## KEY

Quadrant

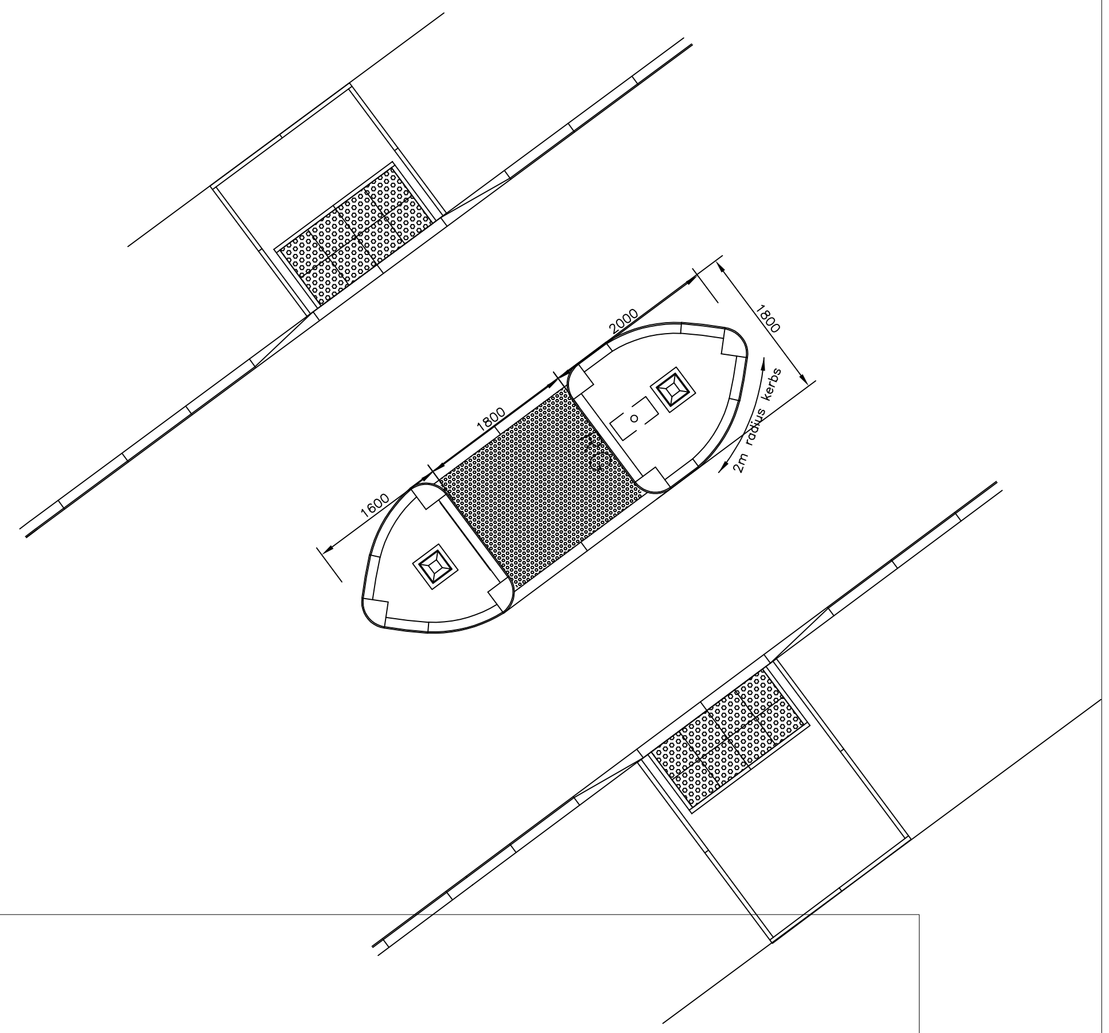
Flush kerb

HB kerb

Dropper kerb

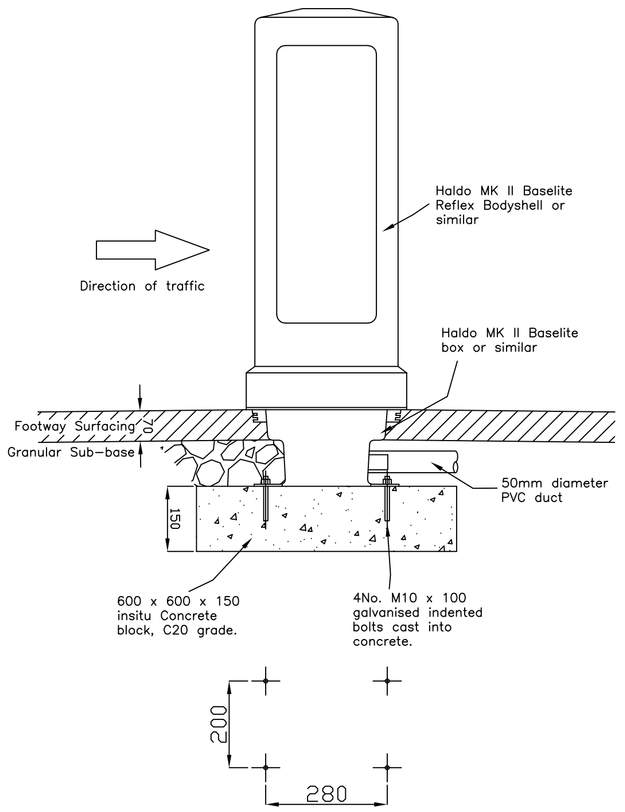
Refuge beacon
(See note 6&7)

Base illuminated bollard.




NARROW REFUGE ISLAND WITH
