

# STANDARD DRAWINGS

## ROADS

## STORMWATER DRAINAGE

NUMBER	TITLE
SD-R 01	RURAL ROAD - 7M SEALED ROAD TYPICAL CROSS SECTION
SD-R 02	URBAN ROAD - TYPICAL CROSS SECTION
SD-R 03	BICYCLE PATH AND HOLDING RAIL
SD-R 04	STANDARD FOOTPATH 1.2M WIDE
SD-R 05	KERB & GUTTER
SD-R 06	VEHICULAR DRIVEWAY PROFILES
SD-R 07	VEHICLE CROSSING PLAN RESIDENTIAL AND INDUSTRIAL
SD-R 08	STANDARD ALLOCATION FOR PUBLIC UTILITIES IN FOOTPATH
SD-R 09	KERB OUTLET
SD-R 10 A & B	KERB RAMPS
SD-R 11	STREET NAME PLATE & POST
SD-R 12	RURAL ACCESS OFF A PUBLIC ROAD
SD-R 13	TRENCH BACKFILL DETAILS FOR ROAD CROSSING

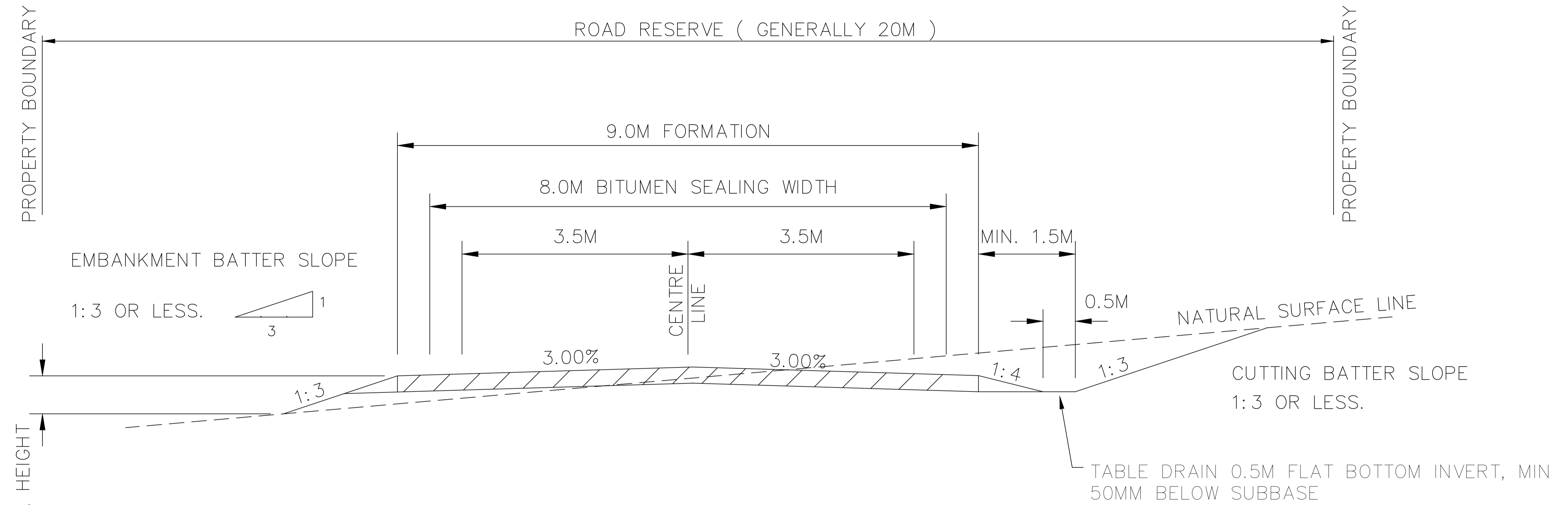
NUMBER	TITLE
SD-D 01	SIDE ENTRY PIT - NO EXTENDED CHAMBER PIT
SD-D 02	JUNCTION PIT
SD-D 03	DRAINAGE CONNECTIONS - MINOR
SD-D 04	SURFACE INLET PIT
SD-D 05 A,B,C	KERB INLET PIT WITH GRATE - EXTENDED CHAMBER PIT
SD-D 06	INTERLOT DRAINAGE CONNECTIONS
SD-D 07	STANDARD CONCRETE HEAD WALL 300-900mm
SD-D 08	PRECAST BOXCULVERTS (EXCAVATION, BEDDING & BACKFILLING)
SD-D 09	MASS CONCRETE WINGWALL
SD-D 10	MASS CONCRETE WINGWALL QUANTITIES
SD-D 11	STEP IRON DETAILS
SD-D 12 A,B	GRASS LINED CHANNEL - OUTLET DETAILS
SD-D 13	SWALE FOOTPATH CROSSING
SD-D 14	SWALE DRIVEWAY PROFILES
SD-D 15	SWALE STABILISED SITE ACCESS
SD-D 16	RAIN GARDEN

## WATER SUPPLY

NUMBER	TITLE
SD-W 01	TYPICAL 20-25MM WATER METER ASSEMBLY ARRANGEMENT



CIVIC CENTRE 184-194 BOURKE STREET, GOULBURN, NSW - 2580.  
 LOCKED BAG 22, GOULBURN, NSW - 2580.  
 PHONE: (02) 4823 4444. FAX: (02) 4823 4456.



NOTES:

1. THIS ONLY INDICATES ONE ROAD WIDTH. DIFFERENT RURAL ROAD WIDTHS HAVE SIMILAR ARRANGEMENTS. REFER TO DESIGN SPECIFICATION DECTION D1
2. TABLE DRAIN WITH LONGITUDINAL GRADE BETWEEN 0% AND 5.0% TO BE UNLINED. TABLE DRAINS STEEPER THAN 5.0% BUT NOT STEEPER THAN 10.0% SHALL BE LINED WITH BITUMEN AND JUTEMESH (OR SIMILAR). TABLE DRAINS STEEPER THAN 10% SHALL BE LINED WITH PERMANENT IMPERVIOUS LINING.
3. ROADSIDE SAFETY BARRIER TO BE INSTALLED IF BATTER FILL HEIGHT IS 4.0M OR GREATER. REFER TO AUSTRROADS PART 6 ROADSIDE DESIGN SAFETY & BARRIERS SECTION 6.3
4. BATTER AND EMBANKMENT SLOPES CAN BE STEEPER THAN INDICATED SUBJECT TO GEOTECHNICAL ANALYSIS, AND ANY NECESSARY STABILISING WORKS. A LONGER MAINTENANCE PERIOD WOULD APPLY IN THIS INSTANCE

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, LANE WIDTH CHANGED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/04/2009	VARIOUS CHANGES (I.ALDRIDGE JANUARY 2018)
DESIGN REVIEWED	P.SMART	14/04/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS  
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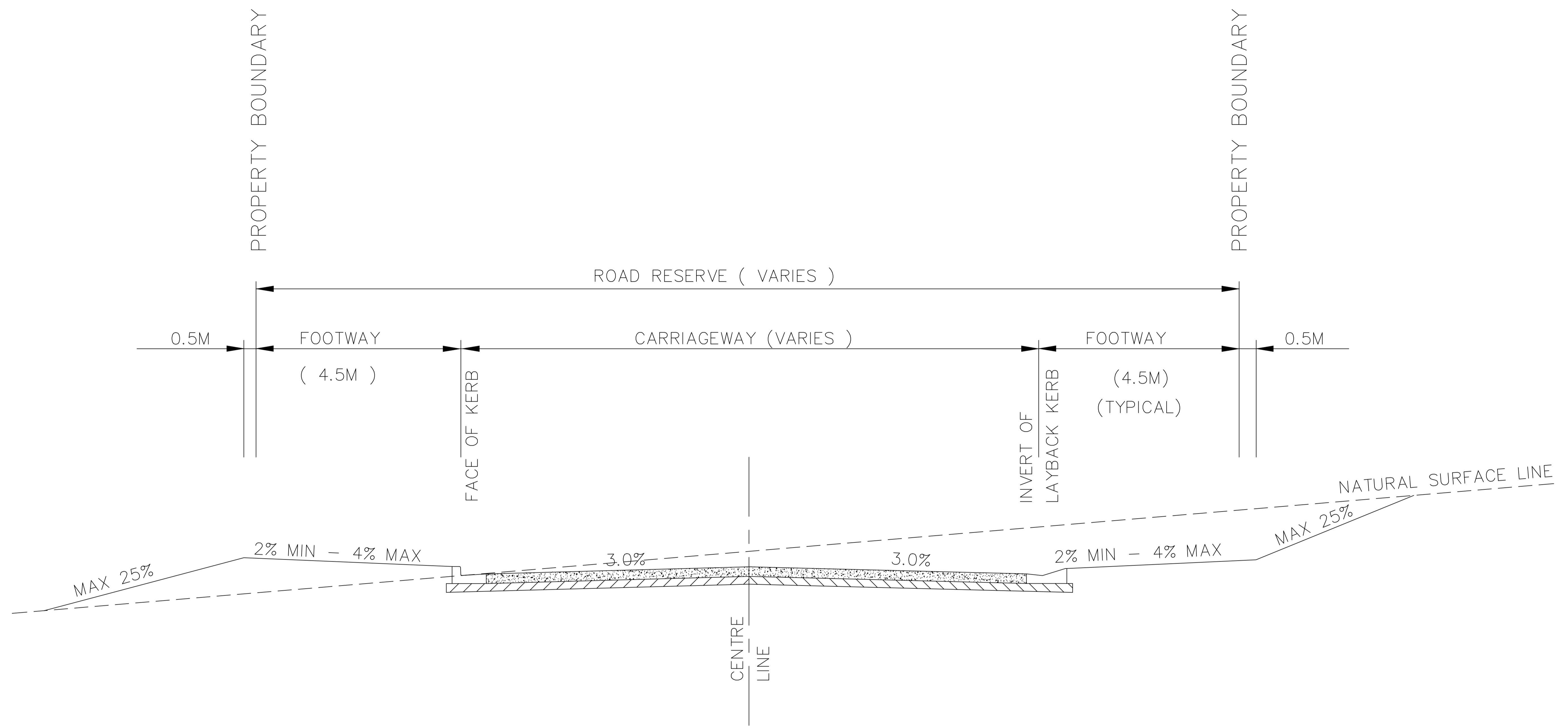
**APPROVED**  
  
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
 DATE: 28/02/2018

**RURAL ROAD**  
**8 METRE SEALED ROAD**  
**TYPICAL CROSS SECTION**

**SAFETY FIRST**  
 PERSONAL PROTECTIVE EQUIPMENT  
 MUST BE WORN ON SITE  
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 1
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-R 01</b>		

DRAWING NUMBER SD-R 01



INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/04/2009	VARIOUS CHANGES MADE (I.ALDRIDGE JANUARY 2018)
DESIGN REVIEWED	P.SMART	14/04/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
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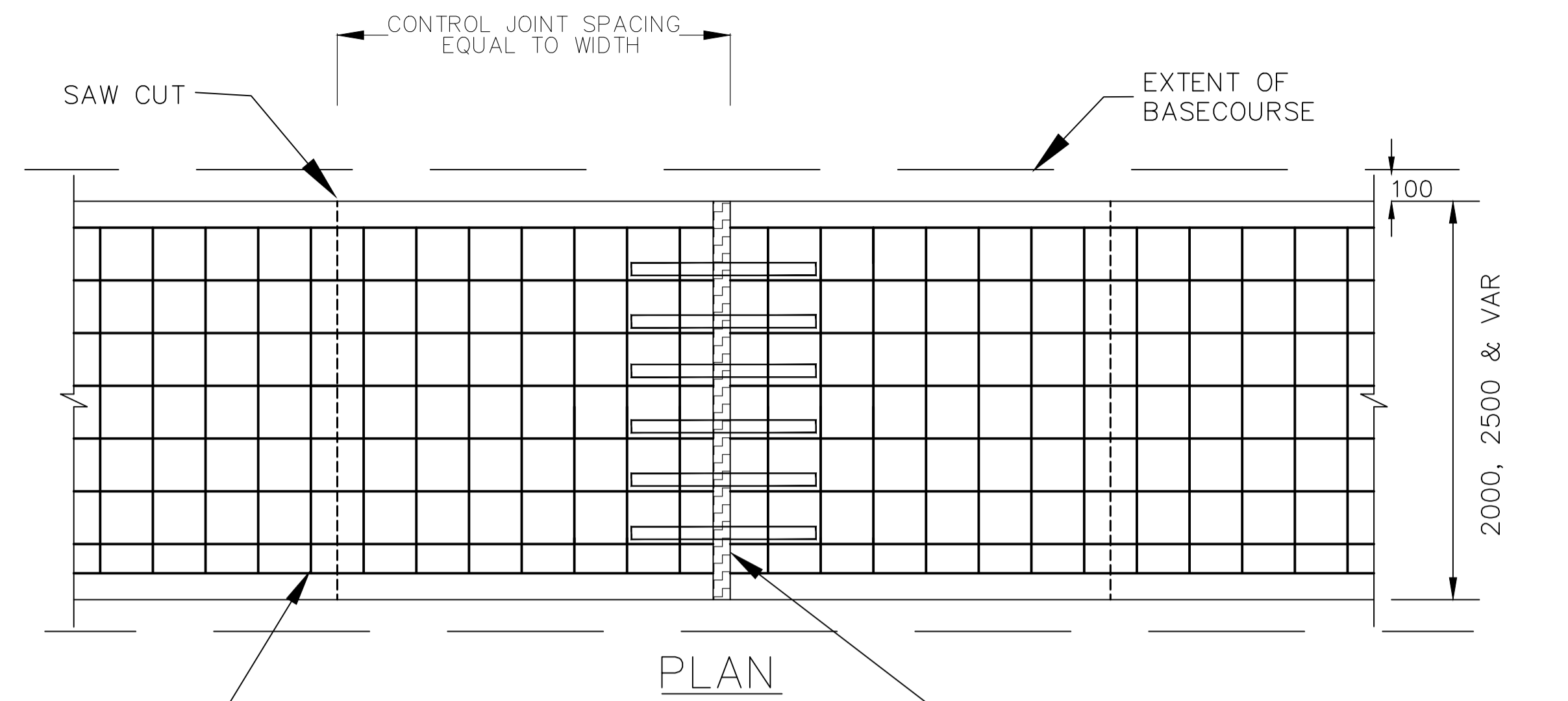
**APPROVED**  
  
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
 DATE: 28/02/2018

**URBAN ROAD**  
**TYPICAL CROSS SECTION**

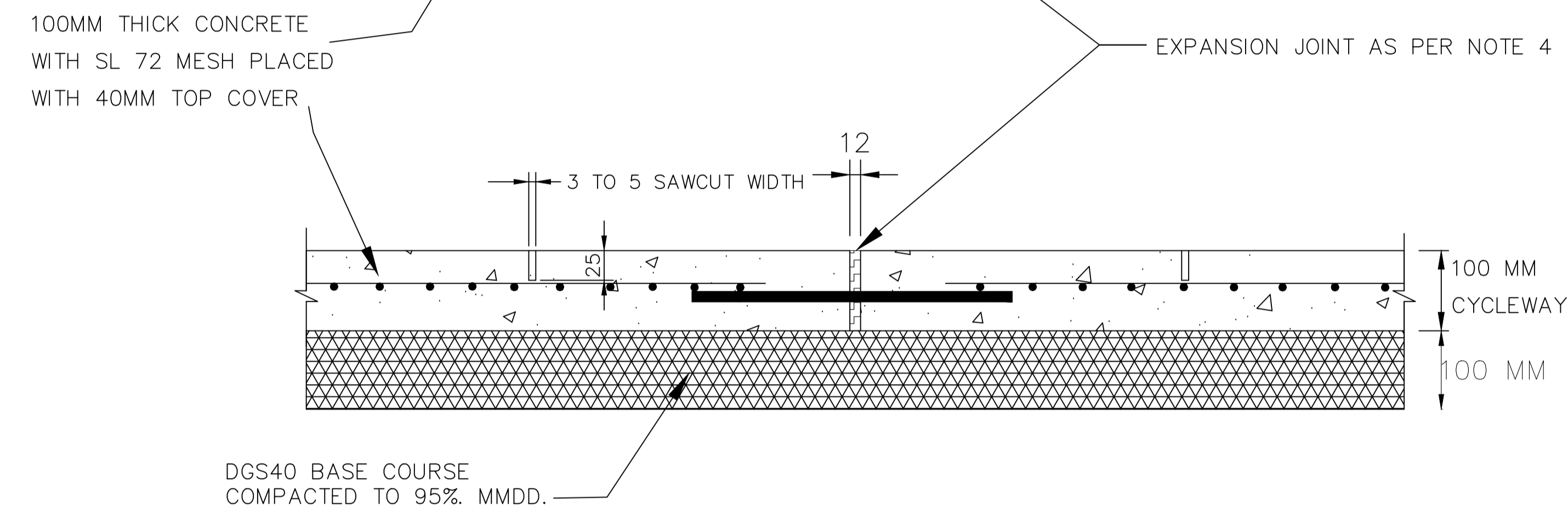
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 2
FILE NAME: STNADARD DRAWINGS.DWG	<b>SD-R 02</b>	
REVISION GMC-VER-1		
RD: -/-/-		

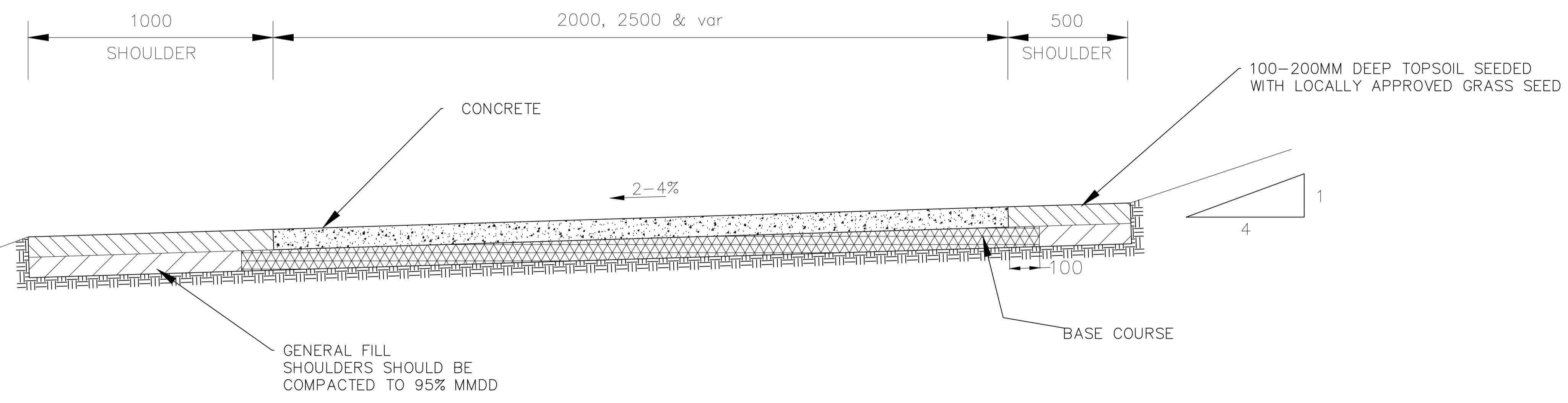




PLAN



LONG SECTION



CROSS SECTION

**NOTES:**

1. CONCRETE TO BE MINIMUM COMPRESSIVE STRENGTH OF 32MPA AT 28 DAYS.
2. ANY VARIATIONS TO STANDARD CROSSFALL 2.0% - 4% ON PATH SHALL REQUIRE THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
3. CONCRETE TO HAVE A BROOM FINISH AND HIGHLIGHTED EDGE WITH A WIDTH OF 100MM
4. DANLEY KEYJOINT EXPANDA PROPRIETARY SYSTEM TO BE PLACED AT 12 M MAX SPACING INSTALLED AS PER MANUFACTURER SPECIFICATION
5. SAWCUT CONTROL JOINTS 25MM DEEP AT INTERVALS TO MATCH WIDTH OF PATH (SQUARES) WITHIN 24 HOURS OF FINISHING CONCRETE. CONTROL JOINTS TO BE SQUARE WITH SIDE OF PATH
6. REINFORCING MESH TO OVER LAP BY 2 TRANSVERSE BARS.
7. SUBGRADE TO BE SOUND AND COMPACTED. PROOF ROLL SUBGRADE TO 200 BEYOND CONCRETE EDGE. 3 PASSES WITH A CC10 ROLLER (OR EQUIVALENT). NO DEFLECTION ON LAST PASS. UNSUITABLE MATERIAL TO BE REMOVED AND REPLACED WITH APPROVED FILL
8. DGS40 BASE COARSE TO BE USED. BASE COARSE MUST BE COMPACTED TO 95% MMDD AND EXTEND 100 MM PAST FORM WORK.
9. FOR CONCRETE FOOTPATHS WHERE VEHICULAR TRAFFIC IS LIKELY TO CROSS THE PATH, THE FOOTPATH IS TO BE DESIGNED AS A VEHICULAR CROSSING - REFER SD-R 07
10. ALL CONSTRUCTION TO COMPLY WITH THE REQUIREMENTS OF AS 3600, CONCRETE CODE
11. CONCRETE PATHS SHALL BE APPROPRIATELY CURED.
12. ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED.

**FOOTPATH REINSTATEMENT:**

WHEN A CONCRETE PATH IS TO BE AFFECTED WHEREBY PARTIAL REMOVAL IS PROPOSED (eg UNDERGROUND UTILITY INSTALLATION) THE CONCRETE PATH IS TO BE REMOVED AND REPLACED IN WHOLE SLABS UPON INSTALLATION OF UTILITY.

WHEN REPLACING SECTIONS OF FOOTPATH OR POURING NEW FOOTPATH ABUTTING ON EXISTING PATH THE NEW CONCRETE MUST BE DOWELED INTO THE ADJOINING PATH

ALL BATTERS TO BE 1 IN 4 UNLESS OTHERWISE APPROVED

ALL DISTURBED AREAS TO BE REINSTATED AND SEEDED

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I ALDRIDGE 2012)
DESIGNED & DRAFTED	A.SINGH	15/12/2020	HOLDING RAIL DETAILS ADDED (I ALDRIDGE 2013)
DESIGN REVIEWED	MW.MORLEY	15/12/2020	FULL REVISION (A.Singh 2020)
FINAL DESIGN CHECKED	M.O'ROURKE	06/01/2021	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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**APPROVED**

*[Signature]*

DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS

DATE: 06/01/2021

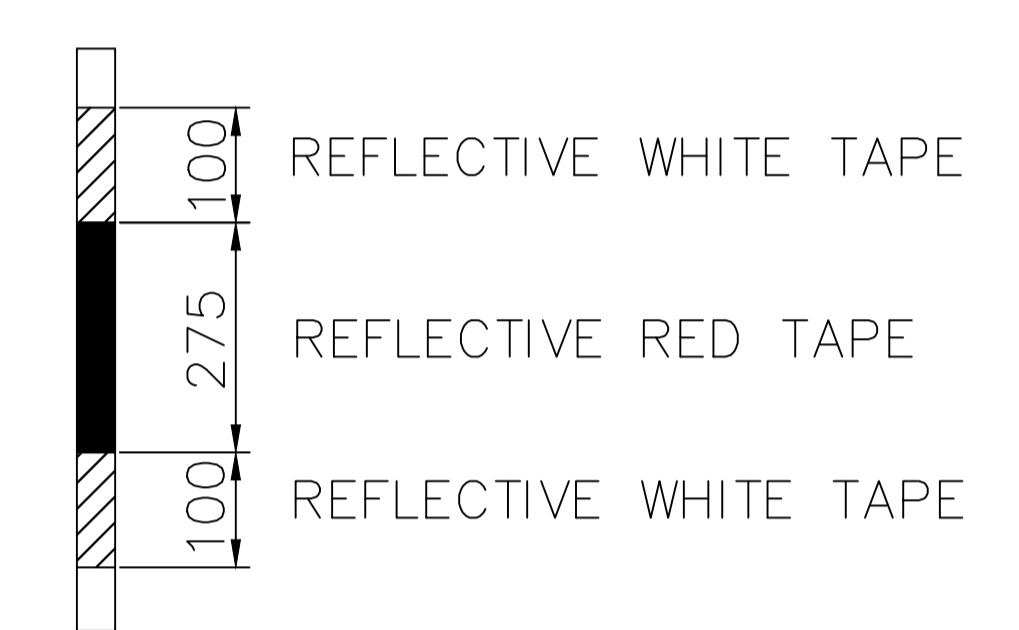
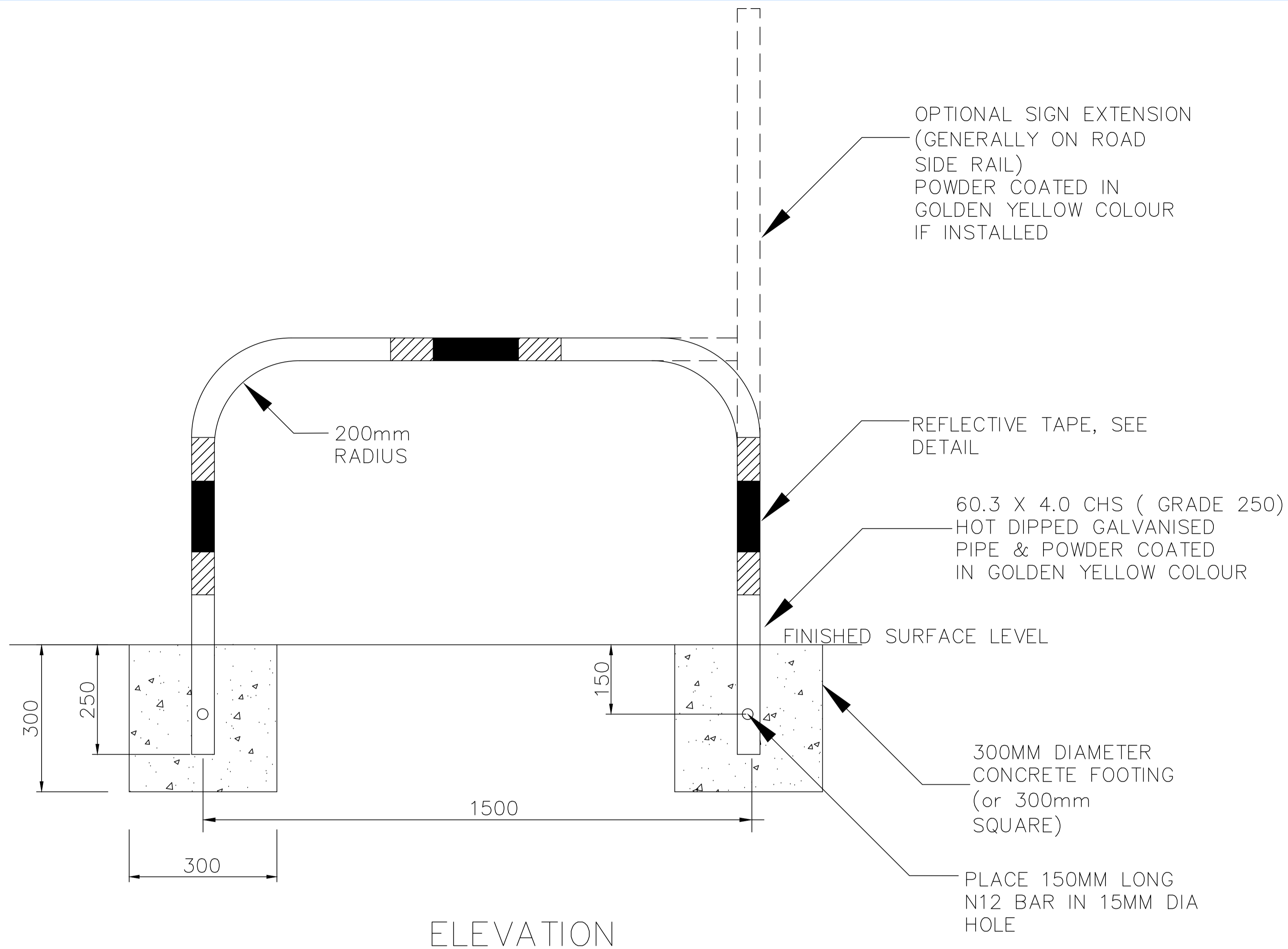
**SHARED PATH /BICYCLE PATH & HOLDING RAIL**

**SAFETY FIRST**  
 PERSONAL PROTECTIVE EQUIPMENT  
 MUST BE WORN ON SITE

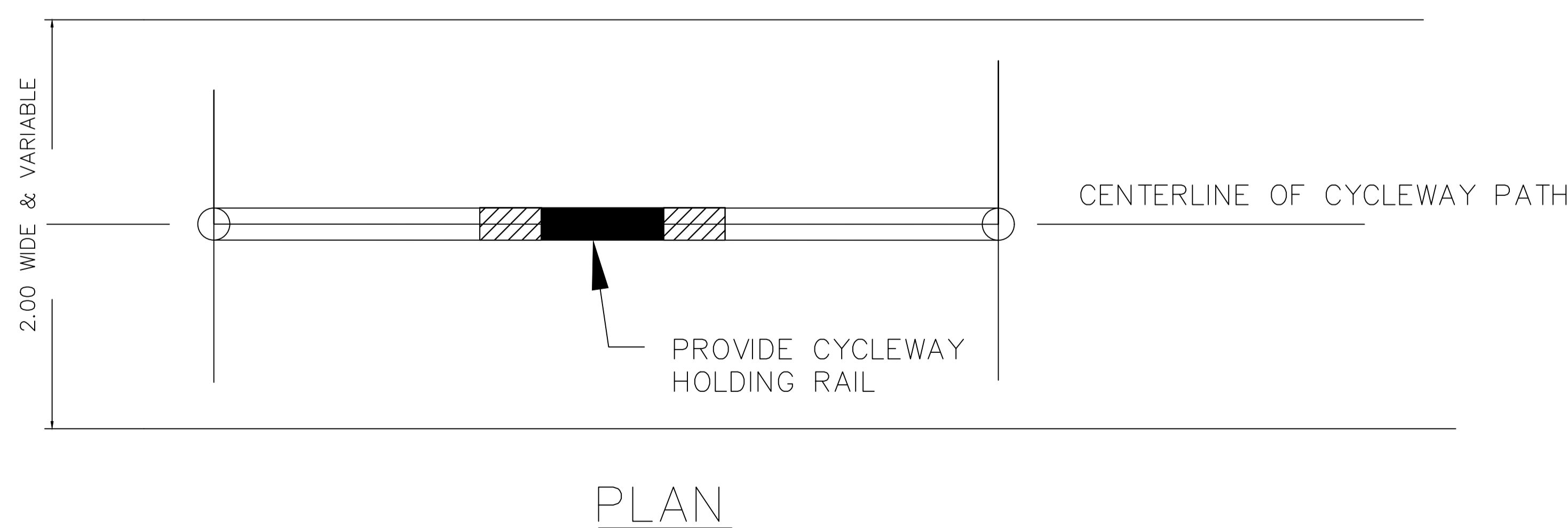
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 3
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-R 03</b>		



REFLECTIVE TAPE DETAIL



NOTE:  
CONCRETE TO BE 25 MPA AT 28DAYS

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	T.DIMEC	10/02/2009	HOLDING RAIL DETAILS ADDED (I.ALDRIDGE 2013)
DESIGN REVIEWED	T.DIMEC	10/02/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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*[Signature]*  
 DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS

DATE: 28/02/2018

**SHARED PATH/BICYCLE PATH & HOLDING RAIL**

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A1 - SCALE AS SHOWN  
 NUMBER OF SHEETS 34  
 SHEET NUMBER 3

FILE NAME: STANDARD DRAWINGS.DWG

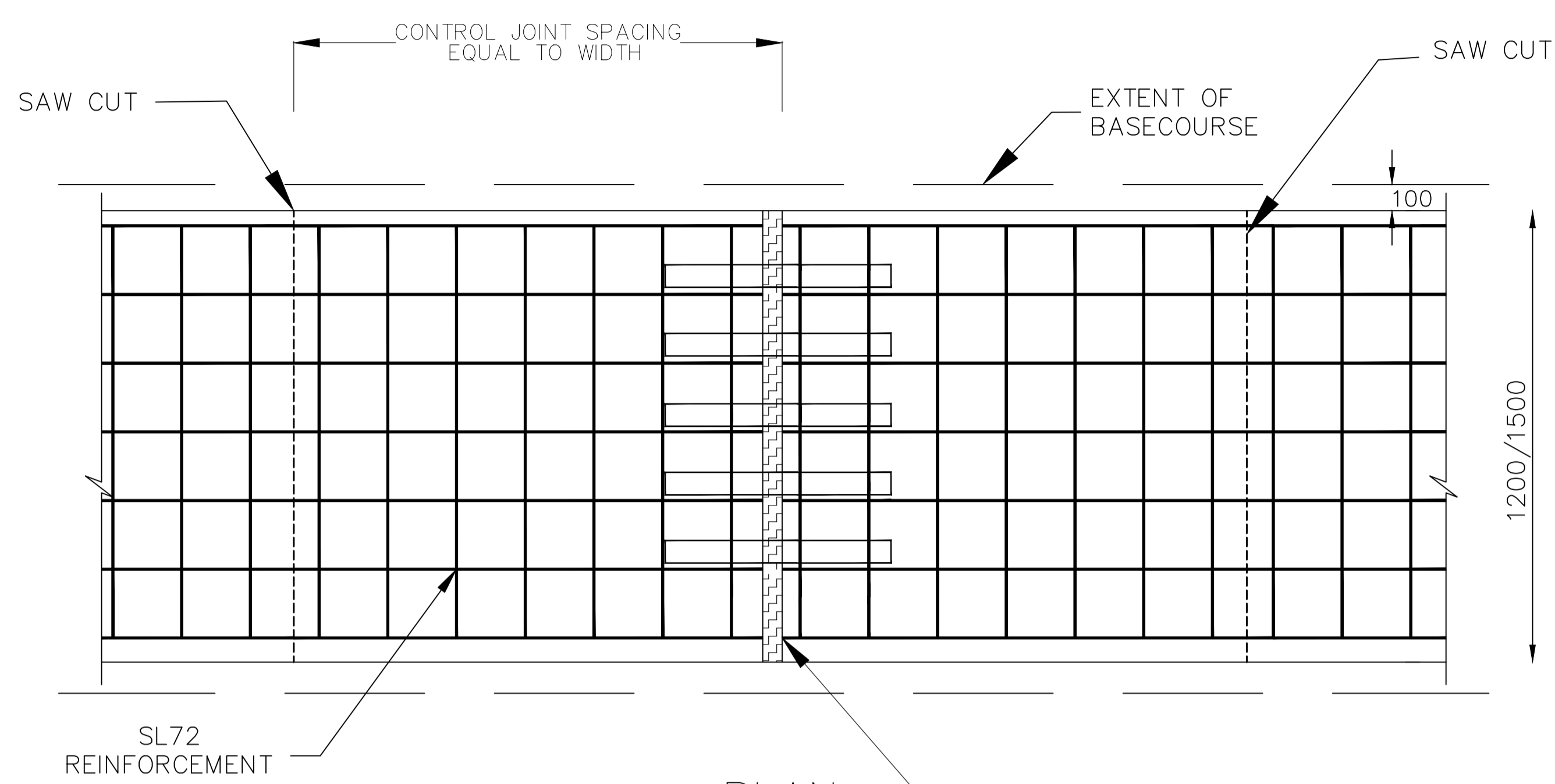
REVISION  
 GMC-VER-1

**SD-R 03**

RD: -/-/-/-/-

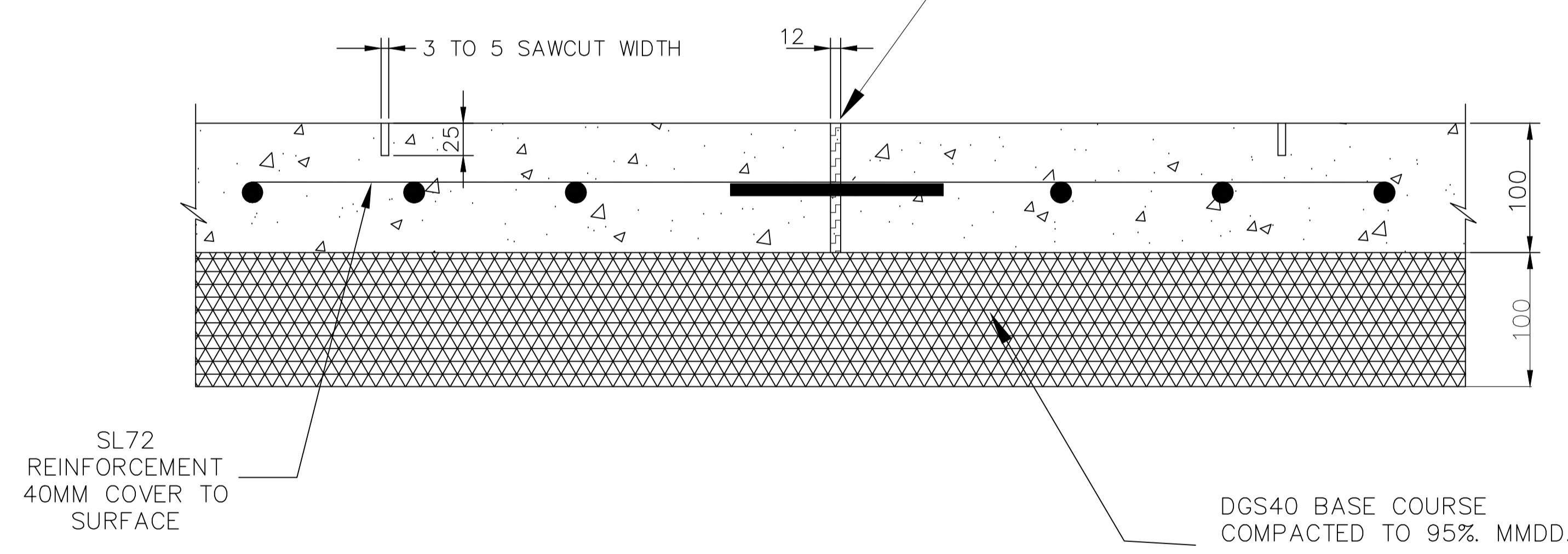
DRAWING NUMBER SD-R 03





PLAN

EXPANSION JOINT AS PER NOTE 4



LONG SECTION

NOTES:

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SURVEYED			NOTES CHANGED/ADDED (I ALDRIDGE 2012)
DESIGNED & DRAFTED	A.SINGH	15/12/2020	NOTES CHANGED/ADDED (I ALDRIDGE MARCH 2017)
DESIGN REVIEWED	MW.MORLEY	15/12/2020	FULL REVISION (A.Singh 2020)
FINAL DESIGN CHECKED	M.O'ROURKE	06/01/2021	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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*[Signature]*

DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 06/01/2021

**STANDARD FOOTPATH**

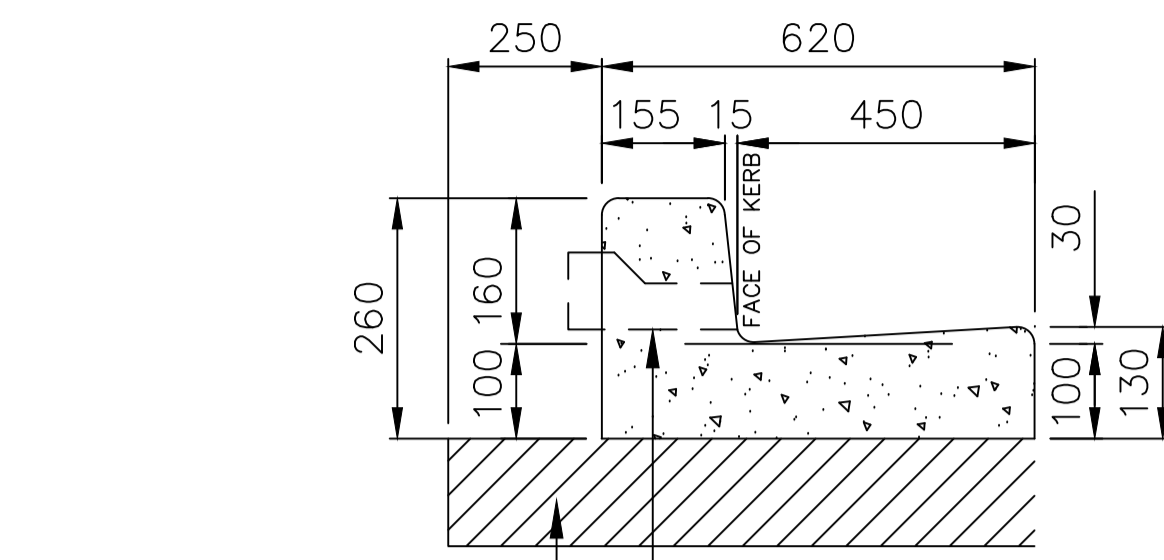
**1.2M WIDE**

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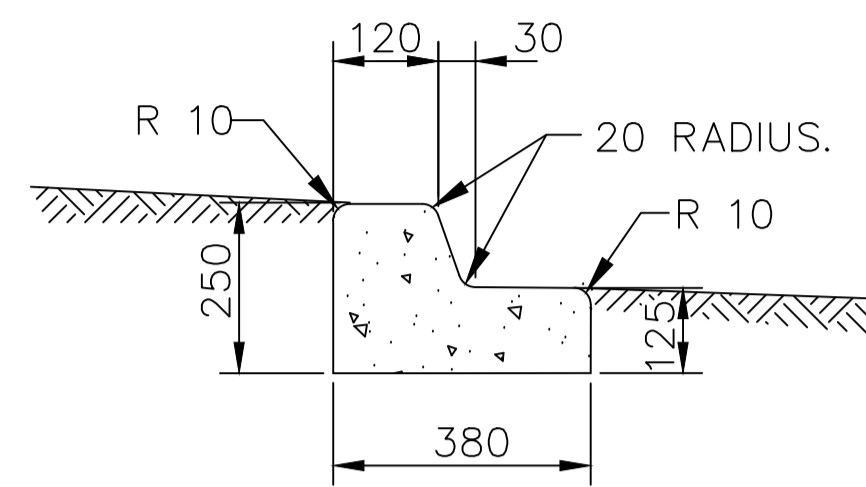
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 4
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	<b>SD-R 04</b>

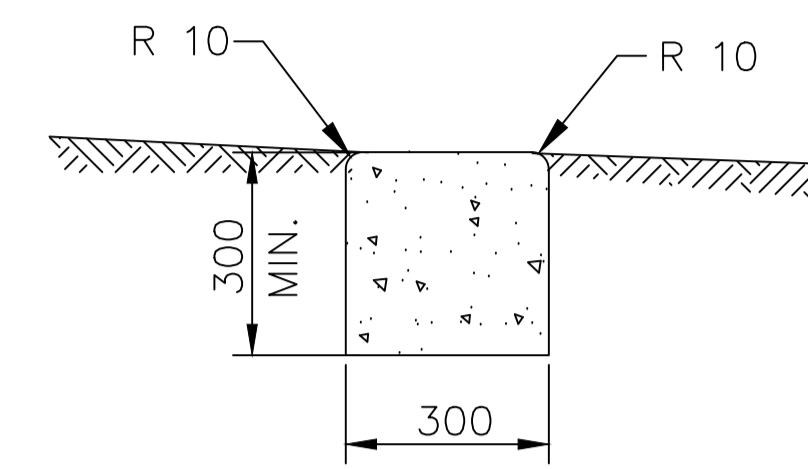


GRAVEL PAVEMENT DEPTH AS SPECIFIED  
DRAINAGE HOLE WHERE SPECIFIED TO BE LINED WITH A UPVC DOWN PIPE ADAPTOR EXTENDING FROM KERB FACE TO 50MM BEHIND BACK OF KERB.

