each bolt is removed, checked for condition (fatigue cracking, corrosion etc.) and then re-installed as per previous assembly notes. If there is any sign of fatigue damage to the bolt, the bolt must be replaced. Adequate column supports or baseplate clamps must be provided during the inspection process.



**DIAGRAM 4**