

STANDARD DRAWINGS

ROADS

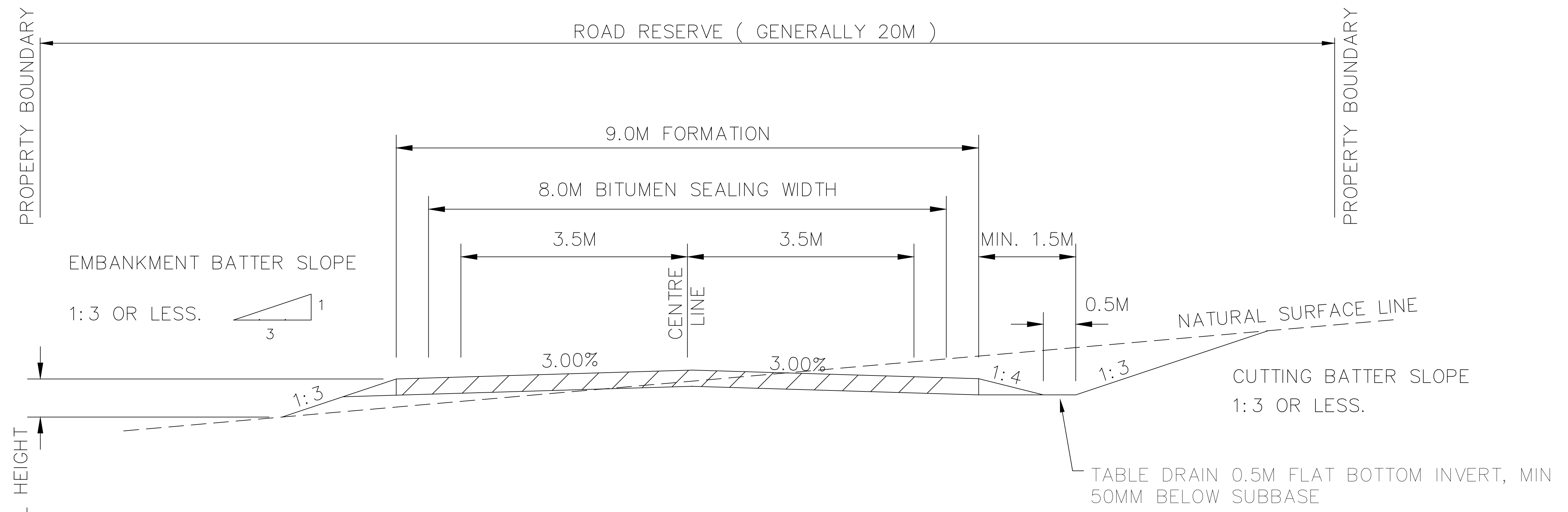
STORMWATER DRAINAGE

NUMBER	TITLE
SD-R 01	RURAL ROAD - TYPICAL CROSS SECTION
SD-R 02	URBAN ROAD - TYPICAL CROSS SECTION
SD-R 03 A & B	SHARED PATH/BICYCLE PATH AND HOLDING RAIL
SD-R 04	STANDARD FOOTPATH 1.2/1.5 M WIDE
SD-R 05	VEHICULAR DRIVEWAY PROFILES
SD-R 06	VEHICLE CROSSING PLAN RESIDENTIAL
SD-R 07	VEHICLE CROSSING PLAN INDUSTRIAL
SD-R 08 A & B	RURAL AND VILLAGE ACCESS OFF A PUBLIC ROAD
SD-R 09	KERB AND GUTTER
SD-R 10	KERB OUTLET
SD-R 11 A & B	KERB RAMPS
SD-R 12	STANDARD SERVICE ALLOCATION FOR PUBLIC UTILITIES IN FOOTPATHS
SD-R 13	TRENCH BACKFILL DETAILS FOR ROAD CROSSING
SD-R 14	STREET NAME PLATE & POST

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



CIVIC CENTRE 184-194 BOURKE STREET, GOULBURN, NSW - 2580.
 LOCKED BAG 22, GOULBURN, NSW - 2580.
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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)
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			
WORK AS EXECUTED			

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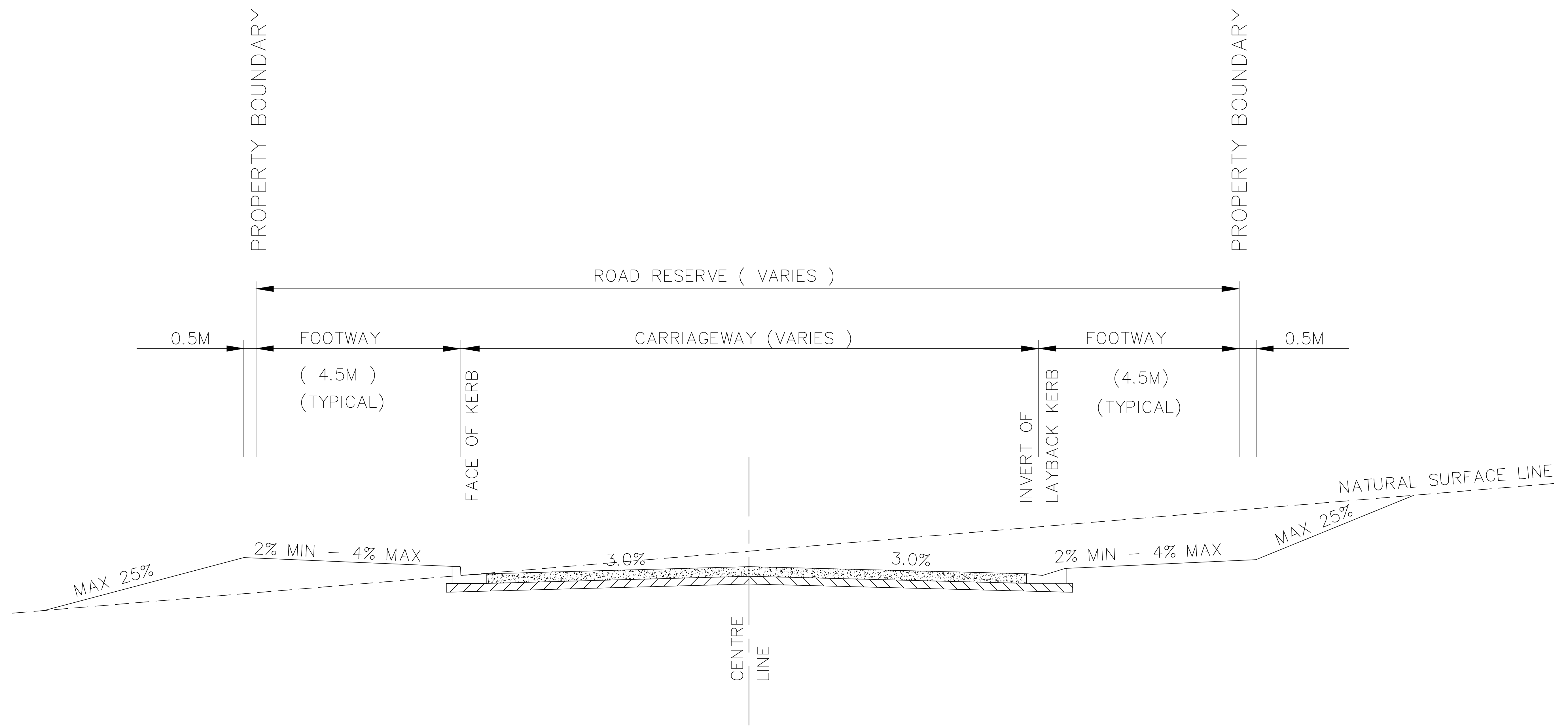
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS
 DATE: 28/02/2018

RURAL 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 35	SHEET NUMBER 1
REVISION GMC-VER-1	FILE NAME: STNADARD DRAWINGS.DWG	
	SD-R 01	

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	
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WORK AS EXECUTED			

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DATE: 28/02/2018

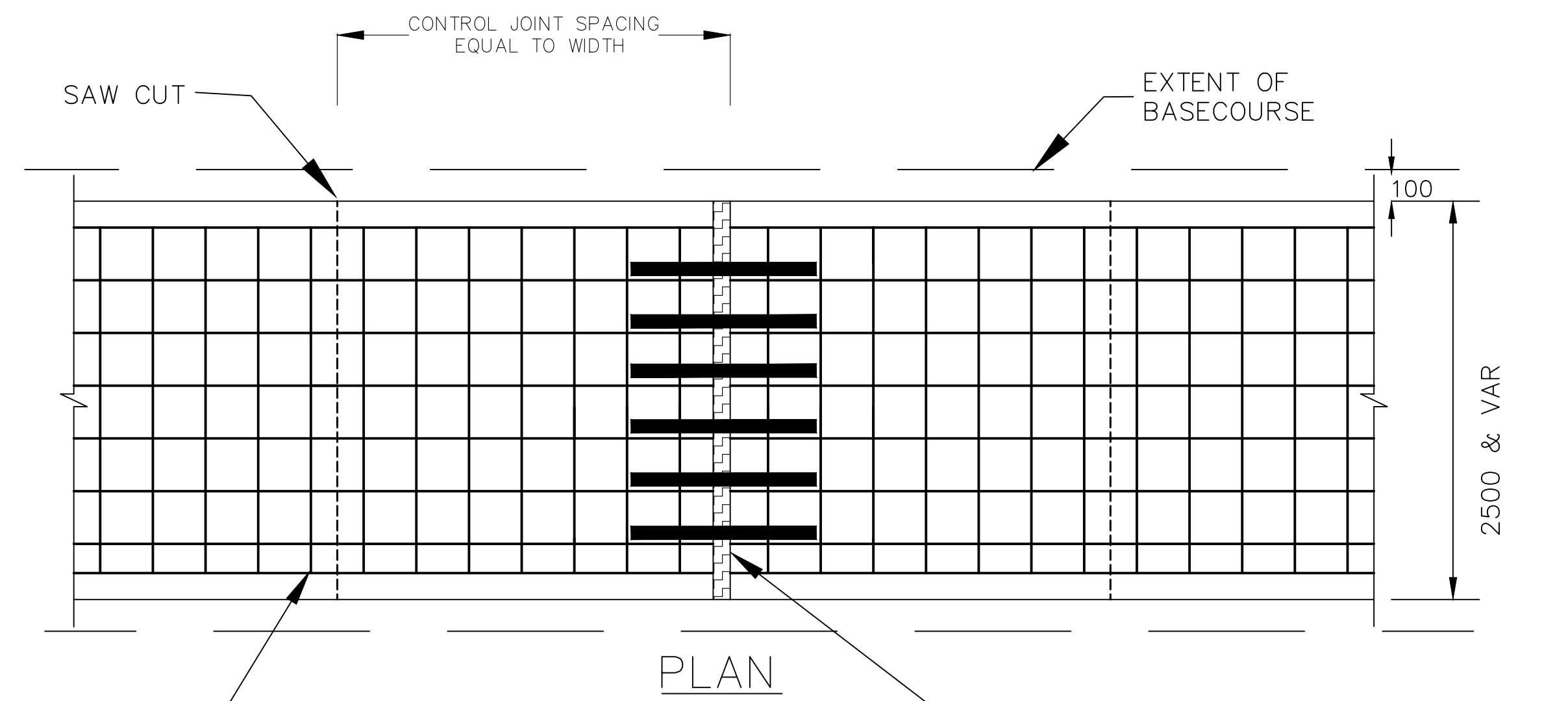
URBAN ROAD
TYPICAL CROSS SECTION

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 2
FILE NAME: STNADARD DRAWINGS.DWG	SD-R 02	
REVISION GMC-VER-1		
RD: -/-/-/-/-		



- 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.

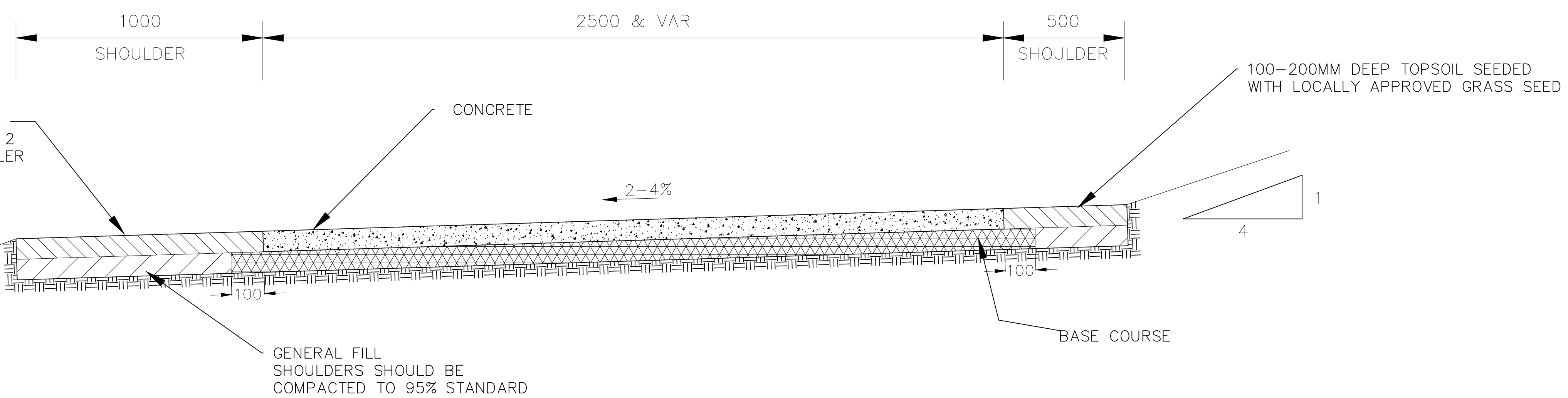
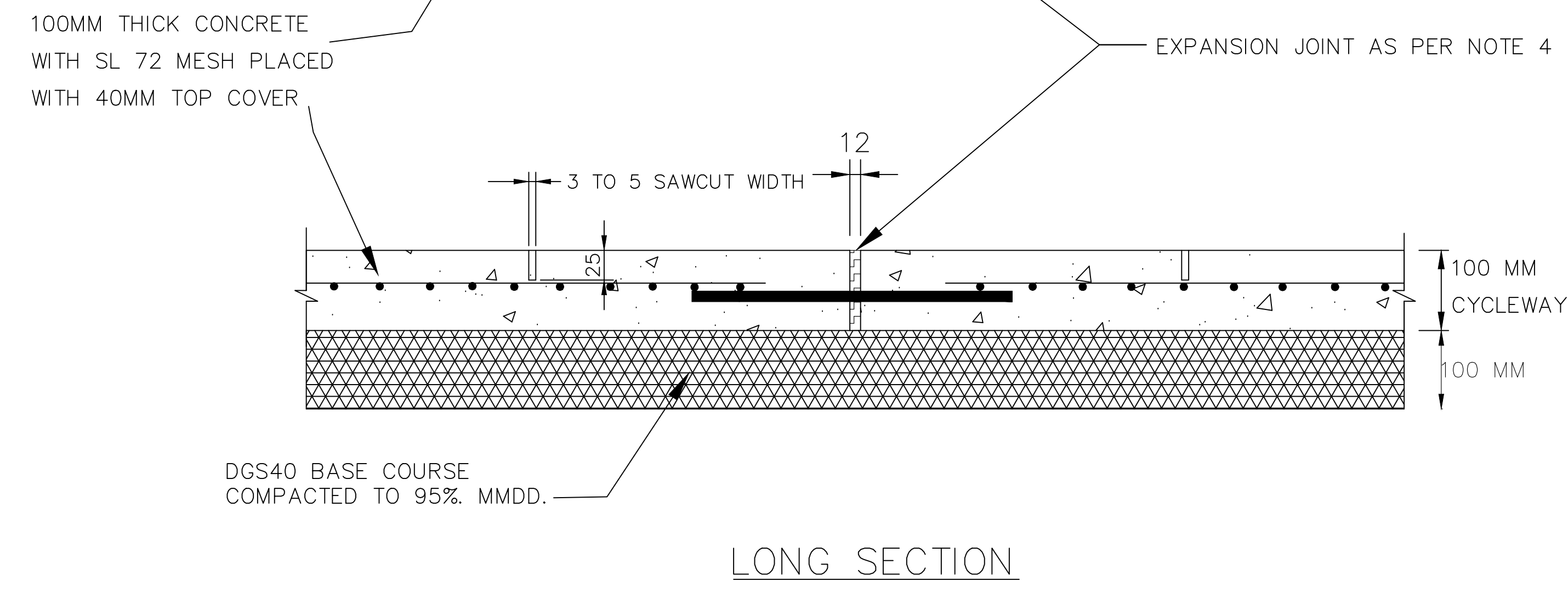
FOOTPATH REINSTATEMENT:

