

STANDARD DRAWINGS

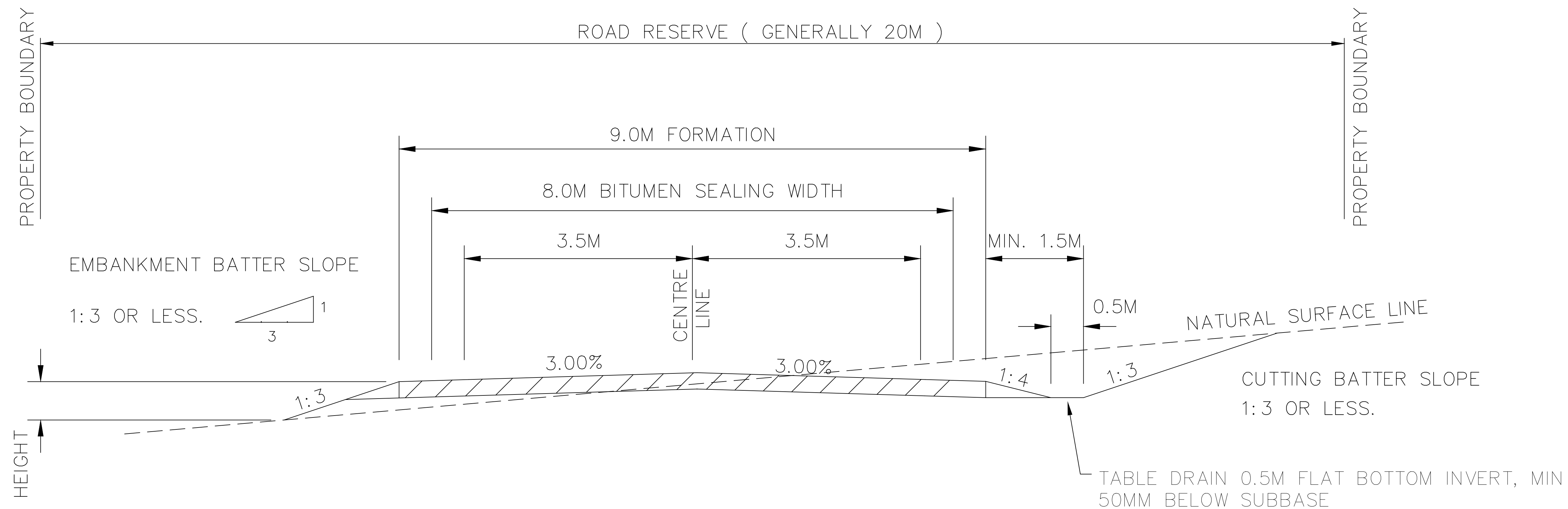
ROADS

STORMWATER DRAINAGE

NUMBER	TITLE	NUMBER	TITLE
SD-R 01	RURAL ROAD - TYPICAL CROSS SECTION	SD-D 01	SWALE STABILISED SITE ACCESS
SD-R 02	URBAN ROAD - TYPICAL CROSS SECTION	SD-D 02	SIDE ENTRY PIT - NO EXTENDED CHAMBER PIT
SD-R 03 A & B	SHARED PATH/BICYCLE PATH AND HOLDING RAIL	SD-D 03	JUNCTION PIT
SD-R 04	STANDARD FOOTPATH 1.2/1.5 M WIDE	SD-D 04	DRAINAGE CONNECTIONS - MINOR
SD-R 05	VEHICULAR DRIVEWAY PROFILES	SD-D 05	SURFACE INLET PIT
SD-R 06	VEHICLE CROSSING PLAN RESIDENTIAL	SD-D 06 A,B,C	KERB INLET PIT WITH GRATE - EXTENDED CHAMBER PIT
SD-R 07	VEHICLE CROSSING PLAN INDUSTRIAL	SD-D 07	INTERLOT DRAINAGE CONNECTIONS
SD-R 08 A & B	RURAL AND VILLAGE ACCESS OFF A PUBLIC ROAD	SD-D 08	STANDARD CONCRETE HEAD WALL 300-900mm
SD-R 09	KERB AND GUTTER	SD-D 09	PRECAST BOXCULVERTS (EXCAVATION, BEDDING & BACKFILLING)
SD-R 10	KERB OUTLET	SD-D 10	MASS CONCRETE WINGWALL
SD-R 11 A & B	KERB RAMPS	SD-D 11	MASS CONCRETE WINGWALL QUANTITIES
SD-R 12	STANDARD SERVICE ALLOCATION FOR PUBLIC UTILITIES IN	SD-D 12	STEP IRON DETAILS
FOOTPATHS		SD-D 13 A & B	GRASS LINED CHANNEL - OUTLET DETAILS
SD-R 13	TRENCH BACKFILL DETAILS FOR ROAD CROSSING	SD-D 14 A & B	RAIN GARDEN AND BIORETENTION NOTES
SD-R 14	STREET NAME PLATE & POST		






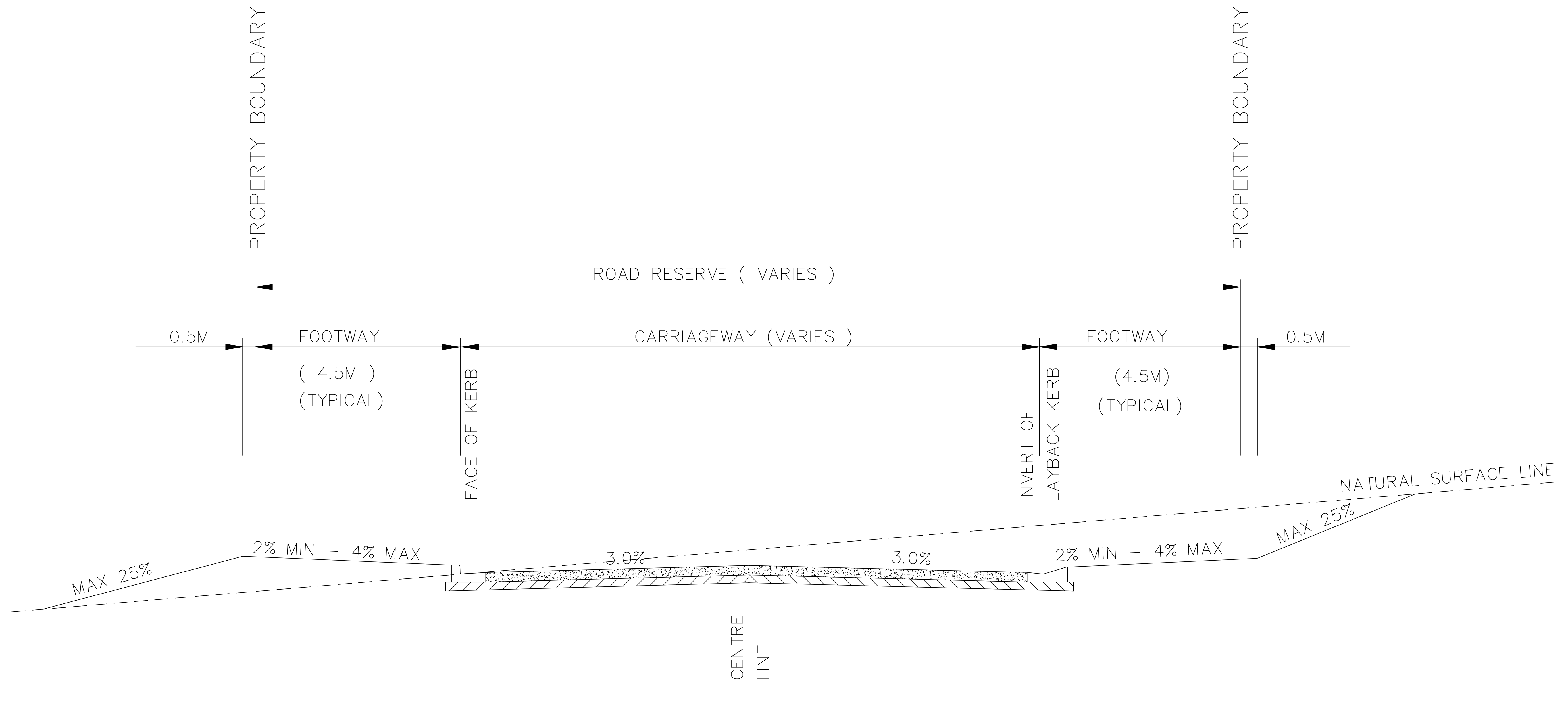
CIVIC CENTRE 184-194 BOURKE STREET, GOULBURN, NSW - 2580.
LOCKED BAG 22, GOULBURN, NSW - 2580.
PHONE: (02) 4823 4444. FAX: (02) 4823 4456.



NOTES:

1. THIS ONLY INDICATES ONE ROAD WIDTH. DIFFERENT RURAL ROAD WIDTHS HAVE SIMILAR ARRANGEMENTS. REFER TO DESIGN SPECIFICATION SECTION 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 (I ALDRIDGE 2012)	 <div>CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456</div> <div>AUSTRALIAN HEIGHT DATUM</div> <div>AS-1100 STANDARDS</div> <div>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.</div>	<div>APPROVED</div> <div></div> <div>DIRECTOR OF GOULBURN MULWAREE OPERATIONS</div> <div>DATE: 28/02/2018</div>	<div>RURAL ROAD</div> <div>TYPICAL CROSS SECTION</div>	<div>SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE  www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG</div>	A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 1
DESIGNED & DRAFTED	P.SMART	14/04/2009	VARIOUS CHANGES MADE (I ALDRIDGE JANUARY 2018)					FILE NAME: STNADARD DRAWINGS.DWG	<div>SD-R 01</div>	
DESIGN REVIEWED	P.SMART	14/04/2009						REVISION GMC-VER-1		
FINAL DESIGN CHECKED	I.ALDRIE	12/12/2012						RD: 		
ISSUED FOR CONSTRUCTION										
WORK AS EXECUTED										



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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	
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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

URBAN ROAD

TYPICAL CROSS SECTION



A1 - SCALE
AS SHOWN
REVISION
GMC-VER-1
RD: 1100

NUMBER OF SHEETS
35
SHEET NUMBER
2
FILE NAME:
STNADARD DRAWINGS.DWG
SD-R 02

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.

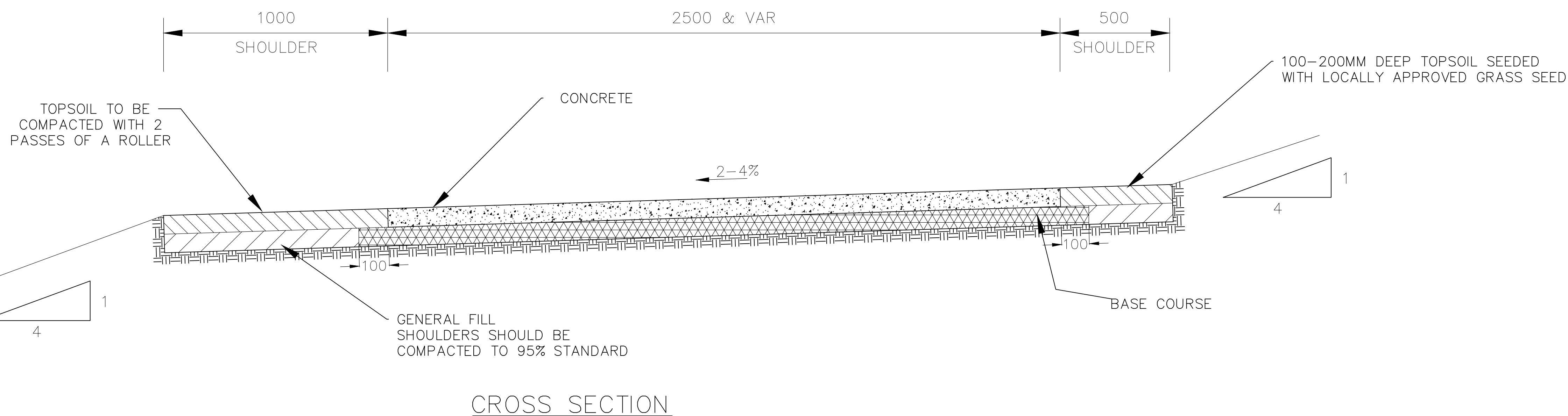
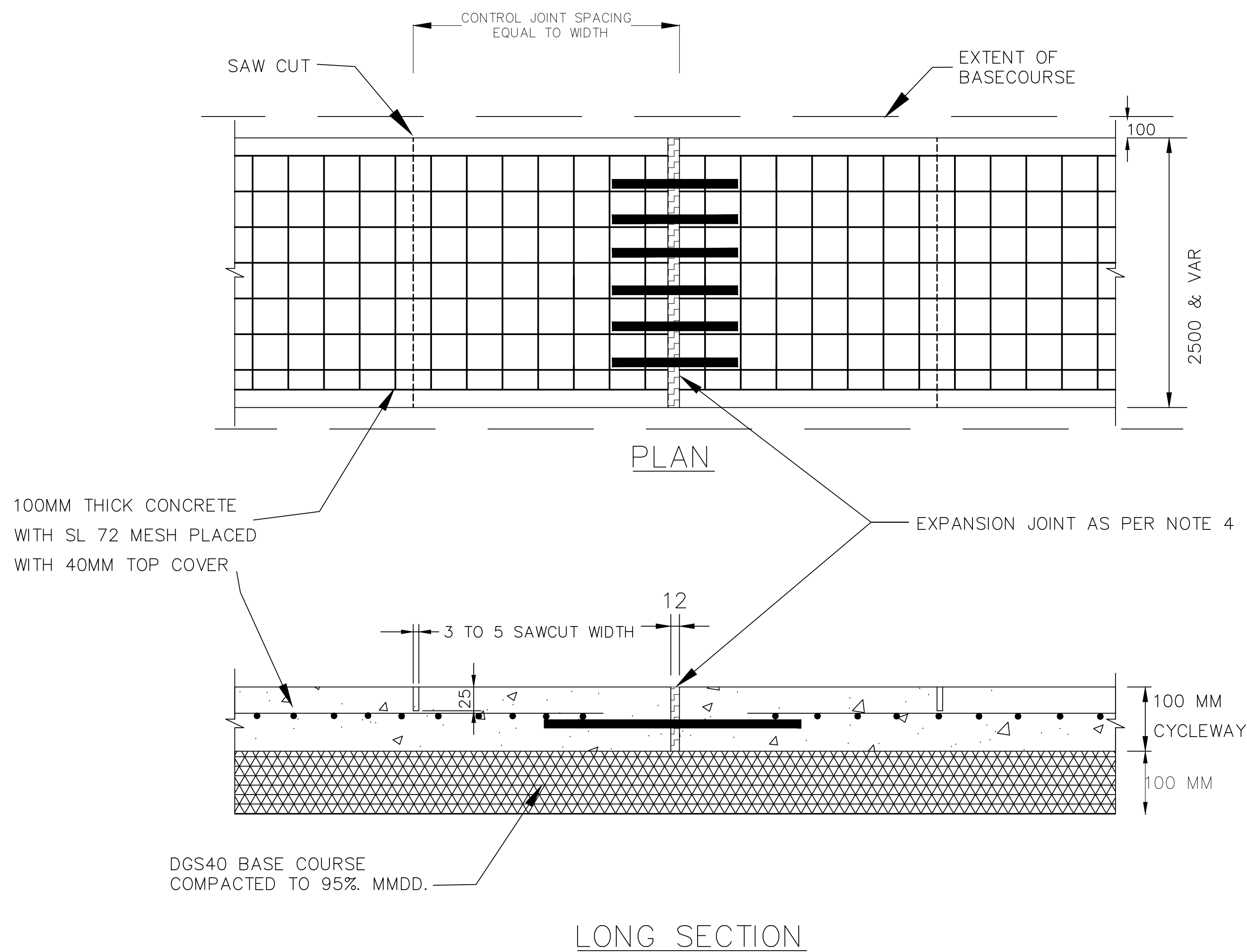
FOOTPATH REINSTATEMENT:

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




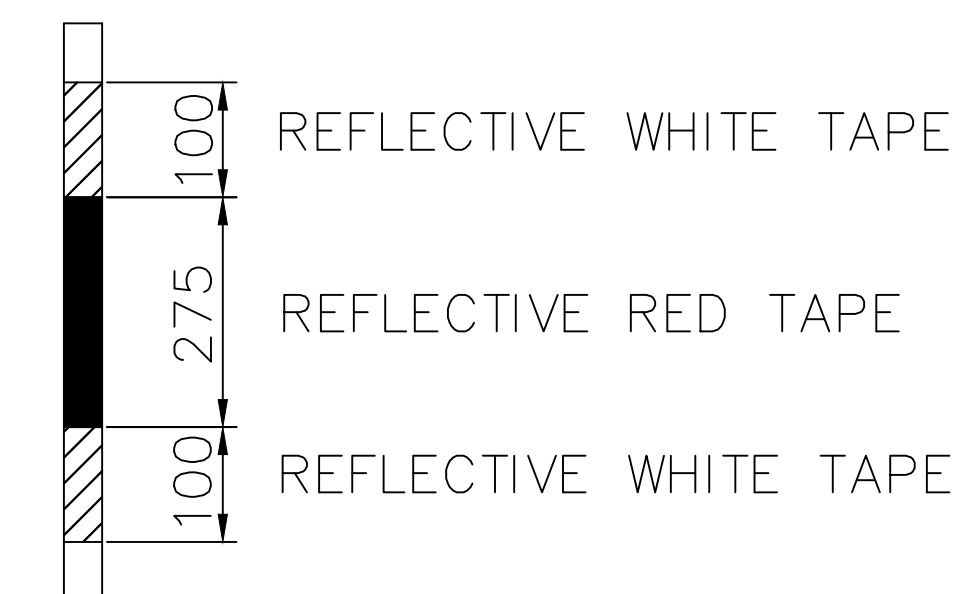
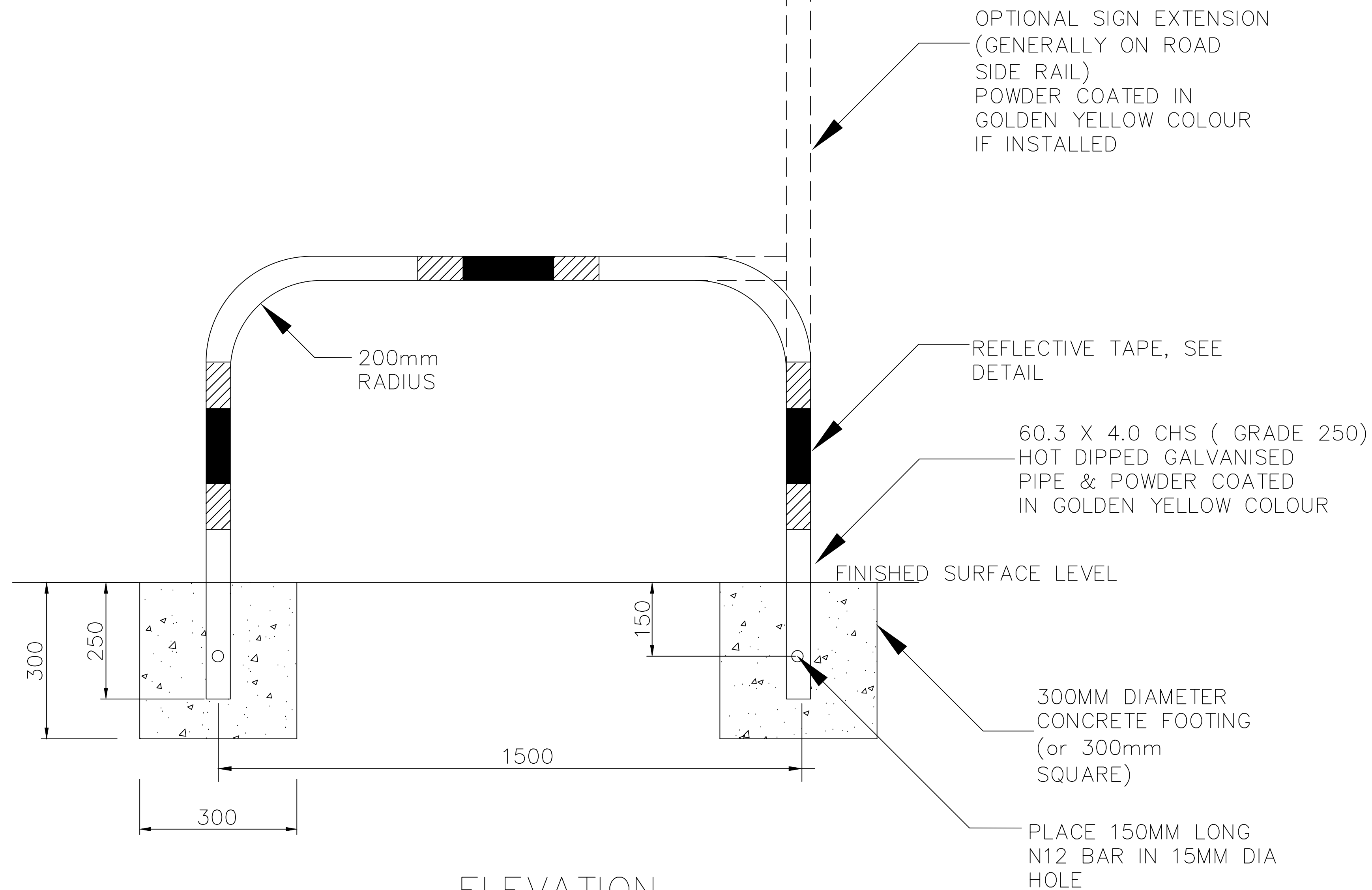
INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I ALDRIDGE 2012)
DESIGNED & DRAFTED	A.SINGH	15/12/2020	HOLDING RAIL DETAILS ADDED (I ALDRIDGE 2013)
DESIGN REVIEWED	MW.MORLEY	15/12/2020	FULL REVISION (A Singh 2020)
FINAL DESIGN CHECKED	M.O'ROURKE	06/01/2021	
ISSUED FOR CONSTRUCTION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

	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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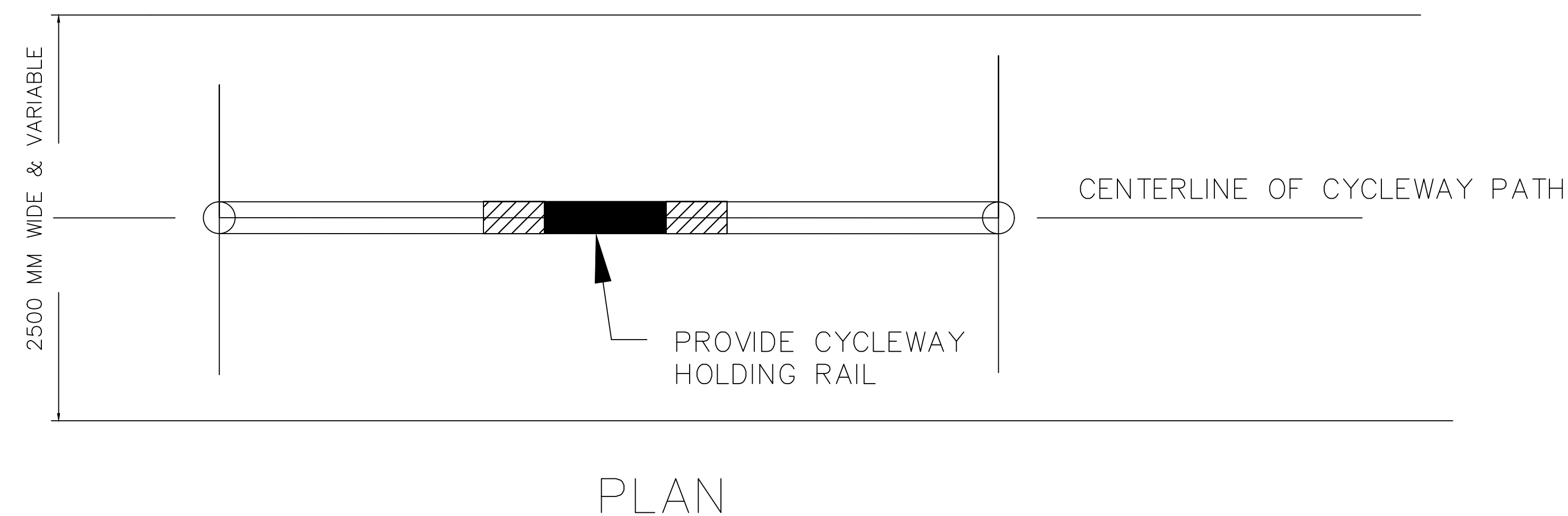
APPROVED	
DIRECTOR OF GOULBURN MULWAREE OPERATIONS	
DATE: 06/01/2021	

SHARED PATH /BICYCLE PATH

SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE www.dialbeforeyoudig.com.au 	A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 3
REVISION GMC-VER-2 RD: 06/01/21	FILE NAME: STANDARD DRAWINGS.DWG	SD-R 03 A	



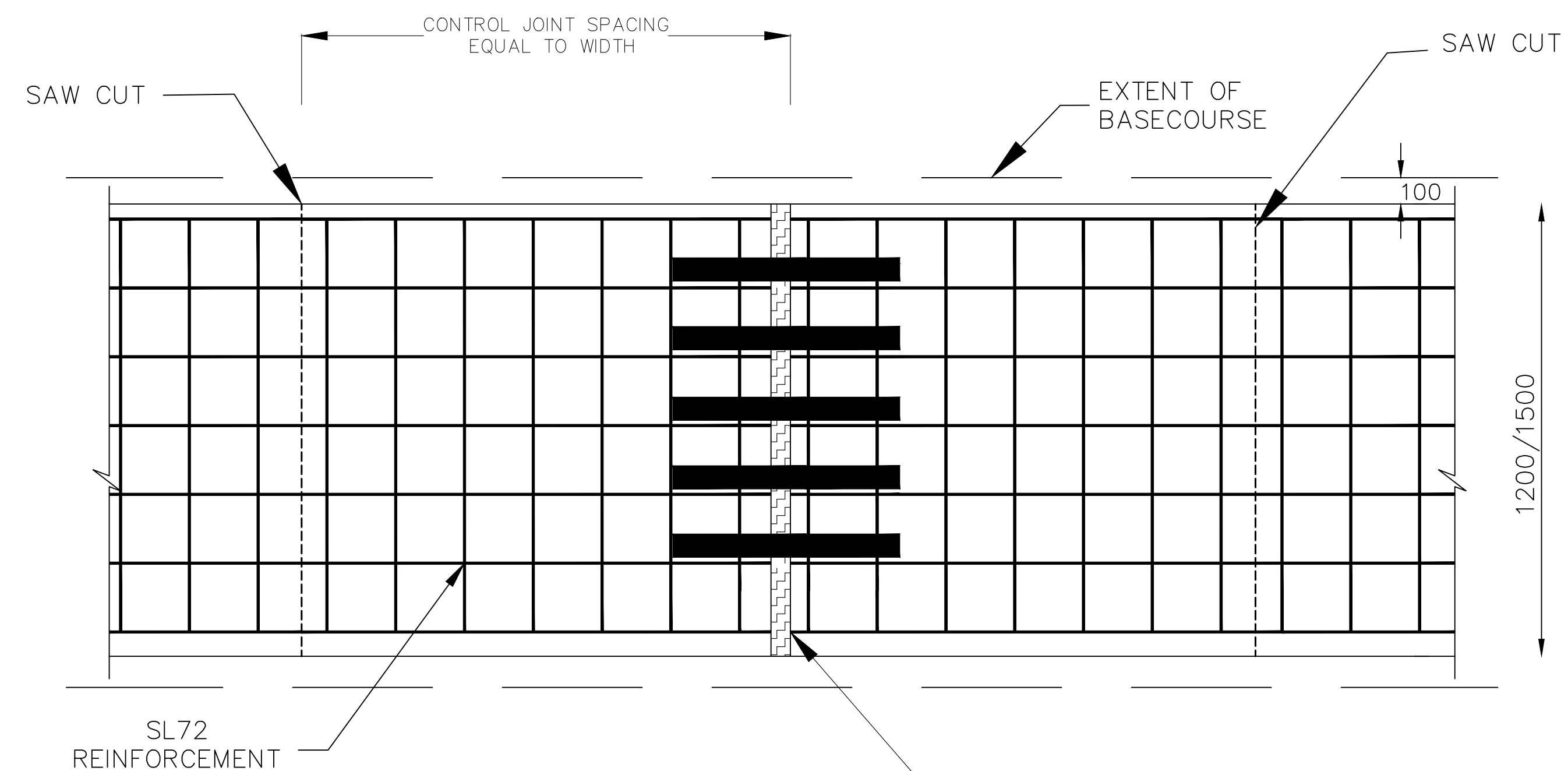
REFLECTIVE TAPE DETAIL



NOTE:

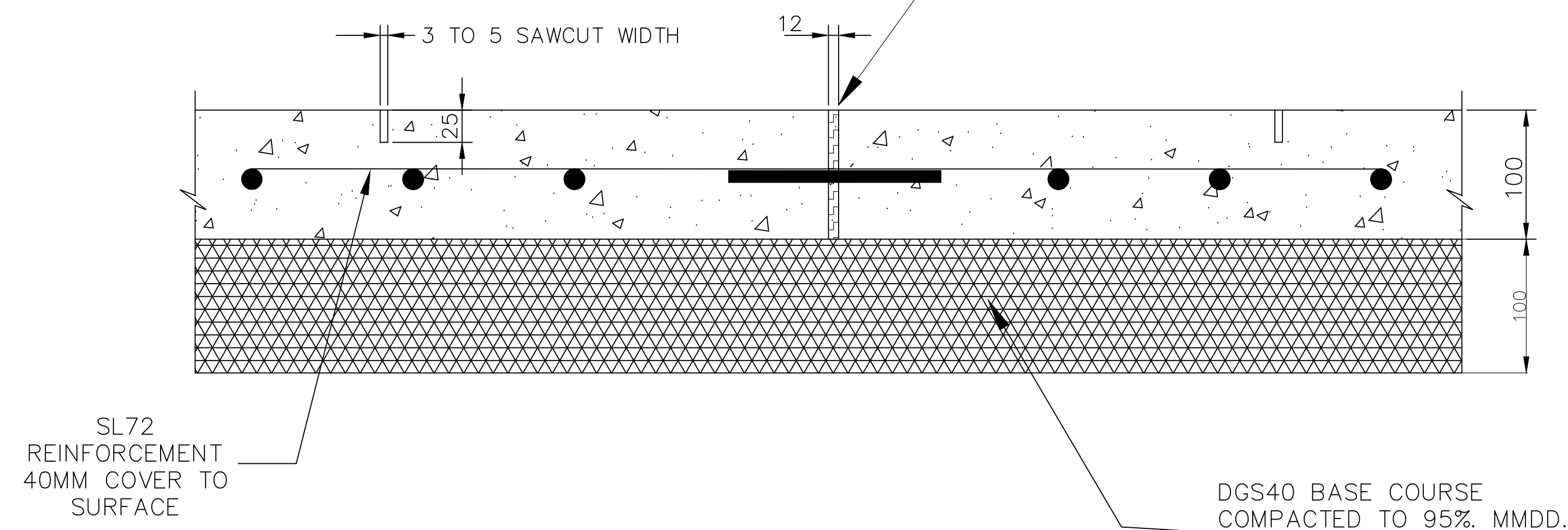
CONCRETE TO BE 32 MPA AT 28 DAYS

INDEX	NAME	DATE	AMENDMENTS	<div><div>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 DATUMAS-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.</div></div>		APPROVED		<div><div>DIRECTOR OF GOULBURN MULWAREE OPERATIONS</div></div>	HOLDING RAIL		
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I ALDRIDGE 2012)			DATE: 28/02/2018					
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											
						<div><div><div><div>SAFETY FIRST</div><div>PERSONAL PROTECTIVE EQUIPMENT</div><div>MUST BE WORN ON SITE</div></div><div>www.dialbeforeyoudig.com.au</div><div><div></div><div><div>DIAL 1100</div><div>BEFORE YOU DIG</div></div></div></div></div>		A1 - SCALE AS SHOWN		NUMBER OF SHEETS 35	SHEET NUMBER 4
						FILE NAME: STANDARD DRAWINGS.DWG		REVISION GMC-VER-1		SD-R 03 B	
								RD: 			



PLAN

EXPANSION JOINT AS PER NOTE 4



LONG 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. KEYJOINTS TO HAVE DOWELS WITH A DIAMTER OF 12MM AND PLACED EVERY 400MM. DOWELS MUST HAVE SLEEVES.
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. REINFORCED MESH TO OVERLAP BY TWO TRANSVERSE BARS.
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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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AUSTRALIAN HEIGHT DATUM

AS-1100 STANDARDS

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APPROVED

DIRECTOR OF
GOULBURN MULWAREE
OPERATIONS

DATE: 06/01/2021

STANDARD FOOTPATH

1.2/1.5 M WIDE



A1 - SCALE
AS SHOWN

FILE NAME:
REVISION
GMC-VER-2
RD: 06/01/21

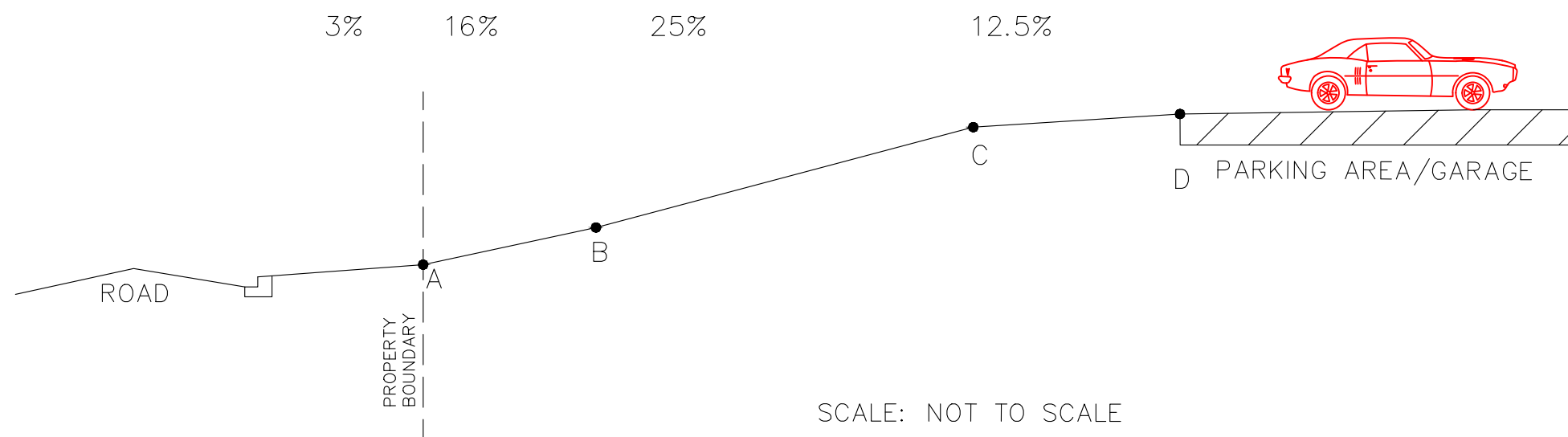
NUMBER OF SHEETS
35

SHEET NUMBER
5

STANDARD DRAWINGS.DWG

SD-R 04

HIGH LEVEL PARKING DRIVEWAY PROFILE



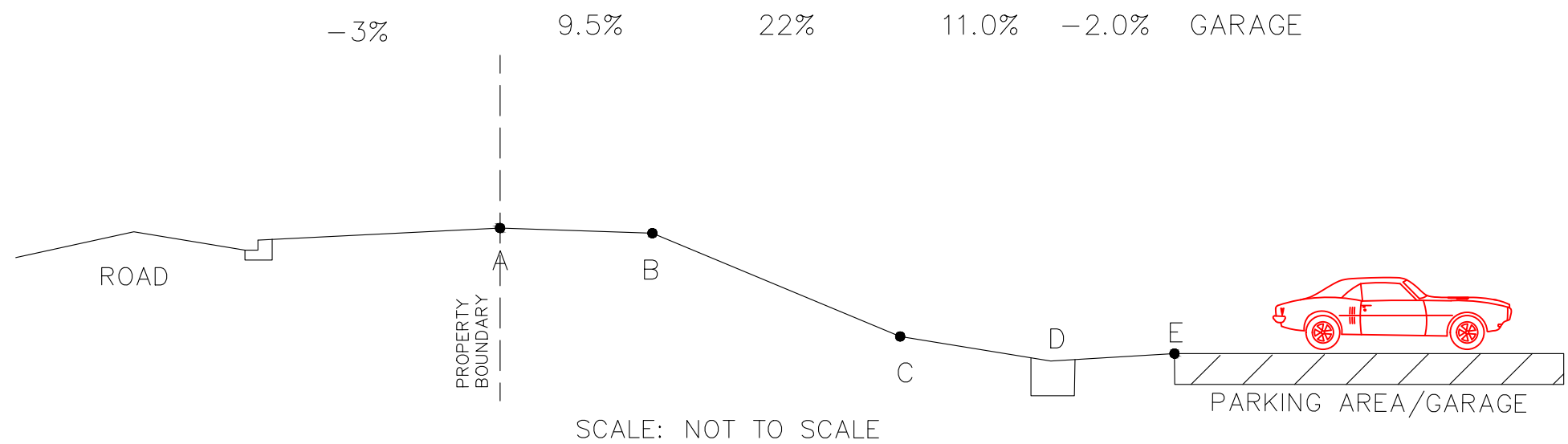
HORIZONTAL GARAGE SETBACK FROM BOUNDARY (A TO D)	HEIGHT DISTANCE FROM PROPERTY BOUNDARY			HORIZONTAL GARAGE SETBACK FROM BOUNDARY (A TO D)	HEIGHT DISTANCE FROM PROPERTY BOUNDARY		
	B	C	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (D)		B	C	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (D)
5	0.32	0.57	0.82	10.2	0.32	1.87	2.12
5.2	0.32	0.62	0.87	10.4	0.32	1.92	2.17
5.4	0.32	0.67	0.92	10.6	0.32	1.97	2.22
5.6	0.32	0.72	0.97	10.8	0.32	2.02	2.27
5.8	0.32	0.77	1.02	11	0.32	2.07	2.32
6	0.32	0.82	1.07	11.2	0.32	2.12	2.37
6.2	0.32	0.87	1.12	11.4	0.32	2.17	2.42
6.4	0.32	0.92	1.17	11.6	0.32	2.22	2.47
6.6	0.32	0.97	1.22	11.8	0.32	2.27	2.52
6.8	0.32	1.02	1.27	12	0.32	2.32	2.57
7	0.32	1.07	1.32	12.2	0.32	2.37	2.62
7.2	0.32	1.12	1.37	12.4	0.32	2.42	2.67
7.4	0.32	1.17	1.42	12.6	0.32	2.47	2.72
7.6	0.32	1.22	1.47	12.8	0.32	2.52	2.77
7.8	0.32	1.27	1.52	13	0.32	2.57	2.82
8	0.32	1.32	1.57	13.2	0.32	2.62	2.87
8.2	0.32	1.37	1.62	13.4	0.32	2.67	2.92
8.4	0.32	1.42	1.67	13.6	0.32	2.72	2.97
8.6	0.32	1.47	1.72	13.8	0.32	2.77	3.02
8.8	0.32	1.52	1.77	14	0.32	2.82	3.07
9	0.32	1.57	1.82	14.2	0.32	2.87	3.12
9.2	0.32	1.62	1.87	14.4	0.32	2.92	3.17
9.4	0.32	1.67	1.92	14.6	0.32	2.97	3.22
9.6	0.32	1.72	1.97	14.8	0.32	3.02	3.27
9.8	0.32	1.77	2.02	15	0.32	3.07	3.32
10	0.32	1.82	2.07				

NOTES:

- ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
- ANY VARIATION FROM THESE VALUES (A,B,C,D) AND ROAD CROSS FALL GREATER THAN -3% WILL REQUIRE DRIVEWAY PROFILE TO BE PROVIDED FROM THE CENTERLINE OF THE ROAD TO THE GARAGE AT A RATIO OF 1:20. THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING VEHICLE TEST PROFILES ARE CHECKED IN ACCORDANCE WITH AS2890.1 OFF-STREET CAR PARKING STANDARD.
- THIS STANDARD DRAWING SHALL BE FOLLOWED FOR HIGH AND LOW RESIDENTIAL VEHICULAR CROSSINGS WHERE THE CROSS FALL DEPARTS FROM MAXIMUM 4%.
- THIS DRAWING SHALL BE READ IN ADDITION TO OTHER STANDARD DRAWINGS REFERRING TO VEHICULAR CROSSINGS.
- THESE DRIVEWAY PROFILE ARE INDICATIVE ONLY. VARIATIONS FROM THESE GRADES MAY BE ACHIEVABLE.

