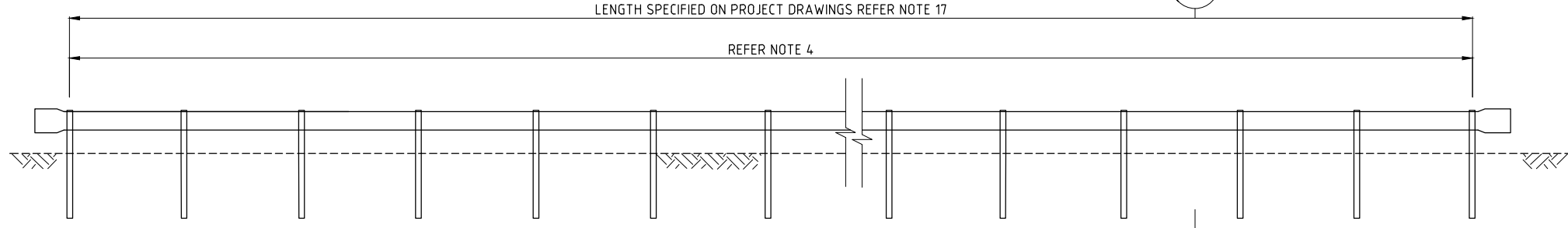
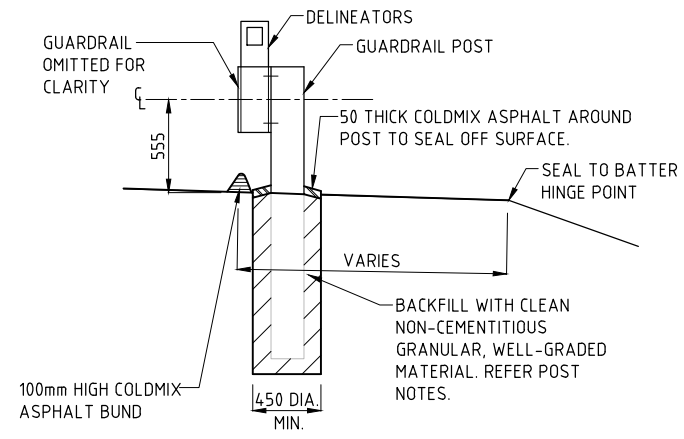


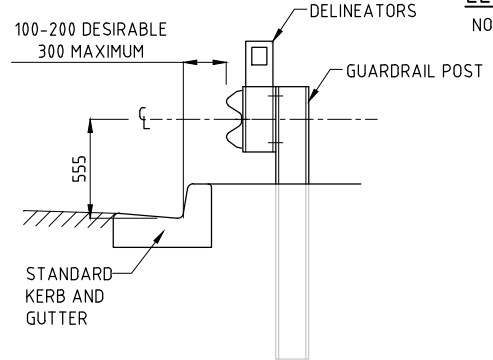
PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE



PREBORED POST
NOT TO SCALE
(SEE NOTES FOR APPLICATION)