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



CROSS SECTION

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			

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AUSTRALIAN HEIGHT DATUM AS-1100 STANDARDS

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DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 06/01/2021

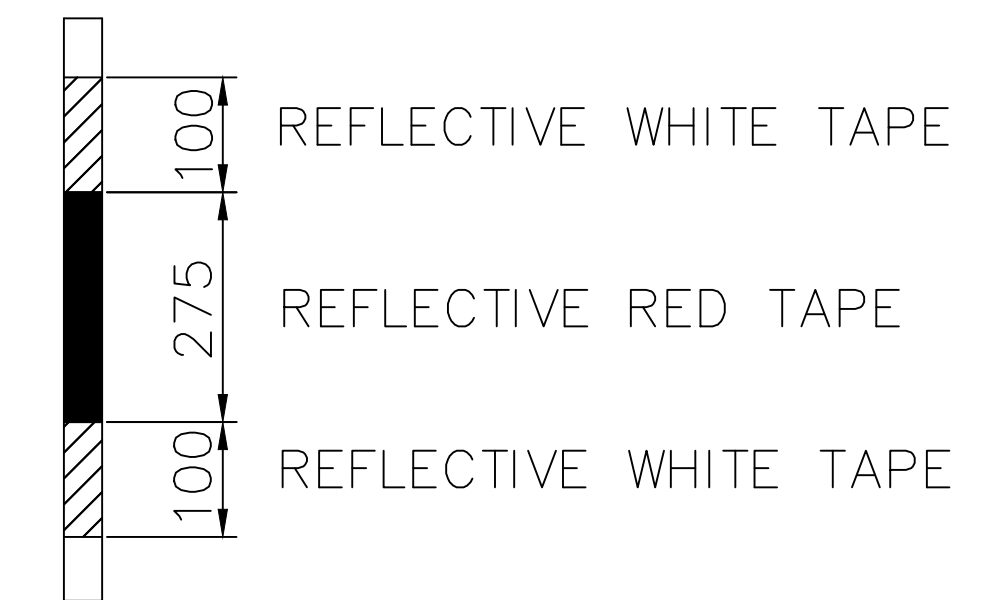
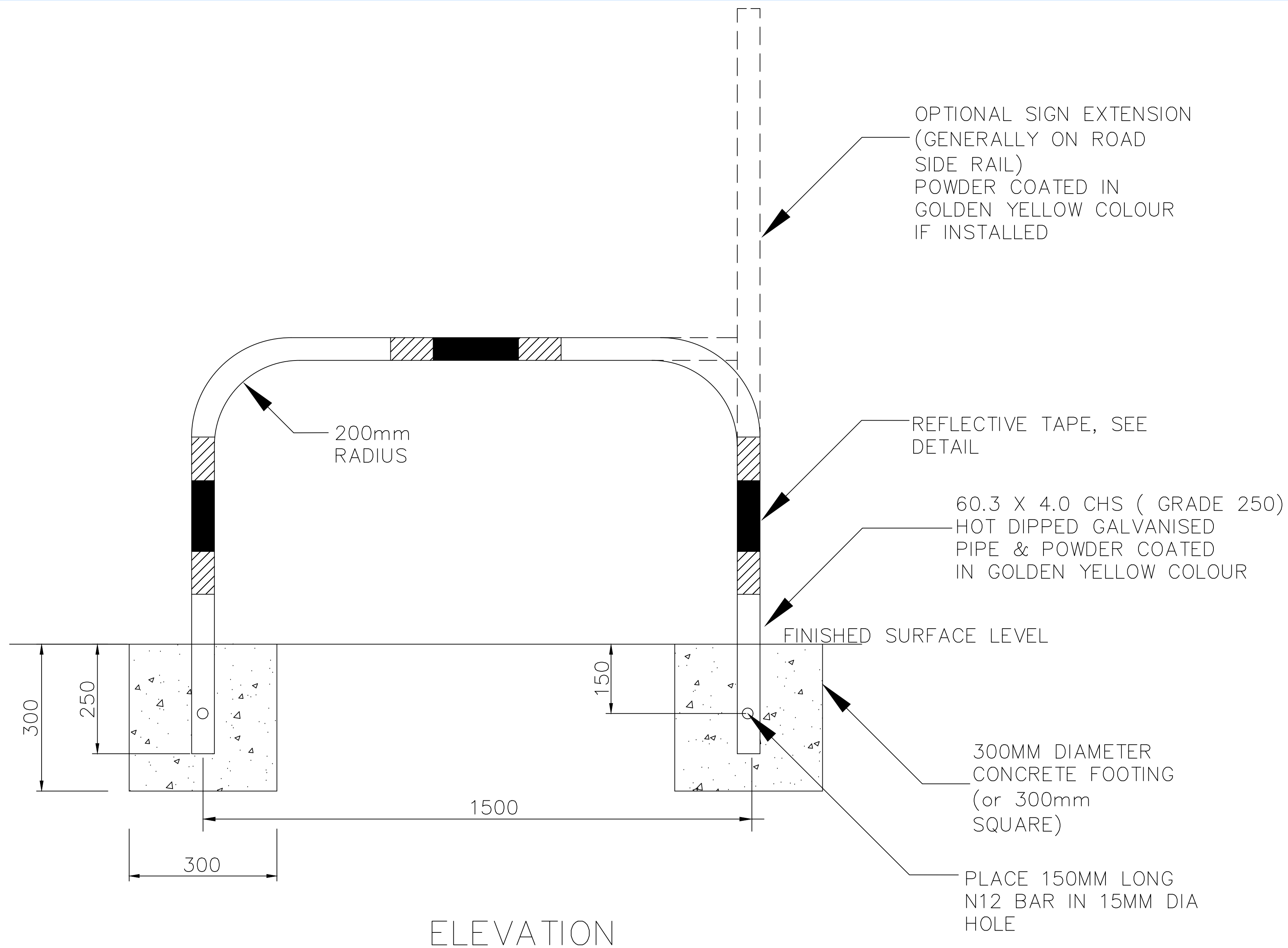
SHARED PATH /BICYCLE PATH

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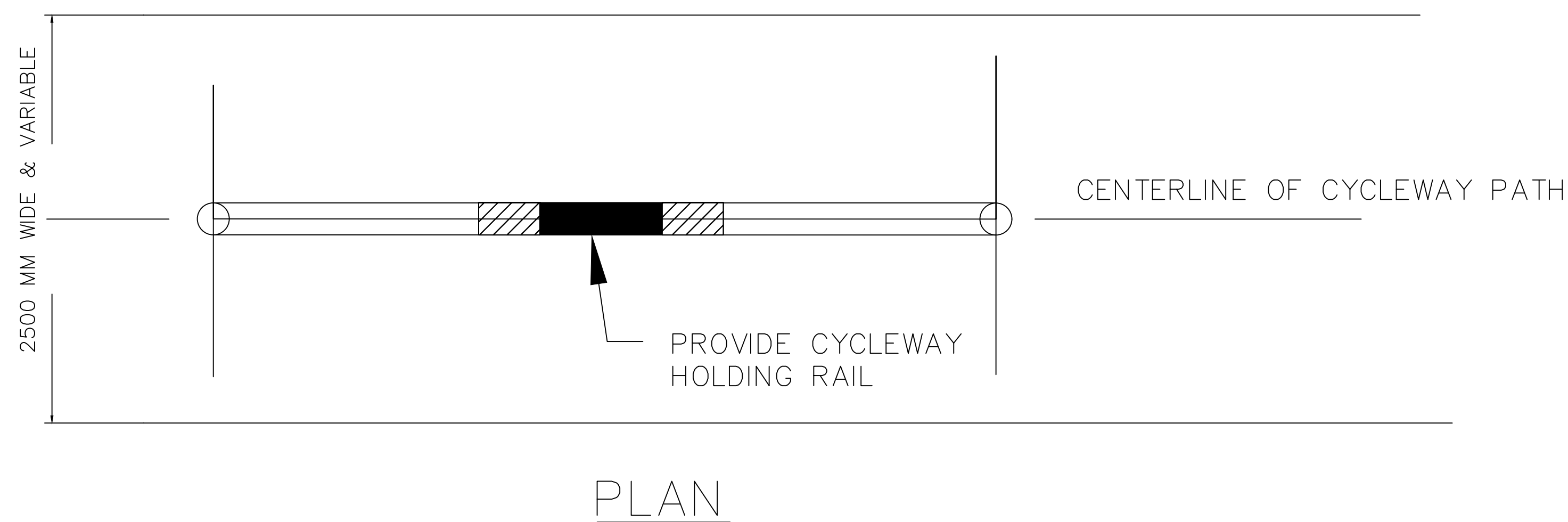
A1 - SCALE AS SHOWN
NUMBER OF SHEETS 35
SHEET NUMBER 3

FILE NAME: STANDARD DRAWINGS.DWG
REVISION GMC-VER-2
RD: 06/01/21

SD-R 03 A



REFLECTIVE TAPE DETAIL



NOTE:

CONCRETE TO BE 32 MPA AT 28 DAYS

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	
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OPERATIONS

DATE: 28/02/2018

HOLDING RAIL

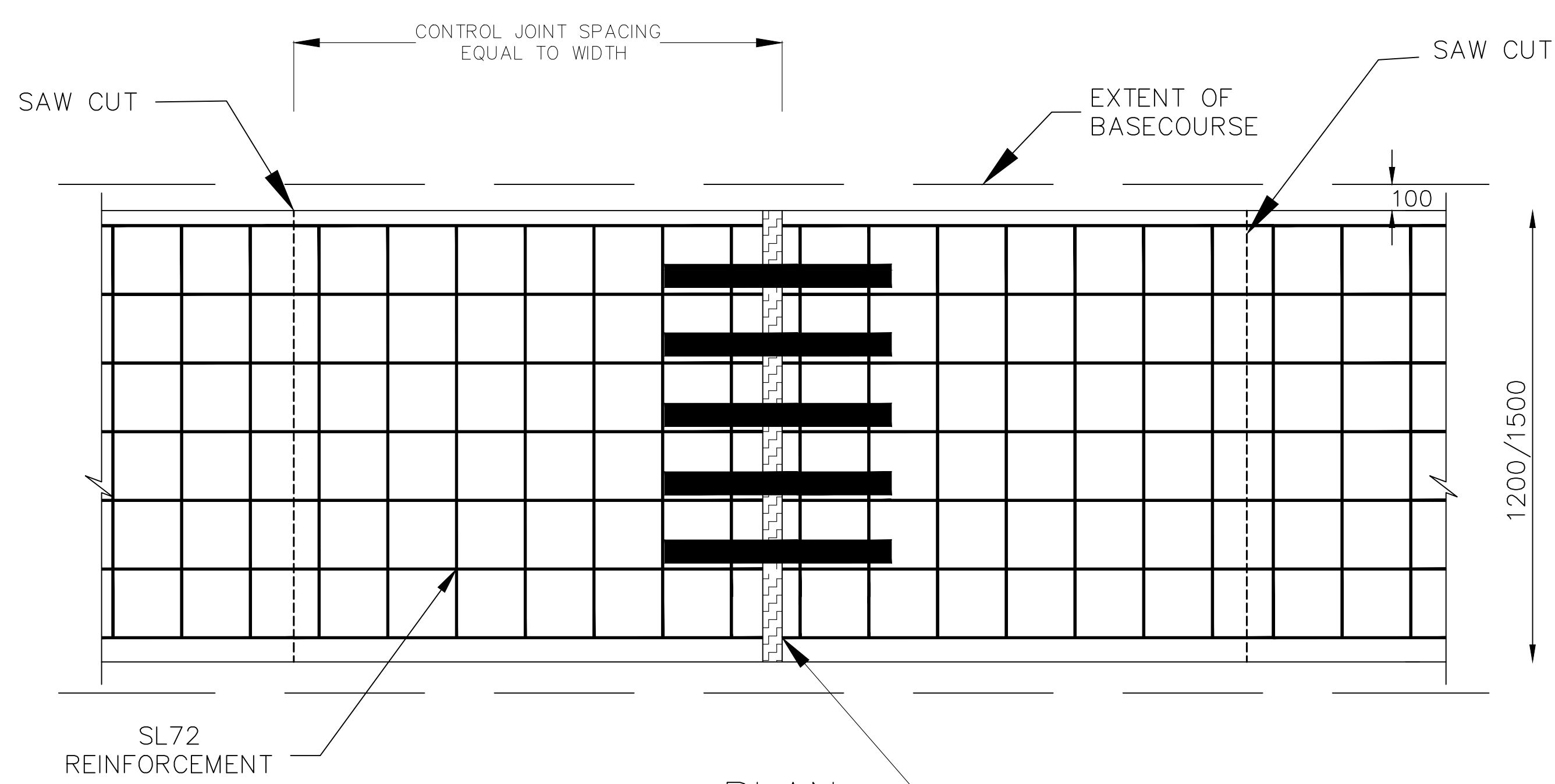
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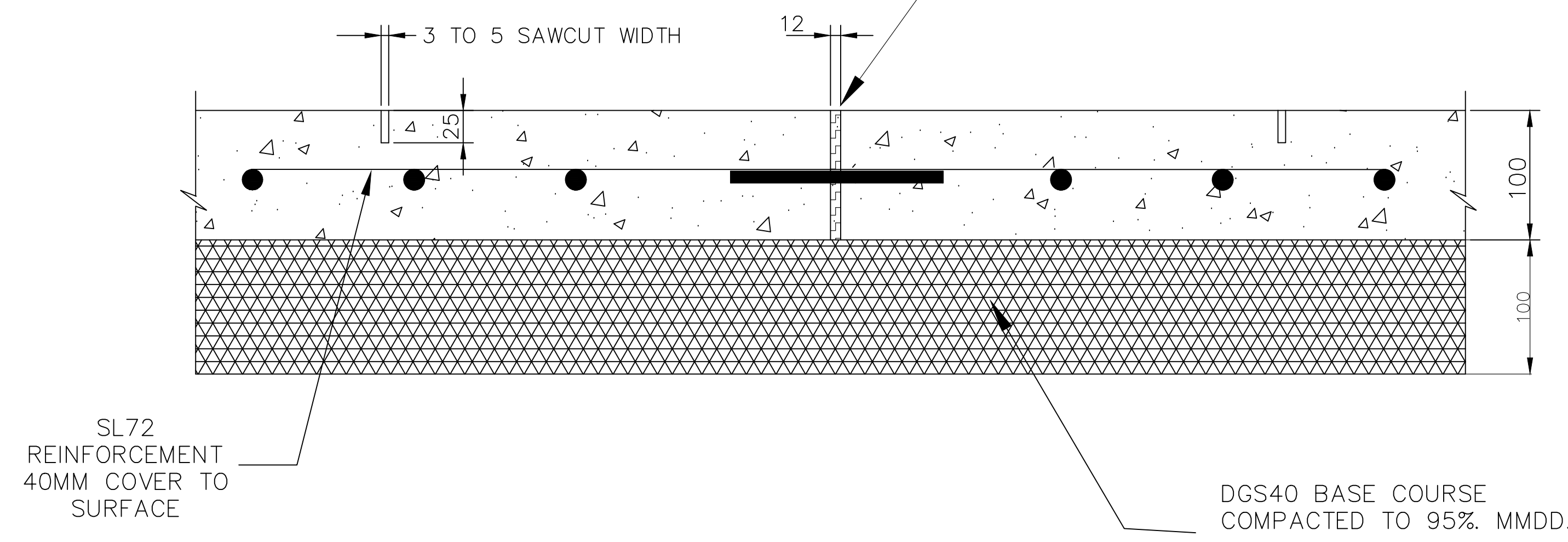
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 4
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-R 03 B		

