

1. Objective and Scope

To describe how to correctly install Saferoads OMNI-STOP Super Duty Security Bollard.

2. Important Note:

Saferoads OMNI-STOP Super Duty Security Bollard has been crash tested and can stop a 5000lbs/2270kg vehicle travelling at 30mph/50kph when surrounded by 250mm thick concrete.

Saferoads OMNI-STOP Super Duty Security Bollard has also been crash tested and can stop a 5000lbs/2270kg vehicle travelling at 30mph/50kph when surrounded by SP – poorly graded sand.

However effective safe zone must be increased by a factor of 2.5.

Installation outside of these conditions may be possible, but a geotechnical engineer should be engaged to recommend appropriate design.

3. Personal protective equipment (PPE)

The following is mandatory PPE.



Boots



Eye Protection



Ear Protection



Hi Viz



Gloves



Protective Clothing

4. Equipment Required

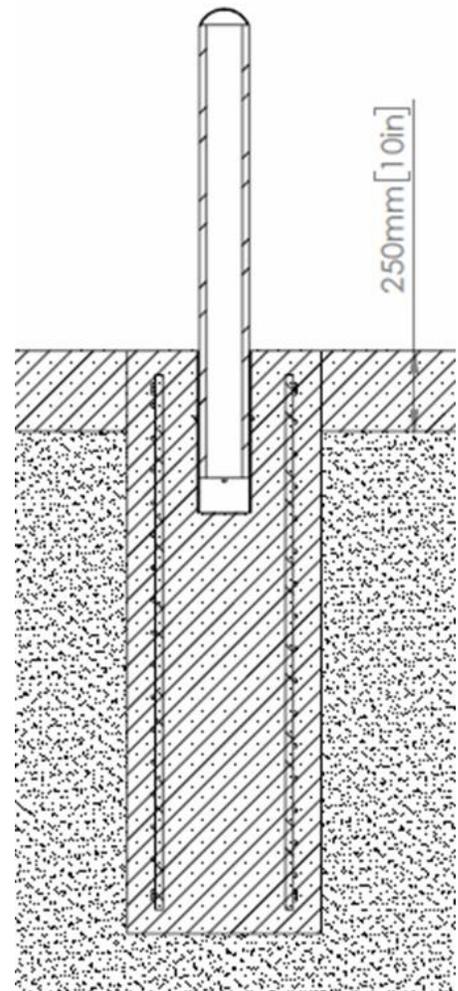
- a) Auger and or digging tools;
- b) String line;
- c) Spirit level;
- d) Reo spacers;
- e) 5000PSI / 32MPa concrete;
- f) Pencil vibrator; and
- g) 6in / 150mm x 57in / 1450mm light galvanised pipe.