LOW LEVEL PARKING DRIVEWAY PROFILE

THESE DRIVEWAY PROFILES COMPLY WITH AS2890.1 AND PROVIDES A BERM IN FRONT OF THE DRIVEWAY TO ALLOW FOR DRAINAGE. STEEPER DRIVEWAYS ARE POSSIBLE WITHOUT DRAINAGE BERM BUT THESE MAY CAUSE INTERNAL DRAINAGE PROBLEMS



HORIZONTAL GARAGE SETBACK FROM BOUNDARY (A TO E)	HEIGHT DIFFERENCE FROM PROPERTY BOUNDARY				HORIZONTAL GARAGE SETBACK FROM BOUNDARY (A TO E)	HEIGHT DIFFERENCE FROM PROPERTY BOUNDARY			
	B	C	D	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (E)		B	C	D	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (E)
5	-0.19	-0.19	-0.41	-0.39	10.2	-0.19	-1.334	-1.554	-1.534
5.2	-0.19	-0.234	-0.454	-0.434	10.4	-0.19	-1.378	-1.598	-1.578
5.4	-0.19	-0.278	-0.498	-0.478	10.6	-0.19	-1.422	-1.642	-1.622
5.6	-0.19	-0.322	-0.542	-0.522	10.8	-0.19	-1.466	-1.686	-1.666
5.8	-0.19	-0.366	-0.586	-0.566	11	-0.19	-1.51	-1.73	-1.71
6	-0.19	-0.41	-0.63	-0.61	11.2	-0.19	-1.554	-1.774	-1.754
6.2	-0.19	-0.454	-0.674	-0.654	11.4	-0.19	-1.598	-1.818	-1.798
6.4	-0.19	-0.498	-0.718	-0.698	11.6	-0.19	-1.642	-1.862	-1.842
6.6	-0.19	-0.542	-0.762	-0.742	11.8	-0.19	-1.686	-1.906	-1.886
6.8	-0.19	-0.586	-0.806	-0.786	12	-0.19	-1.73	-1.95	-1.93
7	-0.19	0.63	-0.85	-0.83	12.2	-0.19	-1.774	-1.994	-1.974
7.2	-0.19	-0.674	-0.894	-0.874	12.4	-0.19	-1.818	-2.038	-2.018
7.4	-0.19	-0.718	-0.938	-0.918	12.6	-0.19	-1.862	-2.082	-2.062
7.6	-0.19	-0.762	-0.982	-0.962	12.8	-0.19	-1.906	-2.126	-2.106
7.8	-0.19	-0.806	-1.026	-1.006	13	-0.19	-1.95	-2.17	-2.15
8	-0.19	-0.85	-1.07	-1.05	13.2	-0.19	-1.994	-2.214	-2.194
8.2	-0.19	-0.894	-1.114	-1.094	13.4	-0.19	-2.038	-2.258	-2.238
8.4	-0.19	-0.938	-1.158	-1.138	13.6	-0.19	-2.082	-2.302	-2.282
8.6	-0.19	-0.982	-1.202	-1.182	13.8	-0.19	-2.126	-2.346	-2.326
8.8	-0.19	-1.026	-1.246	-1.226	14	-0.19	-2.17	-2.39	-2.37
9	-0.19	-1.07	-1.29	-1.27	14.2	-0.19	-2.214	-2.434	-2.414
9.2	-0.19	-1.114	-1.334	-1.314	14.4	-0.19	-2.258	-2.478	-2.458
9.4	-0.19	-1.158	-1.378	-1.358	14.6	-0.19	-2.302	-2.522	-2.502
9.6	-0.19	-1.202	-1.422	-1.402	14.8	-0.19	-2.346	-2.566	-2.546
9.8	-0.19	-1.246	-1.466	-1.446	15	-0.19	-2.39	-2.61	-2.59
10	-0.19	-1.29	-1.51	-1.49					

INDEX

NAME

DATE

AMENDMENTS

SURVEYED

DESIGNED & DRAFTED

DESIGN REVIEWED

FINAL DESIGN CHECKED

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

APPROVED

Director of Goulburn Mulwaree Operations

DATE: 28/02/2018

VEHICULAR DRIVEWAY PROFILES

SAFETY FIRST

PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE

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A1 - SCALE AS SHOWN

NUMBER OF SHEETS 35

SHEET NUMBER 6

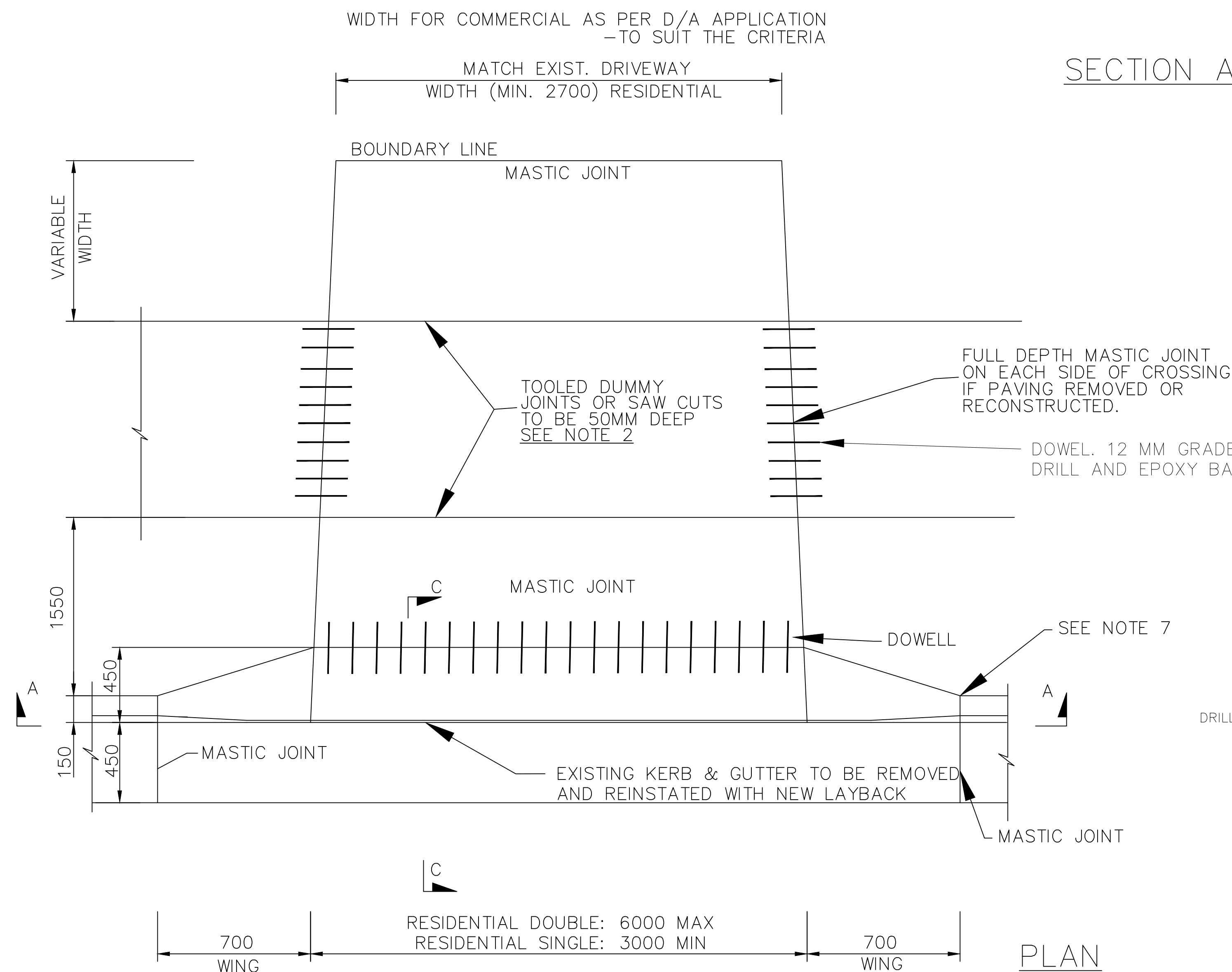
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REVISION GMC-VER-1

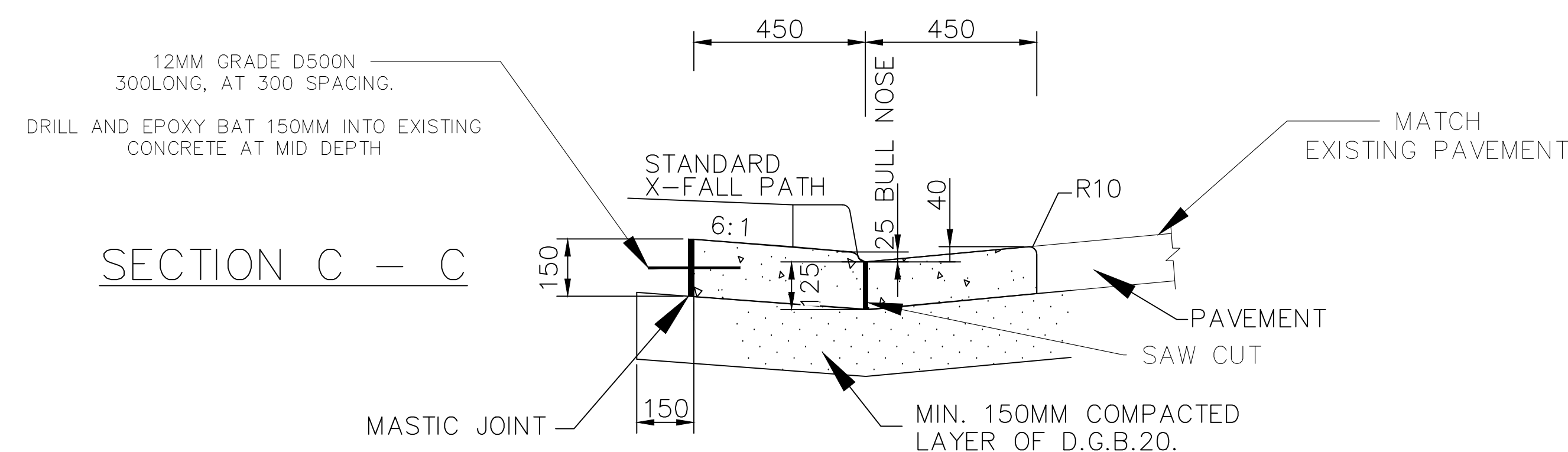
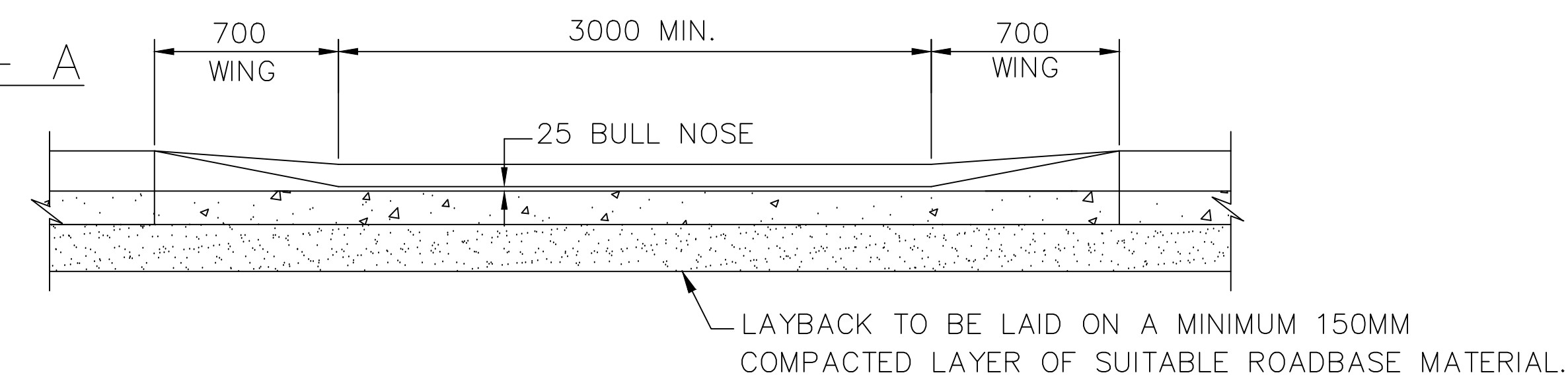
SD-R 05

DRAWING NUMBER SD-R 05

A1



SECTION A - A



NOTES:

1. FOOTWAY CROSSING THICKNESS AS FOLLOWS:

- 1.1. RESIDENTIAL VEHICULAR FOOTWAY CROSSINGS SHALL BE 125MM THICK CONCRETE, REINFORCED WITH SL72 MESH ON CHAIRS IN A REGULAR GRID NOT EXCEEDING 1M SPACING. PROVIDE 50MM TOP COVER AND ENDS TO STEEL REINFORCEMENT.

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, REMOVED WITH DOWELS TO CONNECT FOOTPATH TO NEW DRIVEWAY.

5. CONCRETE SHALL HAVE A 28 DAY STRENGTH (F'C) OF 25MPA AND A SLUMP OF 80MM, IN ACCORDANCE WITH AS3600.

6. ANY VARIATIONS TO STANDARD CROSSFALL (REFER TO SD-R 04) ON FOOTWAY SHALL HAVE THE PRIOR APPROVAL OF COUNCIL.

7. FOR DRIVEWAYS WITH EXISTING KERB AND GUTTER BUT NO LAYBACK THE KERB IS TO BE SAW CUT AT THE INVERT AND THE KERB REMOVE CREATE LAYBACK.


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 COUNCILS ENGINEERING DESIGN AND ASSETS DEPARTMENT.

9. REINFORCED MESH TO OVERLAP BY TWO TRANSVERSE BARS.

10. DRIVEWAY TO BE DESIGNED AND LOCATED IN ACCORDANCE WITH AS2890, ENSURING THAT THE PROPOSED LOCATION MEETS THE SIGHT DISTANCE REQUIREMENTS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

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	NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
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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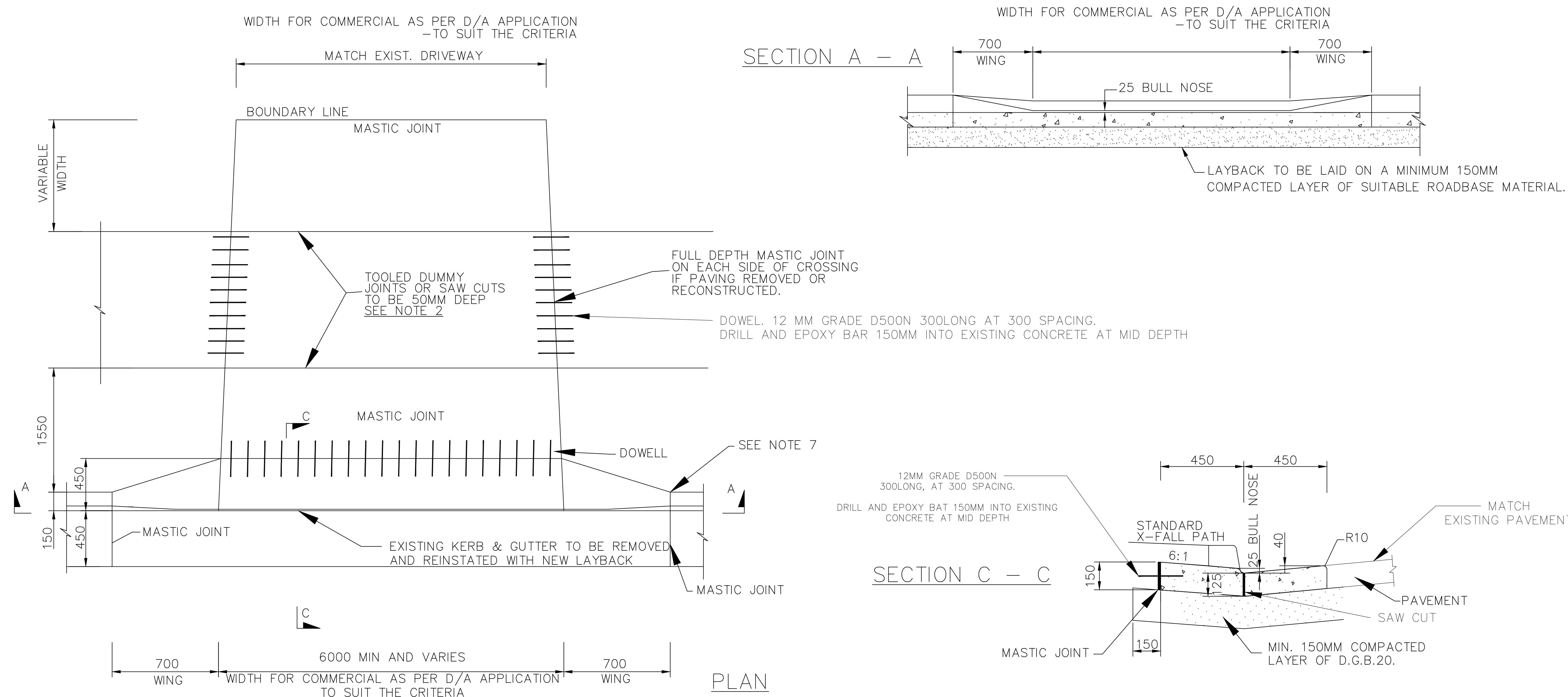
APPROVED

DIRECTOR OF
GOULBURN MULWAREE
OPERATIONS

DATE: 28/02/2018

VEHICLE CROSSING PLAN
RESIDENTIALA1 - SCALE
AS SHOWNNUMBER OF SHEETS
35SHEET NUMBER
7FILE NAME:
STANDARD DRAWINGS.DWG
REVISION
GMC-VER-1

SD-R 06



NOTES:

1. COMMERCIAL AND INDUSTRIAL VEHICULAR FOOTWAY CROSSINGS SHALL BE MINIMUM 175MM THICK CONCRETE, REINFORCED WITH SL82 MESH ON CHAIRS IN A REGULAR GRID NOT EXCEEDING 1M SPACING PROVIDE 65MM TOP COVER AND ENDS TO STEEL REINFORCEMENT. 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, REMOVED WITH DOWELS TO CONNECT FOOTPATH TO NEW DRIVEWAY.

5. CONCRETE SHALL HAVE A 28 DAY STRENGTH (F'C) OF 32MPA AND A SLUMP OF 80MM.
6. ANY VARIATIONS TO STANDARD CROSSFALL ON FOOTWAY SHALL HAVE THE PRIOR APPROVAL OF COUNCIL.
7. FOR DRAWINGS WITH EXISTING KERB AND GUTTER BUT NO LAYBACK THE KERB IS TO BE SAW CUT AT THE INVERT AND THE KERB REMOVED TO CREATE A LAYBACK.
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 FORM WORK, 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 COUNCILS ENGINEERING DESIGN AND ASSETS DEPARTMENT .
9. REINFORCED MESH TO OVERLAP BY TWO TRANSVERSE BARS
10. DRIVEWAY TO BE DESIGNED AND LOCATED IN ACCORDANCE WITH AS2890, ENSURING THAT THE PROPOSED LOCATION MEETS THE SIGHT DISTANCE REQUIREMENTS.

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DESIGN REVIEWED	T.DIMEC	08/04/2009	NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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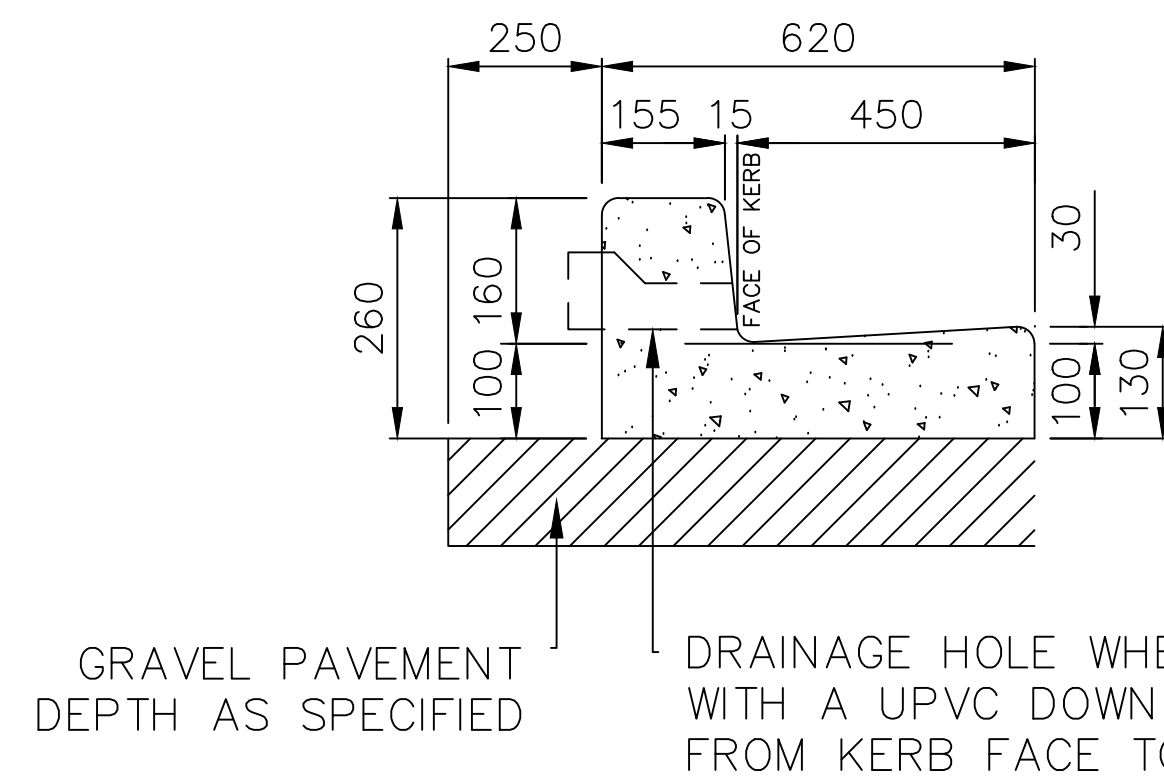
DATE: 28/02/2018

VEHICLE CROSSING PLAN

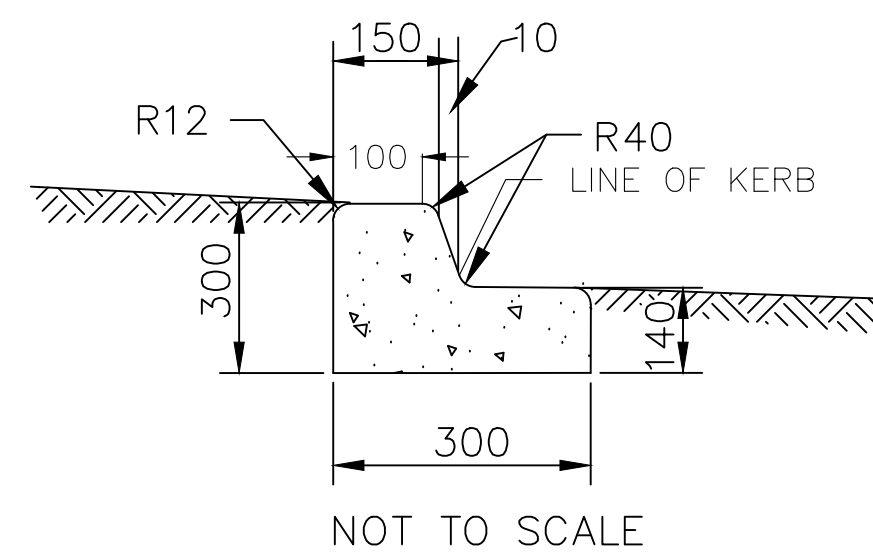
INDUSTRIAL

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35SHEET NUMBER
8FILE NAME:
STANDARD DRAWINGS.DWG
REVISION
GMC-VER-1

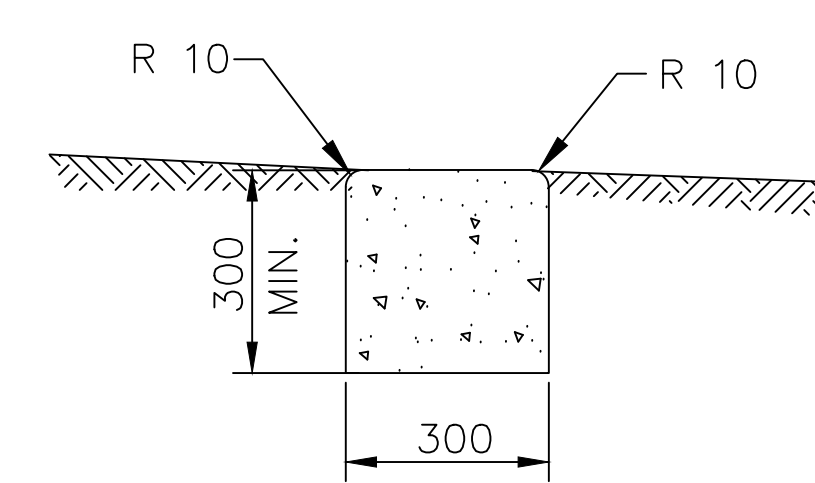
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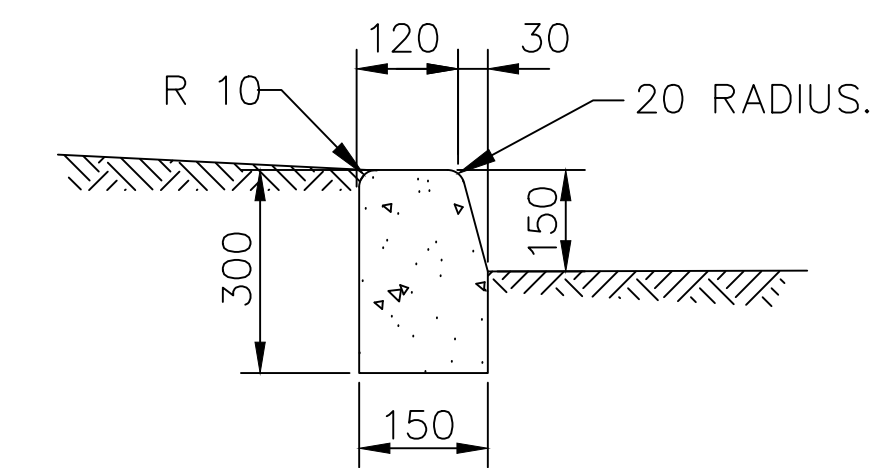
BARRIER KERB AND GUTTER



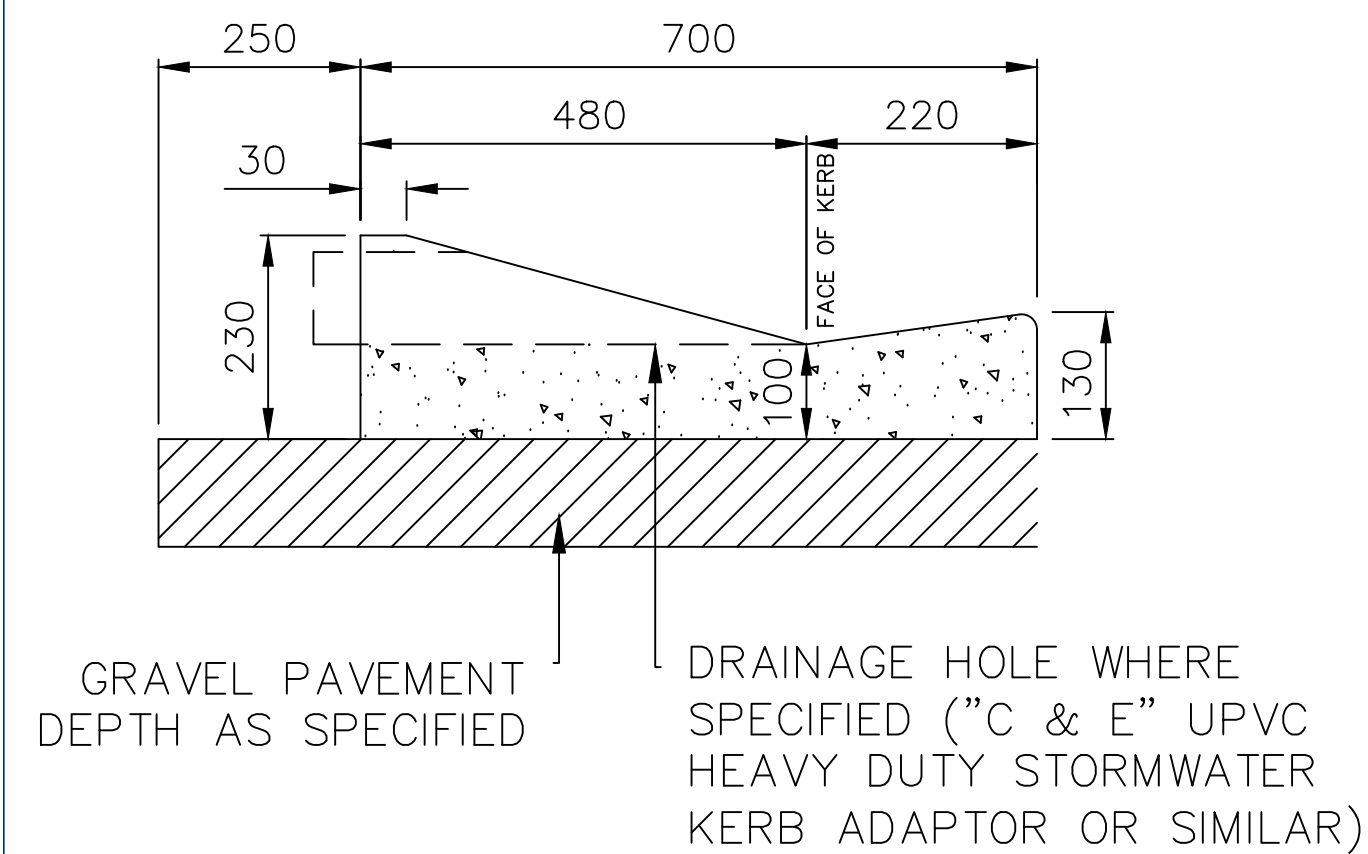
KERB WITH TOE



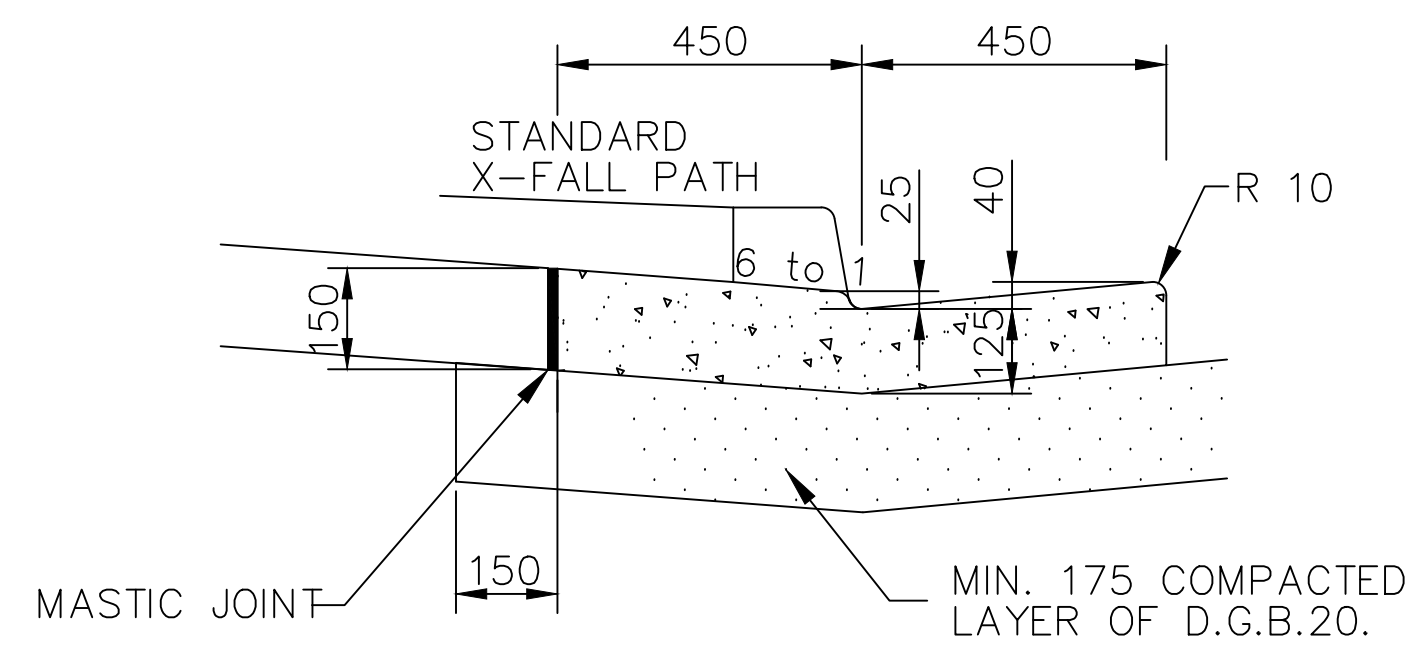
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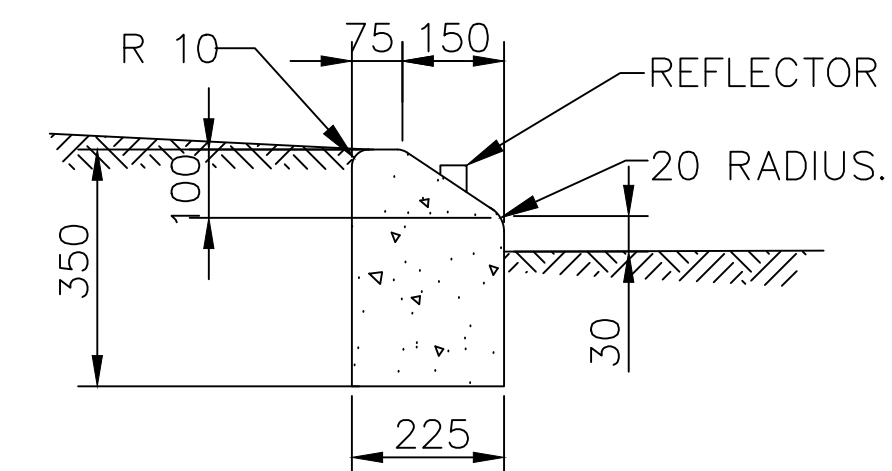
KERB ONLY



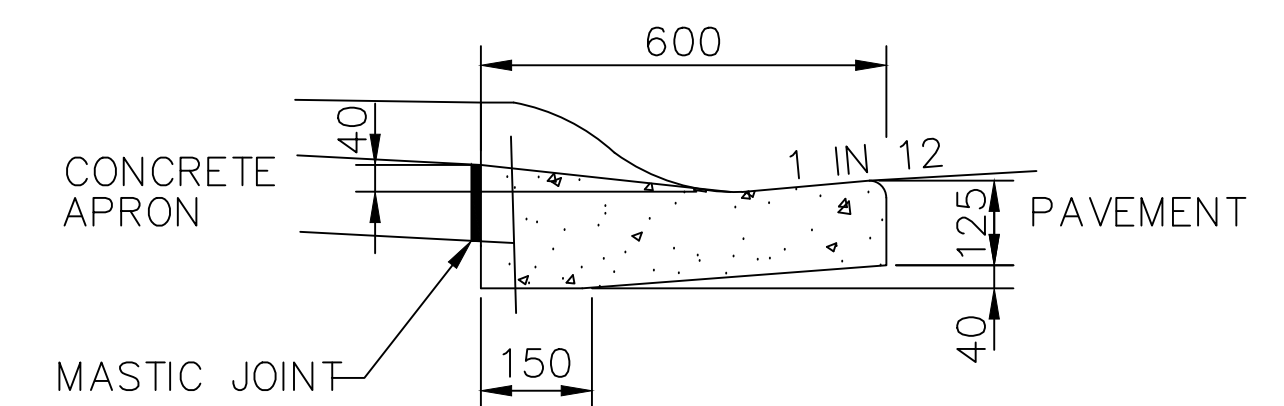
LAYBACK KERB



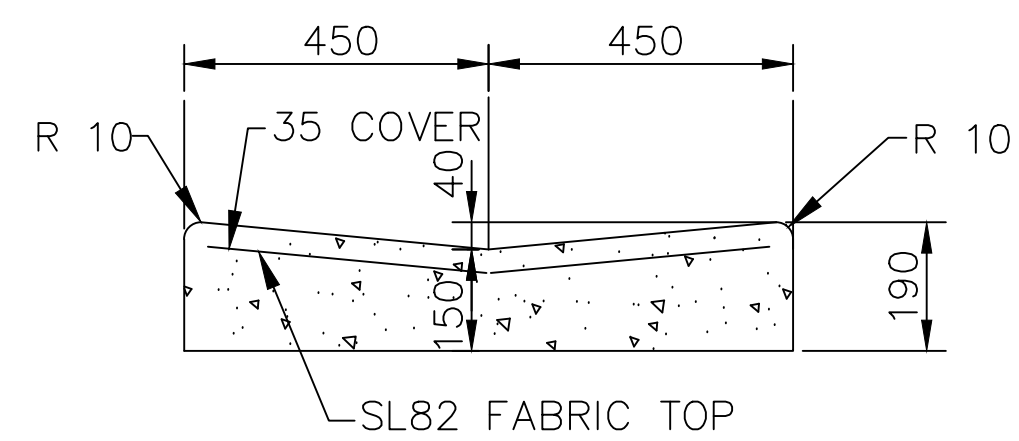
RESIDENTIAL LAYBACK



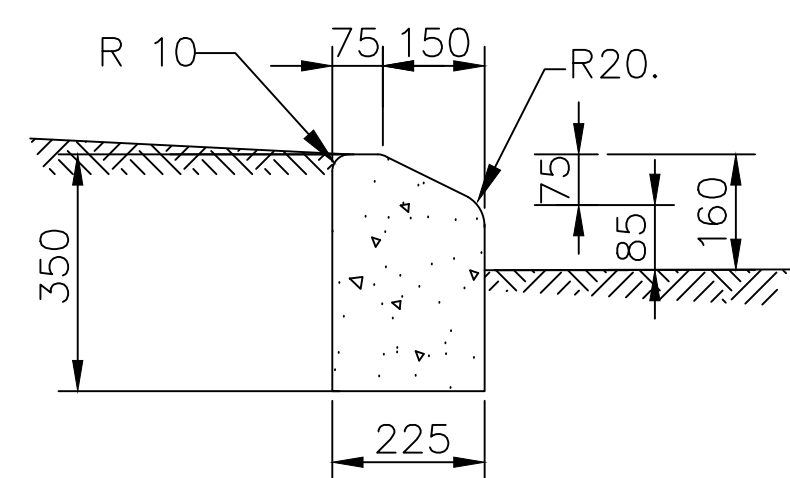
MEDIAN KERB



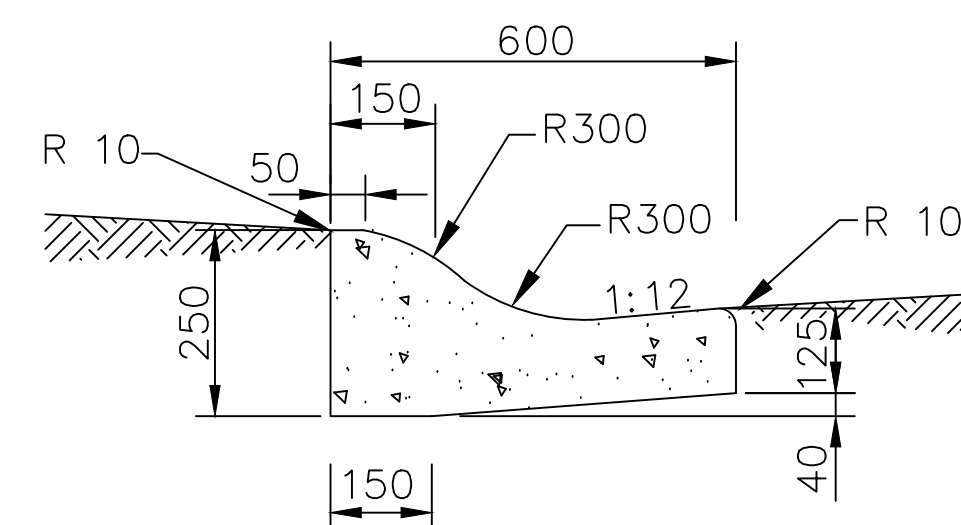
STANDARD ROLL TOP KERB
AT VEHICULAR CROSSING



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.

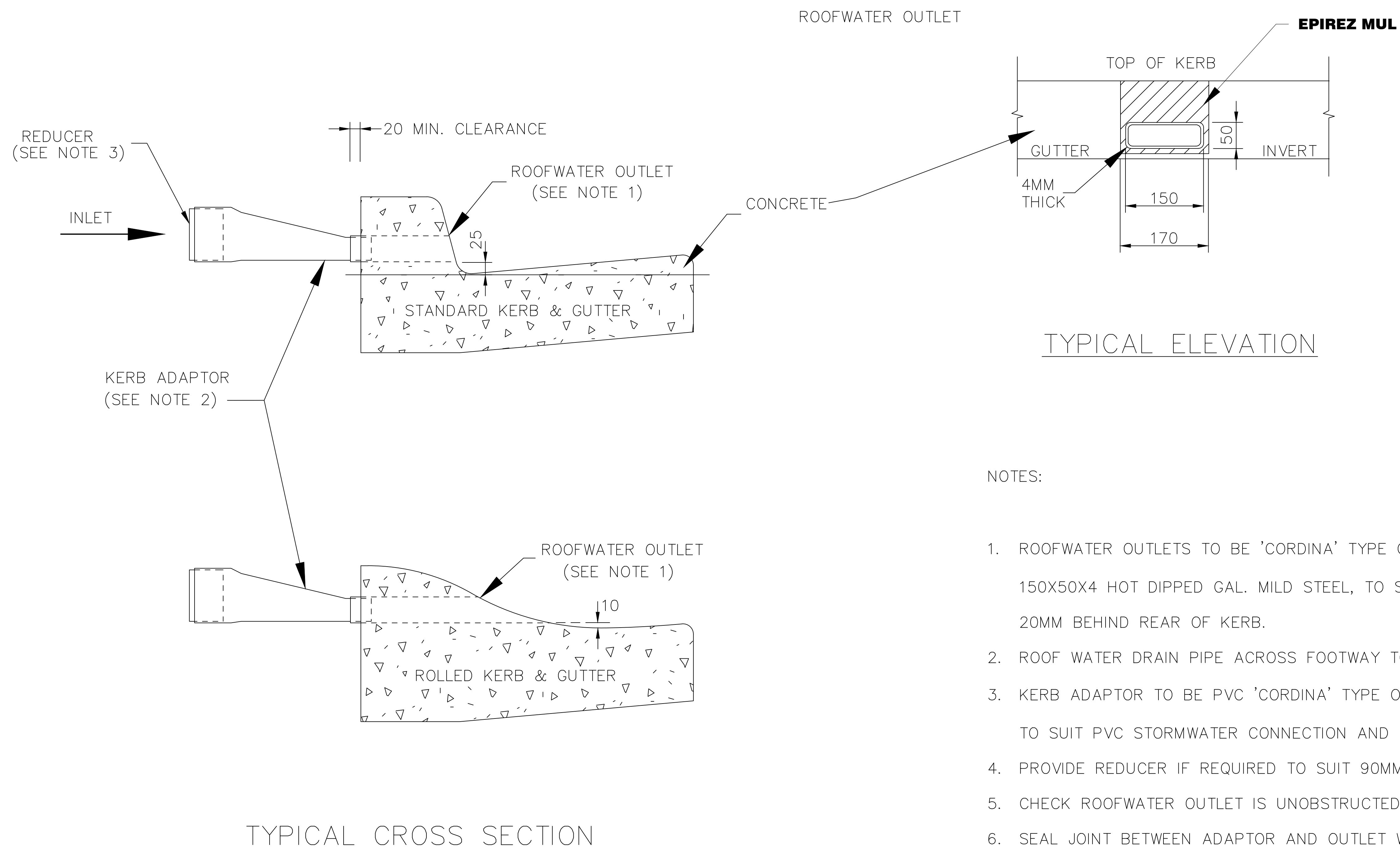
INDEX	NAME	DATE	AMENDMENTS
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DESIGNED & DRAFTED	T.DIMEC	08/04/2011	
DESIGN REVIEWED	T.DIMEC	08/04/2011	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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<p>APPROVED</p> <p></p> <p>DIRECTOR OF GOULBURN MULWAREE OPERATIONS</p>	<p>DATE: 28/02/2018</p>
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KERB & GUTTER

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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 UNLESS NOTED OTHERWISE
9. PROPERTY DRAINAGE PIPES ARE TO BE LOCATED AT LEAST 1M CLEAR OF THE VEHICULAR FOOTWAY CROSSING AND PIPE OUTLETS AT THE KERB ARE TO BE LOCATED AT LEAST 300MM CLEAR OF THE CROSSOVER DRIVEWAY WING.