DRAWING NUMBER SD-R 03 B



PLAN



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.
7. SUBGRADE TO BE SOUND AND COMPACTED. PROOF ROLL SUBGRADE TO 200MM 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
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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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DATE: 06/01/2021

STANDARD FOOTPATH
 1.2/1.5 M WIDE

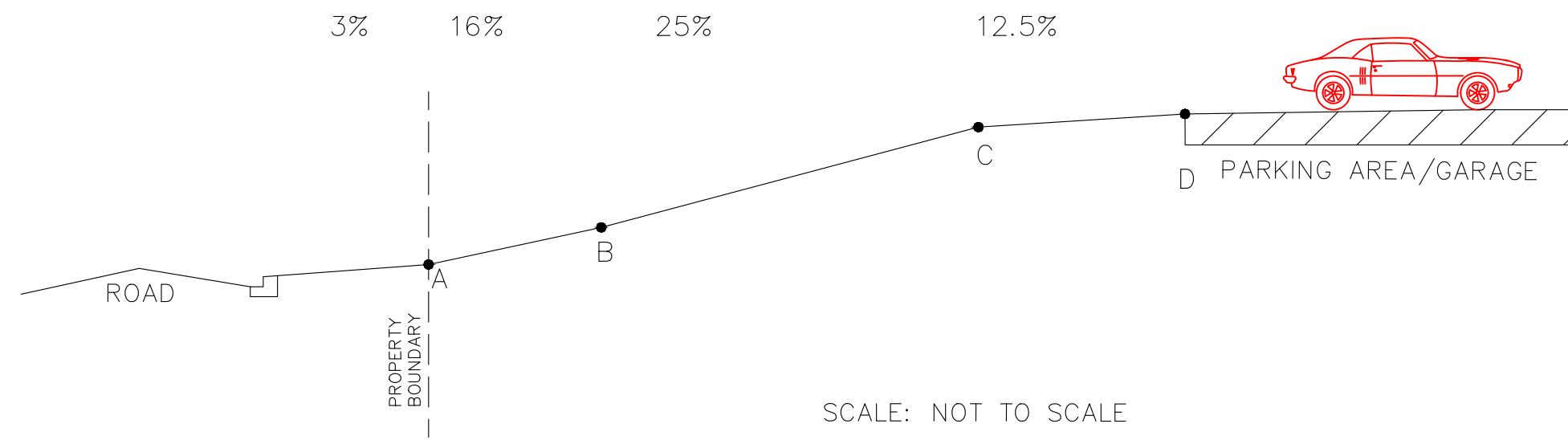
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 5
REVISION GMC-VER-2	STANDARD DRAWINGS.DWG	
SD-R 04		

RD: 06/01/21

HIGH LEVEL PARKING DRIVEWAY PROFILE



SCALE: NOT TO SCALE

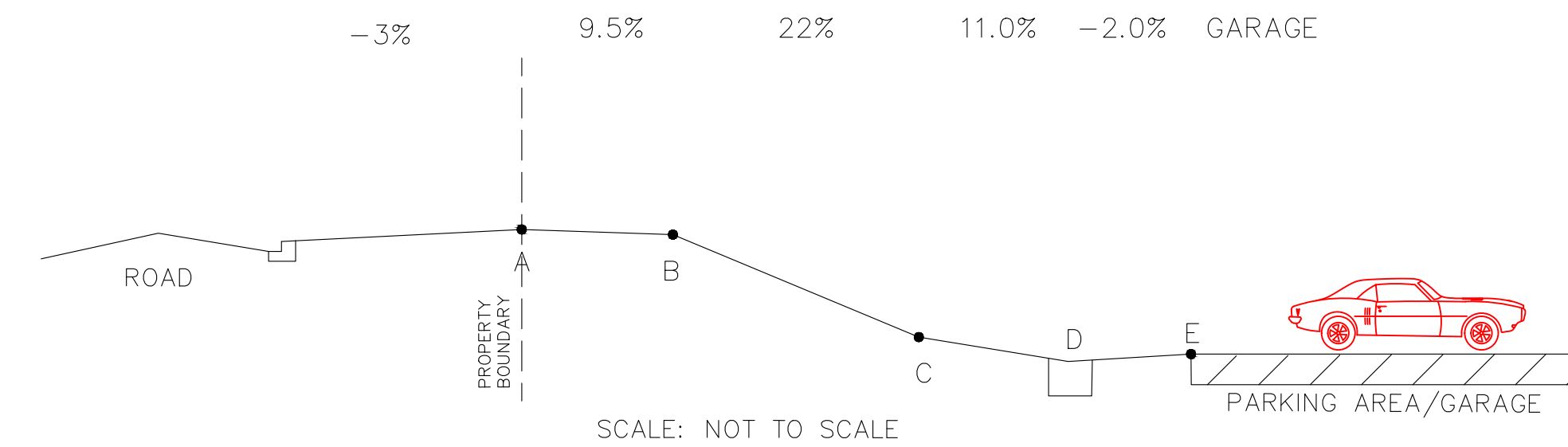
HORIZONTAL GARAGE SETBACK FORM BOUNDARY (A TO D)	HEIGHT DISTANCE FROM PROPERTY BOUNDARY			HORIZONTAL GARAGE SETBACK FORM BOUNDARY (A TO D)	HEIGHT DISTANCE FROM PROPERTY BOUNDARY		
	B	C	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (D)		B	C	MAX GARAGE HEIGHT DIFFERENCE FROM BOUNDARY (D)
5	0.32	0.57	0.82	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:

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. 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.
3. THIS STANDARD DRAWING SHALL BE FOLLOWED FOR HIGH AND LOW RESIDENTIAL VEHICULAR CROSSINGS WHERE THE CROSS FALL DEPARTS FROM MAXIMUM 4%.
4. THIS DRAWING SHALL BE READ IN ADDITION TO OTHER STANDARD DRAWINGS REFERRING TO VEHICULAR CROSSINGS.
5. 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



SCALE: NOT TO SCALE

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	A.SINGH	03/03/2022	
DESIGN REVIEWED	P.NUNN	03/03/2022	
FINAL DESIGN CHECKED	M.O'ROURKE	03/03/2022	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

GOULBURN MULWAREE COUNCIL
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DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

VEHICULAR DRIVEWAY PROFILES

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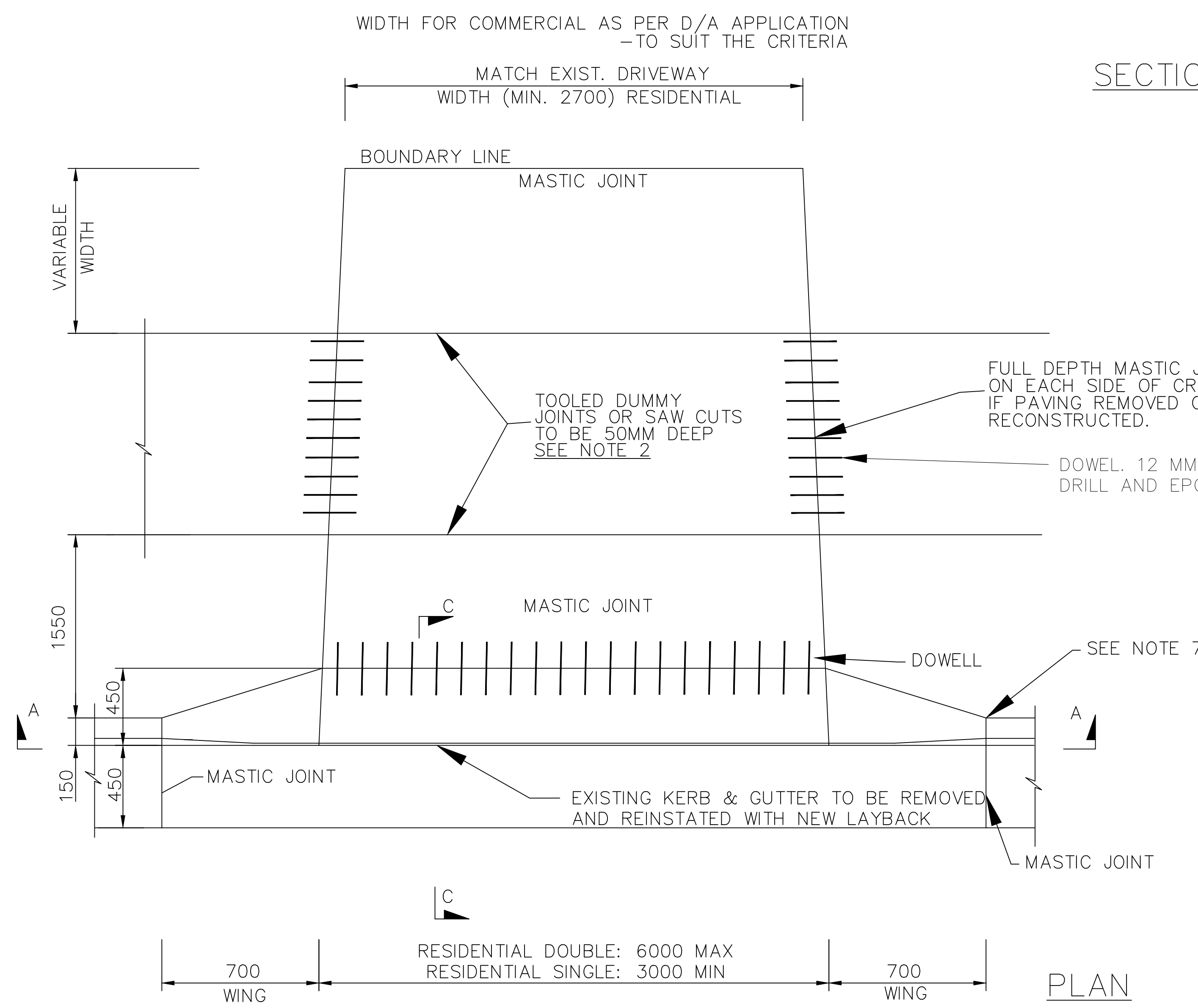
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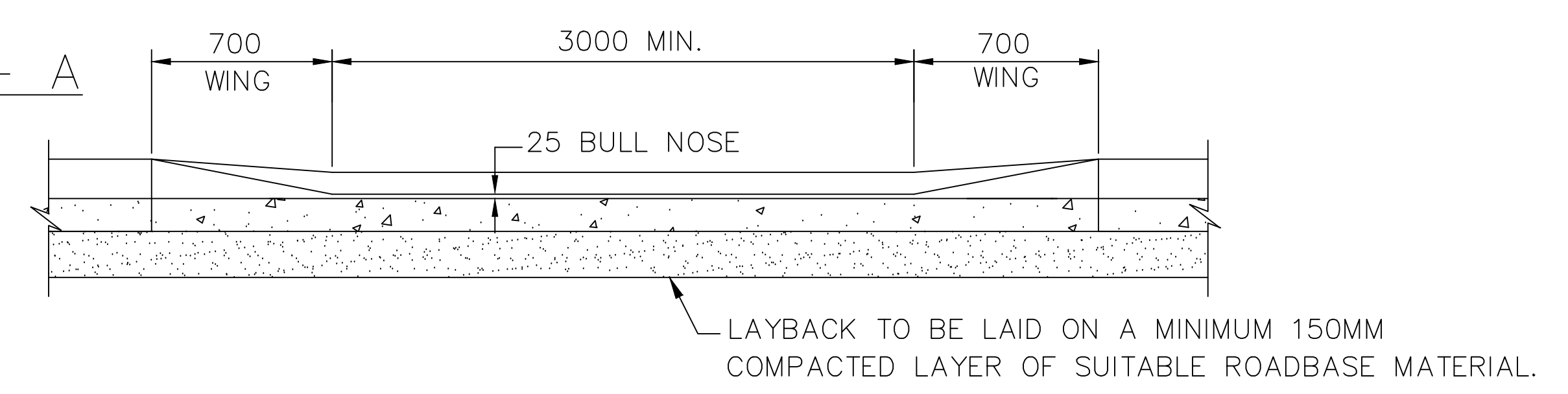
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SD-R 05

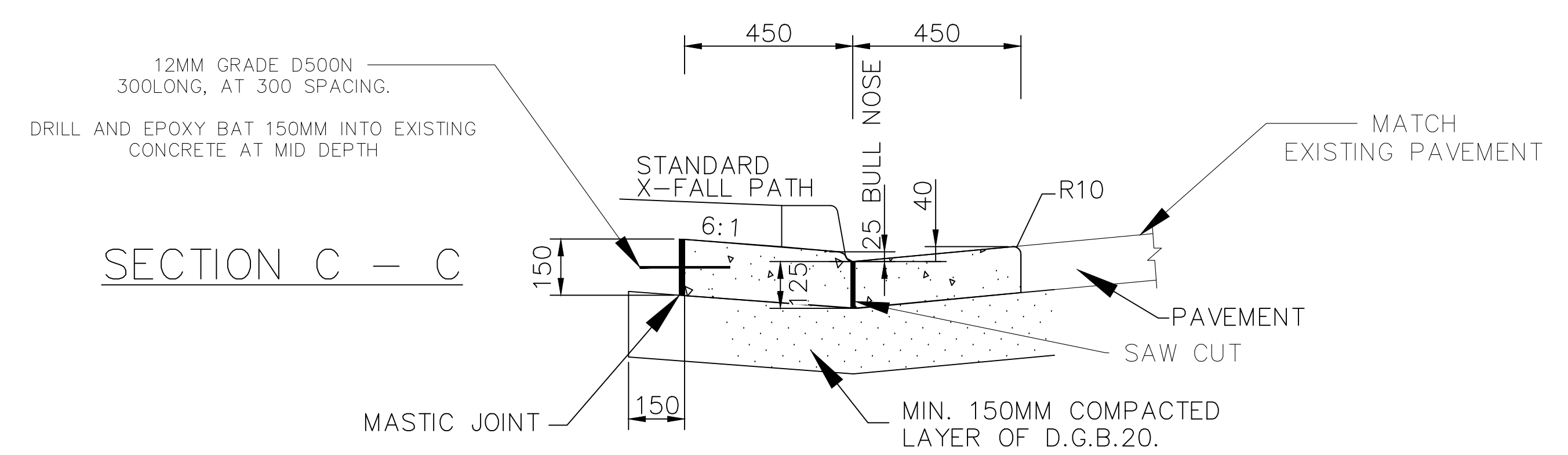
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SECTION A - A



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 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