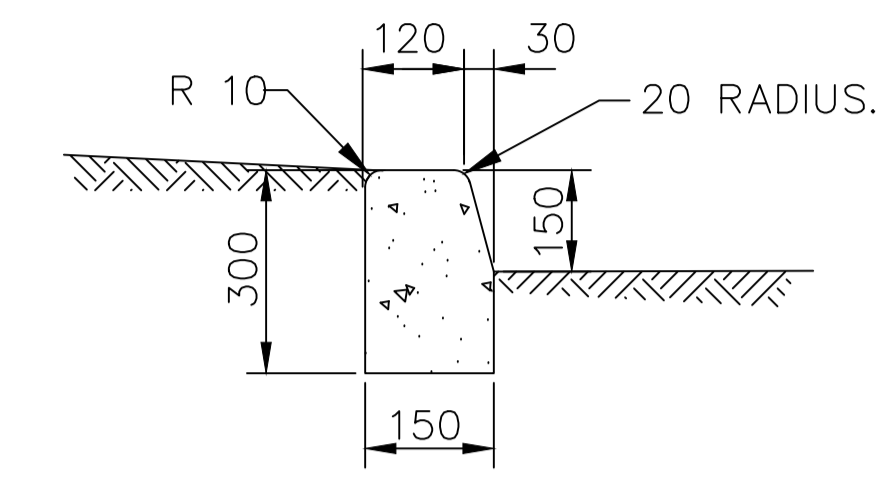
BARRIER KERB AND GUTTER



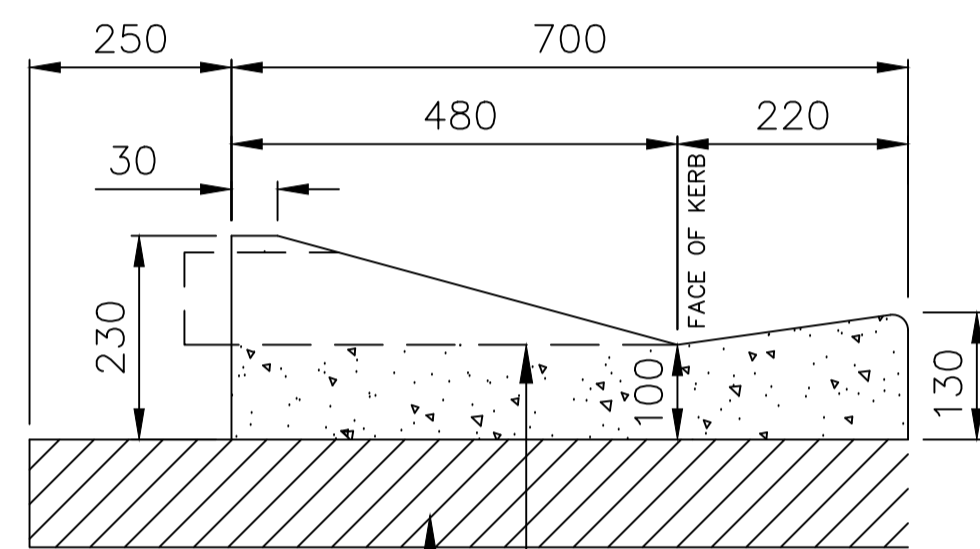
KERB WITH TOE



EDGE STRIP

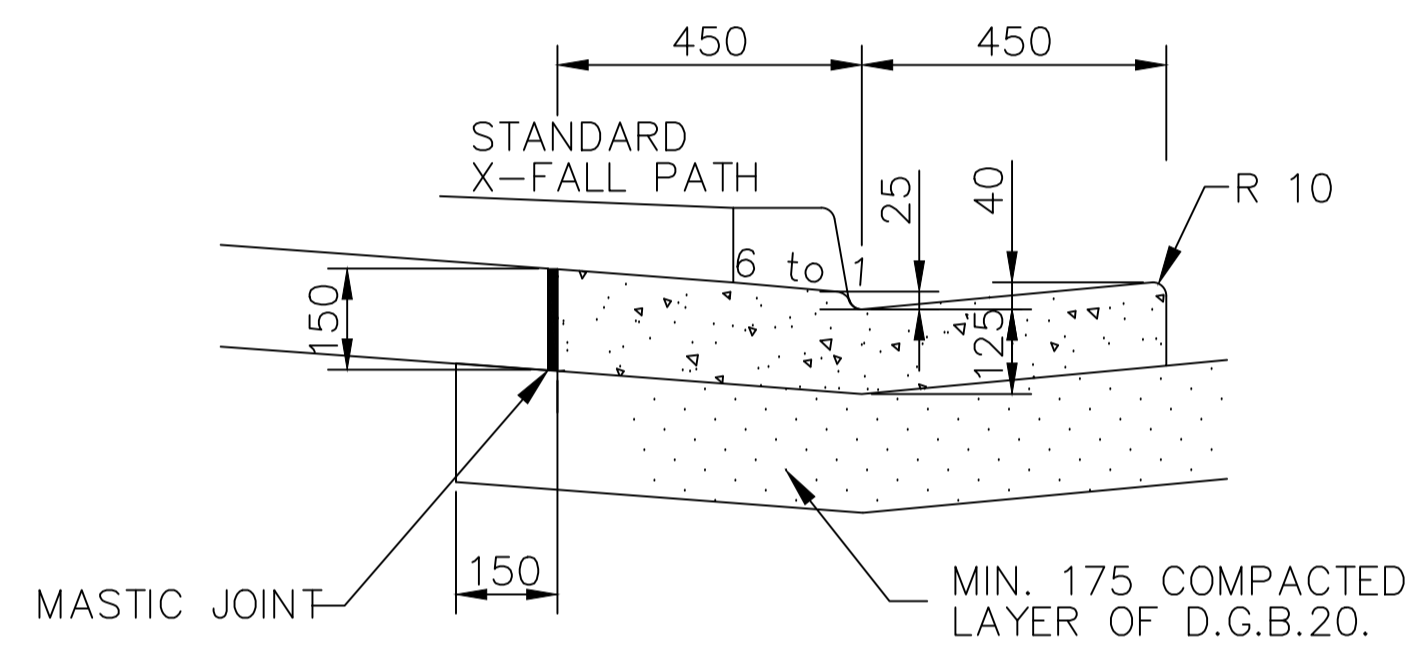


KERB ONLY

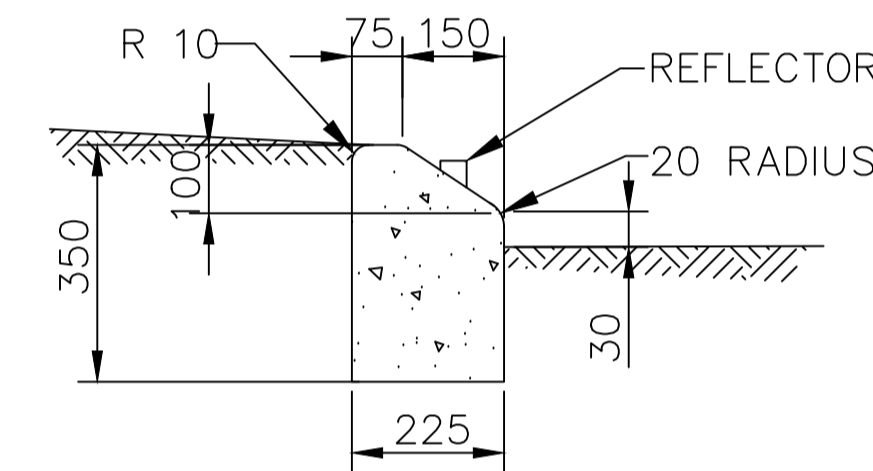


GRAVEL PAVEMENT DEPTH AS SPECIFIED  
DRAINAGE HOLE WHERE SPECIFIED ("C & E" UPVC HEAVY DUTY STORMWATER KERB ADAPTOR OR SIMILAR)

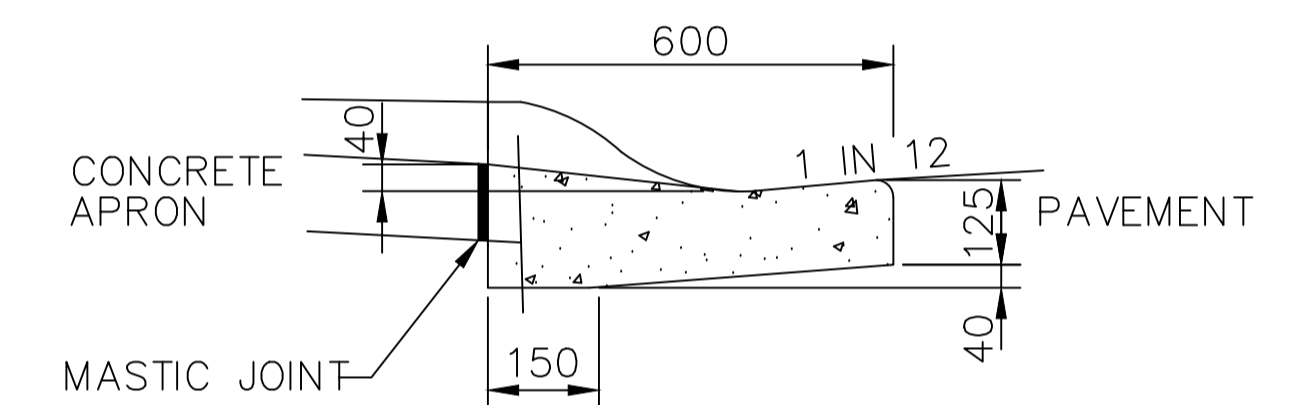
LAYBACK KERB



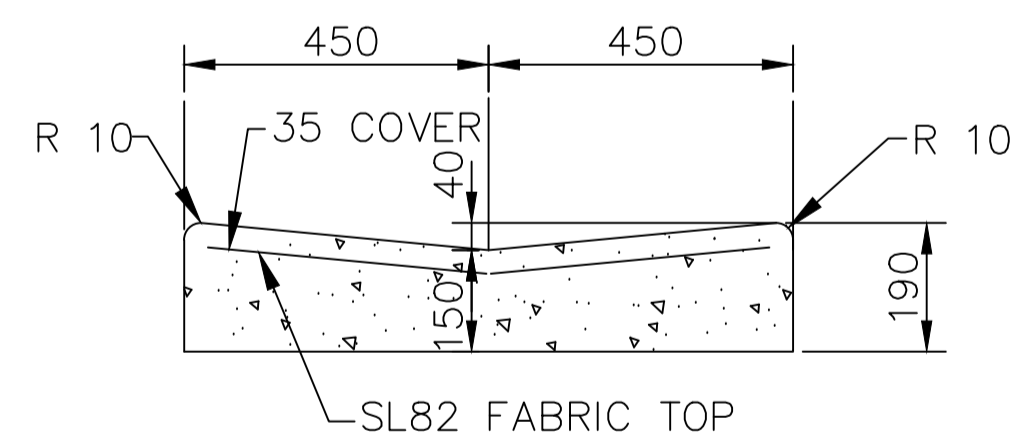
RESIDENTIAL LAYBACK



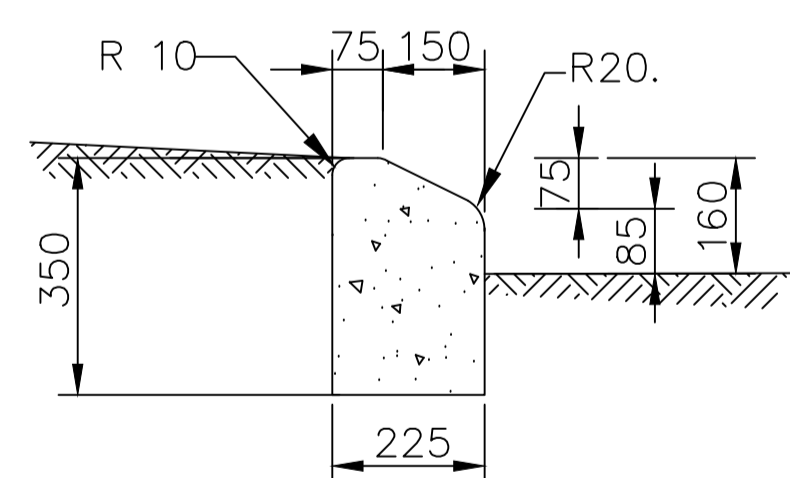
MEDIAN KERB



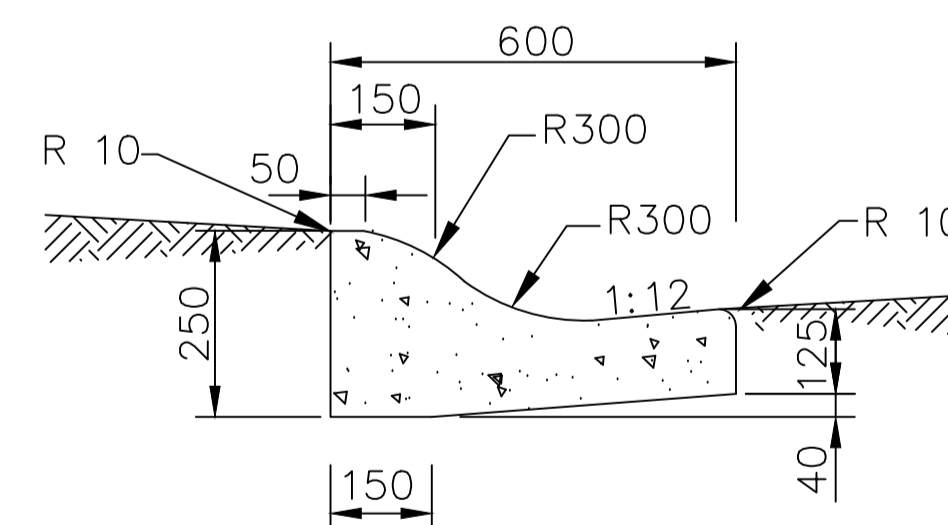
STANDARD ROLL TOP KERB AT VEHICULAR CROSSING



DISH CROSSING



MOUNTABLE KERB



ROLL TOP KERB AND GUTTER

NOTES:

1. ROAD SUB BASE SHALL BE EXTENDED BENEATH KERBS, GUTTERS AND DISH CROSSINGS 150 BEHIND REAR OF KERB A MIN. DEPTH OF 175 & SUBJECT TO SUB-SOIL DRAINAGE REQUIREMENTS.
2. CONCRETE SHALL BE OF 25 MPA COMPRESSIVE STRENGTH (F'C) AT 28 DAYS WITH NO SLUMP MIX FOR KERBS AND GUTTERS, DISH CROSSINGS, MISCELLANEOUS KERBS AND EDGE STRIPS.
3. REINFORCING FABRIC SHALL BE TO AS 4671:2001 "STEEL WIRE REINFORCING FABRIC" WITH 35 COVER.
4. CONDUIT LOCATIONS SHALL BE MARKED ON KERB FACES WITH AN APPROVED TOOL OR AS OTHERWISE DIRECTED.
5. ALL DIMENSIONS ARE IN MILLIMETRES.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			DETAILS CHANGED/ADDED
DESIGNED & DRAFTED	T.DIMEC	08/04/2011	
DESIGN REVIEWED	T.DIMEC	08/04/2011	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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*[Signature]*  
DIRECTOR OF  
GOULBURN MULWAREE  
OPERATIONS  
DATE: 28/02/2018

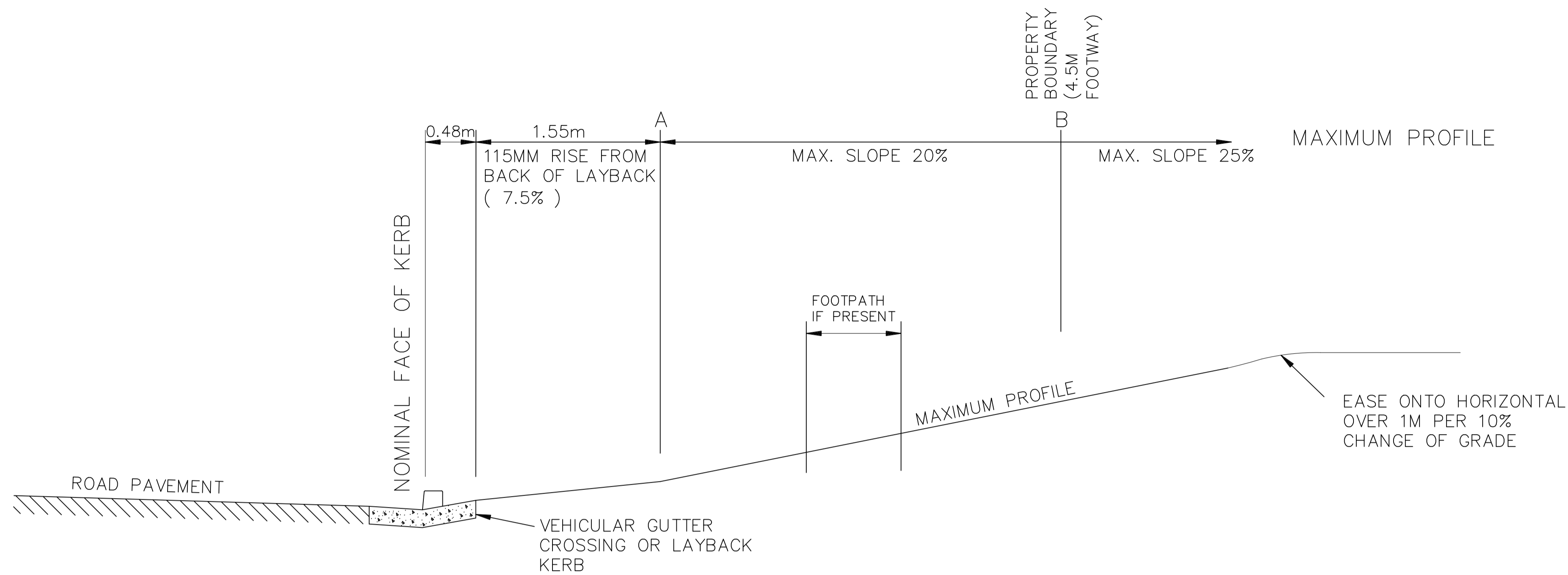
**KERB & GUTTER**

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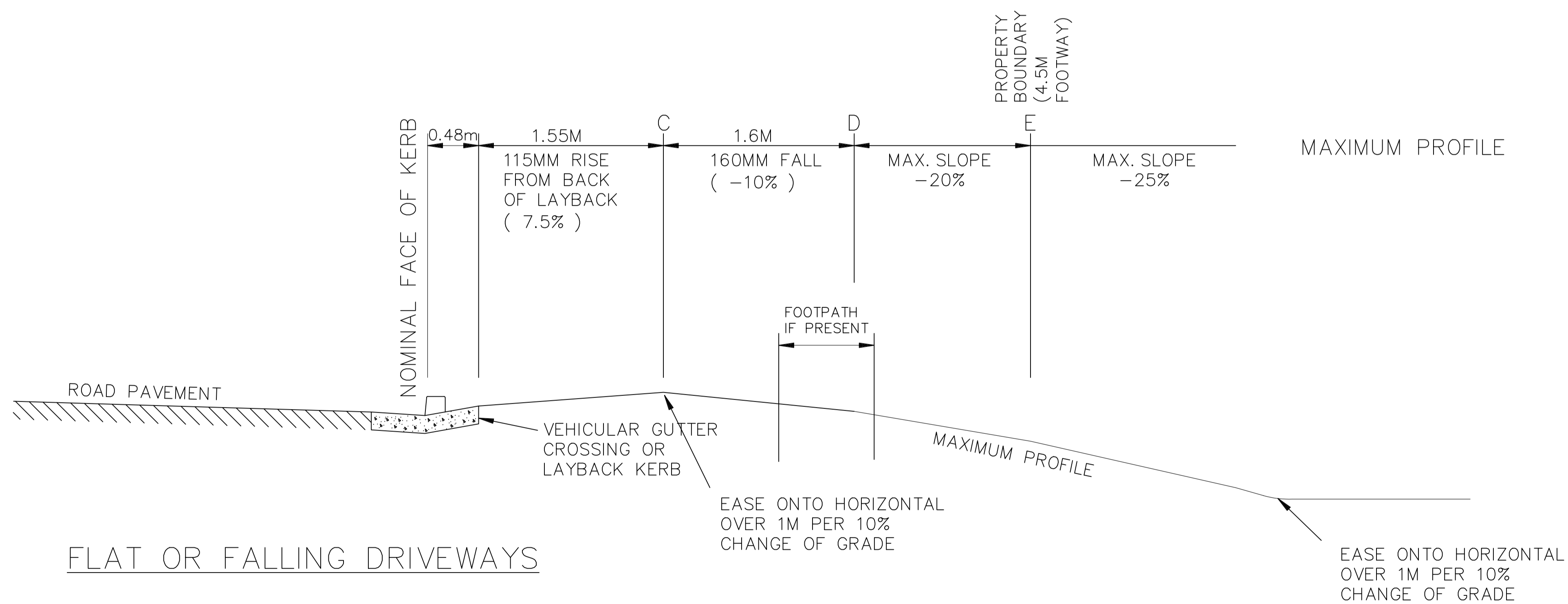
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 5
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	<b>SD-R 05</b>

DRAWING NUMBER SD-R 05





**RISING DRIVEWAYS**



**FLAT OR FALLING DRIVEWAYS**

**LEVELS:**

- A. MANDATORY 115MM ABOVE BACK OF LAYBACK
- B. MAX 609MM ABOVE BACK OF LAYBACK
- C. MANDATORY 115MM ABOVE BACK OF LAYBACK
- D. MAX 45MM BELOW BACK OF LAYBACK
- E. MAX 219MM BELOW BAK OF LAYBACK

**NOTES:**

1. A DRIVEWAY DESIGN SHOULD BE COMPLETED BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS UNDERTAKEN.
2. THE SLOPE A LONG THE ROAD OF THE DRIVEWAY CROSSING OVER THE FOOTPATH IS TO BE THE SAME AS THE ADJACENT GUTTER.
3. CHANGES OF GRADE TO BE EASED DURING CONSTRUCTION.
4. WHERE A CONCRETE FOOTPATH IS PRESENT OR INTENDED, THE DRIVEWAY PROFILE SHALL BE ADJUSTED TO MATCH THE FOOTPATH CROSSFALL.
5. WHEN THE DRIVEWAY LEVELS DIFFER TO THE FOOTPATH, THE FOOTPATH SHALL BE RECONSTRUCTED EITHER SIDE OF THE DRIVEWAY TO ENSURE SMOOTH TRANSITION.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, D-WAY TOP 16M (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	R.McDONALD	03/06/1996	NOTES CHANGED/ADDED (I.ALDRIDGE JANUARY 2018)
DESIGN REVIEWED	R.McDONALD	03/06/1996	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

If the actual work done differs from the original drawing the person performing the work must amend this copy accordingly and return it to the Design Office.

**APPROVED**

*[Signature]*

DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

**VEHICULAR DRIVEWAY PROFILES**

**SAFETY FIRST**  
PERSONAL PROTECTIVE EQUIPMENT  
MUST BE WORN ON SITE

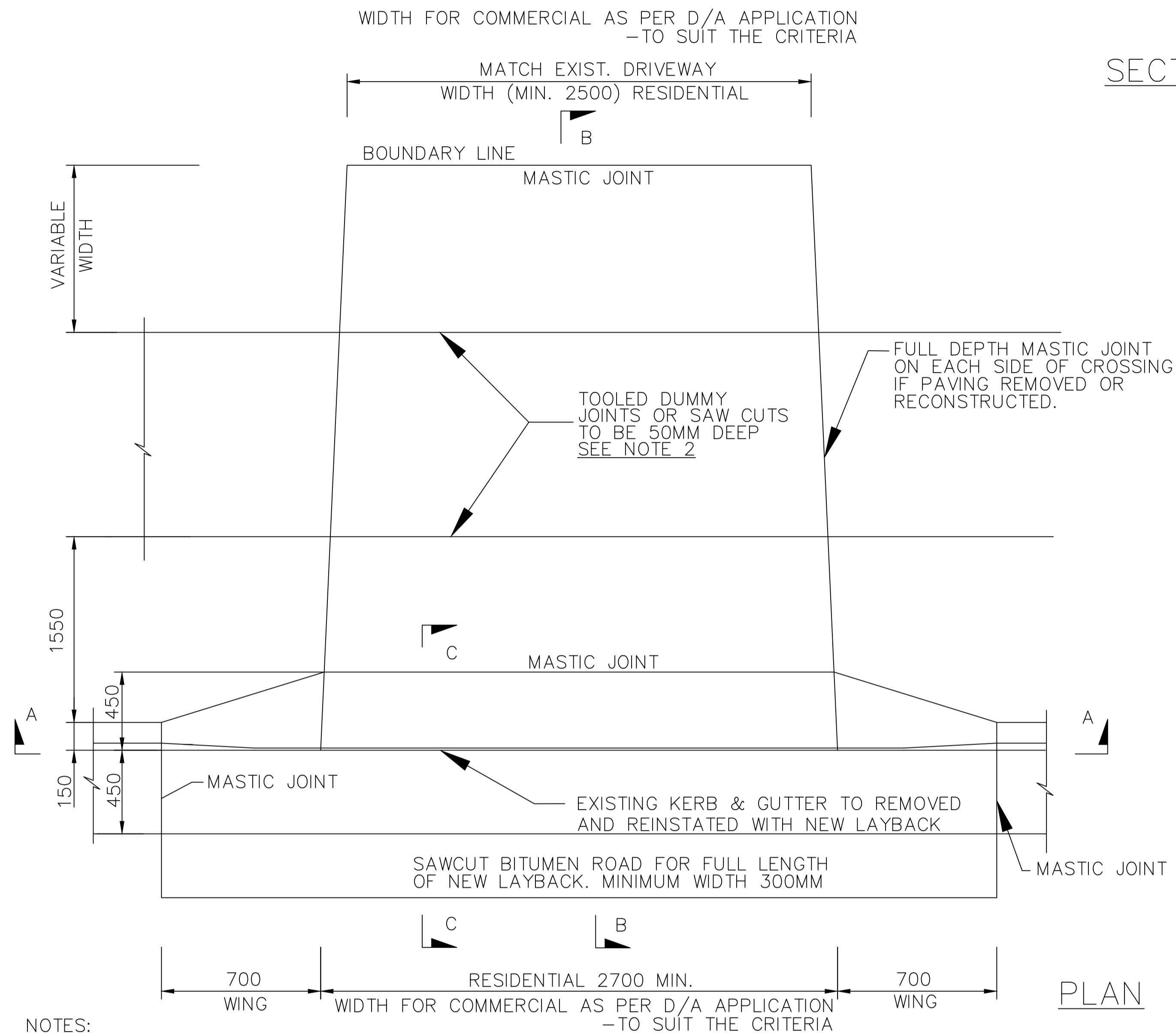
www.dialbeforeyoudig.com.au

**DIAL 1100**  
BEFORE YOU DIG

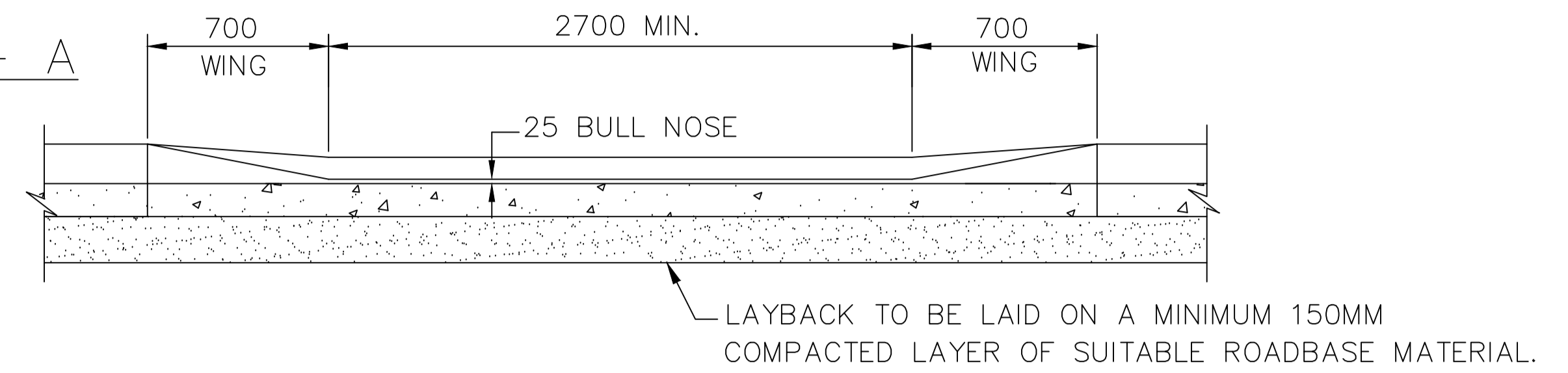
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 6
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-R 06</b>		

DRAWING NUMBER SD-R 06





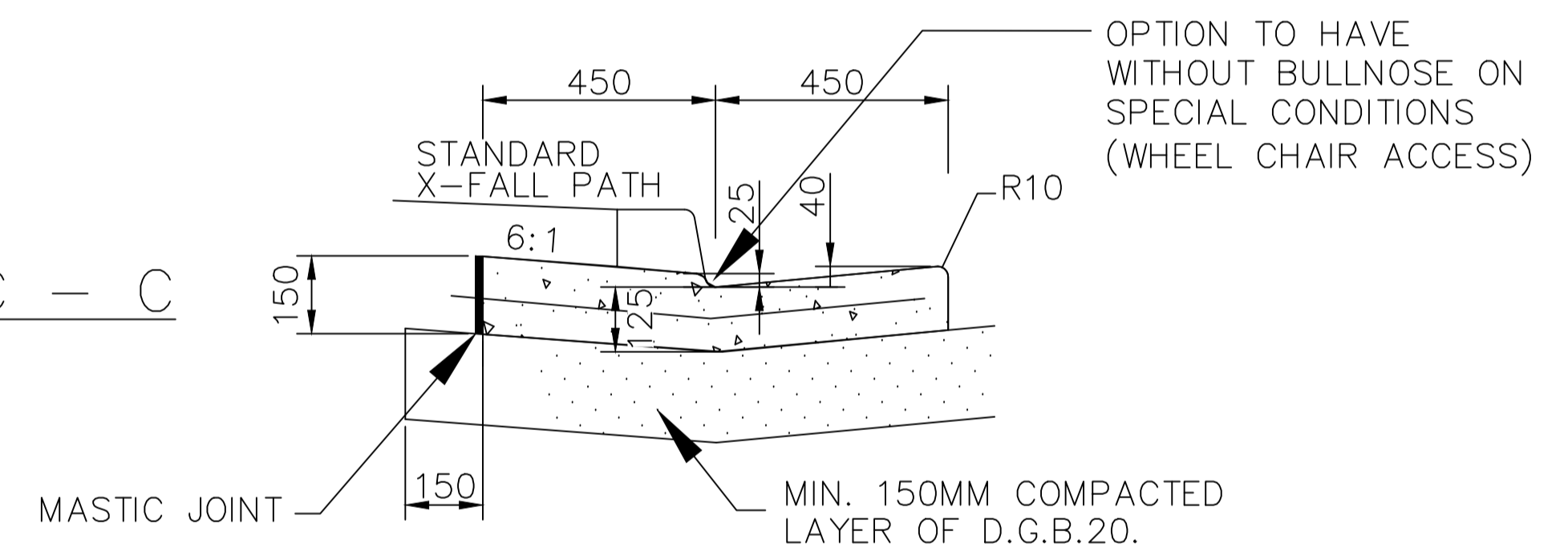
SECTION A - A



SECTION B - B  
REF: SD-R 06



SECTION C - C



NOTES:

1. FOOTWAY CROSSING THICKNESS AS FOLLOWS:
  - 1.1. RESIDENTIAL VEHICULAR FOOTWAY CROSSINGS SHALL BE 125MM THICK CONCRETE, REINFORCED WITH SL72 MESH ON CHAIRS, 50MM COVER.
  - 1.2. COMMERCIAL AND INDUSTRIAL VEHICULAR FOOTWAY CROSSINGS SHALL BE MINIMUM 175MM THICK CONCRETE, REINFORCED WITH SL82 MESH ON CHAIRS, 50MM COVER. A STRUCTURAL DESIGN IS REQUIRED FOR HEAVY INDUSTRIAL APPLICATION.
2. DUMMY/KEY JOINTS OF APPROVED PROPRIETARY DESIGN SHALL BE PREPARED AS FOLLOWS:
  - 2.1. 6000MM - 9000MM SINGLE CENTRAL JOINT
  - 2.2. GREATER THAN 9000MM TWO JOINTS EQUALLY SPACED.
  - 2.3. EITHER SIDE OF THE PAVED FOOTPATH IF PRESENT.
3. THE CONCRETE SHALL BE PLACED ON A 25MM LAYER OF APPROVED FINE, GRANULAR MATERIAL, EXCEPT UNDER THE KERB AND GUTTER LINE WHERE THIS SECTION SHALL BE PLACED ON A MINIMUM 150MM COMPACTED LAYER OF D.G.B. 20.

4. EXISTING CONCRETE FOOTPATH SHALL BE SAW CUT EITHER SIDE OF THE CROSSING AND WHERE NECESSARY RECONSTRUCTED IN CONJUNCTION WITH THE CROSSING.
5. CONCRETE SHALL HAVE A 28 DAY STRENGTH (F'C) OF 25MPA AND A SLUMP OF 80MM.
6. ANY VARIATIONS TO STANDARD CROSSFALL 10 % (REFER TO SD-R 06) ON FOOTWAY SHALL HAVE THE PRIOR APPROVAL OF COUNCIL.
7. MAXIMUM WIDTH OF ENTRY IN INDUSTRIAL AT KERB LINE IS SUBJECT TO TRAFFIC REGULATIONS, POLICY AND STANDARDS FOR TRAFFIC GENERATING DEVELOPMENTS.
8. SURFACE FINISH: ON PLAIN CONCRETE, THE EXPOSED SURFACE SHALL BE BROOM FINISHED WITH BULL NOSED EDGES TO LEAVE THE SURFACE PLAIN & SMOOTH & UNIFORM IN COLOUR & APPEARANCE. ALL KERB & GUTTERING & LAYBACKS SHALL BE FINISHED WITH A STEEL FLOAT TO LEAVE THE SURFACE PLAIN, SMOOTH & UNIFORM IN COLOUR & APPEARANCE. AFTER REMOVAL OF FORMWORK, ANY ROUGH OR POROUS PLACES OR HOLES SHALL BE PICKED OVER & DRESSED UP WITH A TWO (2) TO ONE (1) CEMENT MORTAR. OTHER FINISHES MUST BE APPROVED IN WRITING FROM THE COUNCIL ENGINEERING DESIGN DEPARTMENT .

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	T.DIMEC	08/04/2009	RESIDENTIAL & INDUSTRIAL COMBINED (I.ALDRIDGE 2012)
DESIGN REVIEWED	T.DIMEC	08/04/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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*[Signature]*

DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS

DATE: 28/02/2018

**VEHICLE CROSSING PLAN**  
**RESIDENTIAL AND INDUSTRIAL**

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 MUST BE WORN ON SITE

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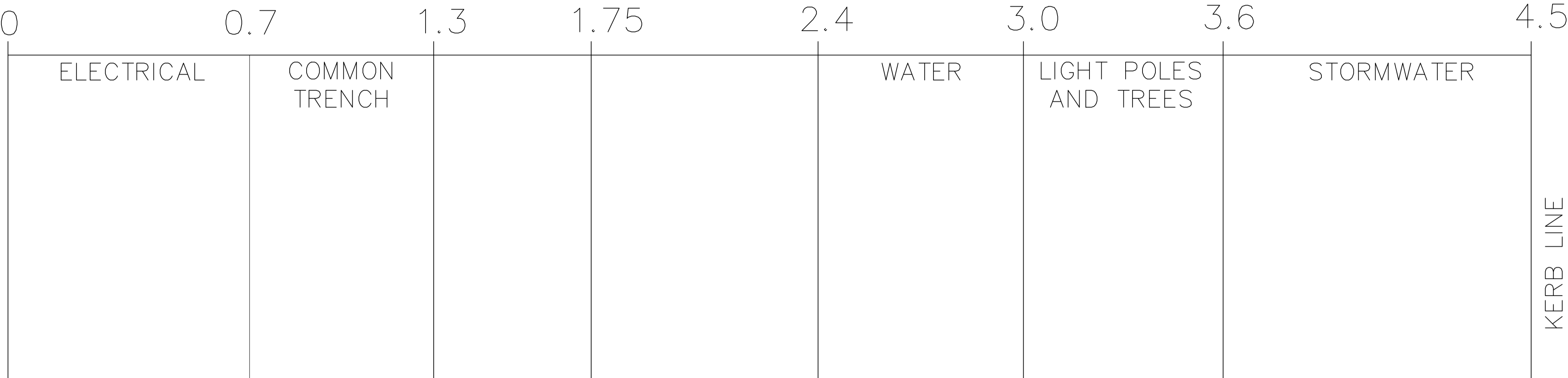
**DIAL 1100**  
 BEFORE YOU DIG

A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 7
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
RD: <i>[Signature]</i>		<b>SD-R 07</b>

DRAWING NUMBER SD-R 07

RESERVATIONS 0

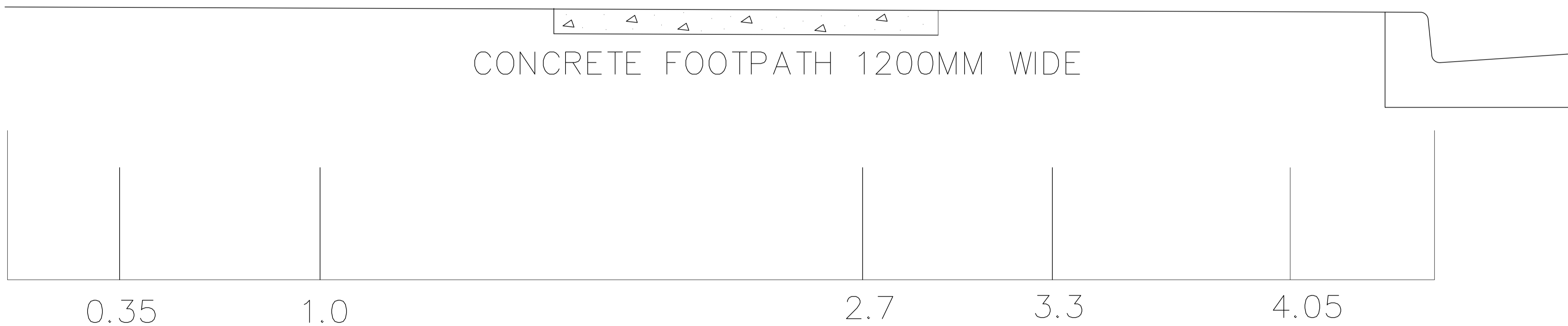
PROPERTY LINE



KERB LINE

CONCRETE FOOTPATH 1200MM WIDE

CENTRE OF ALIGNMENTS



DRAWING NUMBER SD-R 08

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			FOOTPATH 1200 WIDE (I ALDRIDGE 2011)
DESIGNED & DRAFTED	R.McDONALD	03/06/1996	NOTES CHANGED/ADDED (I ALDRIDGE JANUARY 2018)
DESIGN REVIEWED	P.SMART	03/04/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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**APPROVED**

*[Signature]*

DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

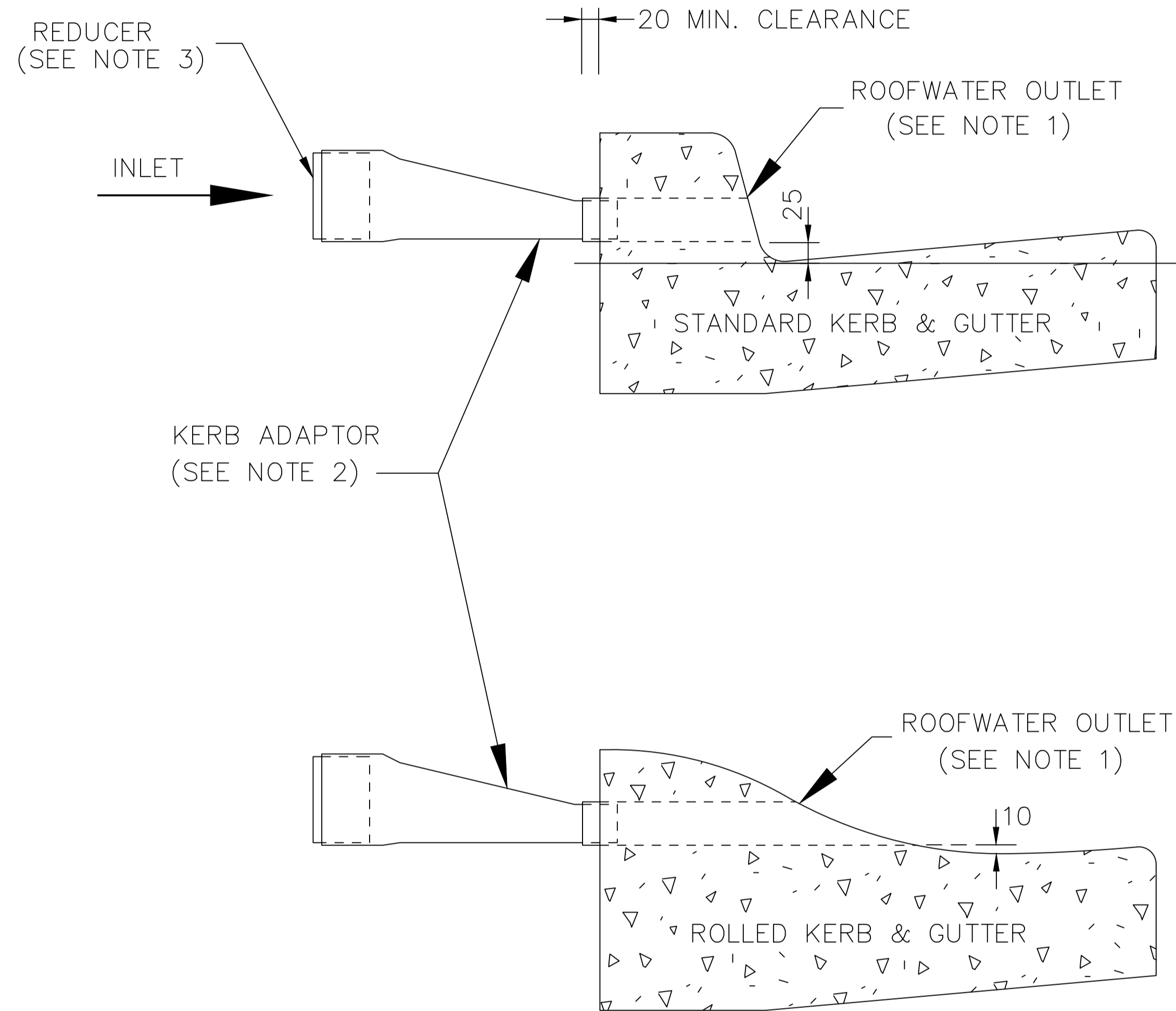
**STANDARD ALLOCATION**  
 FOR PUBLIC UTILITY SERVICES IN FOOTPATH AREAS

**SAFETY FIRST**  
 PERSONAL PROTECTIVE EQUIPMENT  
 MUST BE WORN ON SITE

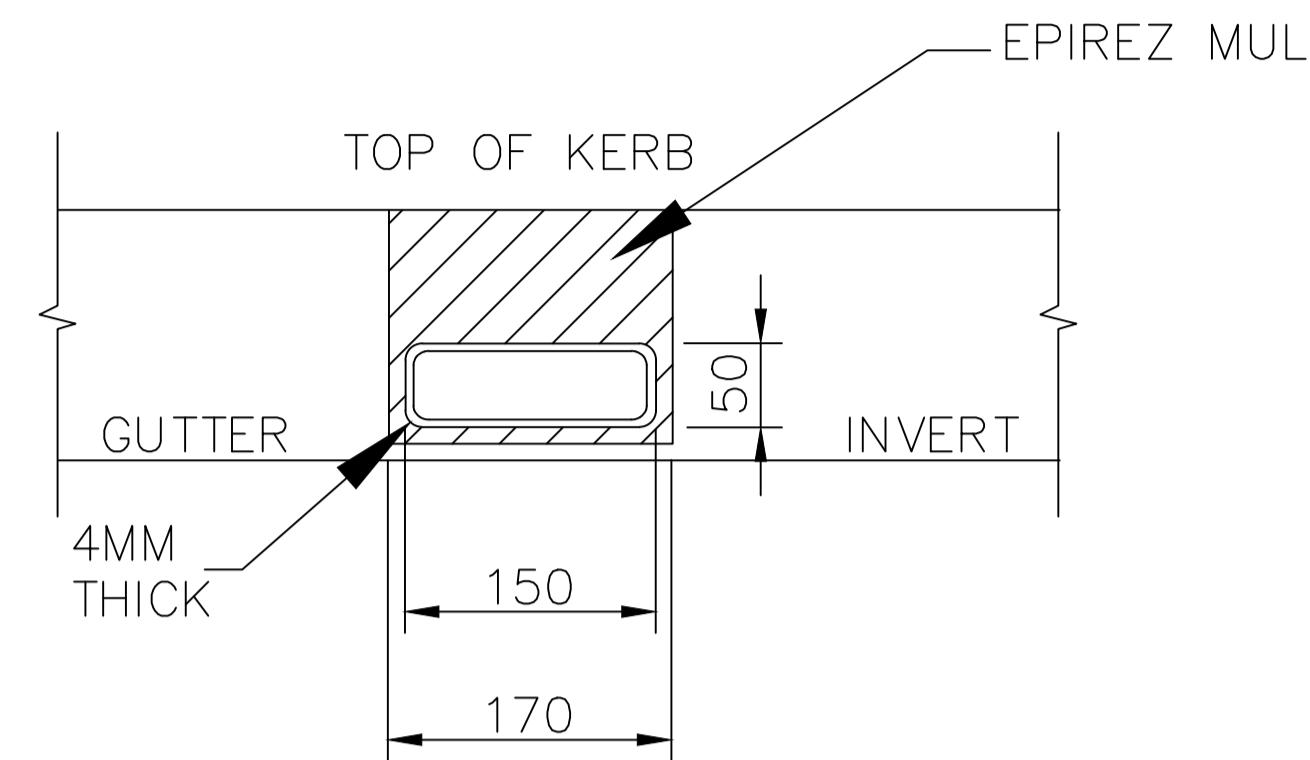
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 BEFORE YOU DIG

A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 8
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-R 08</b>		



TYPICAL CROSS SECTION



TYPICAL ELEVATION

NOTE:

FITTING OUTLETS TO EXISTING KERB

SAWCUT KERB 10MM WIDER AND DEEPER THAN KERB OUTLET BED AND BACKFILL WITH 'EPIREZ MUL' OR EQUIVALENT AND MAKE SMOOTH JOIN WITH EXISTING KERB.