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES CHANGED/ADDED (I/ALDRIDGE DECEMBER 2017)
DESIGNED & DRAFTED	T.DIMEC	09/07/2009	NOTES CHANGED/ADDED (A.SINGH 2022)
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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GOULBURN MULWAREE
OPERATIONS

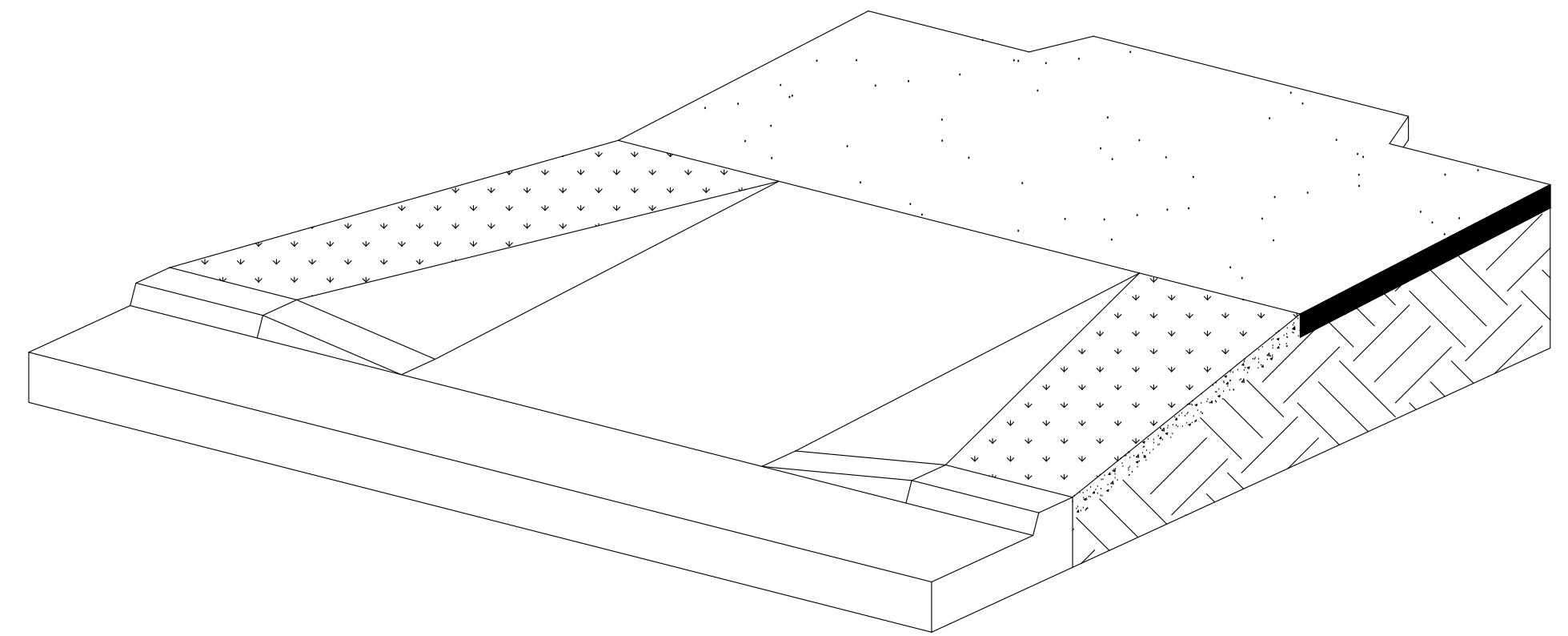
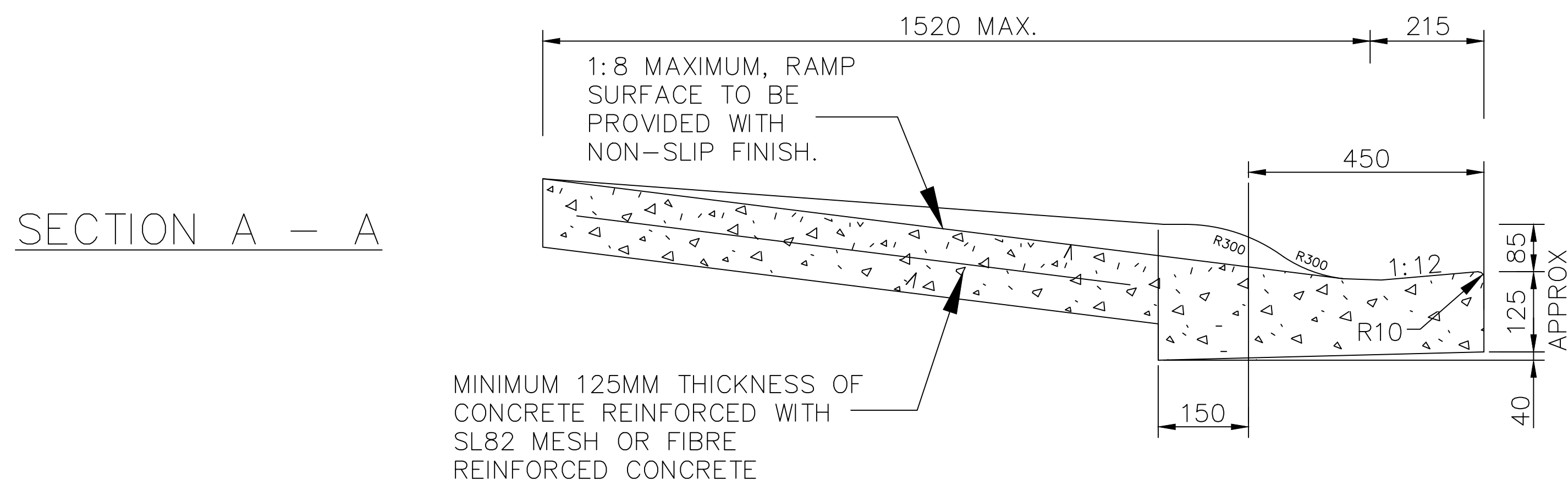
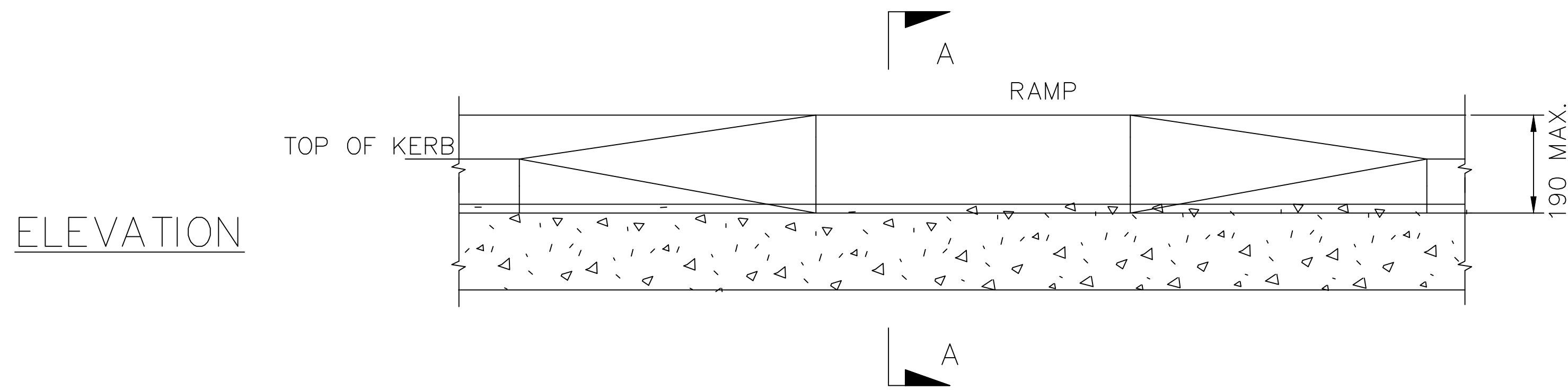
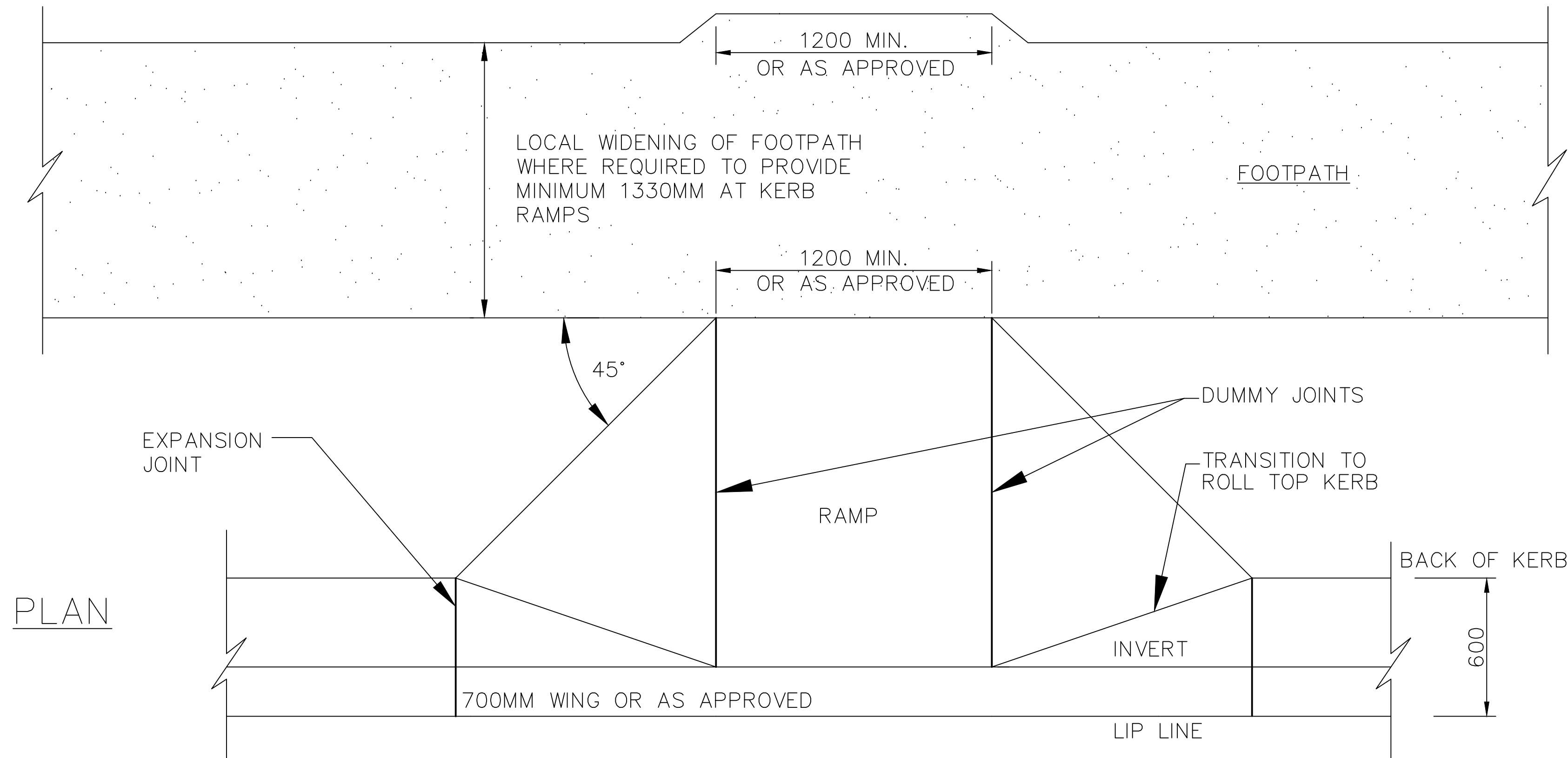
DATE: 28/02/2018

KERB OUTLET

KERB ROOFWATER OUTLET & KERB ADAPTOR

A1 - SCALE
AS SHOWNNUMBER OF SHEETS
35SHEET NUMBER
12FILE NAME:
STANDARD DRAWINGS.DWG
REVISION
GMC-VER-1
RD: -

SD-R 10



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.
7. KERB RAMPS ARE TO GENERALLY COMPLY WITH AS1428.1, AS 1428.4.

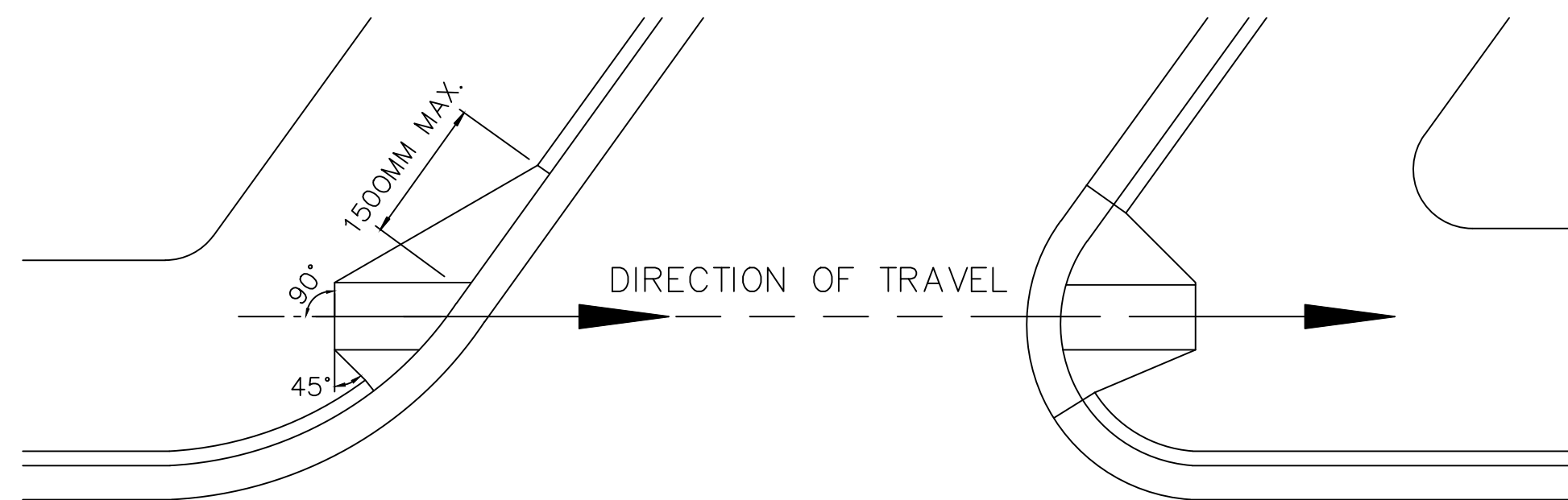
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DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

		CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456
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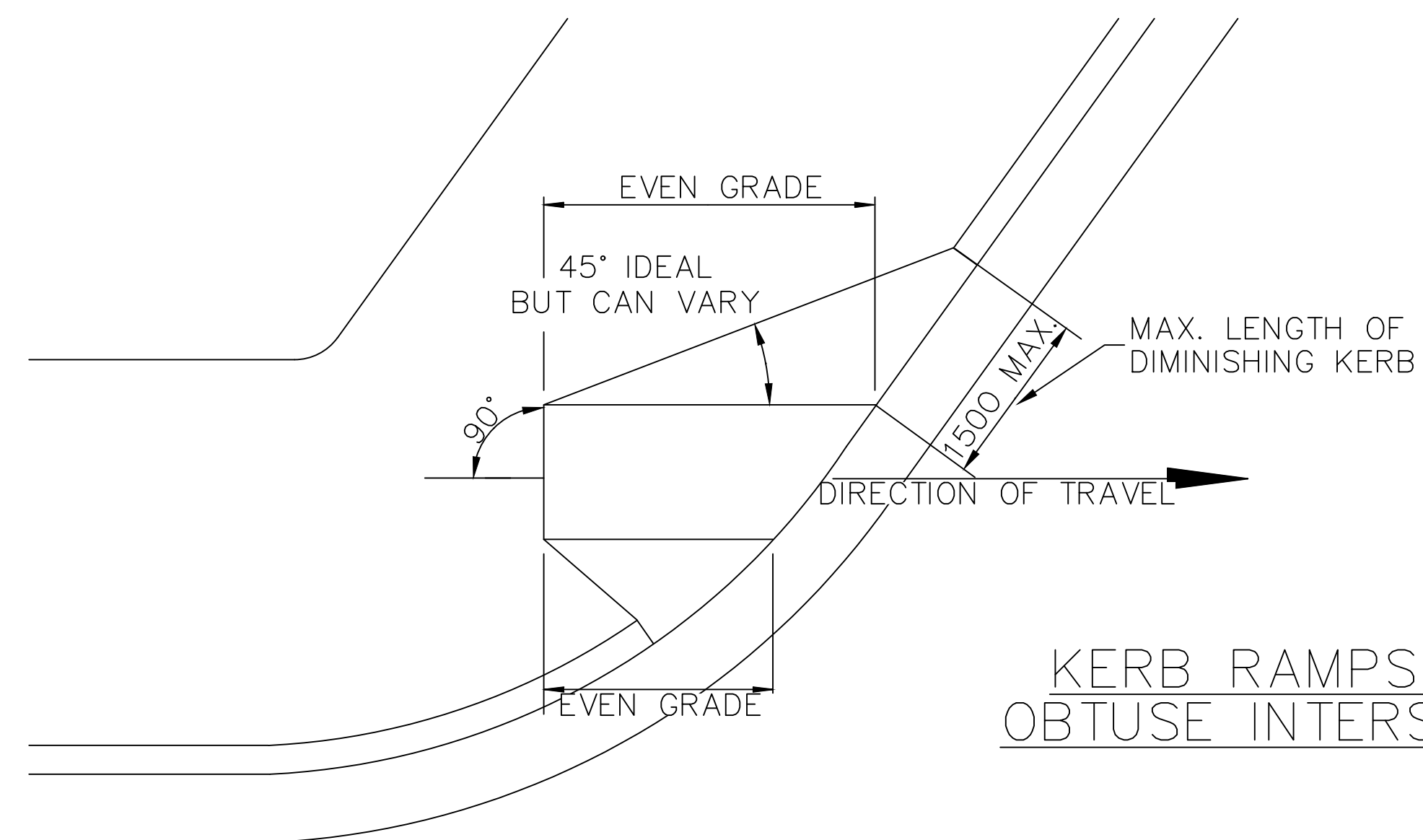
APPROVED	
DIRECTOR OF GOULBURN MULWAREE OPERATIONS	
DATE: 28/02/2018	

KERP RAMPS

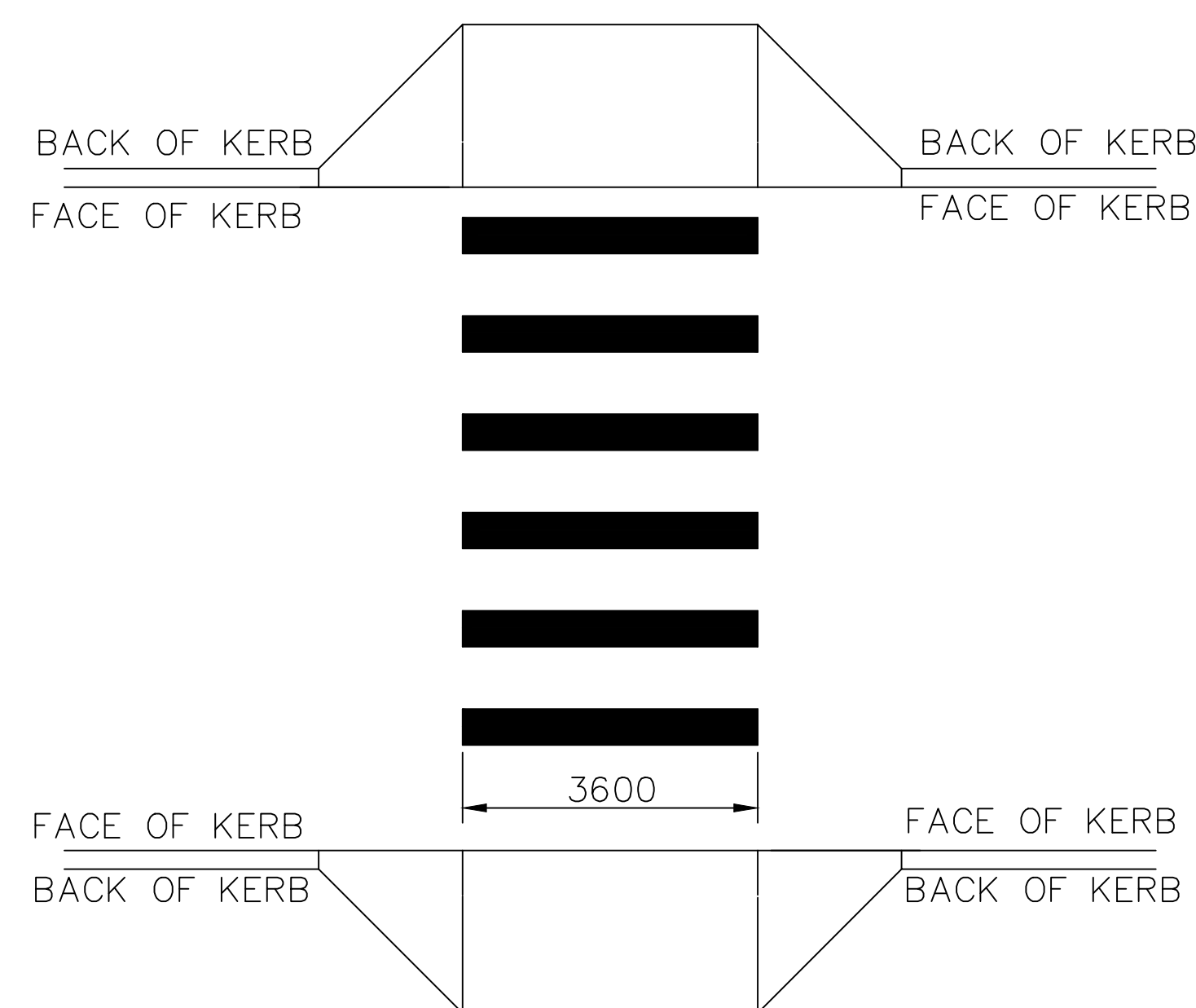
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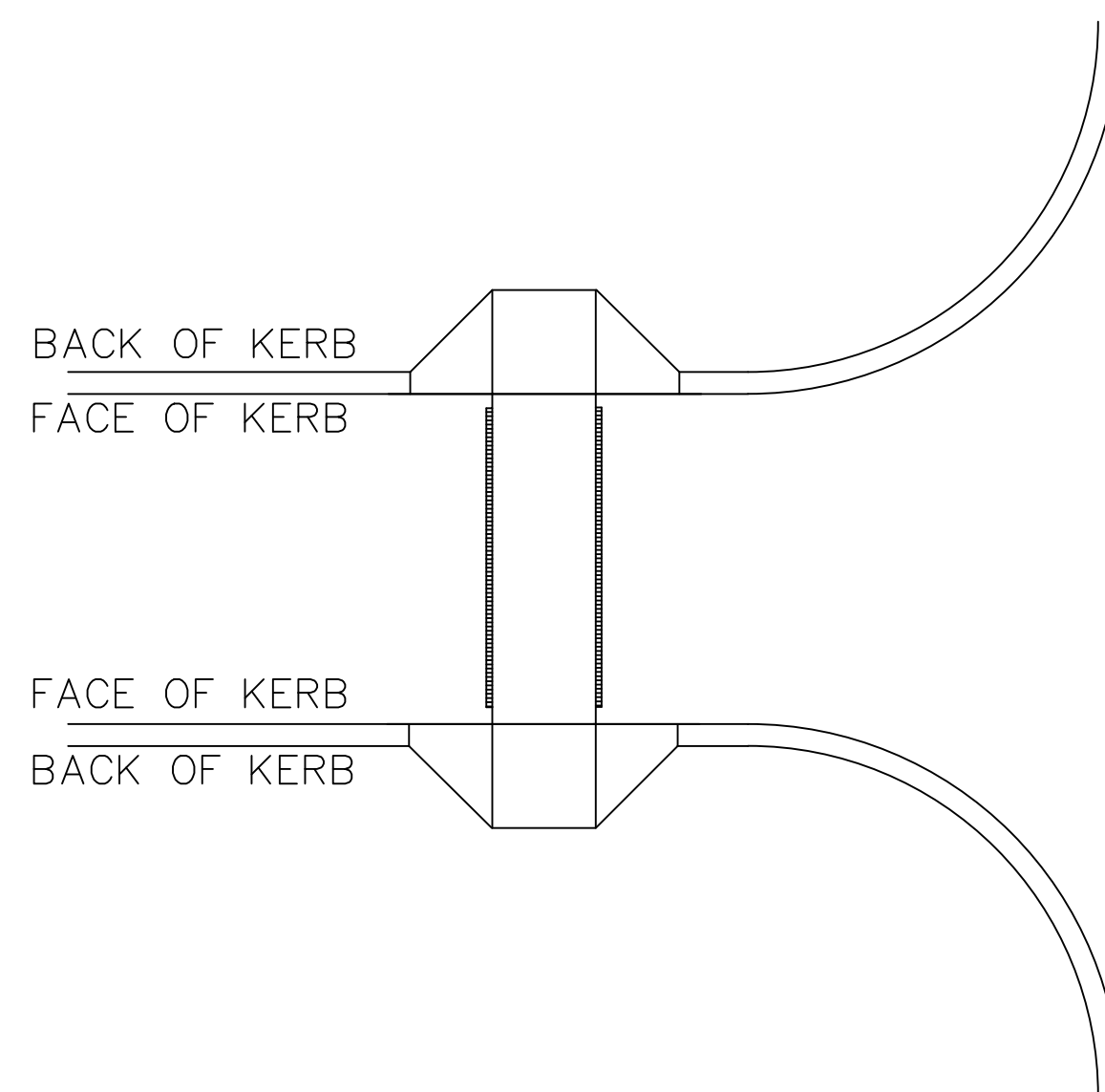
KERB RAMPS FOR
ACUTE/OBTUSE INTERSECTION



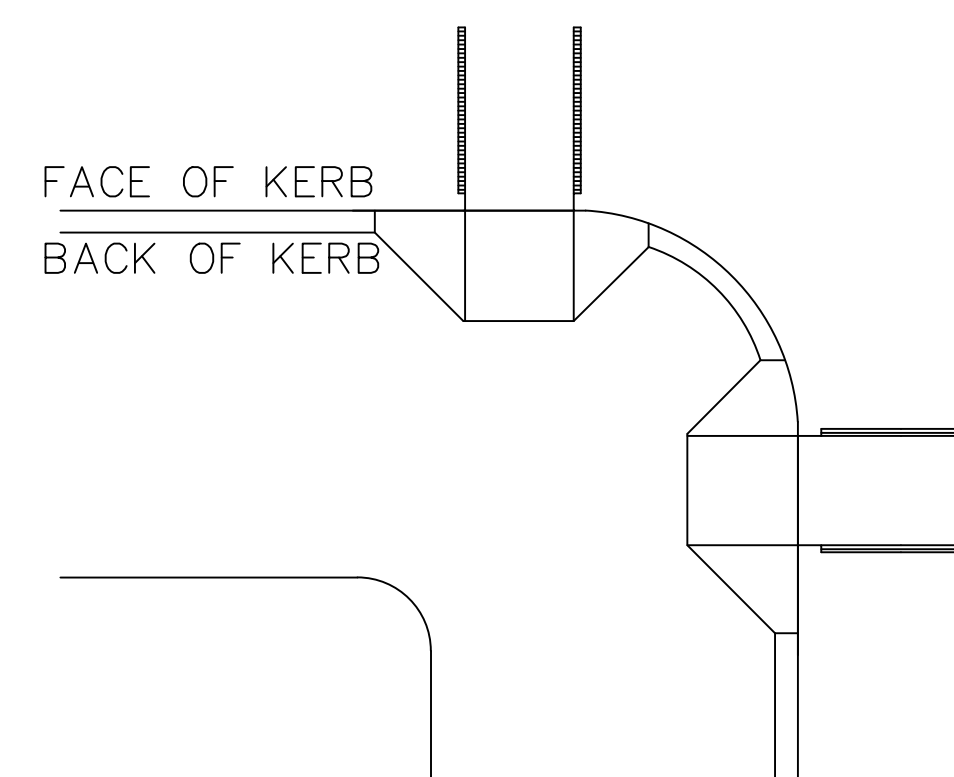
KERB RAMPS FOR
OBTUSE INTERSECTION



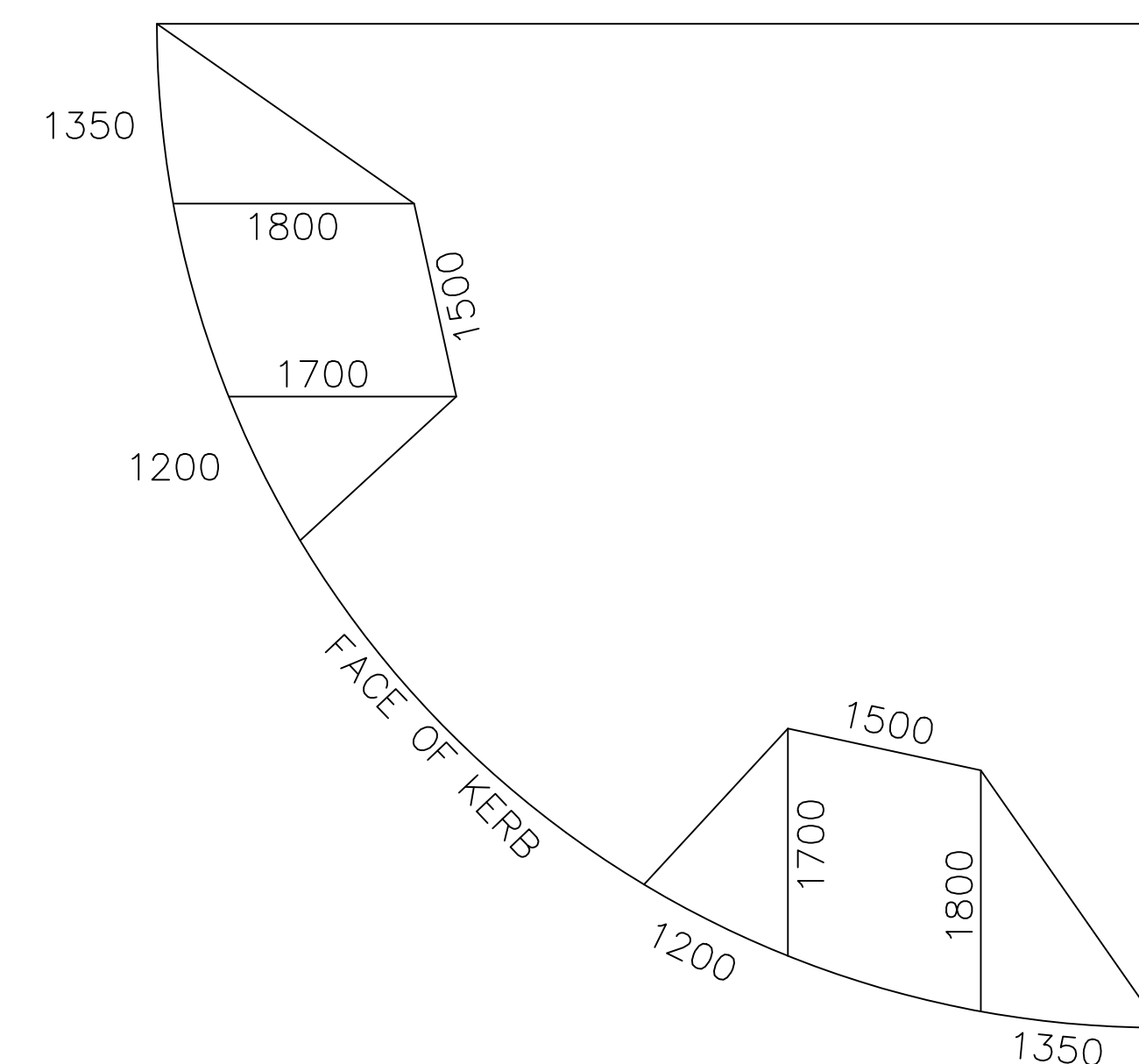
AT PEDESTRIAN
CROSSING (ZEBRA)
SEE NOTE 4 ON SD-R 10 A



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)
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FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
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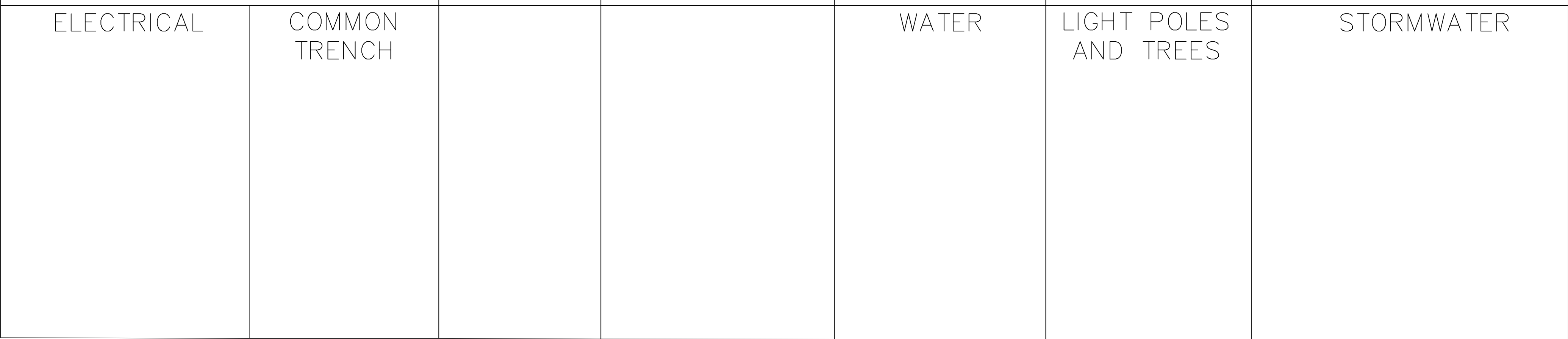
	CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456
AUSTRALIAN HEIGHT DATUM	AS-1100 STANDARDS

APPROVED DIRECTOR OF GOULBURN MULWAREE OPERATIONS	DATE: 28/02/2018
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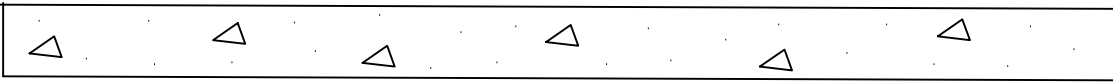
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	www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG	FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-R 11 B

RESERVATIONS 0 0.7 1.3 1.75 2.4 3.0 3.6 4.5

PROPERTY LINE



KERB LINE




CONCRETE FOOTPATH 1200MM WIDE

CENTRE OF ALIGNMENTS

0.35 1.0 2.7 3.3 4.05

DRAWING NUMBER SD-R 12

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	TITLE CHANGED (A.SINGH 2022)
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			




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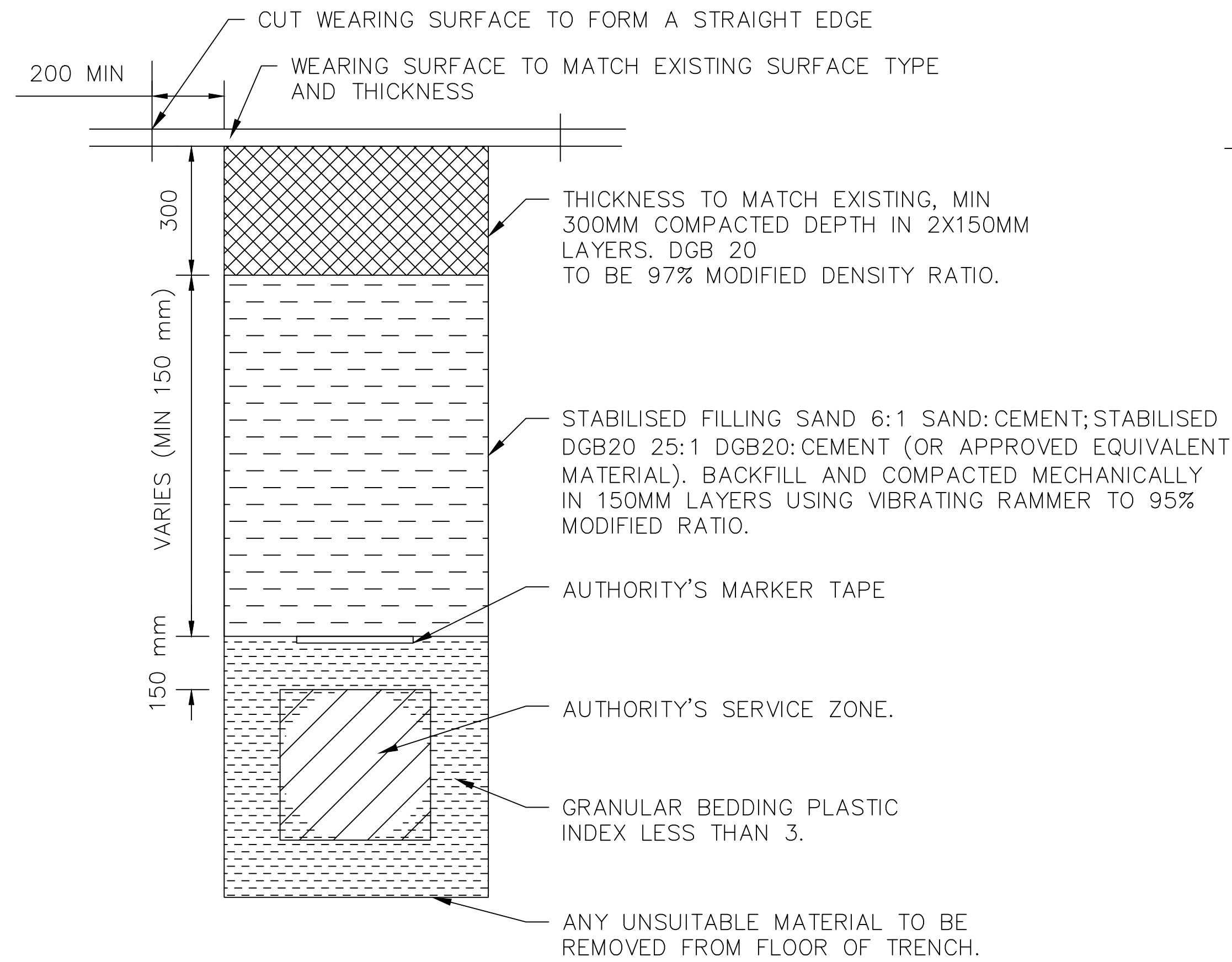
STANDARD SERVICE ALLOCATION
FOR PUBLIC UTILITY SERVICES IN FOOTPATH AREAS