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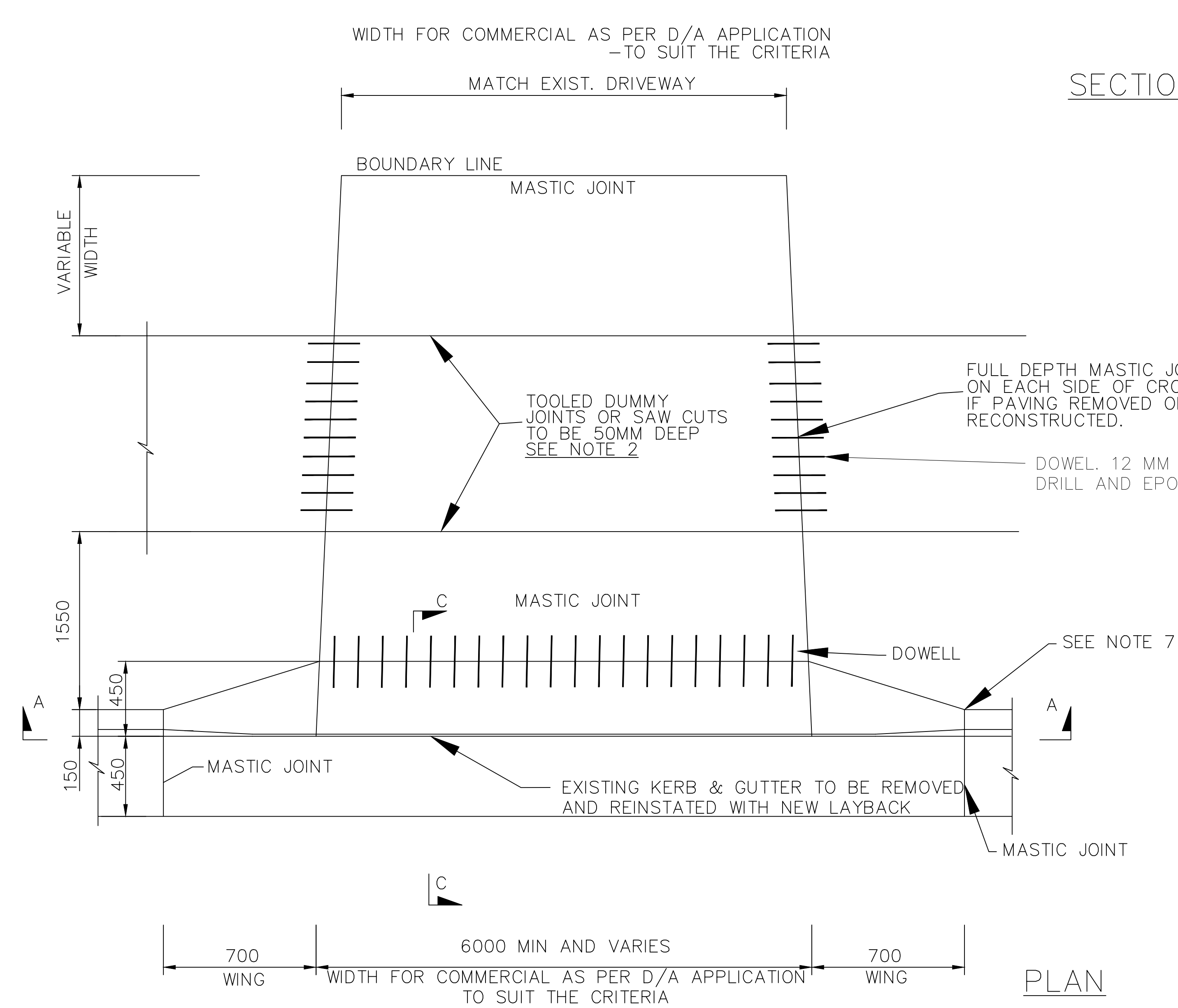
VEHICLE CROSSING PLAN

RESIDENTIAL

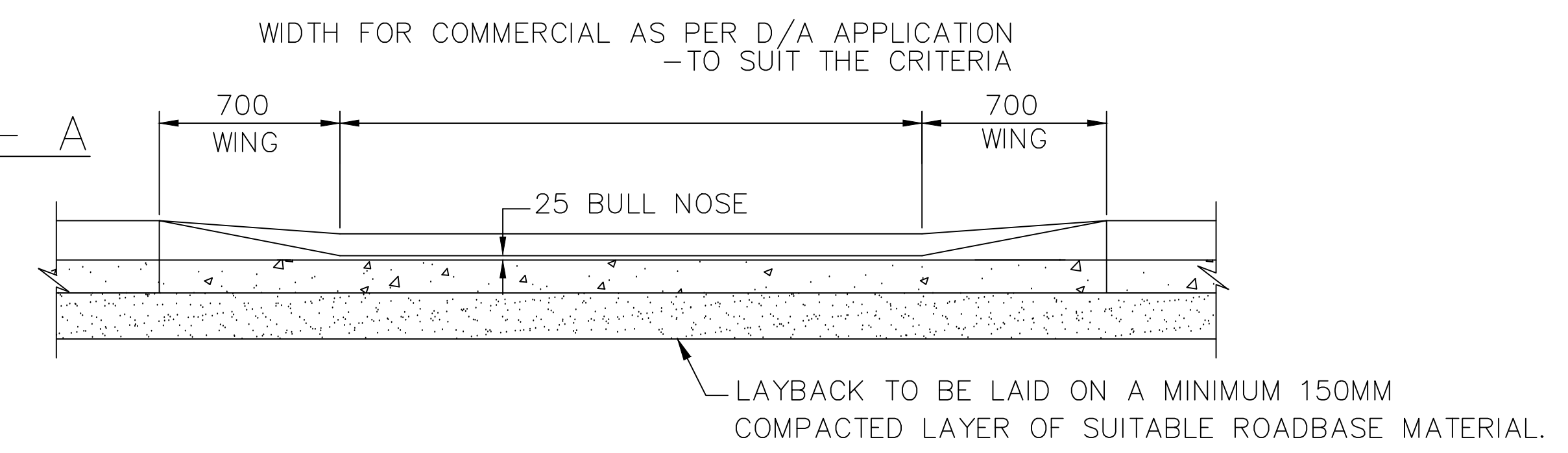
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REVISION GMC-VER-1
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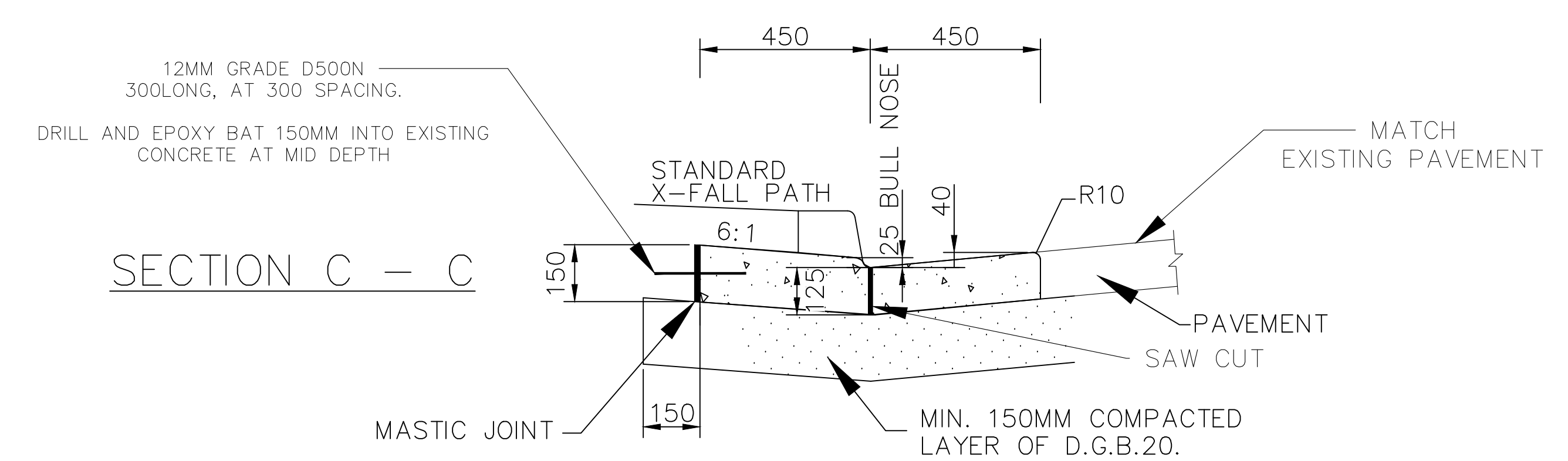
SD-R 06



PLAN



SECTION A - A



SECTION C - C

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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DIRECTOR OF GOULBURN MULWAREE OPERATIONS

DATE: 28/02/2018

VEHICLE CROSSING PLAN

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A1 - SCALE AS SHOWN
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 SHEET NUMBER 8

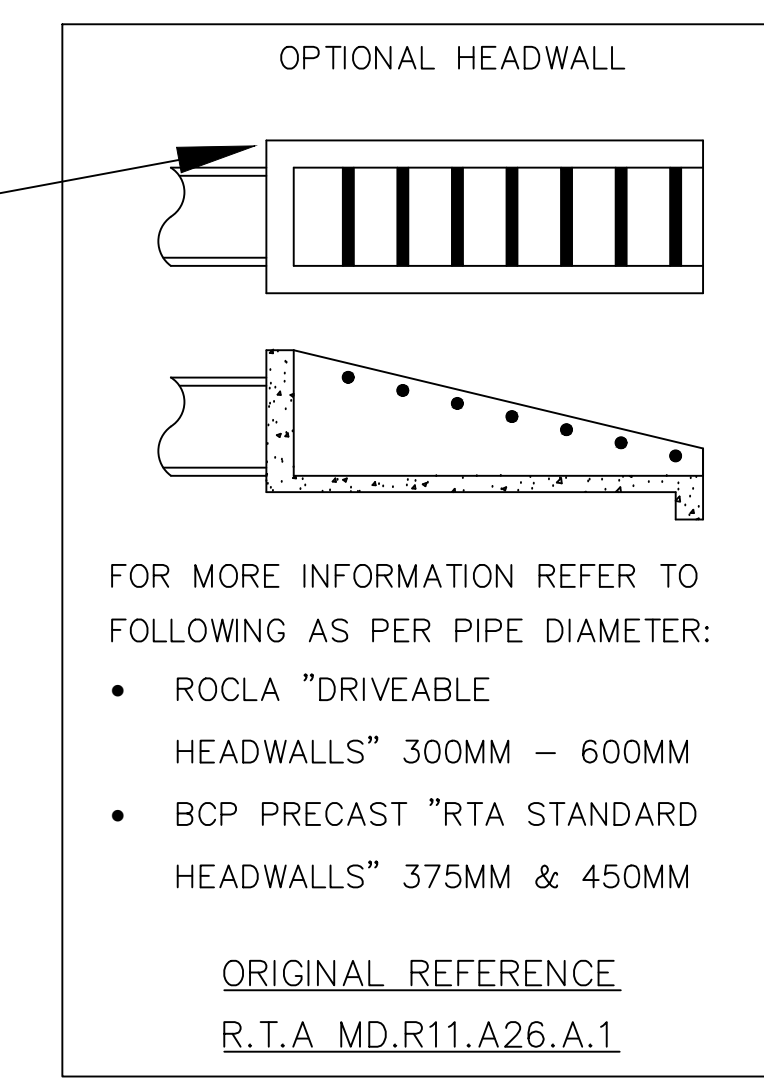
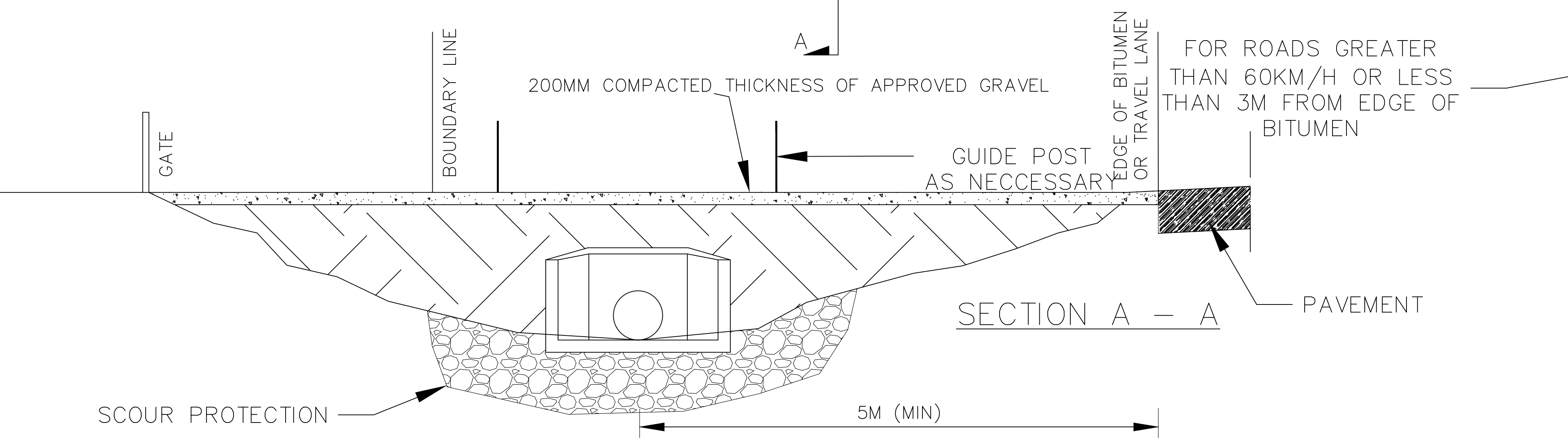
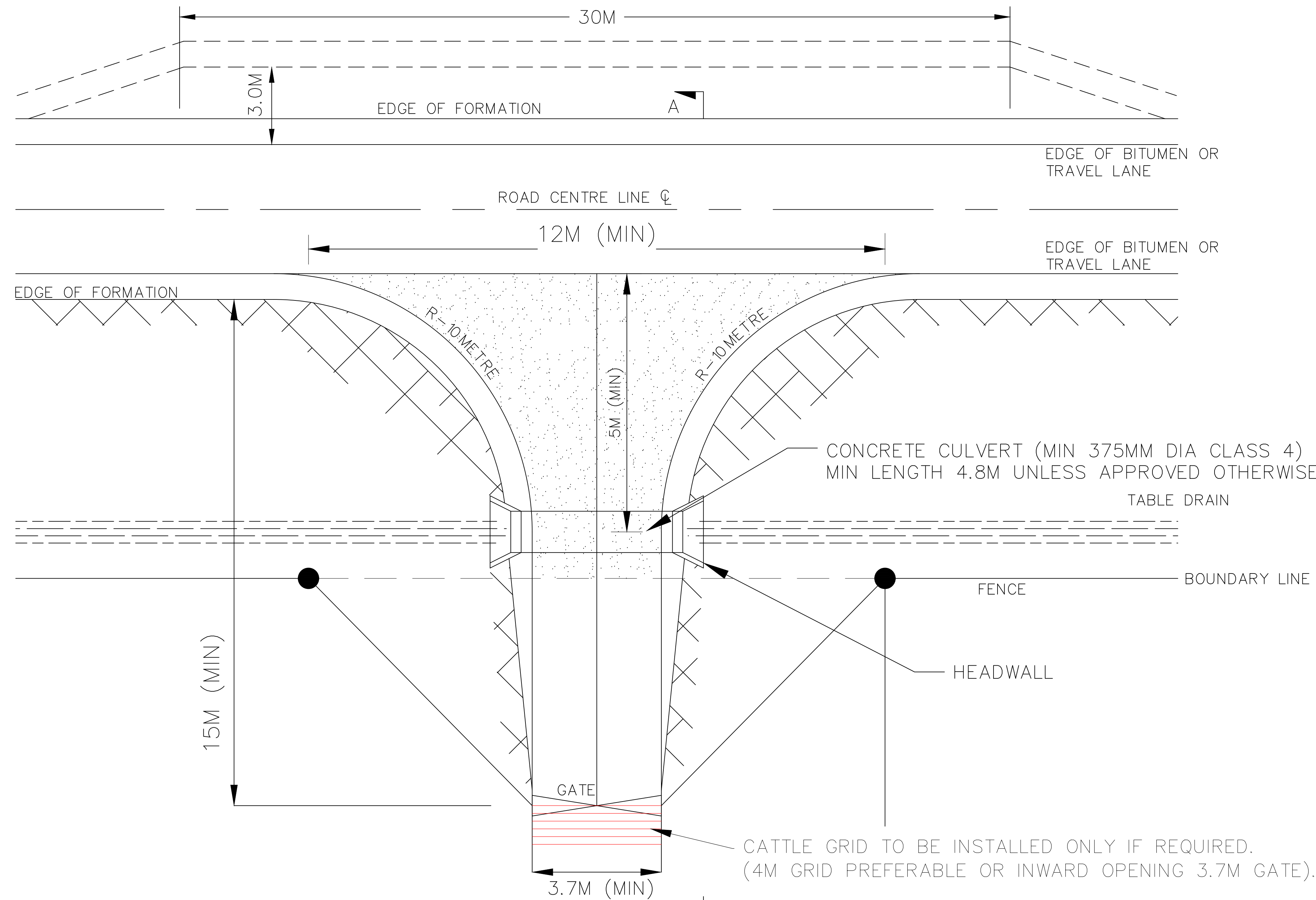
FILE NAME: STANDARD DRAWINGS.DWG

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SD-R 07

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 DOUBLE GUIDE POST AT EACH END OF THE HEADWALL.
- MINIMUM PIPE GRADE 1%.
- GATE TO OPEN INWARDS
- DRIVEWAY TO BE DESIGNED AND LOCATED IN ACCORDANCE WITH AS2890. ENSURING THAT PROPOSED LOCATION MEETS THE SIGHT DISTANCE REQUIREMENTS.
- IT IS THE PROPERTY OWNER'S RESPONSIBILITY TO REPAIR AND MAINTAIN THE DRIVEWAY/VEHICLE CROSSING TO THEIR LAND. REFER TO SEC 218 OF NSW ROADS ACT, 1993.
- SCOUR PROTECTION SHALL BE REQUIRED AT PIPE OUTLET FOR A DISTANCE OF 2M, WIDTH 1M USING 200MM DURABLE ROCK.
- PIPES OR BOX CULVERT TO BE SIZED TO MATCH TABLE DRAIN CAPACITY AND TO ENSURE THE CAPACITY OF THE ROADWAY IS NOT COMPROMISED BY THE PIPE OR HEADWALL.



