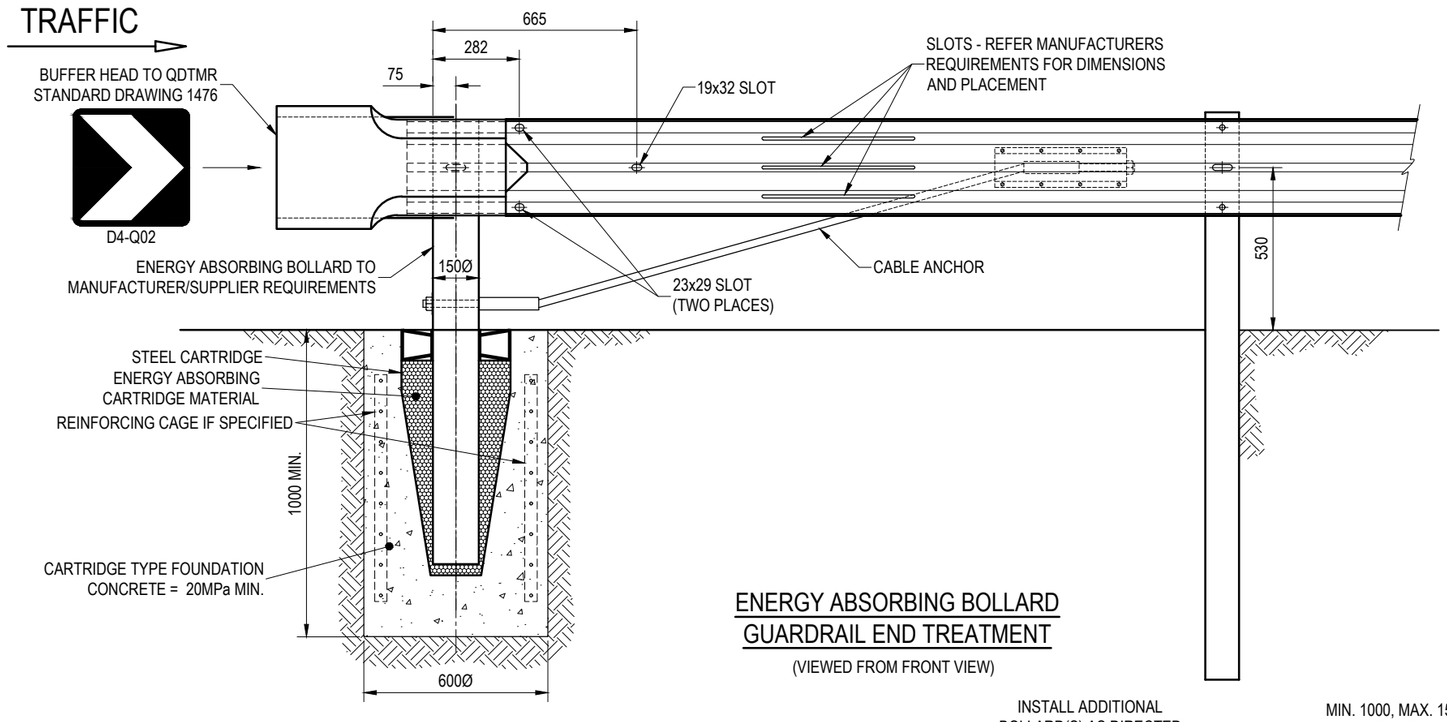