NOTES:

1. ROOFWATER OUTLETS TO BE 'CORDINA' TYPE OR SIMILAR MANUFACTURED FROM 150X50X4 HOT DIPPED GAL. MILD STEEL, TO SUIT KERB TYPE TO EXTEND MIN. 20MM BEHIND REAR OF KERB.
2. ROOF WATER DRAIN PIPE ACROSS FOOTWAY TO BE DUCTILE IRON OR GALVANISED PIPE.
3. KERB ADAPTOR TO BE PVC 'CORDINA' TYPE OR SIMILAR 4MM THICK AND 355MM LONG TO SUIT PVC STORMWATER CONNECTION AND ROOFWATER OUTLET SECTION.
4. PROVIDE REDUCER IF REQUIRED TO SUIT 90MM PVC STORMWATER CONNECTION.
5. CHECK ROOFWATER OUTLET IS UNOBSTRUCTED PRIOR TO CONNECTING ADAPTOR.
6. SEAL JOINT BETWEEN ADAPTOR AND OUTLET WITH APPROVED SILICON SEALANT.
7. ALL JOINTS TO BE SEALED AND WATERTIGHT.
8. ALL DIMENSIONS ARE IN MILLIMETRES

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I ALDRIDGE DECEMBER 2017)
DESIGNED & DRAFTED	T.DIMEC	09/07/2009	
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I/ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS  
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**APPROVED**  
  
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
 DATE: 28/02/2018

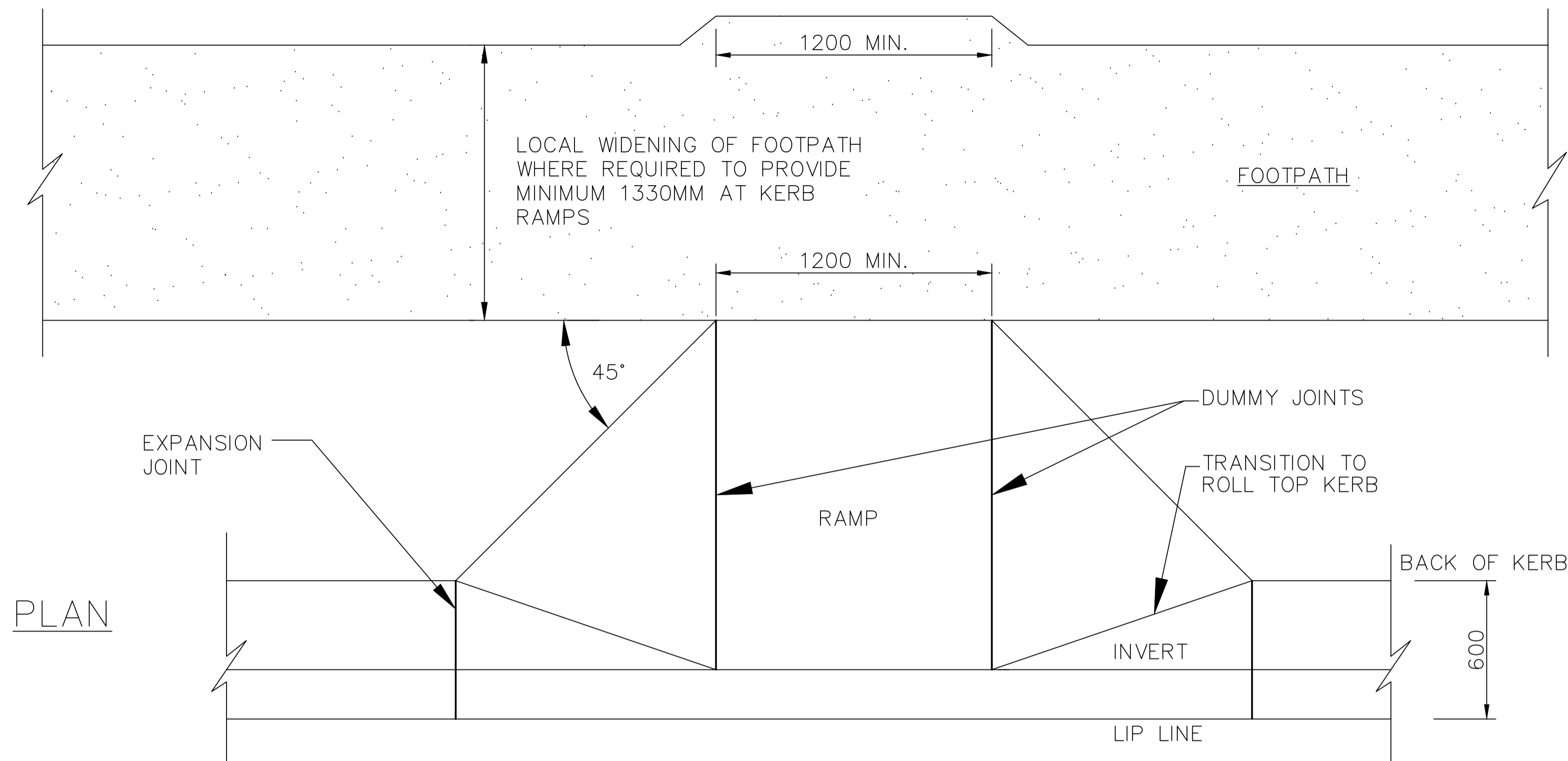
**KERB OUTLET**  
**KERB ROOFWATER OUTLET & KERB ADAPTOR**

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 MUST BE WORN ON SITE  
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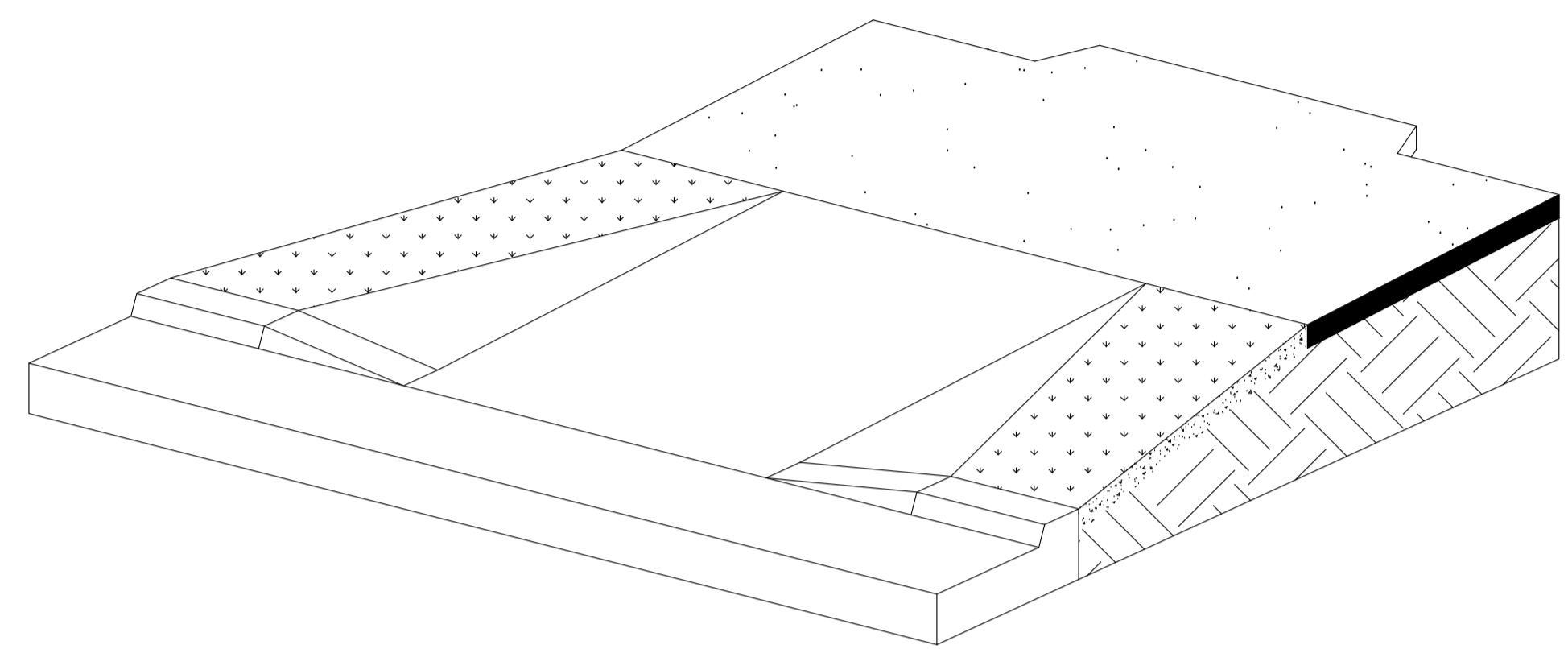
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 9
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-R 09</b>		

DRAWING NUMBER SD-R 09

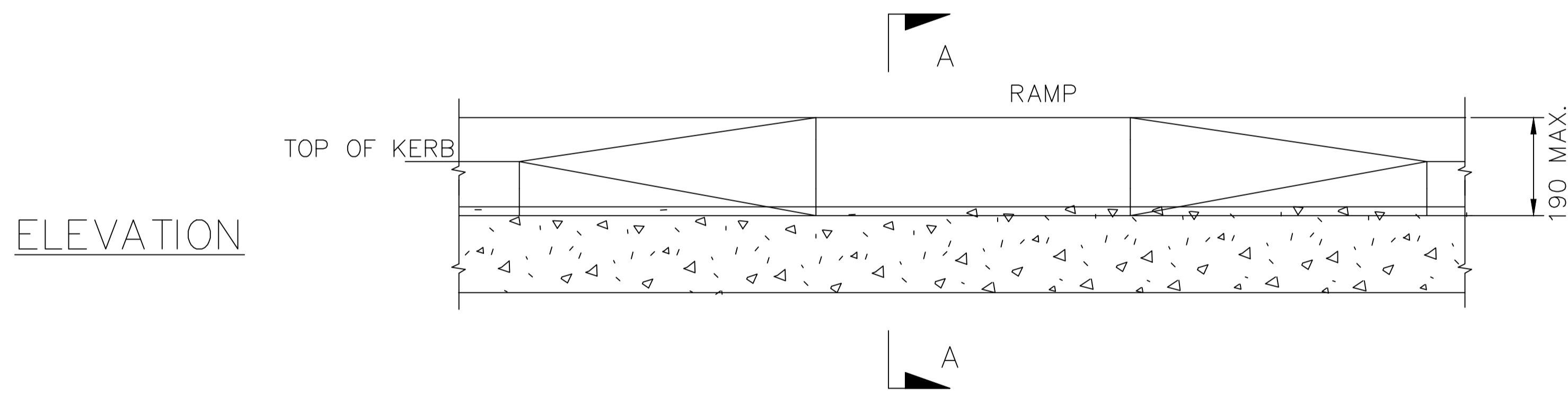




PLAN

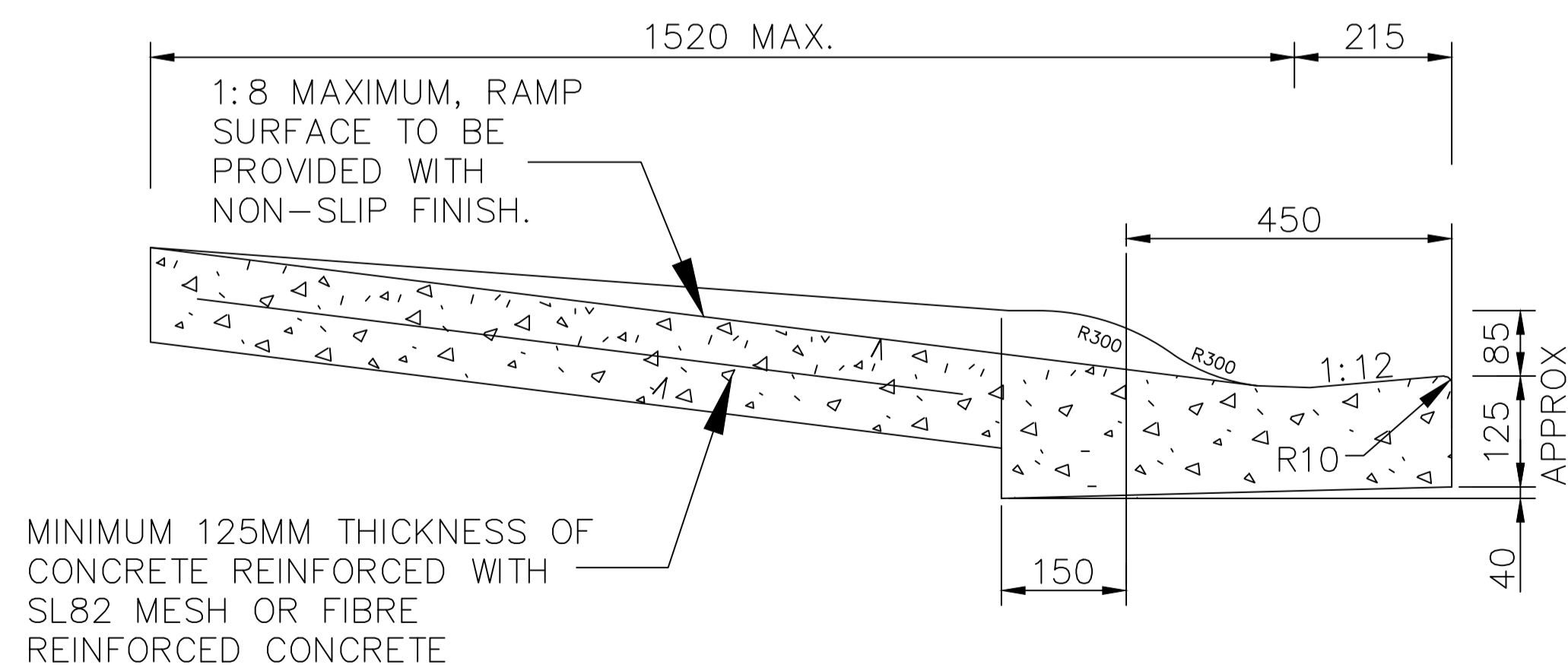


ISOMETRIC VIEW  
NOT TO SCALE



ELEVATION

SECTION A - A



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR DETAIL KERB AND GUTTER OPTIONS SEE SD-R05
3. ALL KERB RAMPS ARE TO BE ALIGNED WITH THE DESIRED DIRECTION OF PEDESTRIAN TRAVEL AND BE A MINIMUM OF 1200 WIDE.
4. AT PEDESTRIAN CROSSINGS AND MARKED FOOT CROSSING RAMPS MUST LINE UP WITH CROSSING AND CORRESPONDING CROSSING ON OTHER SIDE OF ROAD.
5. EXPANSION JOINTS TO BE PROVIDED WHERE ENDS OF KERB RAMP ABUTS KERB AND GUTTER.
6. SEPARATE KERB RAMPS MUST BE USED FOR ADJACENT CROSSING AT INTERSECTIONS.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED
DESIGNED & DRAFTED	T.DIMEC	09/07/2009	
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
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 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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*[Signature]*

DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS

DATE: 28/02/2018

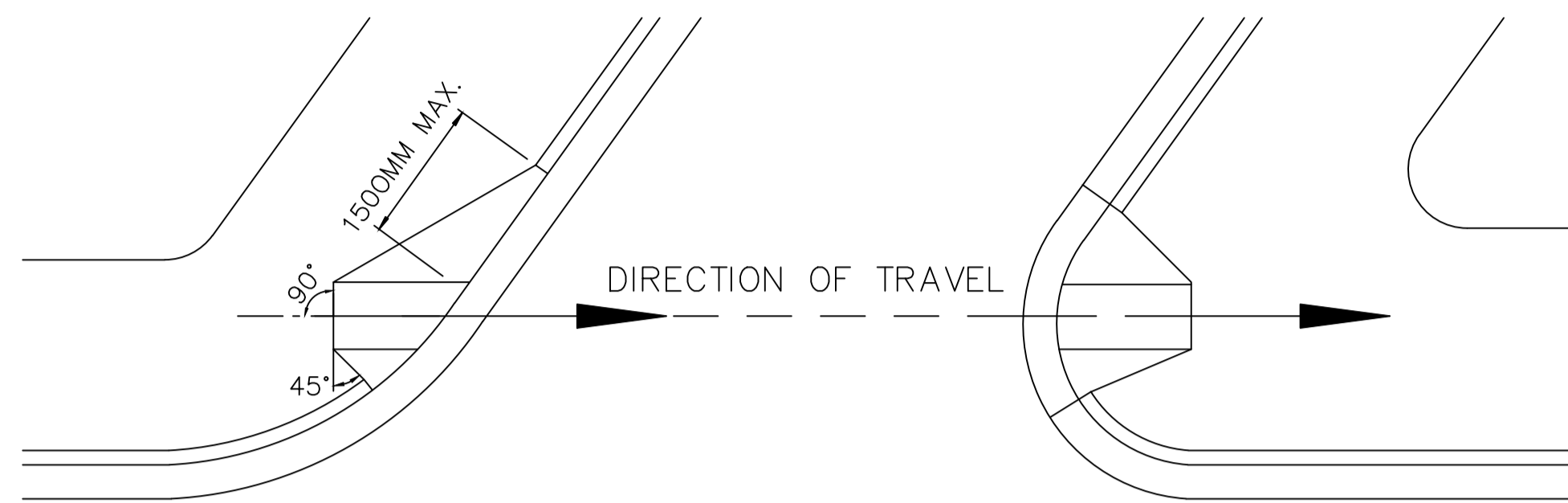
**KERP RAMPS**

**SAFETY FIRST**  
 PERSONAL PROTECTIVE EQUIPMENT  
 MUST BE WORN ON SITE

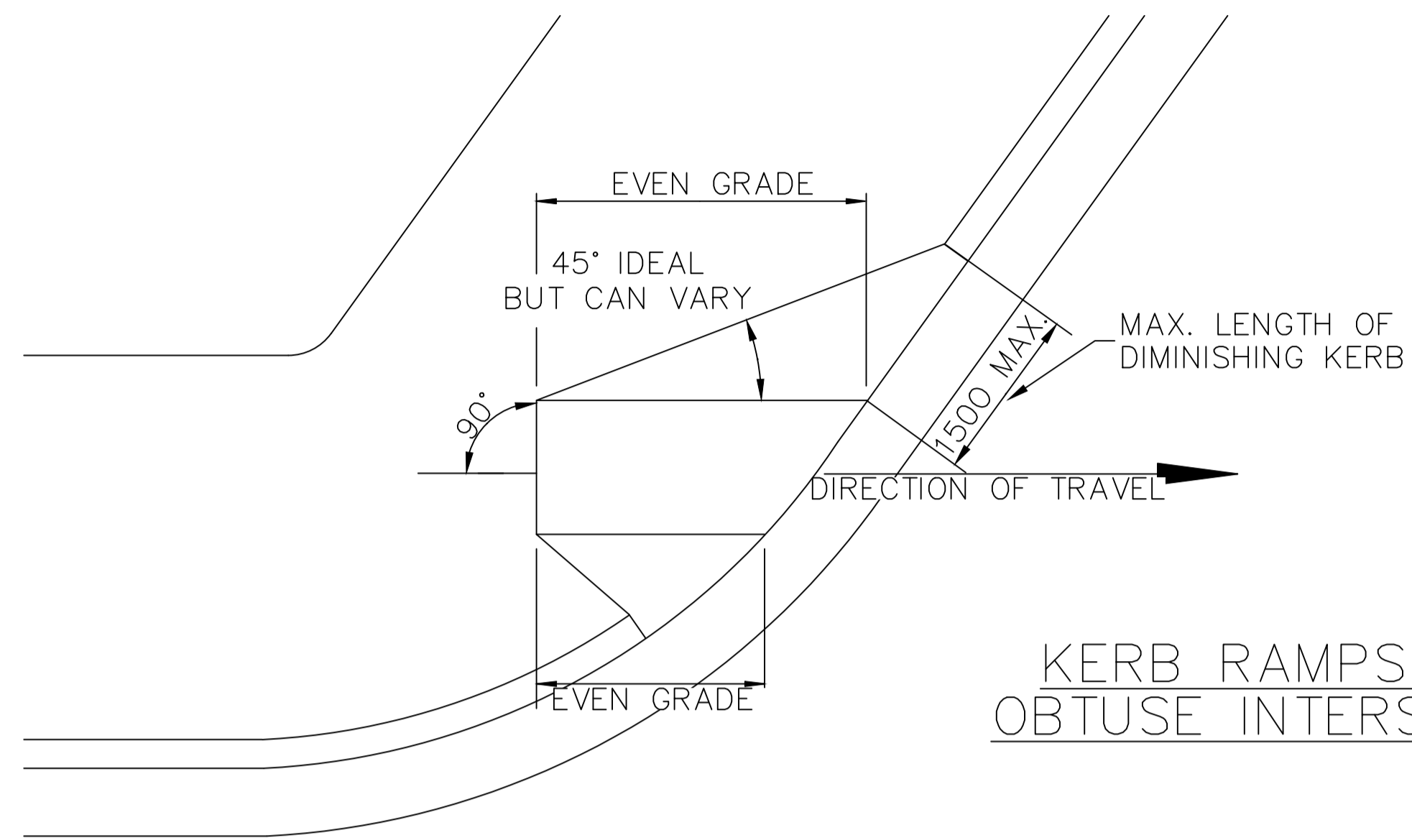
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**DIAL 1100**  
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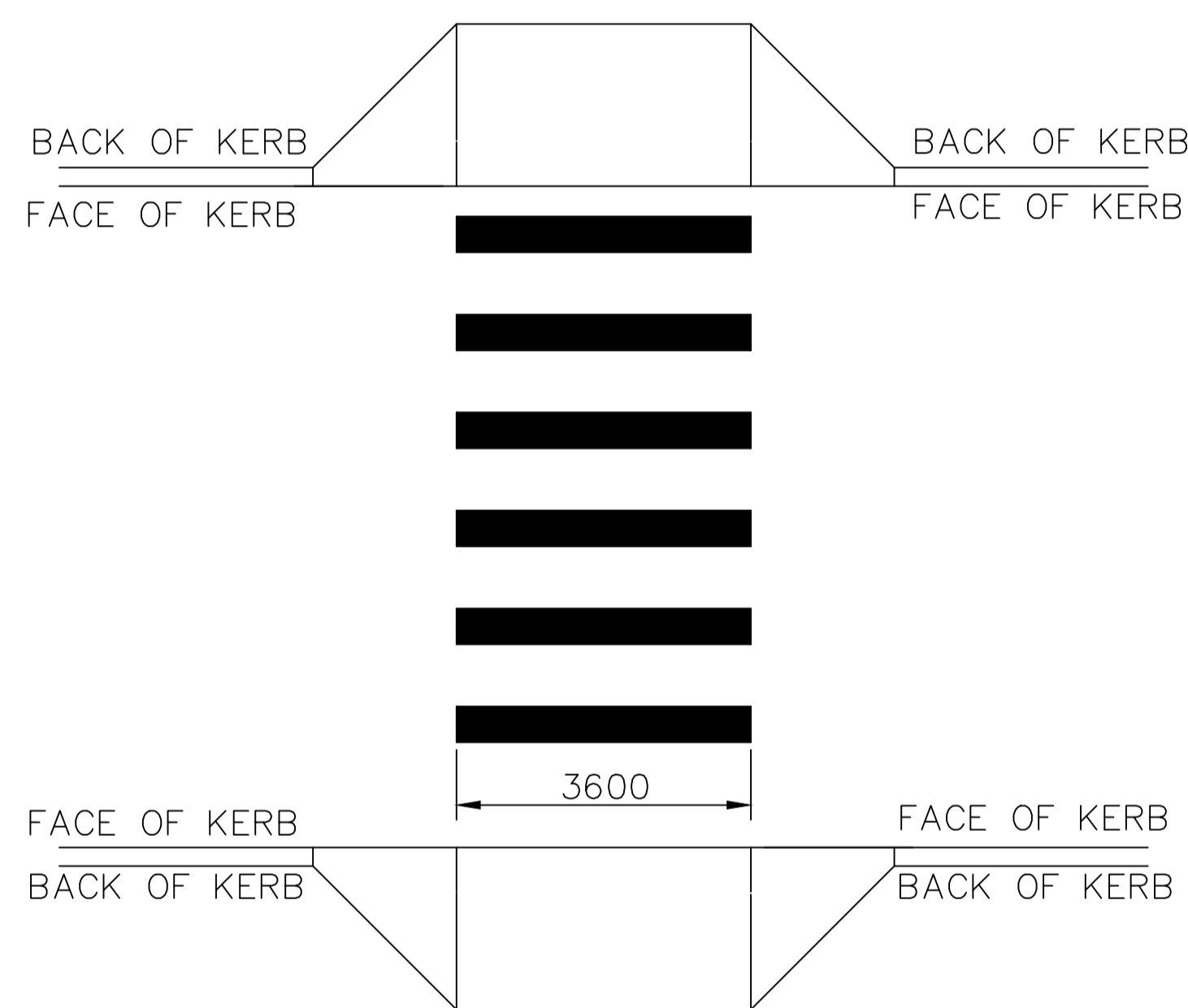
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FILE NAME: STANDARD DRAWINGS.DWG	<b>SD-R 10 A</b>	
REVISION GMC-VER-1		



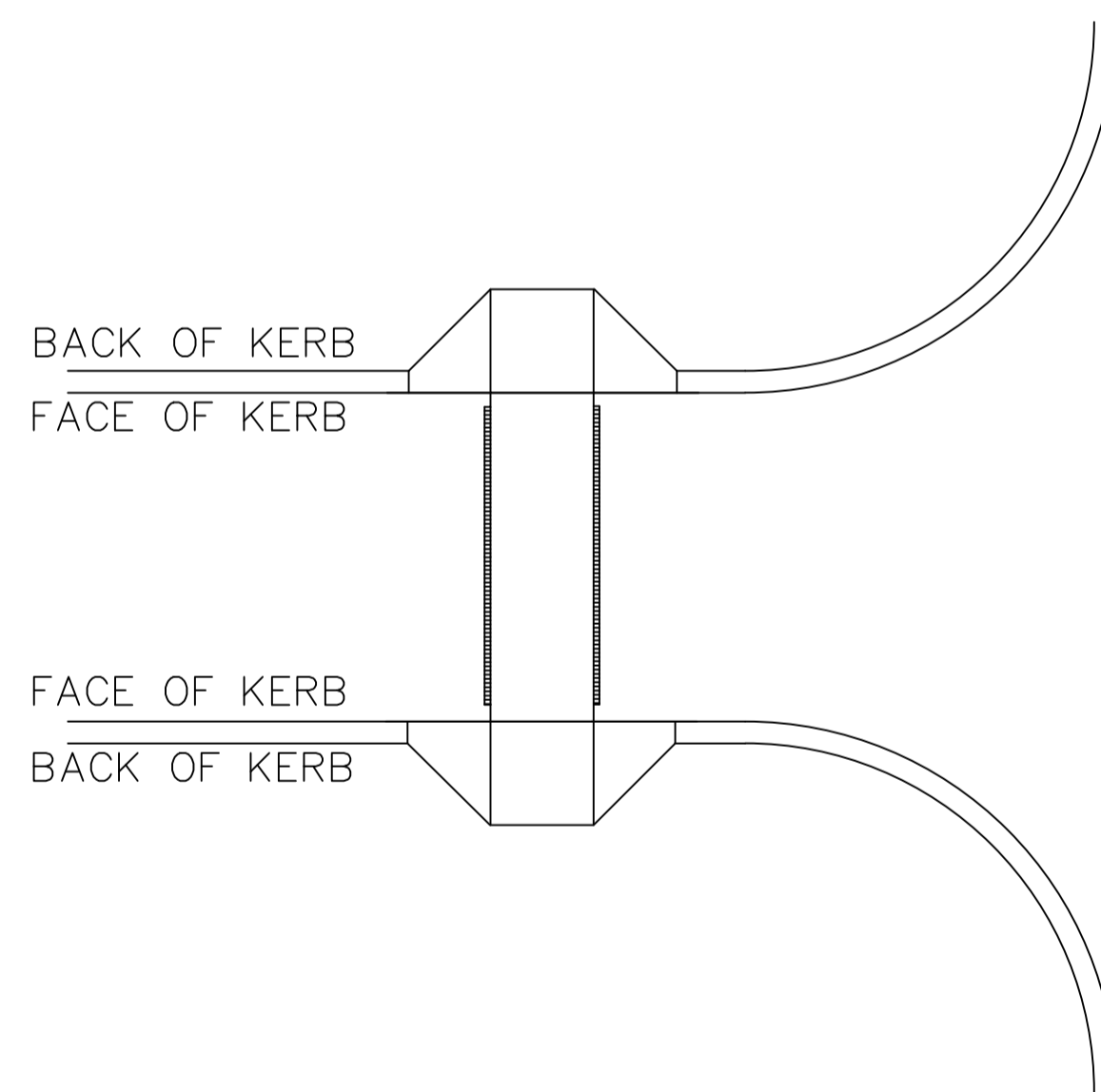
KERB RAMPS FOR ACUTE/OBTUSE INTERSECTION



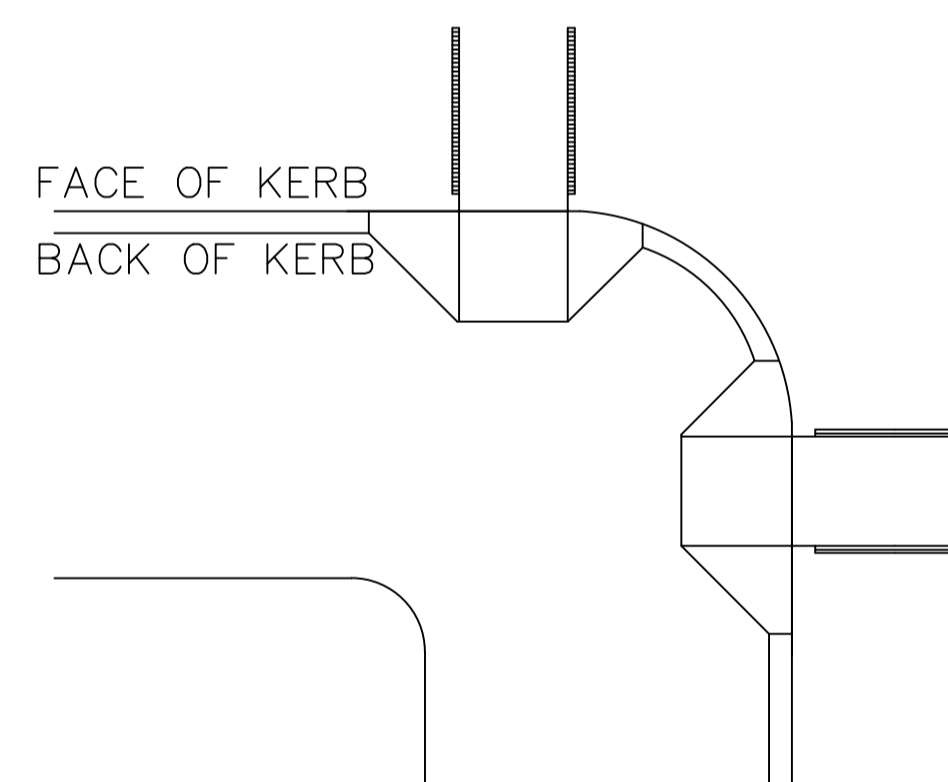
KERB RAMPS FOR OBTUSE INTERSECTION



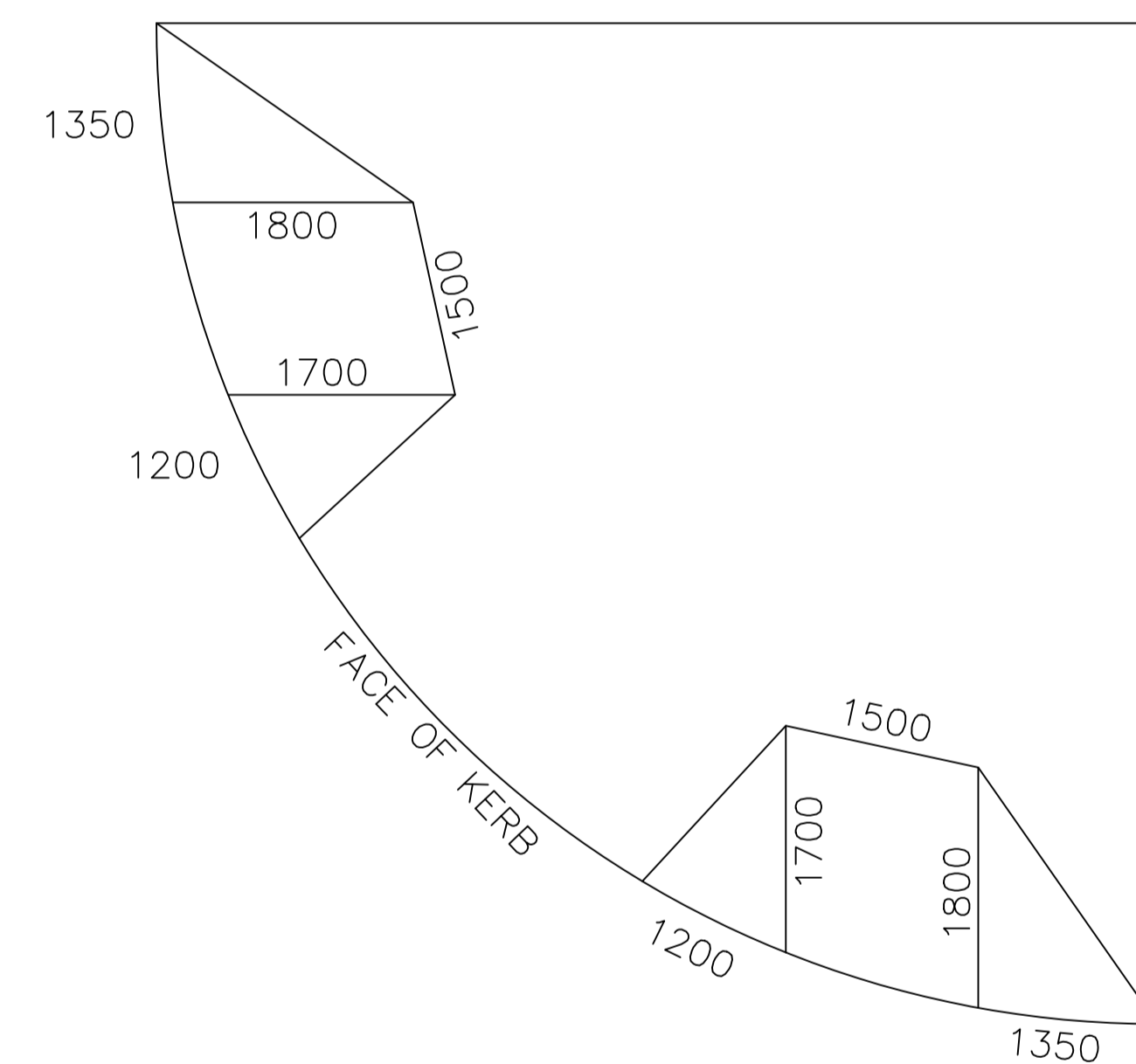
AT PEDESTRIAN CROSSING (ZEBRA)  
SEE NOTE 4 ON SD-R 10 A



ALIGNED KERB RAMPS  
SEE NOTE 4 ON SD-R 10 A



ADJACENT CROSSINGS  
SEE NOTE 6 ON SD-R 10 A



LARGE DUAL RAMPS FOR CBD AND MAJOR INTERSECTIONS

NOTE:

1. DIMENSIONS APPROX. TO SUIT KERB RADIUS AND SITE GRADES.
2. IF NECESSARY LENGTHEN TO PROVIDE MAX. 1:8 (12.5%) GRADE

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	T.DIMEC	09/07/2009	NOTES CHANGED/ADDED (I.ALDRIDGE DECEMBER 2017)
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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*[Signature]*  
DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

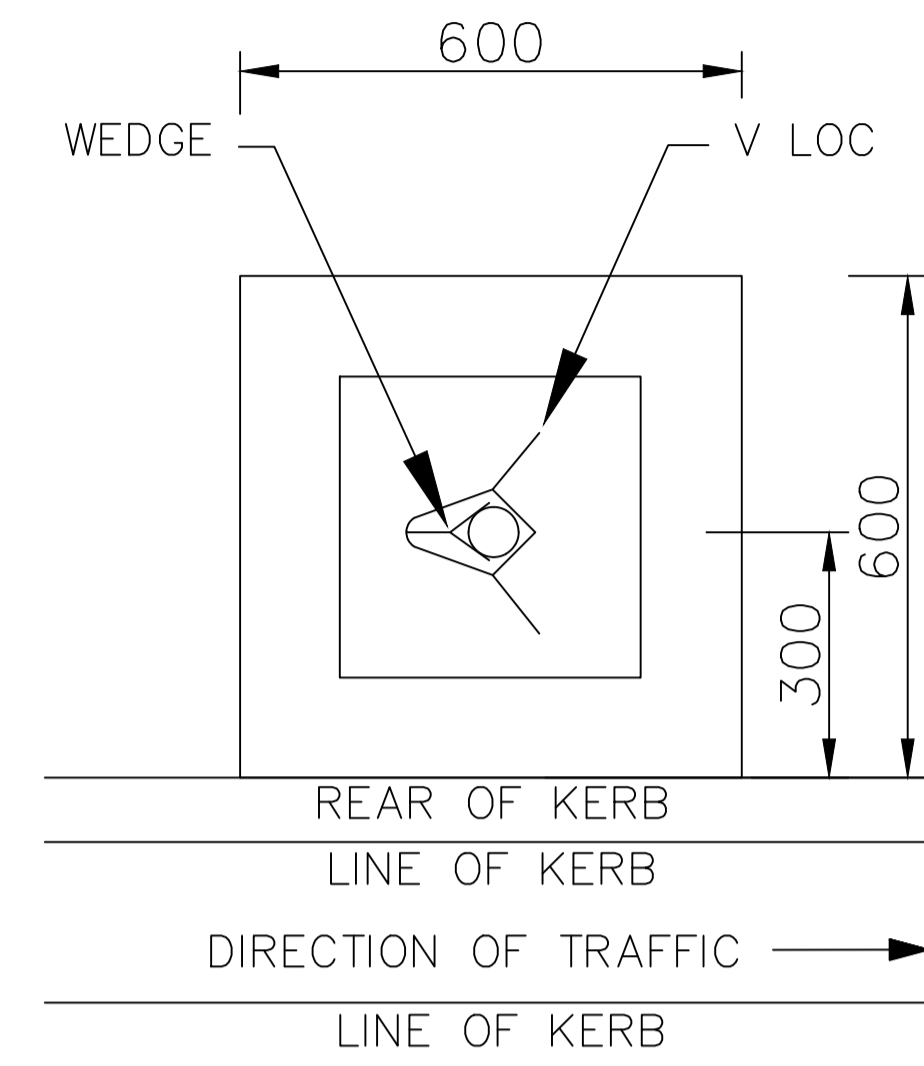
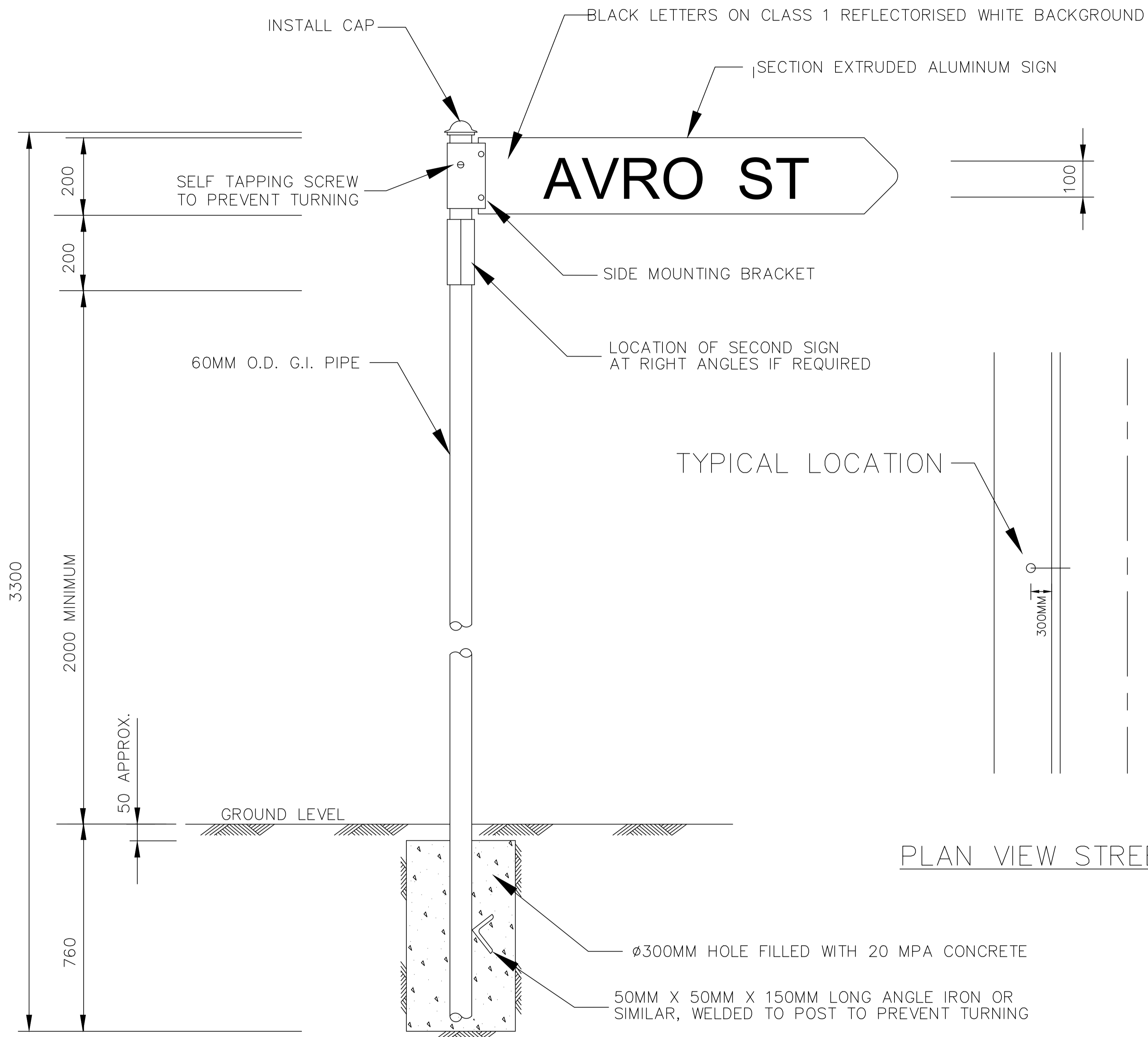
## KERB RAMPS LAYOUT AT INTERSECTIONS



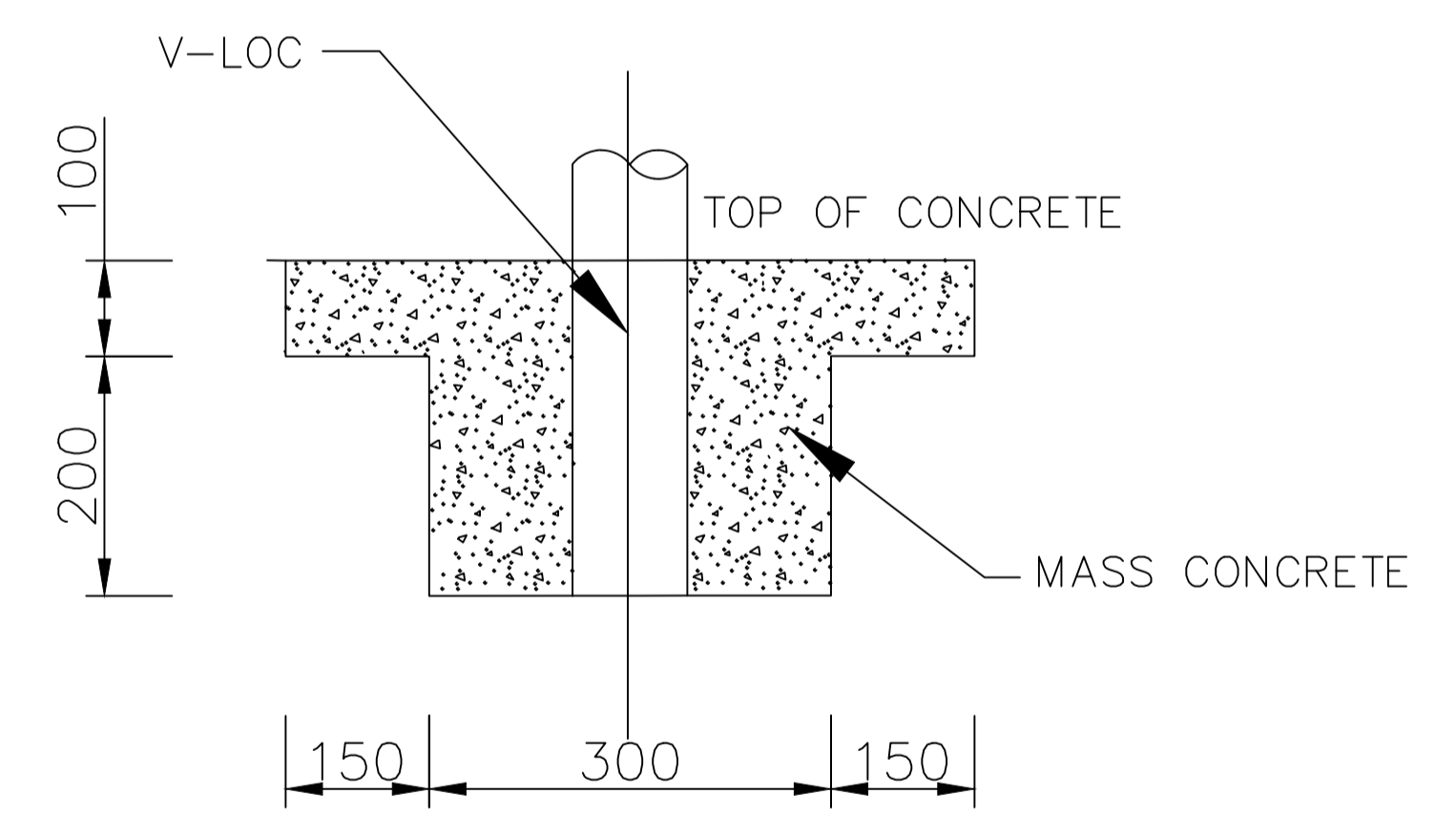
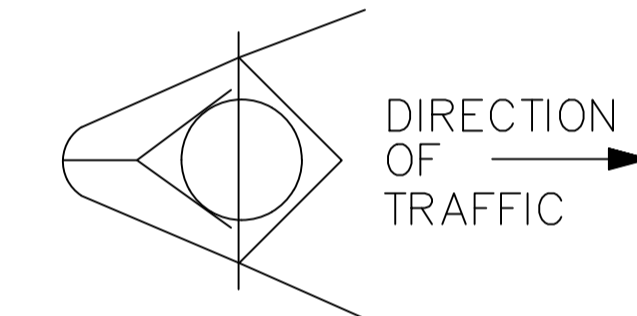
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FILE NAME: STANDARD DRAWINGS.DWG  
REVISION GMC-VER-1  
RD: -/-/-