ACCESS DRIVEWAY SIGHT DISTANCE (AS2890.1)	
SPEED LIMIT KM/H	SIGHT DISTANCE (ROUND TO NEAREST 5M)
50	70
60	85
70	100
80	110
90	125
100	140
110	155

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	NOTES & DETAILS CHANGED/ADDED (A.SINGH 2022)
ISSUED FOR CONSTRUCTION			
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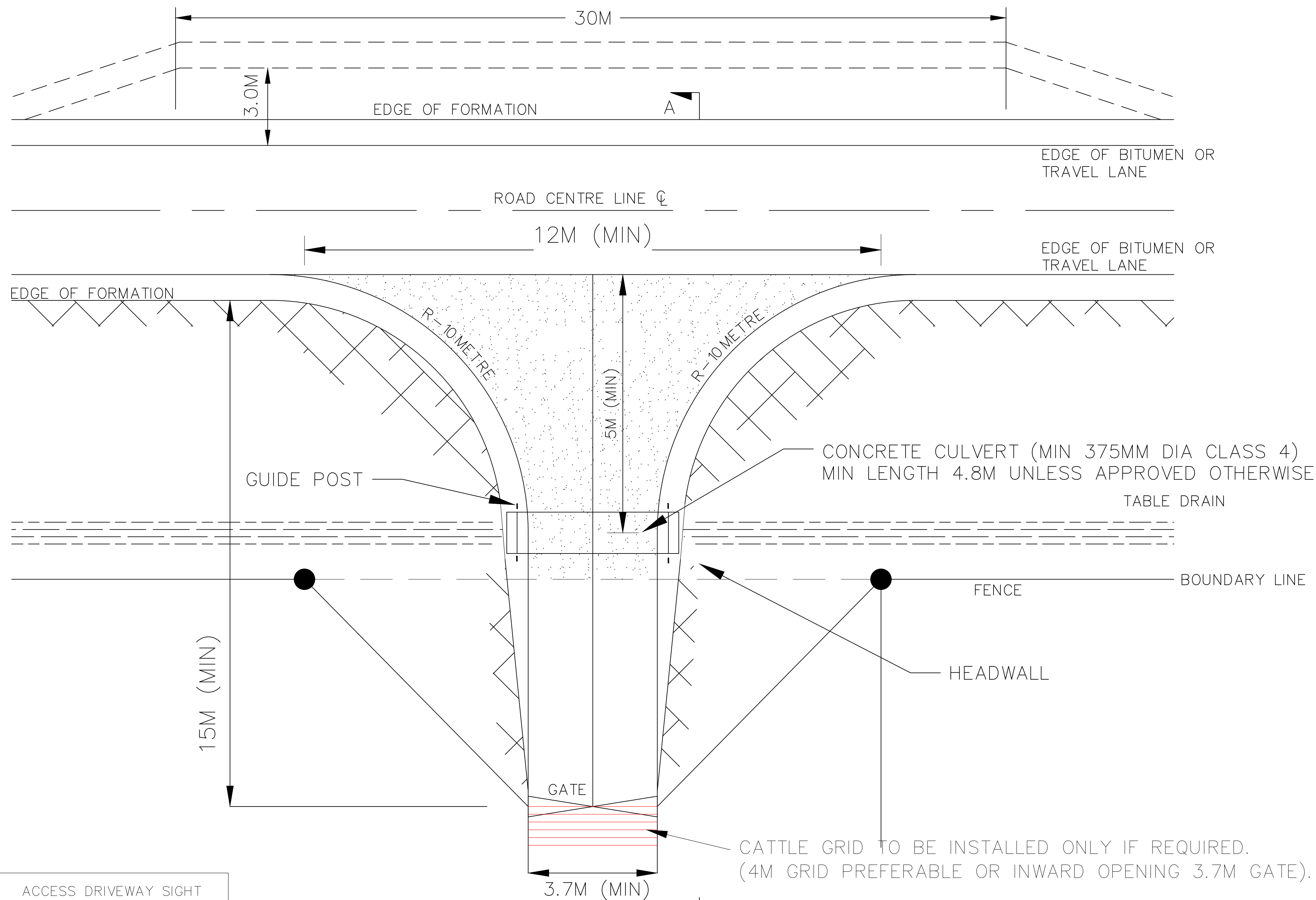
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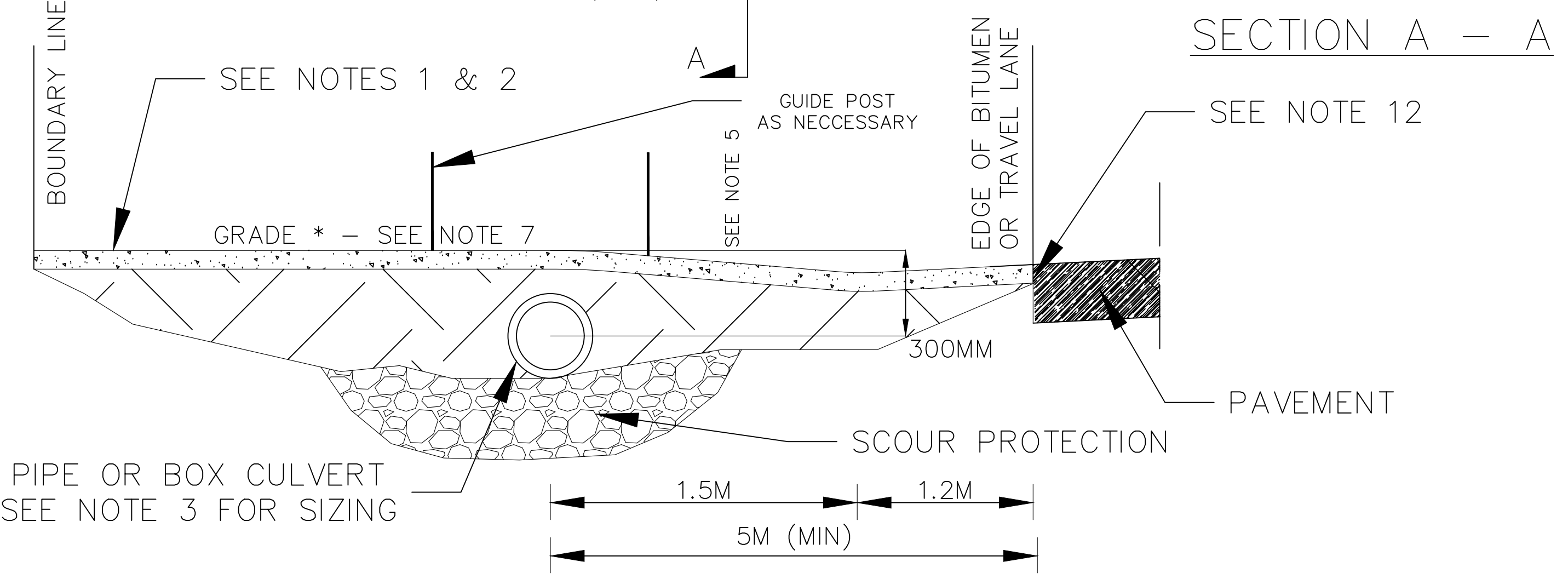
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NOTES:

- IF CROSSING IS ADJACENT TO SEALED ROAD, ENTRANCE IS TO BE SEAL IN 2 COAT BITUMEN SEAL OR REINFORCED CONCRETE FROM EXISTING EDGE OF BITUMEN TO BOUNDARY LINE.
- COMPACTED DGB20 ROAD BASE FOR PAVEMENT TO BE MINIMUM THICKNESS OF 100MM AND APPROVED BY COUNCIL'S OFFICER.
- PIPES OR BOX CULVERT TO BE SIZED TO MATCH TABLE DRAIN CAPACITY AND TO ENSURE THE 100 YEAR MAJOR FLOW CAPACITY OF THE ROADWAY IS NOT COMPROMISED BY THE PIPE OR HEADWALL. MINIMUM PIPE SHALL BE $\phi 375$ AND MINIMUM BOX CULVERT SIZE SHALL BE 600 WIDE x 300 HIGH.
- WHERE PIPE COVER IS IMPRACTICAL DUE TO THE LEVEL OF THE INVERT OF THE TABLE DRAIN A REINFORCED CONCRETE DISH DRAIN WITH A PROFILE THAT COMPLIES WITH AS 2890.5 DRIVEWAY GRADES IS TO BE DESIGNED.
- NOMINAL COVER OVER CROWN OF PIPE TO BE 300MM AND PIPES ARE TO BE PROPERLY BEDDED AND BACKFILLED TO THE REQUIREMENTS OF COUNCIL'S OFFICER. COVER MAY BE REDUCED TO 100MM IF 100MM THICK CONCRETE IS USED, AND PIPE IS BACKFILLED WITH CONCRETE.
- SCOUR PROTECTION SHALL BE REQUIRED AT PIPE OUTLET FOR A DISTANCE OF 2000, WIDTH 1000 USING $\phi 200$ DURABLE ROCK.
- GRADE * - REFER TO SD-R 04
- THE ENTRANCE IS GENERALLY TO BE CONSTRUCTED WITHIN THE ROAD RESERVE, AT AN ANGLE OF NINETY DEGREES (90°) TO THE CENTRE OF THE ROAD. THIS ANGLE MAY BE REDUCED TO A MINIMUM OF SEVENTY DEGREES (70°) WITH THE APPROVAL OF COUNCIL'S OFFICER.
- PRECAST HEADWALLS SHALL BE GROUTED TO PIPES.
- PROVIDE SLOPED HEADWALLS WHERE SPEED ZONE EXCEEDS 60 KM/H, AND THE HEADWALL IS CLOSER THAN 5M FROM EDGE OF TRAVELING LANE.
- IT IS THE PROPERTY OWNER'S RESPONSIBILITY TO REPAIR AND MAINTAIN THE DRIVEWAY/VEHICLE CROSSING TO THEIR LAND. REFER SEC 218 OF NSW ROADS ACT, 1993.
- AN EXPANSION JOINT SHALL BE PROVIDED ADJACENT TO ANY CONCRETE EDGE STRIP OR RIGID PAVEMENT.

ACCESS DRIVEWAY SIGHT DISTANCE (AS2890.1)	
SPEED LIMIT KM/H	SIGHT DISTANCE (ROUND TO NEAREST 5 M)
50	70
60	85
70	100
80	110
90	125
100	140
110	155



INDEX	NAME	DATE	AMENDMENTS
SURVEYED			NEW STANDARD ADDED FOR VILLAGE ACCESS (A SINGH 2022)
DESIGNED & DRAFTED	A.SINGH	03/03/2022	
DESIGN REVIEWED	P.NUNN	03/03/2022	
FINAL DESIGN CHECKED	M.OROURKE	03/03/2022	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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 DATE: 28/02/2018