SAFETY FIRST
PERSONAL PROTECTIVE EQUIPMENT
MUST BE WORN ON SITE

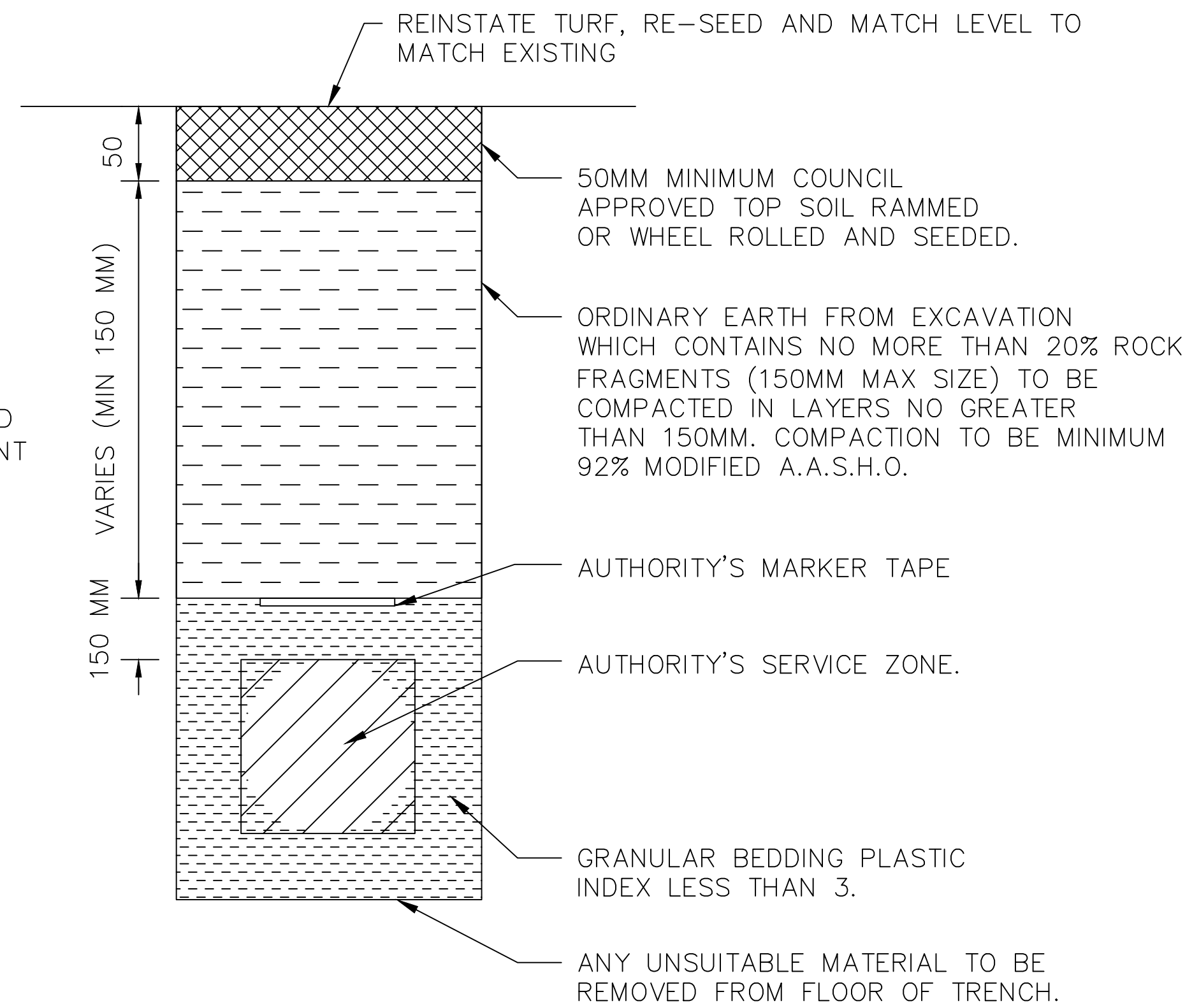
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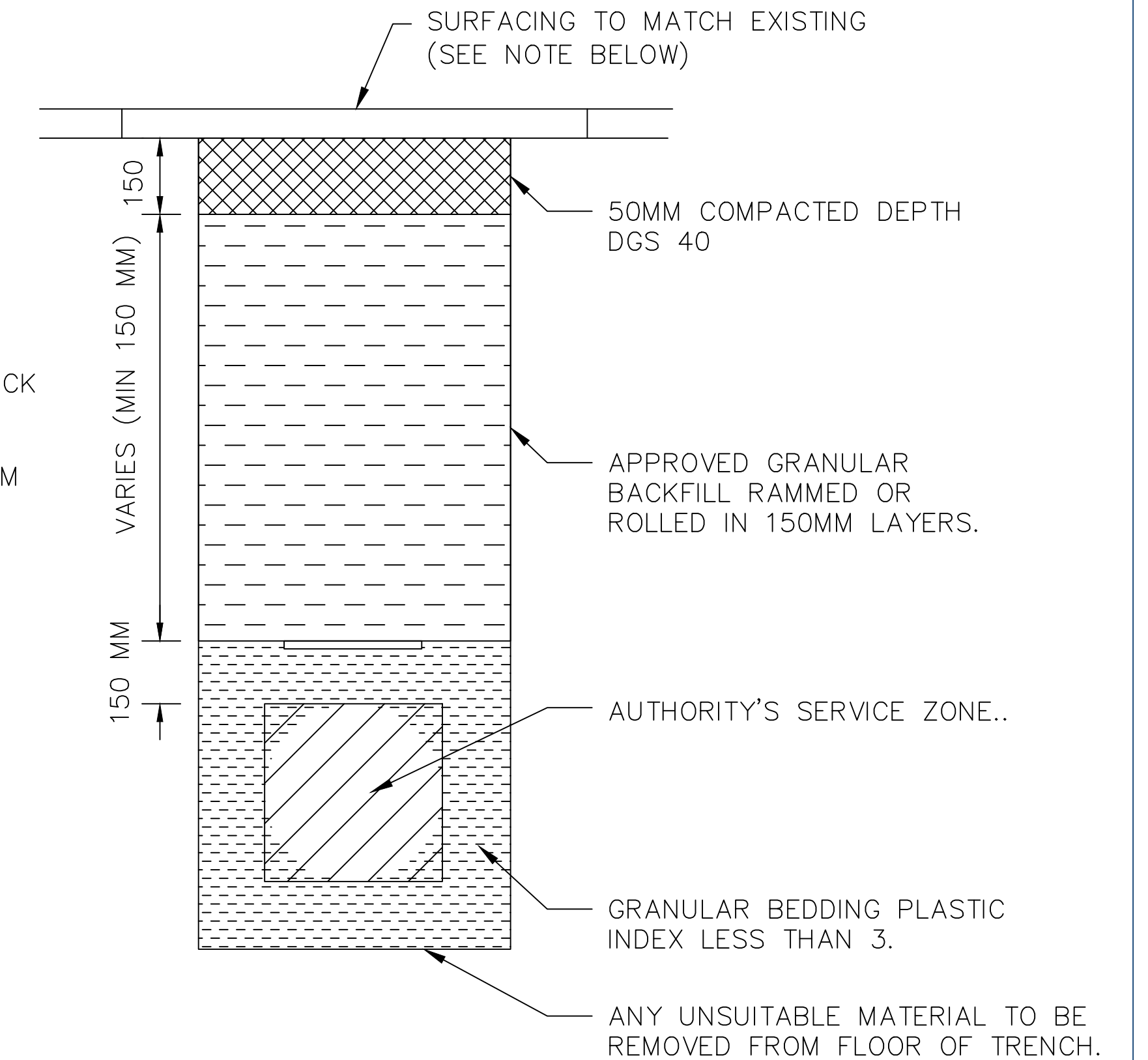
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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-R 12



PAVED CARRIAGEWAYS



GRASSED FOOTWAYS



PAVED FOOTWAYS

NOTES:

1. 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.

2. SURFACING

- CONCRETE FOOTPATH – 32 MPA CONCRETE, 100MM DEEP INCLUDING SL72 MESH (REF: SD-R 03). ALL FOOTPATH IS TO BE REPLACED IN WHOLE SECTIONS. NEW FOOTPATH IS TO BE DOWELED INTO EXISTING SECTIONS.
- CONCRETE VEHICULAR CROSSING – 25 MPA CONCRETE, 125MM DEEP INCLUDING SL72 MESH (REF: SD-R 05) ALL DRIVEWAYS ARE TO BE REPLACED IN WHOLE SECTIONS. NEW SECTIONS ARE TO BE DOWELED INTO EXISTING SECTIONS.
- SEAL
 - (I) BITUMINOUS CONCRETE (HOTMIX) 30MM RESIDENTIAL ROADS. 40MM COLLECTORS ROADS/INDUSTRIAL ROADS
 - (II) 2 COAT SPRAY SEAL ON EXISTING SPRAY SEAL ROADS ONLY.

- ALL TRENCHING IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCILS ROAD OPENING PERMIT OR AGREEMENT AND AUSSPEC 1151 & 1152 ROAD OPENING AND RESTORATIONS SPECIFICATIONS.
- ADEQUATE FENCING, BARRICADES, LIGHTS AND SIGNS SHALL BE PROVIDED TO GUIDE TRAFFIC AND PEDESTRIAN MOVEMENTS DURING CONSTRUCTION IN ACCORDANCE TO AS 1742.3.
- SERVICE PITS ARE TO BE INSTALLED/ADJUSTED TO BE FLUSH WITH SURFACE AND PARALLEL TO KERB.

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	NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
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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APPROVED

[Signature]
DIRECTOR OF
GOULBURN MULWAREE
OPERATIONS

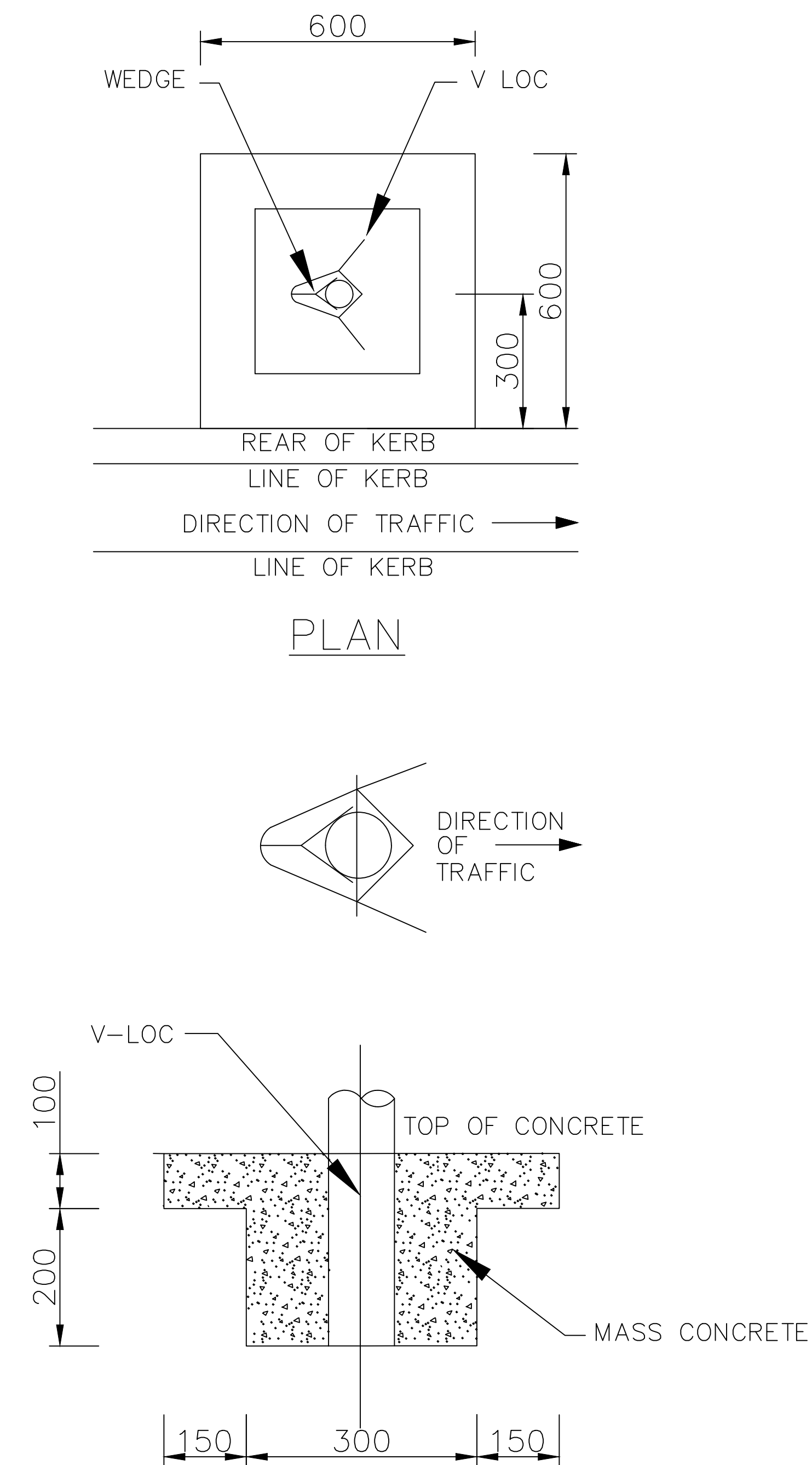
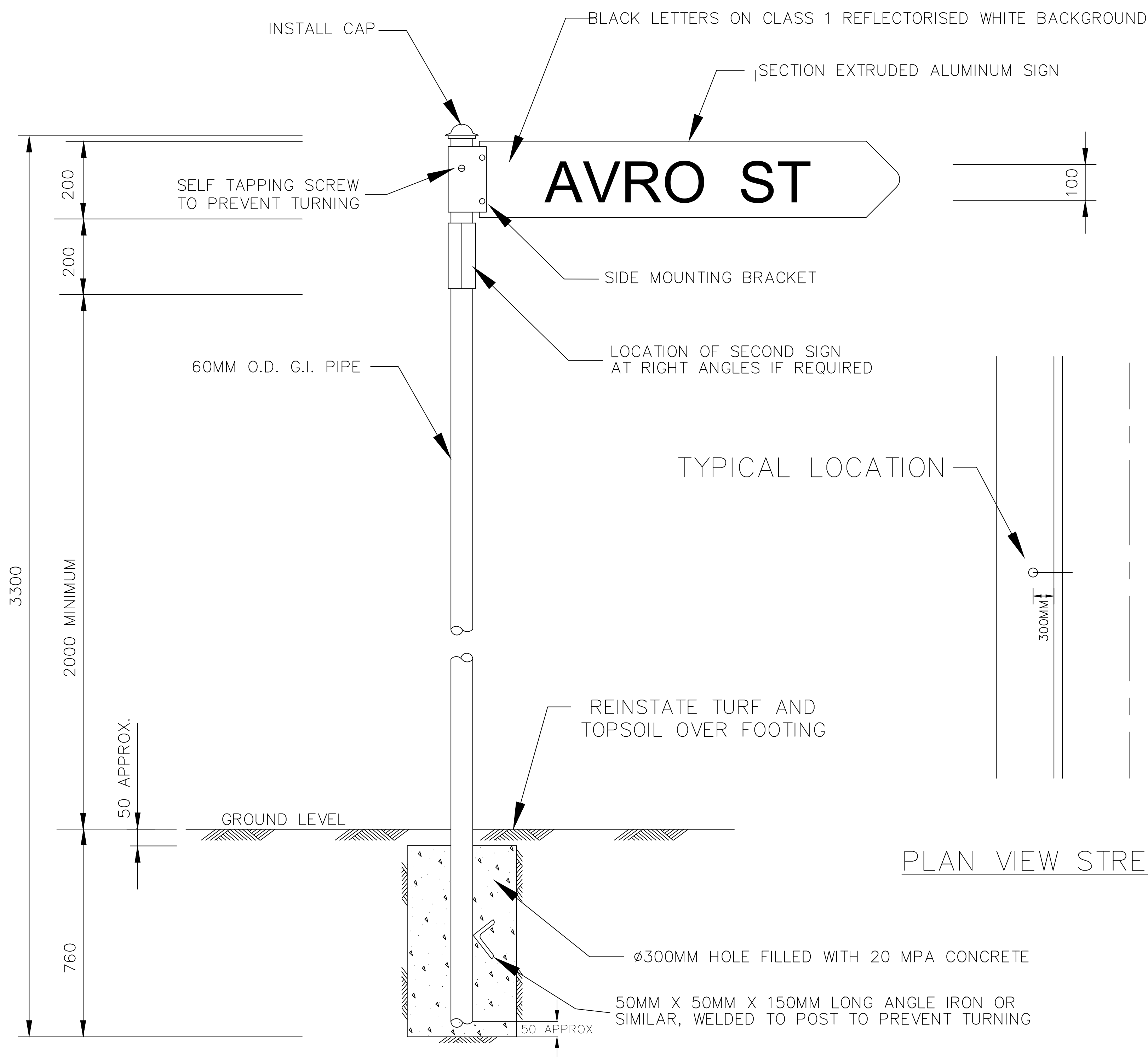
DATE: 28/02/2018

TRENCH BACKFILL DETAILS FOR ROAD CROSSINGS



A1 - SCALE
AS SHOWN
REVISION
GMC-VER-1
RD: *[Signature]*


NUMBER OF SHEETS
35
SHEET NUMBER
16
FILE NAME:
STANDARD DRAWINGS.DWG
SD-R 13



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	NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
DESIGN REVIEWED	T.DIMEC	09/07/2009	
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

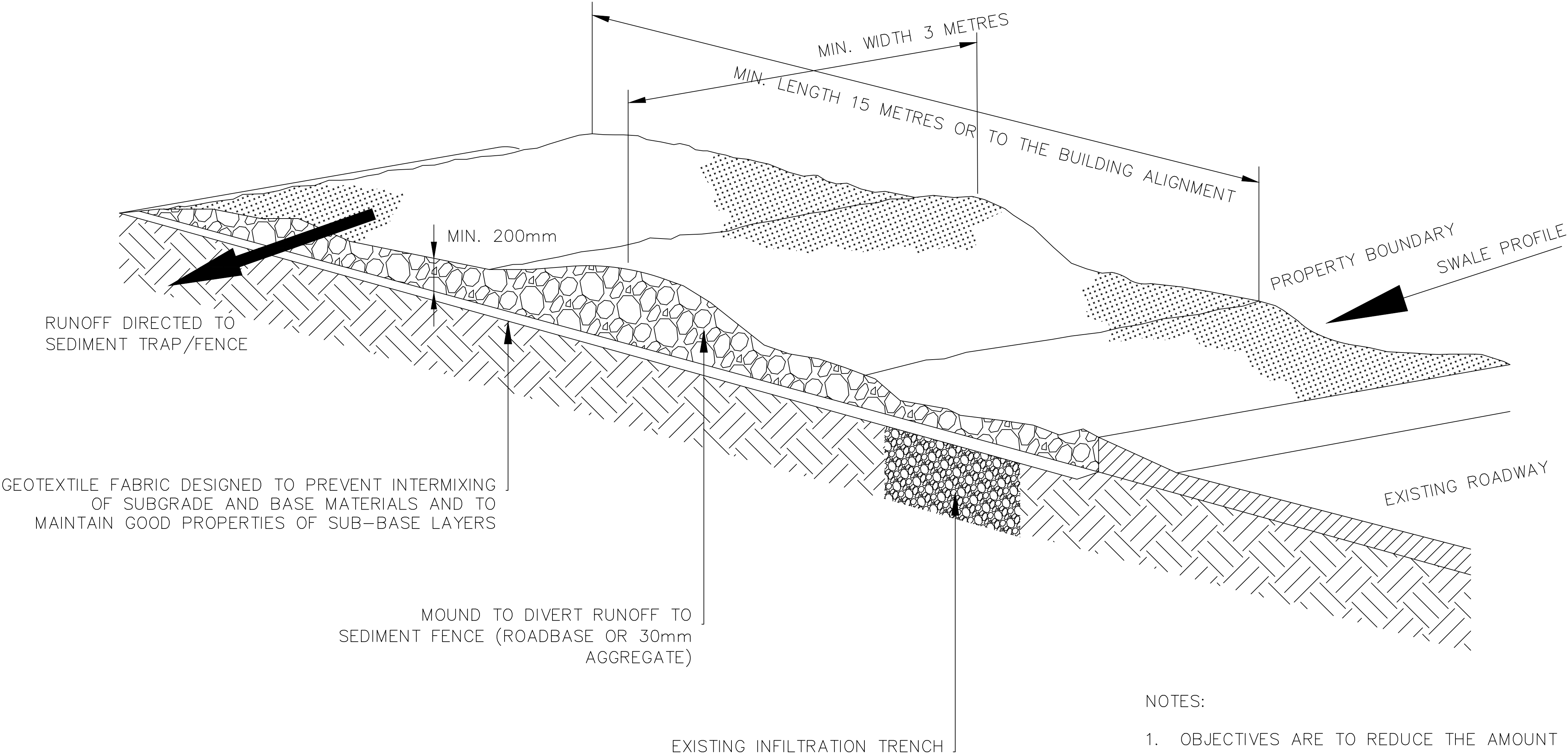
	CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456
AUSTRALIAN HEIGHT DATUM	AS-1100 STANDARDS
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DATE: 28/02/2018	

STREET NAME PLATE & POST


SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE www.dialbeforeyoudig.com.au 	A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 17
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-R 14	

STABILISED SITE ACCESS ACROSS SWALE TO DWELLING CONSTRUCTION SITE



- NOTES:
- 1. OBJECTIVES ARE TO REDUCE THE AMOUNT OF SEDIMENTS CARRIED OFF SITE AND PROTECT SWALES.
 - 2. ACCESS PREPARATION: STRIP TOPSOIL (STOCKPILE), COMPACT SUBGRADE.
 - 3. STABILISED ACCESS ACROSS SWALE MATCHES SWALE PROFILE.
 - 4. 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			



CIVIC CENTRE, 184-194 BOURKE STREET
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PHONE: (02) 4823 4444
FAX: (02) 4823 4456

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OPERATIONS

DATE: 28/02/2018

SWALE STABILISED

SITE ACCESS

SAFETY FIRST

PERSONAL PROTECTIVE EQUIPMENT
MUST BE WORN ON SITE

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A1 - SCALE
AS SHOWN

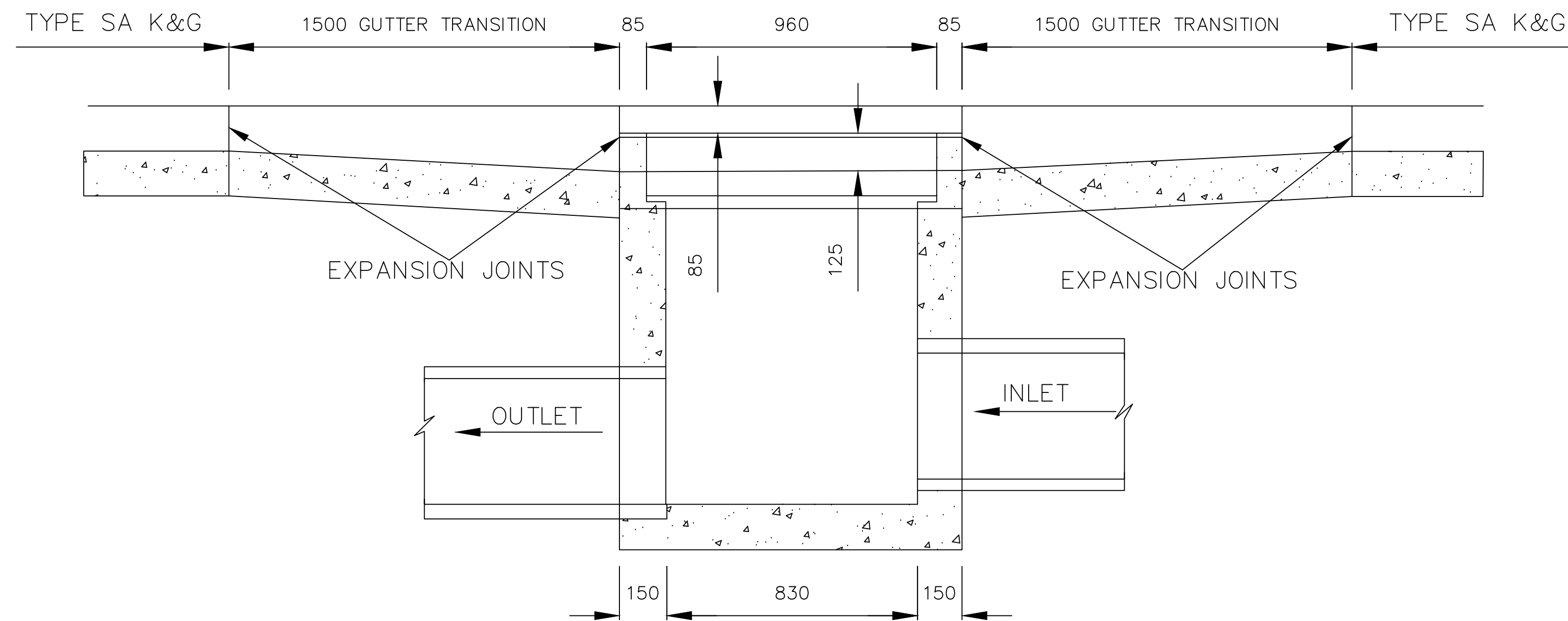
REVISION
GMC-VER-1

NUMBER OF SHEETS
35

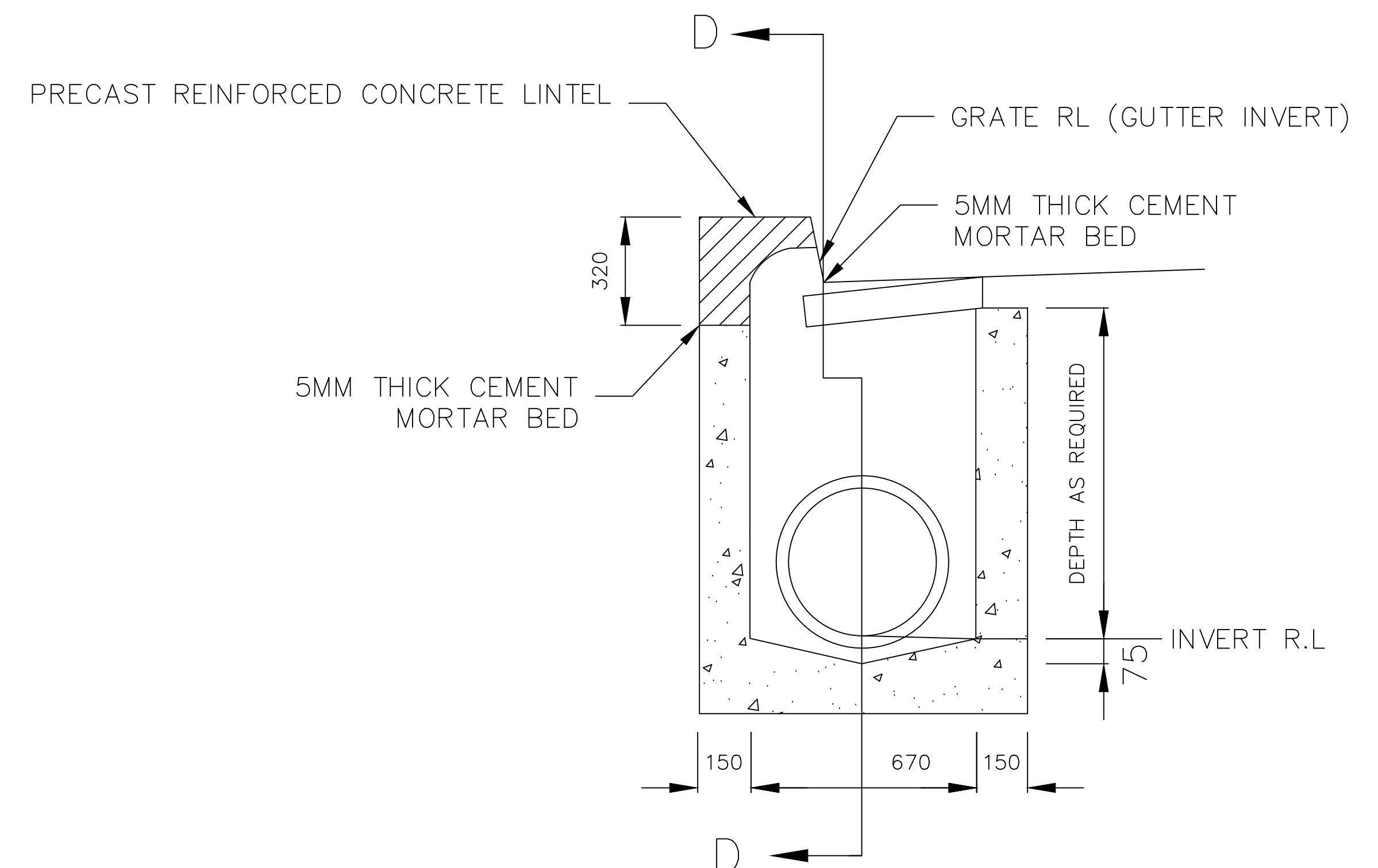
SHEET NUMBER
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FILE NAME:
STANDARD DRAWINGS.DWG

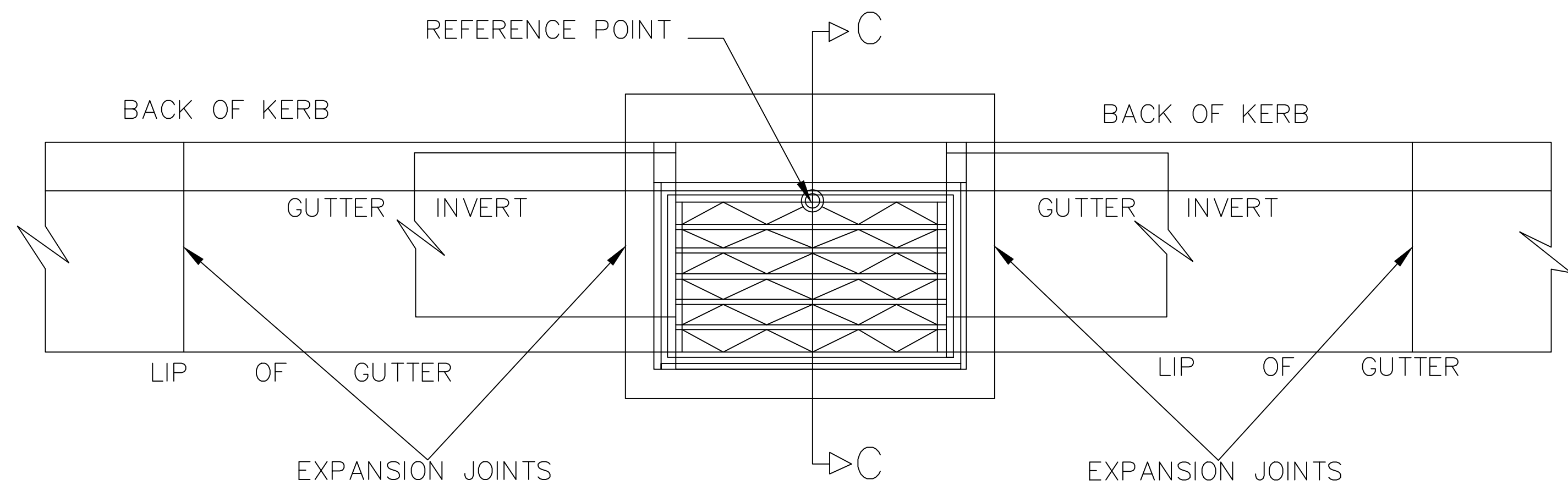
SD-D 01



SECTION D-D (GRATING REMOVED)



SECTION C-C

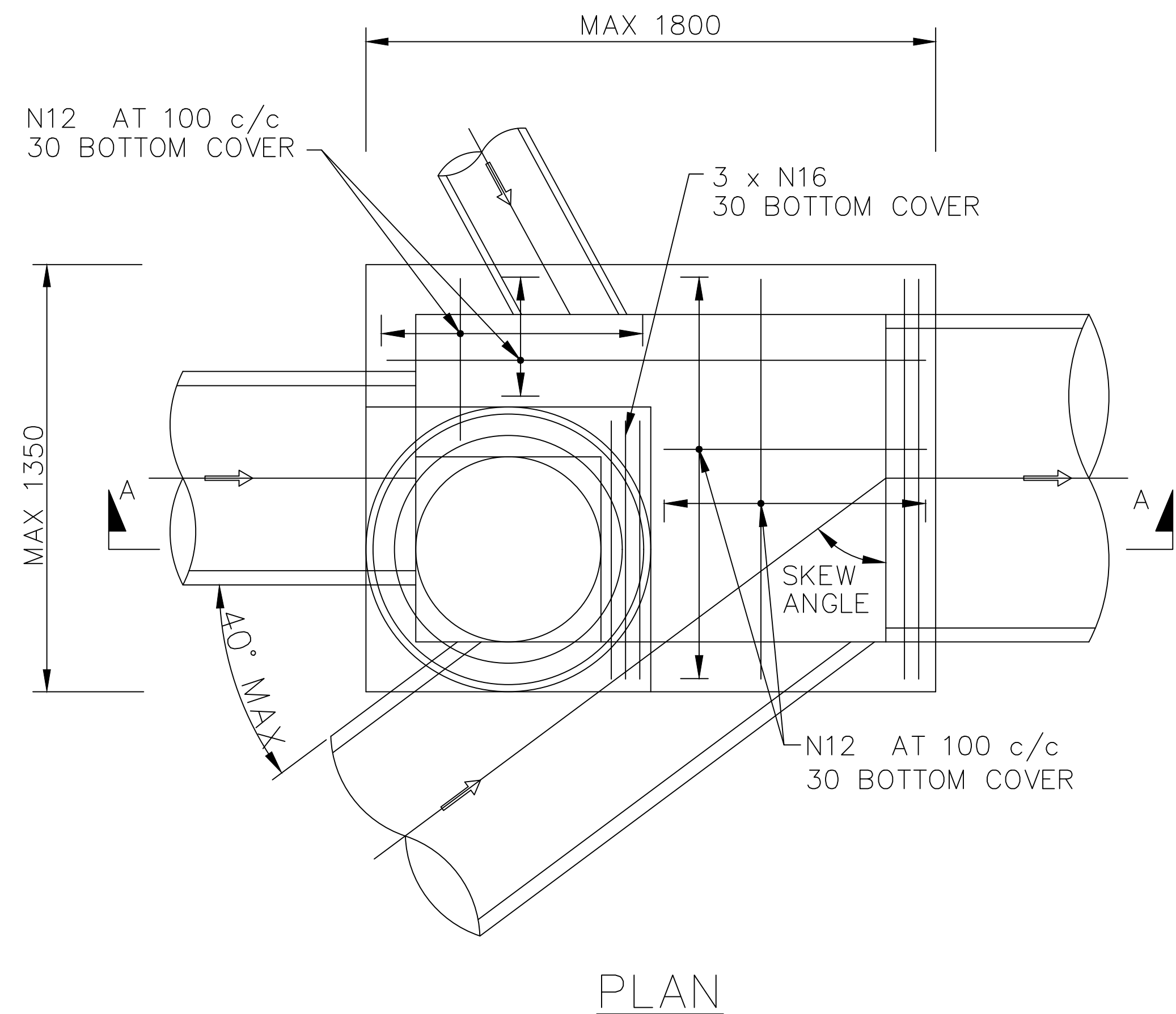


PLAN

NOTES:

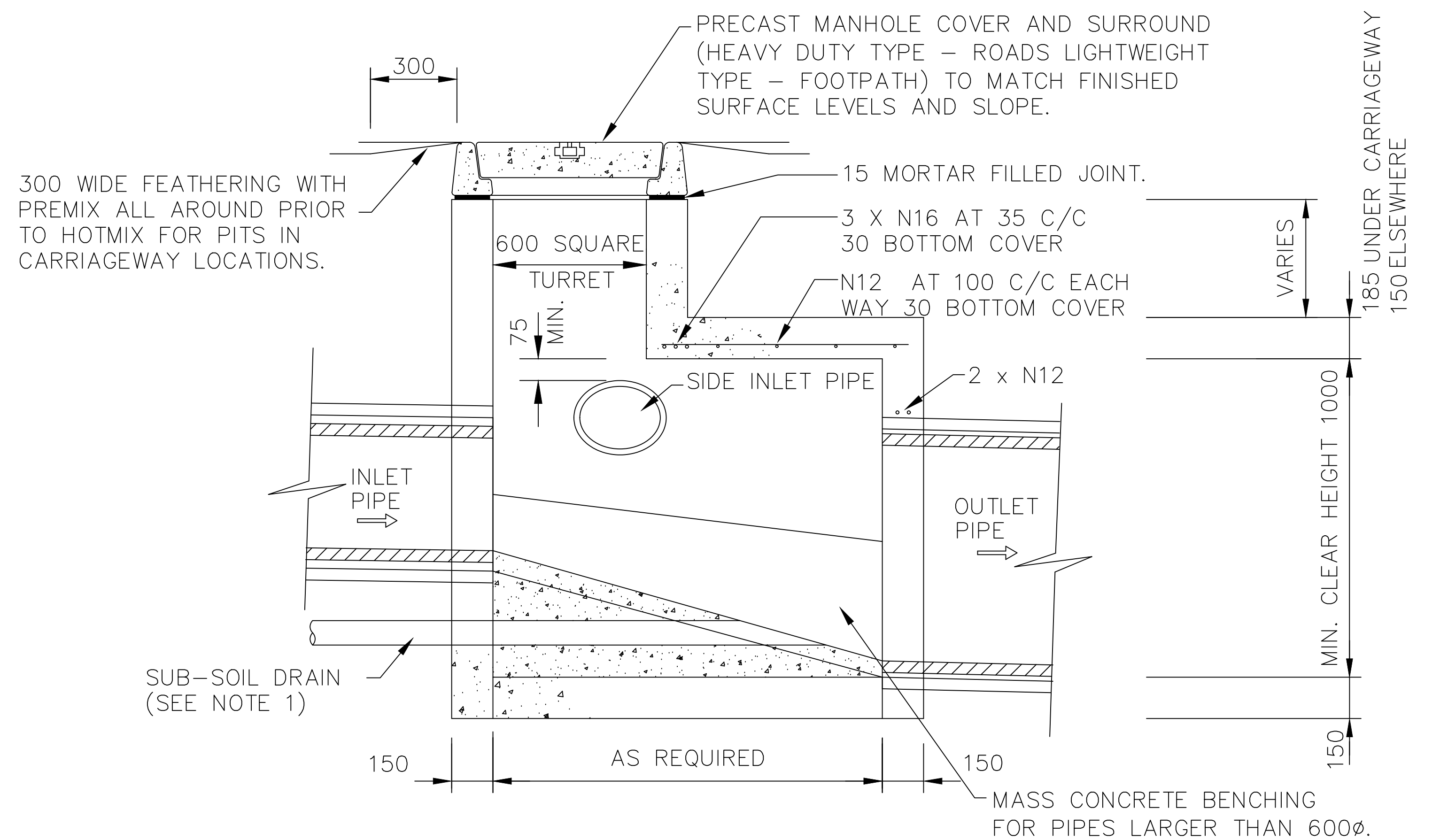
1. CONCRETE STRENGTH 25 MPA. 20MM MAX SIZE AGGREGATE IN ACCORDANCE AS 3600; UNLESS APPROVED OTHERWISE
2. STEEL: HOT DIP GALVANISED IN ACCORDANCE WITH AS1650.
3. PROVIDE SUBSURFACE DRAINS INTO PITS.
4. SIDE WALLS OF PITS DEEPER THAN 1500 TO BE REINFORCED WITH ONE LAYER OF N72 MESH AND RETURNED INTO BASE.
5. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 600. REFER TO (SD-D 11)
6. HEAVY DUTY GULLY GRATE AND FRAME TYPE GG 78-49, GG 78-50 OR EQUIVALENT PROVIDED TO CATER FOR THE HEAVIEST VEHICLES LIKELY TO USE THE ROAD.

INDEX	NAME	DATE	AMENDMENTS	<div><div><div>GOULBURN MULWAREE COUNCIL</div><div><div><div></div><div></div><div></div></div></div><div><div>CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456</div><div>AUSTRALIAN HEIGHT DATUMAS-1100 STANDARDS</div></div></div><div>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.</div></div>		<div><div>APPROVED</div><div><div></div></div><div>DIRECTOR OF GOULBURN MULWAREE OPERATIONS</div><div>DATE: 28/02/2018</div></div>		<div><div>SIDE ENTRY PIT</div><div>WITHOUT EXTENDED CHAMBER PIT</div></div>		<div><div><div>SAFETY FIRST</div><div>PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE</div><div>www.dialbeforeyoudig.com.au</div><div><div><div></div><div></div></div><div><div>DIAL 1100</div><div>BEFORE YOU DIG</div></div></div></div></div>		<div><div>A1 - SCALE AS SHOWN</div><div>NUMBER OF SHEETS 35</div><div>SHEET NUMBER 19</div></div> <th colspan="2" rowspan="6"><div><div>FILE NAME: STANDARD DRAWINGS.DWG</div><div>REVISION GMC-VER-1</div><div>SD-D 02</div></div></th>		<div><div>FILE NAME: STANDARD DRAWINGS.DWG</div><div>REVISION GMC-VER-1</div><div>SD-D 02</div></div>	
SURVEYED			NOTES CHANGED/ADDED, TITLE CHANGED (I.ALDRIDGE 2012)												
DESIGNED & DRAFTED	RMS		NOTES CHAGED/ADDED (A.SINGH 2022)												
DESIGN REVIEWED	GS.LOTAY	07/11/2011													
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012													
ISSUED FOR CONSTRUCTION															
WORK AS EXECUTED															



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° 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.