NUMBER OF SHEETS 34  
SHEET NUMBER 11  
**SD-R 10 B**

DRAWING NUMBER SD-R 10 B



PLAN



PLAN VIEW STREET SIGN LOCATION

- NOTES:
- ALTERNATIVE POSTS CAN BE SECURED INTO SOIL USING A PIN OR WEDGE LOCKING SYSTEM.
  - ALL DIMENSIONS IN MM

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	R.McDONALD	09/07/1996	
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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*[Signature]*

DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

# STREET NAME PLATE & POST

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A1 - SCALE AS SHOWN  
 NUMBER OF SHEETS 34  
 SHEET NUMBER 12

FILE NAME: STANDARD DRAWINGS.DWG

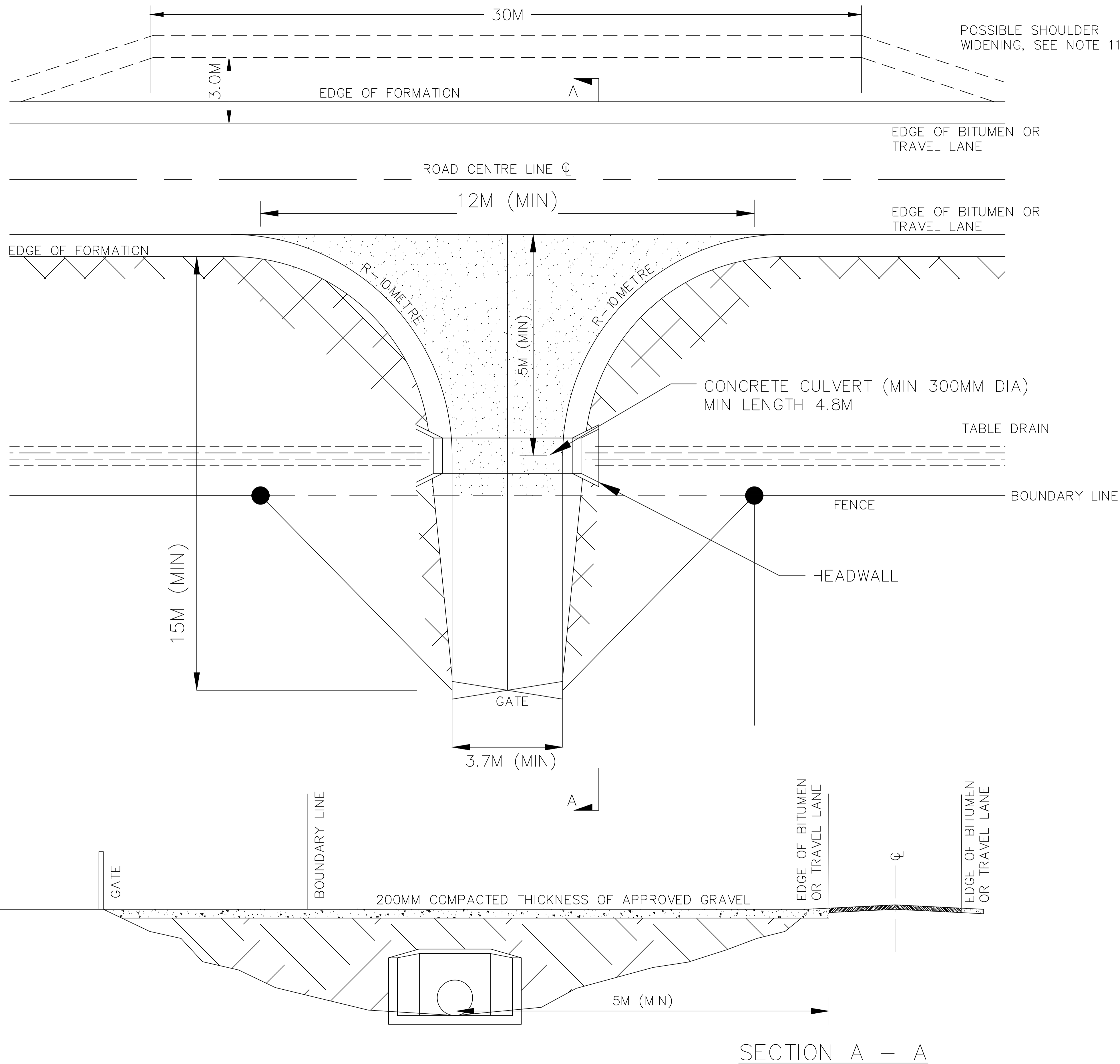
REVISION GMC-VER-1

**SD-R 11**

RD: -/-/-

DRAWING NUMBER SD-R 11





NOTES:

- CORNER POSTS TO BE 300MM Ø TIMBER, CONCRETE OR GAL STEEL STRAINER POSTS OR 100MM Ø GALVANISED STEEL
- STAYS TO BE TIMBER, CONCRETE OR GAL STEEL POST.
- FENCE TO BE CONSTRUCTED TO COUNCIL'S MINIMUM STANDARD.  
I.E. 2 BARBS, 3 PLAIN WIRES, 0.75M HIGH NETTING OR RINGLOC.
- MINIMUM OF 15 METRE LENGTH REQUIRED FROM EDGE OF FORMATION TO THE GATE TO STORE A SINGLE TRUCK.
- IF ANY VEHICLE OVER 15 METRE LONG ARE ANTICIPATED THEN 25 METRE INDENTATION IS REQUIRED.
- ON SEALED ROAD, ACCESS TO BE SEALED FROM EDGE OF EXISTING BITUMEN TO GATE AS INDICATED. BITUMEN SEAL TO BE 14/7MM DOUBLE
- CULVERT TO BE CONCRETE PIPE, SIZED FOR 20 YEARS ARI.
- INSTALL GUIDE POST AT EACH END OF THE HEADWALL.
- MINIMUM PIPE GRADE 1%.
- IF SHOULDER WIDENING REQUIRED ON OTHER SIDE OF THE ROAD FOR SCHOOL BUS, THE WIDENING TO BE 30M LONG x 3.0M WIDE
- GATE TO OPEN INWARDS

OPTIONAL HEADWALL

FOR MORE INFORMATION REFER TO FOLLOWING AS PER PIPE DIAMETER:

- ROCLA "DRIVEABLE HEADWALLS" 300MM - 600MM
- BCP PRECAST "RTA STANDARD HEADWALLS" 375MM & 450MM

ORIGINAL REFERENCE  
R.T.A MD.R11.A26.A.1

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	GS.LOTAY	05/03/2012	DETAILS CHANGED - ADDITION OF GAL STEEL (DELLISON 2013)
DESIGN REVIEWED	GS.LOTAY	05/03/2012	NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE JANUARY 2018)
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
CIVIC CENTRE, 184-194 BOURKE STREET  
GOULBURN, NSW-2580  
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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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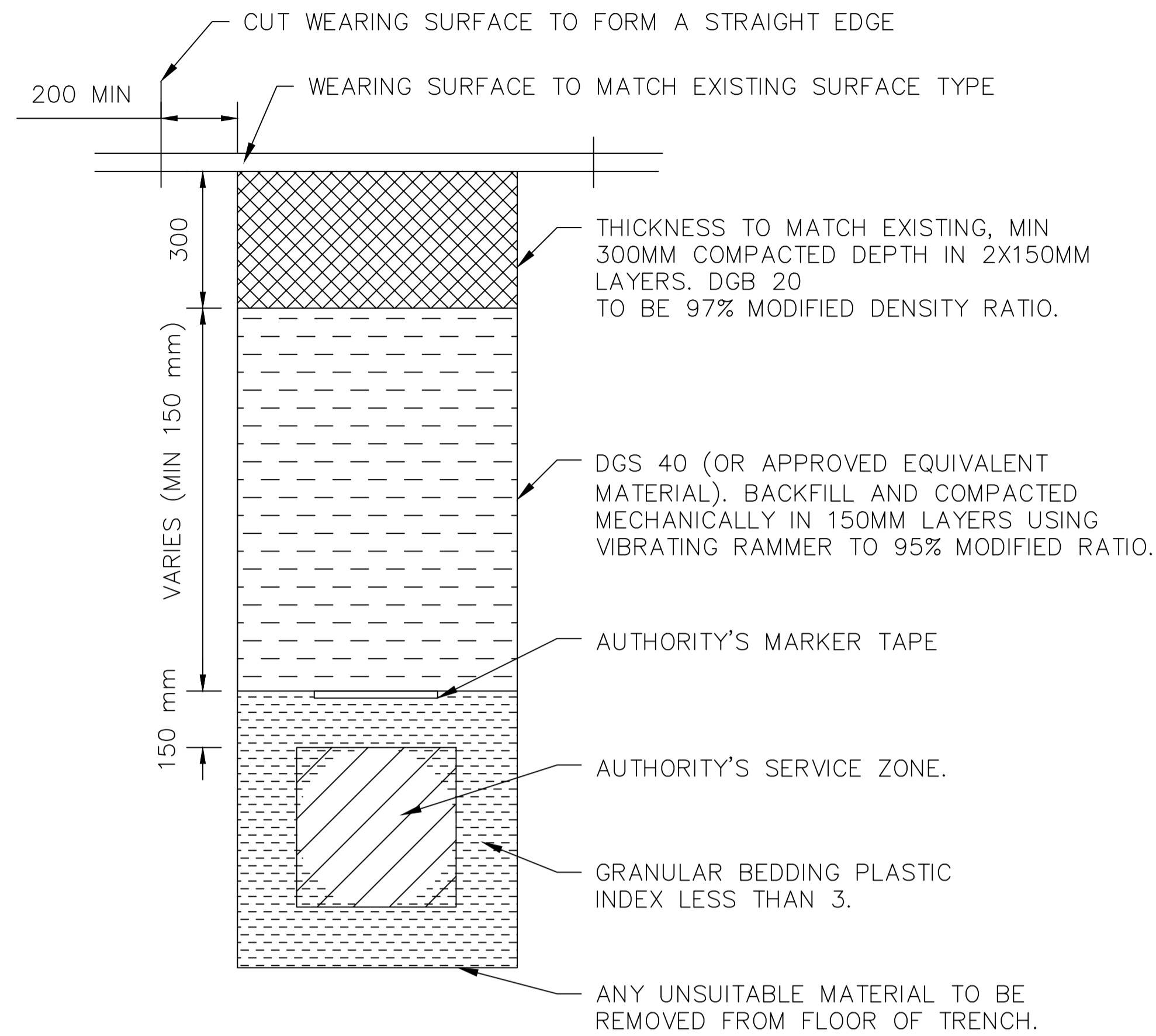
APPROVED  
*[Signature]*  
DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
DATE: 28/02/2018

**RURAL ACCESS**  
OFF A PUBLIC ROAD

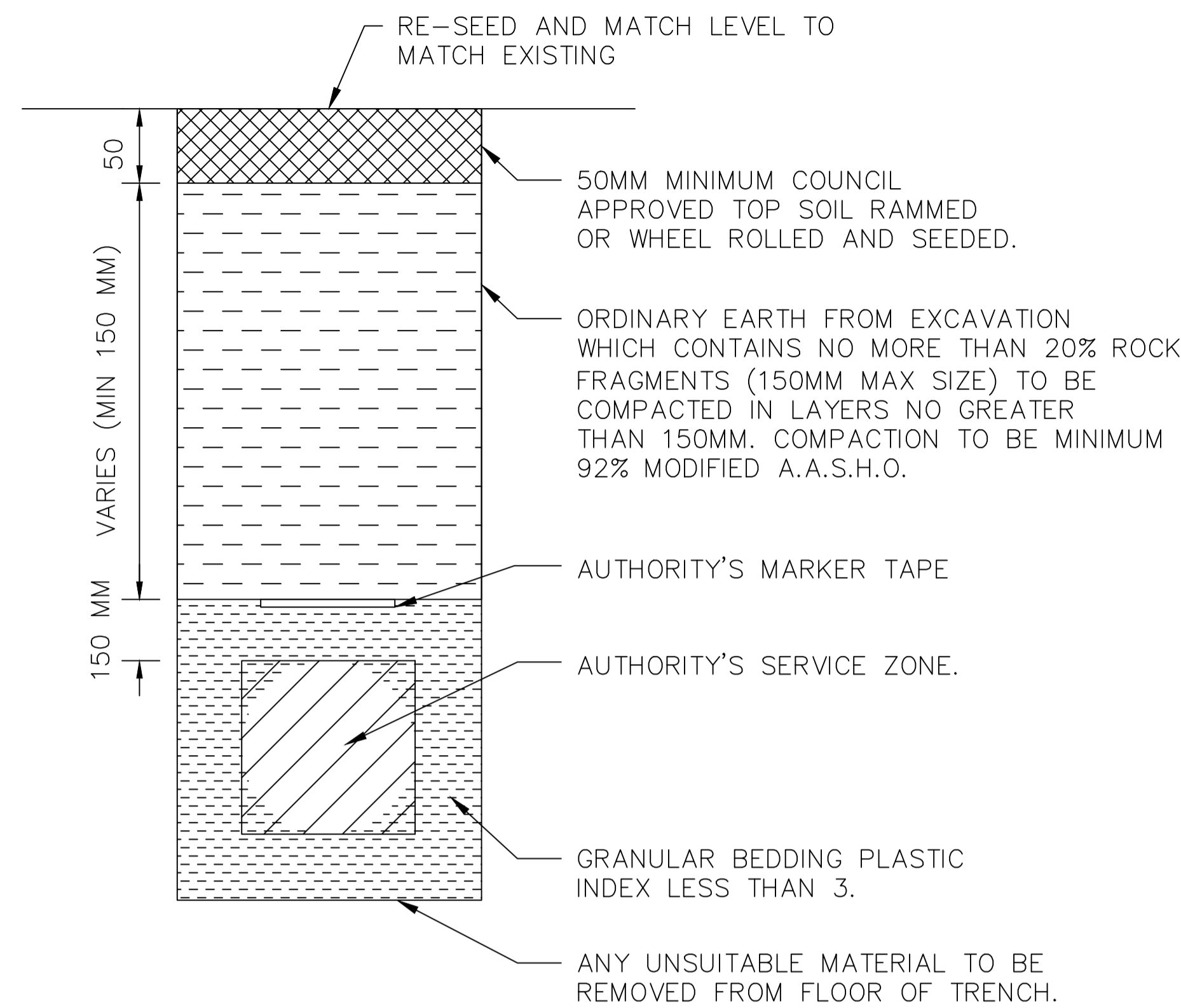
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 13
FILE NAME: STANDARD DRAWINGS.DWG	<b>SD-R 12</b>	
REVISION GMC-VER-1		

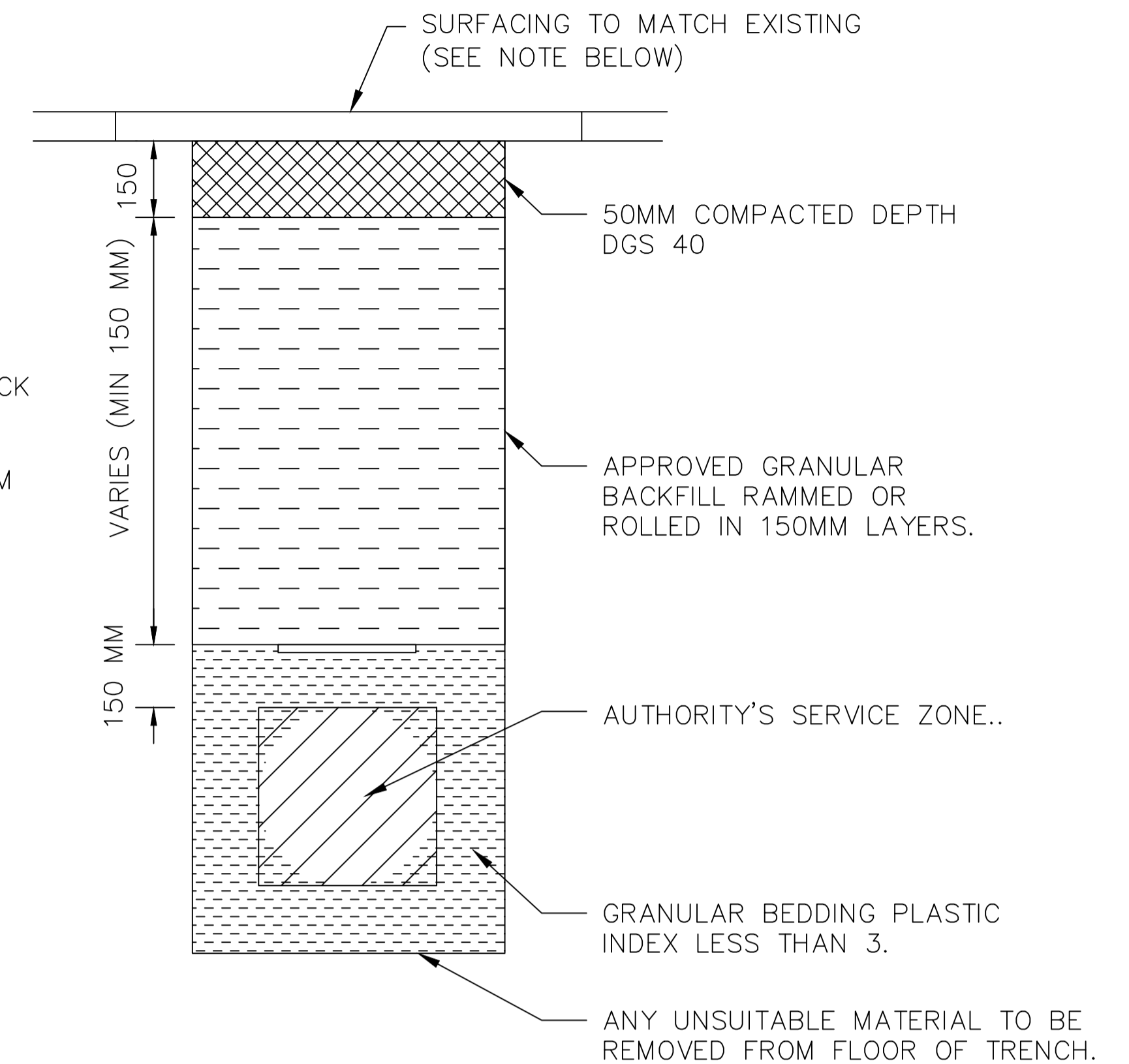
DRAWING NUMBER SD-R 12



PAVED CARRIAGEWAYS



GRASSED FOOTWAYS



PAVED FOOTWAYS

NOTES:

- S 138 APPROVAL
  - "APPLICATION TO CARRY OUT ACTIVITY UNDER S138 OF ROADS ACT" FORM MUST BE OBTAINED FROM COUNCIL PRIOR TO WORKS COMMENCING.
  - A MINIMUM THREE WORKING DAYS NOTICE TO BE GIVEN PRIOR TO COMMENCEMENT.

- COMPACTION AND TESTING
  - MOISTURE CONTENT SHALL BE ADJUSTED TO OPTIMUM AT TIME OF COMPACTION.
  - COMPACTION TESTS ARE REQUIRED FOR EACH LAYER WHERE DENSITY IS SPECIFIED.

3. SURFACING

CONCRETE FOOTPATH	25 MPA CONCRETE, 75MM DEEP (REF: SD-R 04)
CONCRETE VEHICULAR CROSSING	25 MPA CONCRETE, 125MM DEEP INCLUDING F72 MESH (REF: SD-R 08)
SEAL	(I) BITUMINOUS CONCRETE (HOTMIX) 30MM RESIDENTIAL ROADS. 40MM COLLECTORS ROADS/INDUSTRIAL ROADS (II) 2 COAT SPRAY SEAL ON EXISTING SPRAY SEAL ROADS ONLY.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES REMOVED MINES ACT 15M (I ALDRIDGE 2012)
DESIGNED & DRAFTED	T.DIMEC	09/07/2009	NOTES CHANGED/ADDED (I ALDRIDGE JANUARY 2018)
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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**TRENCH BACKFILL DETAILS FOR ROAD CROSSINGS**


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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 14
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-R 13</b>		

DRAWING NUMBER SD-R 13

..\standard drawings old\standard drawings\_sep 2013\sd w 01.jpg

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	K.STEWART	08/05/2012	
DESIGN REVIEWED	K.STEWART	08/05/2012	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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**TYPICAL 20-25MM WATER METER  
ASSEMBLY ARRANGEMENT**

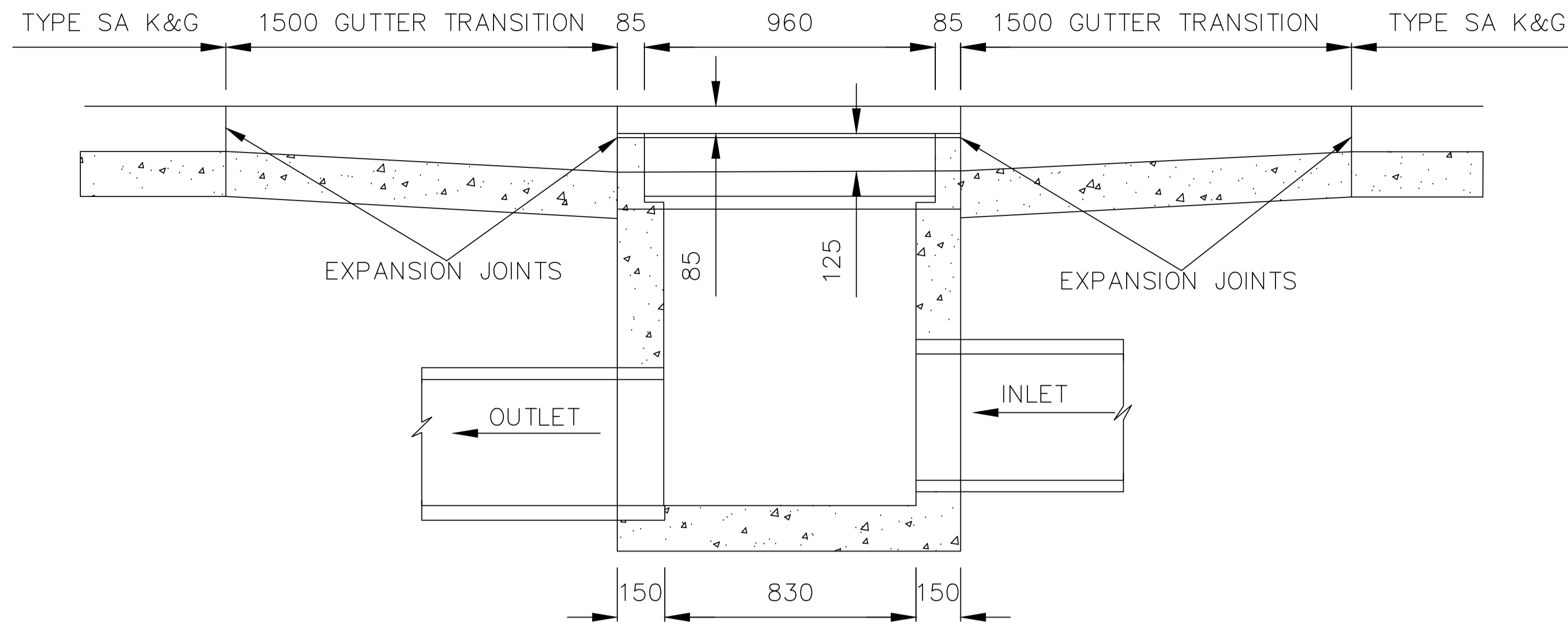
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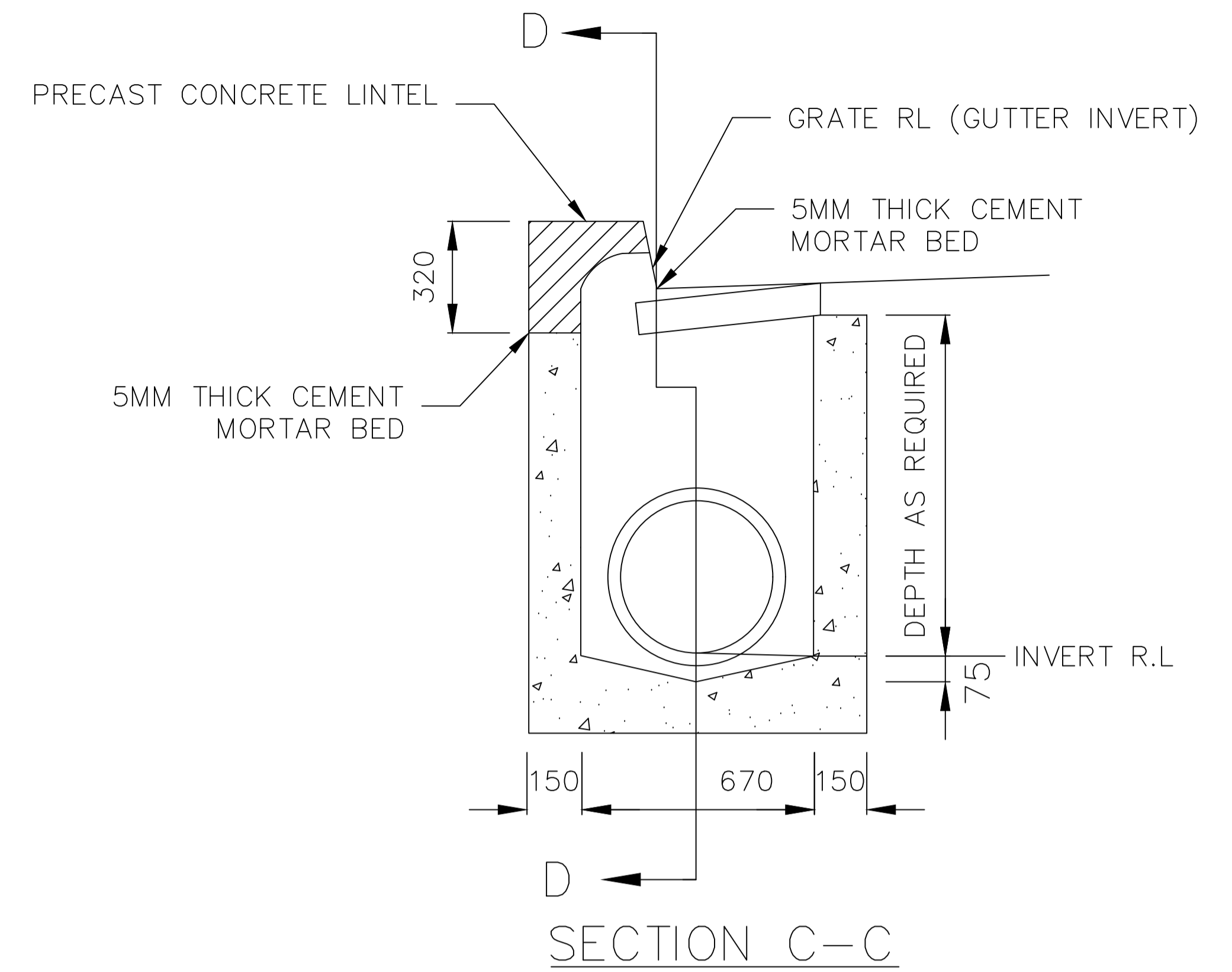


A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 15
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-W 01</b>		

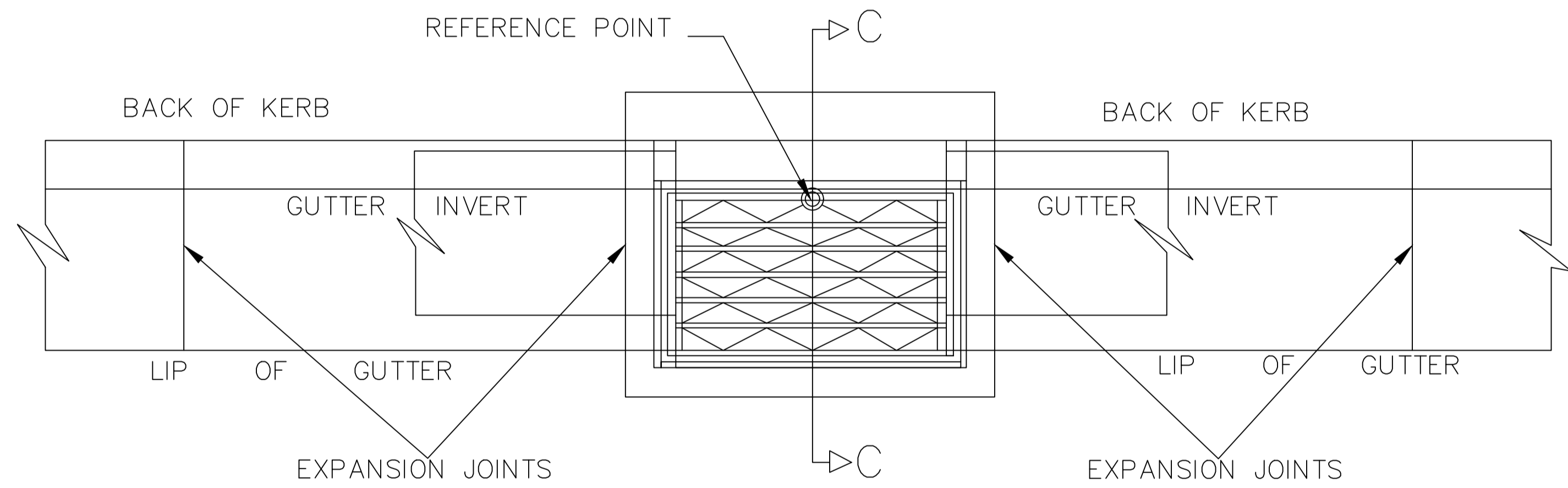




SECTION D-D (GRATING REMOVED)



SECTION C-C



PLAN

NOTES:

1. CONCRETE STRENGTH 25 MPA.
2. STEEL: HOT DIP GALVANISED IN ACCORDANCE WITH AS1650.
3. PROVIDE SUBSURFACE DRAINS INTO PITS.
4. SIDE WALLS OF PITS DEEPER THAN 1500 TO BE REINFORCED WITH ONE LAYER OF N72 MESH AND RETURNED INTO BASE.
5. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 600. REFER TO (SD-D 11)
6. GULLY GRATE AND FRAME TYPE GG 78-49, GG 78-50 OR EQUIVALENT.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	RMS		
DESIGN REVIEWED	GS.LOTAY	07/11/2011	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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WORK AS EXECUTED			

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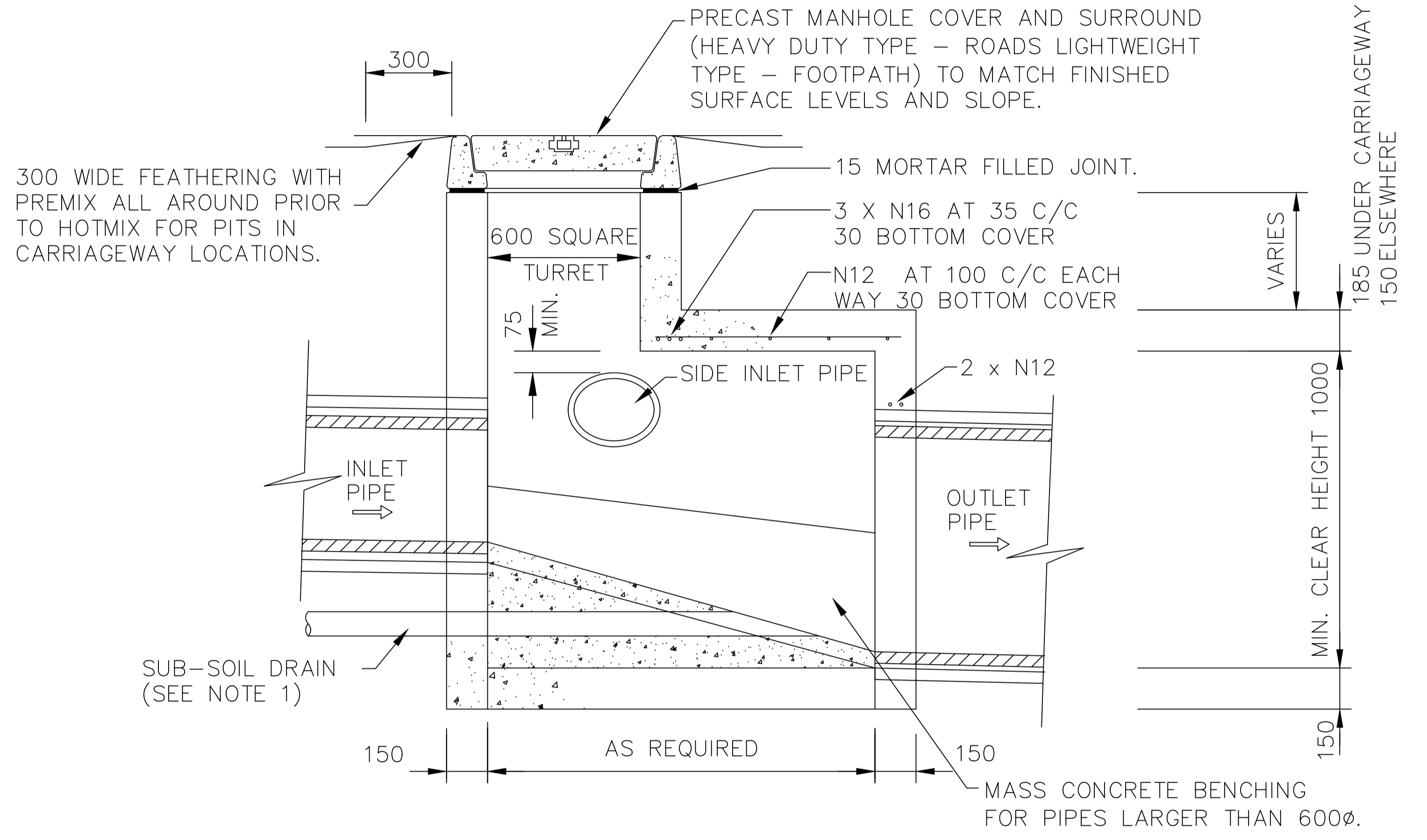
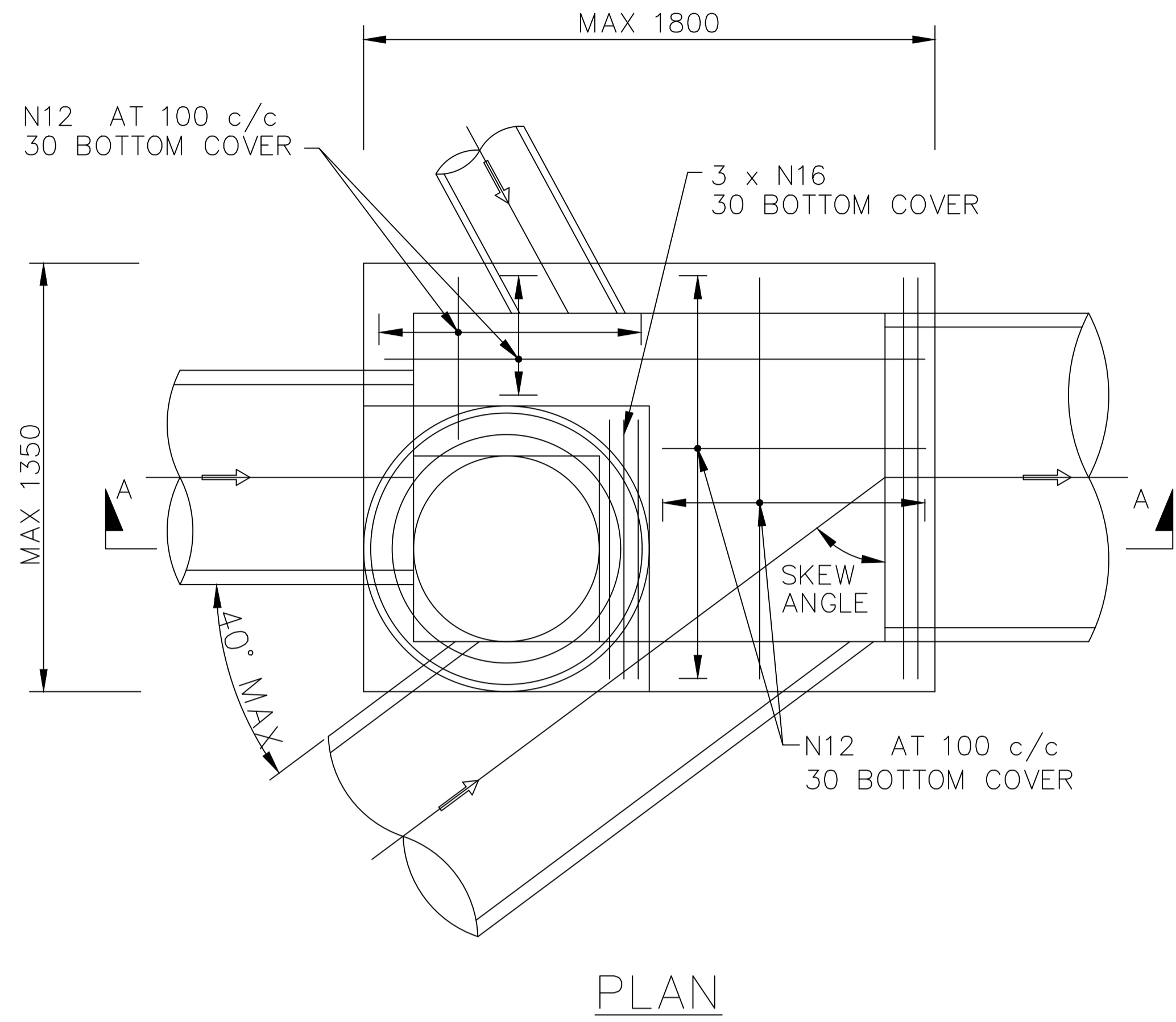
**SIDE ENTRY PIT  
 WITHOUT EXTENDED CHAMBER PIT**

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 16
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-D 01</b>		



SECTION A - A

NOTES:

1. PROVIDE  $\phi 100$  SUB-SOIL DRAINAGE PIPE, 2000 LONG, WRAPPED IN FABRIC SOCK ADJACENT TO INLET PIPES.
2. MAXIMUM OUTLET PIPE ON STRAIGHT  $\phi 900$ .
3. MAXIMUM OUTLET PIPE ON SKEW  $\phi 825$ .
4. MAXIMUM SIDE ENTRY PIPE  $\phi 825$  AT APPROX.  $40^\circ$  SKEW.
5. MINIMUM INTERNAL DIMENSIONS - LENGTH 900 MM  
- WIDTH 700 MM  
- HEIGHT 1000 MM
6. CAST IN SITU CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPA AT 28 DAYS.
7. WHERE PITS ARE DEEPER THAN 600 MM PROVIDE STEP IRONS, REFER TO SD-D 11.
8. PITS DEEPER THAN 1500 MM SHALL BE REINFORCED WITH ONE LAYER OF SL82 TO FLOOR AND WALLS FOR THE FULL DEPTH. PITS DEEPER THAN 2000 MM SHALL BE STRUCTURALLY DESIGNED.

DRAWING NUMBER SD-D 02

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			TITLE CHANGED (I ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/07/2009	
DESIGN REVIEWED	P.SMART	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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WORK AS EXECUTED			

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GOULBURN, NSW-2580  
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**JUNCTION PIT**