GUARDRAIL BEHIND KERB

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- BARRIERS TO BE IN ACCORDANCE WITH AS/NZS 3845.1-2015.
- REFER TO PROJECT DRAWINGS FOR LENGTH, POSITION, OFFSET AND TERMINALS.
- INSTALLATION AND POST SPACING IN ACCORDANCE WITH MANUFACTURES INSTALLATION DRAWINGS OF CRASH TESTED GUARDRAIL IN ACCORDANCE WITH AS 3845.1-2015.
- REFER TO AUSTRROADS GUIDE TO ROAD DESIGN, PART 6, SECTION 6.3 FOR GUARDRAIL OFFSETS FOR URBAN AREAS.
- PROVIDE A FLARED GATING TERMINAL WHERE GUARDRAIL LIES WITHIN THE SHY LINE OFFSET AREA. APPLY FLARE RATE AS PER AUSTRROADS GUIDE TO ROAD DESIGN PART 6.
- IN LINE KINETIC ENERGY ABSORBING TERMINALS MAY BE USED WHERE THE GUARDRAIL IS POSITIONED OUTSIDE OF THE SHY LINE OFFSET AREA OR WHERE THERE IS INSUFFICIENT SPACE FOR A FLARED END GATING TERMINAL. OBTAIN SUPERINTENDENT'S APPROVAL FOR ACCEPTANCE OF ALTERNATIVE TO FLARED END TERMINALS.
- GATING TERMINALS INCLUDE:
 - MODIFIED ECCENTRIC LOADER TERMINAL (MELT)
 - KINETIC ENERGY ABSORBING TERMINALS FOR SPEEDS >70km/hr
- GUARDRAIL LAPS ARE TO BE IN THE DIRECTION OF TRAVEL TO AVOID EXPOSING THE END OF THE RAIL TO ONCOMING VEHICLES.
- GUARDRAIL DELINEATORS SHALL BE PROVIDED WITH RED AND WHITE "CLASS 1A" RETROREFLECTIVE SHEETING OR AS DOUBLE SIDED REFLECTORS IN ACCORDANCE WITH AS/NZS 1906.2-2007. USE YELLOW DELINEATORS ON RIGHT HAND SIDE ON ONE WAY TRAFFIC ROADS. RETROREFLECTIVE AREA SHALL BE 100cm² AND NO LESS THAN 60mm WIDE. DELINEATORS ARE TO BE BOLTED TO THE BLOCK OUT PIECES OR TO THE POSTS WHERE BLOCK OUTS ARE NOT USED. THE TOP OF THE DELINEATOR SHALL BE 220mm ABOVE THE TOP OF THE GUARDRAIL SO THAT THE APPROACHING DRIVER ALWAYS SEES RED ON HIS LEFT AND WHITE ON HIS RIGHT HAND SIDE. PLACE AT EACH END AND AT 12m CENTRES.
- ALL STEELWORK SHALL BE HOT DIP GALVANISED AFTER FABRICATION OF ALL WELDED COMPONENTS TO AS 4680-2006.
- ALL CONCRETE SHALL BE N25 IN ACCORDANCE WITH AS 3600-2009.
- DETAILS NOT SPECIFICALLY SHOWN ON THIS DRAWING SHALL BE TO AS 3845.1-2015 UNLESS NOTED OTHERWISE.
- TIGHTENING OF NUTS: NUTS FOR SLIP BASE PLATES TO BE TIGHTENED TO 25Nm. NUT TO CABLE ASSEMBLIES TO BE TIGHTENED SO THERE IS NO SLACK IN THE CABLE. ALL OTHER NUTS SHALL BE SNUG TIGHT TO AS 4100-1998.

- FLAME CUTTING OF GALVANISED POST OR RAIL IS NOT PERMITTED.
- THE MINIMUM INSTALLED LENGTH OF W BEAM BARRIER SHALL INCLUDE:
 - A GATING TERMINAL AT BOTH ENDS FOR A TWO WAY CARRIAGEWAY, OR
 - A GATING TERMINAL AT THE APPROACH END AND ONE WAY DEPARTURE TREATMENT ON THEIR DEPARTING END.
 - AND 12m STRAIGHT GUARD RAIL.

GUARD-RAIL ALIGNMENT:

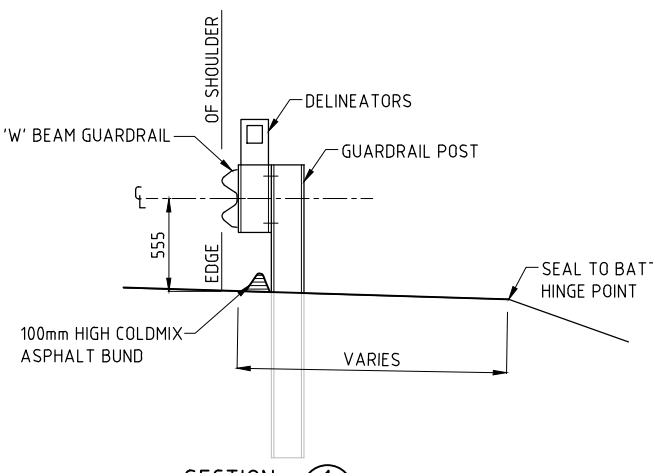
- OBTAIN THE SUPERINTENDENT'S APPROVAL FOR POST SETOUT DIMENSIONS AND ALIGNMENT.
- OFFSET NOMINALLY 1250mm. HOWEVER THE OFFSET MAY VARY DEPENDENT ON MANUFACTURES APPLIED FLARE RATE. THE DISTANCE IS FROM THE OUTSIDE EDGE OF SHOULDER TO THE BULLNOSE, NOT FROM THE EDGE OF THE TRAFFIC LANE.