SECTION A – A

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	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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

AUSTRALIAN HEIGHT DATUM

AS-1100 STANDARDS

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DIRECTOR OF
GOULBURN MULWAREE
OPERATIONS

DATE: 28/02/2018

JUNCTION PIT



A1 - SCALE
AS SHOWN

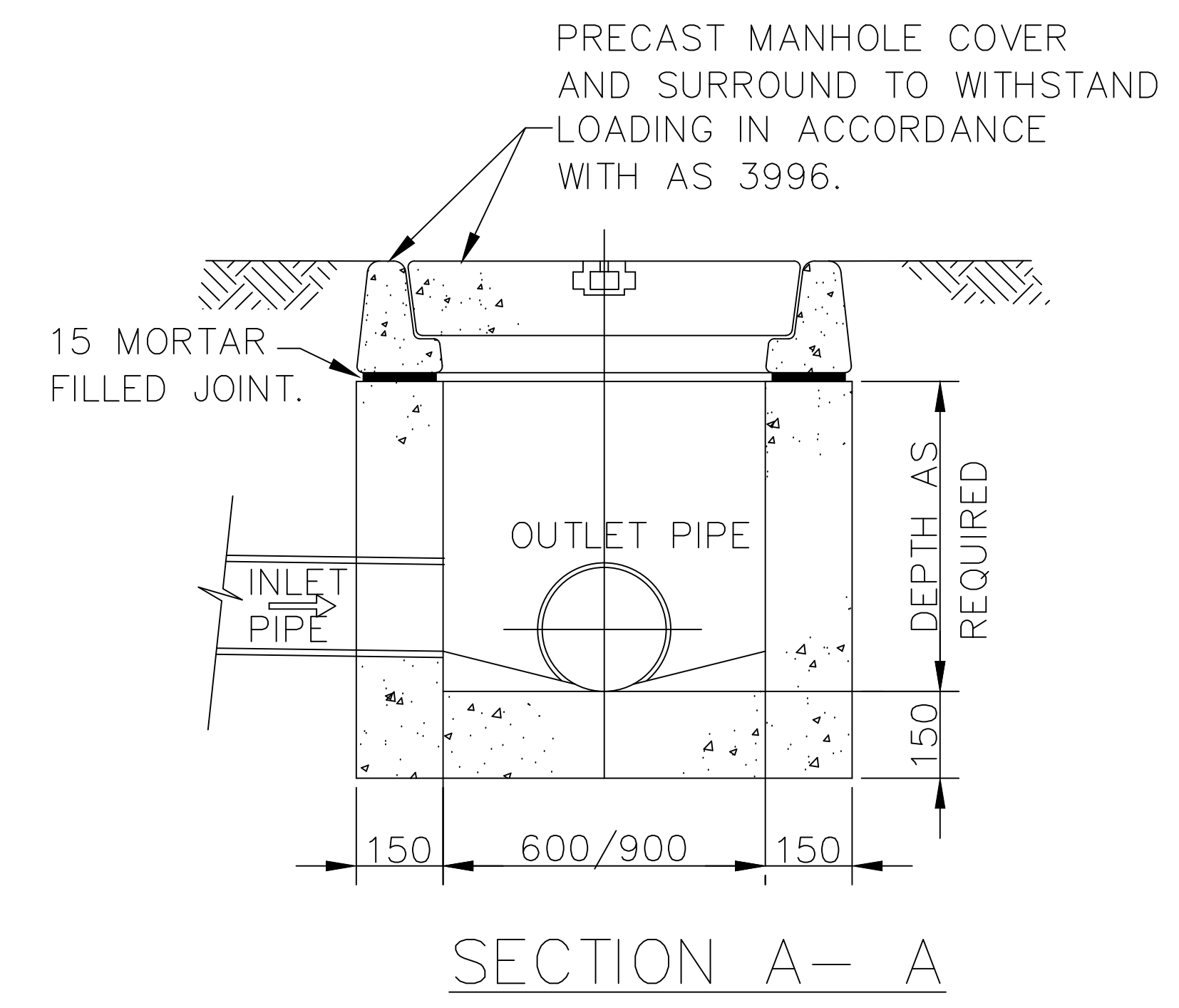
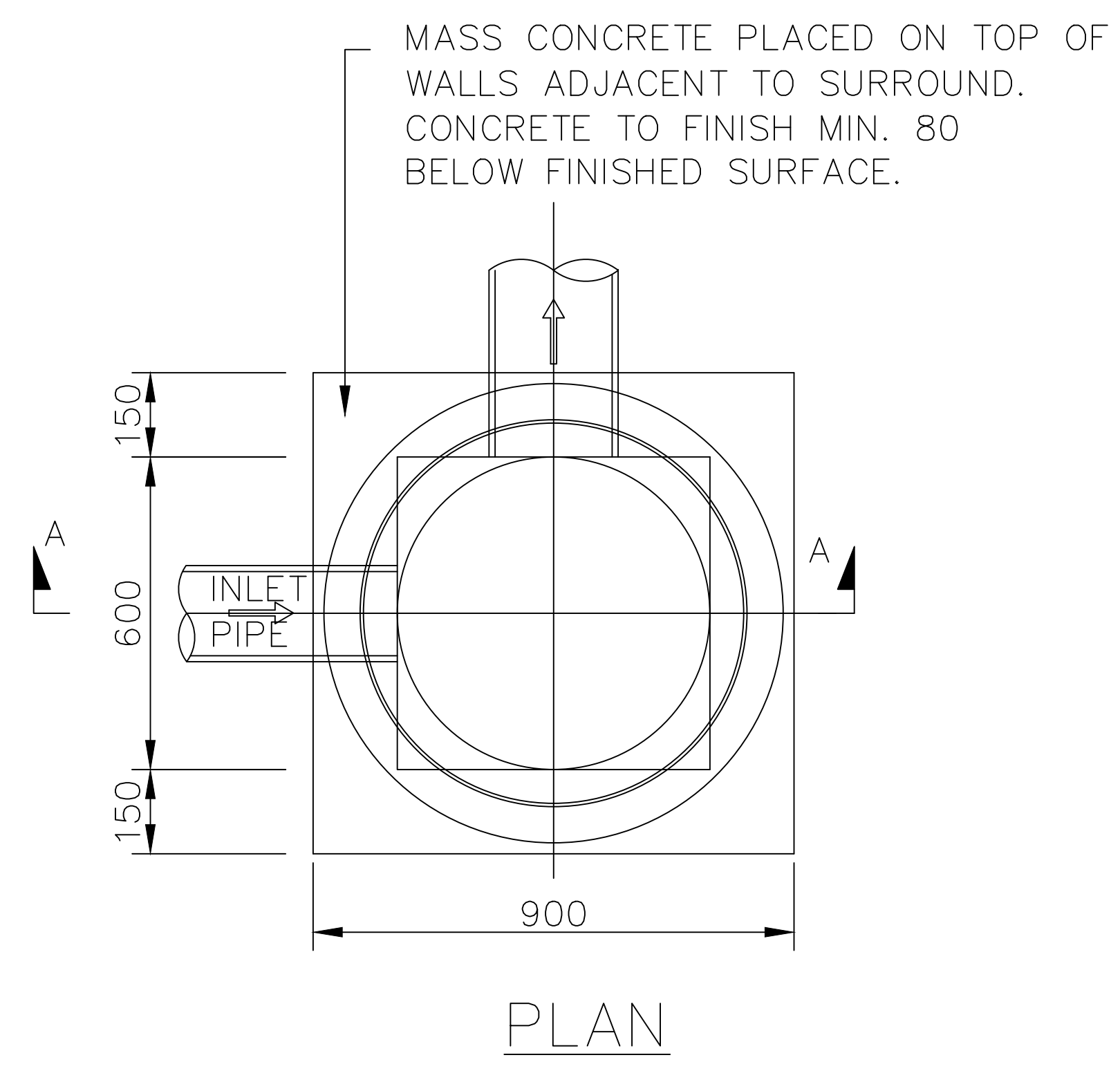
NUMBER OF SHEETS
35

SHEET NUMBER
20

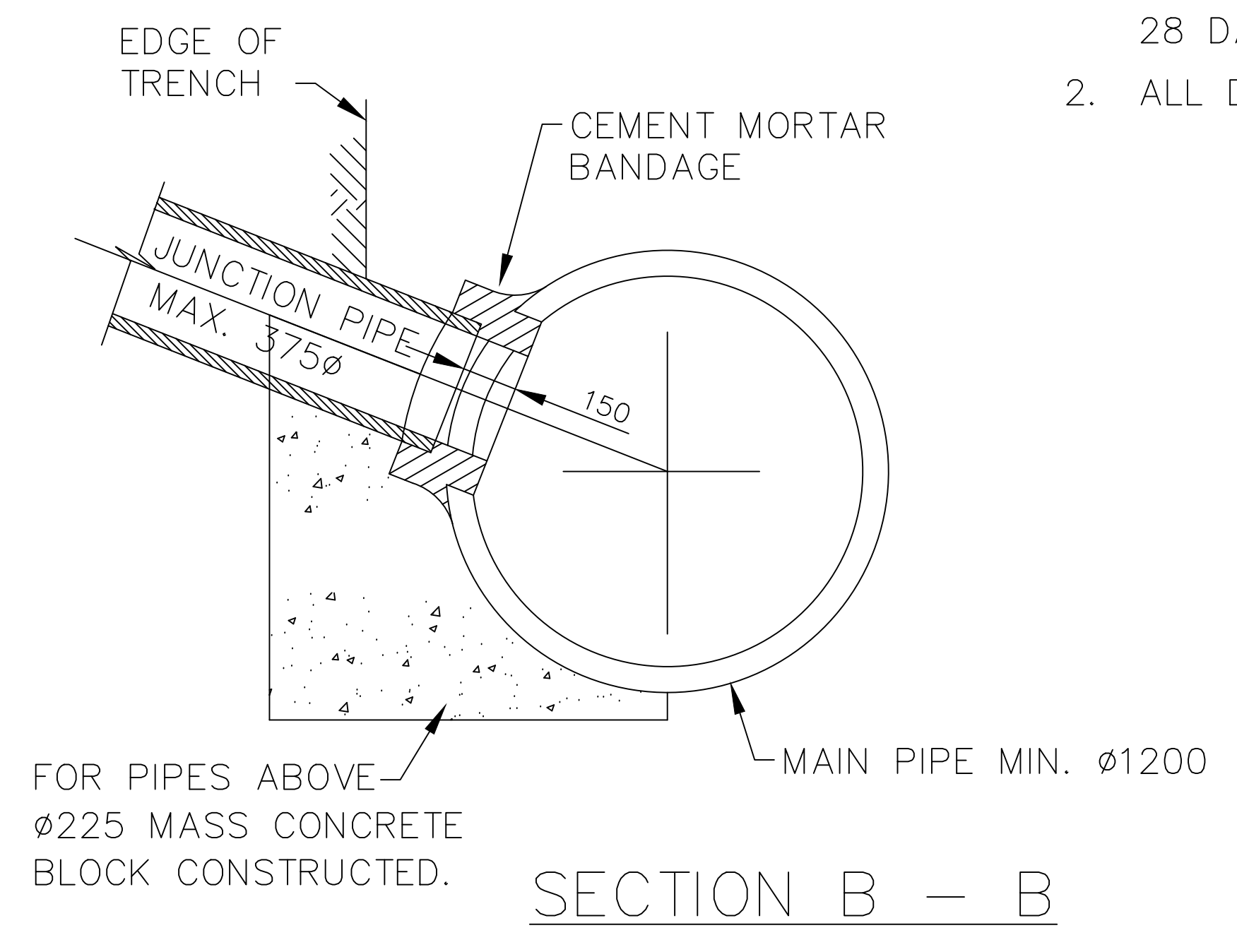
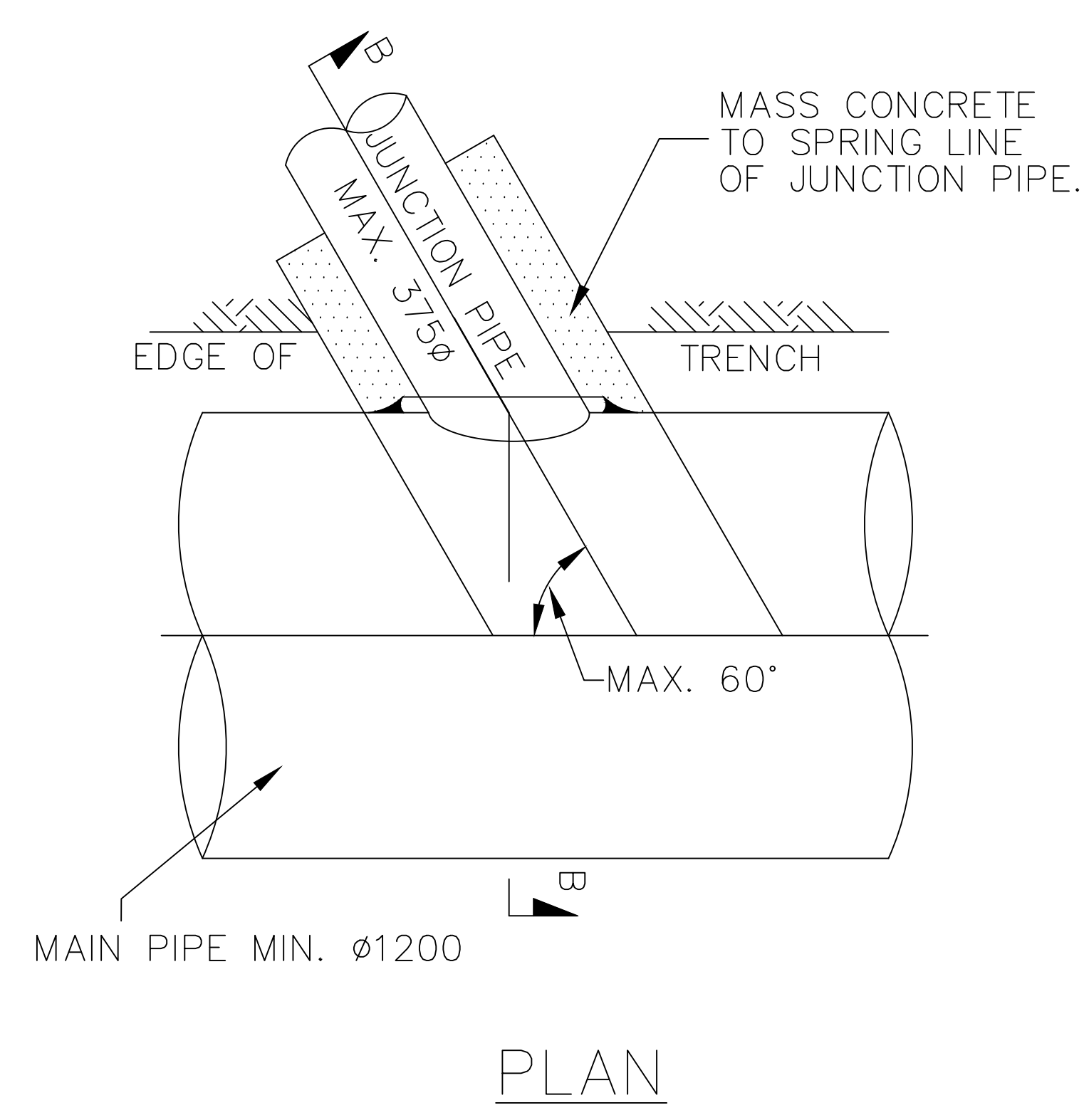
FILE NAME:
STANDARD DRAWINGS.DWG
REVISION
GMC-VER-1
RD: *rd*

SD-D 03

DRAWING NUMBER SD-D 03



CONCRETE INSPECTION PIT



NOTES:

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

TYPICAL DIRECT CONNECTION OF SMALL PIPE AND LARGE PIPE

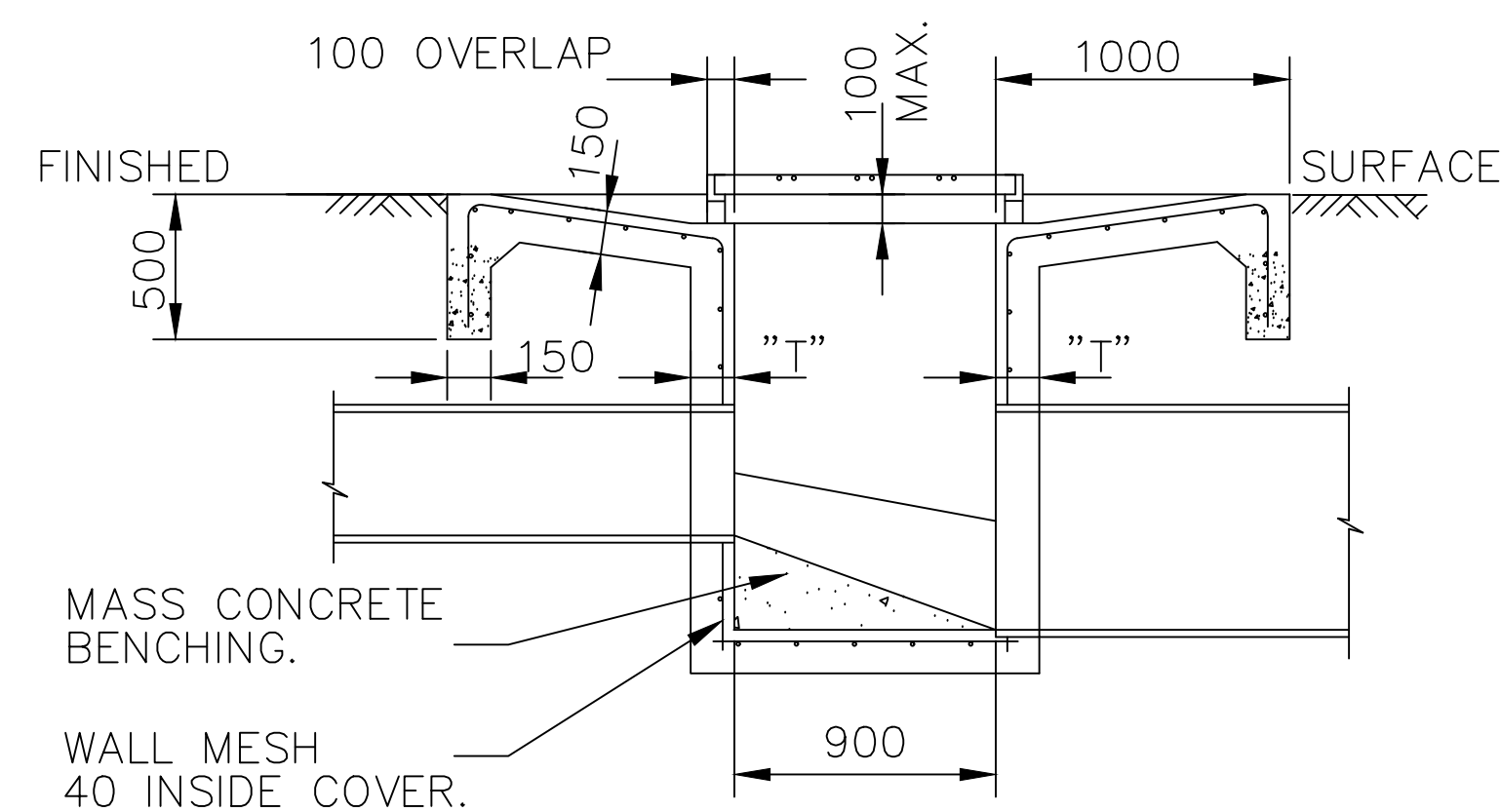
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SURVEYED			NOTES & DETAILS CHANGED/ADDED (I/ALDRIDGE 2012)				
DESIGNED & DRAFTED	P.SMART	14/07/2009					
DESIGN REVIEWED	P.SMART	14/07/2009					
FINAL DESIGN CHECKED	I.ALDRIDGE	12/12/2012					
ISSUED FOR CONSTRUCTION							
WORK AS EXECUTED							

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

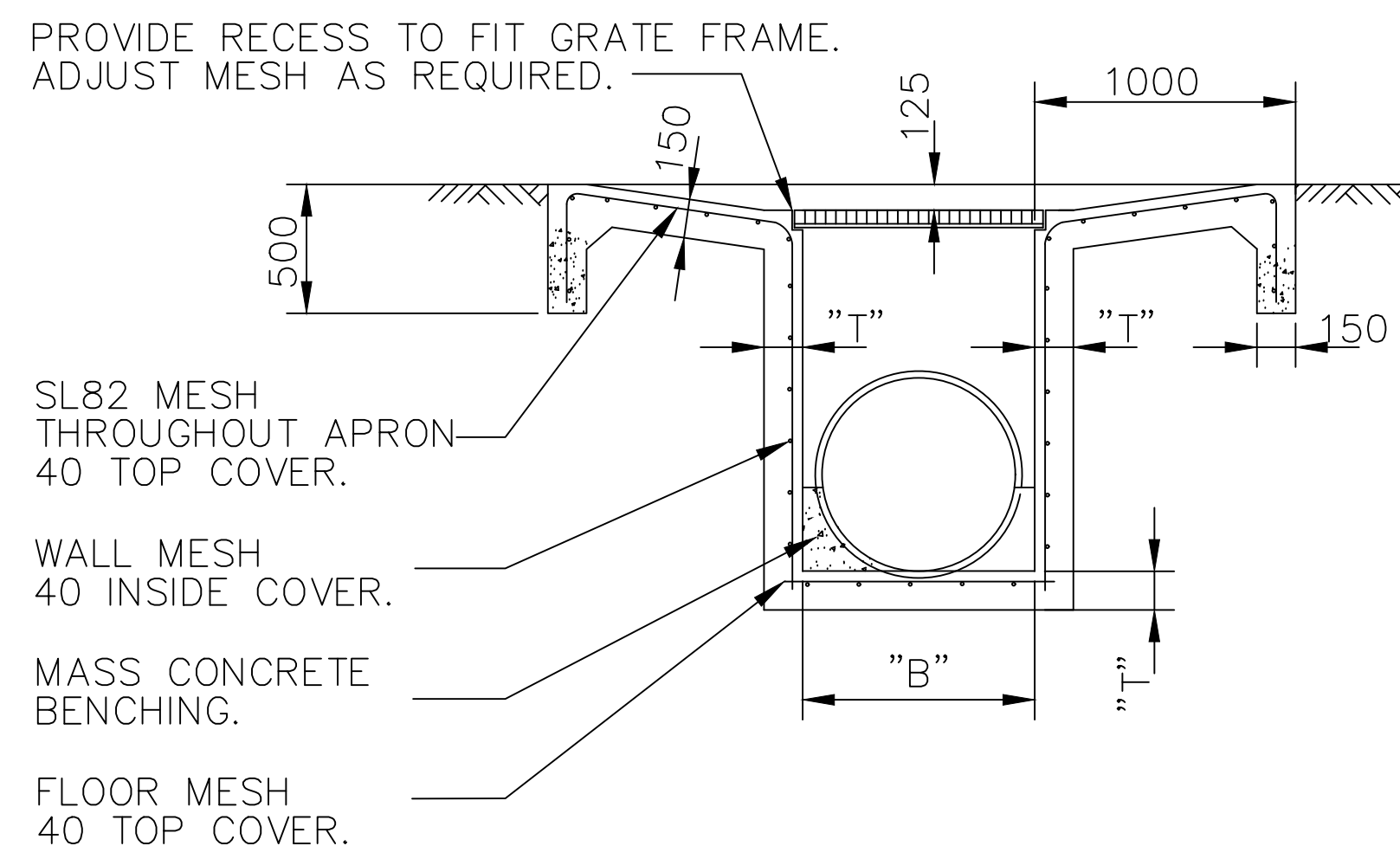
DRAINAGE CONNECTIONS	
MINOR	

SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE www.dialbeforeyoudig.com.au 	A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 21
	FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-D 04



SECTION A - A

PIT TYPE A - RAISED GRATE

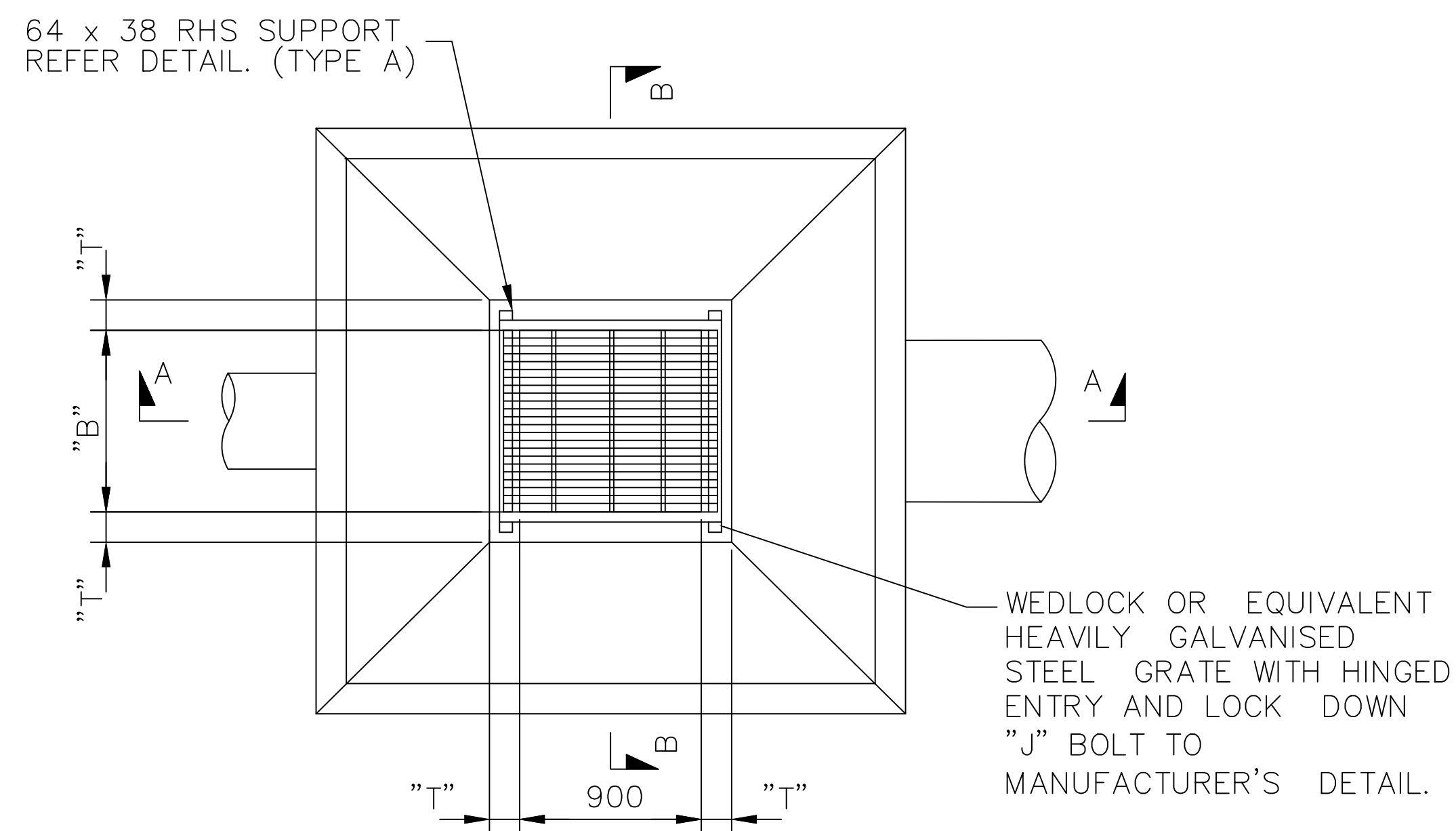


SECTION B - B

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.

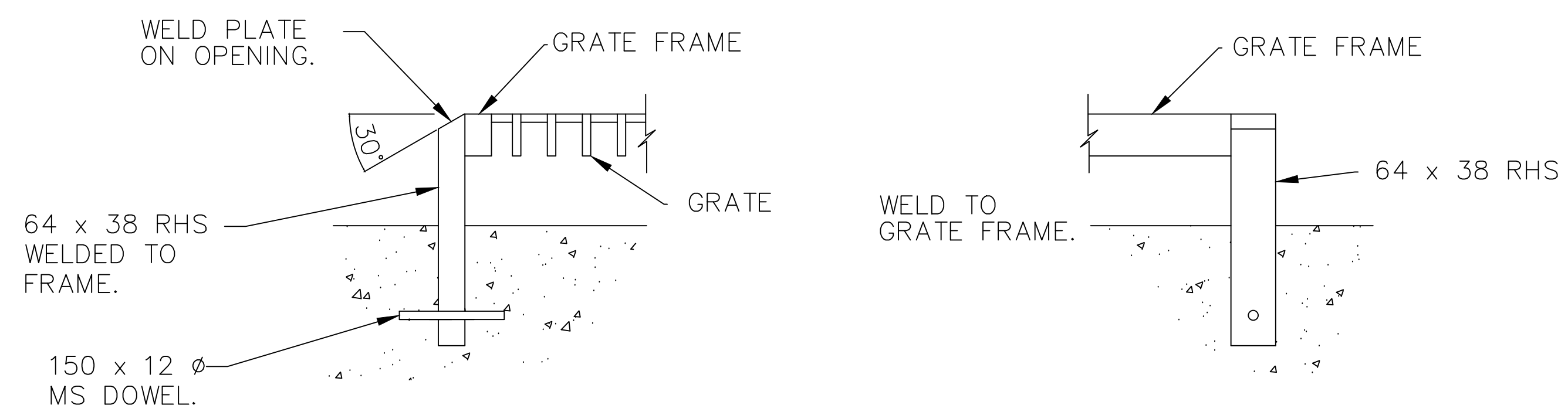


PLAN - PIT TYPE A and B

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.ALDRIAGE	12/12/2012	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

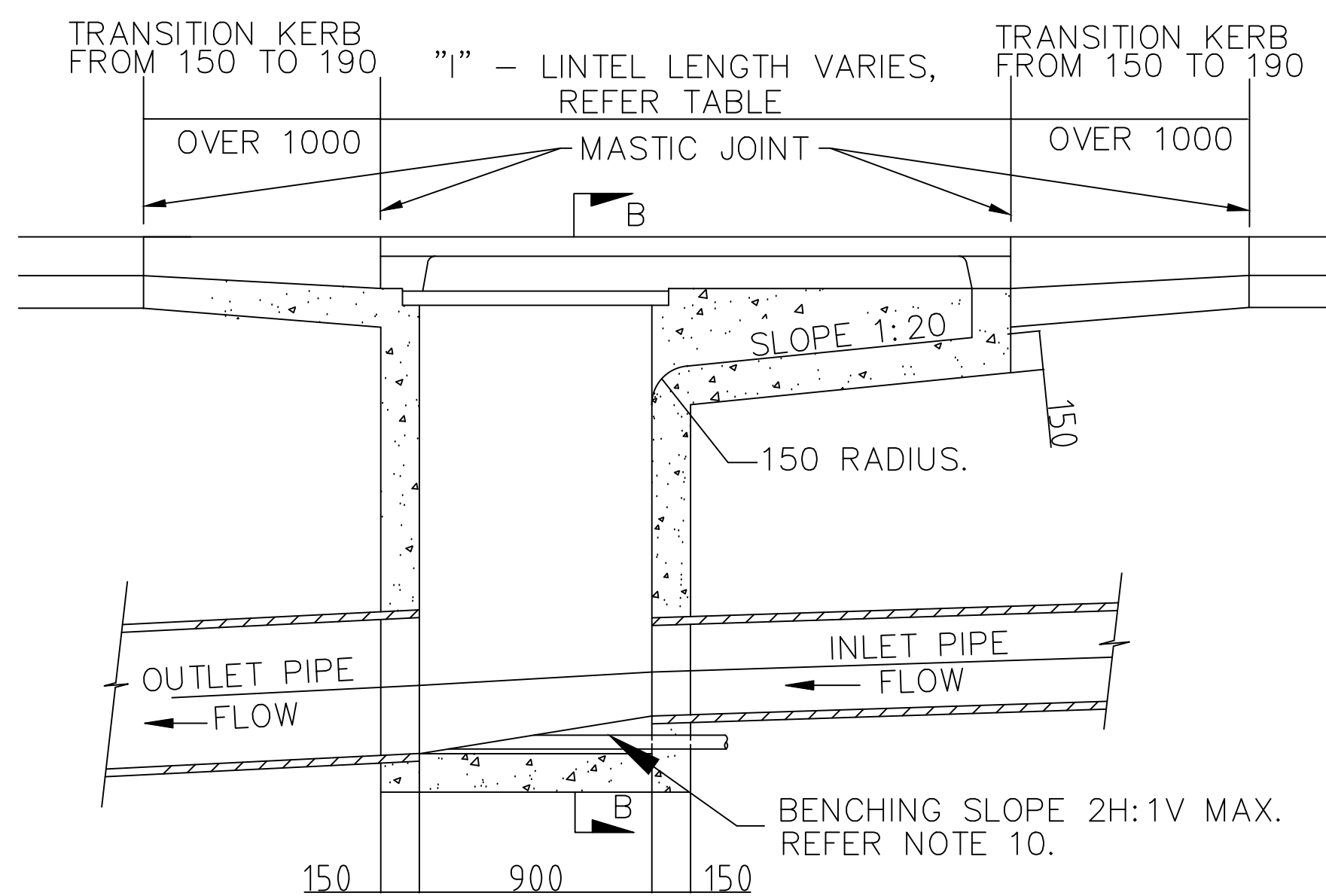
<p>CIVIC CENTRE, 184-194 BOURKE STREET GOULBURN, NSW-2580 LOCKED BAG 22, GOULBURN, NSW-2580 PHONE: (02) 4823 4444 FAX: (02) 4823 4456</p>	<p>AUSTRALIAN HEIGHT DATUM</p> <p>AS-1100 STANDARDS</p> <p>If the actual work done differs from the original drawing the person performing the work must amend this copy accordingly and return it to the Design Office.</p>
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<p>APPROVED</p> <p></p> <p>DIRECTOR OF GOULBURN MULWAREE OPERATIONS</p> <p>DATE: 28/02/2018</p>

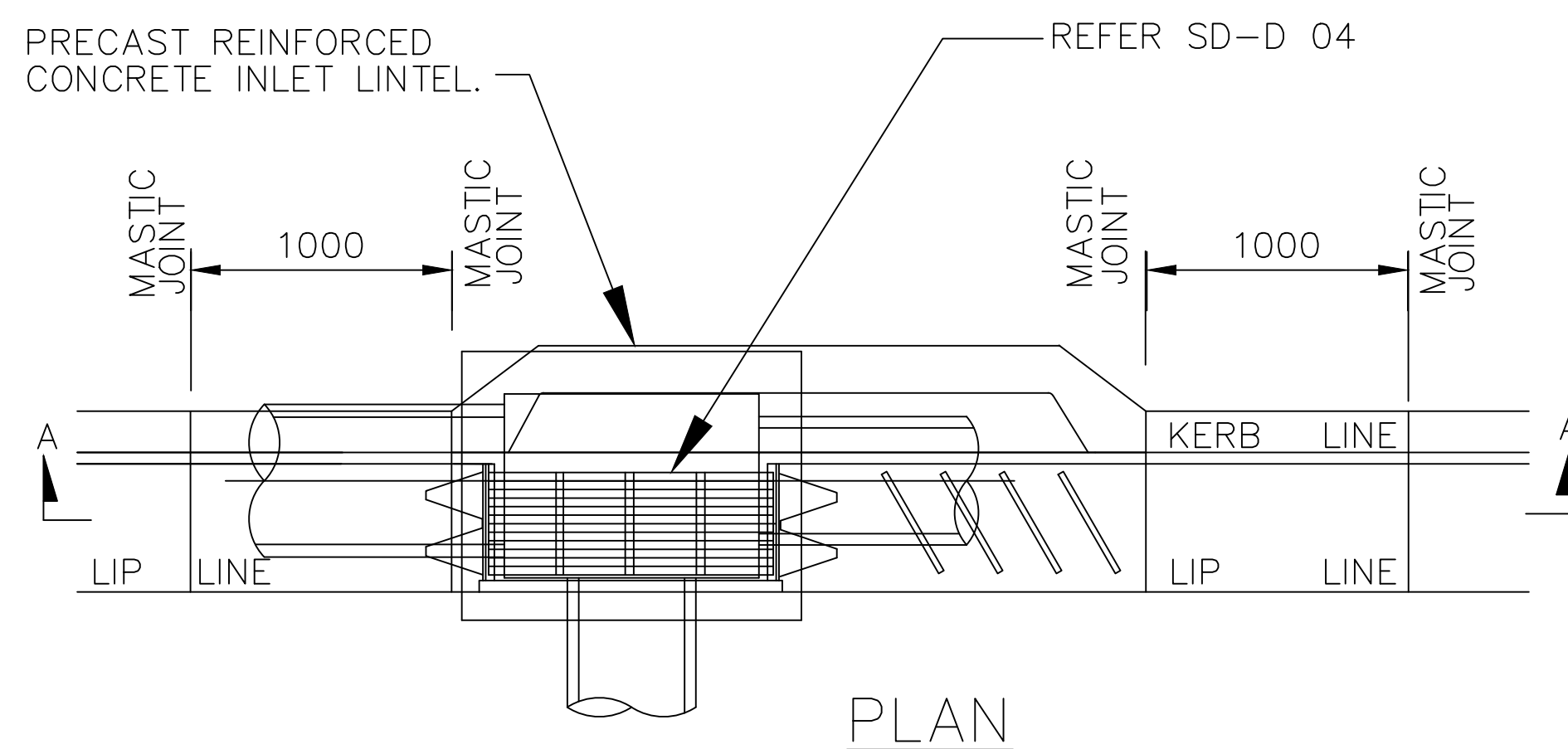
SURFACE INLET PITS
TYPE A - RAISED GRATE
TYPE B - FLUSH GRATE

<p>SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE www.dialbeforeyoudig.com.au </p>	<p>A1 - SCALE AS SHOWN</p> <p>FILE NAME: STANDARD DRAWINGS.DWG</p> <p>REVISION GMC-VER-1</p> <p>RD: </p>	<p>NUMBER OF SHEETS 35</p>	<p>SHEET NUMBER 22</p>
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SD-D 05



SECTION A - A



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

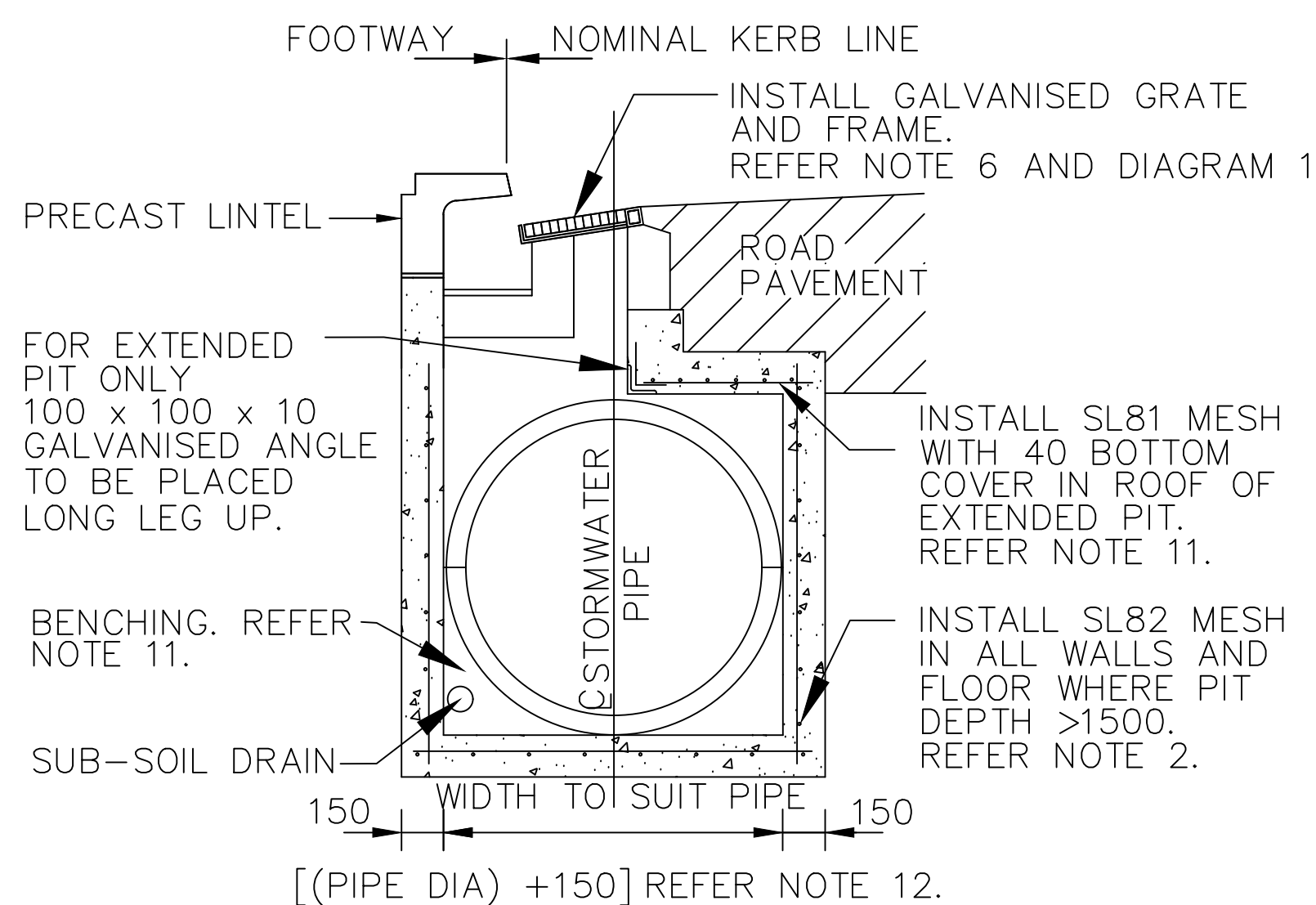
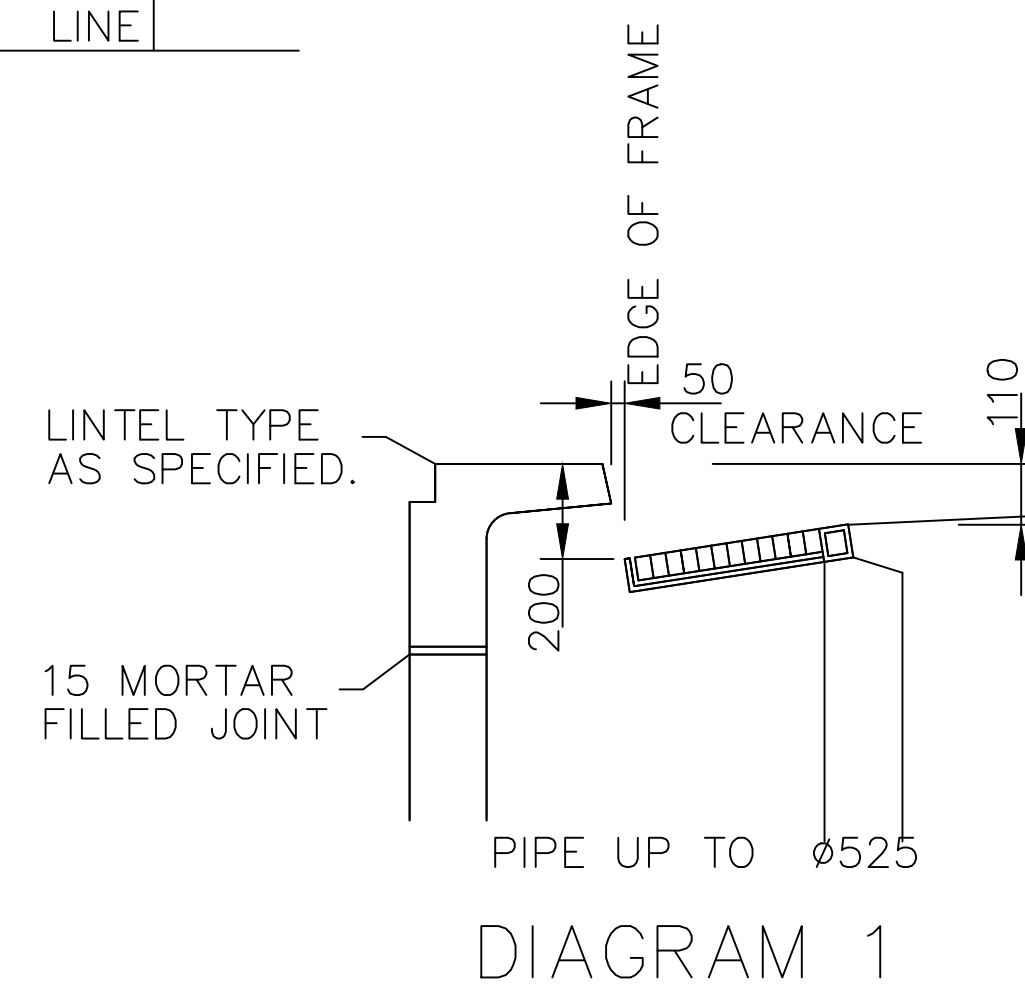
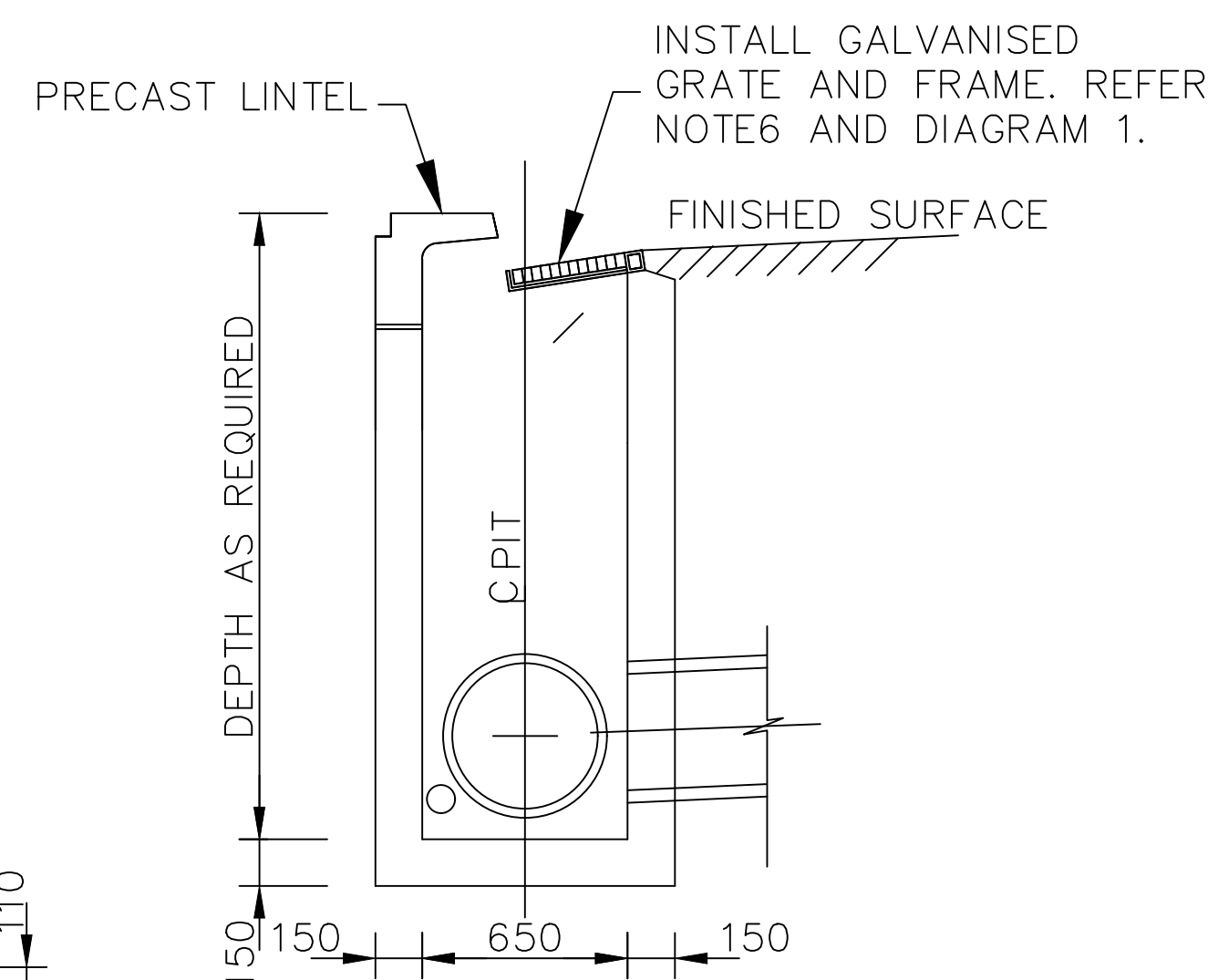
SECTION B - B
EXTENDED PIT CHAMBER
REFER NOTE 9.