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A1 - SCALE AS SHOWN

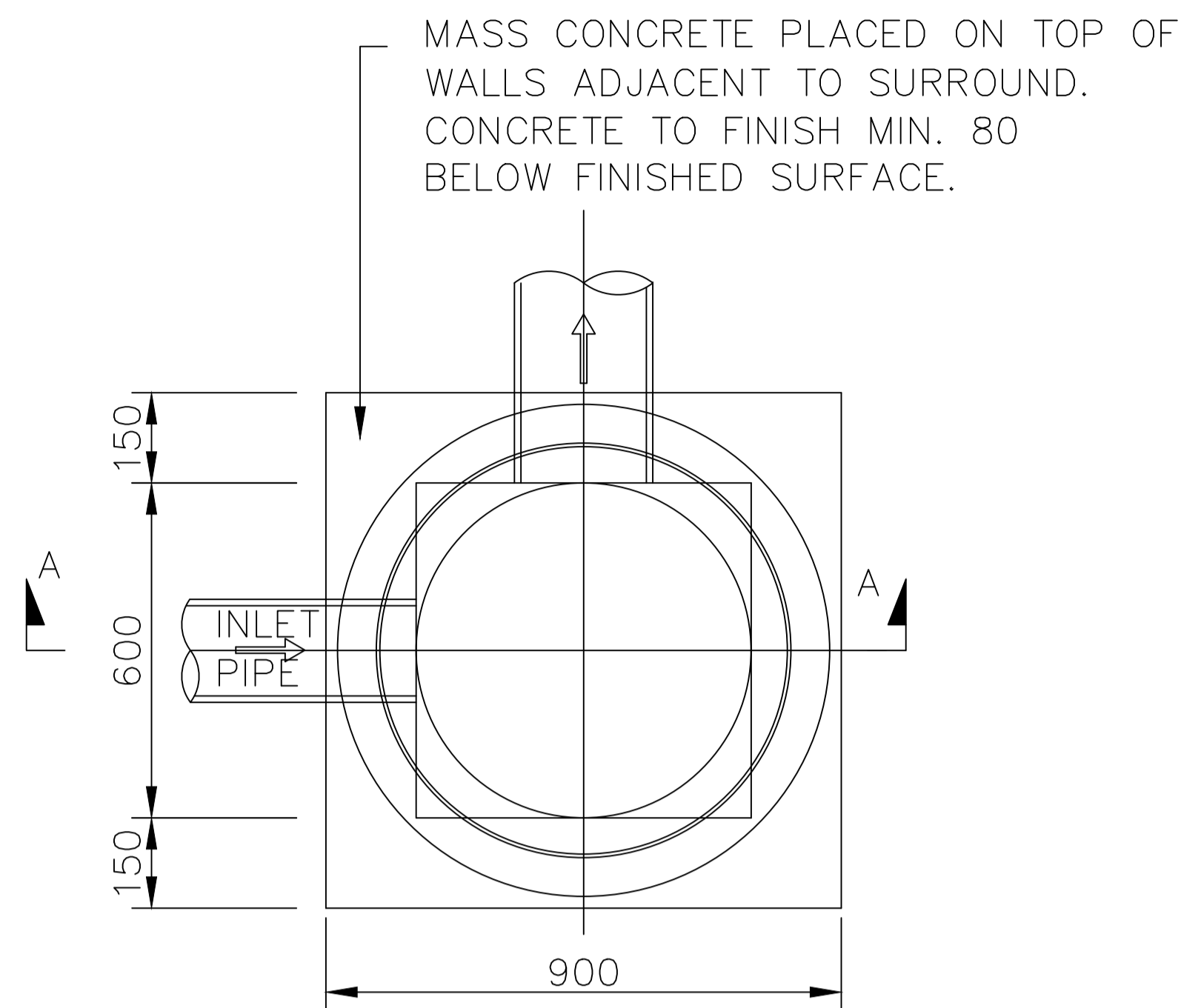
NUMBER OF SHEETS 34

SHEET NUMBER 17

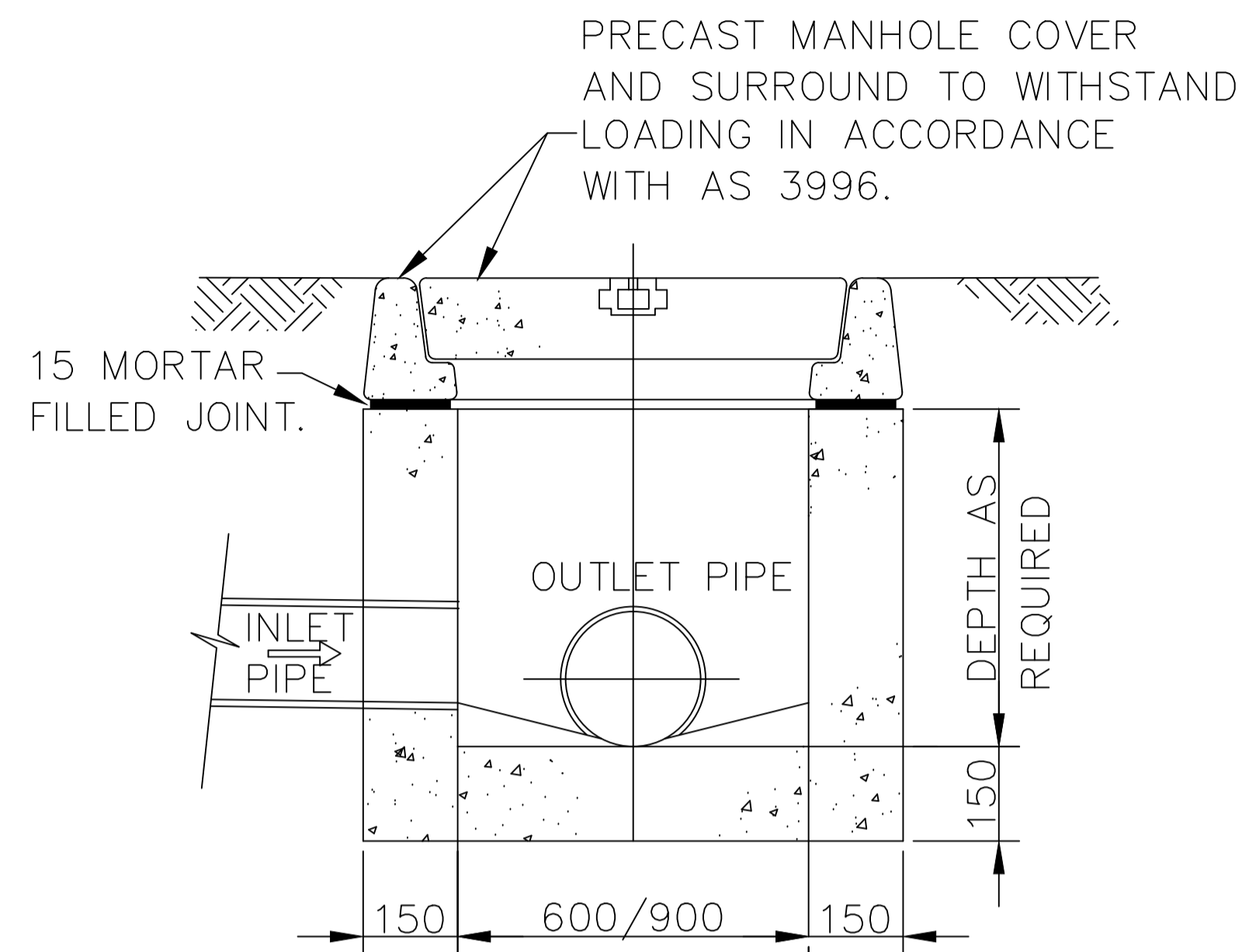
FILE NAME: STANDARD DRAWINGS.DWG

REVISION GMC-VER-1

**SD-D 02**

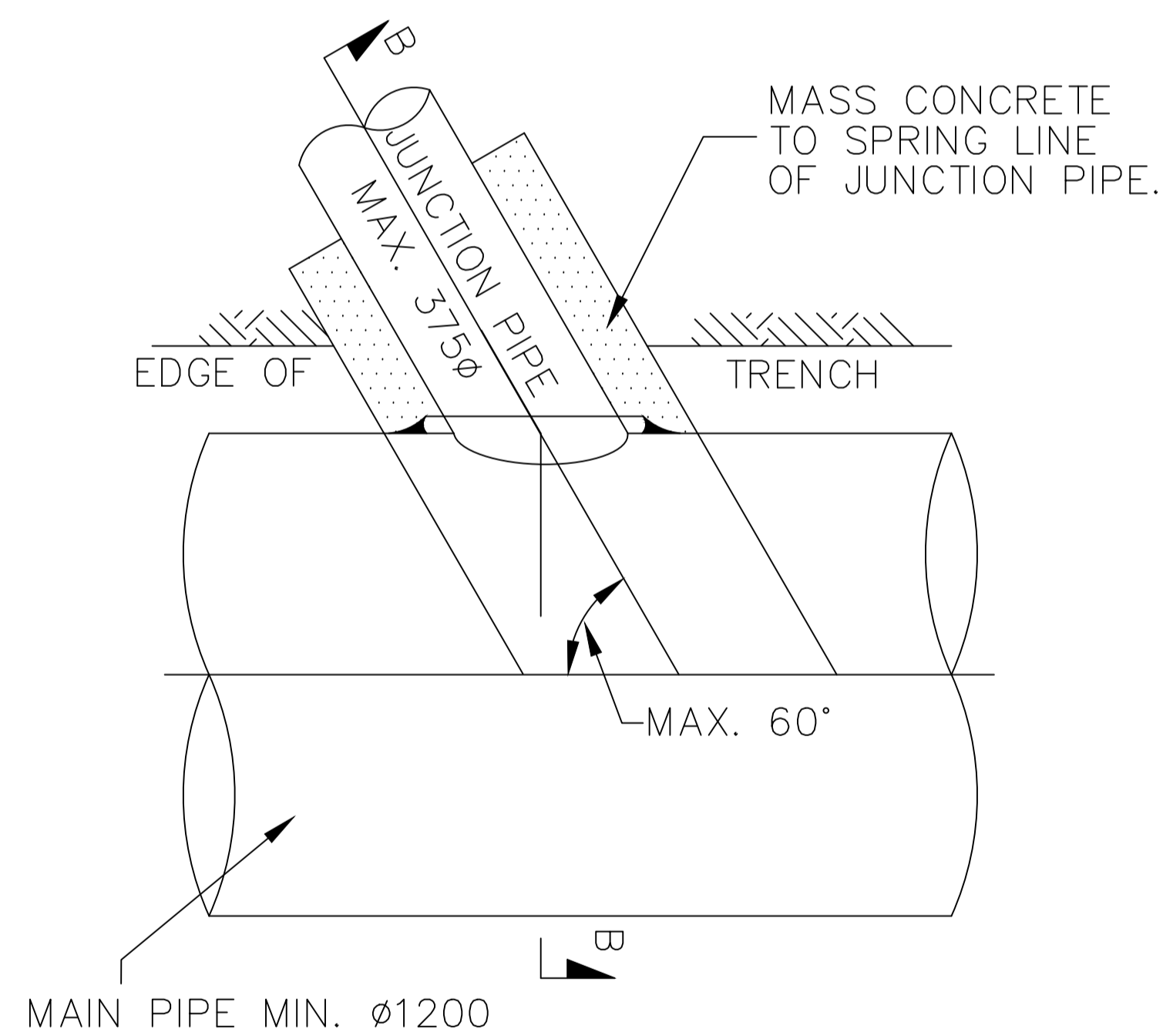


PLAN

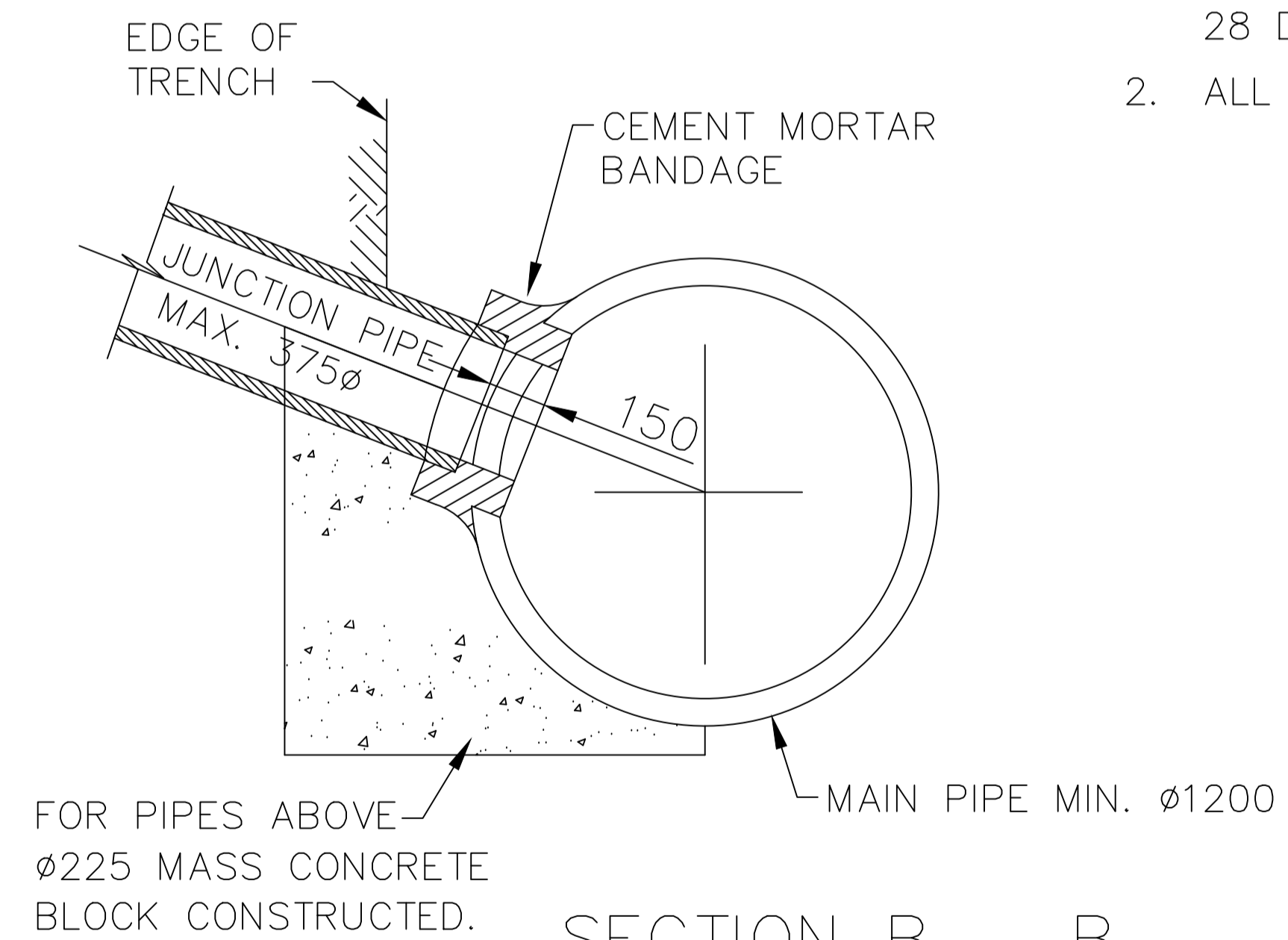


SECTION A - A

CONCRETE INSPECTION PIT



PLAN



SECTION B - B

NOTES:

1. CONCRETE STRENGTH 25 MPA AT 28 DAYS.
2. ALL DIMENSIONS IN MILLIMETERS

TYPICAL DIRECT CONNECTION OF SMALL PIPE AND LARGE PIPE

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I/ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/07/2009	
DESIGN REVIEWED	P.SMART	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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**DRAINAGE CONNECTIONS**  
**MINOR**

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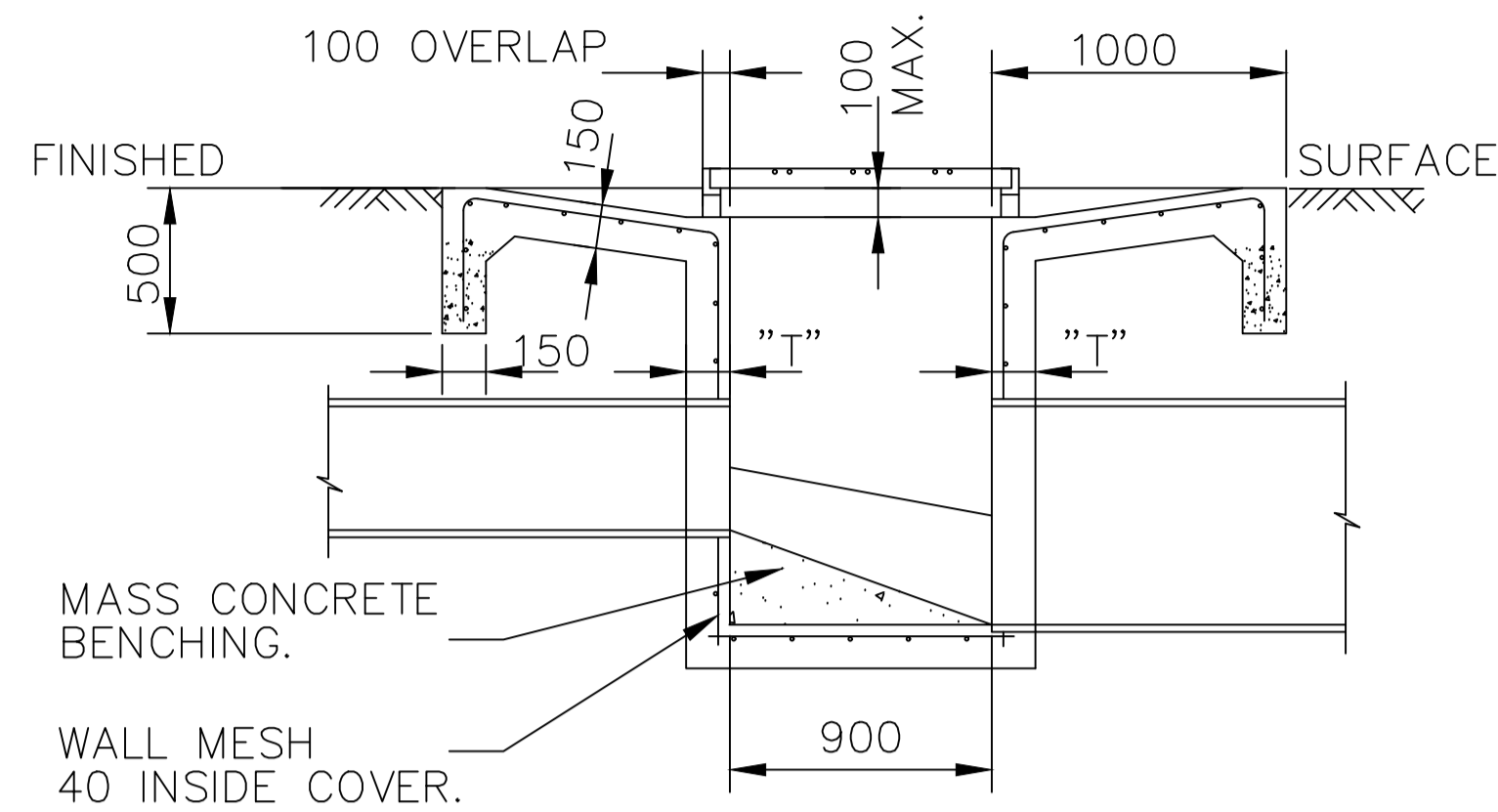
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 18
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RD: -		<b>SD-D 03</b>

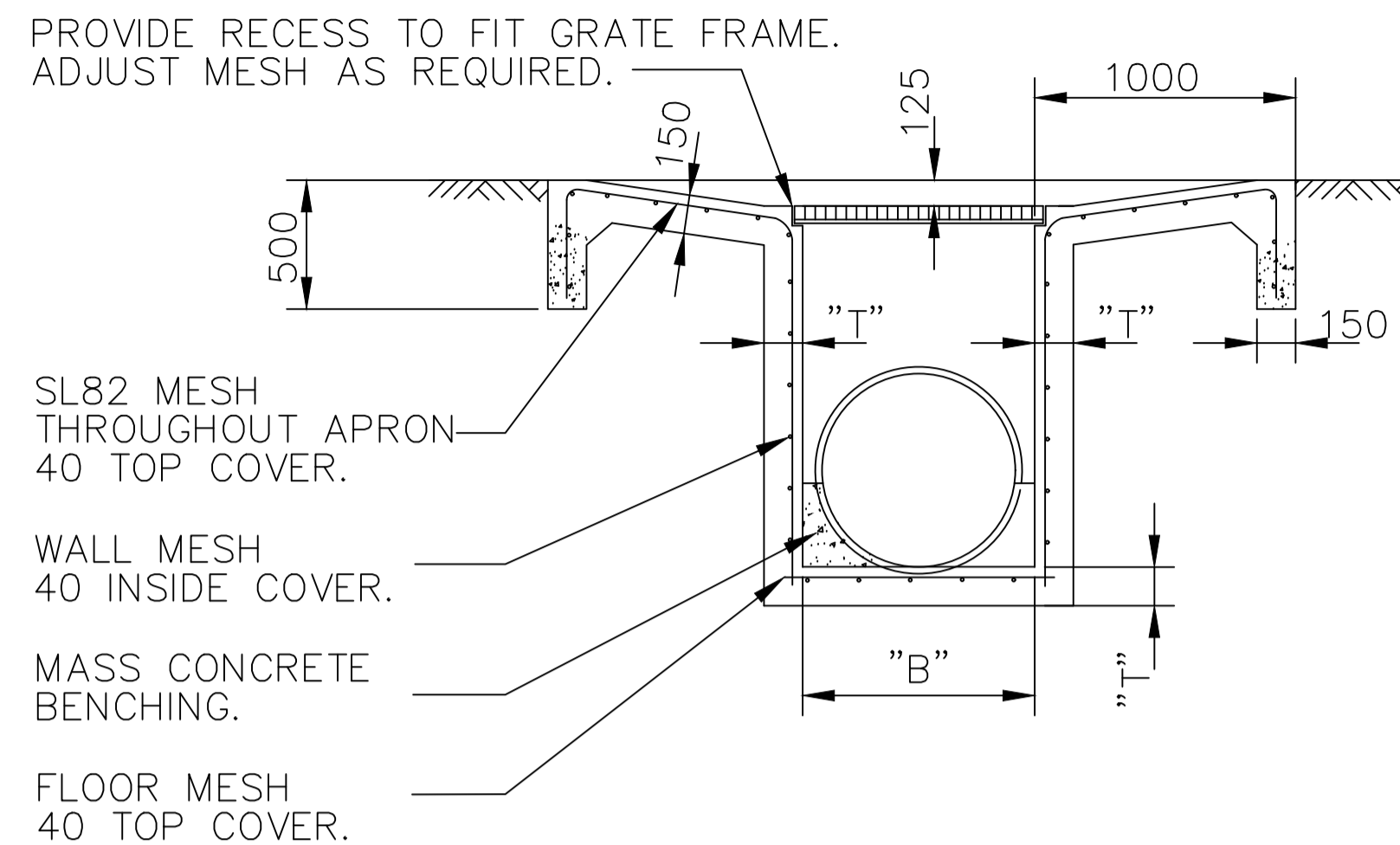
DRAWING NUMBER SD-D 03





SECTION A - A

PIT TYPE A - RAISED GRATE

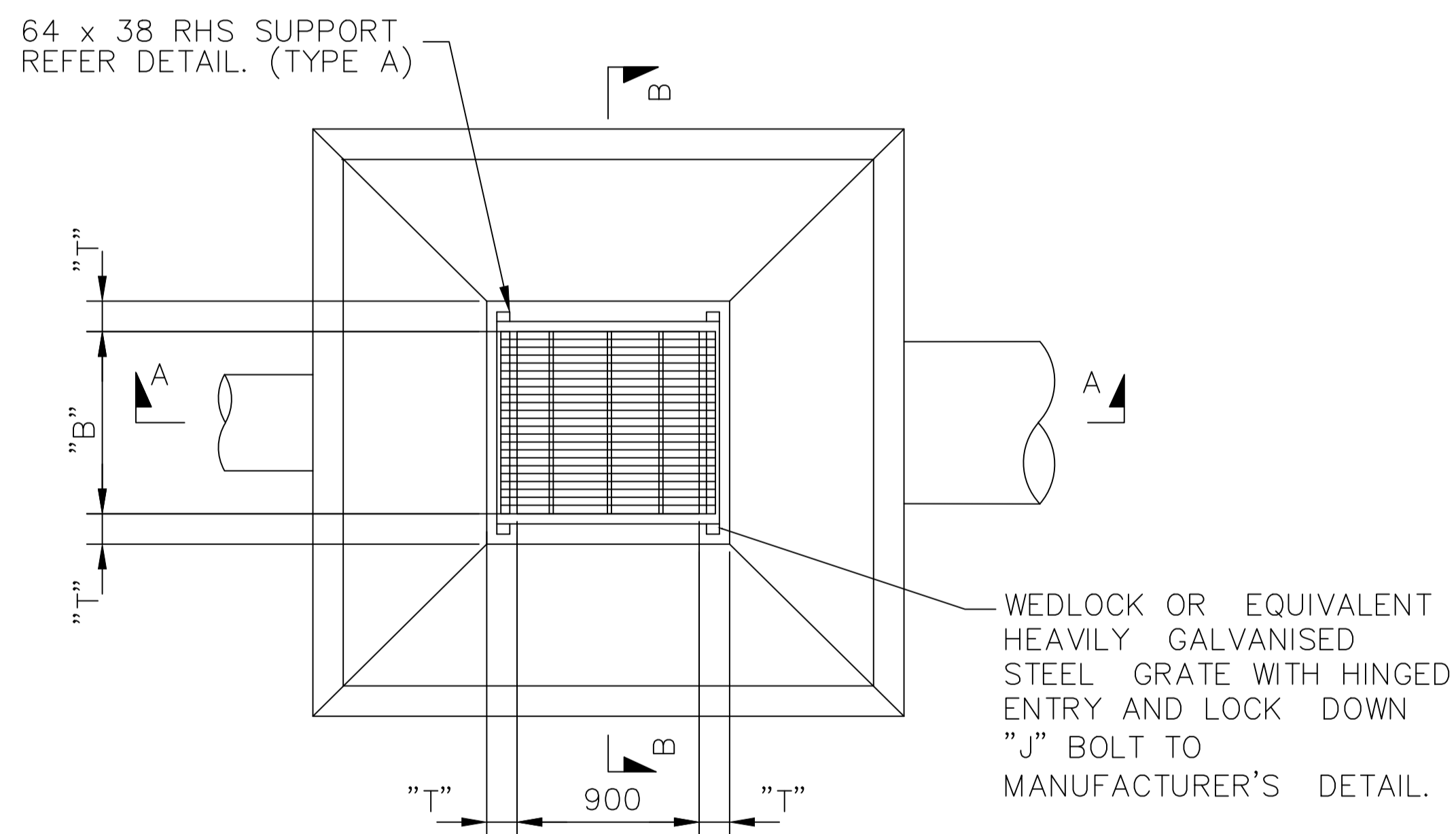


SECTION B - B

PIT TYPE B - FLUSH GRATE

NOTES:

1. ALL CONCRETE TO HAVE A MINIMUM STRENGTH OF 25 MPA EXCEPT MASS CONCRETE BENCHING 5MPA.
2. APPROVED STEP IRONS SHALL BE PROVIDED WHERE THE PIT EXCEEDS 600MM IN DEPTH. REFER TO SD-D 11.
3. GRATES MUST BE CLASS C FOR NON-ROAD INSTALLATION AND CLASS D FOR ROAD INSTALLATION. CLASSES AS DEFINED IN A.S.3996.
4. GRATE LEGS TO BE WELDED TO FRAME PRIOR TO GALVANISING. (TYPE A)
5. MASS CONCRETE BENCHING TO PIPE CENTERLINE MUST BE PROVIDED AS INDICATED.
6. WHERE SITE CONDITIONS DICTATE, THE PIT TOPS MAY BE INCLINED TO AN UPPER LIMIT OF 1 VERTICAL. IN 4 HORIZONTAL. NO ALTERATION TO REINFORCEMENT IS REQUIRED, HOWEVER, THE ENTIRE PIT ROOF (AND ACCOMPANYING APRONS) ARE TO REMAIN PLANAR.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

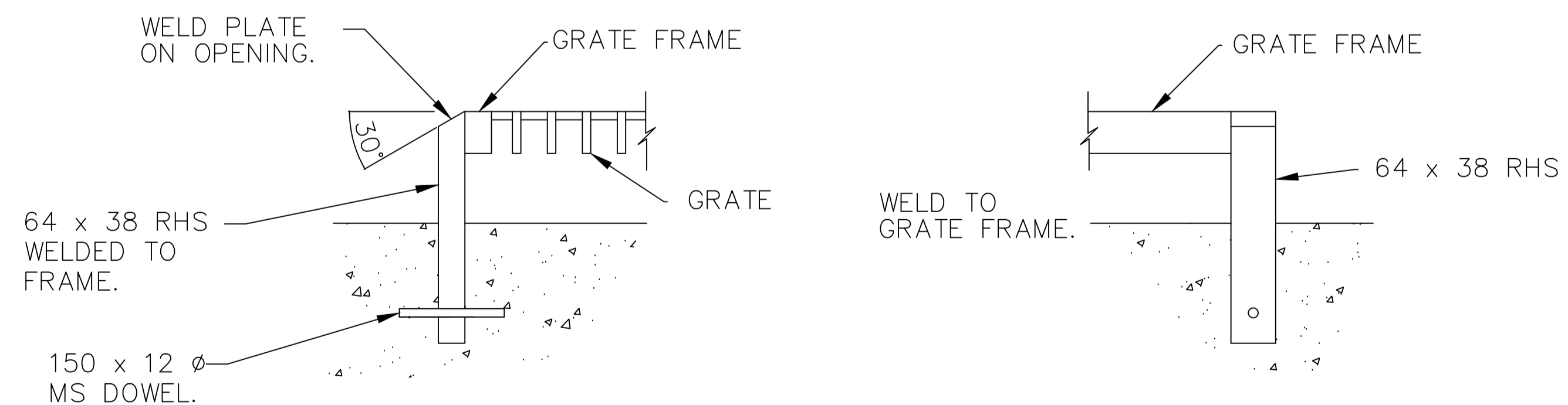


PLAN - PIT TYPE A and B

TYPICAL DETAIL SURFACE INLET TO SUIT PIPES UP TO 1500mm DIA.

PIT DIMENSIONS AND MESH			
LARGEST PIPE CONNECTED TO PIT	DIMENSION "B"	DIMENSION "T"	MESH (WALLS and FLOOR ONLY)
UP TO 525	600	150	SL82
UP TO 750	900	150	SL82
825 - 900	1000	150	SL82
1050 - 1200	1400	150	SL82
1350	1550	200	SL82
1500	1700	200	SL102

NOTWITHSTANDING THE ABOVE TABLE, PITS DEEPER THAN 2000mm TO INVERT SHALL BE STRUCTURALLY DESIGNED.



DETAIL SHOWING CONNECTION OF RAISED GRATE TO PIT. (TYPE A)

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/07/2009	
DESIGN REVIEWED	P.SMART	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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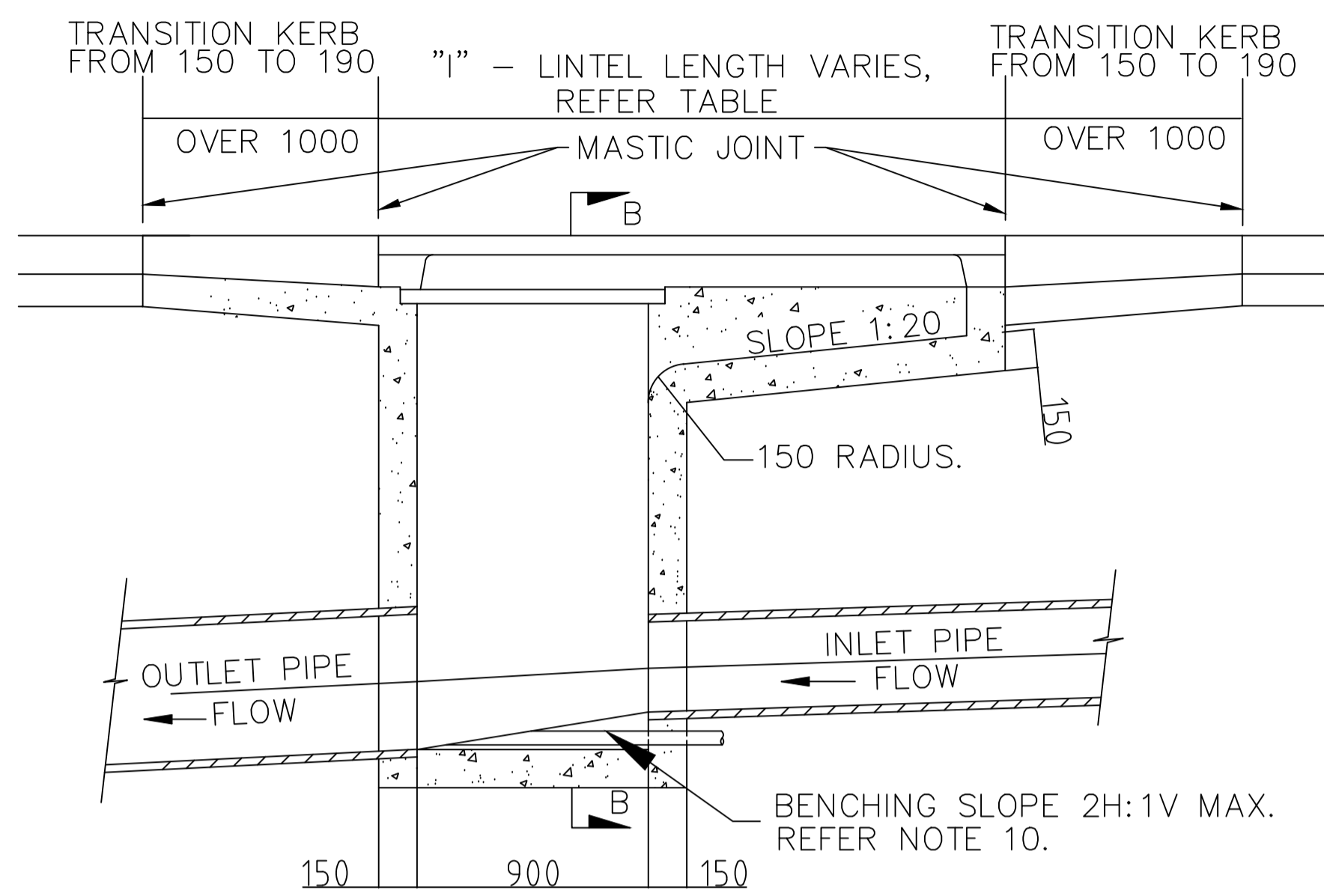
**SURFACE INLET PITS**

**TYPE A - RAISED GRATE**  
**TYPE B - FLUSH GRATE**

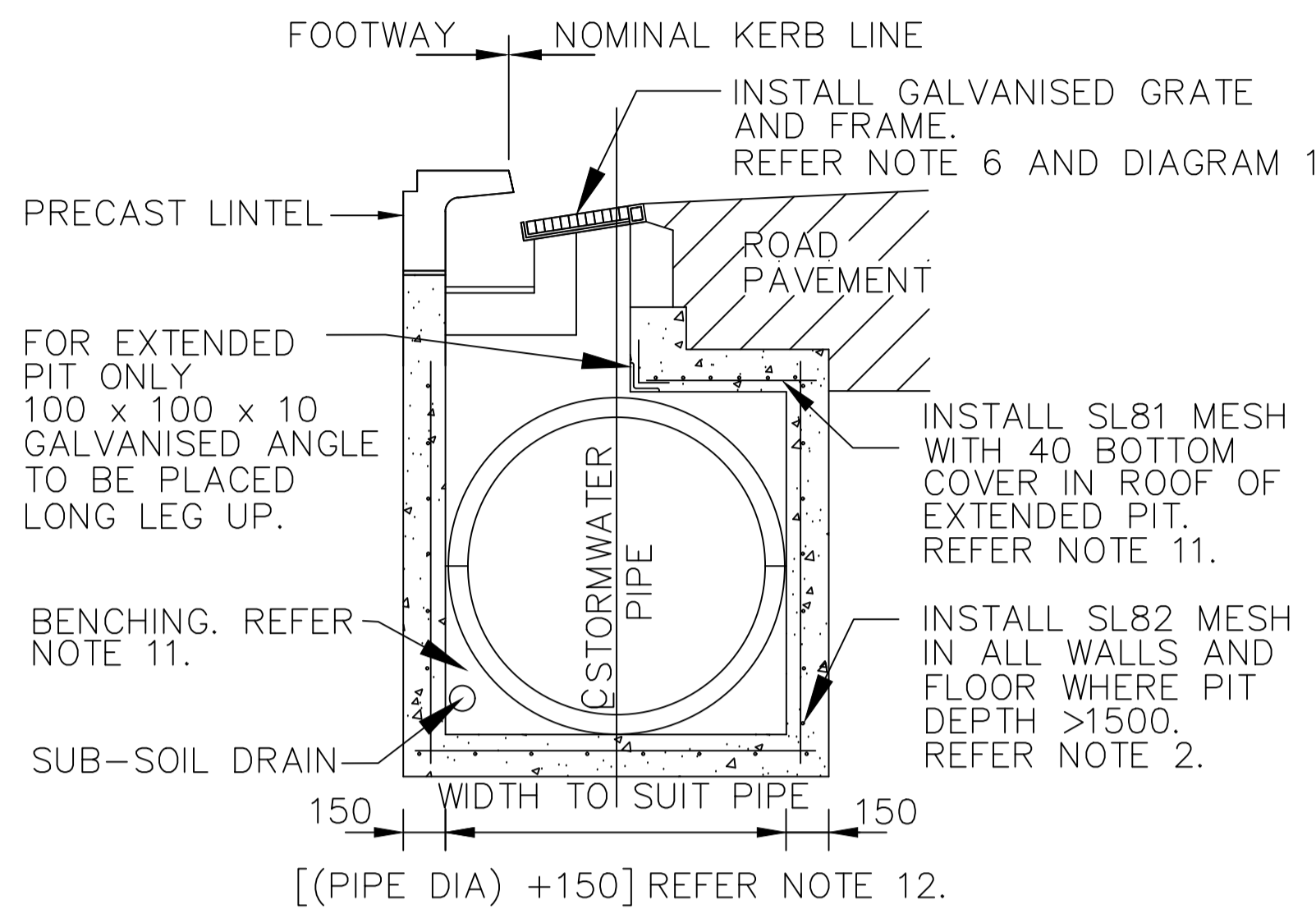
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 19
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-D 04		RD: -

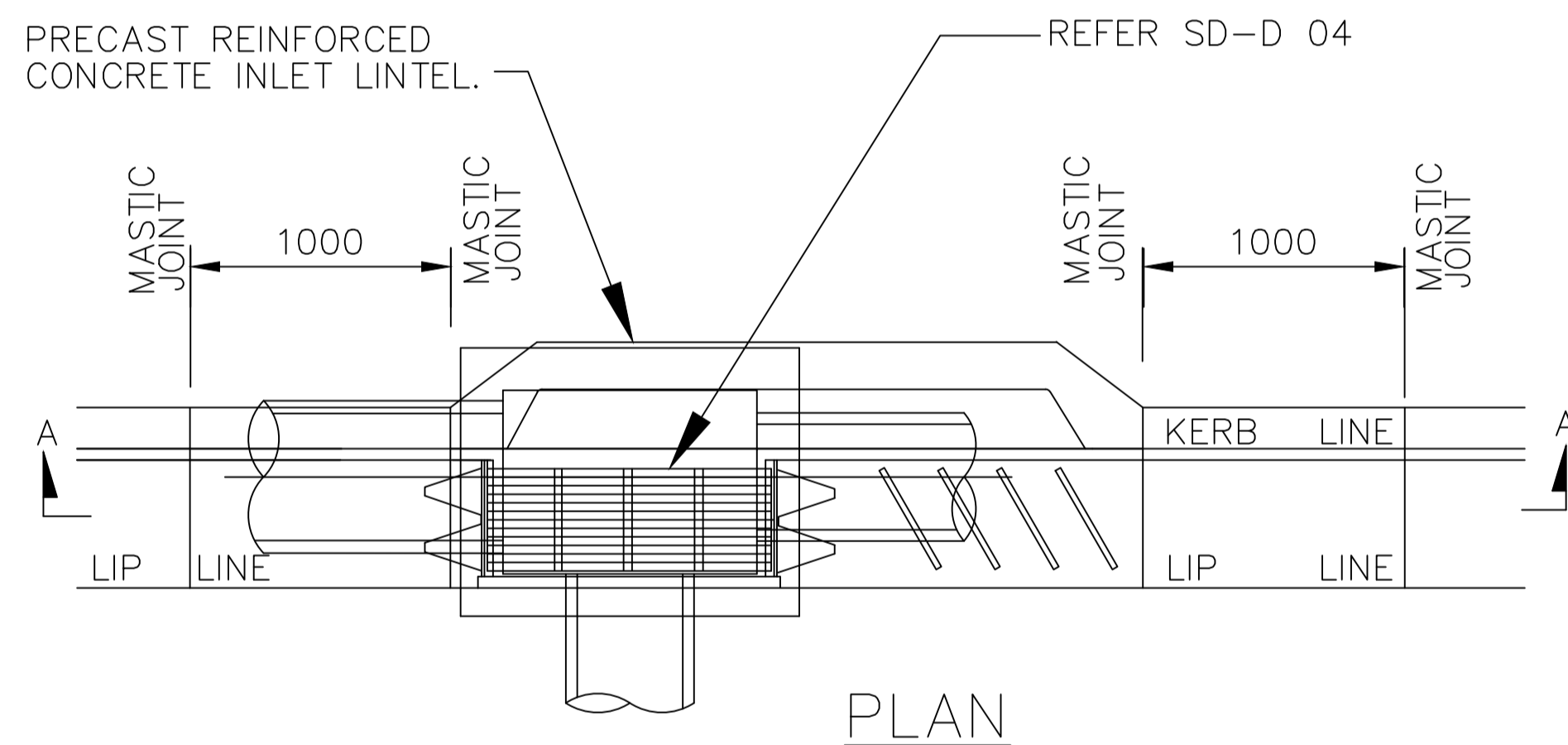
DRAWING NUMBER SD-D 04



SECTION A - A



SECTION B - B  
EXTENDED PIT CHAMBER  
REFER NOTE 9.



PLAN

PRECAST LINTEL SIZES.	
NOMINAL OPENING SIZE METRES	OVERALL LENGTH "L" mm
0.9	1825
1.2	1825
1.8	2438
2.4	3048
3.0	3657
3.6	4267
4.2	4877
4.8	5486

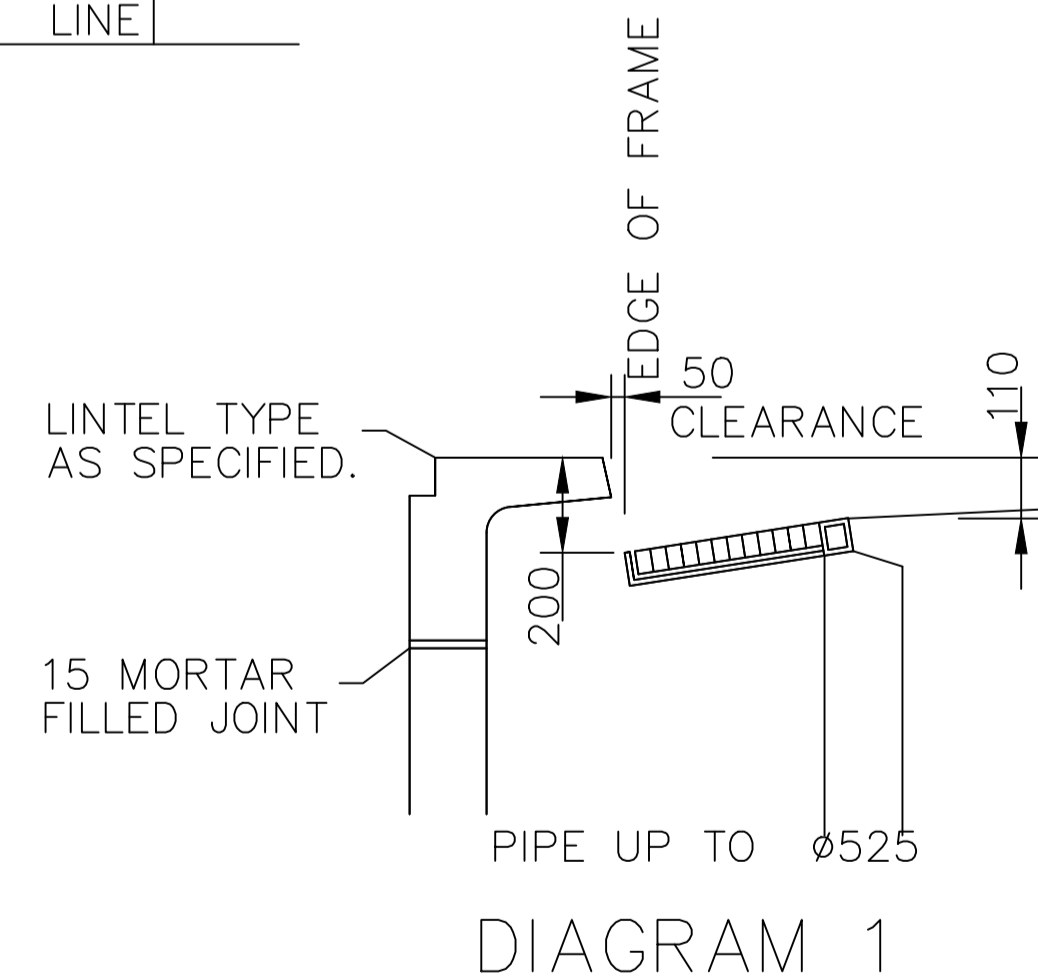
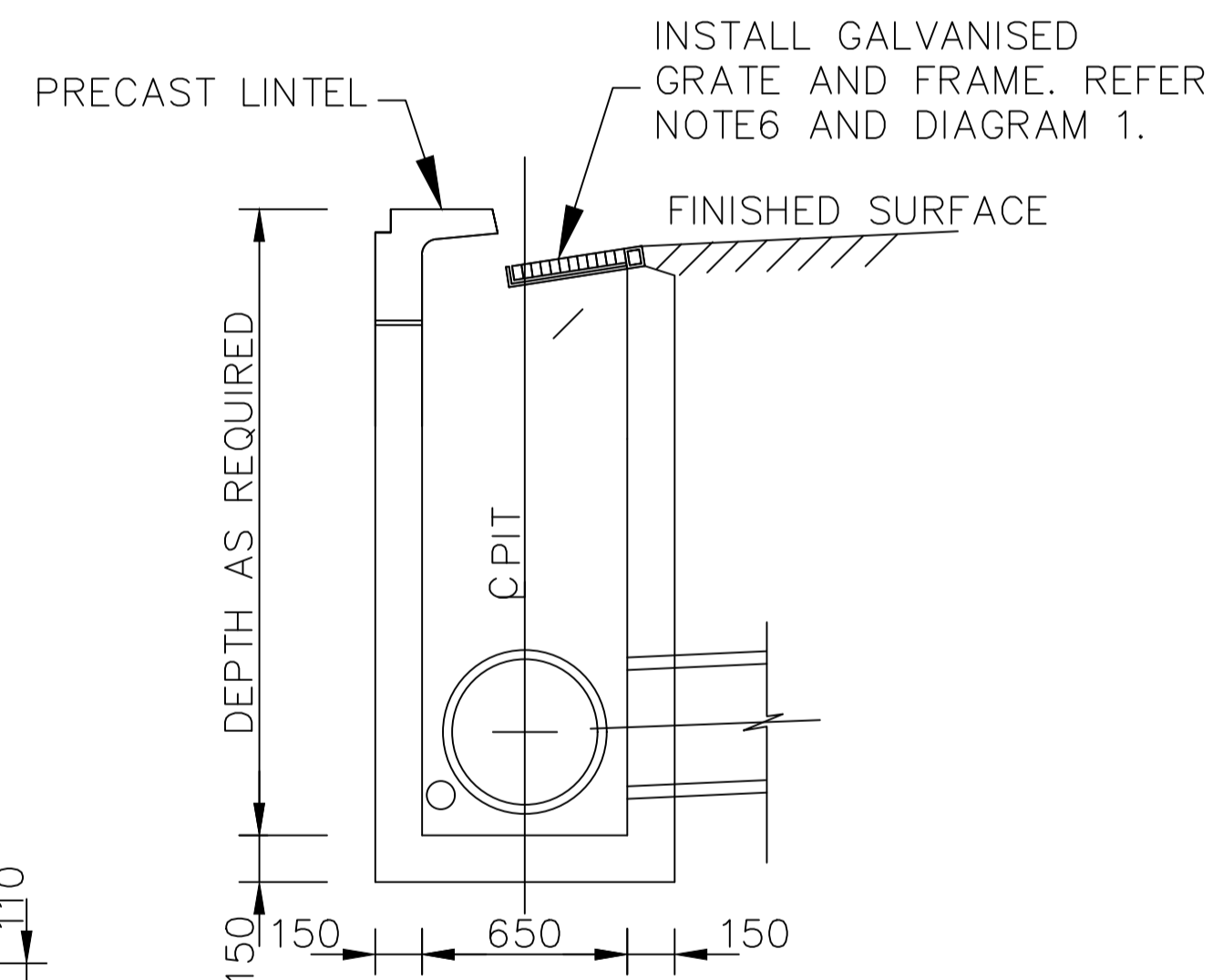


DIAGRAM 1



SECTION B - B  
STANDARD PIT  
REFER NOTE 9.