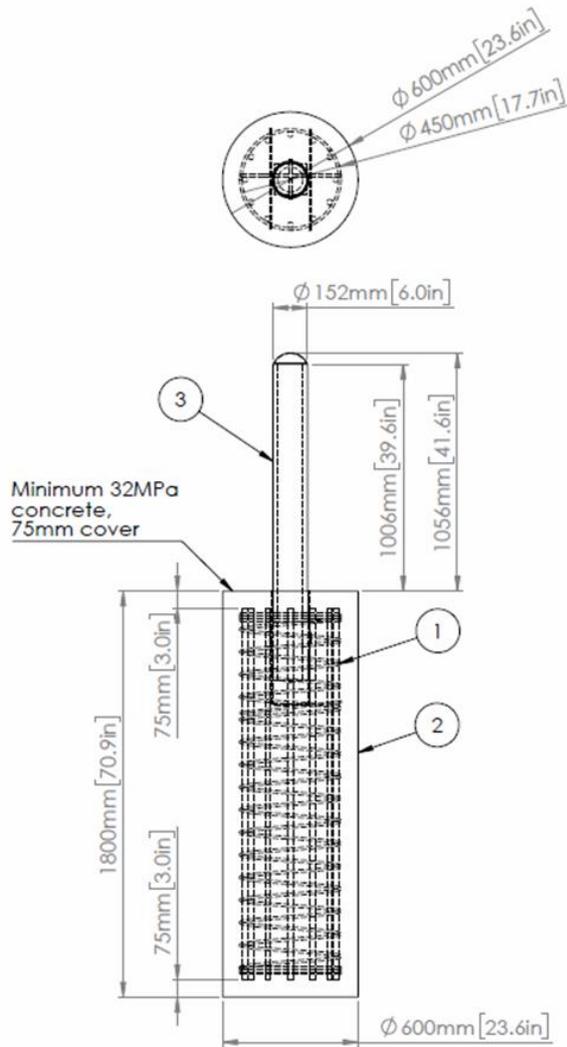
5. Qualifications and Competencies

- a) Safe use of hand tools;
- b) Manual handling; and
- c) Road traffic management.

6. Overview

- Item 1 Reinforcement cage assembly including Bollard Tube receiver
- Item 2 5000PSI / 32MPa concrete footing, 24in / 600mm dia. X 71in / 1800mm deep
- Item 3 55in / 1400mm long “Omni” pipe plus domed cap, 6in / 150mm nominal O.D.





c) Ensure you are at the correct location and set up traffic control to Australian Standards, or as advised and required by the client.

8. Marking

Mark out hole centres as per site design. If installing multiple bollards use a string-line to check they are in a straight line.



9. Dig

After removing concrete, auger or manually dig a minimum 24in / 600mm diameter x 71in / 1800mm deep hole.



If using machinery refer to Equipment SOP for safe operating procedures.

10. Reinforcement Spacers

Place 4 reinforcement spacers under the cage to allow the reinforcement cage to sit clear of the sub-soil.

7. Documentation and Setup

- a) Ensure that the selected installer provides a copy of Public Liability Insurance, WorkCover, SWMS and plant service records. (No documentation - no job).
- b) Before commencing ensure that you have had all services located and clearly identified using "Dial Before You Dig" or "Before You Dig Call 811". Ensure you complete the Inspection and Test Plan (ITP).





11. Positioning Reinforcement Cage

Insert the Omni-Stop Super Duty Security Bollard reinforcement cage, ensuring that the cage is at equal distance from the edges of the hole.

Also ensure the top of the sleeve is level with the finished concrete surface.



Use a spirit level to ensure that the reinforcement cage assembly is correctly positioned.

Note: using a 6in / 150mm x 57in / 1450mm lightweight galvanised pipe placed into the cage to check that the bollards will be vertical may assist.

12. Pouring Concrete

Pour concrete into the space surrounding the reo cage to approximately 12in / 300mm and then re-check levels. (Concrete must be 5000PSI / 32MPa).



Fill the remainder of the hole with concrete. Ensuring that the application of concrete does not move the reo cage out of position.

The concrete should be vibrated with a pencil vibrator to settle the concrete and remove air pockets.

Be careful when pouring concrete that the Omni-Stop Super Duty Security Bollard cage is not moved from its intended location, or level.



The performance of the Omni-Stop Super Duty Security Bollard may be affected by incorrect installation.

Finish off by screening the concrete surface and if applicable replace pavers around installed bollard.



Note: If paving is to be placed over the top of the footing, the excavation must be deep enough to ensure that the concrete footing is minimum 71in / 1800mm deep and 24in / 600mm diameter.

Sweep up any excess dirt or debris from the site.



13. ITP

Ensure you have completed the Inspection and Test Plan (ITP) for the Omni-Stop Ultra Security Bollard for each installation you have completed.

14. Finish

Installation complete

15. House Keeping and Final Checks

a) Safety Checks:

- Housekeeping practices adhered to and worksite is left clean and safe
- Items have been fitted correctly and safely

b) Quality Checks:

- Workmanship is to specification
- Materials quality is acceptable
- Unused materials are removed
- Quality checks performed

c) Environment Checks:

- Surrounds are restored to prior condition
- No spillage and/or damage to any soil, habitat, atmosphere or drainage

SOP REVISION UPDATES

Rev 1 dated 26/10/2020

- a) New SOP