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.ALDRIE	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

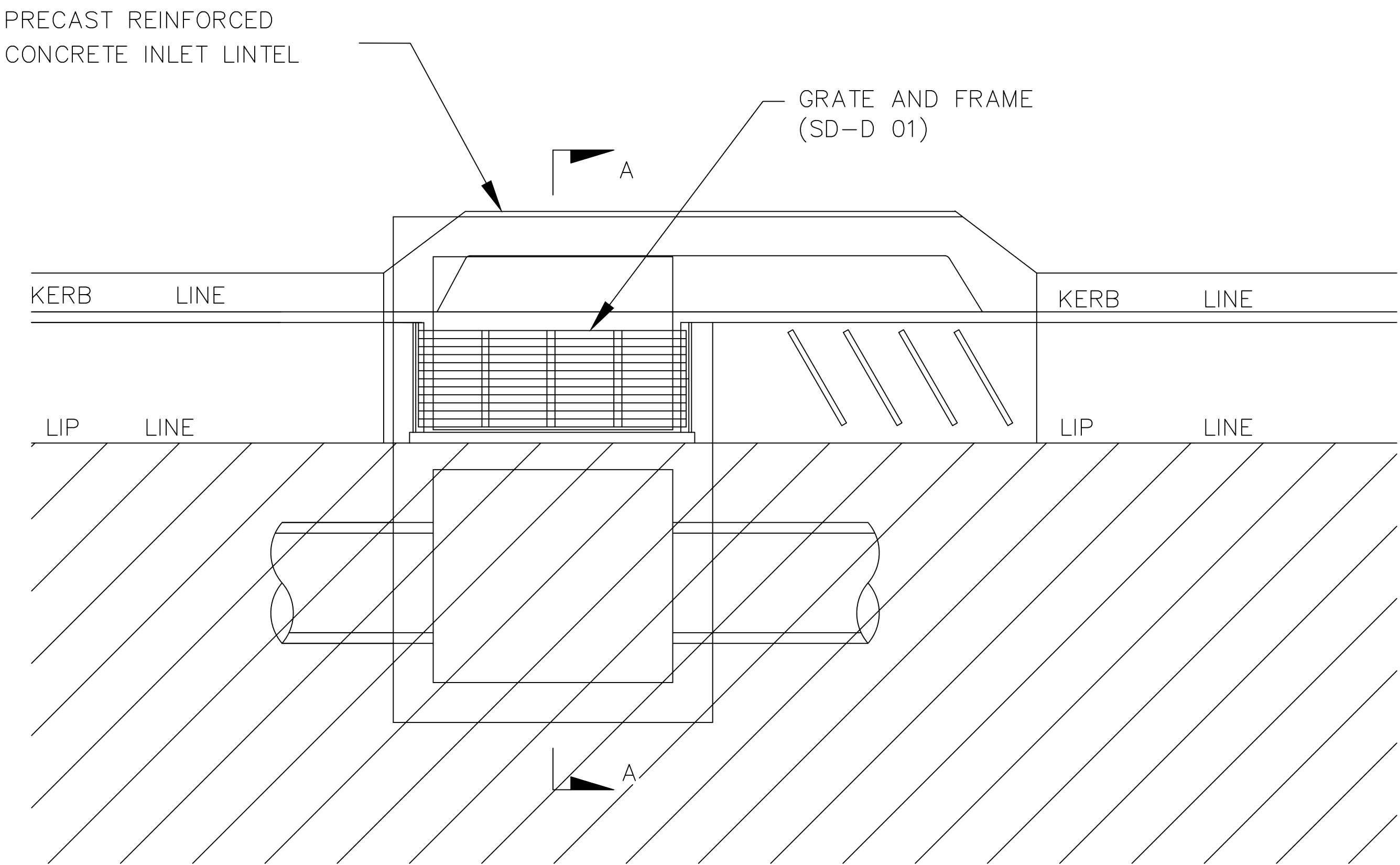
KERB INLET PIT WITH GRATE
EXTENDED CHAMBER PITA1 - SCALE
AS SHOWNNUMBER OF SHEETS
35SHEET NUMBER
23

FILE NAME:

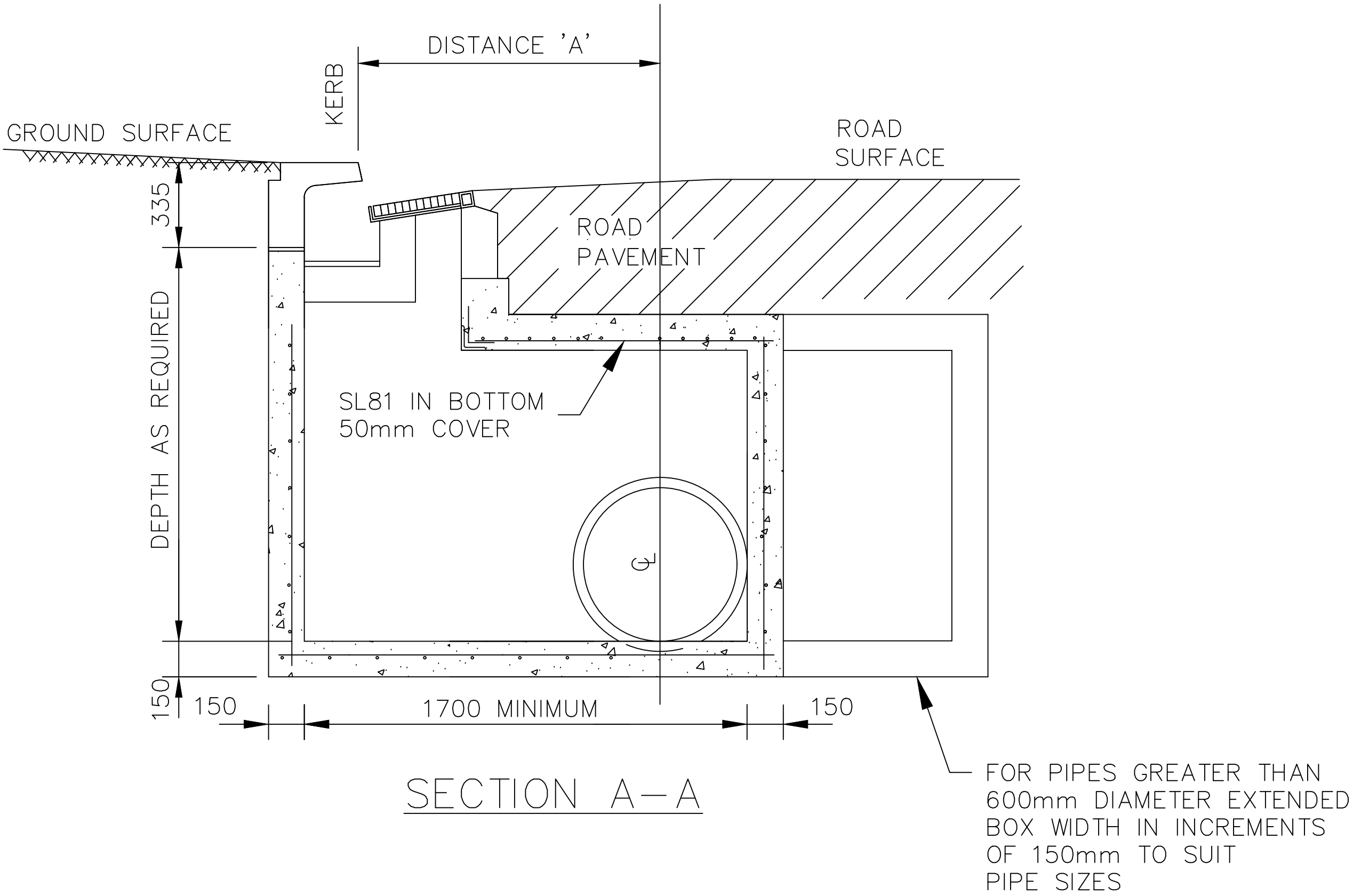
STANDARD DRAWINGS.DWG

REVISION
GMC-VER-1

SD-D 06 A



PLAN




SECTION A-A

PIPE CL 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	
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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OPERATIONS

DATE: 28/02/2018

KERB INLET PIT WITH GRATE

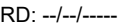
STORMWATER PIPE IN FRONT OF KERB

SAFETY FIRST
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MUST BE WORN ON SITE
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A1 - SCALE
AS SHOWN

FILE NAME:
STANDARD DRAWINGS.DWG

REVISION
GMC-VER-1

RD: 

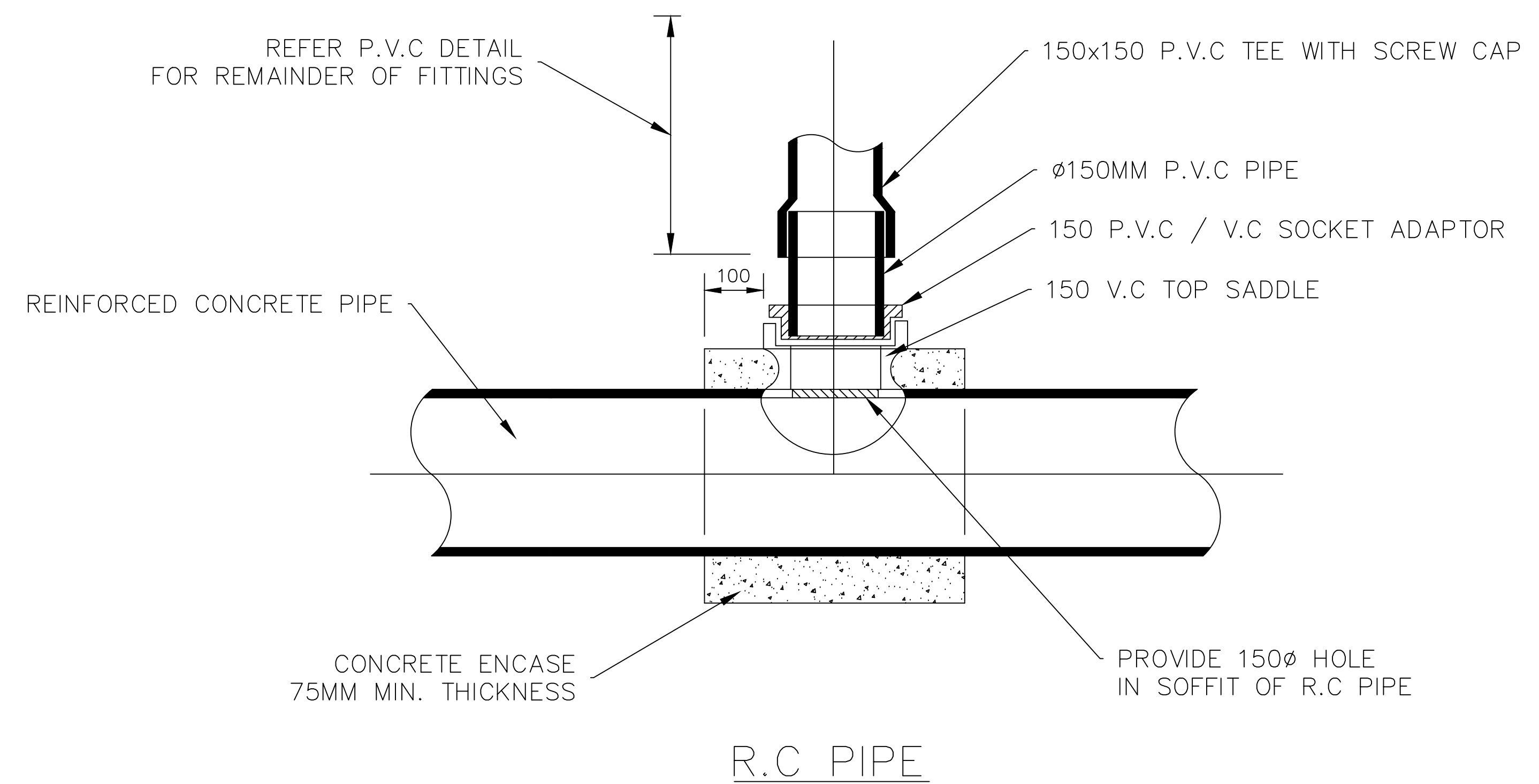
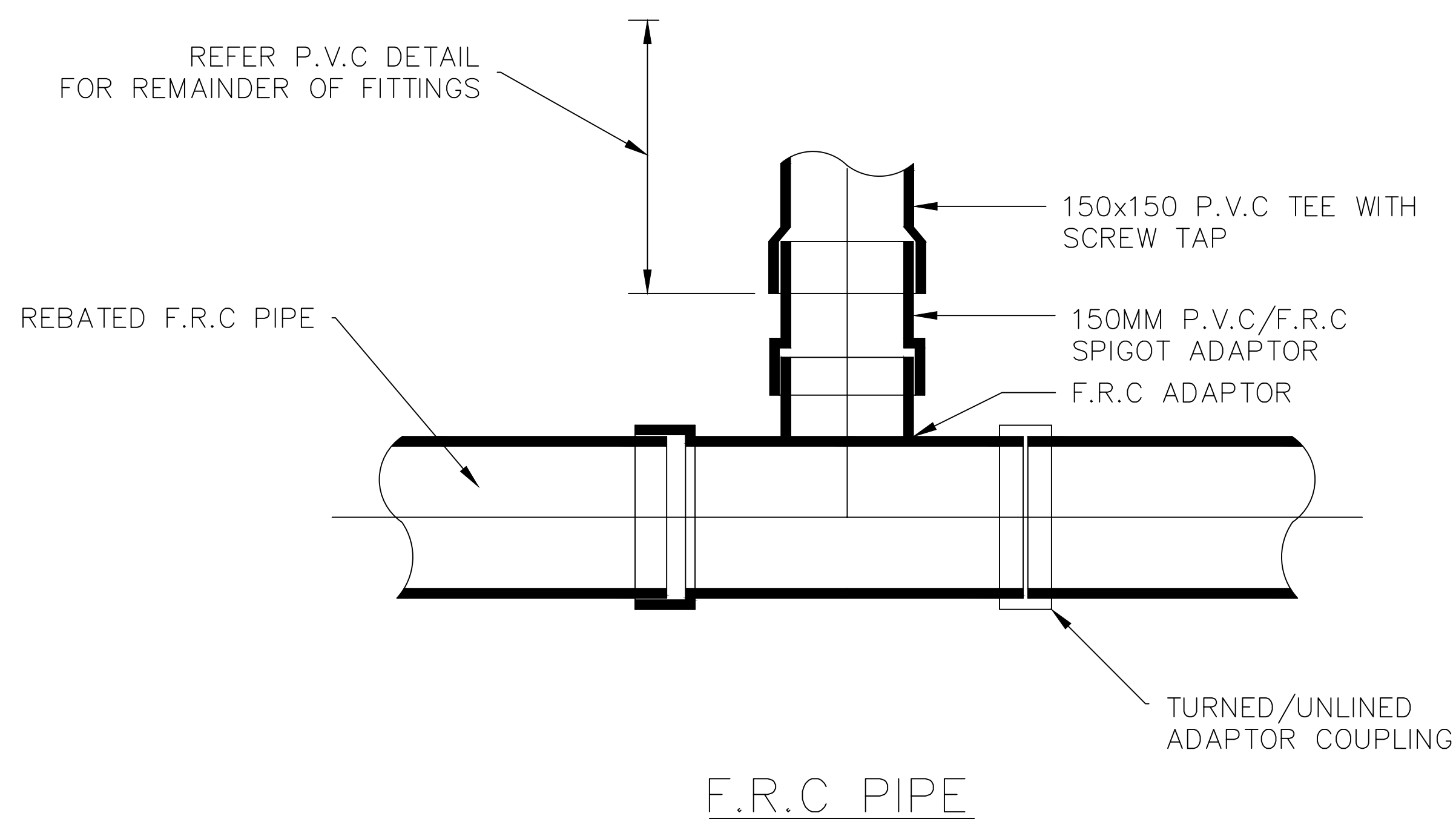
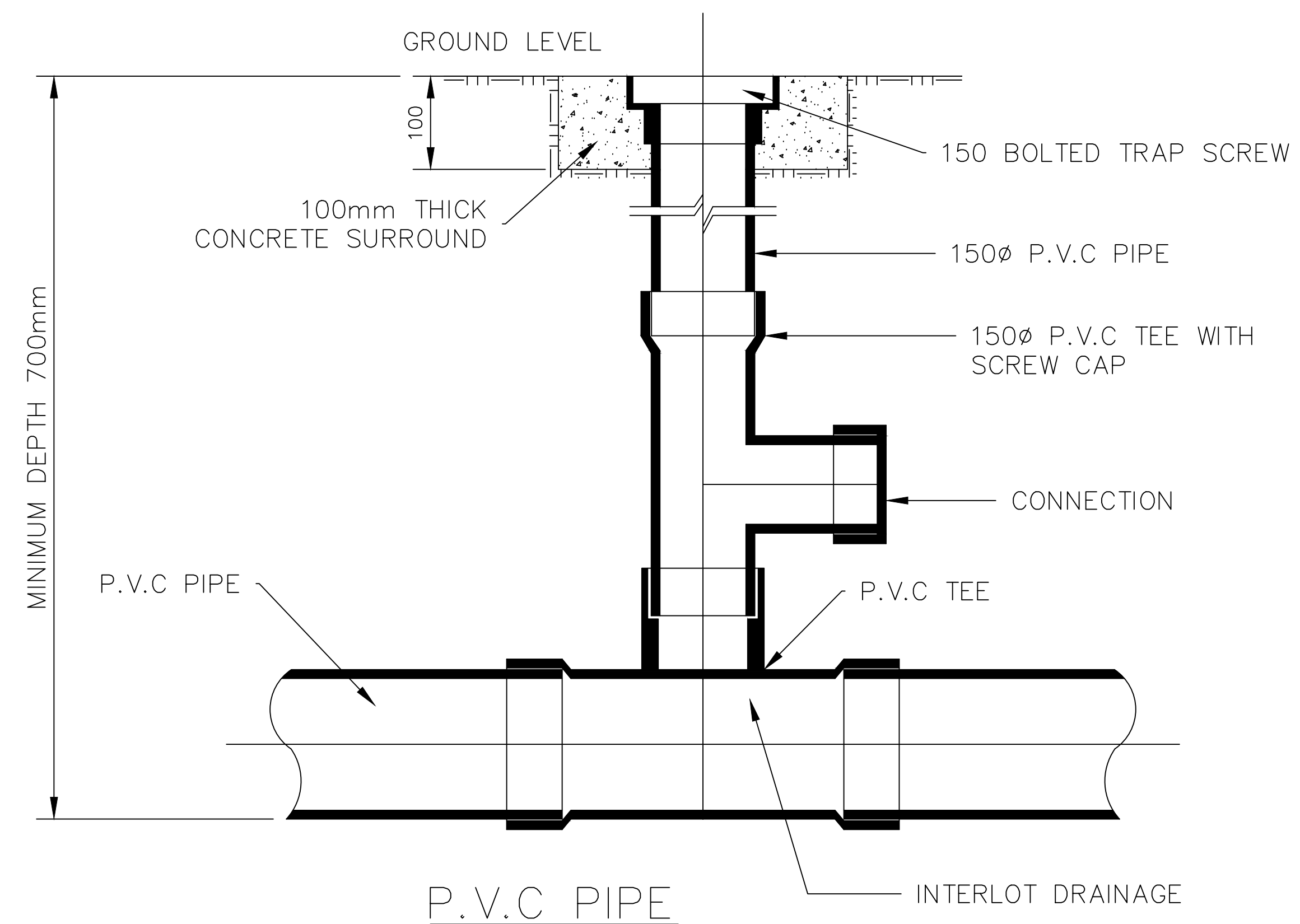
NUMBER OF SHEETS
35

SHEET NUMBER
24

SD-D 06 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			



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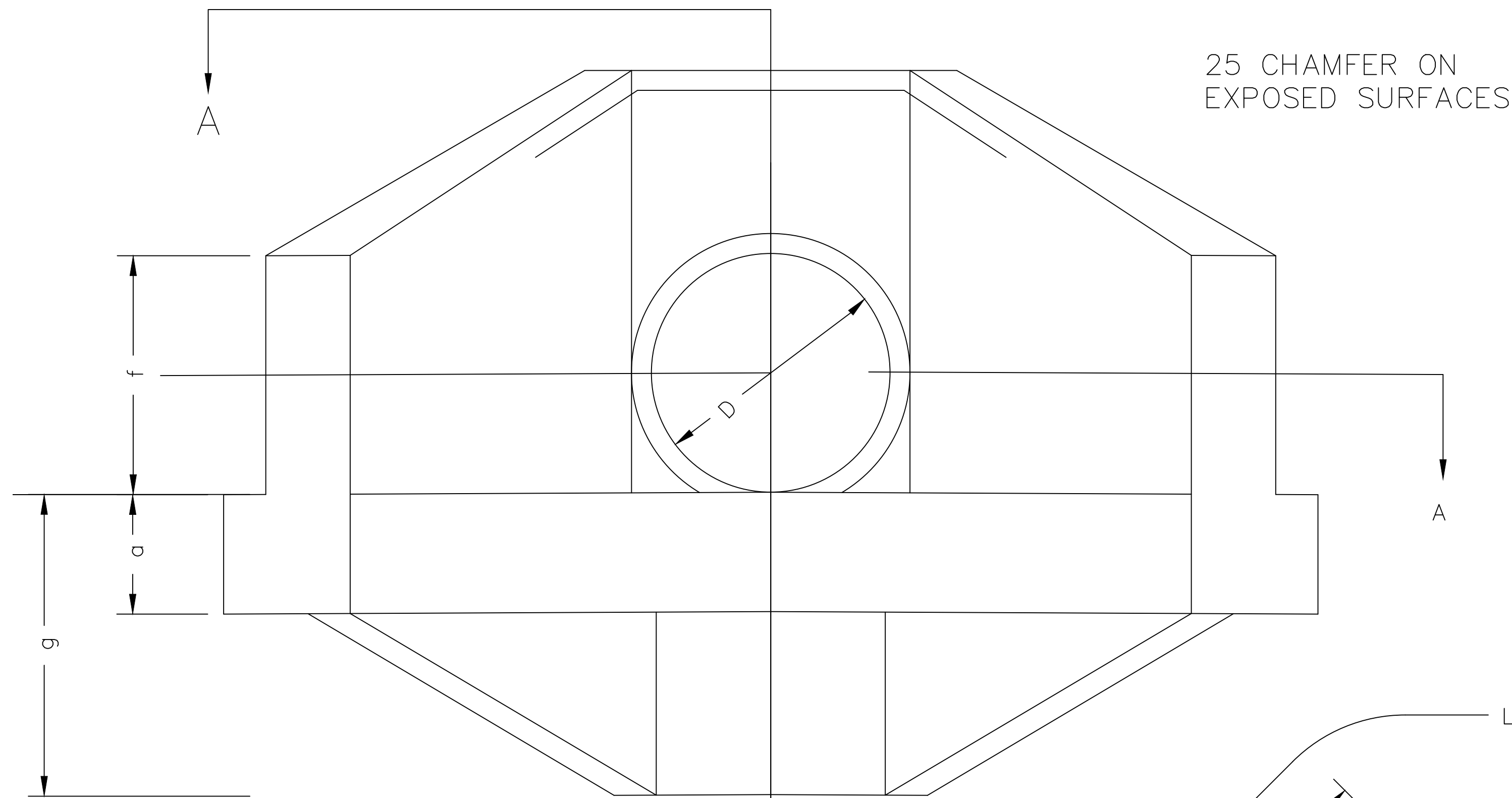
DATE: 28/02/2018

INTERLOT DRAINAGE CONNECTIONS SECTIONAL ELEVATIONS

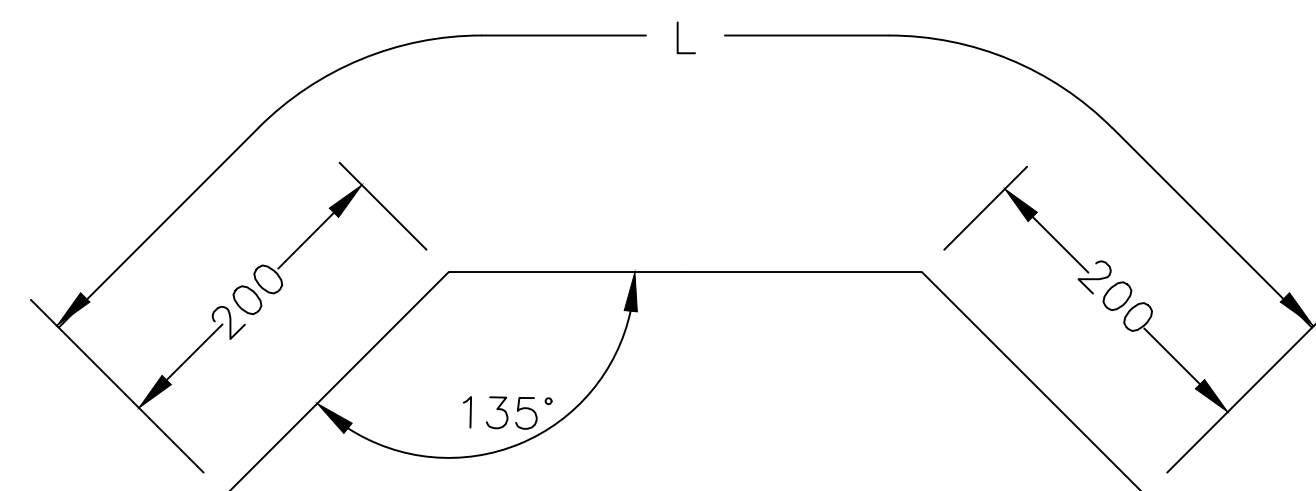


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AS SHOWN
REVISION
GMC-VER-1
RD: 12/12/2012

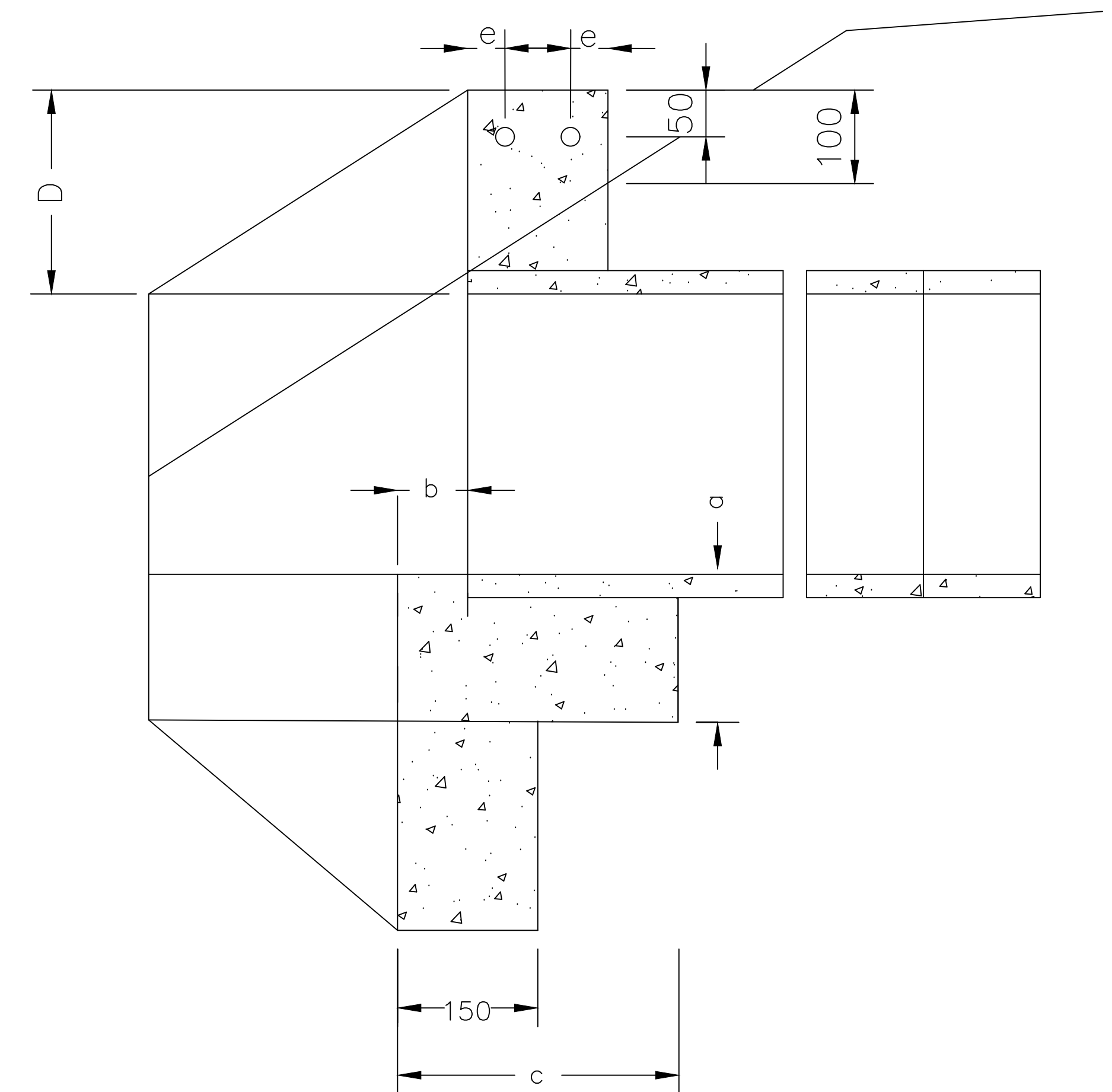
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SHEET NUMBER
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FILE NAME:
STANDARD DRAWINGS.DWG
SD-D 07



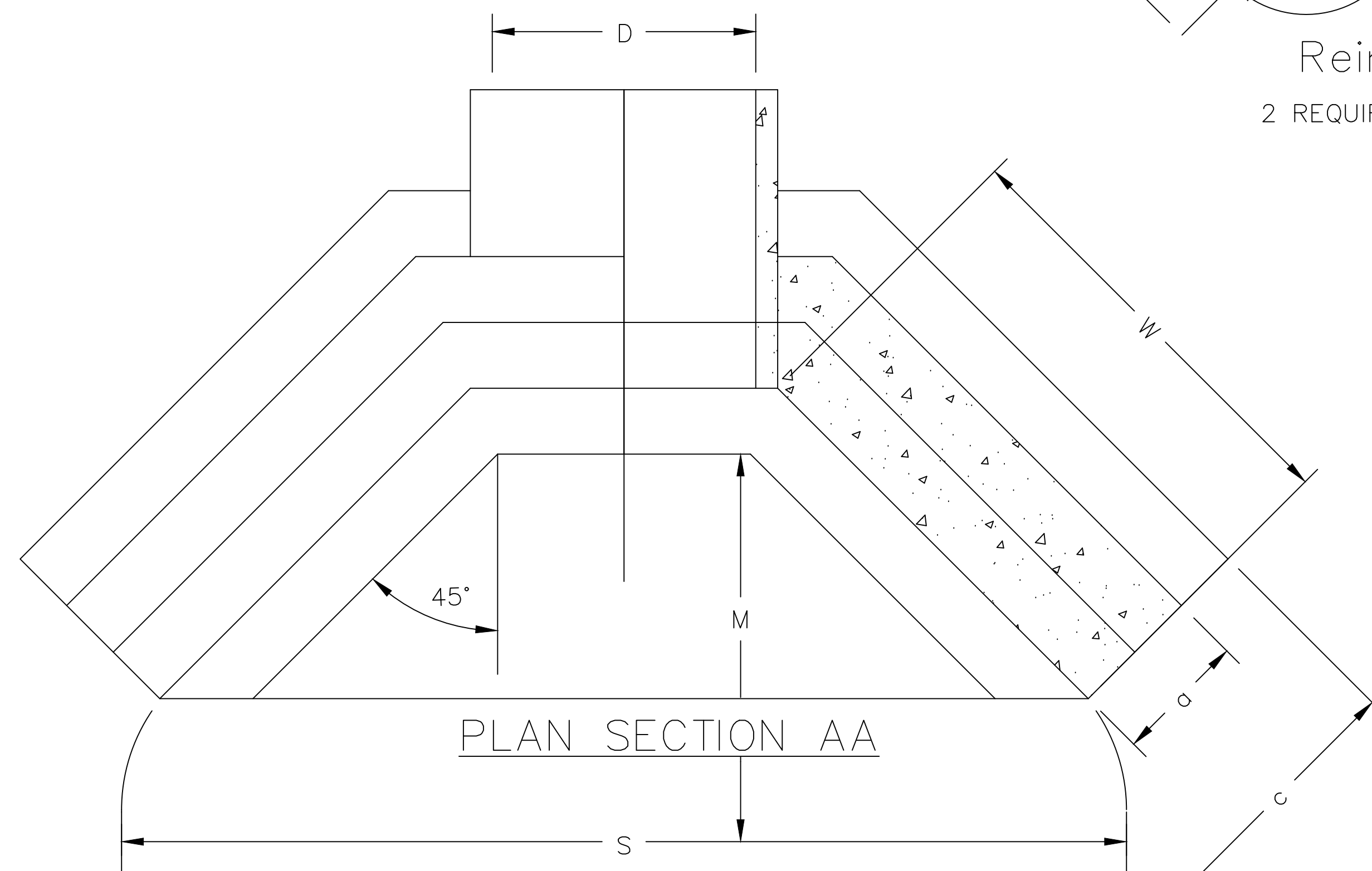
ELEVATION



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	Mattress 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			