NOTES:

- ALL CONCRETE TO HAVE A MINIMUM STRENGTH OF 25 MPA AT 28 DAYS UNLESS OTHERWISE NOTED.
- WHERE DEPTH OF PIT EXCEEDS 1500MM, WALLS AND BOTTOM TO BE REINFORCED IN ALL DIRECTIONS WITH SL82 MESH AT 40 COVER TO INSIDE FACE WITH N12 CORNER BARS 300 LEGS AT 400 CTRS. PITS DEEPER THAN 2000 SHALL BE DESIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER.
- SAG PITS TO HAVE LINTEL LOCATED CENTRALLY OVER PIT.
- BACKFILL ADJACENT TO PITS TO BE APPROVED GRANULAR MATERIAL.
- A 3M LENGTH OF APPROVED "FILTER FABRIC" WRAPPED 100MM SUB-SOIL DRAIN OR EQUIVALENT IS TO BE PROVIDED AND CONNECTED TO THE UPSTREAM PIT WALL.
- PIT GRATE AND FRAME TO BE "WELDLOK" GG78-50 FOR RESIDENTIAL ROADS AND GG78-42A FOR INDUSTRIAL ROADS, FITTED WITH A LOCKABLE "J" BOLT.
- STEP IRONS WHERE THE PIT EXCEEDS 600MM IN DEPTH. AS PER SD-D 11.
- THE CENTRE LINES OF INTERSECTING PIPES ARE TO MEET AT THE DOWNSTREAM FACE OF THE PIT WHERE POSSIBLE.
- WHERE ENTERING PIPE EXCEEDS 525MM IN DIAMETER, EXTEND PIT CHAMBER AS SHOWN.
- FLOOR OF PIT TO BE BENCHED TO MID POINT OF OUTLET PIPE WHERE OUTLET PIPE IS >600MM DIAMETER.
- WHERE EXTENDED CHAMBER WIDTH EXCEEDS 1200MM, ROOF REINFORCEMENT TO BE DESIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
- PITS IN AREAS OF SALINITY HAZARD SHALL BE APPROPRIATELY DESIGNED.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			TITLE CHANGED (I ALDRIDGE 2012)
DESIGNED & DRAFTED	T.DIMEC	14/07/2009	
DESIGN REVIEWED	T.DIMEC	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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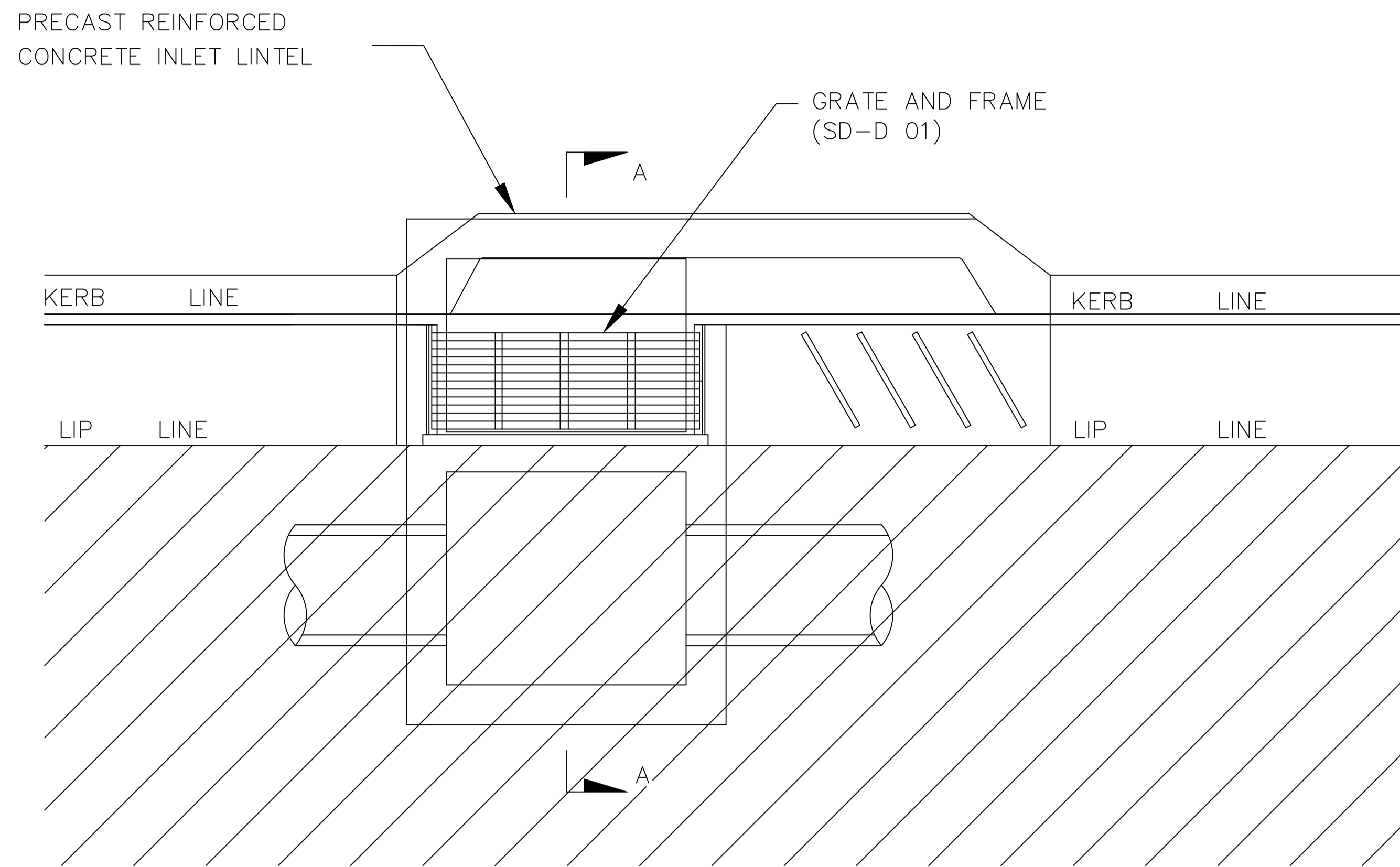
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 DATE: 28/02/2018

**KERB INLET PIT WITH GRATE**  
**EXTENDED CHAMBER PIT**

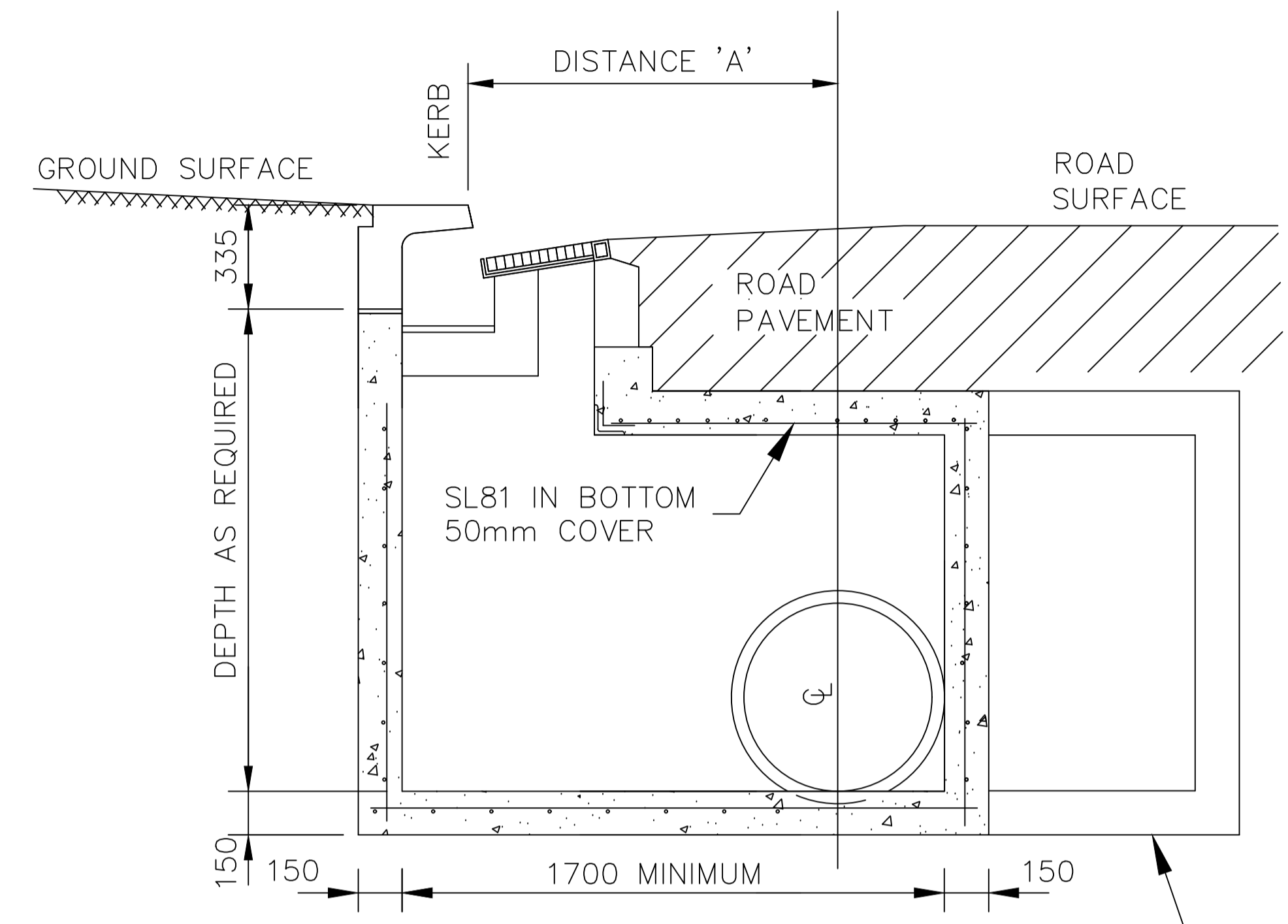
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 20
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-D 05 A</b>		





PLAN



SECTION A-A

PIPE $\phi$ OFFSETS FROM KERB	
PIPE DIAMETER mm	DISTANCE 'A' mm
375	1100
450	1100
525	1100
600	1100
675	1250
750	1250
825	1250
900	1250
1050	1450
1200	1450

NOTES:

1. CONCRETE STRENGTH 25 MPA.
2. STEEL: HOT DIP GALVANISED IN ACCORDANCE WITH AS1650.
3. SIDE WALLS OF PITS DEEPER THAN 1500 TO BE REINFORCED WITH ONE LAYER OF N72 MESH AND RETURNED INTO BASE.
4. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 600MM. (REFER TO: SD-D 11)
5. GULLY GRATE AND FRAME TYPE GG 78-49, GG 78-50 OR EQUIVALENT. (REFER TO SD-D 01)
6. KERB INLET TO BE ADJUSTED AS REQUIRED TO SUIT "WEDLOCK" GRATE AND LINTEL GG 78-57 OR SIMILAR.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/07/2009	
DESIGN REVIEWED	P.SMART	14/07/2009	
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DATE: 28/02/2018

**KERB INLET PIT WITH GRATE**  
**STORMWATER PIPE IN FRONT OF KERB**

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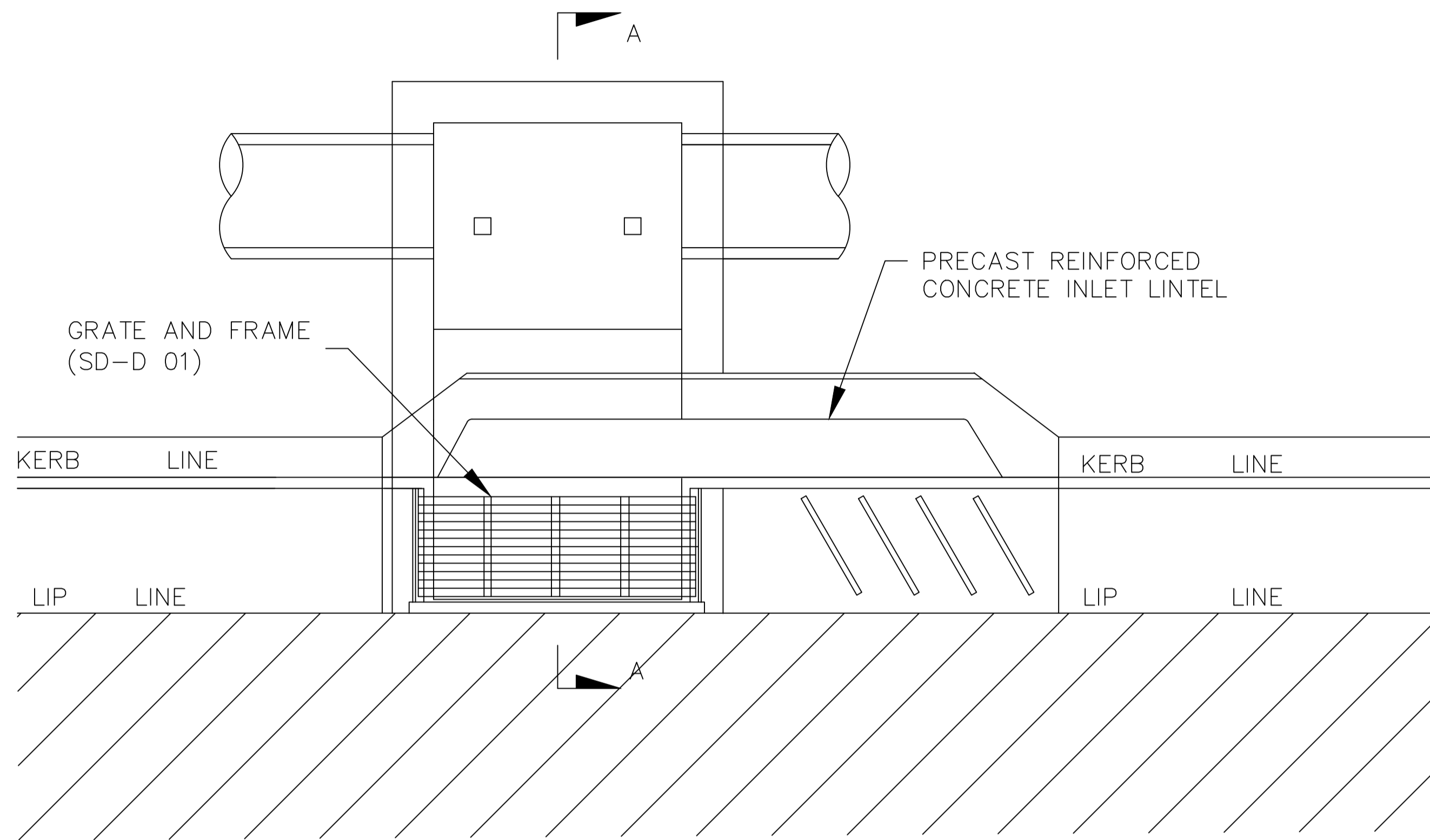
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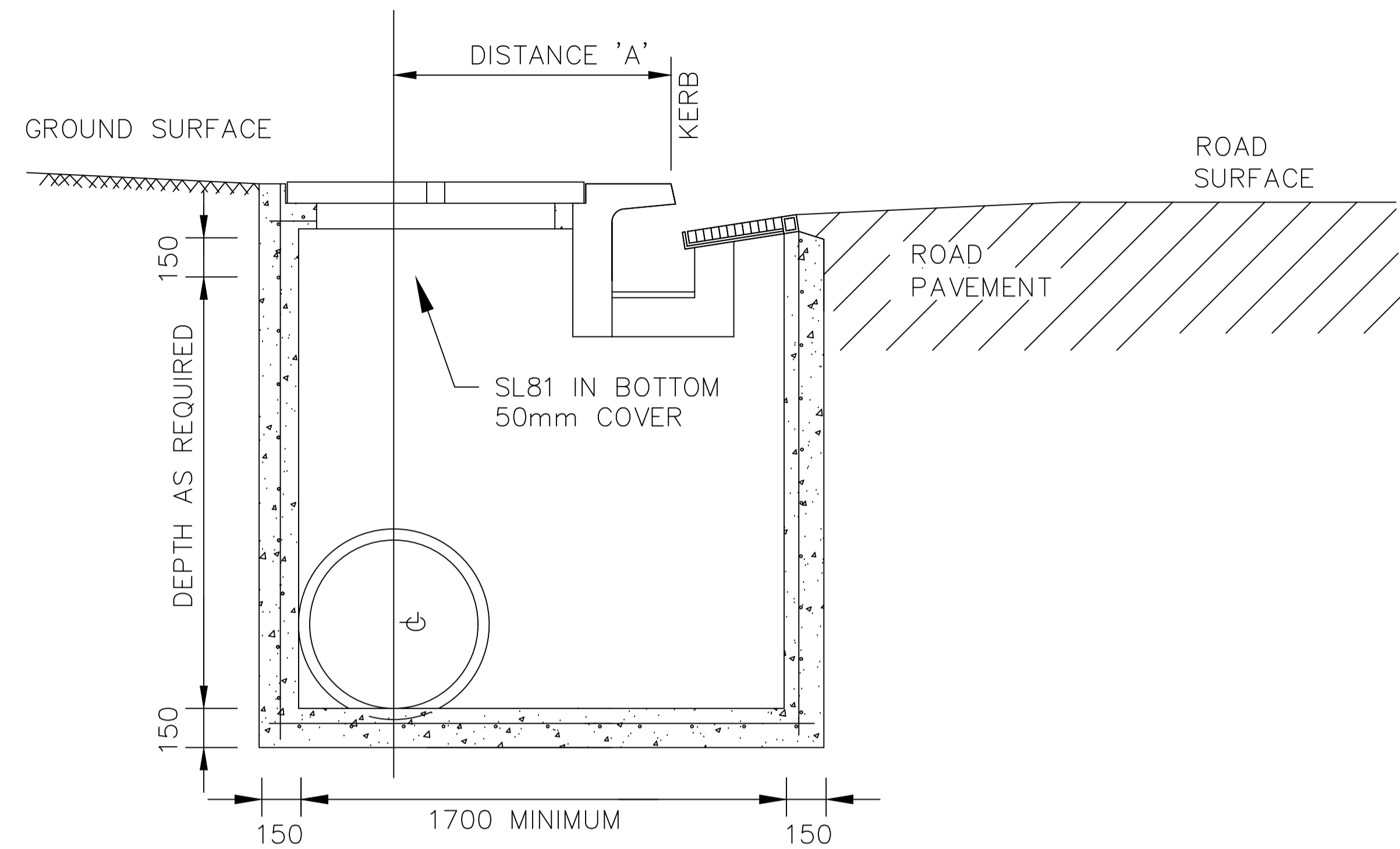
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 21
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	
<b>SD-D 05 B</b>		

DRAWING NUMBER SD-D 05 B





PLAN



SECTION A-A

PIPE Ø OFFSETS FROM KERB	
PIPE DIAMETER "mm"	DISTANCE 'A' "mm"
375	1000
450	1000
525	1000
600	1000
675	1100
750	1100
825	1200
900	1200
1050	1300
1200	1400

NOTES:

1. CONCRETE STRENGTH 25 MPA.
2. STEEL: HOT DIP GALVANISED IN ACCORDANCE WITH AS1650.
3. SIDE WALLS OF PITS DEEPER THAN 1500 TO BE REINFORCED WITH ONE LAYER OF N72 MESH AND RETURNED INTO BASE.
4. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 600MM. (REFER TO: SD-D 11)
5. GULLY GRATE AND FRAME TYPE GG 78-49, GG 78-50 OR EQUIVALENT. REFER TO (SD-D 01)
6. KERB INLET TO BE ADJUSTED AS REQUIRED TO SUIT "WEDLOCK" GRATE AND LINTEL GG 78-57 OR SIMILAR.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I.ALDRIDGE 2012)
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FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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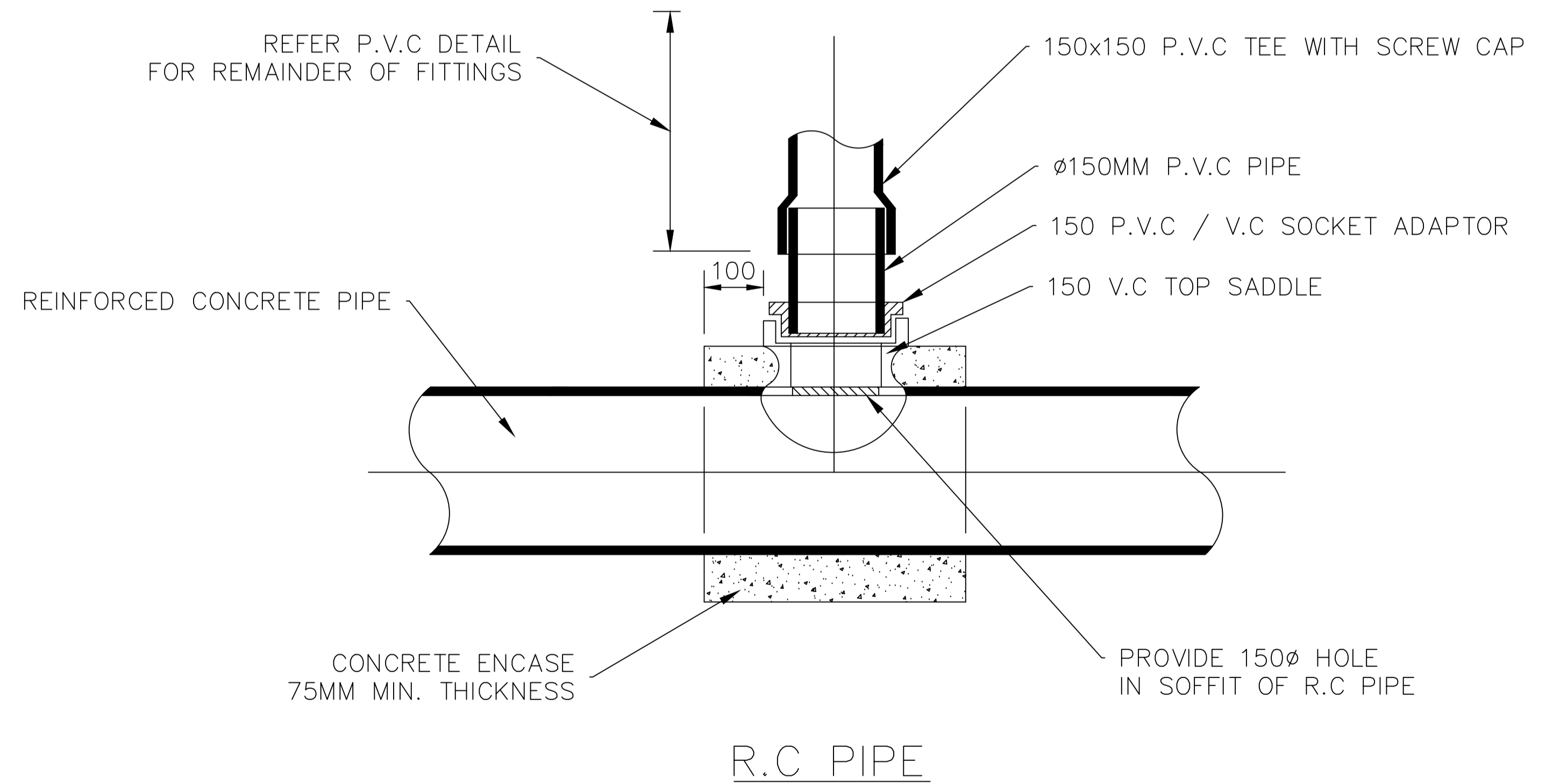
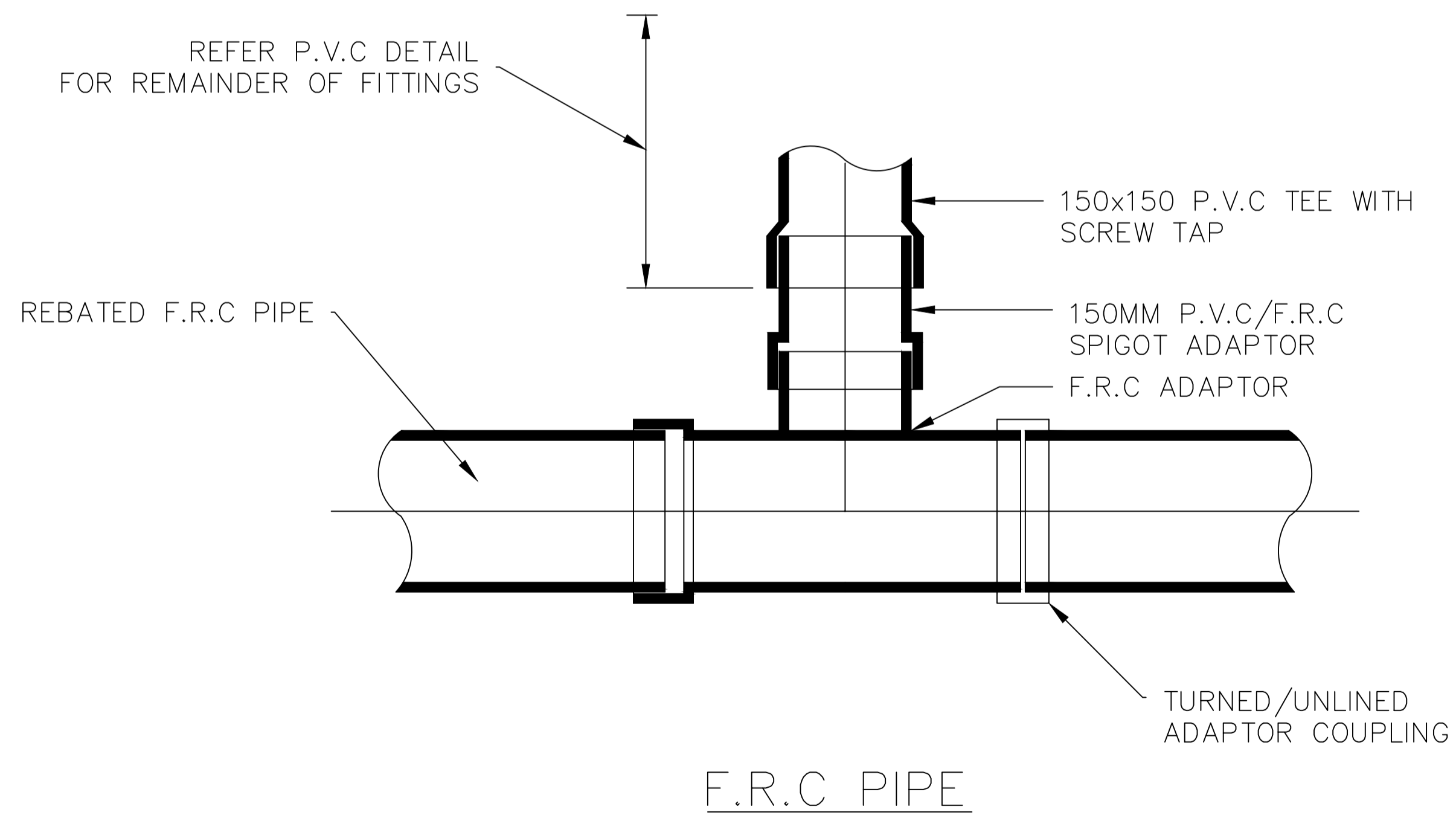
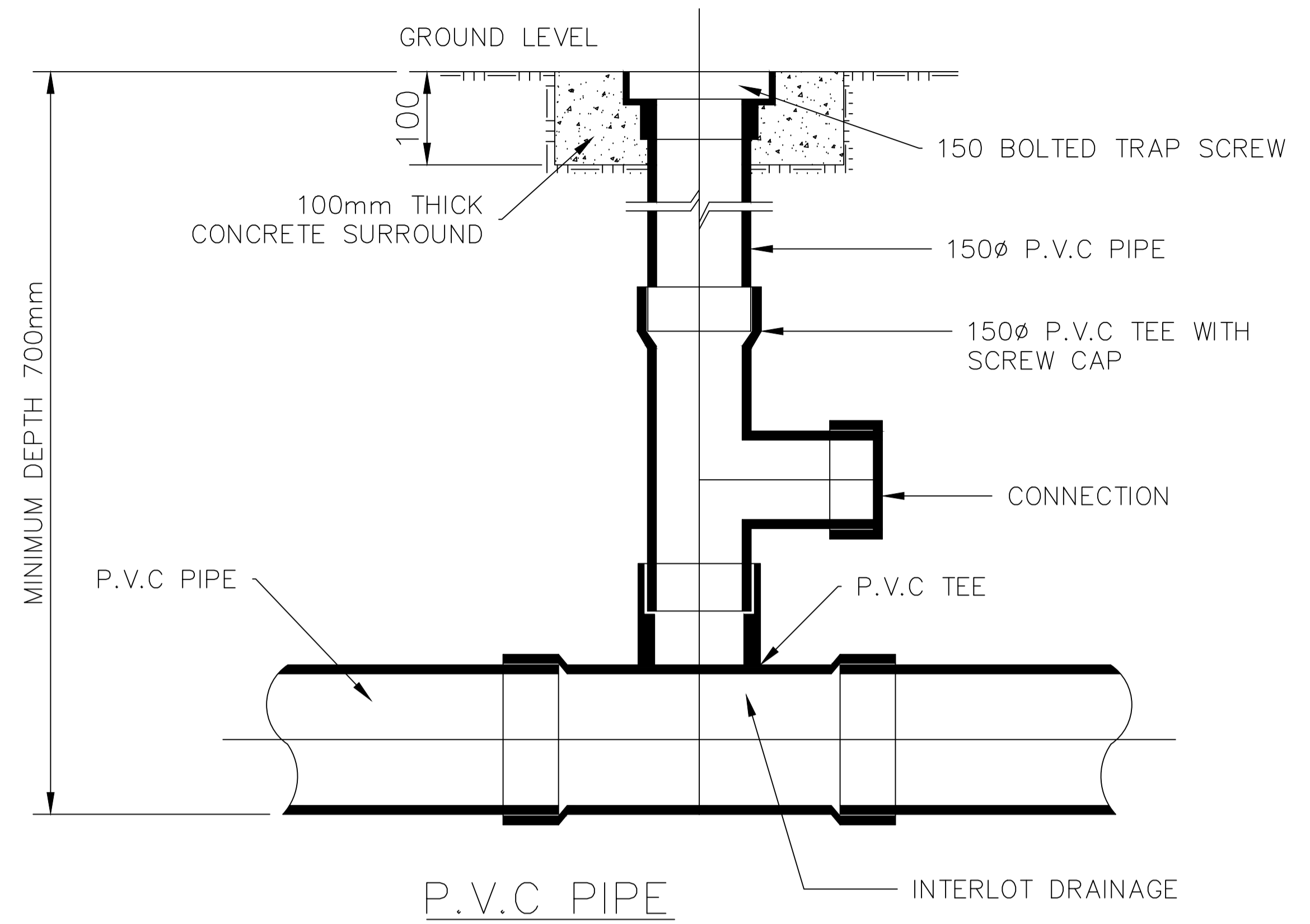
**KERB INLET PIT WITH GRATE**  
**STORMWATER PIPE BEHIND THE KERB**



A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 22
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	
<b>SD-D 05 C</b>		

NOTES:

ANY OTHER JUNCTION CONNECTIONS RECOMMENDED BY THE MANUFACTURER CAN BE USED WITH PRIOR APPROVAL



INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (I.ALDRIDGE 2012)
DESIGNED & DRAFTED	P.SMART	14/07/2009	
DESIGN REVIEWED	P.SMART	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

If the actual work done differs from the original drawing the person performing the work must amend this copy accordingly and return it to the Design Office.

**APPROVED**

*[Signature]*

DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS

DATE: 28/02/2018

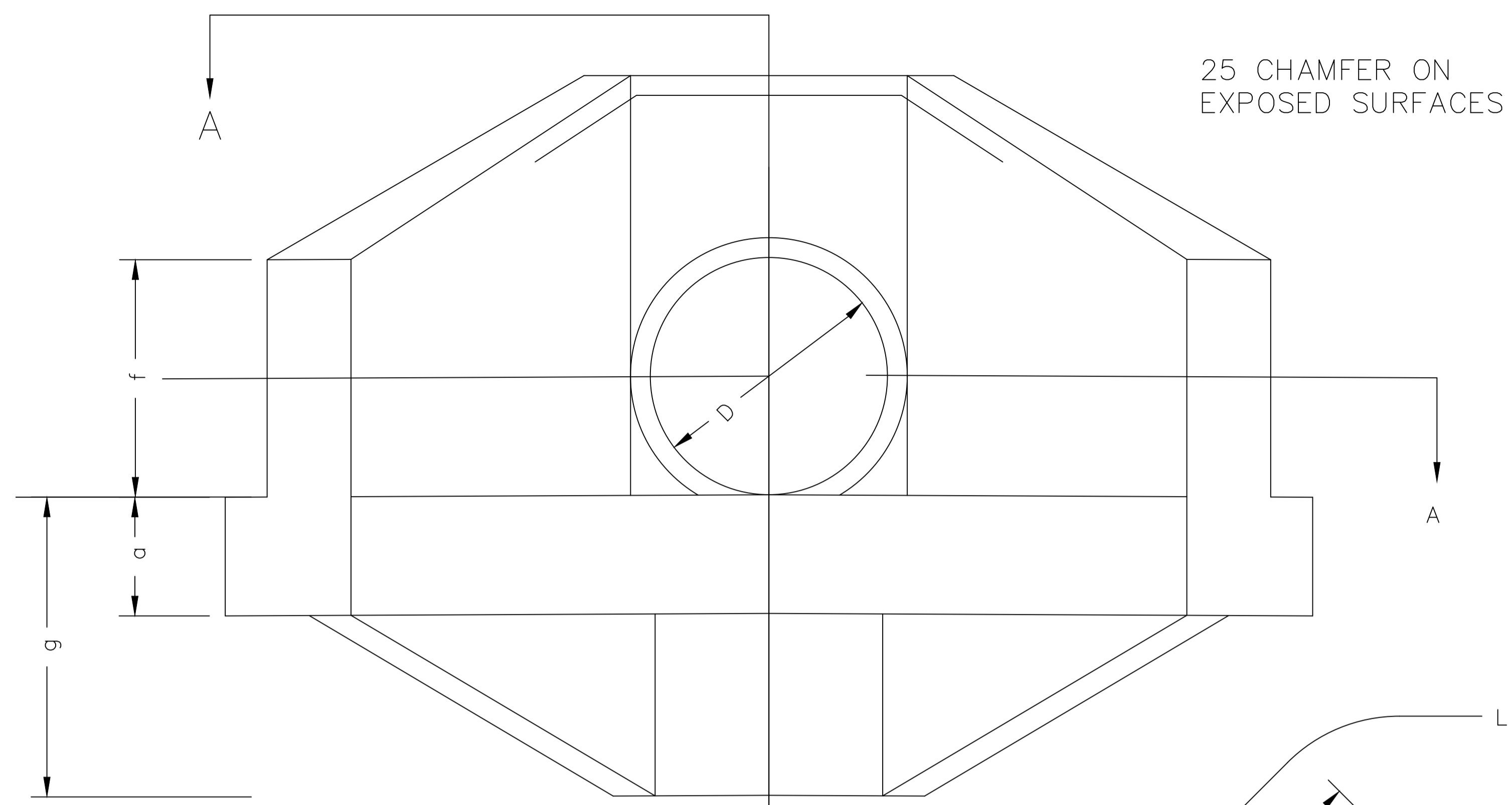
**INTERLOT DRAINAGE**  
 CONNECTIONS SECTIONAL ELEVATIONS

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 PERSONAL PROTECTIVE EQUIPMENT  
 MUST BE WORN ON SITE

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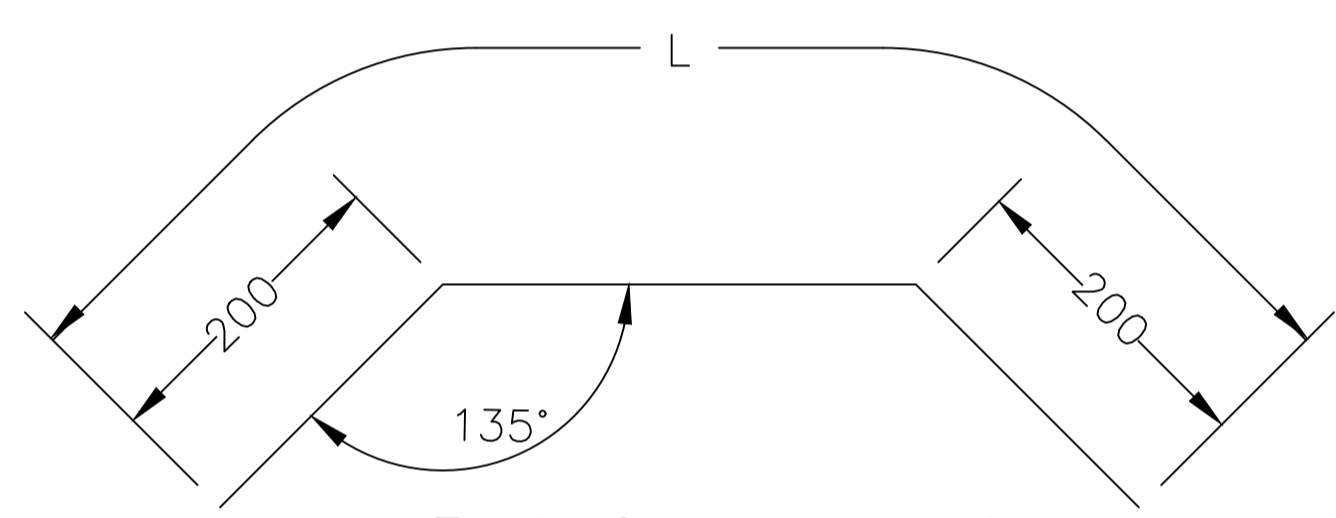
**DIAL 1100**  
 BEFORE YOU DIG

A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 23
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-D 06</b>		

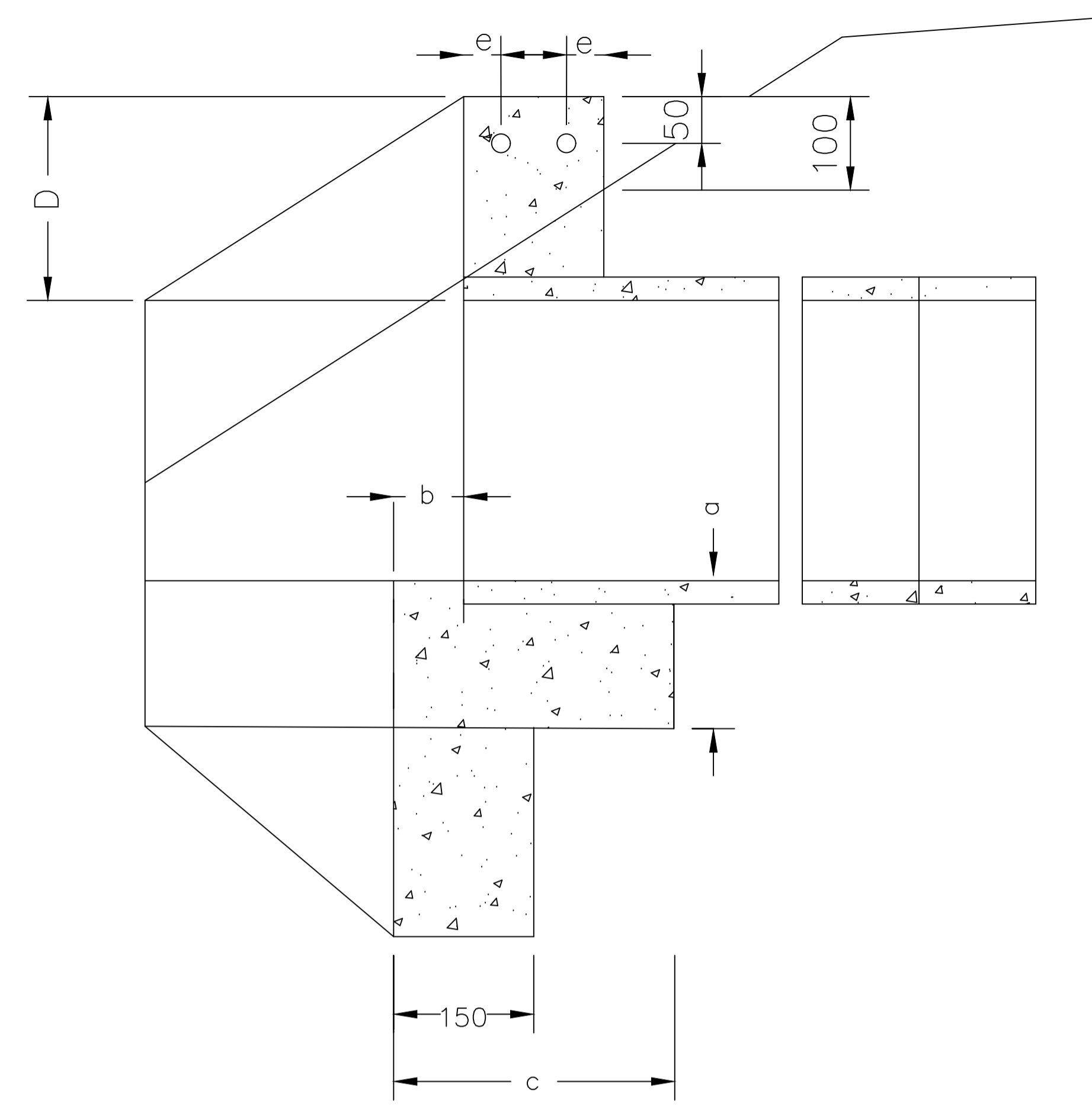


ELEVATION

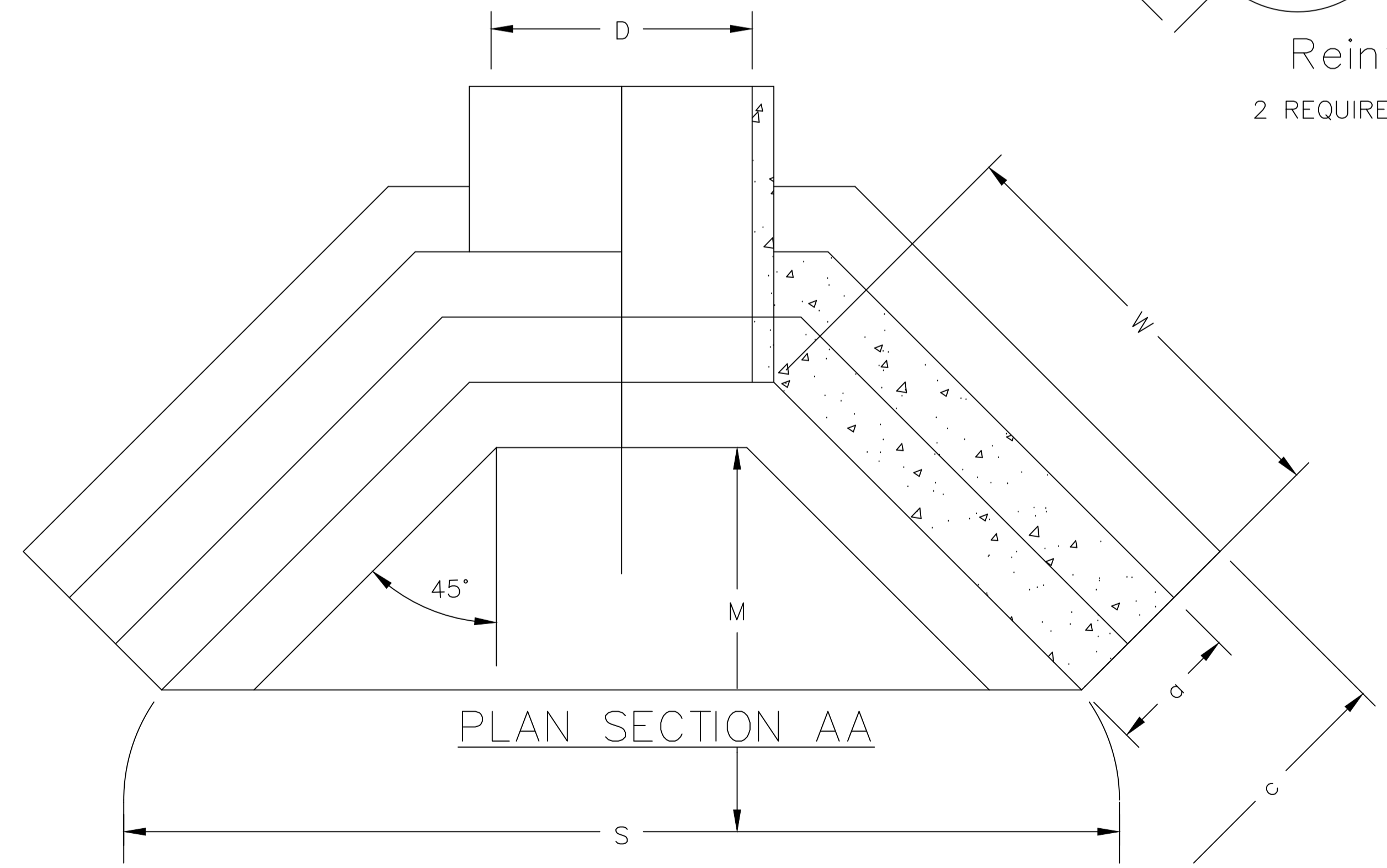
25 CHAMFER ON EXPOSED SURFACES



Reinforcement  
2 REQUIRED IN EACH HEADWALL



LONGITUDINAL SECTION



PLAN SECTION AA

D	PIPE DIAMETER	(mm)	300	375	450	525	600	750	900
a	FOOTING & KERB	(mm)	150	150	150	150	180	205	230
b	CURTAIN WALL	(mm)	75	75	75	75	110	110	110
c	CURTAIN WALL WIDTH	(mm)	300	300	300	300	450	450	450
d	KERB-HEIGHT	(mm)	230	230	230	230	300	300	300
e	KERB-COVER	(mm)	40	40	40	40	50	50	50
f	HEADWALL HEIGHT	(mm)	300	300	300	300	380	380	380
g	CURTAIN WALL DEPTH	(mm)	380	380	380	380	530	530	530
w	HEADWALL LENGTH	(mm)	500	690	840	990	1120	1450	1780
L	Reinforcement length	(mm)	765	840	915	990	1100	1250	1400
REINFORCEMENT DIA		(mm)	10	10	10	10	12	12	12
REINFORCEMENT IN TWO HEADWALLS	Length	(mm)	3060	3360	3660	3960	4400	5000	5600
	Mass	(kg)	2.0	2.2	2.4	2.6	4.0	5.2	5.9
CONC. IN TWO HEADWALLS		(cub.m)	0.48	0.54	0.65	0.76	1.34	2.04	2.80
M	MATRESS WIDTH	(mm)	1200	1600	2400	3100	3600	4300	4800
S	Matress length	(mm)	1450	1800	2100	2400	2750	3350	4000