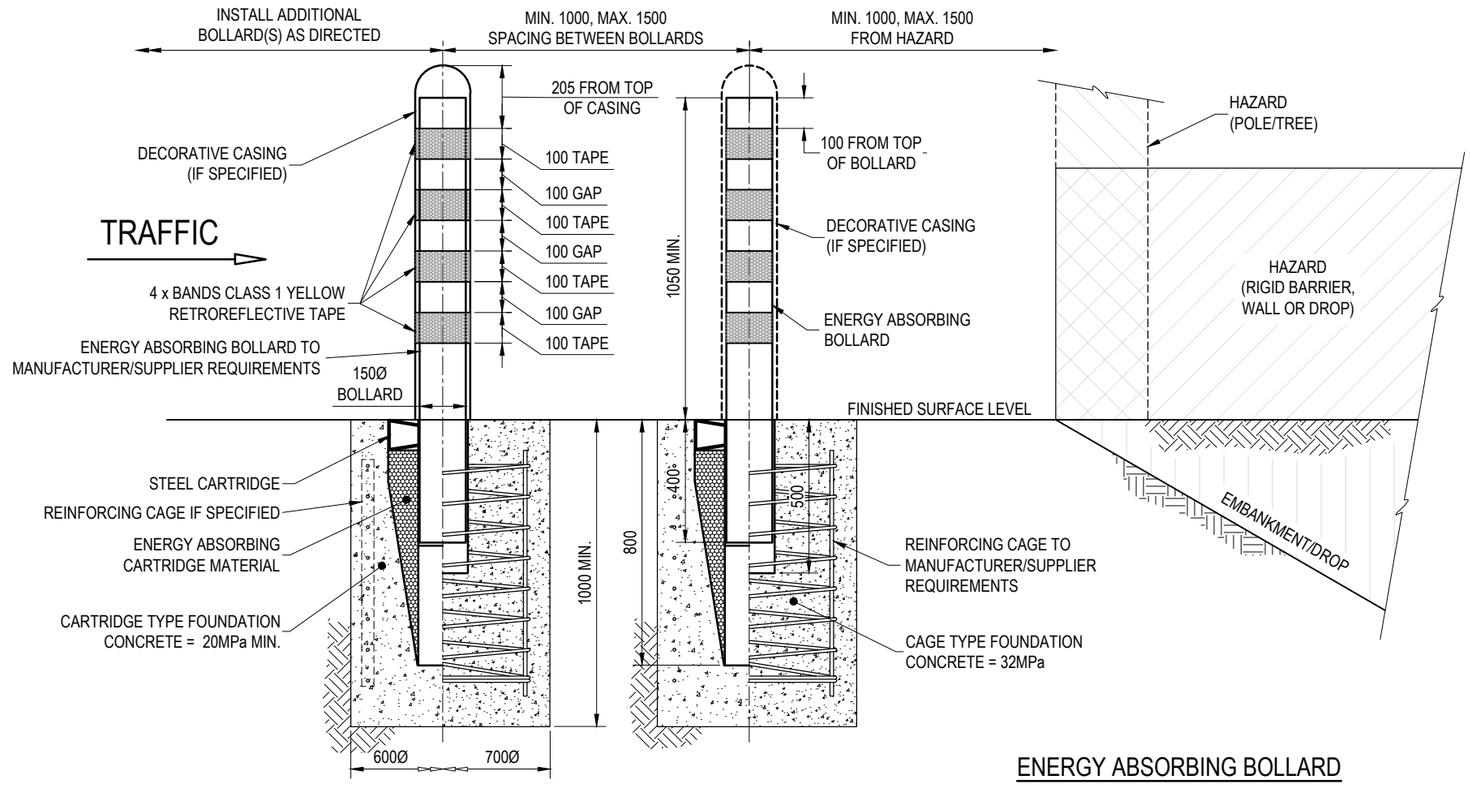