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DATE: 28/02/2018

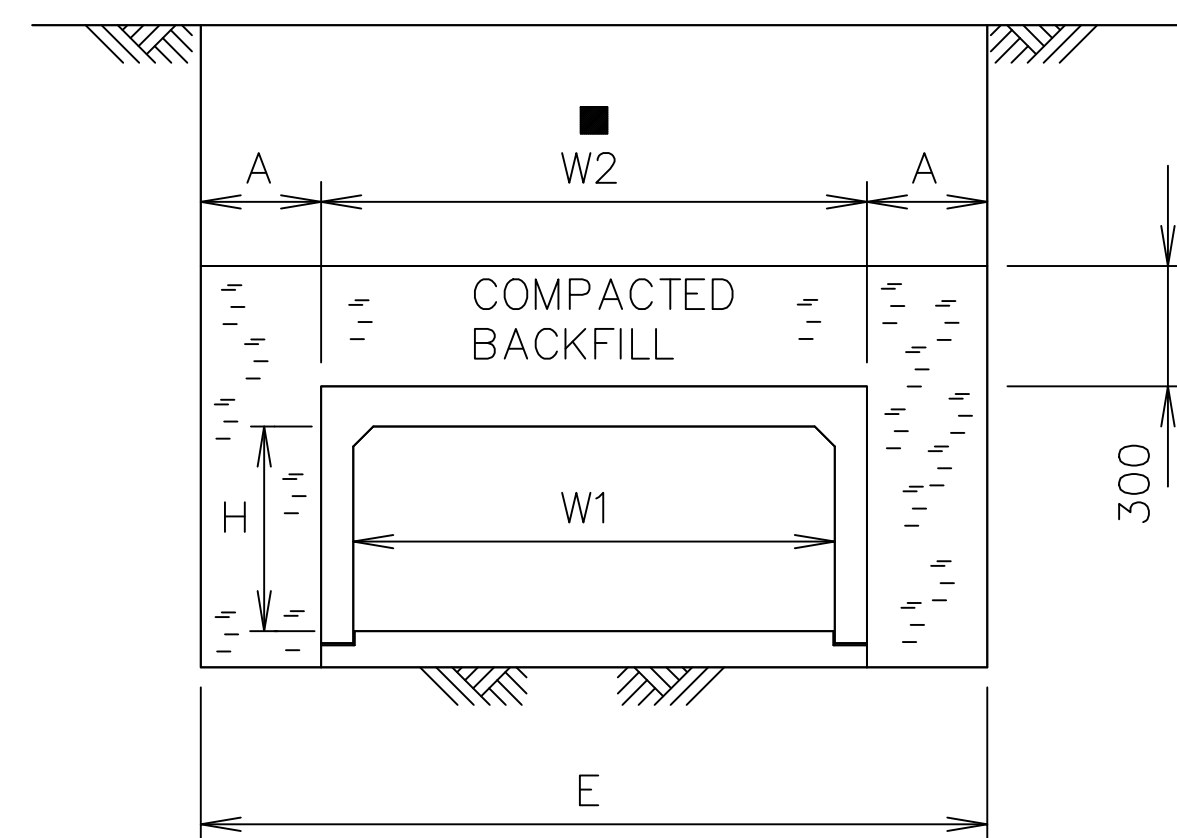
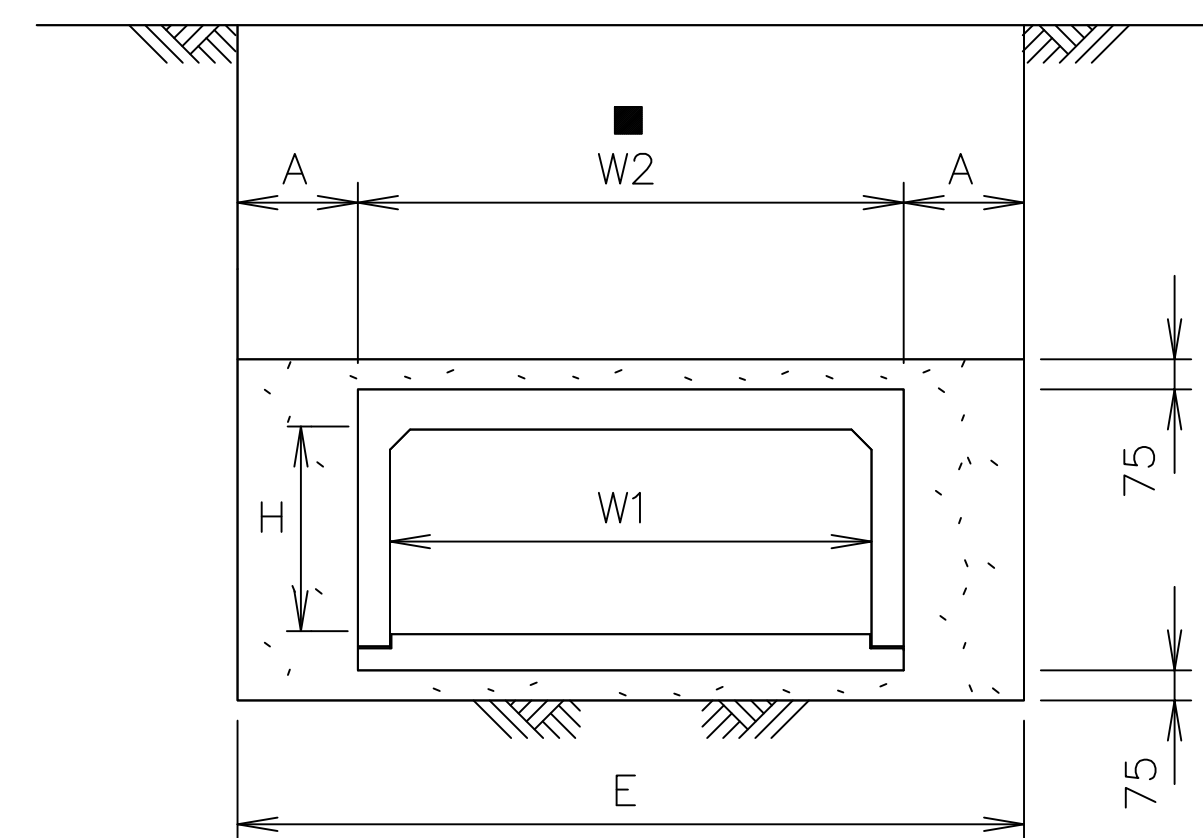
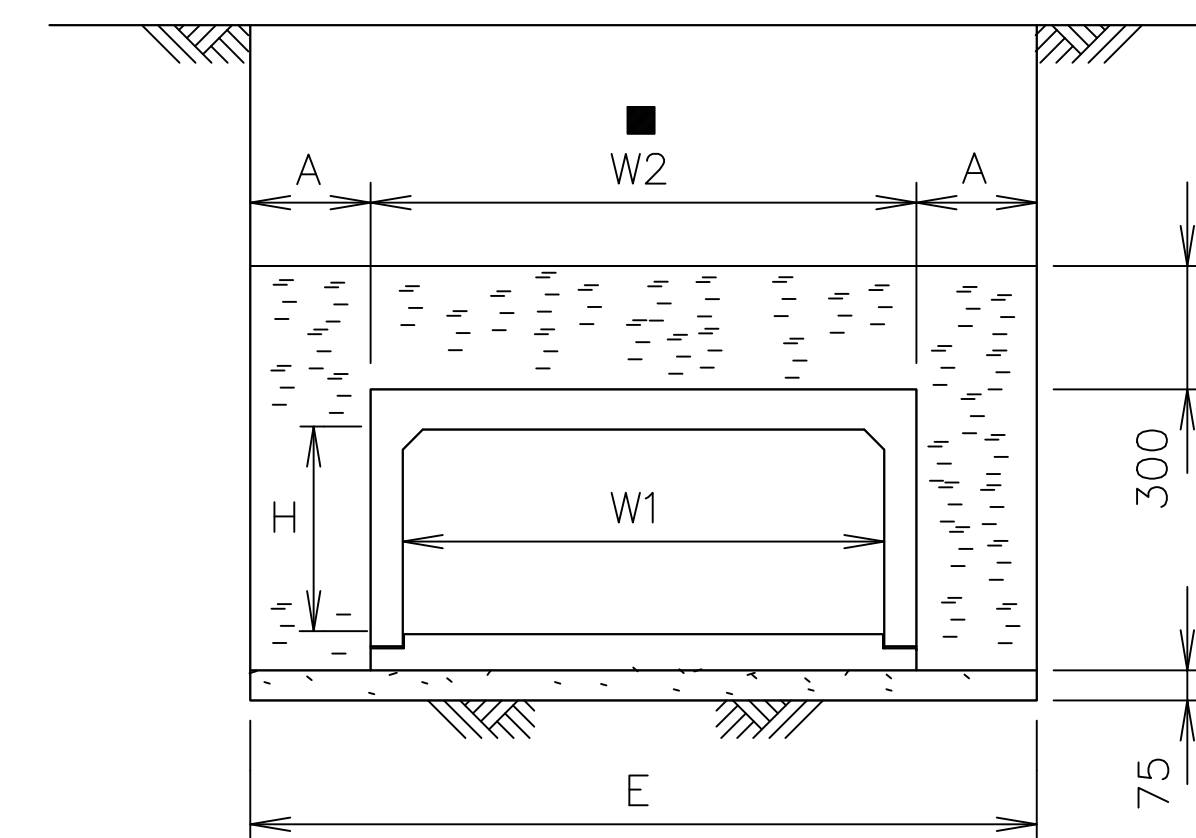
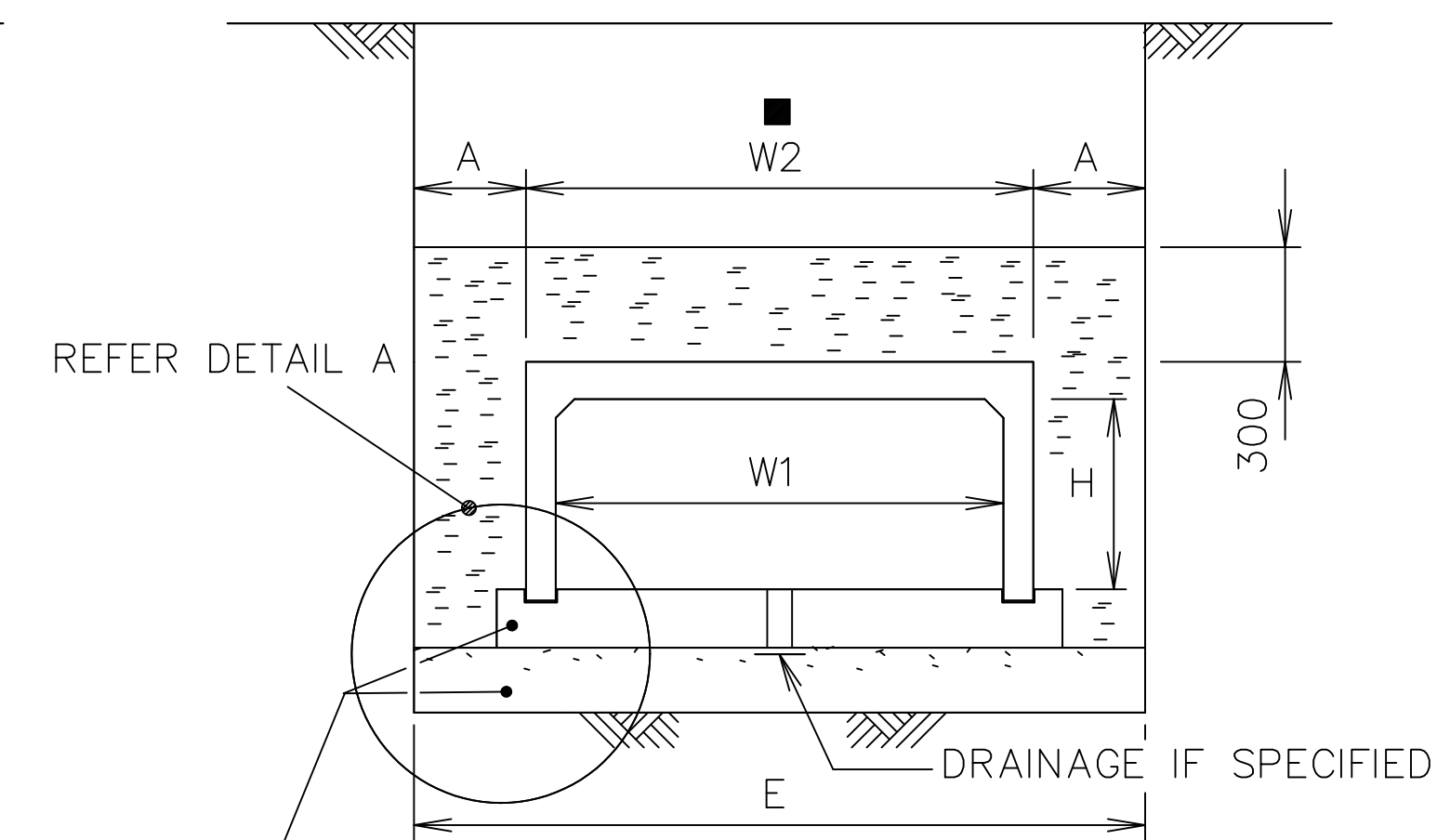
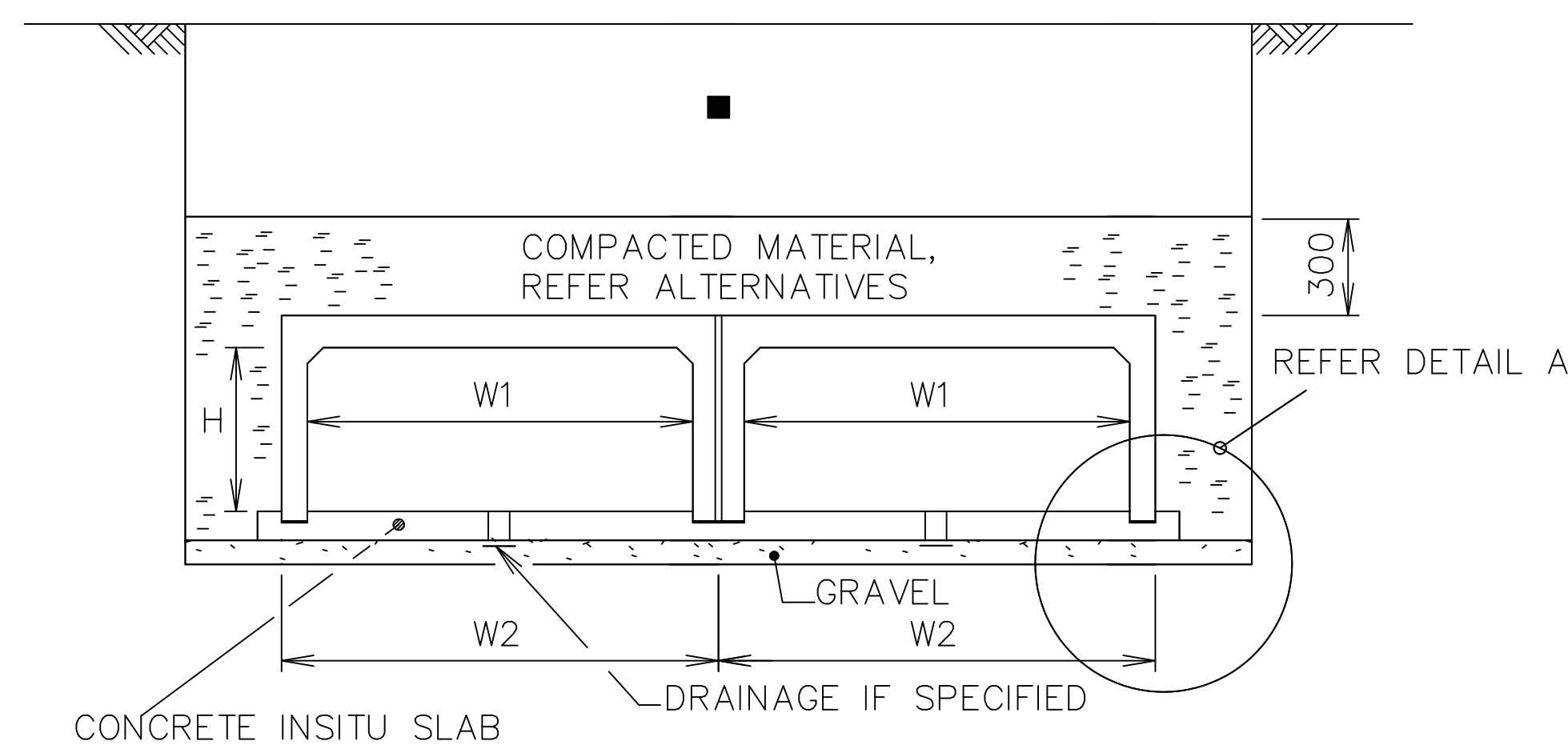
CONCRETE HEADWALL

STANDARD FROM 300MM - 900MM

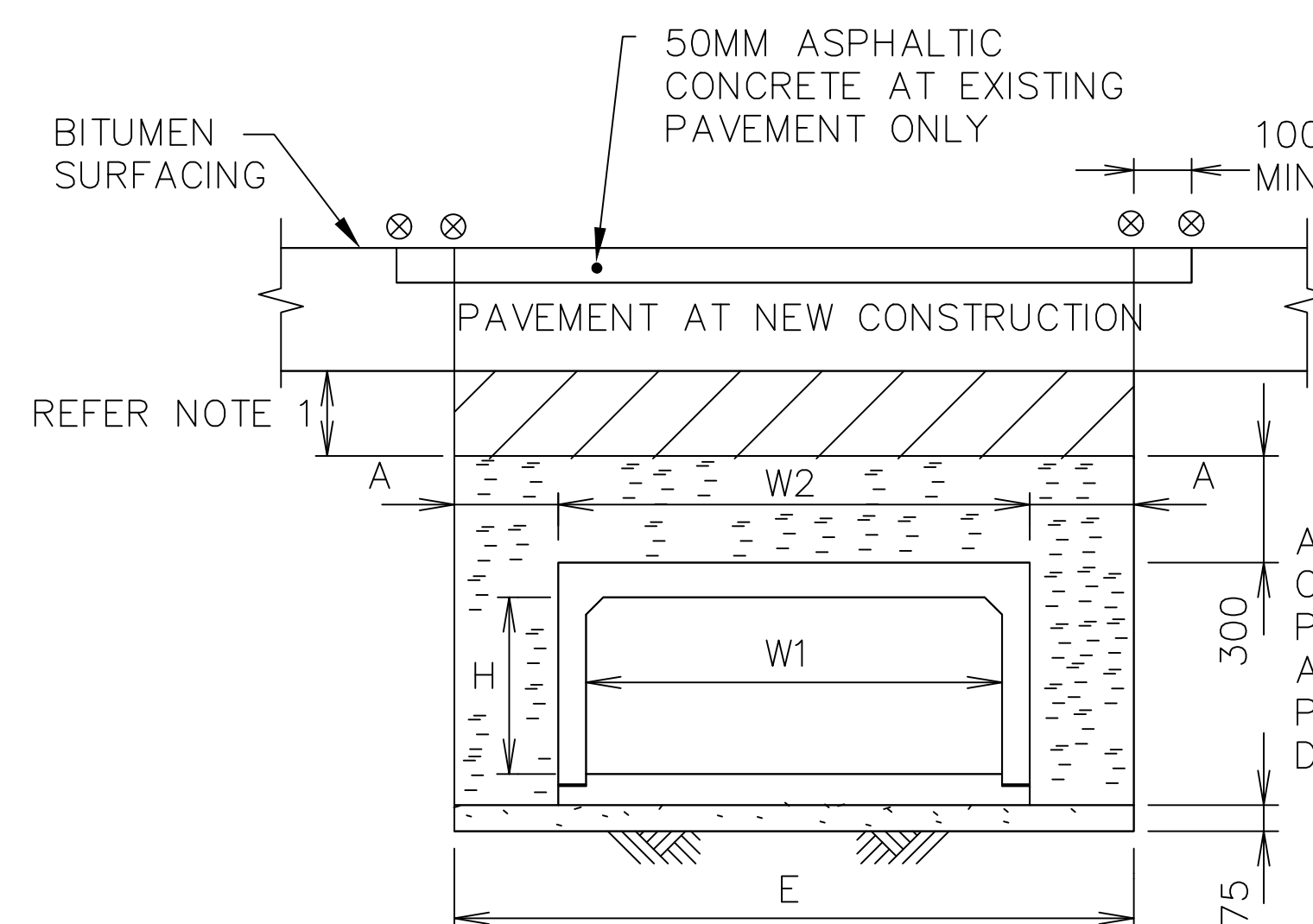


A1 - SCALE
AS SHOWN
FILE NAME:
REVISION
GMC-VER-1
RD: -

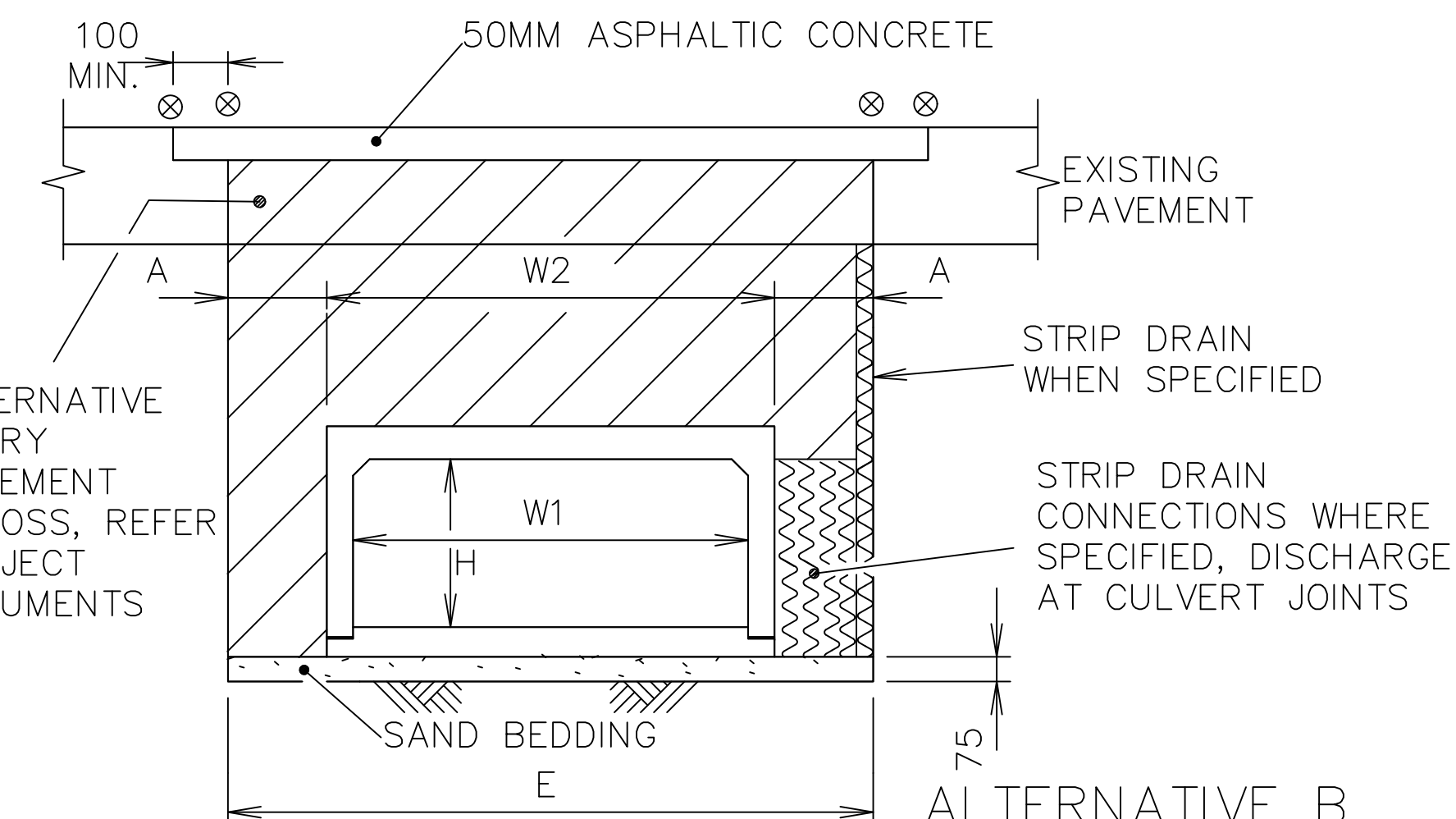
NUMBER OF SHEETS
35
SHEET NUMBER
27
STANDARD DRAWINGS.DWG
SD-D 08

TYPE 1
NATURAL BEDDINGTYPE 2
SAND SURROUNDTYPE 3
SAND BEDDINGTYPE 4
INSITU BASE SLAB

MULTIPLE CULVERTS



ALTERNATIVE A



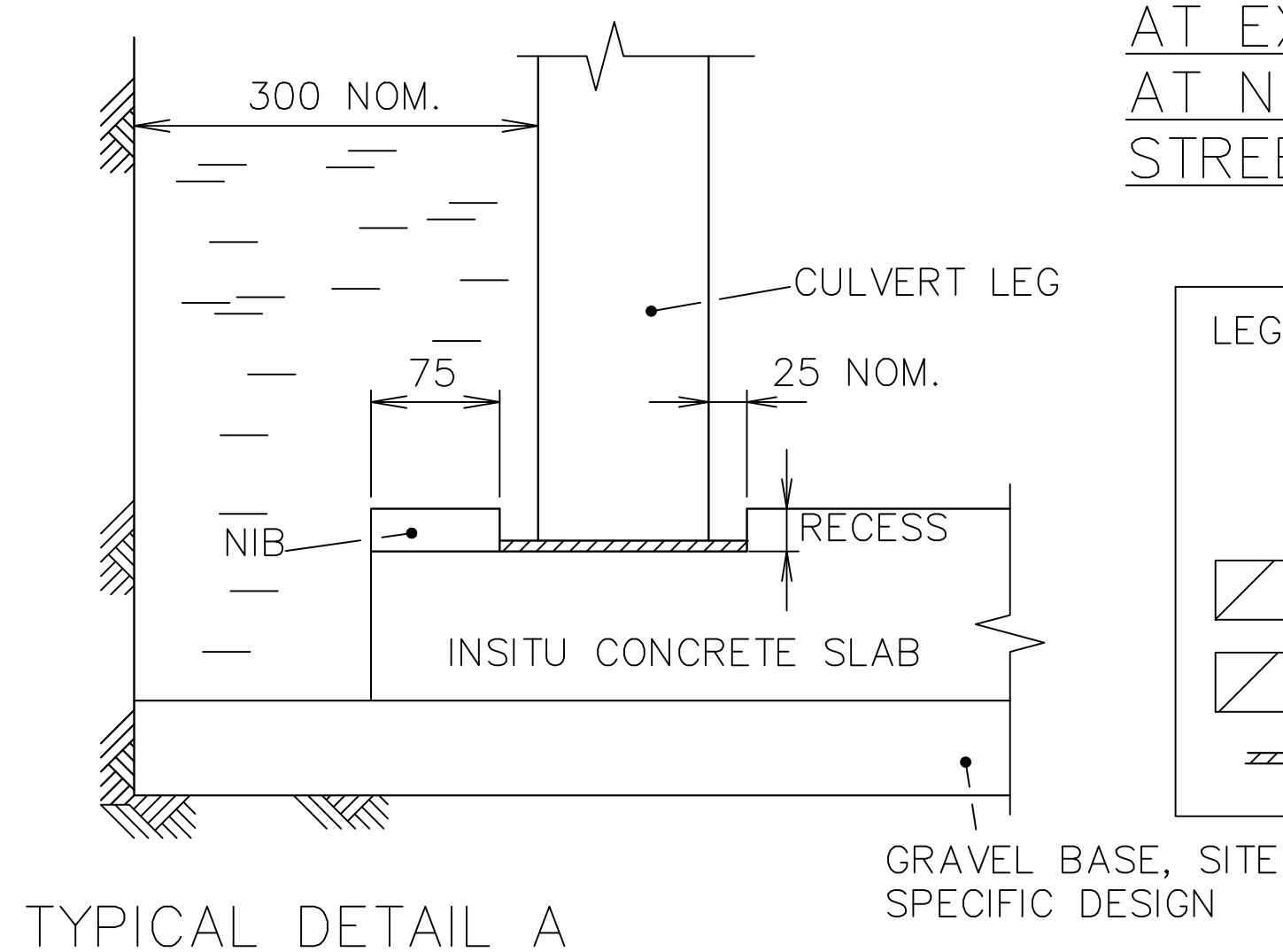
ALTERNATIVE B

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

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

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:


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

	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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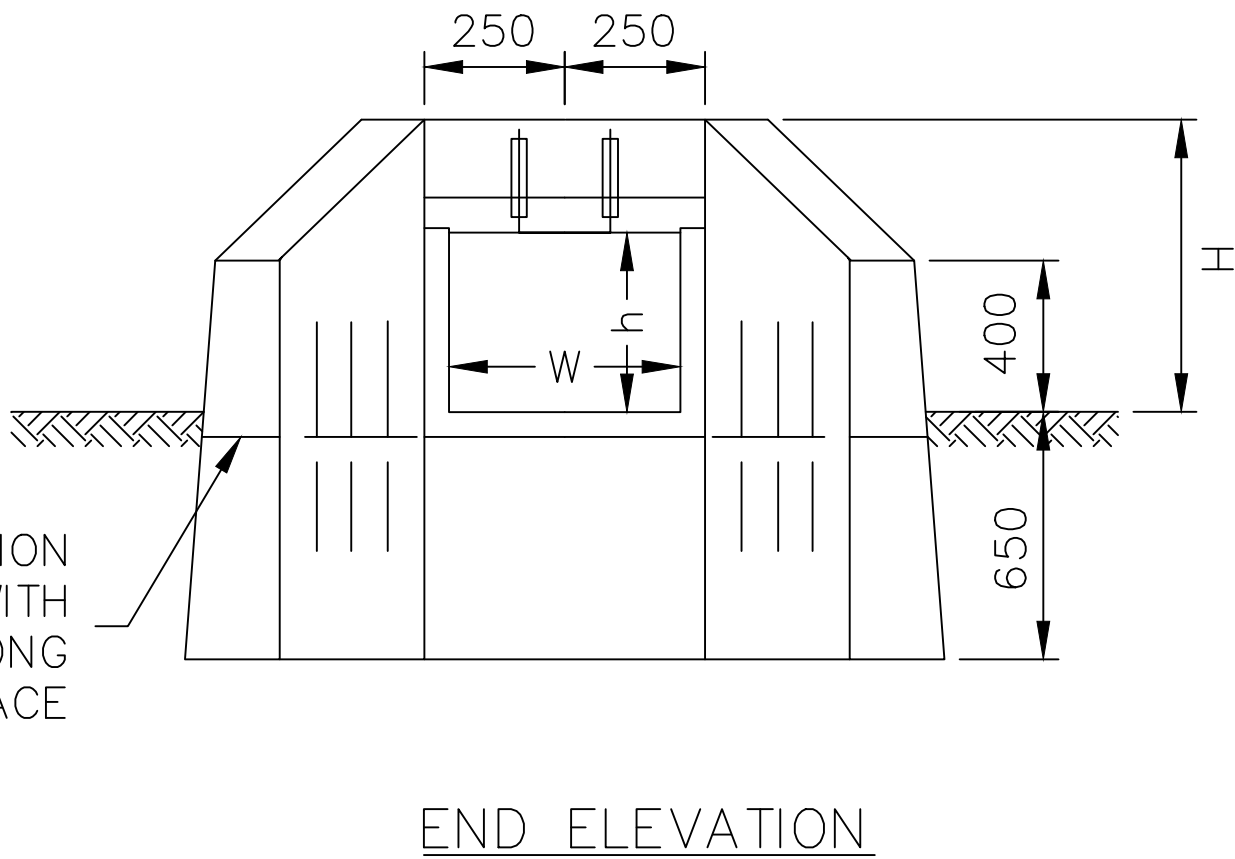
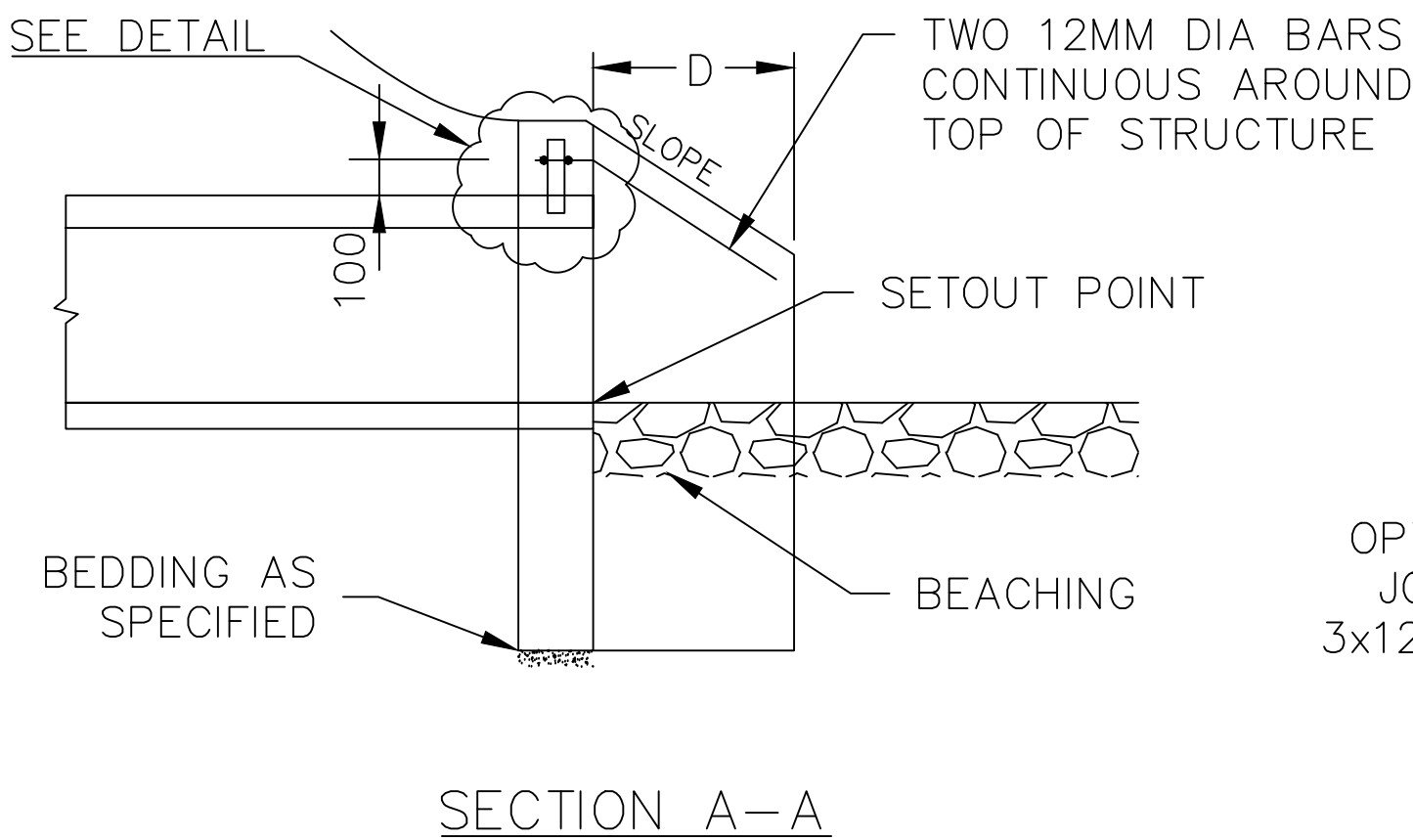
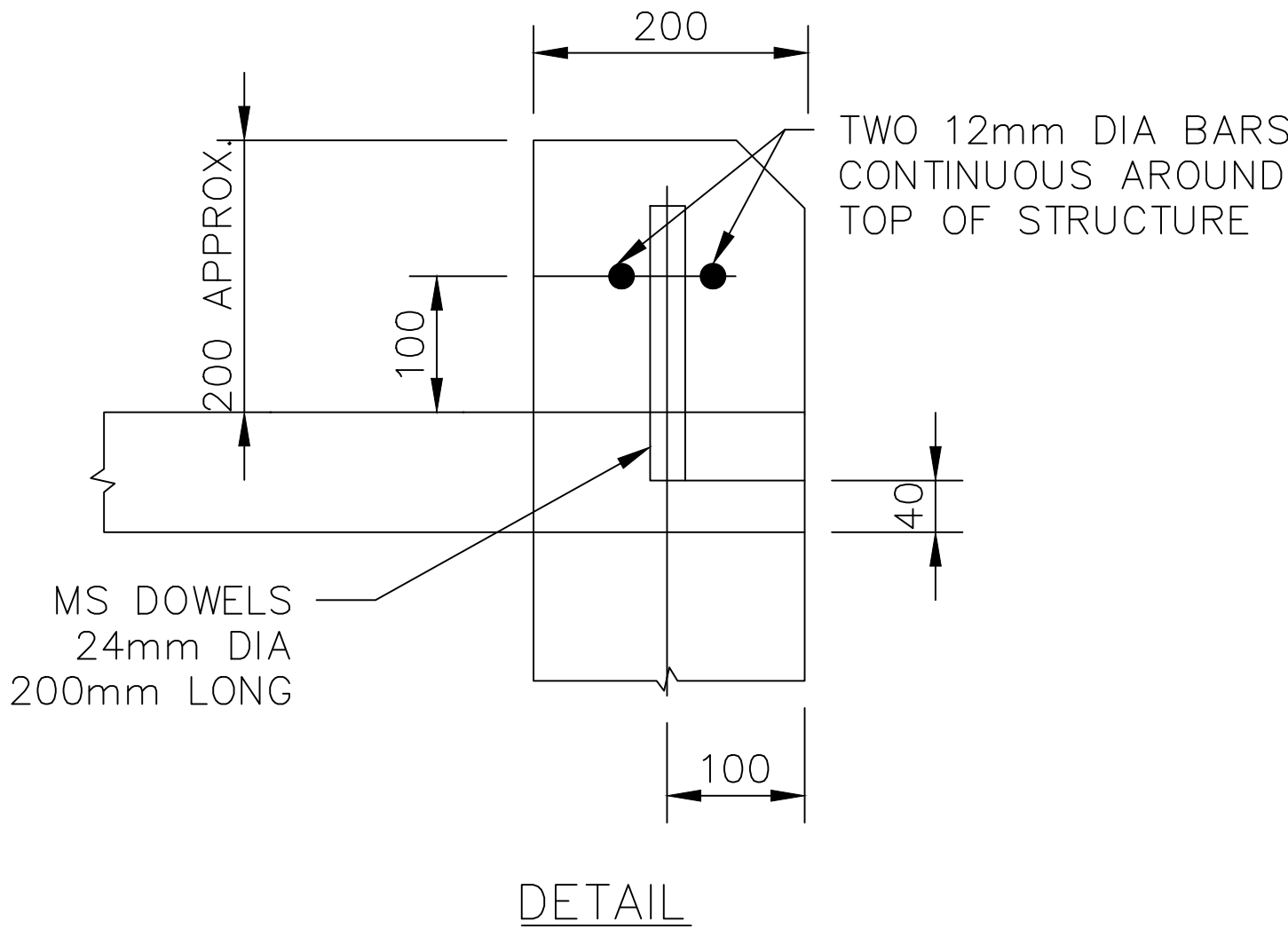
PRECAST BOX CULVERTS
EXCAVATION, BEDDING & BACKFILLING
TITLE4

SAFETY FIRST PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN ON SITE www.dialbeforeyoudig.com.au 	A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 28
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-D 09	


NOM WIDTH (w)	NOM HEIGHT (h)	A ^{XX}	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	714	872	750	2237	1071	1307
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 = Ax A																	

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			



CIVIC CENTRE, 184-194 BOURKE STREET
GOULBURN, NSW-2580
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FAX: (02) 4823 4456

AUSTRALIAN HEIGHT DATUM

AS-1100 STANDARDS

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
DATE: 28/02/2018

MASS CONCRETE WINGWALL

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A1 - SCALE
AS SHOWN

FILE NAME:
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GMC-VER-1
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NUMBER OF SHEETS
35

SHEET NUMBER
29

SD-D 10


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 ³)	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m ³)	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m ³)	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 ³)	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 ³)	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m ³)	REINFORCEMENT BAR (m)	CONCRETE VOLUME (m ³)	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:
- 1. REFER TO: SD-D 08 FOR CULVERT DETAILS.
 - 2. ALL REINFORCEMENT BARS ARE 12MM DIAMETRE.
 - 3. 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	
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ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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OPERATIONS

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MASS CONCRETE WINGWALL

QUANTITIES



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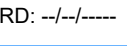
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AS SHOWN

NUMBER OF SHEETS
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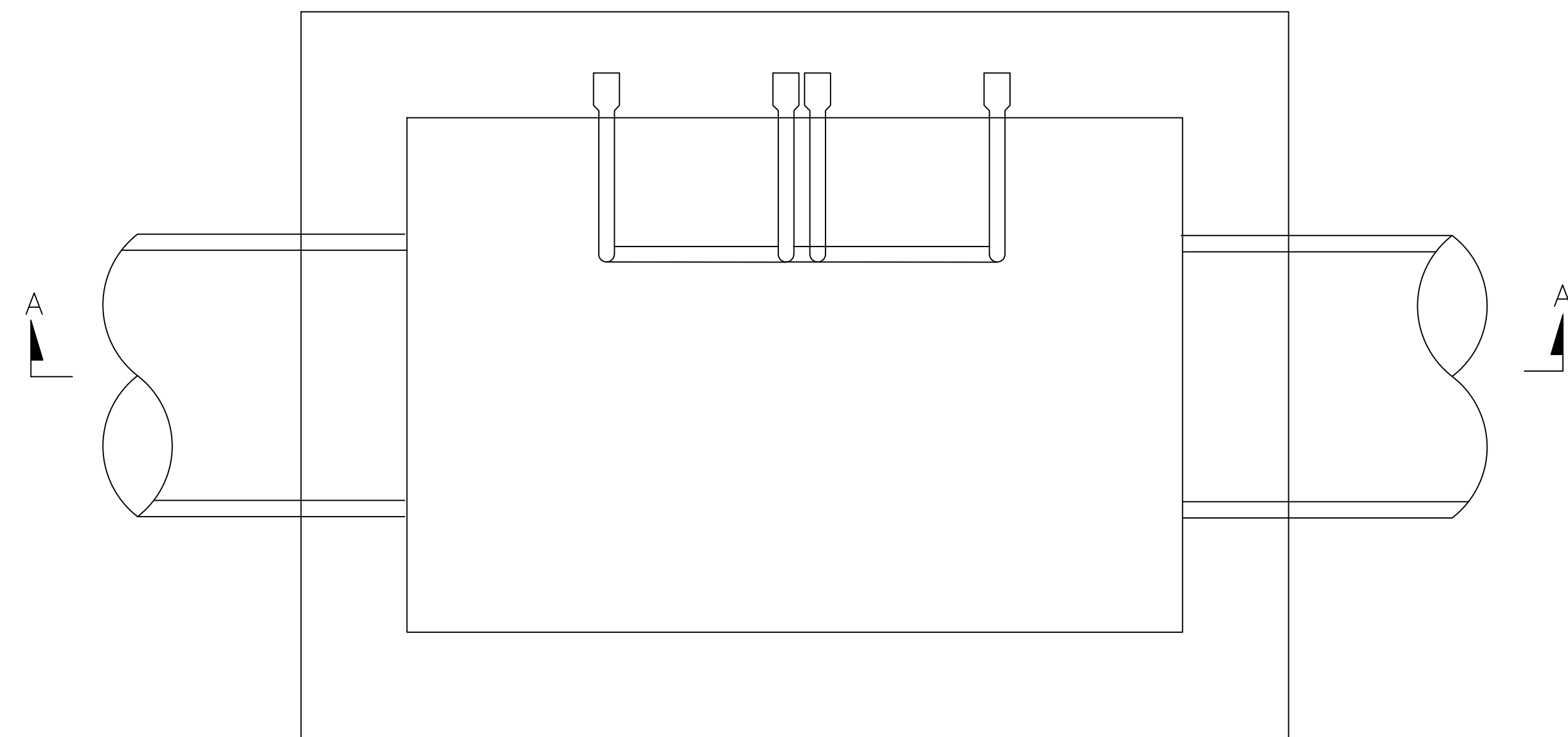
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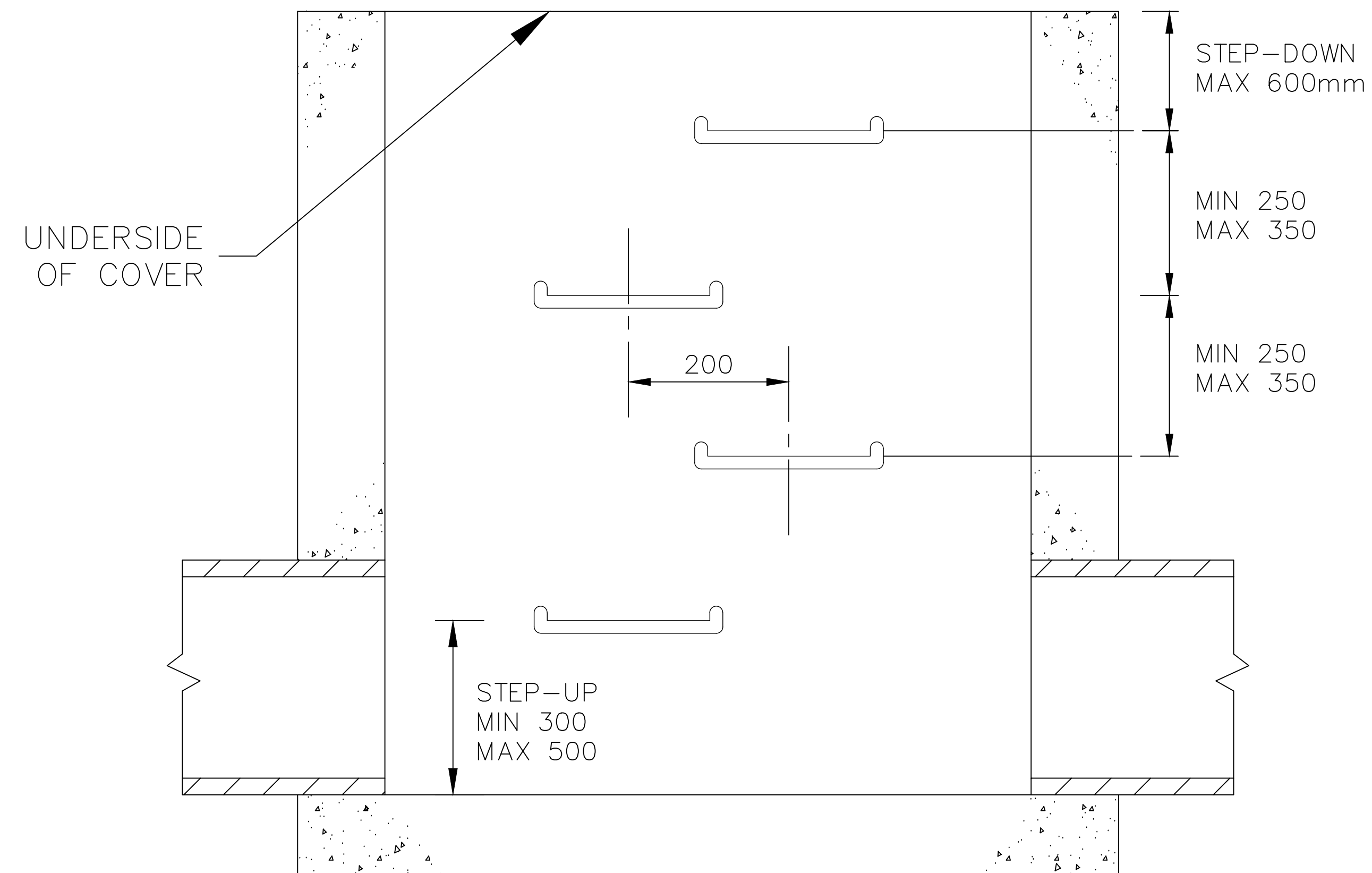
REVISION
GMC-VER-1