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	P.SMART	04/07/2009	
DESIGN REVIEWED	T.DIMEC	04/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS  
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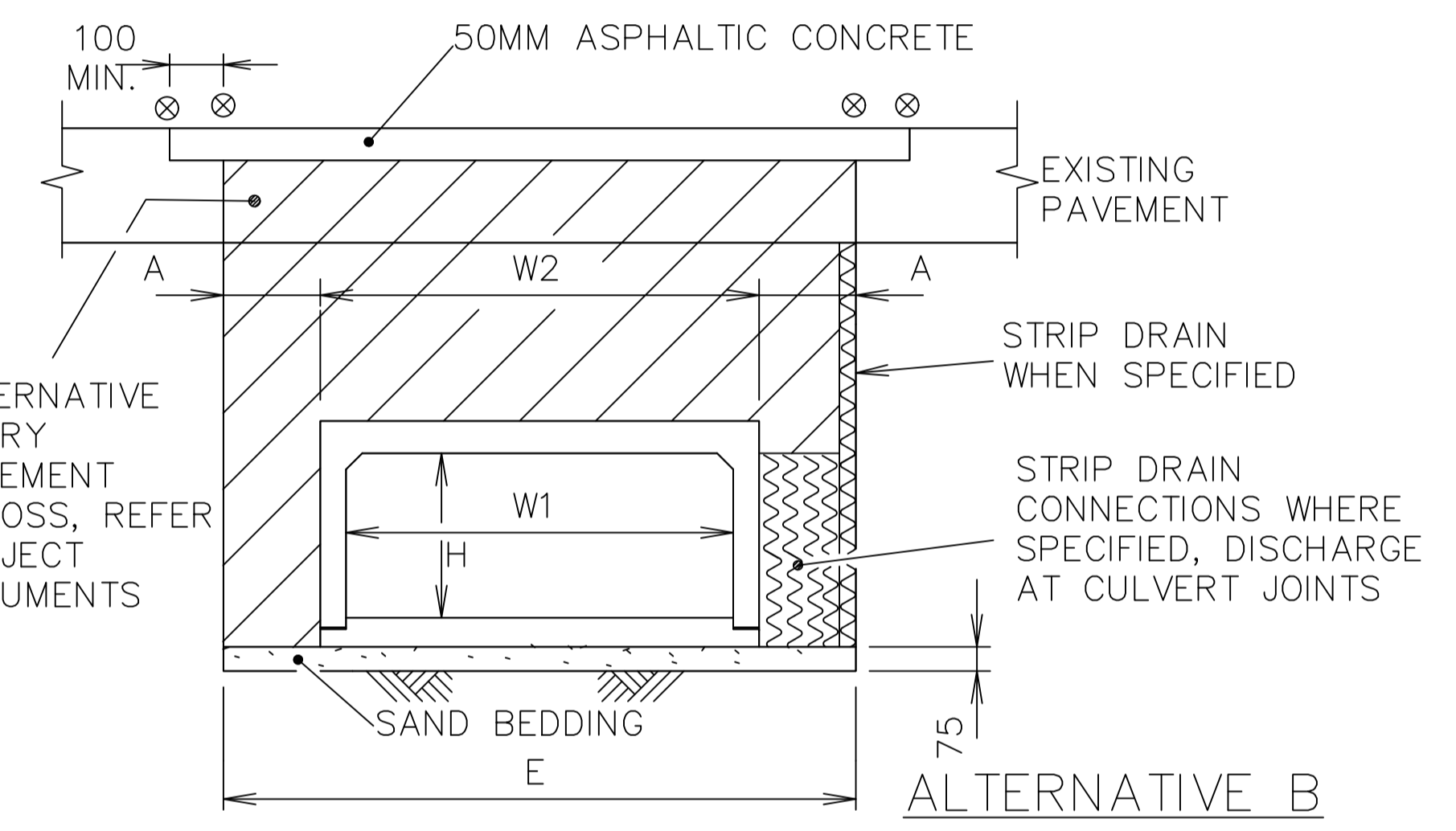
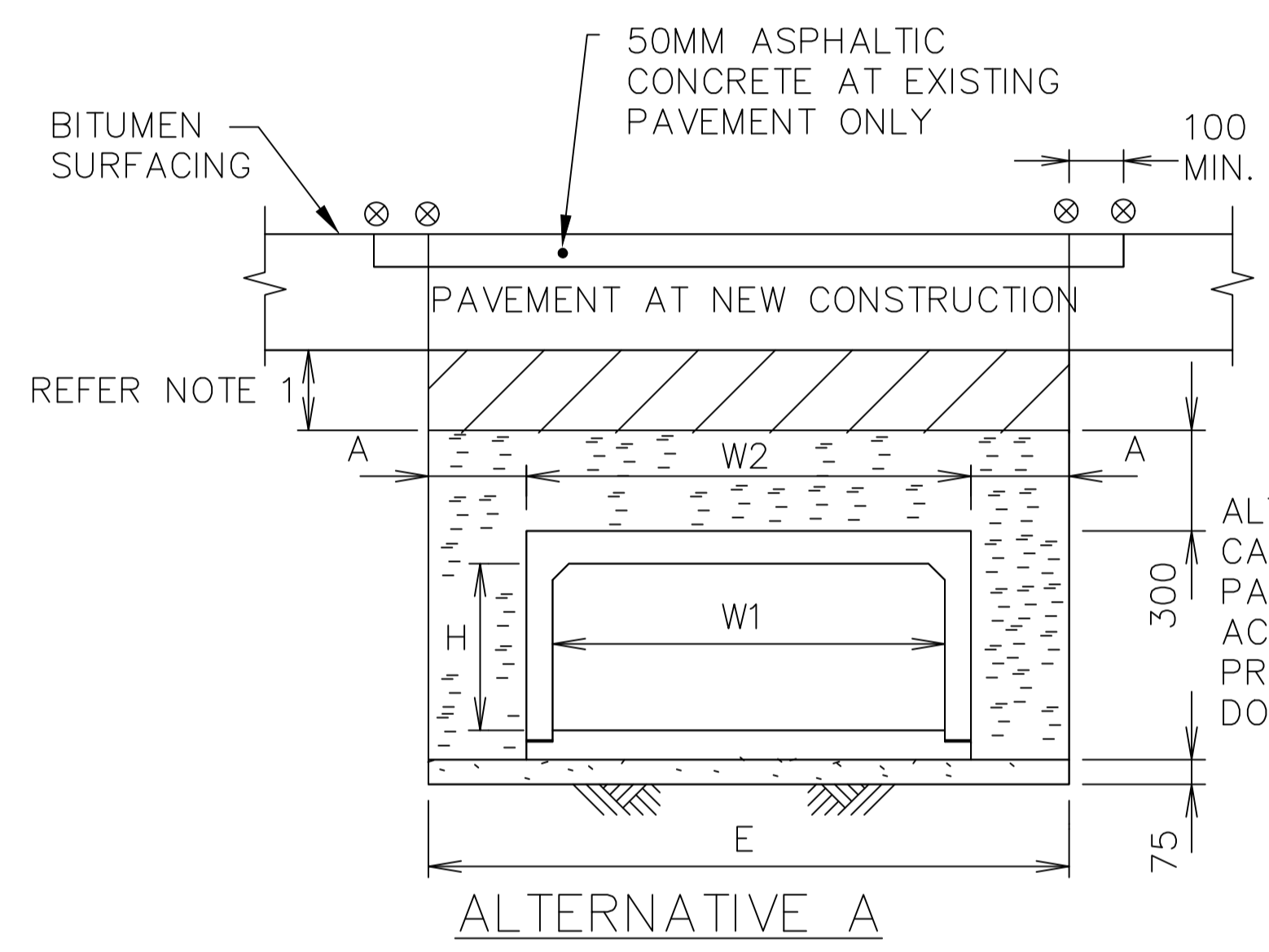
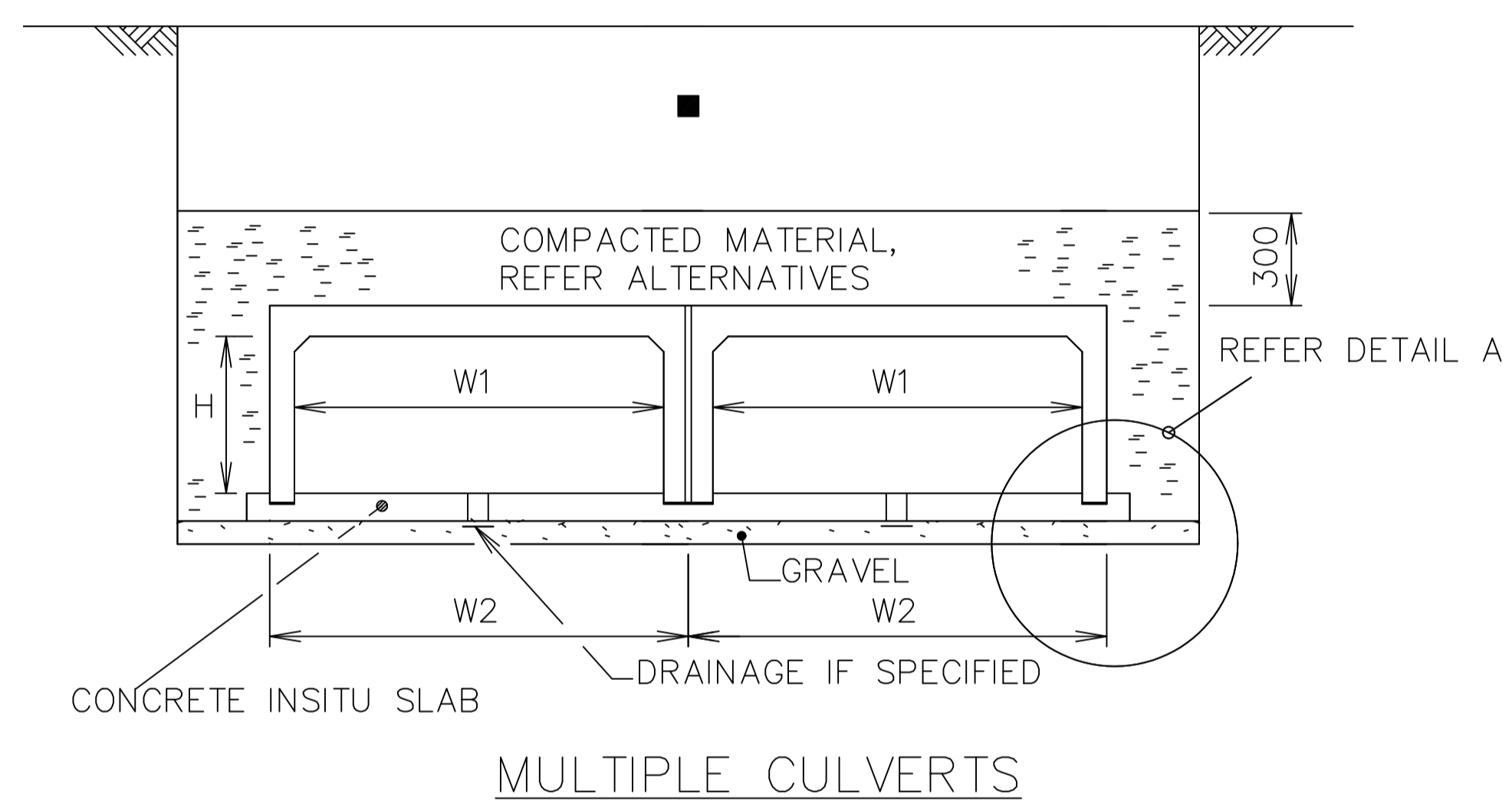
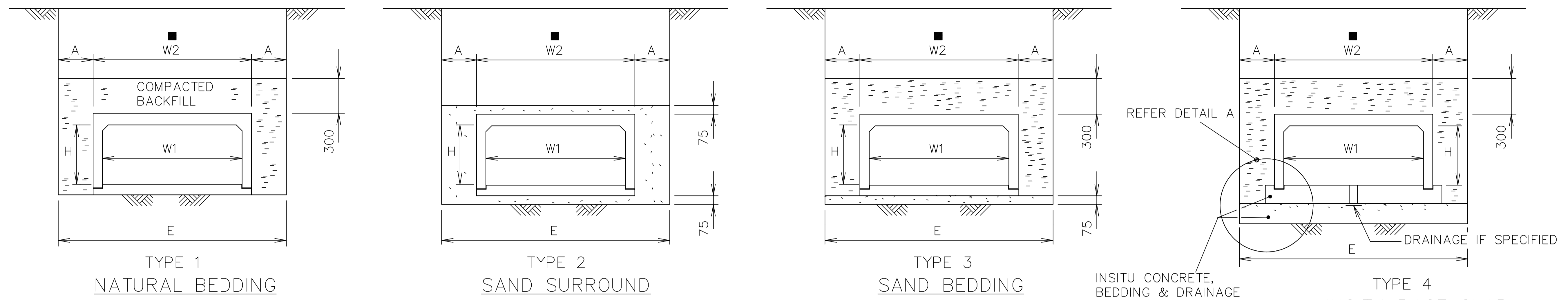
**APPROVED**  
  
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
 DATE: 28/02/2018

**CONCRETE HEADWALL**  
 STANDARD FROM 300MM - 900MM

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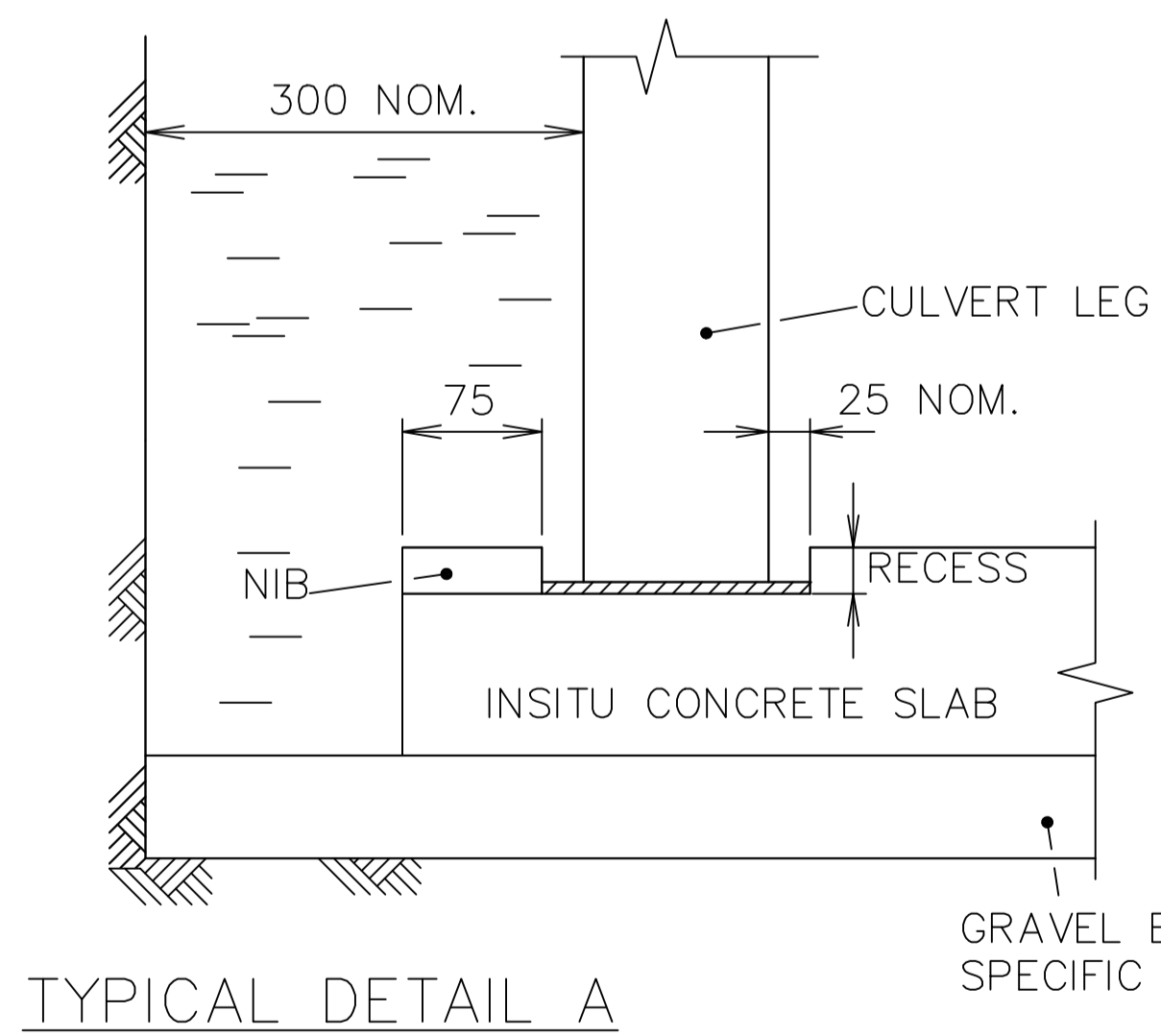
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 24
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	
<b>SD-D 07</b>		





W1	W2	E NOM.
300	420	1000
375	500	1100
450	570	1200
600	730	1300
750	890	1500
900	1050	1700
1200	1360	2000
1520	1700	2300
1820	2010	2600
2130	2340	3000
2440	2670	3300

EXCAVATION WIDTH



TYPICAL DETAIL A

AT EXISTING SURFACED PAVEMENTS OR AT NEW PAVEMENTS ON RESIDENTIAL STREETS & RURAL ROADS

AT EXISTING SURFACED PAVEMENTS ON INDUSTRIAL, TRUNK COLLECTOR, SUB-ARTERIAL & ARTERIAL STREETS / ROADS

**LEGEND**

- A 300MM NOMINAL
- REFER ALTERNATIVE A FOR BACKFILL REQUIREMENTS AT NEW PAVEMENT
- ⊗ SAW CUT AT EXISTING PAVEMENT
- ▨ GRAVEL (MIN CBR15) OR 75MM CRUSHER RUN BACKFILL
- ▧ LEAN MIX CONCRETE BACKFILL (1:15 MIX)
- ▩ 10MM CEMENT MORTAR BED, 1:3 MIX

**NOTES:**

1. BACKFILL COMPACTION:
  - 1.1. APPROVED FILL / APPROVED BEDDING / COMPACTED BACKFILL / CBR15 GRAVEL 90%
  - 1.2. COMPACTED GRAVEL (300MM LAYER) UNDER ROAD PAVEMENT 95%
  - 1.3. COMPACTED FILL - AT FOOTPATHS / PRIVATE PROPERTY 90%
  - 1.4. MAX. DENSITIES DETERMINED BY STANDARD COMPACTION TESTS TO AS 1289.E5.1.
2. TAPE ALL JOINTS WITH 75MM WIDE DENSO (600) TAPE OR EQUIVALENT.
3. ALL DIMENSIONS IN MILLIMETRES.
4. CONCRETE SLAB 150MM THICK WITH SL82.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	P.SMART	10/02/2010	
DESIGN REVIEWED	T.DIMEC	10/02/2010	
FINAL DESIGN CHECKED	T.DIMEC	10/02/2010	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**

CIVIC CENTRE, 184-194 BOURKE STREET  
GOULBURN, NSW-2580  
LOCKED BAG 22, GOULBURN, NSW-2580  
PHONE: (02) 4823 4444  
FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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**APPROVED**

*[Signature]*

DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

**PRECAST BOX CULVERTS**

**EXCAVATION, BEDDING & BACKFILLING**

TITLE4

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A1 - SCALE AS SHOWN  
NUMBER OF SHEETS 34  
SHEET NUMBER 25  
FILE NAME: STANDARD DRAWINGS.DWG  
REVISION GMC-VER-1  
RD: [Signature]

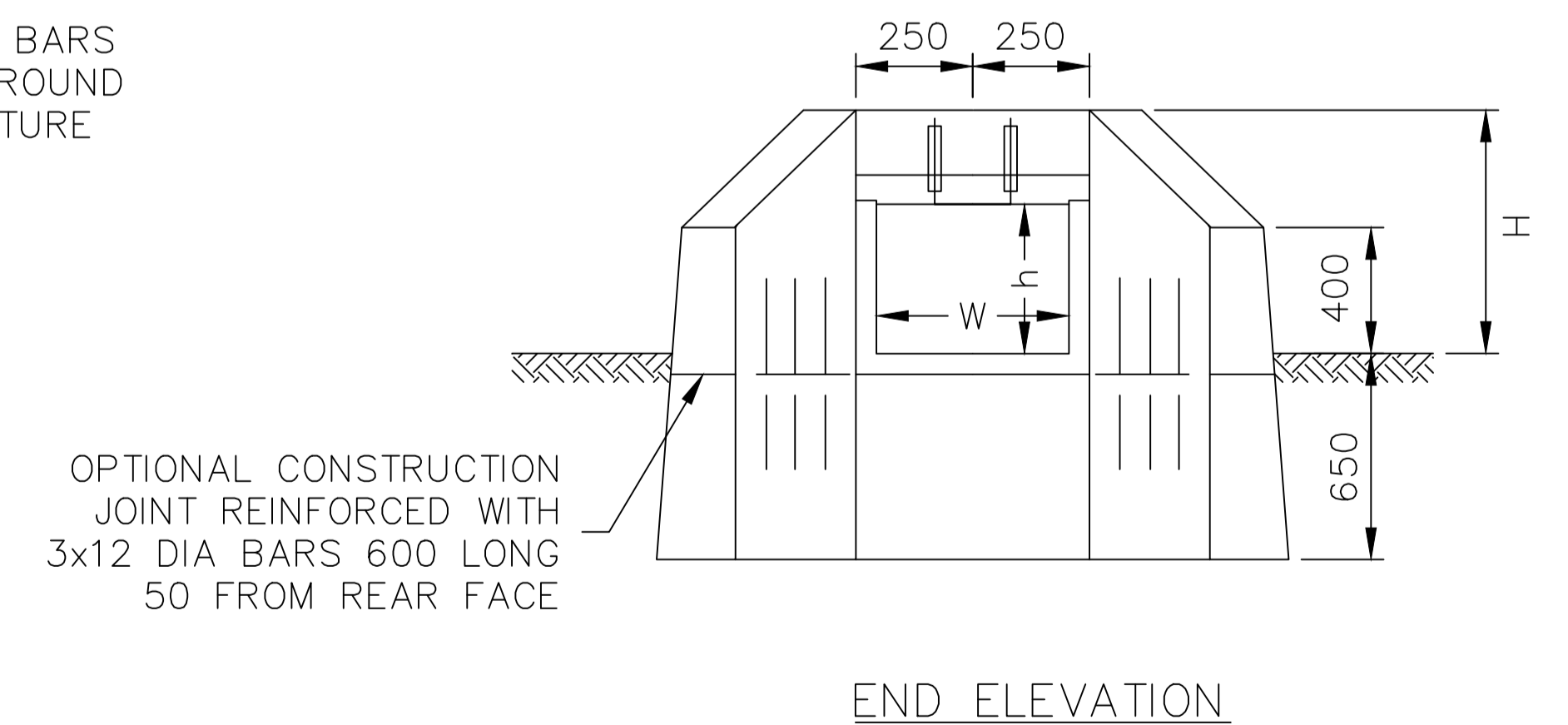
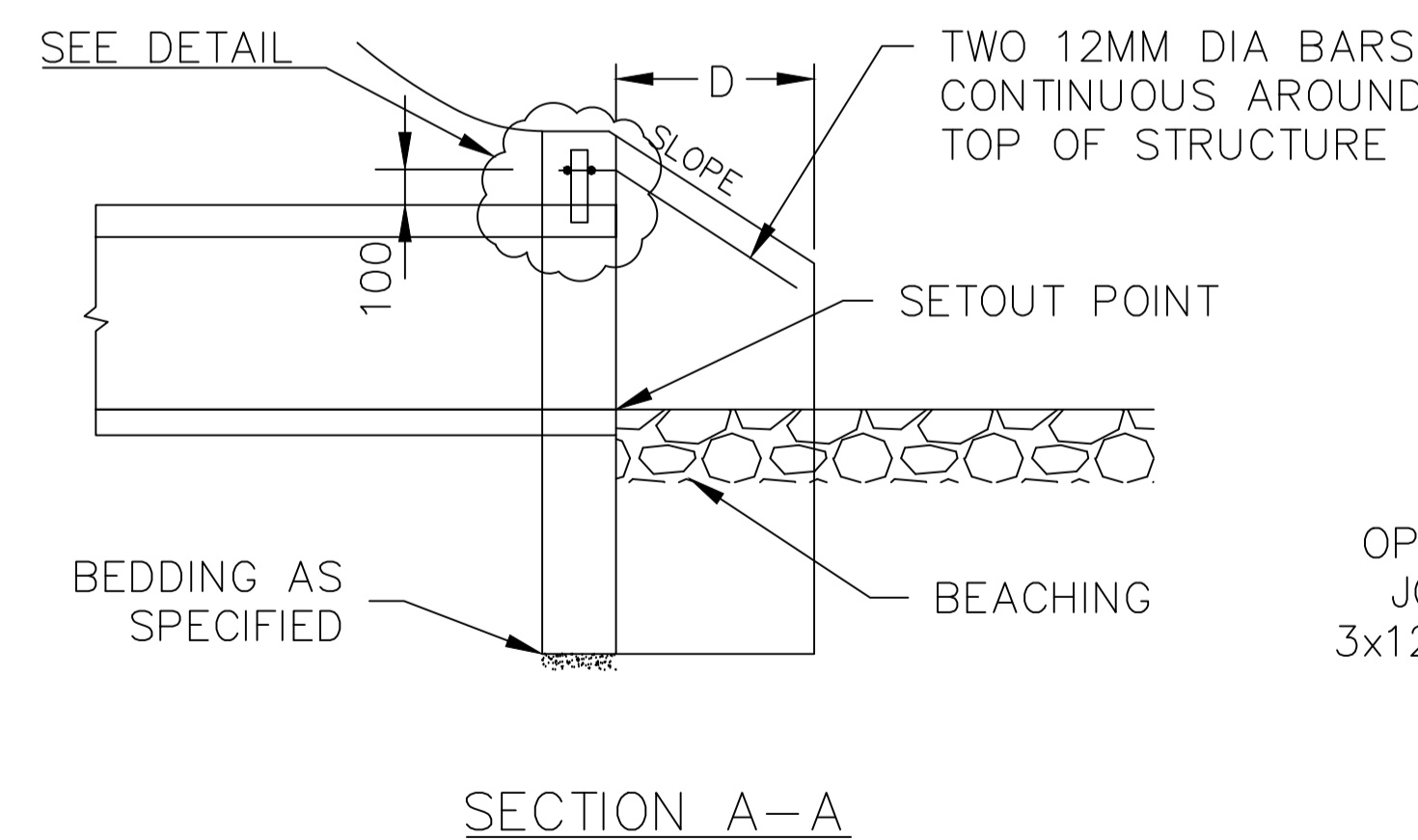
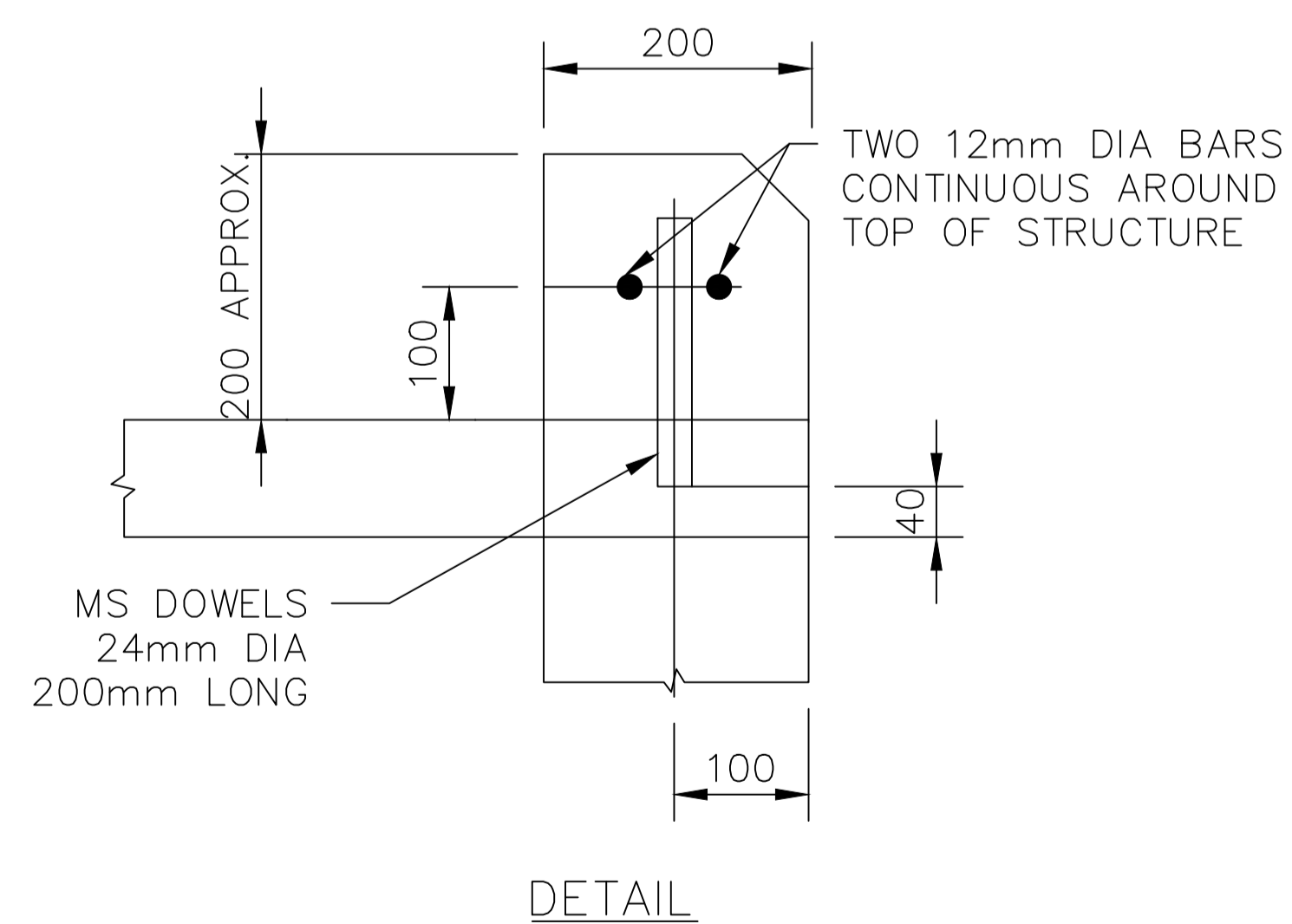
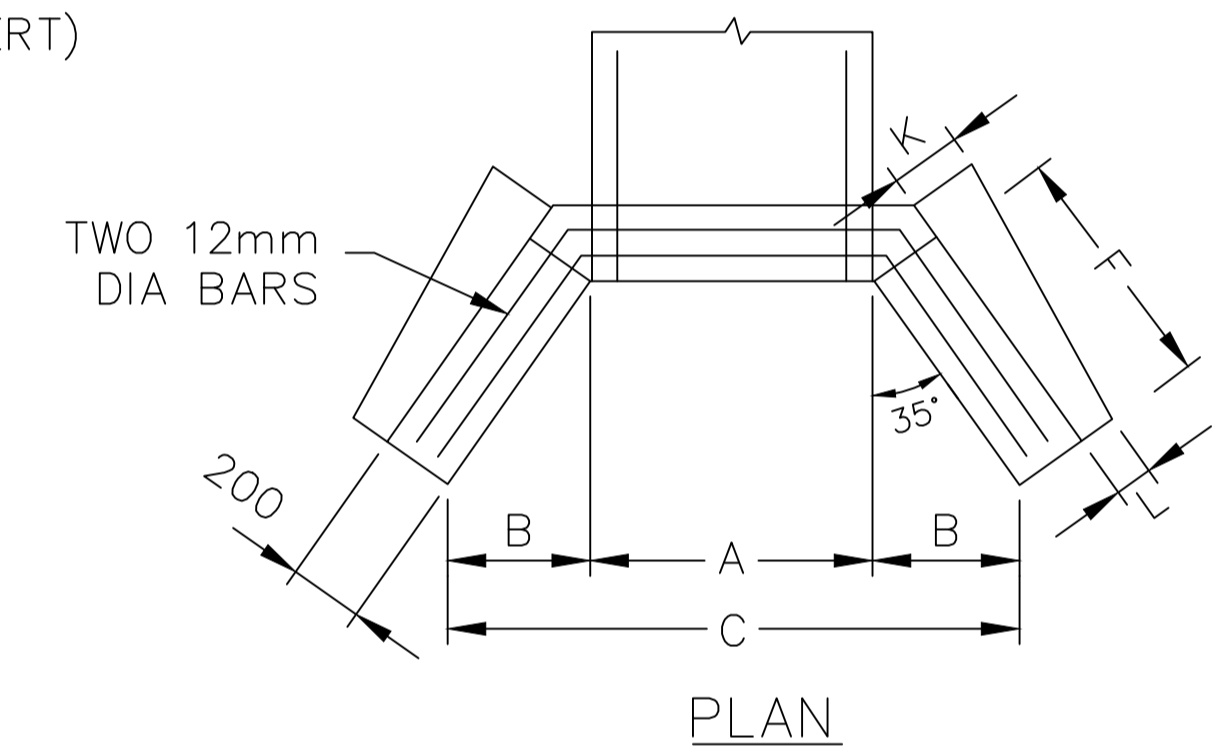
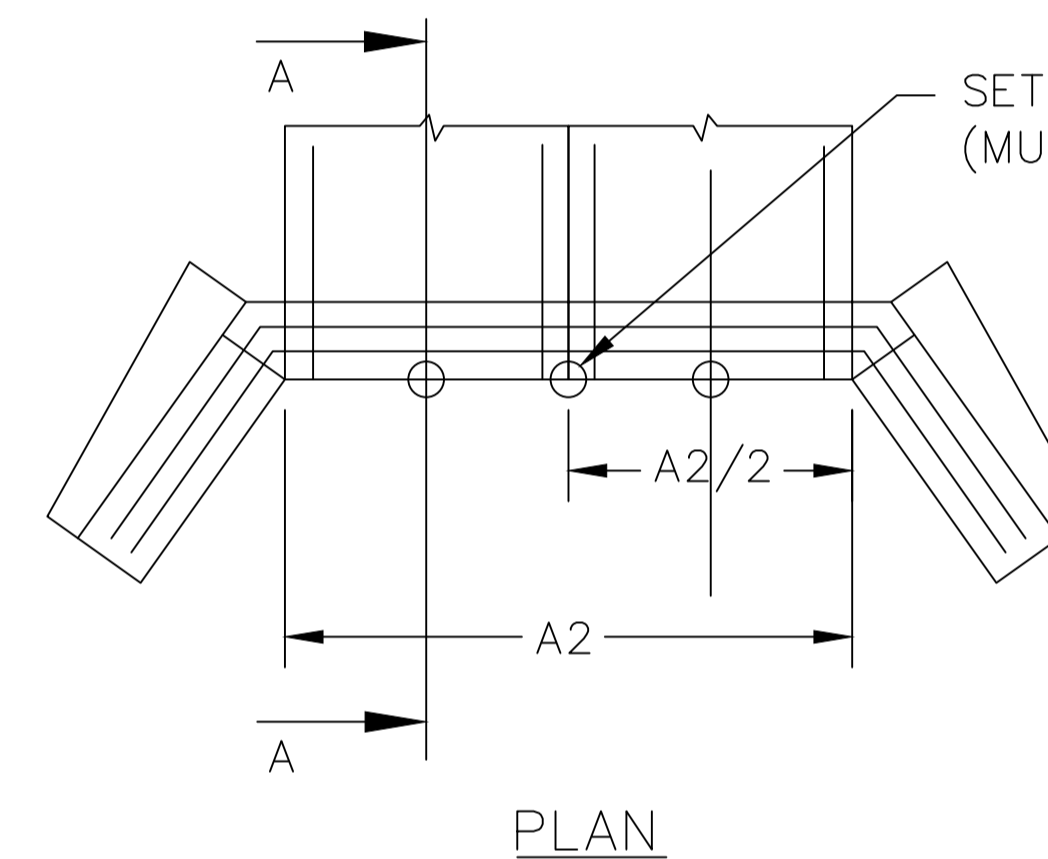
**SD-D 08**

NOM WIDTH (w)	NOM HEIGHT (h)	A <sup>XX</sup>	H	K	L	TYPE 1 X SLOPE AT 15:1				TYPE 2 X SLOPE AT 2:1				TYPE 3 X SLOPE AT 3:1			
						B	C	D	F	B	C	D	F	B	C	D	F
						600	450	737	757	180	134	375	1487	536	654	500	1737
750	450	889	762	180	134	380	1649	543	663	507	1903	724	884	760	2410	1086	1326
750	600	889	915	215	144	541	1971	773	943	721	2331	1030	1257	1082	3053	1545	1886
900	450	1067	767	180	133	385	1838	551	672	514	2095	734	896	771	2609	1101	1344
900	600	1067	920	215	144	546	2159	780	952	728	2523	1040	1270	1092	3252	1560	1904
900	750	1067	1073	255	155	707	2481	1010	1232	942	2952	1346	1643	1414	3894	2019	2465
1200	450	1372	778	180	132	397	2166	567	692	529	2431	756	923	794	2960	1134	1384
1200	600	1372	931	215	143	558	2487	797	972	744	2859	1062	1296	1115	3603	1593	1945
1200	900	1372	1235	300	167	877	3126	1253	1529	1169	3711	1670	2039	1754	4880	2505	3058

x THEORETICAL SLOPE OF WINGWALL MEASURED AT RIGHT ANGLES TO THE ROADWAY  
xx A2 = AxA

NOTES:

1. BECAUSE THE RELATION OF THE BATTER TO THE TOP OF THE ENDWALL IS ESSENTIAL FOR FOR THE SAFETY OF THE MOTORIST, THE DETAIL AS SHOWN IN SECTION A-A MUST BE ADHERED TO DURING CONSTRUCTION.
2. REINFORCEMENT BARS SHALL COMPLY WITH AS/NZS 4671, GRADE 400Y. LAPS IN REINFORCEMENT BARS SHALL BE 300 MIN, AND CLEAR COVER 50 MIN.
3. EXPOSED EDGES SHALL HAVE 20X20 CHAMFERS.
4. COMPACTION PRESSURE BEHIND WALLS NOT TO EXCEED 15 KPA (1.5 TONNE VIBRATORY ROLLER OR 300 KG VIBRATING PLATE WITHIN 0.5MM OF WALL)
5. CONCRETE SHALL BE NORMAL CLASS N32 STANDARD STRENGTH GRADE OR HIGHER COMPLYING WITH THE REQUIREMENTS OF AS 1379. EXPOSURE CLASSIFICATION UP TO AND INCLUDING B1.
6. DOWEL BARS SHALL COMPLY WITH AS 3679 PART 1, GRADE 250.
7. CONCRETE AGGREGATES SHALL COMPLY WITH AS 2578 CONCRETE AGGREGATES.
8. ENDWALL SHALL BE CONSTRUCTED IN PROVISIONS OF AS 3600.



INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	17/02/2010	
DESIGN REVIEWED	T.DIMEC	17/02/2010	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**  
CIVIC CENTRE, 184-194 BOURKE STREET  
GOULBURN, NSW-2580  
LOCKED BAG 22, GOULBURN, NSW-2580  
PHONE: (02) 4823 4444  
FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS  
If the actual work done differs from the original drawing the person performing the work must amend this copy accordingly and return it to the Design Office.

**APPROVED**  
*[Signature]*  
DIRECTOR OF  
GOULBURN MULWAREE  
OPERATIONS  
DATE: 28/02/2018

# MASS CONCRETE WINGWALL

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 26
FILE NAME: STANDARD DRAWINGS.DWG	<b>SD-D 09</b>	
REVISION GMC-VER-1 RD: -/-/-		

DRAWING NUMBER SD-D 09



NOMINAL WIDTH (w)	NOMINAL HEIGHT (h)	SINGLE BOX					
		TYPE 1 SLOPE AT 1.5:1		TYPE 2 SLOPE AT 2:1		TYPE 3 SLOPE AT 3:1	
		CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)
600	450	0.65	9.3	0.80	10.2	1.10	12.0
750	450	0.68	9.7	0.83	10.6	1.14	12.4
750	600	0.96	11.1	1.20	12.4	1.68	15.0
900	450	0.72	10.1	0.87	11.0	1.18	12.9
900	600	0.99	11.5	1.24	12.8	1.73	15.4
900	750	1.33	12.9	1.68	14.6	2.38	18.0
1200	450	0.78	10.9	0.94	11.8	1.26	13.7
1200	600	1.06	12.3	1.31	13.6	1.81	16.3
1200	900	1.80	15.1	2.29	17.1	3.27	21.4


NOMINAL WIDTH (w)	NOMINAL HEIGHT (h)	ADDITIONAL BOX	
		CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)
600	450	0.12	1.6
750	450	0.14	2.0
750	600	0.14	2.0
900	450	0.17	2.3
900	600	0.17	2.3
900	750	0.17	2.3
1200	450	0.22	3.0
1200	600	0.22	3.0
1200	900	0.22	3.0

NOMINAL WIDTH (w)	NOMINAL HEIGHT (h)	TWIN BOX					
		TYPE 1 SLOPE AT 1.5:1		TYPE 2 SLOPE AT 2:1		TYPE 3 SLOPE AT 3:1	
		CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m <sup>3</sup> )	REINFORCEMENT BAR (m)
600	450	0.77	10.9	0.92	11.8	1.22	13.6
750	450	0.83	11.7	0.98	12.5	1.28	14.4
750	600	1.10	13.1	1.34	14.3	1.83	16.9
900	450	0.89	12.5	1.04	13.4	1.35	15.2
900	600	1.17	13.9	1.41	15.2	1.90	17.8
900	750	1.50	15.3	1.85	16.9	2.56	20.4
1200	450	1.00	13.9	1.16	14.8	1.48	16.8
1200	600	1.28	15.3	1.53	16.6	2.03	19.3
1200	900	2.02	18.1	2.51	20.1	3.49	24.4

NOTES:

- REFER TO: SD-D 08 FOR CULVERT DETAILS.
- ALL REINFORCEMENT BARS ARE 12MM DIAMETRE.
- 10% ALLOWANCE HAS BEEN MADE FOR ON SITE CUTTING AND SPLICING OF BAR REINFORCEMENT.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I.ALDRIDGE MARCH 2012)
DESIGNED & DRAFTED	T.DIMEC	17/02/2010	
DESIGN REVIEWED	I.ALDRIDGE	12/12/2012	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



CIVIC CENTRE, 184-194 BOURKE STREET  
GOULBURN, NSW-2580  
LOCKED BAG 22, GOULBURN, NSW-2580  
PHONE: (02) 4823 4444  
FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

**MASS CONCRETE WINGWALL**

**QUANTITIES**

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MUST BE WORN ON SITE  
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A1 - SCALE AS SHOWN