ENERGY ABSORBING BOLLARD
GUARDRAIL END TREATMENT
(VIEWED FROM FRONT VIEW)

NOTE:
ONLY FOR USE ON ROADS WITH A POSTED SPEED LIMIT OF 60kph OR LOWER

NOTES:

1. THE GUARDRAIL END TERMINAL SHALL BE (OR APPROVED EQUIVALENT):
   - ENERGY ABSORBING END TERMINAL, DISTRIBUTED BY ROADSIDE SERVICES & SOLUTIONS ((03) 9722 9075, ops@roadsideservices.net.au, http://www.roadsideservices.net.au)
   - OMNI STOP™ END TERMINAL, DISTRIBUTED BY SAFEROADS AUSTRALIA (1800 060 672, https://www.saferoads.com.au/)
2. HAZARD PROTECTION ENERGY ABSORBING BOLLARD SHALL BE (OR APPROVED EQUIVALENT):
   - ENERGY ABSORBING BOLLARD, DISTRIBUTED BY ROADSIDE SERVICES & SOLUTIONS ((03) 9722 9075, ops@roadsideservices.net.au, http://www.roadsideservices.net.au)
   - OMNI STOP™ SUPER DUTY SECURITY BOLLARD, DISTRIBUTED BY SAFEROADS AUSTRALIA (1800 060 672, https://www.saferoads.com.au/)
3. NONFLARED TERMINAL SHALL INCLUDE ALL POST, RAIL AND HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE END TREATMENT SHALL BE INSTALLED TO MANUFACTURERS AND/OR DISTRIBUTORS REQUIREMENTS.
4. DESIGN TO BE IN ACCORDANCE WITH DESIGN MANUALS AS PROVIDED BY MANUFACTURER/DISTRIBUTOR.
5. FOR URBAN SITUATIONS, BOLLARDS TO BE RATED TO 60kph. APPROPRIATE DOCUMENTATION SHOWING LEVEL OF TESTING TO BE PROVIDED BEFORE BOLLARD/SYSTEM INSTALLATION.
6. SYSTEM TO BE INSTALLED PARALLEL TO TRAVEL WAY.
7. DELINEATOR ON GUARDRAIL END TREATMENT END BUFFER TO HAVE CLASS 1 RETROREFLECTIVE BACKGROUND WITH BLACK NONREFLECTIVE PATTERN. DELINEATOR TO MATCH QUEENSLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN D4-Q02.
8. ENERGY ABSORBING BOLLARD FOR HAZARD PROTECTION EITHER TO BE LEFT PLAIN (GALVANISED FINISHED), PAINTED OR POWDERCOATED, OR INSTALLED WITH SECURED DECORATIVE COVER AS SUPPLIED BY MANUFACTURER.
9. WHERE BOLLARD INSTALLED WITH PAINTED OR POWDERCOATED FINISH OR WITH DECORATIVE COVER, COLOUR IS TO COMPLEMENT SURROUNDING STREETSCAPE. COLOUR SELECTION IN ACCORDANCE WITH STANDARD BCC CORPORATE COLOUR PALETTE - REFER BSD-1003 FOR DETAILS.
10. ENERGY ABSORBING BOLLARDS FOR HAZARD PROTECTION TO HAVE THREE (3) 100mm WIDE BANDS OF CLASS 1 YELLOW RETROREFLECTIVE TAPE AT 100mm SPACING.
11. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).



ENERGY ABSORBING BOLLARD
HAZARD PROTECTION TREATMENT

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Alternative Bollard Type Details Added, Notes 1 & 2 (Supplier Details)	NOV '18	APR '19	APR '19
B	Notes 1 & 2 (Supplier Details) and Note 7 (Reference) Updated	MAY '17	MAY '17	MAY '17
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION
PAUL COTTON SIGNATURE ON ORIGINAL
DATED 21/03/06 R.P.E.Q: 2546
ASSET ENGINEERING MANAGER
STRATEGIC ASSET MANAGEMENT

DESIGN APPROVED
B. HANSEN SIGNATURE ON ORIGINAL
DATED 13/03/06
PRINCIPAL ENGINEER
STRATEGIC ASSET MANAGEMENT

DESIGN	SAFEROADS	DATE	---
DRAWN	CA (DJL)	DATE	FEB '05
CHECKED	CA (GMc)	DATE	NOV '05
DRAWING FILENAME	BSD-7091 (C) Energy absorbing bollard guardrail end terminal & hazard protection.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-133		

BRISBANE CITY

BRISBANE CITY COUNCIL STANDARD DRAWING

ENERGY ABSORBING BOLLARD
GUARDRAIL END TERMINAL
& HAZARD PROTECTION

SCALE: NOT TO SCALE
DWG No.: BSD-7091
ORIGINAL SIZE: A3
REVISION: C