POSTS:

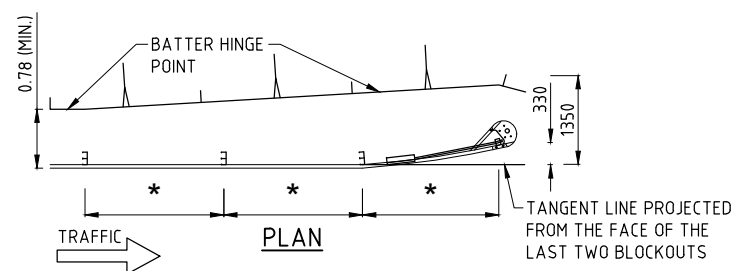
- POSTS MAY BE DRIVEN INTO THE GROUND PROVIDED THIS CAN BE ACHIEVED WITHOUT DAMAGE TO THE POST.
- POSTS THAT ARE OUT OF VERTICAL BY MORE THAN 20mm OVER THE PROJECTING LENGTH, OR MORE THAN 25mm OUT OF POSITION, SHALL BE REMOVED AND RE-INSTALLED IN 450mm DIAMETRE HOLES AS PER THE DETAIL ON THIS SHEET.
- PREBORE 450mm DIAMETRE HOLES FOR POSTS THAT ARE TO BE INSTALLED THROUGH (A) CONCRETE SLAB OR MARGIN, (B) VERY STIFF OR HARD CLAY, (C) LOOSE SAND, (D) BOUND (STABILISED) PAVEMENT, OR (E) DEEP LIFT ASPHALT PAVEMENT, CENTRALISE THE POSTS IN THE HOLE AND BACKFILL USING CLEAN, WELL-GRADED, NON-CEMENTITIOUS, GRANULAR MATERIAL.
- COMPACT THE BACKFILL SUCH THAT (A) IT DOES NOT SETTLE DURING WET-SEASON SERVICE AND (B) THE POST DOES NOT MOVE MORE THAN 3mm AT ROUND LEVEL UNDER THE ACTION OF A 1kN LOAD APPLIED 200mm FROM THE TOP OF THE POST IN ANY DIRECTION.
- THE COMPACTED HOLE SHALL CONFORM TO THE DETAIL ON THIS SHEET ON FLOODWAYS OR WITHIN CONCRETE MARGINS, BACKFILL THE TOP 50mm OF THE HOLE WITH COLD-MIX ASPHALT AS INDICATED ON THE DETAIL.

SEALING:

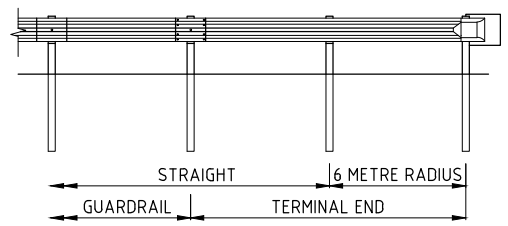
- THE WIDTH OF SEAL SHALL EXTEND BEHIND THE GUARDRAIL AS SHOWN AT SECTION 1, FOR THE FULL LENGTH AND ENCOMPASS THE BULL NOSE.



SECTION 1
NOT TO SCALE



PLAN



ELEVATION

ONE WAY TRAFFIC DEPARTURE END TREATMENT
(APPROACH END SAME AS TWO WAY TRAFFIC)

| No. | DESCRIPTION | DATE | NAME | DEPT/COMPANY |
|------------|------------------------------|-----------|----------|--------------|
| 1 | DETAILS AND NOTES UPDATED | DEC 2017 | J.LEESON | EES/DIPL |
| 0 | ISSUED AS A STANDARD DRAWING | SEPT 2017 | J.LEESON | EES/DIPL |
| AMENDMENTS | | | | |

WARNING
BEWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

| | |
|--------------------------|------------------------------|
| DRAWN J.LEESON | CHECKED S.HATZI |
| DATE JULY 2017 | DATE JULY 2017 |
| DESIGNED | CHECKED |
| DATE | DATE |
| DESIGN LEADER S.HATZI | DESIGN DIRECTOR S.JACKSON |
| DATE 1/09/2017 | DATE 1/09/2017 |



| | | | |
|--------------------------------------|-----------|--|-------------|
| STANDARD DRAWINGS SAFETY BARRIERS | | STEEL BEAM GUARDRAIL (WITH FLARED TERMINALS) | |
| FILE No. | ASSET No. | SHEET No. | DRAWING No. |
| - | - | 1 OF 1 | CS3200 |
| AMEND. | | SHEET SIZE | |
| 1 | | A1 | |