NUMBER OF SHEETS 34

SHEET NUMBER 27

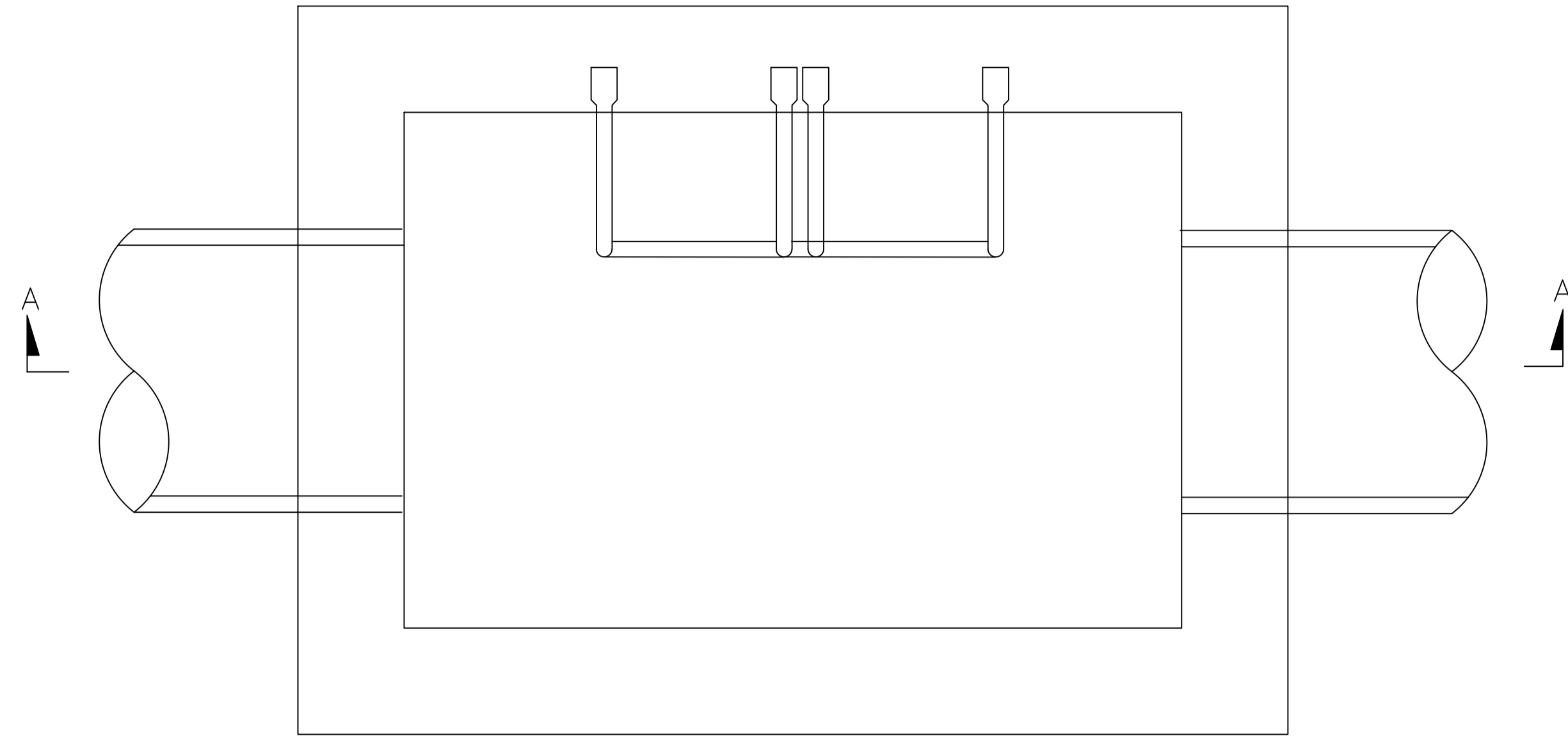
FILE NAME: STANDARD DRAWINGS.DWG

REVISION GMC-VER-1

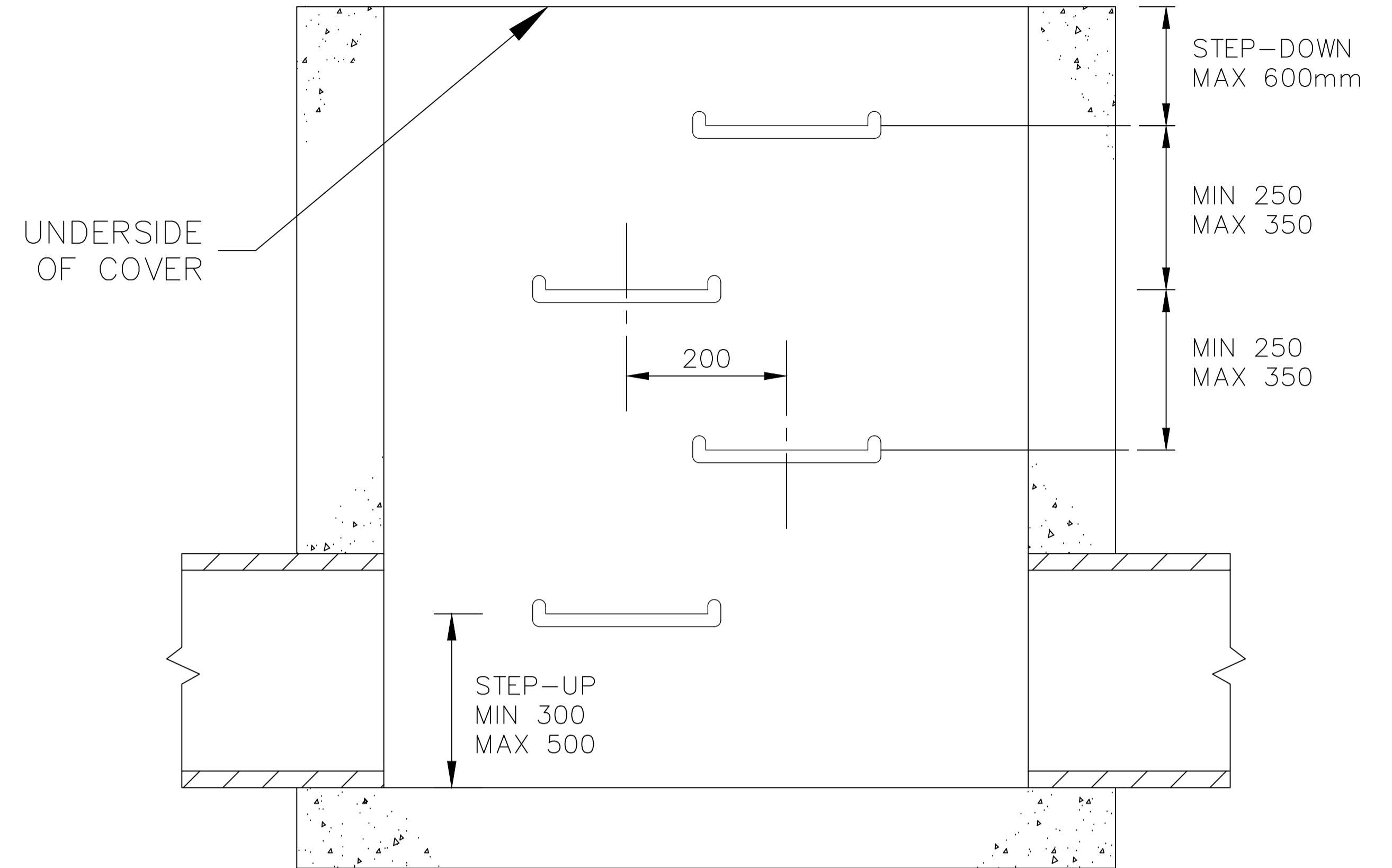
RD: -/-/-

**SD-D 10**

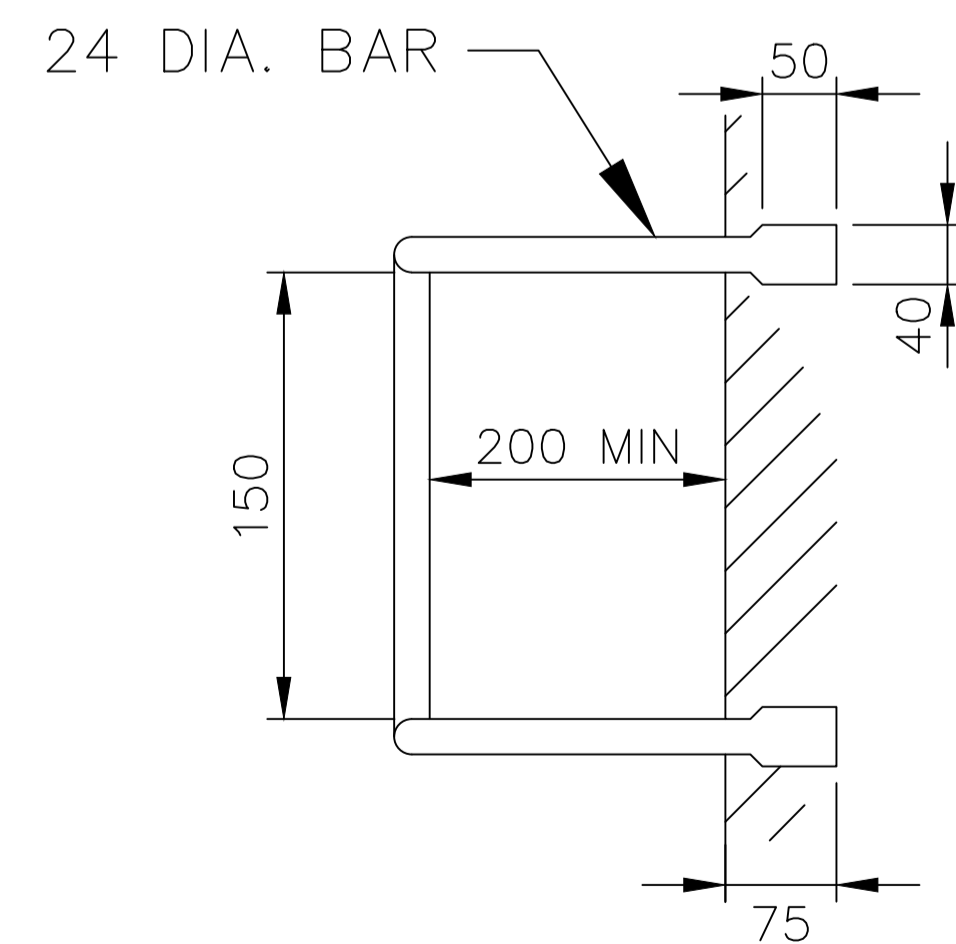
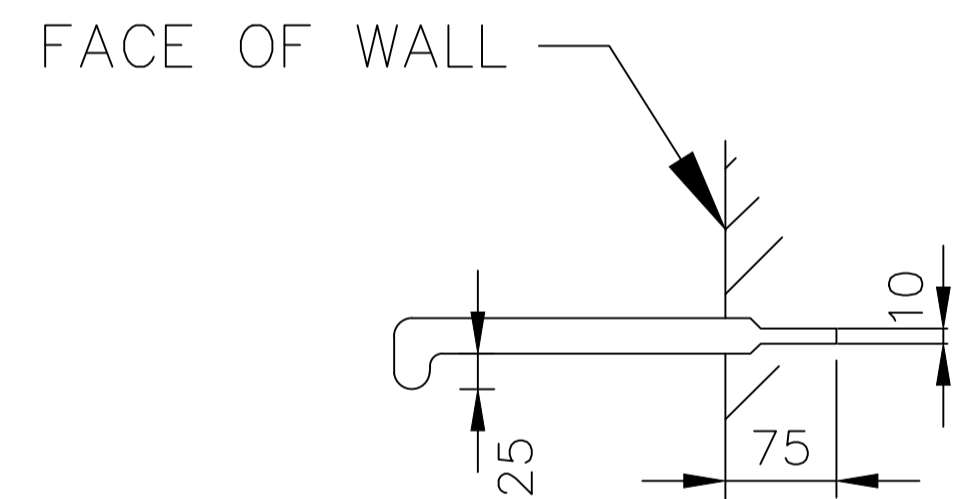
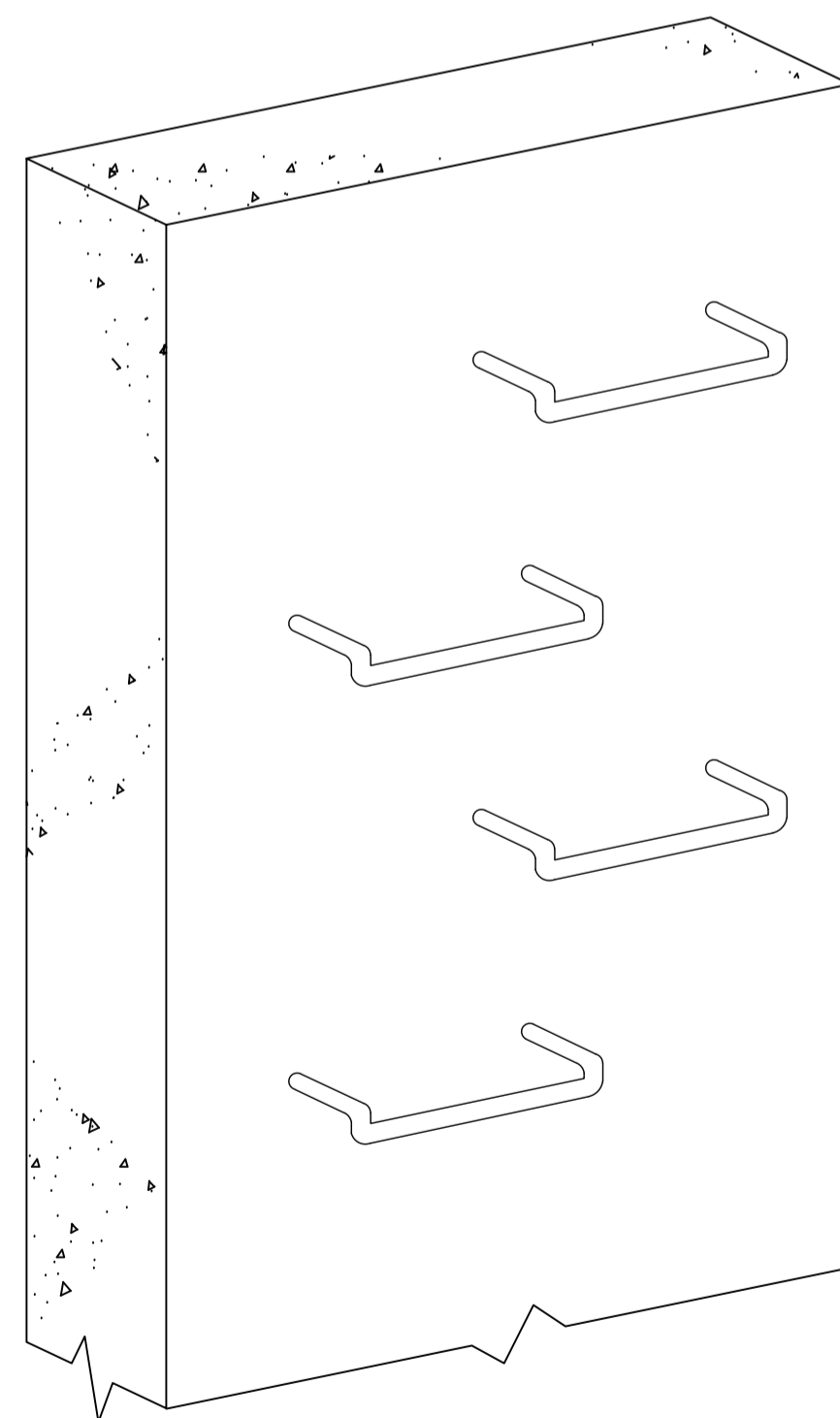




PLAN




SECTION A-A




NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. STEP IRONS TO BE FABRICATED FROM  $\phi 24$  M.S. BARS
3. ALL BENDS TO BE FORMED AROUND  $\phi 12$  PIN
4. STEP IRONS TO BE HOT DIPPED GALVANISED
5. PROPRIETARY PLASTIC ENCAPSULATED INDIVIDUAL -RUNG LADDERS (OR APPROVED ALTERNATIVE ) MAY BE USED.
6. STEP IRONS ARE IN ACCORDANCE WITH AS 1657
7. IF STRUCTURE IS DEEPER THEN 600mm STEP IRONS ARE TO BE INSTALLED.
8. RUNG LADDERS MUST BE INSTALLED
  - 8.1. DIRECTLY BELOW THE OPENING OF THE COVER
  - 8.2. DESIRABLY ON A WALL WITHOUT PIPE OPENING
  - 8.3. DESIRABLE ON ONE OF THE LONG SIDES OF THE PIT

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	14/07/2009	
DESIGN REVIEWED	T.DIMEC	14/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			


 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
 PHONE: (02) 4823 4444  
 FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM      AS-1100 STANDARDS  
 If the actual work done differs from the original drawing the person performing the work must amend this copy accordingly and return it to the Design Office.

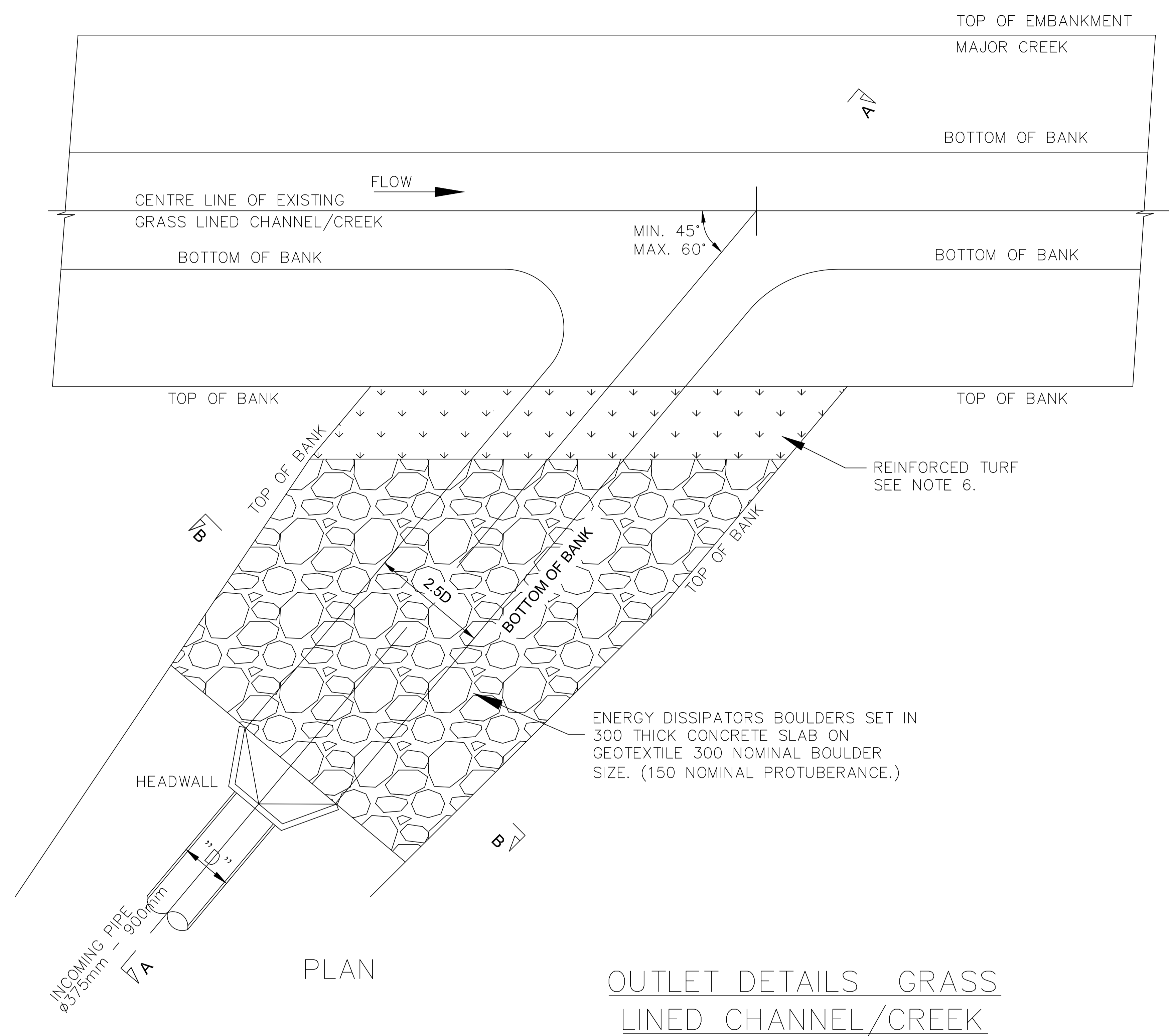
**APPROVED**  
  
 DIRECTOR OF  
 GOULBURN MULWAREE  
 OPERATIONS  
 DATE: 28/02/2018

**STEP IRON DETAILS**

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 28
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-D 11</b>		

DRAWING NUMBER SD-D 11



OUTLET DETAILS GRASS  
LINED CHANNEL/CREEK

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED
2. CONCRETE STRENGTH TO BE GRADE N32, A.S 3600 (32MPa) THROUGHOUT UNLESS OTHERWISE NOTED.
3. COMPACTION AROUND STRUCTURES, UNDER APRONS ETC: UNDISTURBED SUBGRADE OR APPROVED MATERIAL TO BE COMPACTED TO 98% OF THE STANDARD MAXIMUM DRY DENSITY & IS TO BE WITHIN -1 TO +2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD COMPACTION TEST (A.S 1289.5.1.1 - 1993)
4. THE SANDSTONE ROCKS TO BE USED ARE TO BE OF ADEQUATE DURABILITY, SO AS TO BE MINIMALLY AFFECTED BY THE ERODING EFFECTS OF WATER AND BY CHANGES IN TEMPERATURE.
5. FOUNDATION TO BE APPROVED FOR A SAFE BEARING CAPACITY OF 200kPa PRIOR TO CONSTRUCTION.
6. THE EXTENT OF REINFORCED TURF MAY BE EXTENDED AT COUNCIL'S DISCRETION GIVING CONSIDERATION TO THE STABILITY OF THE EXISTING CREEK.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	08/05/2012	
DESIGN REVIEWED	T.DIMEC	08/05/2012	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

**GOULBURN MULWAREE COUNCIL**

CIVIC CENTRE, 184-194 BOURKE STREET  
GOULBURN, NSW-2580  
LOCKED BAG 22, GOULBURN, NSW-2580  
PHONE: (02) 4823 4444  
FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM      AS-1100 STANDARDS

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**APPROVED**

*[Signature]*

DIRECTOR OF  
GOULBURN MULWAREE  
OPERATIONS

DATE: 28/02/2018

**OUTLET DETAILS  
GRASS LINED CHANNEL**

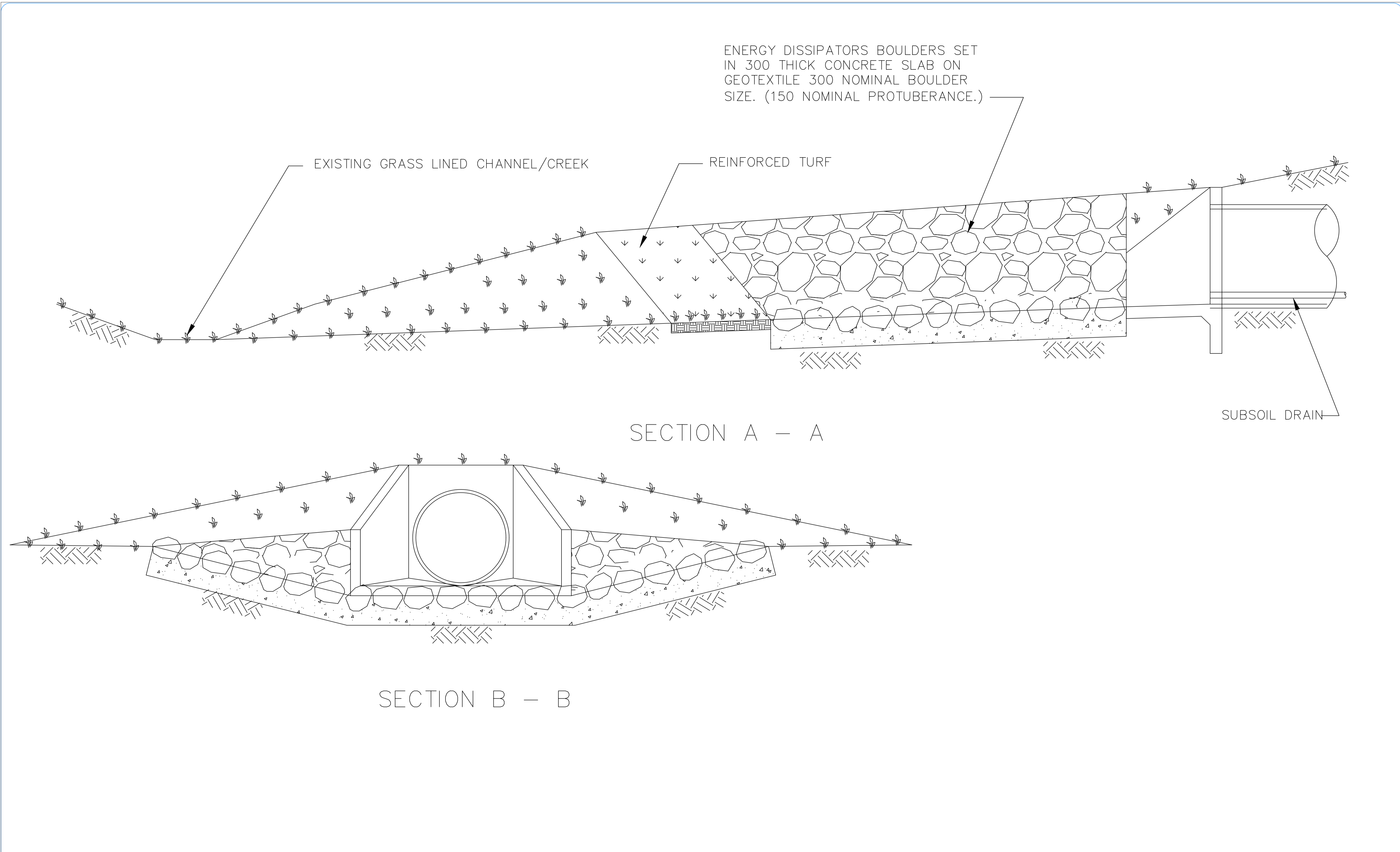
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 29
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	
<b>SD-D 12A</b>		





SECTION A - A

SECTION B - B

OUTLET DETAILS GRASS LINED CHANNEL

DRAWING NUMBER SD-D 12B

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	08/05/2012	
DESIGN REVIEWED	T.DIMEC	08/05/2012	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOULBURN, NSW-2580  
 LOCKED BAG 22, GOULBURN, NSW-2580  
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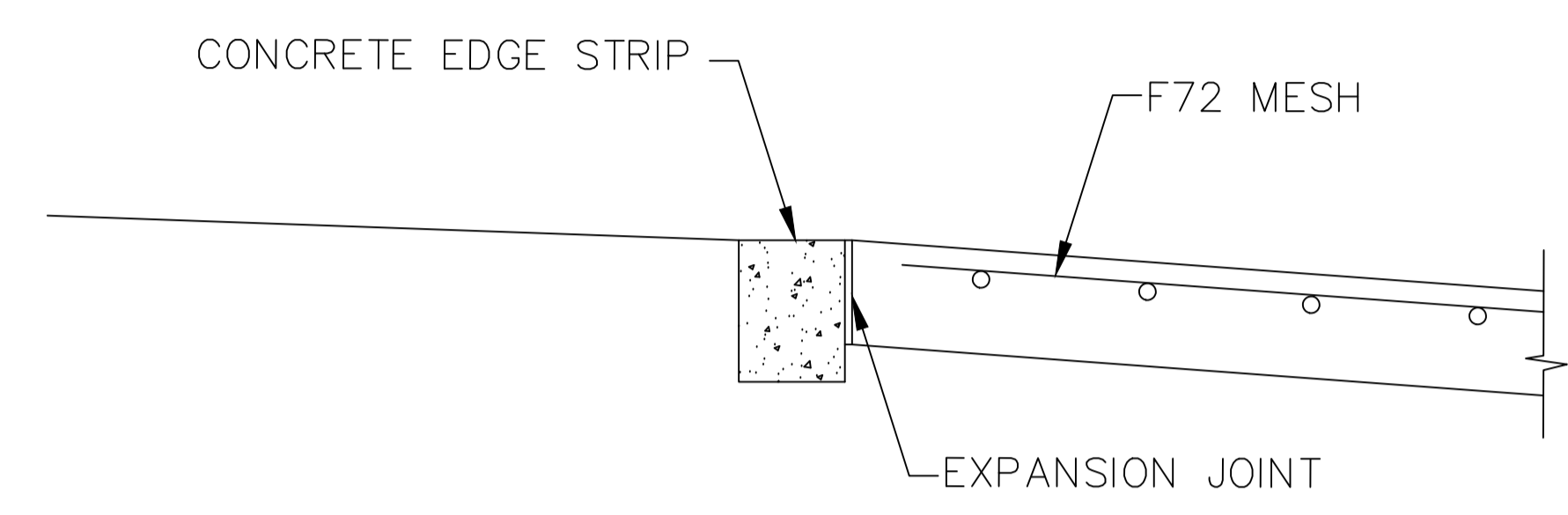
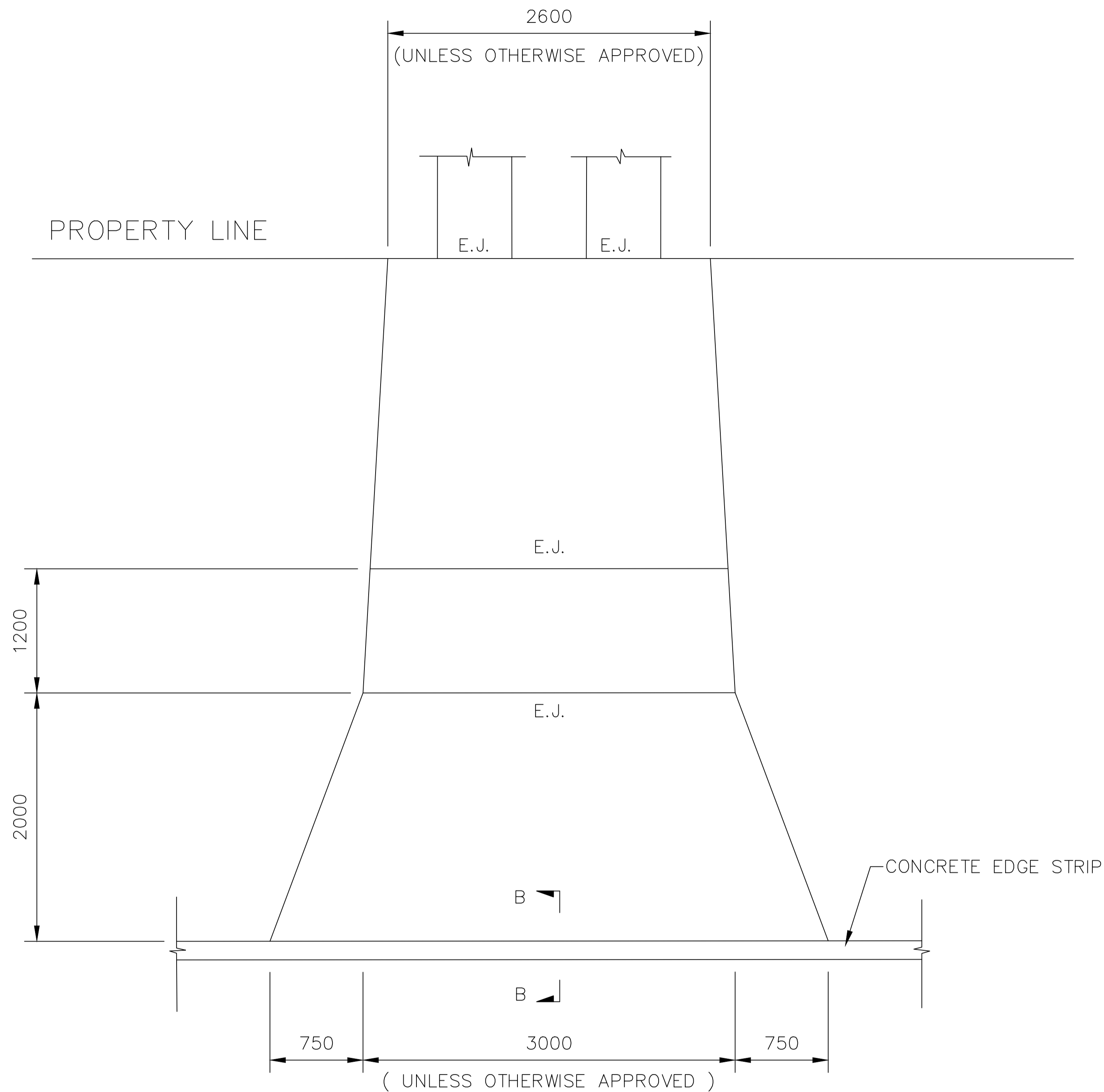
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 DIRECTOR OF GOULBURN MULWAREE OPERATIONS  
 DATE: 28/02/2018

**OUTLET DETAILS**  
**GRASS LINED CHANNEL**

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 30
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
<b>SD-D 12B</b>		





SECTION B - B

NOTES:

1. ALL EXPOSED CONCRETE EDGES SHALL BE ROUNDED TO 10mm RADIUS
2. PROVIDE 30mm TOP COVER TO REINFORCING FABRIC.
3. CONCRETE SHALL BE A MINIMUM OF 25MPa
4. MINIMUM CONCRETE SLAB THICKNESS SHALL BE : RESIDENTIAL 125mm INDUSTRIAL AND COMMERCIAL 200mm.
5. EXPANSION JOINTS "E.J." SHALL BE FILLED WITH 10mm THICK BITUMEN IMPREGNATED PREFORMED JOINTING MATERIAL.
6. FINISHED SURFACE TEXTURE SHALL BE BROOMED FINISH FOR VEHICULAR FOOTPATH CROSSINGS AND THE CONCRETE IS TO BE COATED WITH A SUITABLE CURING COMPOUND.
7. DRIVEWAYS TO BE CONSTRUCTED AT RIGHT ANGLE TO EDGE STRIP.
8. IF CONCRETE EDGE STRIP HAS CHAMFER, TOP OF DRIVEWAY SLAB SHALL ALIGN WITH BOTTOM OF CHAMFER.

STANDARD SWALE VEHICULAR FOOTPATH CROSSING

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	P.SMART	DEC 2004	
DESIGN REVIEWED	I.ALDRIDGE	DEC 2004	
FINAL DESIGN CHECKED	I.ALDRIDGE	DEC 2004	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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 GOULBURN, NSW-2580  
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**SWALE FOOTPATH CROSSING**

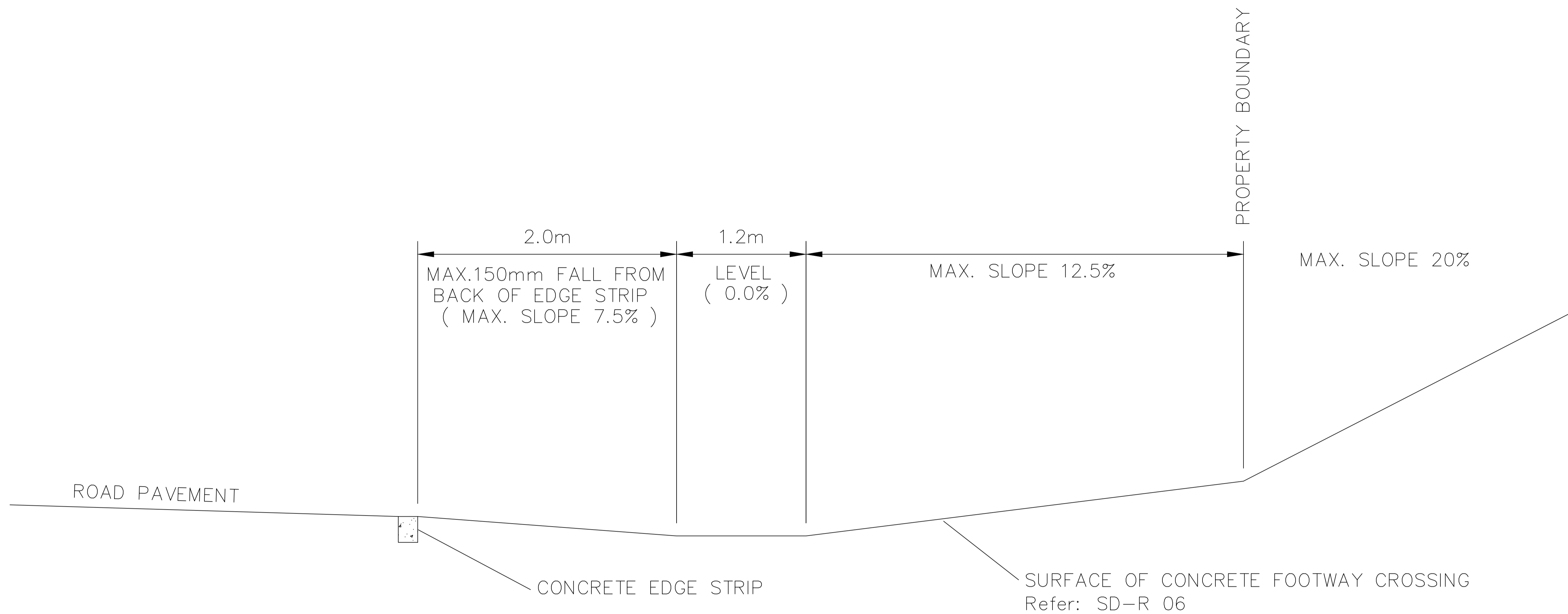
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A1 - SCALE AS SHOWN  
 NUMBER OF SHEETS 34  
 SHEET NUMBER 31

FILE NAME: STANDARD DRAWINGS.DWG

REVISION  
 GMC-VER-1

**SD-D 13**




## RISING DRIVEWAYS ACROSS SWALE

**NOTES:**

1. A DRIVEWAY DESIGN SHOULD BE COMPLETED BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS UNDERTAKEN.
2. THE CROSS SLOPE OF THE DRIVEWAY CROSSING OVER THE FOOTPATH IS TO BE THE SAME AS THE ADJACENT CONCRETE EDGE STRIP.
3. CHANGES OF GRADE TO BE EASED DURING CONSTRUCTION.
4. THE MAX. CHANGE IN GRADE SHOULD NOT EXCEED 12.5%

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	P.SMART	DEC 2004	
DESIGN REVIEWED	I.ALDRIDGE	DEC 2004	
FINAL DESIGN CHECKED	I.ALDRIDGE	DEC 2004	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			


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 CIVIC CENTRE, 184-194 BOURKE STREET  
 GOLBURN, NSW-2580  
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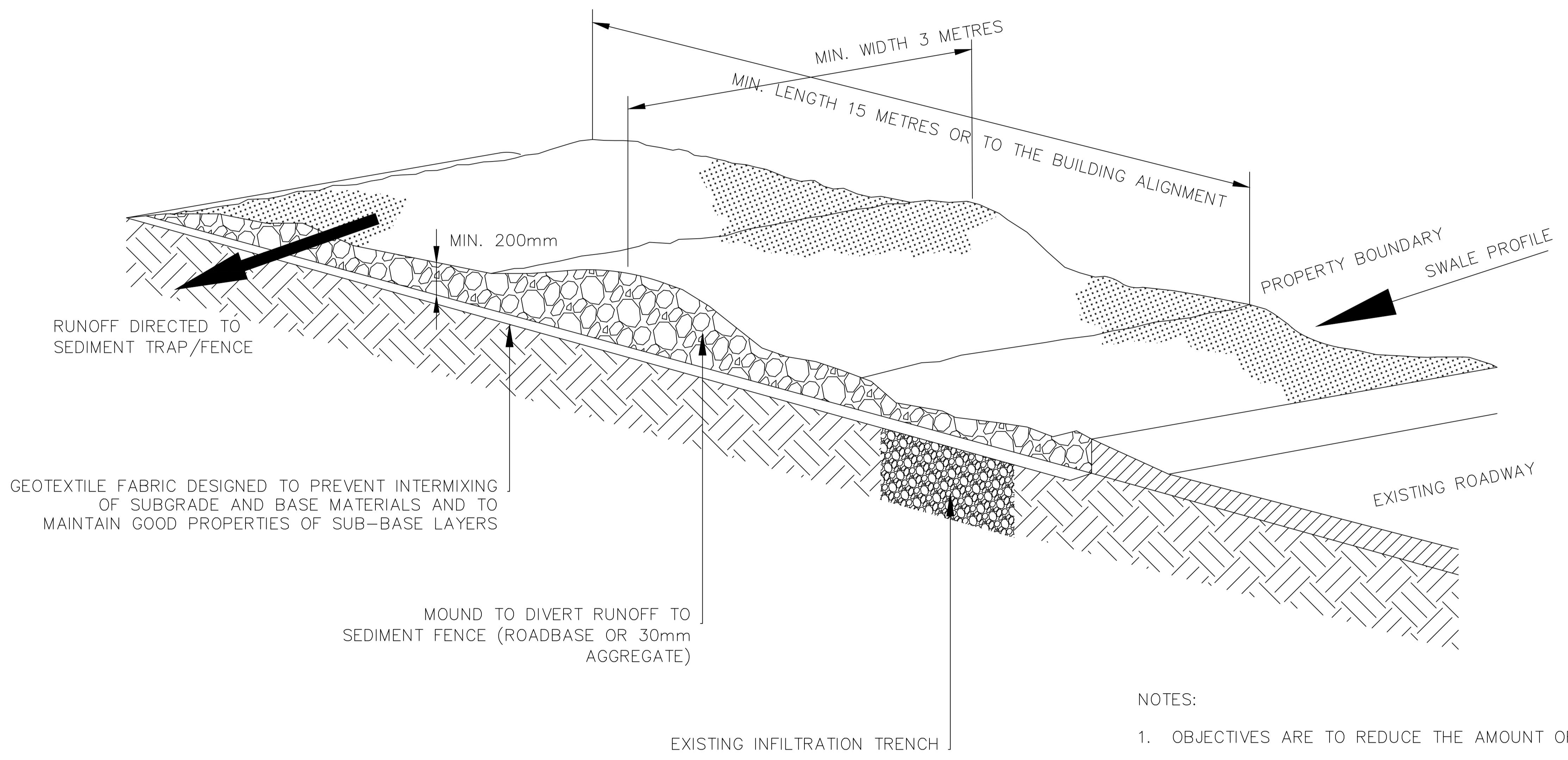
### SWALE DRIVEWAY PROFILE

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 34	SHEET NUMBER 32
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
<b>SD-D 14</b>		

# STABILISED SITE ACCESS ACROSS SWALE TO DWELLING CONSTRUCTION SITE



- NOTES:
- OBJECTIVES ARE TO REDUCE THE AMOUNT OF SEDIMENTS CARRIED OFF SITE AND PROTECT SWALES.
  - ACCESS PREPARATION: STRIP TOPSOIL (STOCKPILE), COMPACT SUBGRADE.
  - STABILISED ACCESS ACROSS SWALE MATCHES SWALE PROFILE.
  - ALL VEHICLE MOVEMENT TO BE RESTRICTED TO THE STABILISED ACCESS.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	I.ALDRIDGE	DEC 2004	
DESIGN REVIEWED	I.ALDRIDGE	DEC 2004	
FINAL DESIGN CHECKED	I.ALDRIDGE	DEC 2004	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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DATE: 28/02/2018

**SWALE STABILISED**

**SITE ACCESS**

**SAFETY FIRST**

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A1 - SCALE AS SHOWN

NUMBER OF SHEETS 34

SHEET NUMBER 33

FILE NAME: STANDARD DRAWINGS.DWG

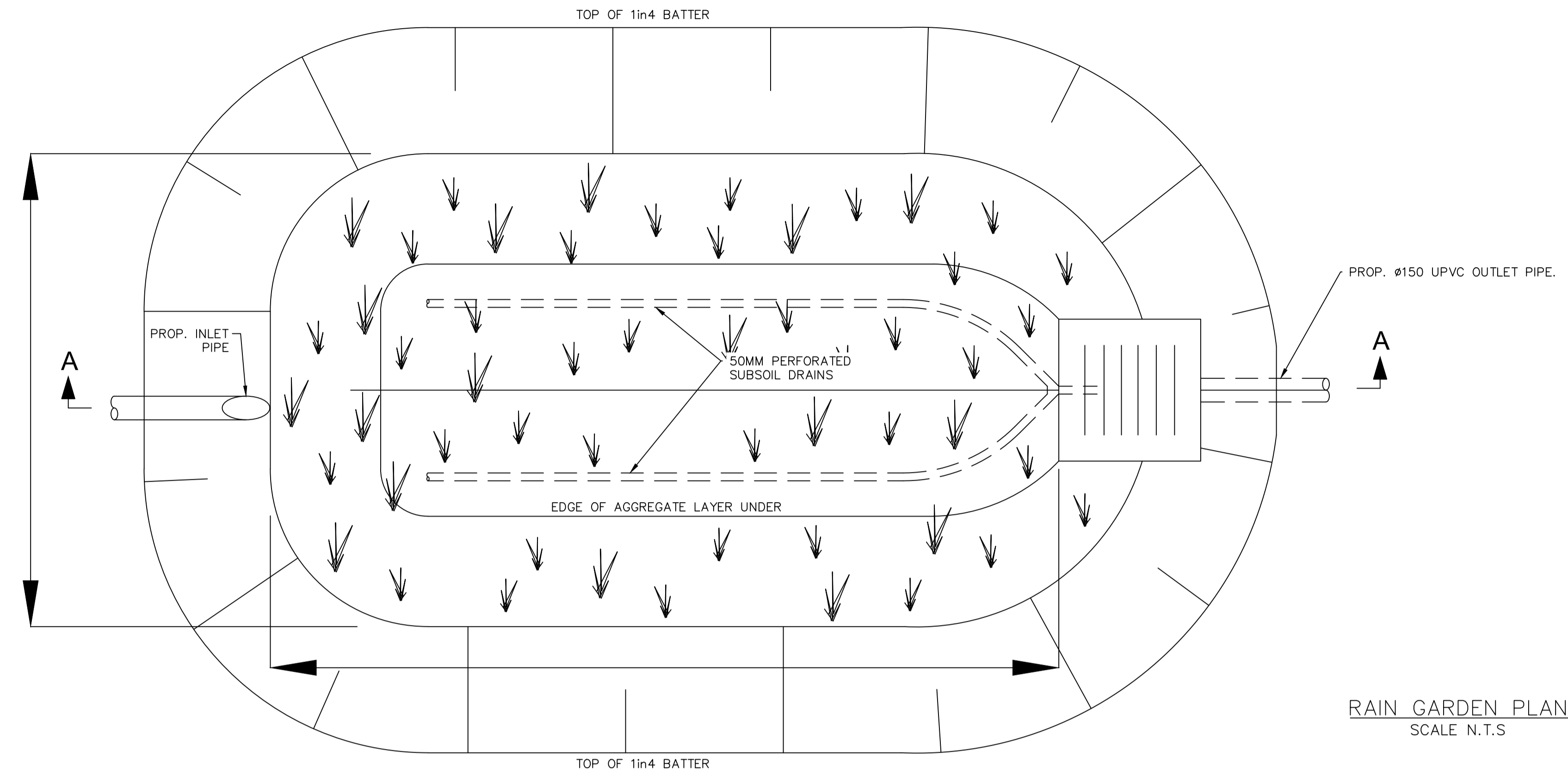
REVISION GMC-VER-1

**SD-D 15**

RD: -/-/-

DRAWING NUMBER SD-D 15





RAIN GARDEN PLAN  
SCALE N.T.S.

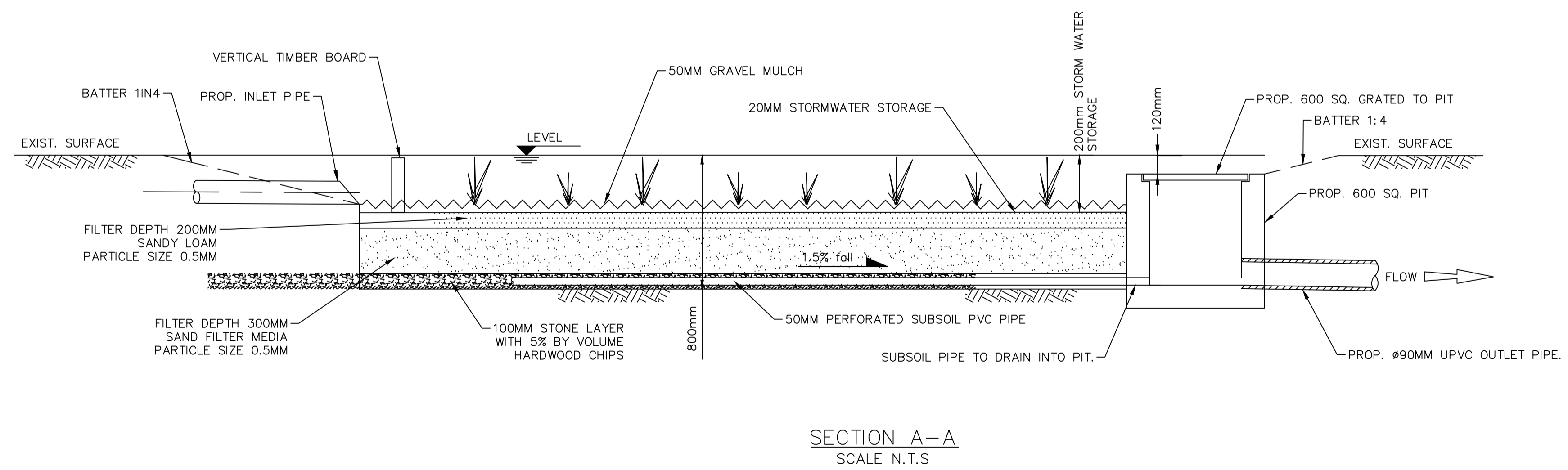
RAIN GARDEN NOTES

1. FILTER SURFACE AREA DIMENSIONS DEPENDENT ON THE AREA TO BE TREATED
2. RAIN GARDEN SHAPE MAY BE ALTERED,
3. INTERNAL AREA NEEDS TO BE MAINTAINED.
4. INLET PIPE FROM FUTURE DWELLING TO CONNECT INTO NEAREST POINT OF THE RAIN GARDEN.
5. RAIN GARDEN OUTLET CAN BE POSITIONED TO SUIT THE POINT OF DISCHARGE.
6. RAIN GARDEN TO BE PLANTED AT A DENSITY OF 8-12 PLANTS PER SQUARE METER CONSISTING OF CAREX SP WITHIN THE RAIN GARDEN & JUNCUS SP AROUND THE PERIMETER.

Note:

Subsoil pipes to be evenly spaced at 1/3 width up to a maximum distance apart of 1 meter.

Rain gardens with width greater than 3m will require additional pipes.



SECTION A-A  
SCALE N.T.S.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	APRIL 2011	
DESIGN REVIEWED	T.DIMEC	APRIL 2011	
FINAL DESIGN CHECKED	I.ALDRIDGE	DEC 2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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 GOULBURN, NSW-2580  
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**RAIN GARDEN**  
**TYPICAL RAIN GARDEN**

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