RD: 

SD-D 11



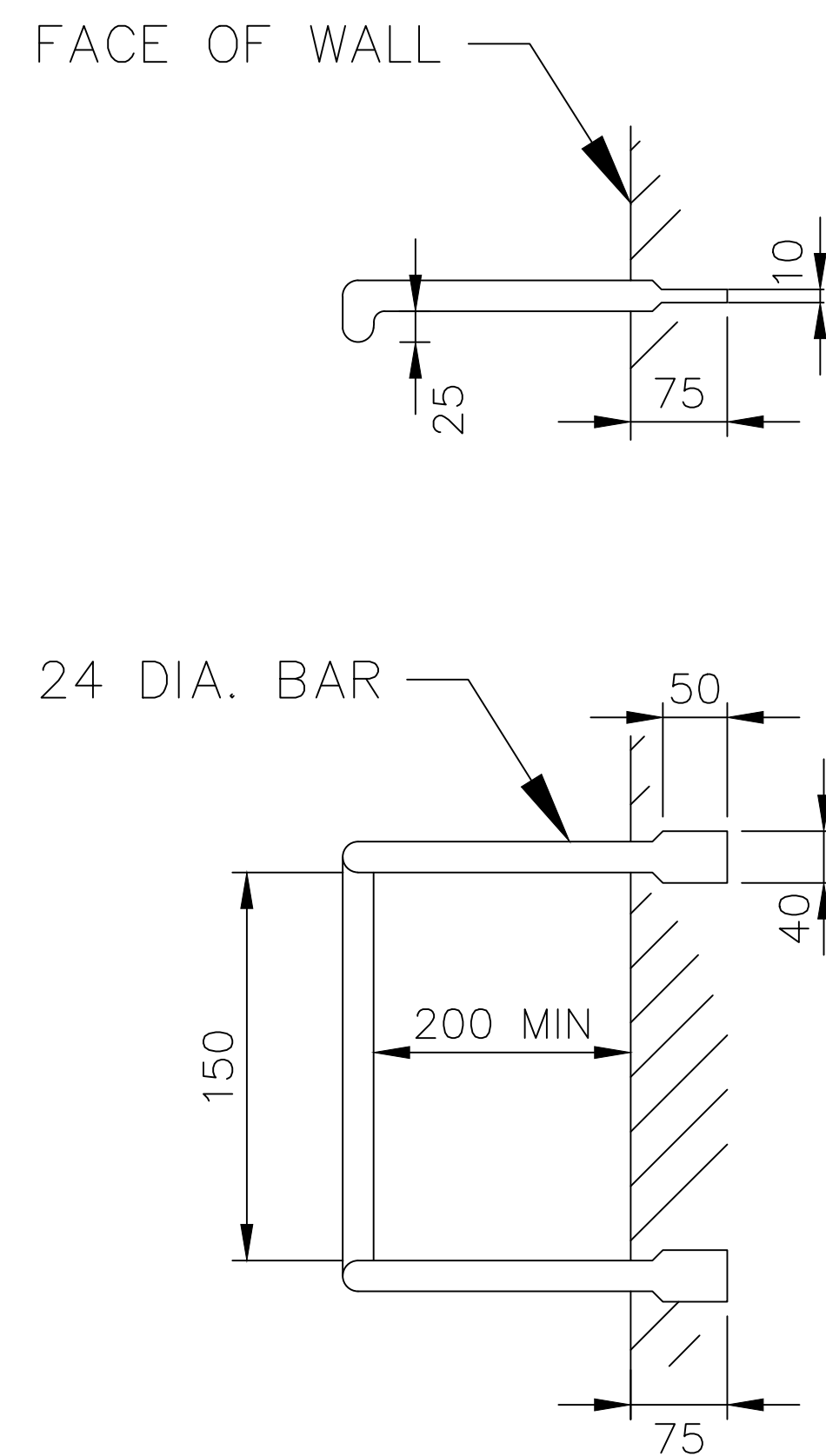
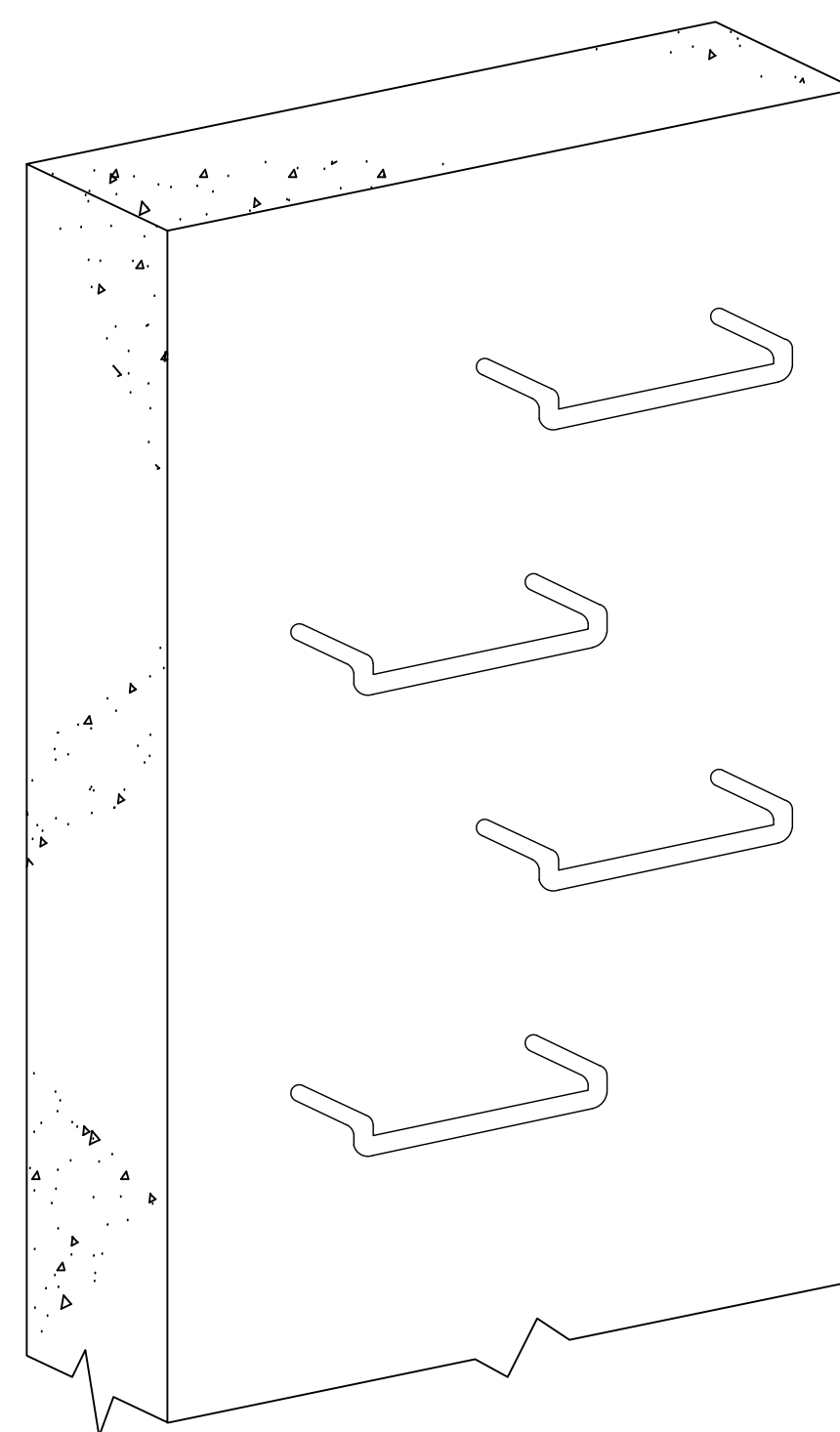
PLAN




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


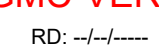


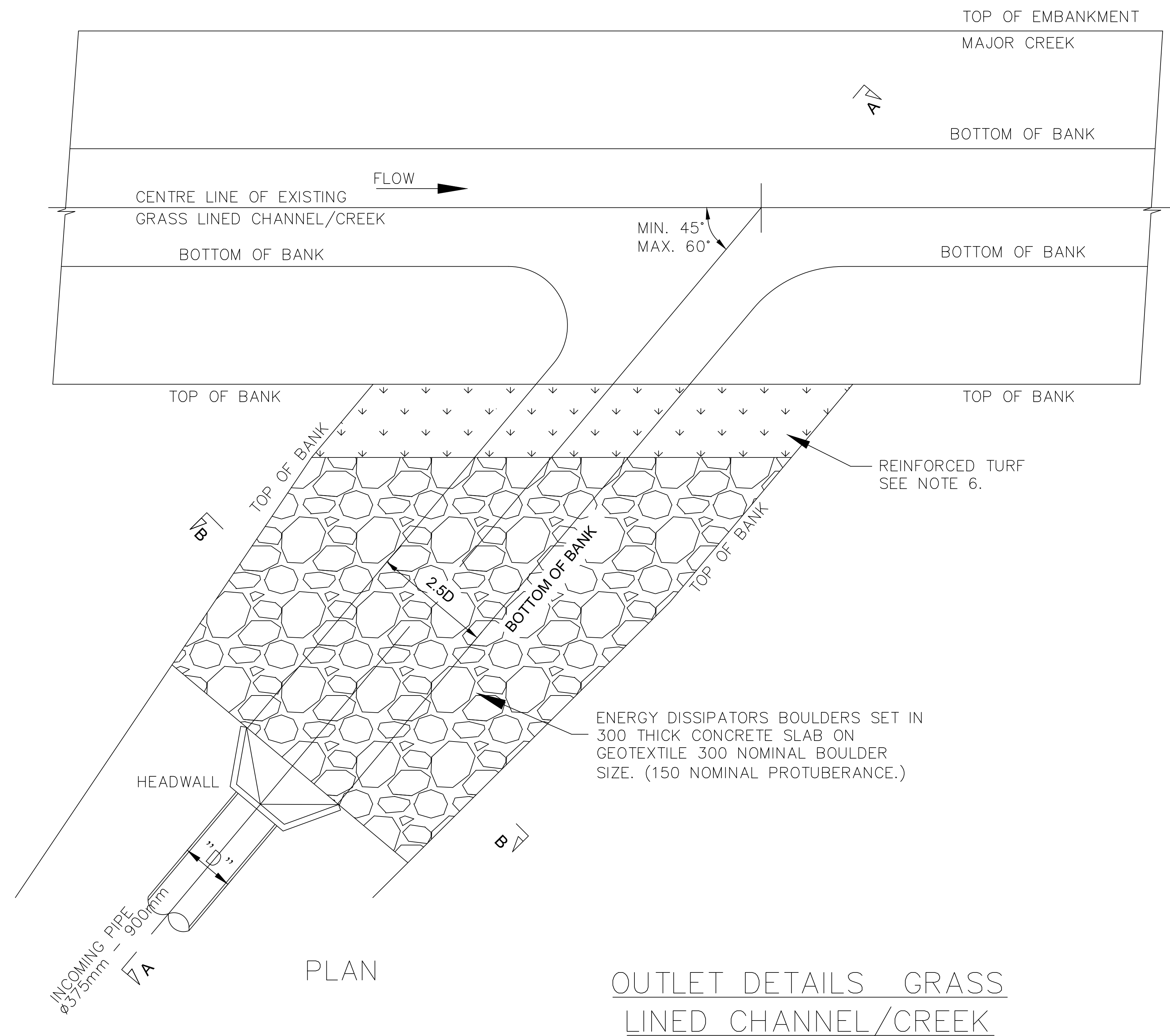
INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
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DESIGN REVIEWED	T.DIMEC	14/07/2009	
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DATE: 28/02/2018

STEP IRON DETAILS

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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	SD-D 12	
RD: 			



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			



CIVIC CENTRE, 184-194 BOURKE STREET
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AUSTRALIAN HEIGHT DATUM

AS-1100 STANDARDS

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OPERATIONS

DATE: 28/02/2018

OUTLET DETAILS GRASS LINED CHANNEL



A1 - SCALE
AS SHOWN

NUMBER OF SHEETS
35

SHEET NUMBER
32

FILE NAME:

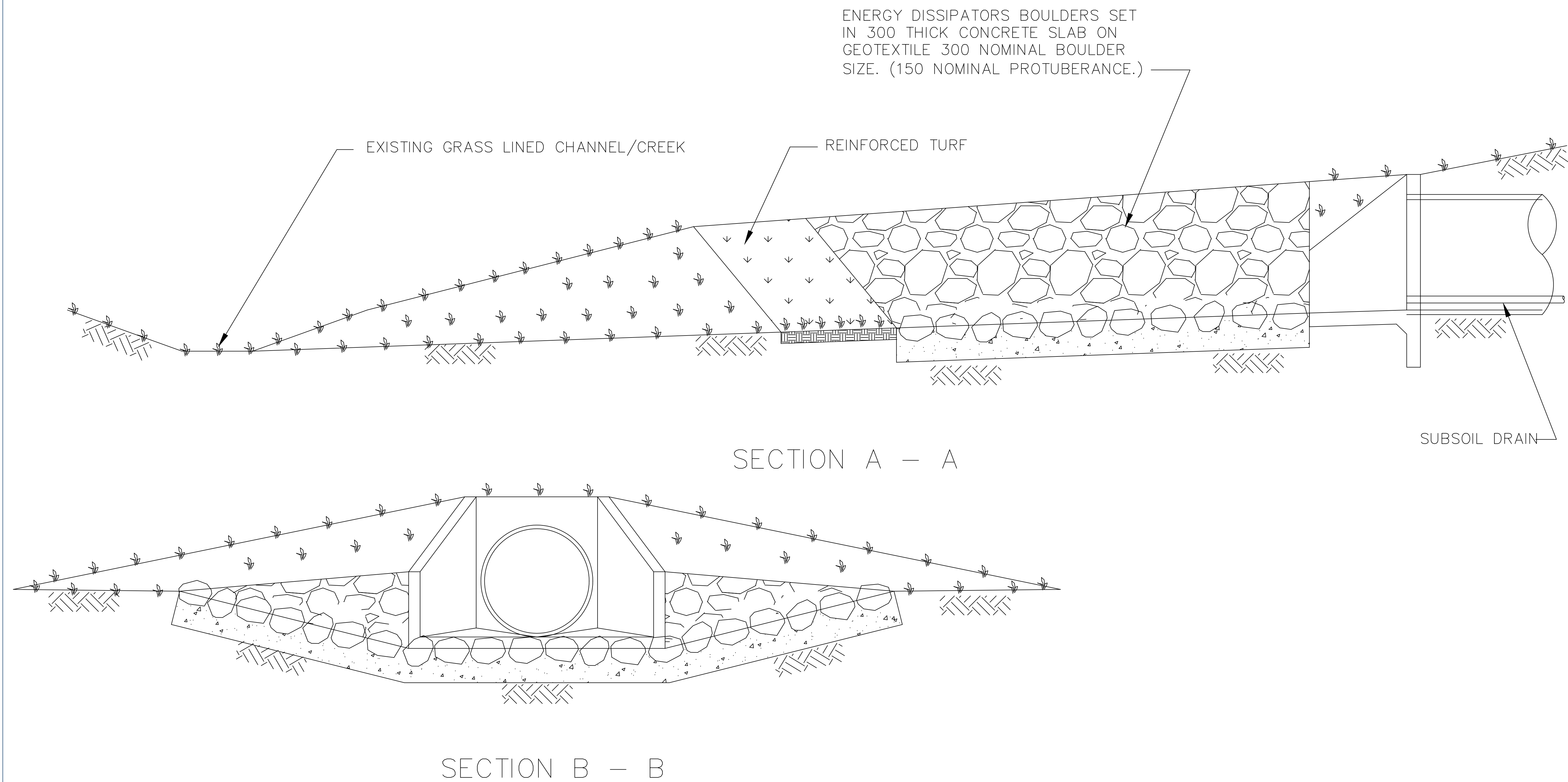
STANDARD DRAWINGS.DWG

REVISION

GMC-VER-1

RD: *[Signature]*

SD-D 13 A



OUTLET DETAILS GRASS LINED CHANNEL

INDEX	NAME	DATE	AMENDMENTS
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DESIGNED & DRAFTED	T.DIMEC	08/05/2012	
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SHEET NUMBER
33

FILE NAME:

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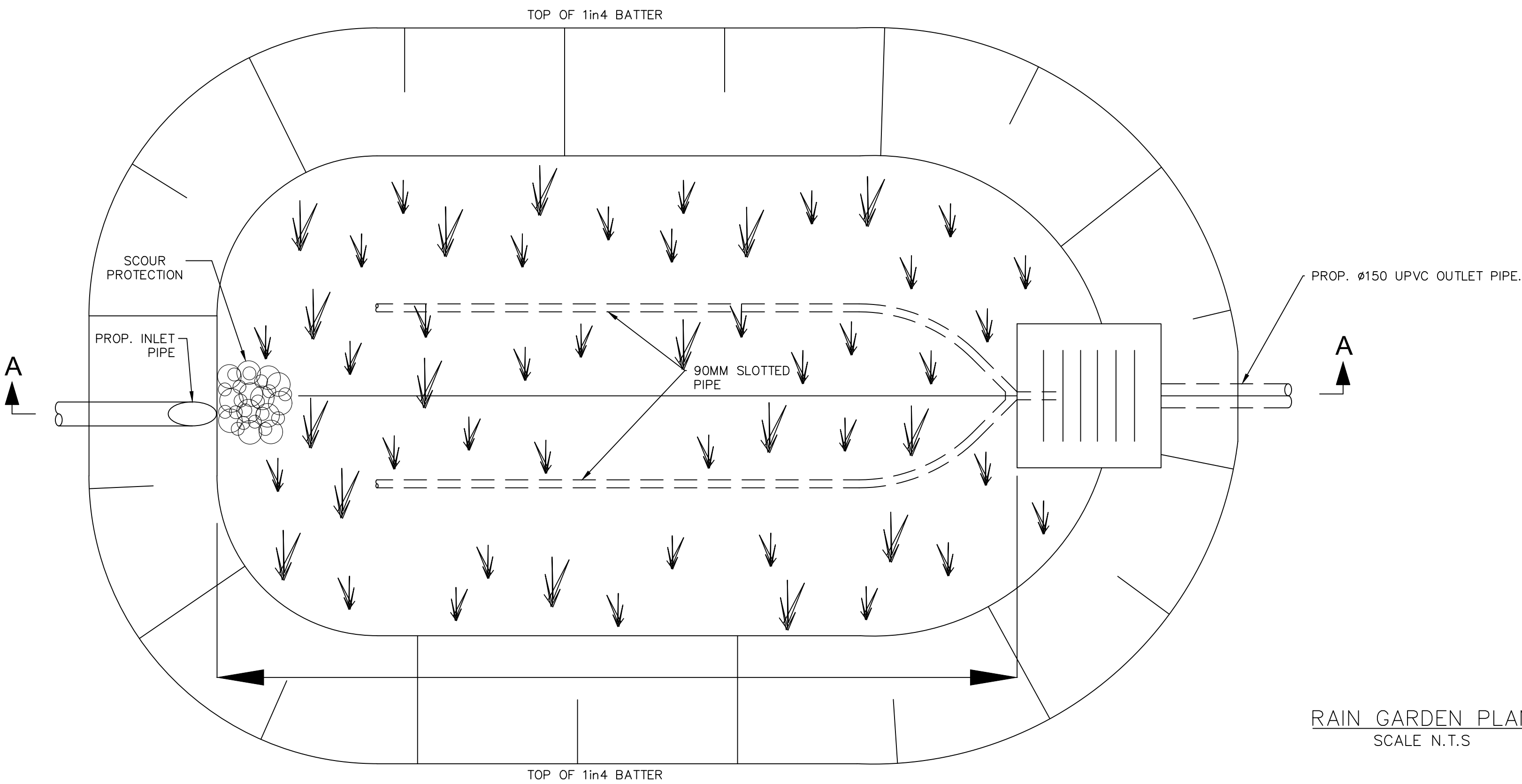
REVISION
GMC-VER-1

RD: *[Signature]*

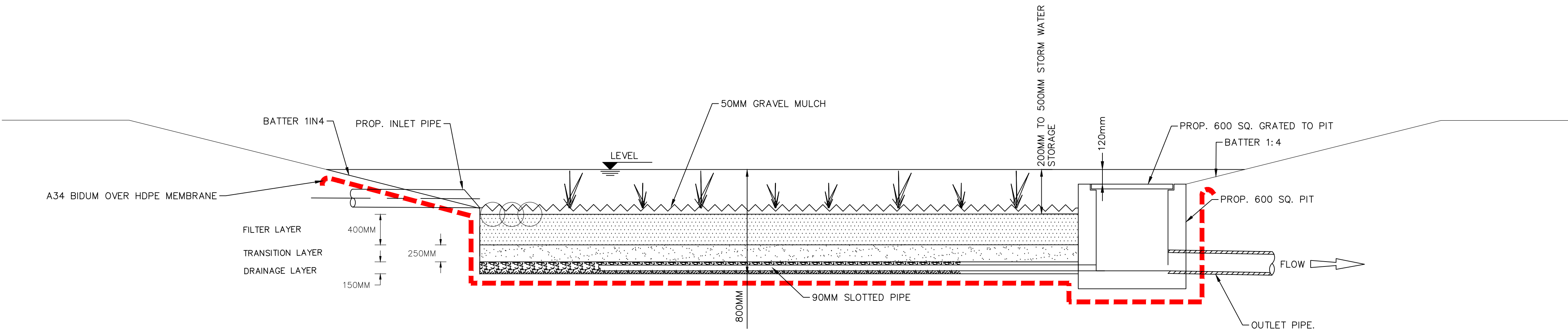
SD-D 13 B

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 METRE CONSISTING OF CAREX SP WITHIN THE RAIN GARDEN & JUNCUS SP AROUND THE PERIMETER.
7. BIDUM A34 OVER A HDPE MEMBRANE TO BE PLACED UNDER RAIN GARDEN WHERE THE RAIN GARDEN IS IN STEEP TERRAIN OR ADJACENT TO PRIVATE PROPERTY
8. SUBSOIL PIPES TO BE EVENLY SPACED AT $\frac{1}{3}$ WIDTH UP TO A MAXIMUM DISTANCE APART OF 1 METER. RAIN GARDENS WITH WIDTH GREATER THAN 3M WILL REQUIRE ADDITIONAL PIPES




RAIN GARDEN PLAN
SCALE N.T.S



SECTION A-A
SCALE N.T.S

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
DESIGNED & DRAFTED	T.DIMEC	APRIL 2011	
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RAIN GARDEN

TYPICAL DOMESTIC RAIN GARDEN

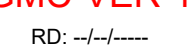
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34

SD-D 14 A

BIORETENTION SYSTEMS ARE FULLY VEGETATED FILTERS. THE ABILITY OF A BIORETENTION SYSTEM TO DETAIN AND INFILTRATE INCOMING STORMWATER IS A FUNCTION OF THE FILTER SURFACE AREA, EXTENDED DETENTION (PONDING) DEPTH, INFILTRATION RATE OF THE SURFACE AND THE HYDRAULIC CONDUCTIVITY OF THE FILTER MEDIA.

GOULBURN MULWAREE COUNCIL REQUIRES 'SATURATED SYSTEMS'. THE CONFIGURATION OF THE OUTLET IS SUCH THAT THE SYSTEM RETAINS WATER IN A 'SATURATED' ZONE. THIS IMPROVES WATER TREATMENT THROUGH BETTER PLANT SURVIVAL. THE RECOMMENDED MINIMUM DEPTH OF THIS ZONE IS 400mm.

MEDIA PROPERTIES

A TYPICAL BIORETENTION SYSTEM HAS 3 LAYERS; A DRAINAGE LAYER, A TRANSITION LAYER AND THE FILTER MEDIA LAYER. GEOFABRIC IS NOT TO BE PLACED BETWEEN THE LAYERS OF MEDIA, OR SOCKS PLACED ON SUB-SOIL DRAINAGE.

THE MEDIA SHOULD BE PLACED IN LIFTS NO DEEPER THAN 250mm THICK AND LIGHTLY COMPACTED. A MAXIMUM OF ONE PASS WITH A SMALL VIBRATING COMPACTOR OR EQUIVALENT. EQUIPMENT SHOULD NOT BE USED FOR MEDIA PLACEMENT THAT WOULD INADVERTANTLY COMPACT THE LAYERS AND AFFECT THE INFILTRATION RATES OF WATER THROUGH THE MEDIA.

FILTER MEDIA SPECIFICATIONS

THE FILTER MEDIA IS THE TOP LAYER AND THE GROWING MEDIUM. MEDIA SHALL BE IN ACCORDANCE WITH THE PROPERTIES LISTED IN APPENDIX C ADOPTION GUIDELINES FOR STORMWATER BIOFILTRATION SYSTEMS (CRC FOR WSC, 2015). AS MODIFIED BELOW:

DEPTH	500MM TYP BUT VARIES DEPENDING ON SYSTEM SCALE AND SIZE																											
MATERIAL	EITHER AN ENGINEERED MATERIAL – A WASHED, WELL GRADED SAND – OR NATURALLY OCCURRING SAND, A MIXTURE IS PERMITTED. IT SHOULD BE FREE OF RUBBISH AND WEEDS AND NOT BE HYDROPHOBIC. AN APPROVED FILTER MEDIA IS THE (M165) MEDIA FROM BENEDICT SAND AND GRAVEL OR APPROVED EQUIVALENT																											
HYDRAULIC CONDUCTIVITY	A TARGET, AS BUILT OR IN-SITU SATURATED HYDRAULIC CONDUCTIVITY RATE OF THE FILTER MEDIA SHALL BE A MINIMUM OF 100mm/Hr. THE EX-SITU (EX BIN) RATE SHALL BE A MINIMUM OF 250mm/Hr AND VERIFIED, WITH INDEPENDENT NATA REGISTERED LABORATORY TEST DATA NO LONGER THAN ONE MONTH OLD. FOR ALL MUSIC MODELS ADOPT THE IN-SITU RATE OF 100mm/Hr. TESTING OF MEDIA SHALL CONFORM TO ASTM-F1815-11. EVERY 100m3 OF MEDIA SHALL BE TESTED FOR COMPLIANCE WITH ALL SPECIFIED CRITERIA IN THIS TABLE																											
PH	5.5 – 7 AS SPECIFIED FOR "NATURAL SOILS AND BLENDS" (PH : IN WATER)																											
ELECTRICAL CONDUCTIVITY	<1.2 DS/M AS SPECIFIED FOR "NATURAL SOILS AND BLENDS"																											
NUTRIENT CONTENT	LOW NUTRIENT CONTENT TOTAL NITROGEN (TN) < 1000 mg/kg NITROGEN DRAWDOWN > 0.5 (NDI) AVAILABLE PHOSPHATE (COLWELL) < 80mg/kg ORTHOPHOSPHATE < 40 mg/kg (IN BOTH STANDARD OR SATURATED SYSTEMS)																											
GRADING OF PARTICLES	SMOOTH GRADING – ALL PARTICLE SIZE CLASSES SHOULD BE REPRESENTED ACROSS SIEVE SIZES FROM THE 0.05mm TO THE 3.4mm SIEVE AS PER ASTM F 1632-03 (2010). <table><tr><td></td><td>ACCEPTABLE RANGE (%W/W)</td><td>RETAINED (< 0.05 mm)</td></tr><tr><td>CLAY & SILT</td><td>< 3%</td><td>(0.05 – 0.15 mm)</td></tr><tr><td>VERY FINE SAND</td><td>5–30%</td><td>(0.15 – 0.25 mm)</td></tr><tr><td>FINE SAND</td><td>10–30%</td><td>(0.25 – 0.5 mm)</td></tr><tr><td>MEDIUM SAND</td><td>40–60%</td><td>(0.5 – 1.0 mm)</td></tr><tr><td>COARSE SAND</td><td>< 25%</td><td>(1.0 – 2.0 mm)</td></tr><tr><td>VERY COARSE SAND</td><td>0–10%</td><td>(2.0 – 3.4 mm)</td></tr><tr><td>FINE GRAVEL</td><td>< 3%</td><td></td></tr><tr><td>ORGANIC CONTENT</td><td>< 5%</td><td></td></tr></table>		ACCEPTABLE RANGE (%W/W)	RETAINED (< 0.05 mm)	CLAY & SILT	< 3%	(0.05 – 0.15 mm)	VERY FINE SAND	5–30%	(0.15 – 0.25 mm)	FINE SAND	10–30%	(0.25 – 0.5 mm)	MEDIUM SAND	40–60%	(0.5 – 1.0 mm)	COARSE SAND	< 25%	(1.0 – 2.0 mm)	VERY COARSE SAND	0–10%	(2.0 – 3.4 mm)	FINE GRAVEL	< 3%		ORGANIC CONTENT	< 5%	
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TRANSITION LAYER (MIDDLE) SPECIFICATION

THE PURPOSE OF THE TRANSITION LAYER IS TO PREVENT THE MIGRATION OF THE FILTER MEDIA INTO THE DRAINAGE LAYER. IT CREATES A LAYER BETWEEN THE FILTER MEDIA AND THE DRAINAGE LAYER. THE LAYER DEPTH IS TO BE A MIN OF 250mm THICK, IN A SATURATED SYSTEM.

THE MATERIAL MUST BE CLEAN, WELL GRADED SAND/COARSE MATERIAL CONTAINING LITTLE OR NO FINES. USE OF WELL WASHED RECYCLED GLASS IS ACCEPTABLE. AN INDICATIVE PARTICLE SIZE DISTRIBUTION IS BETWEEN 0.5mm AND 1.4mm. FINE PARTICLE CONTENT <2%. IN ADDITION TO BRIDGING CRITERIA, THE D15 (TRANSITION) ≥ D15 (FILTER) x 5, THIS CRITERIA ENSURES GREATER HYDRAULIC CONDUCTIVITY OF THE TRANSITION LAYER THAN THE MEDIA.

THE CONTRACTOR SHALL ARRANGE FOR TESTING OF THE PSD & COMPLIANCE WITH BRIDGING CRITERIA & HYDRAULIC CONDUCTIVITY OF A RATE OF 1 TEST PER 1000m2 OF FILTER MEDIA AREA.

DRAINAGE LAYER SPECIFICATION

THIS LAYER COLLECTS STORES AND CONVEYS TREATED STORMWATER INTO A SLOTTED COLLECTION PIPE BEDDED INTO THE DRAINAGE LAYER. IT CONSISTS OF A CLEAN GRAVEL 5–7mm WASHED SCREENINGS (NOT SCORIA). THE LAYER DEPTH SHALL MAINTAIN A MINIMUM 50mm COVER OVER THE SUB SURFACE DRAINAGE PIPE. RECYCLED CONCRETE OR BRICK PRODUCTS WILL NOT BE ACCEPTED.

BRIDGING CRITERIA AS FOLLOWS APPLIES: THE D15 (DRAINAGE LAYER) ≤ 5 x D85 (TRANSITION LAYER) HYDRAULIC CONDUCTIVITY CRITERIA APPLIES AS FOLLOWS: THE D15 (DRAINAGE LAYER) ≥ D15 (TRANSITION) x 5

THE CONTRACTOR SHALL ARRANGE FOR TESTING OF THE PSD & COMPLIANCE WITH BRIDGING CRITERIA & HYDRAULIC CONDUCTIVITY OF A RATE OF 1 TEST PER 1000m2 OF FILTER MEDIA AREA & AND MINIMUM OF 1 TEST.

SUB SURFACE DRAINAGE PIPES

SYSTEMS > 60m LONG NEED INTERMEDIATE FLUSHING POINTS AND RISERS. THE PIPES WITHIN THE BIORETENTION SYSTEM SHOULD BE A MINIMUM 90mm (UNO) DIAMETER UPVC SLOTTED PIPE (CONSISTENT WITH AS/NZS 1254) WITH MINIMUM 1,500mm²OPENINGS/M. JOINTS TO BE RUBBER RING JOINT, BENDS SHOULD BE 45° TO ENSURE THAT THE PIPE CAN BE FLUSHED. SLOTS SHALL BE A MAXIMUM OF 4MM WIDE.

CORRUGATED PLASTIC PIPE (I.E. 'AG' PIPE) IS NOT ACCEPTABLE DUE TO THE RISK OF COMPRESSION FAILURE AND ROOT PENETRATION. THE PIPES SHALL BE:

- SPACED AT A MAXIMUM OF 1m CENTRES.
- DESIGNED TO CONVEY A MINIMUM FLOW OF 4.45L/S/100m2 OF FILTER AREA. THIS WAS CALCULATED USING DARCY'S LAW AND ASSUMED EDD OF 0.3m AND FILTER MEDIA DEPTH OF 0.5m AND KSAT OF 100mm/Hr.

FOR LARGE SYSTEMS, THE STANDARD DRAWINGS ADOPT DIA 150mm PIPES SPACED AT 1m CENTRES WHICH MEETS THIS CRITERIA. FOR SMALLER SYSTEMS DIA 90mm PIPES MY BE USED SUBJECT TO CONFIRMATION THE HGL REMAINS BELOW THE FILTER MEDIA (AT MAXIMUM DESIGN FLOW). HGL CALCULATIONS SHALL CONSIDER DEPTH OF WEIR FLOW (REFER DETAIL 11 &13 SHEET 8), FRICTION & FITTING LOSSES ALONG THE LENGTH OF THE SUBSOIL DRAINAGE PIPE. ASSUME 50% OF THE DESIGN FLOW CONVEYED AT MID POINT OF PIPE.

LINERS

BIORETENTION SYSTEMS ARE LOCATED ON STEEP SITES OR ADJACENT TO PRIVATE PROPERTY. THE BIORETENTION SYSTEMS ARE TO BE LINED TO RETAIN WATER. LINING CAN INCLUDE CLAY LINING (MIN. 300mm COMPACTED THICKNESS), HDPE WATERTIGHT MEMBRANE 1.5mm THICK, GEOSYNTHETIC CLAY LINERS (I.E. BENTOFIX). THE LINER IS TO EXTEND TO THE SURFACE OF THE MEDIA LAYER WHERE NO BUILDINGS ARE LOCATED NEXT TO THE SYSTEM. IF BUILDINGS ARE LOCATED NEXT TO THE SYSTEM THE LINER IS TO BE ATTACHED 100mm ABOVE THE EXTENDED DETENTION DEPTH TO THE SIDE OF THE BUILDING.

INSTALL A LAYER OF NON-WOVEN NEEDLE PUNCHED GEOFABRIC, SUCH AS BIDIM A34 OR APPROVED EQUIVALENT, UNDER AND OVER HDPE LINERS, TO MINIMISE THE RISK OF DAMAGE CAUSED BY ROCKS IN THE SUBSOIL. ALL HDPE LINERS SHALL HAVE WELDED WATER TIGHT JOINTS.

VEGETATION, SHADING AND MULCHING

PLANTS ARE AN ESSENTIAL COMPONENT OF THE BIORETENTION SYSTEM, REMOVING POLLUTANTS AND MAINTAINING THE HYDRAULIC CONDUCTIVITY OF THE FILTER MEDIA. PLANTS MUST BE CAPABLE OF SURVIVING IN THE FILTER MEDIA ENVIRONMENT (SANDY SOIL, DRY PERIODS WITH INTERMITTENT INUNDATION).

PLANTS IN 50mm TUBES OR HIKO CELLS ARE SUITABLE FOR PLANTING IN BIORETENTION SYSTEMS. ESTABLISHMENT WATERING WILL BE REQUIRED.

PLANTS WILL NEED TO BE PRE-ORDERED EARLY IN THE DESIGN PROCESS TO ENSURE THEY ARE AVAILABLE AT THE DESIRED TIME. ALL PLANTS SHALL BE VIGOROUS AND HEALTHY AND FREE FROM ROOT BALLING AND WEEDS. THE PLANTS SHALL BE POTTED ON IF A DELAY OCCURS.

DESIGNS MUST CONSIDER SUNLIGHT AVAILABILITY FOR THE PLANTS. THE ORIENTATION OR DEPTH OF THE SYSTEM CAN CAUSE EXCESSIVE PLANT SHADING, ESPECIALLY IN WINTER.

BIORETENTION SYSTEMS SHALL NOT BE MULCHED. IF MULCH IS USED ON ADJACENT BATTERS IT SHALL BE PLACED SO THAT IT WILL NOT BE WASHED INTO THE BIORETENTION SYSTEM.

DURING ESTABLISHMENT EROSION OF THE BOTTOM OF ACCESS RAMPS & AROUND ALL SURCHARGE PITS SHALL BE CONTROLLED USING JUTE.

ACCESS

ACCESS FOR MAINTENANCE IS AN ESSENTIAL PART OF SYSTEM DESIGN AND OPERATION. ALL DESIGNS SHALL ENSURE EASE OF ACCESS WITHOUT UNDUE RISK TO MAINTENANCE PERSONNEL. DEEP BIORETENTION SYSTEMS SHALL INCLUDE AN ACCESS SYSTEM THAT ENSURES MAINTENANCE CREWS CAN EASILY AND SAFELY CARRY OUT REMOVAL OF LITTER, DEBRIS, SEDIMENT, REPLANTING, WEEDING AND REPLACEMENT OF THE FILTER MEDIA.


ESTABLISHMENT / STAGING OF WORKS

IT IS RECOMMENDED THAT BIORETENTION SYSTEMS BE ESTABLISHED OFF-LINE WHEREVER POSSIBLE. THIS ALLOWS VEGETATION TO ESTABLISH WITHOUT BEING IMPACTED BY HIGH STORMWATER FLOWS. DESIGN DRAWINGS SHALL SHOW TEMPORARY WORKS FOR THE ESTABLISHMENT PHASE, SUCH AS A TEMPORARY COVER ON AN INLET, TEMPORARY IRRIGATION AND TEMPORARY EROSION CONTROL. REFER TO GOULBURN MULWAREE COUNCIL BIORETENTION SPECIFICATION FOR FURTHER INFORMATION. STAGES AS FOLLOWS:

WHEN INCORPORATING WATER QUALITY CONTROLS IN A SUBDIVISION DEVELOPMENT, COUNCIL REQUIRES A STAGED IMPLEMENTATION. STAGES TYPICALLY INCLUDE:

- DURING BULK EARTHWORKS PHASE A SEDIMENT BASIN IN PLACE OF THE FINAL BIORETENTION.
- FOLLOWING COMPLETION OF BULK EARTHWORKS A SACRIFICIAL BASIN SHOULD BE CONSTRUCTED TO HAVE THE SUBDIVISION CERTIFICATE / LINEN PLANS RELEASED.
- ONCE 90% OF CATCHMENT DEVELOPMENT IS COMPLETE A FULLY FUNCTIONAL BIORETENTION SYSTEM IS MADE OPERATIONAL. THIS IS AT THE DISCRETION OF COUNCIL WHO MAY VARY THIS REQUIREMENT.

INDEX	NAME	DATE	AMENDMENTS
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DESIGNED & DRAFTED	A.SINGH	03/03/2022	
DESIGN REVIEWED	P.NUNN	03/03/2022	
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ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			



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BIORETENTION NOTES



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