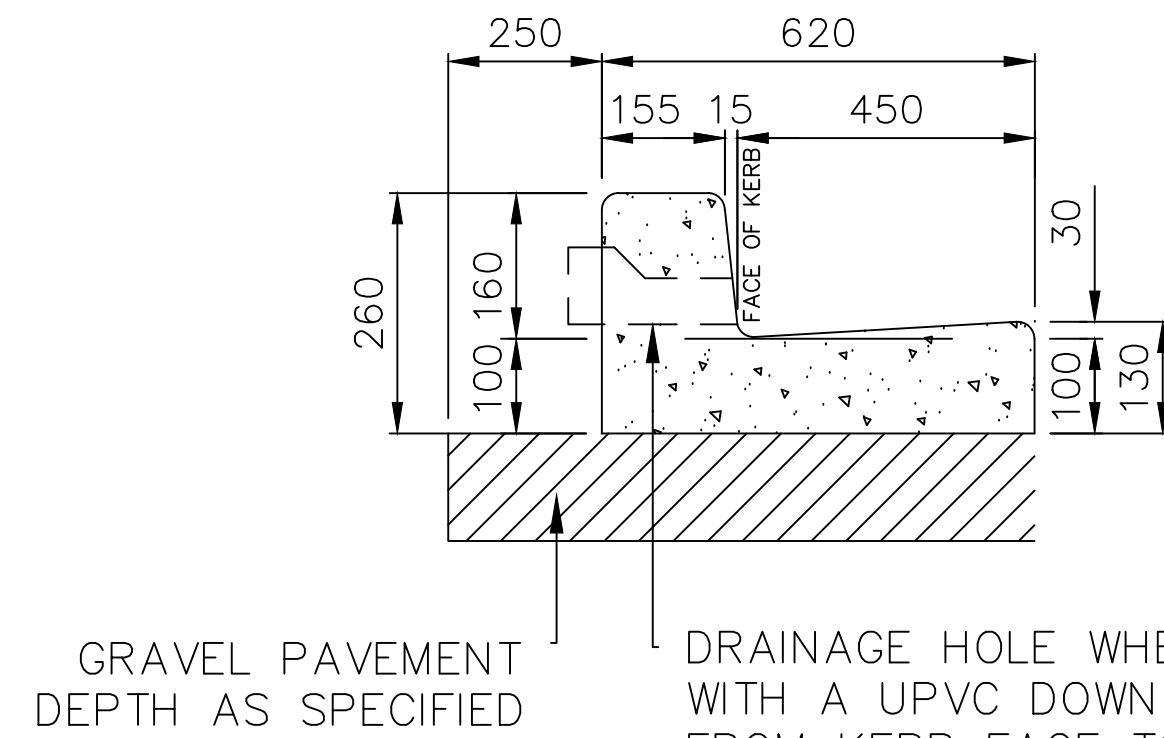
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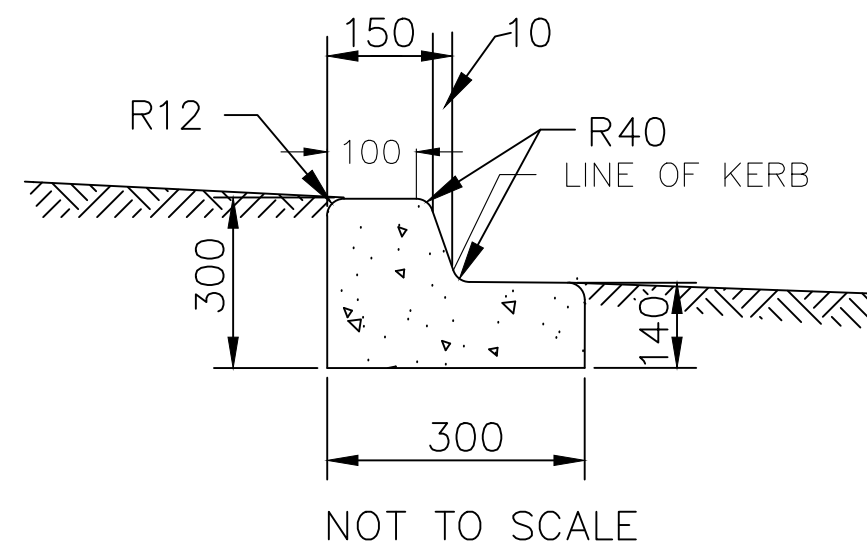
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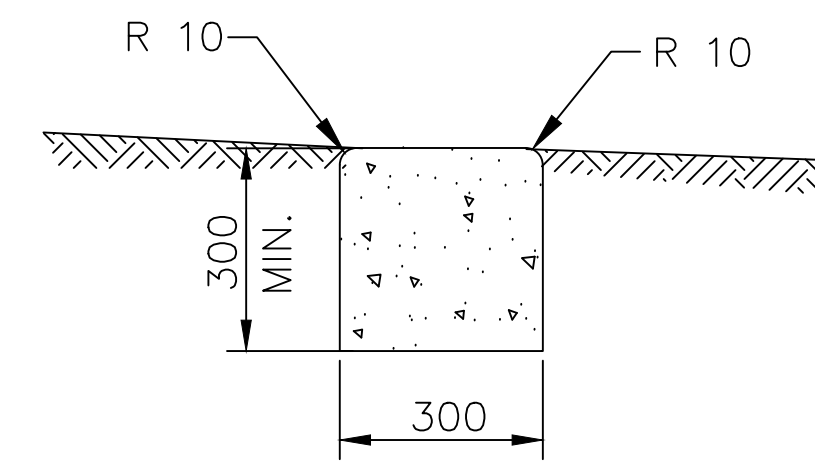
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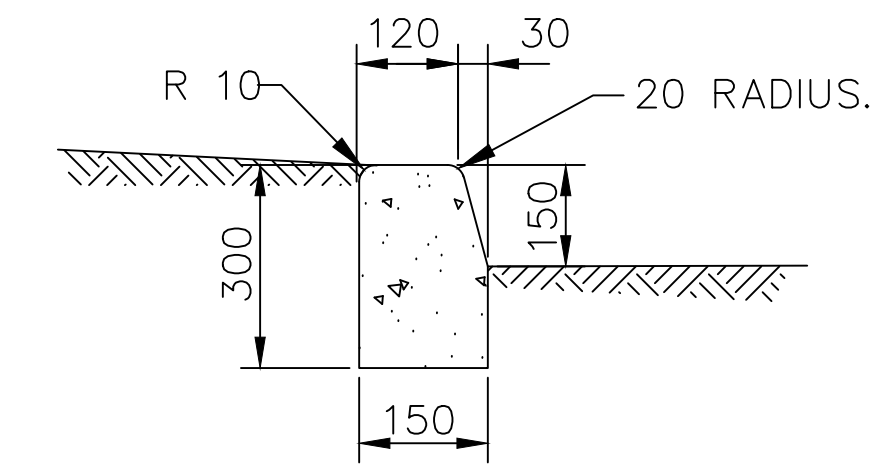
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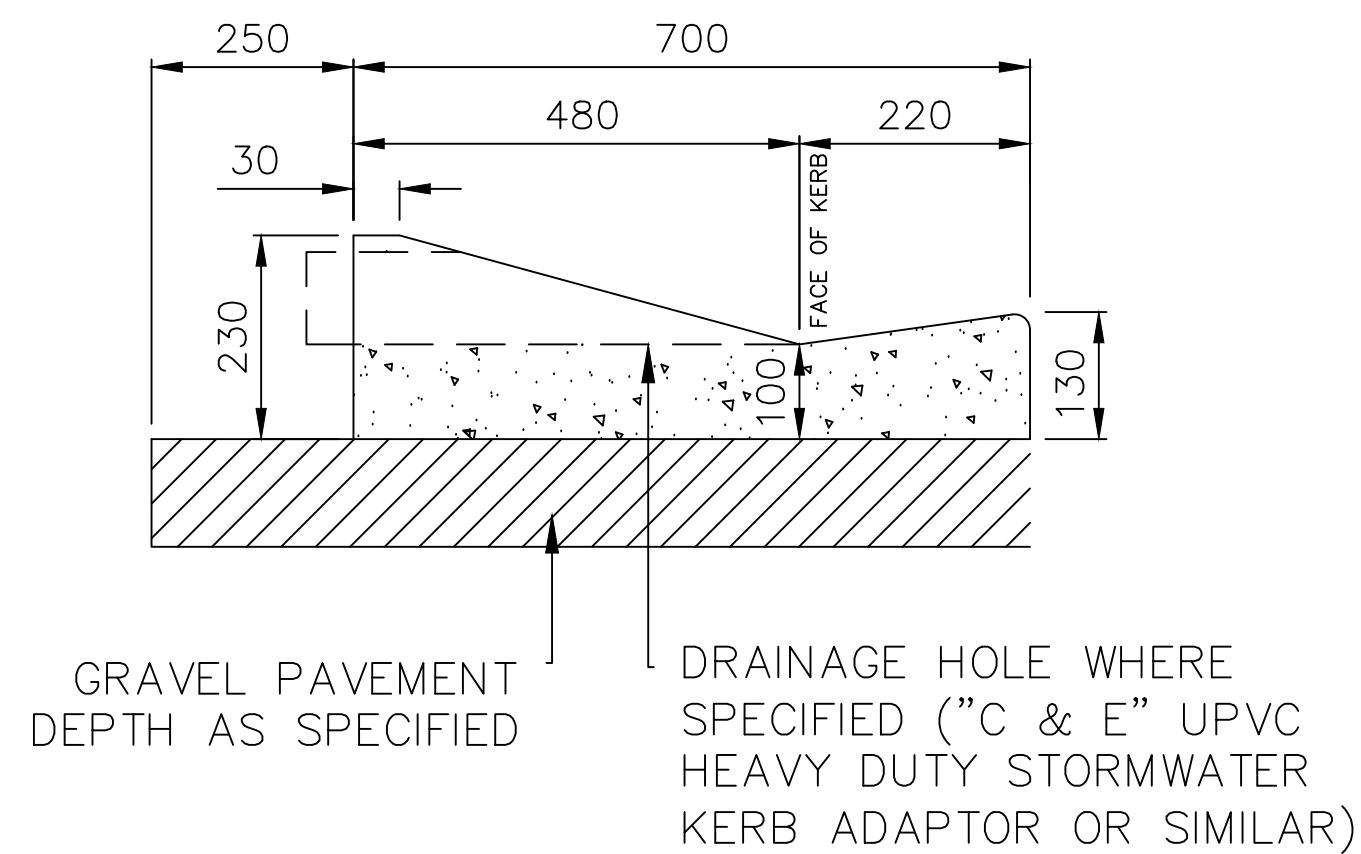
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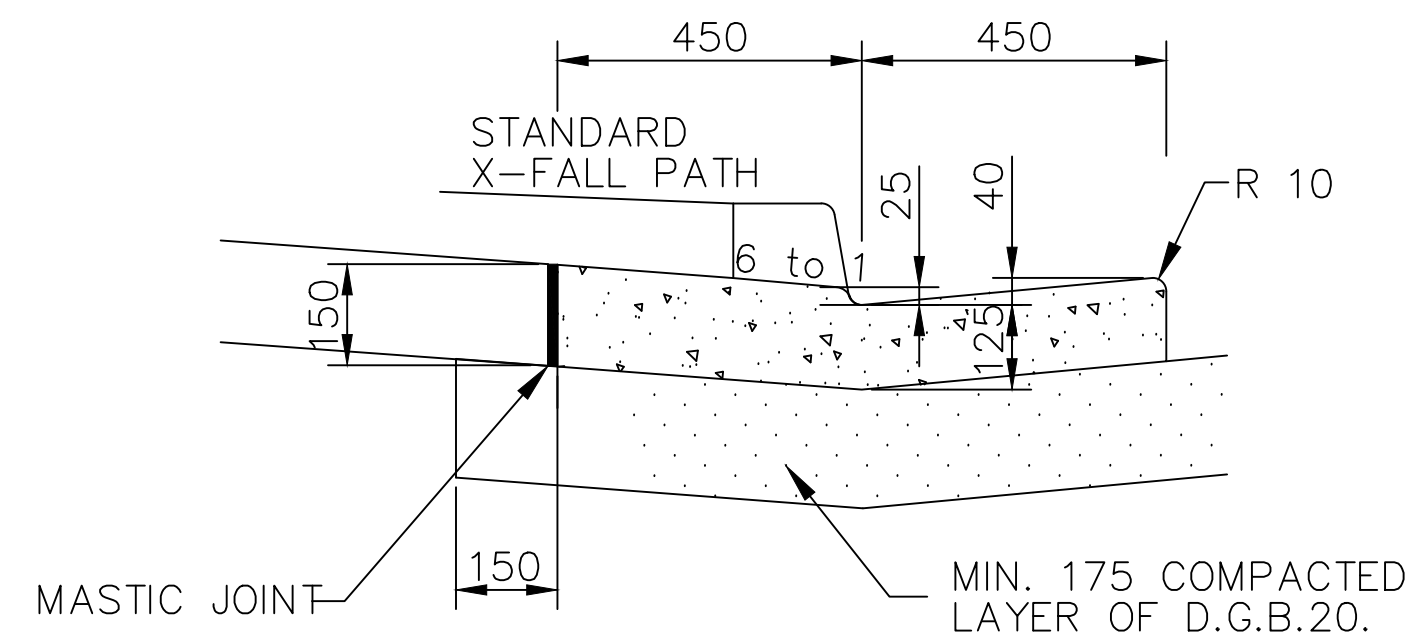
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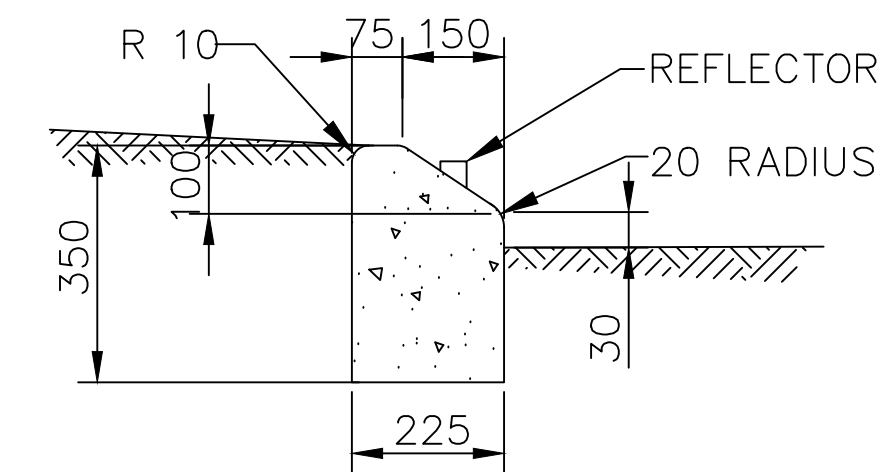
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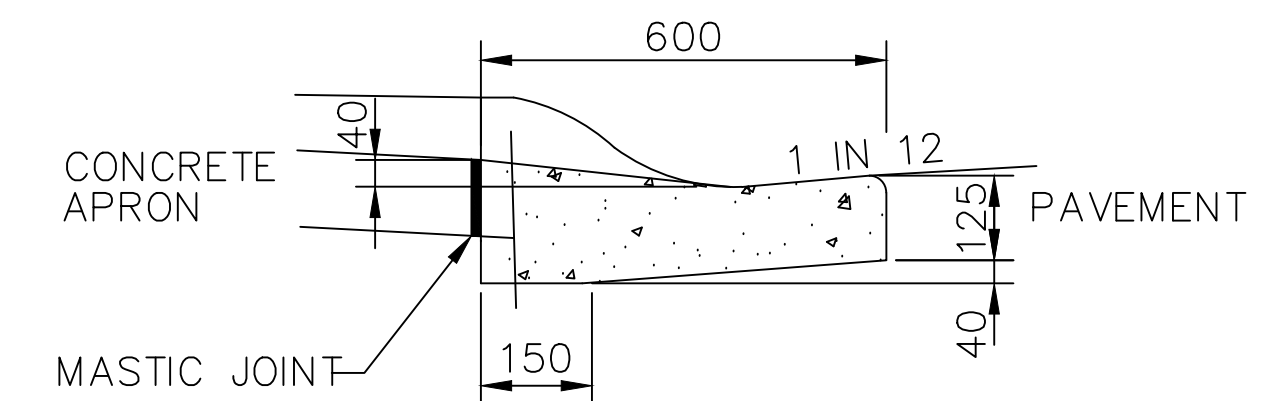
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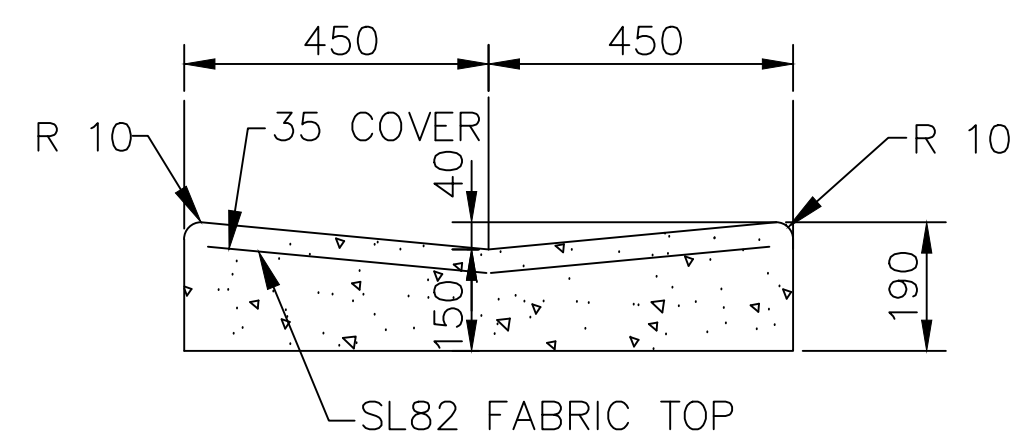
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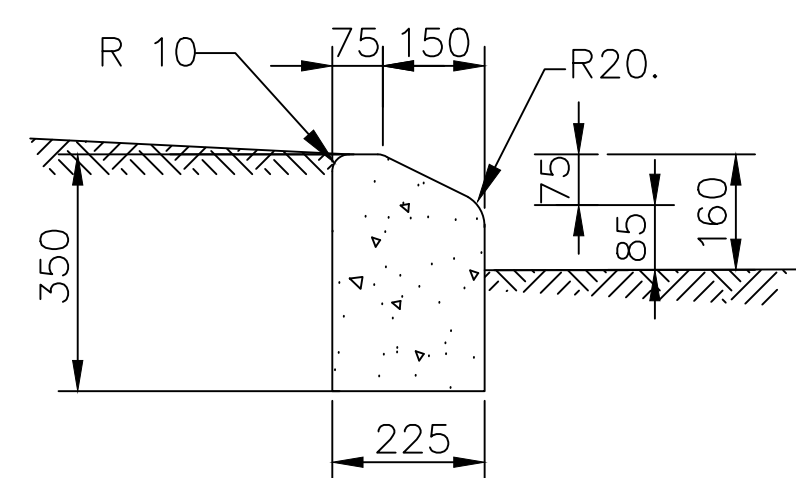
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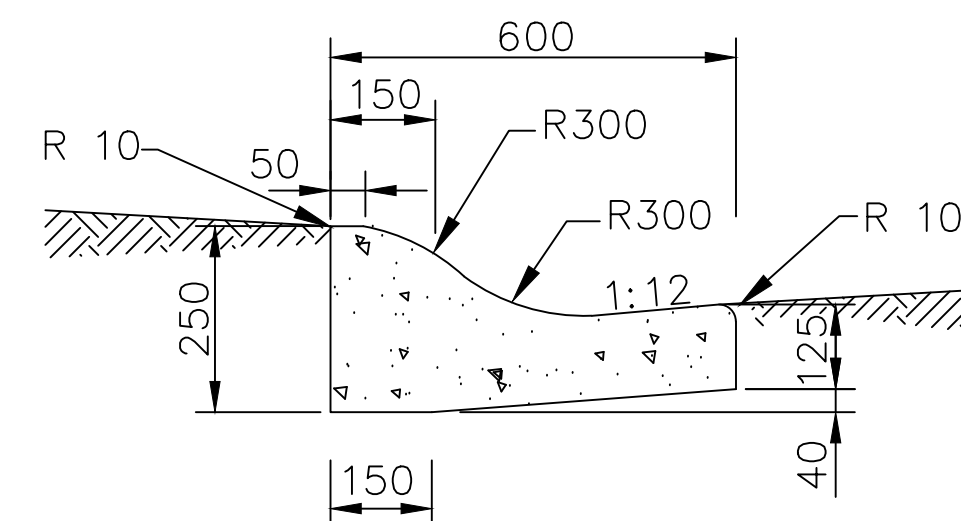
STANDARD ROLL TOP KERB AT VEHICULAR CROSSING