PEDESTRIAN FACILITIES

SECTIONAL ELEVATION

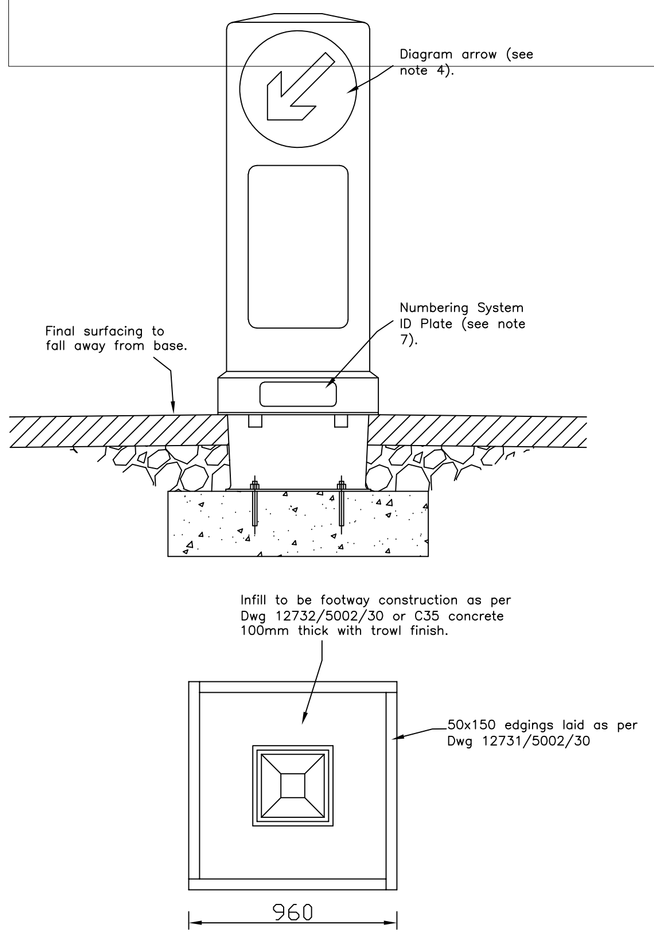






PLAN SHOWING BOLT CENTRES

SECTIONAL ELEVATION




PLAN SHOWING HARD STANDING AROUND
BOLLARD IN UNSURFACED AREAS
(see Note 5)

REFUGE ISLAND NOTES:

1. All dimensions are in millimetres unless otherwise stated.
2. 305mm x 255mm quadrants to be used on nosings.
3. The end of the 2m radius kerbs to be cut to suit the width of the refuge and to ensure a flush joint with quadrant.
4. Type HB (half battered) kerbs to be used with 125mm kerb face except where stated.
5. Refuges to be surfaced with the standard footway construction as per Drg No 12732/5002/30. Base course regulating material to be used in lieu of sub-base when refuges are constructed in existing surfaces.
6. Refuge beacon to be in accordance with the 'Traffic Signs Manual' (Chapter 4).
7. On certain designated abnormal load routes the refuge beacon shall be mounted in a 'Poletech' Unit or similar equivalent system approved by the LCC Street Lighting section.
8. The width of the flush kerbs shall correspond to the width of the adjacent footway or cycleway.

ILLUMINATED BOLLARD NOTES:

1. The one piece moulded bollard shell shall be made from soft, translucent white, UV stabilised, butyl vinyl acetate capable of withstanding hard impacts at temperatures down to −23°C. The bollard shell shall provided good yield characteristics in both face on the diagonal impacts without major damage to shell or base assembly.
   The bollard shall achieve, when new, a mean average light output of 100cd/m2 at the diagram arrow. It shall through design provide outstanding levels of lighting at the upper portion of the bollard head regardless of vehicular approach angle.
   It shall be fixed to the hinged platform of the enclosure by 4 No. stainless steel threaded Hex Sets with stainless nuts used on the inside of the shell to prevent bollard theft or loss.

2. The base light enclosure shall be manufactured in cast aluminium LM6 aluminium all, base flanges to include holes for ragbolts if required. The base light lid shall retain and seal a 5.0mm thick UV stabilized polycarbonate domed lens to a protection factor of IP67 (BS 5490).
   Base light units shall contain a removable gear tray with a bonded incoming supply plug which shall engage in the order: earth−neutral−live and disconnect in the reverse order. The gear tray shall be fitted with two independently fused circuits each comprising a Harvard DK13 digital ballast supplying an 11 watt 4 pin compact fluorescent lamp, with both circuits controlled by a single Zodion F4200 low−light infra−red photo−electric control unit, complying with BSEN 50081/50082. Each base light unit shall be fitted with an integral fixed plg/socket arrangement that isolates the bollard electrical circuits upon removal of the light/gear tray and shall be fitted with internally accessible cable glands that, when tightened, maintains an IP68 rating for the base unit and an additional cable access is required and that,when fitted, also maintains the IP rating.

3. The foundation incorporating the ducts should be as per the manufacturers recommendations.

4. The diagram arrow or sign as specified by the Engineer, to be in accordance with the Traffic Signs Regulations and General Directions 2002.

5. Where the bollard is installed in an unsurfaced verge, island or refuge, the bollard base must be surrounded by an area of hard surfacing as shown.

6. The bollard should be positioned in splitter islands and refuges so that the front face is 0.45m to 1m from the carriageway tot he side faces shall be 0.45m to 0.6m or as agreed with the Engineer.

7. Construction materials as follows:
   Reflective numbers− 40mm high for illuminated, black self−adhesive Class 1 reflective engineering grade material.
   All surfaces should be clean, dry and free from grease before application.
   Note − Similar products must be approved before use.



1. Do not scale dimensions from this drawing in either paper or electronic format.
2. To be read in conjunction with all relevant Engineer's, Architect's and Other drawings and specifications.
3. All building products to be used in strict accordance with the manufacturer's recommendations.
4. Any discrepancies are to be reported to the Engineer immediately.
5. Main Contractor to provide a detailed method statement for all works prior to commencement on site.

| Rev | Date | Drawn | Description | Ch'k'd |
|---|---|---|---|---|

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Client
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Milton Keynes.

Project
Charlestown Road,
Glossop.

Title
Pedestrian Refuge Island
Construction Details

| Drawn | DB | Checked | SS | Scale |
|---|---|---|---|---|
| Date | Sep 16 | Date | Sep 16 | Not to Scale |

Status: For Approval
Original Size: A1

Drawing No: 12732-5002-37
Rev: -