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 (A.SINGH 2022)
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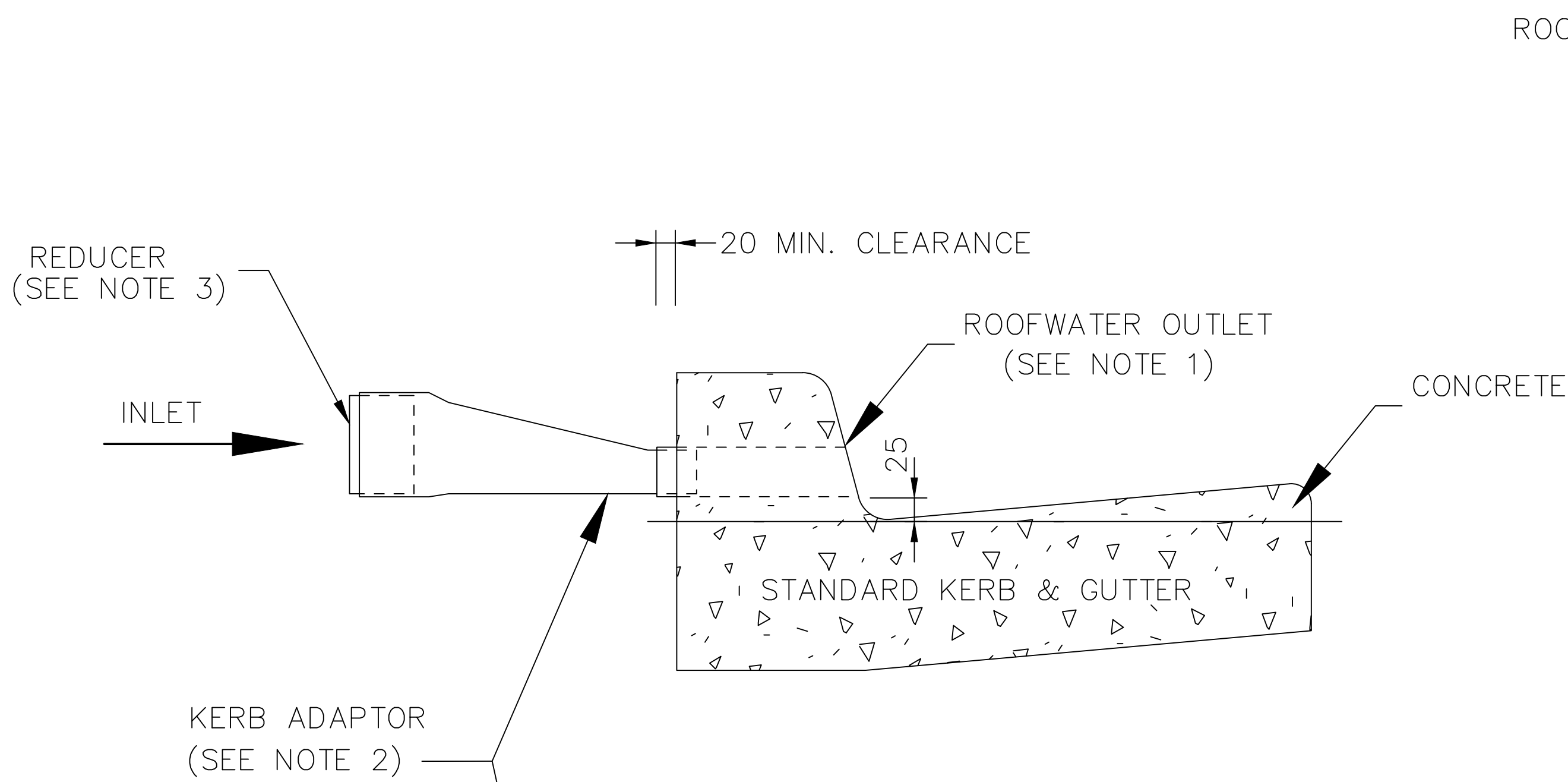
KERB & GUTTER

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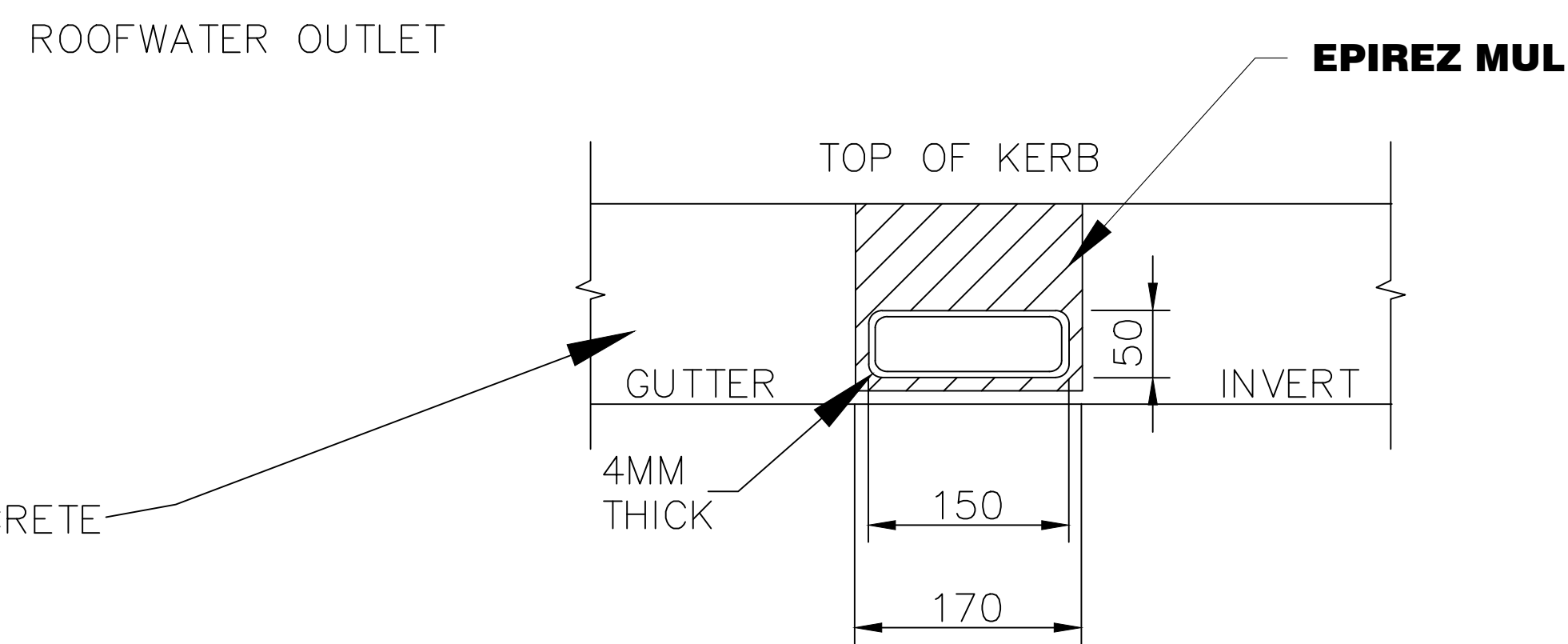
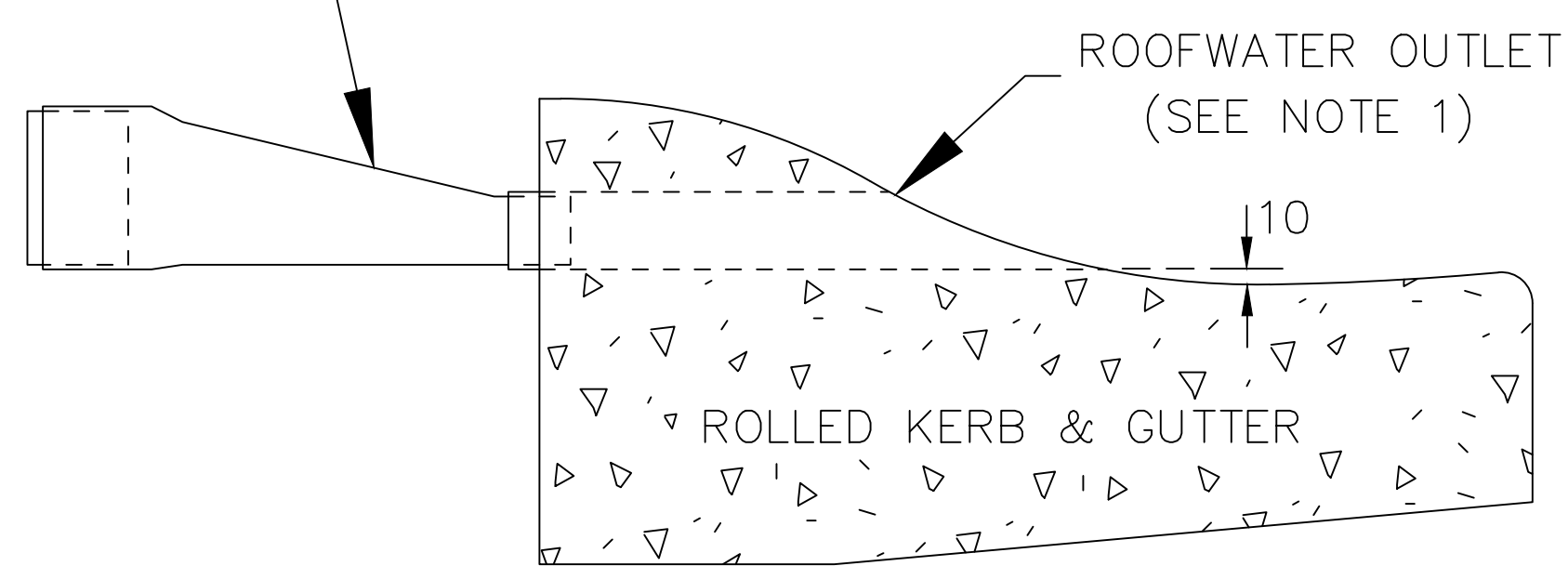
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 REVISION GMC-VER-1
 RD: -/-/-/-

SD-R 09

DRAWING NUMBER SD-R 09



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 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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 FAX: (02) 4823 4456

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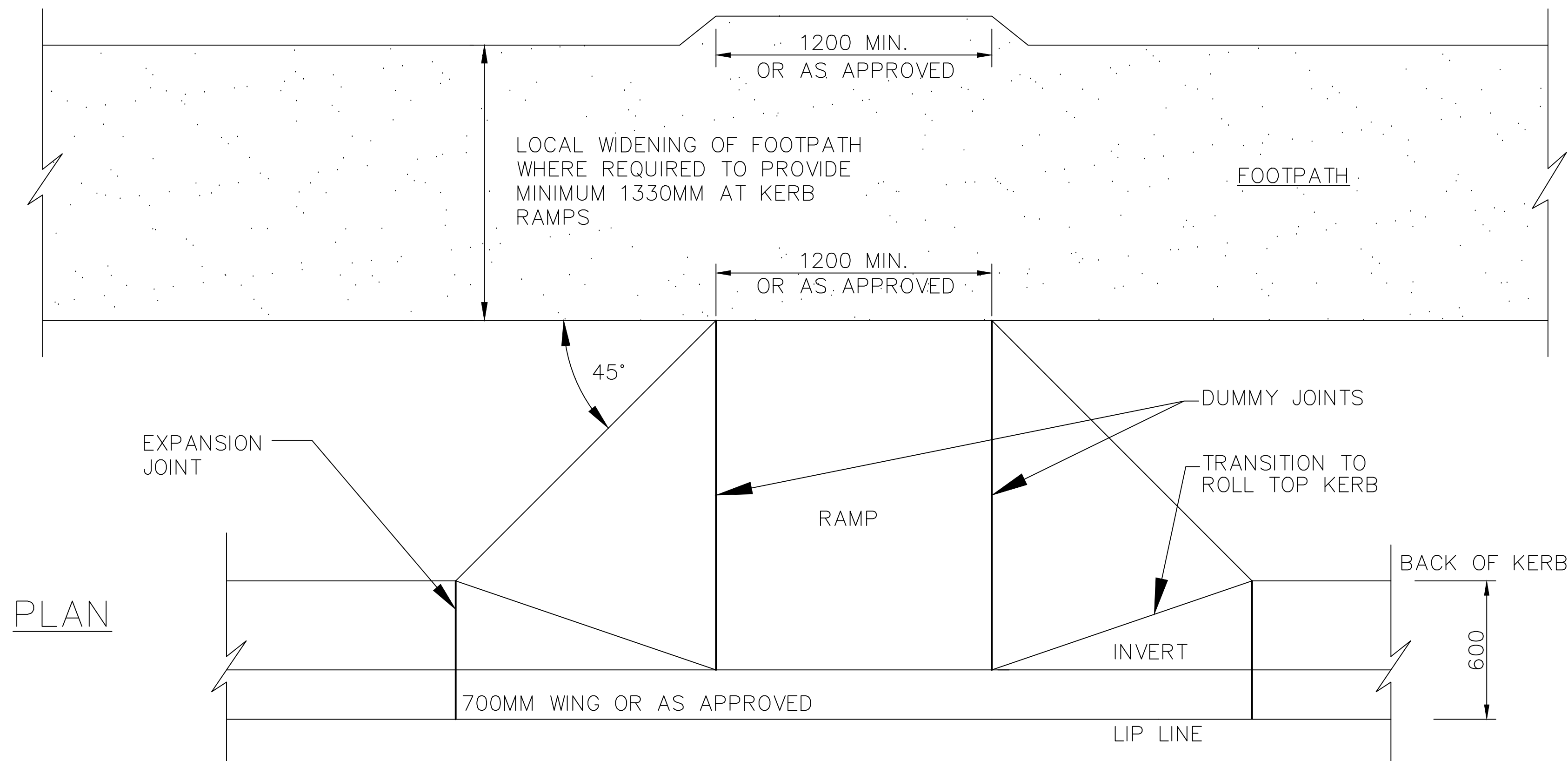
 DIRECTOR OF GOULBURN MULWAREE OPERATIONS
 DATE: 28/02/2018

KERB OUTLET
KERB ROOFWATER OUTLET & KERB ADAPTOR

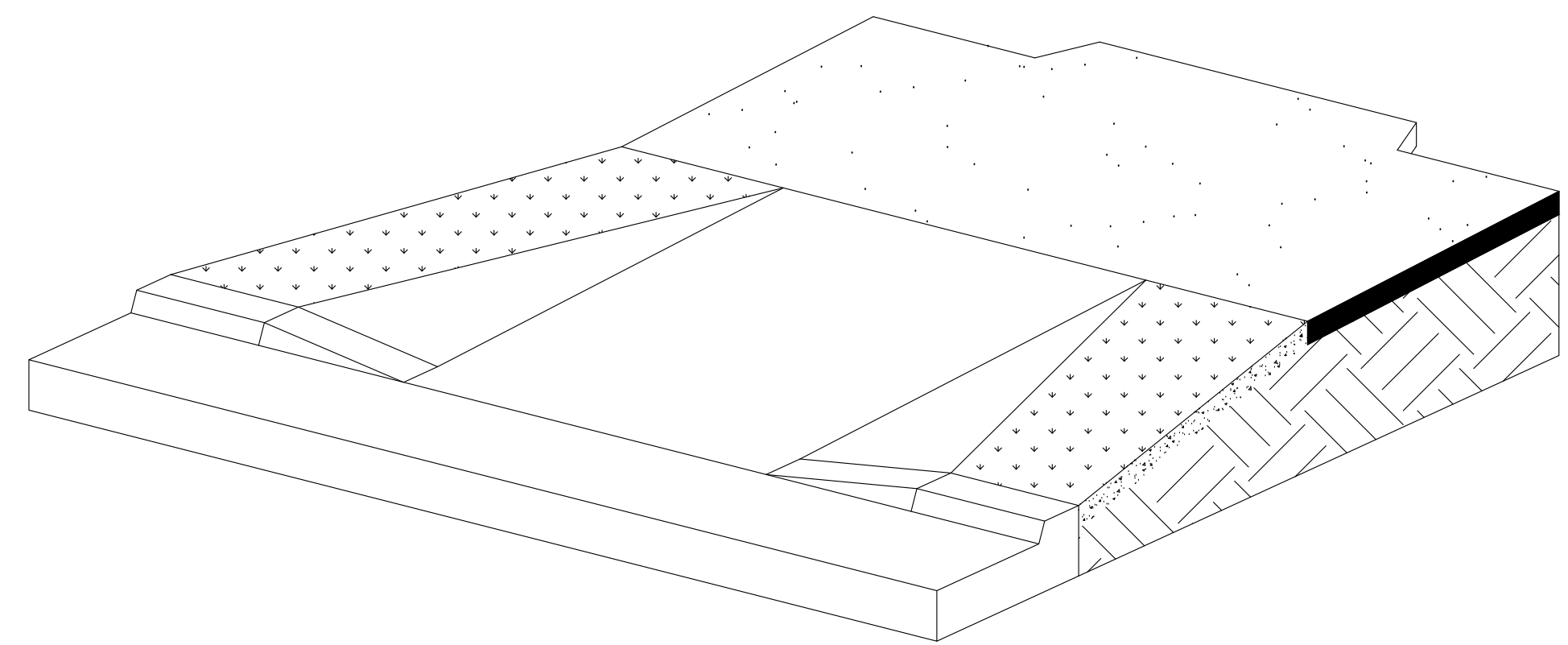
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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-R 10		

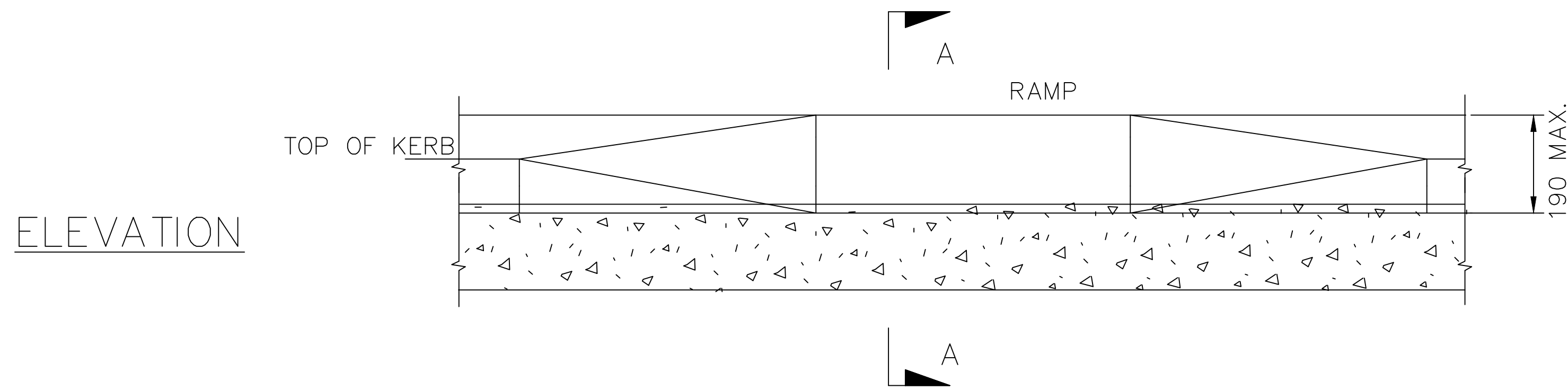
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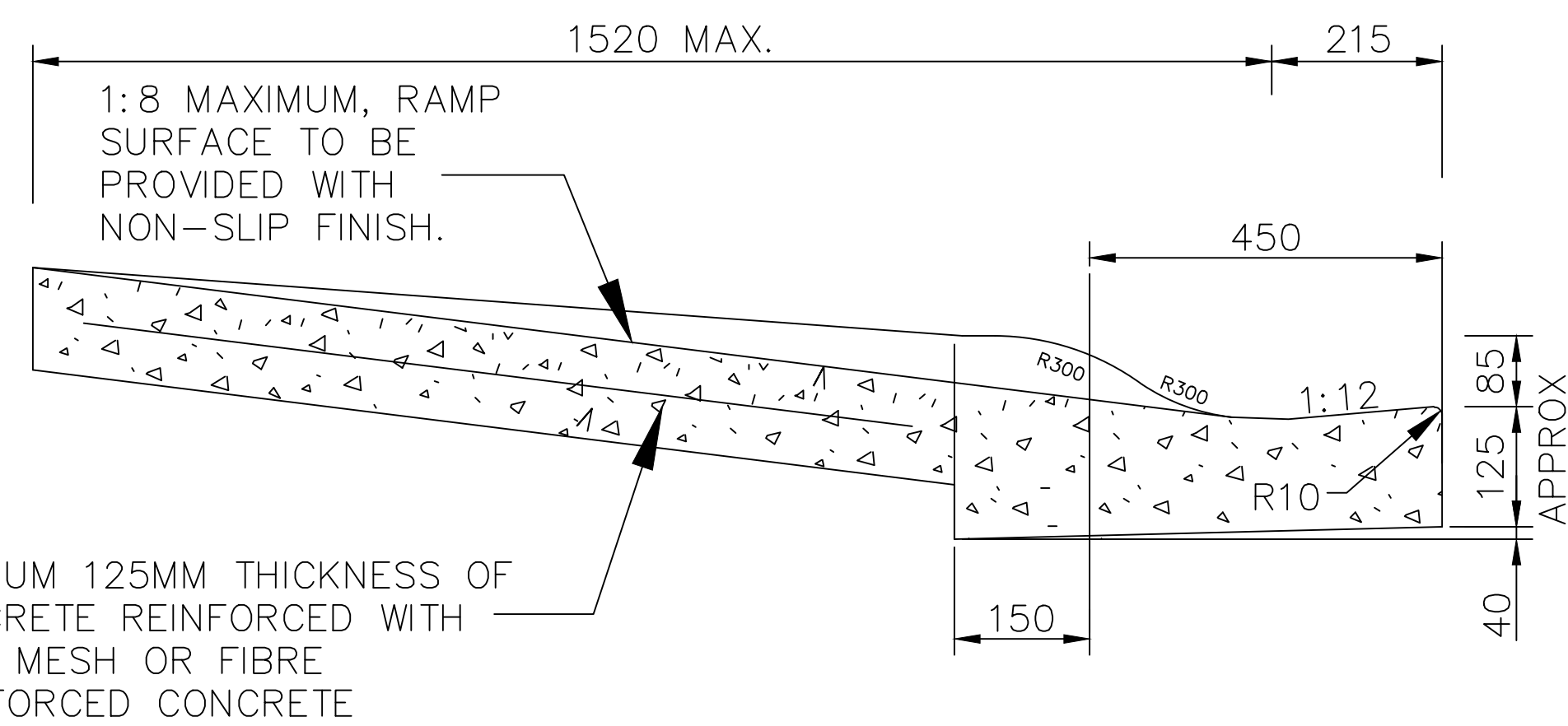
PLAN



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

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			

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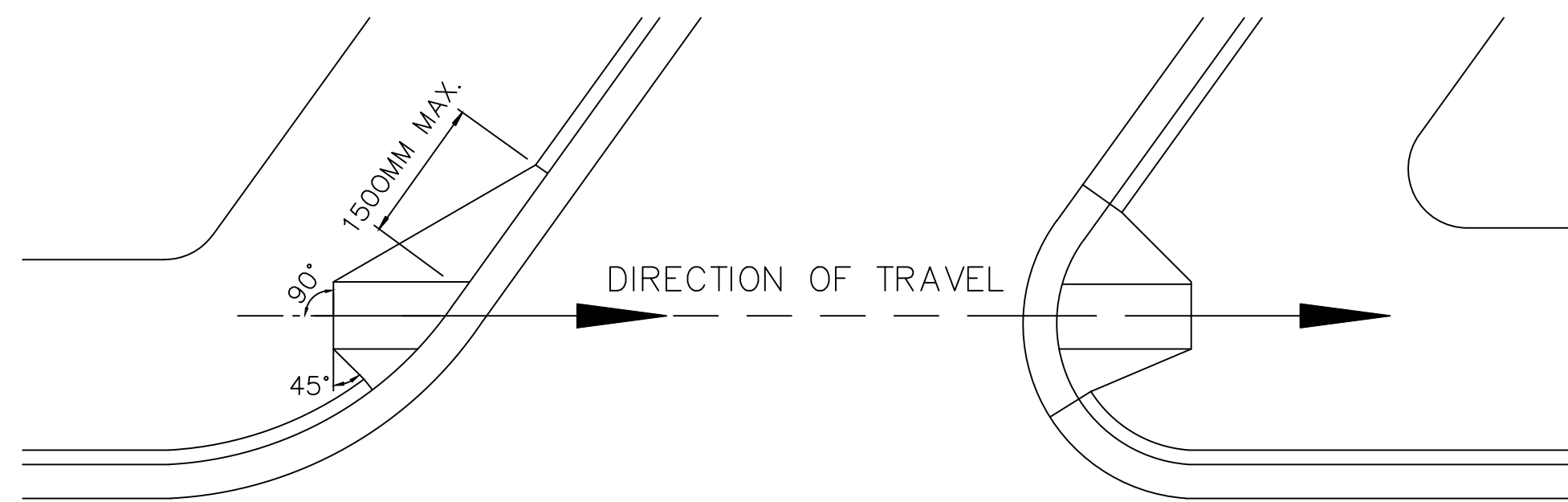
KERP RAMPS

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MUST BE WORN ON SITE

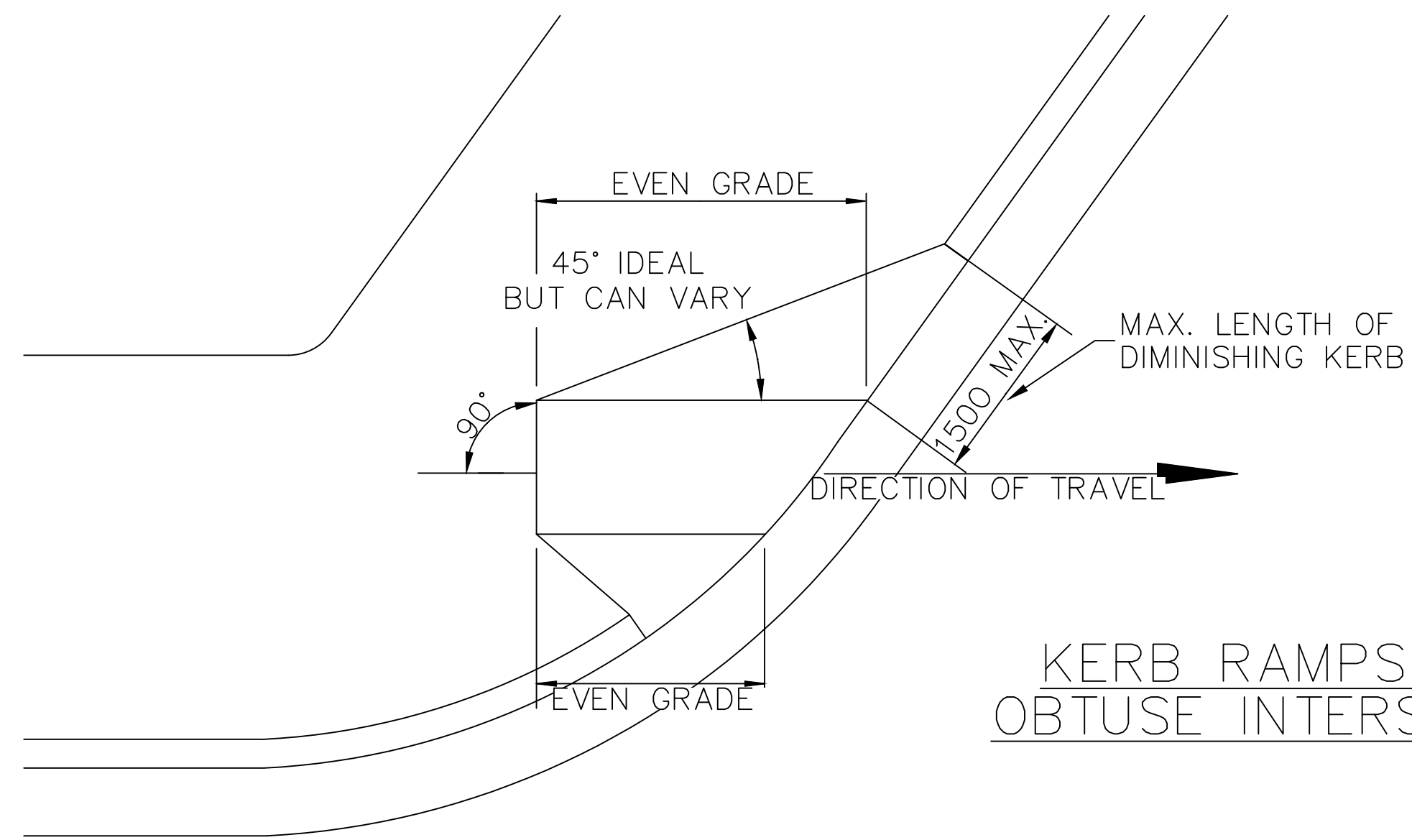
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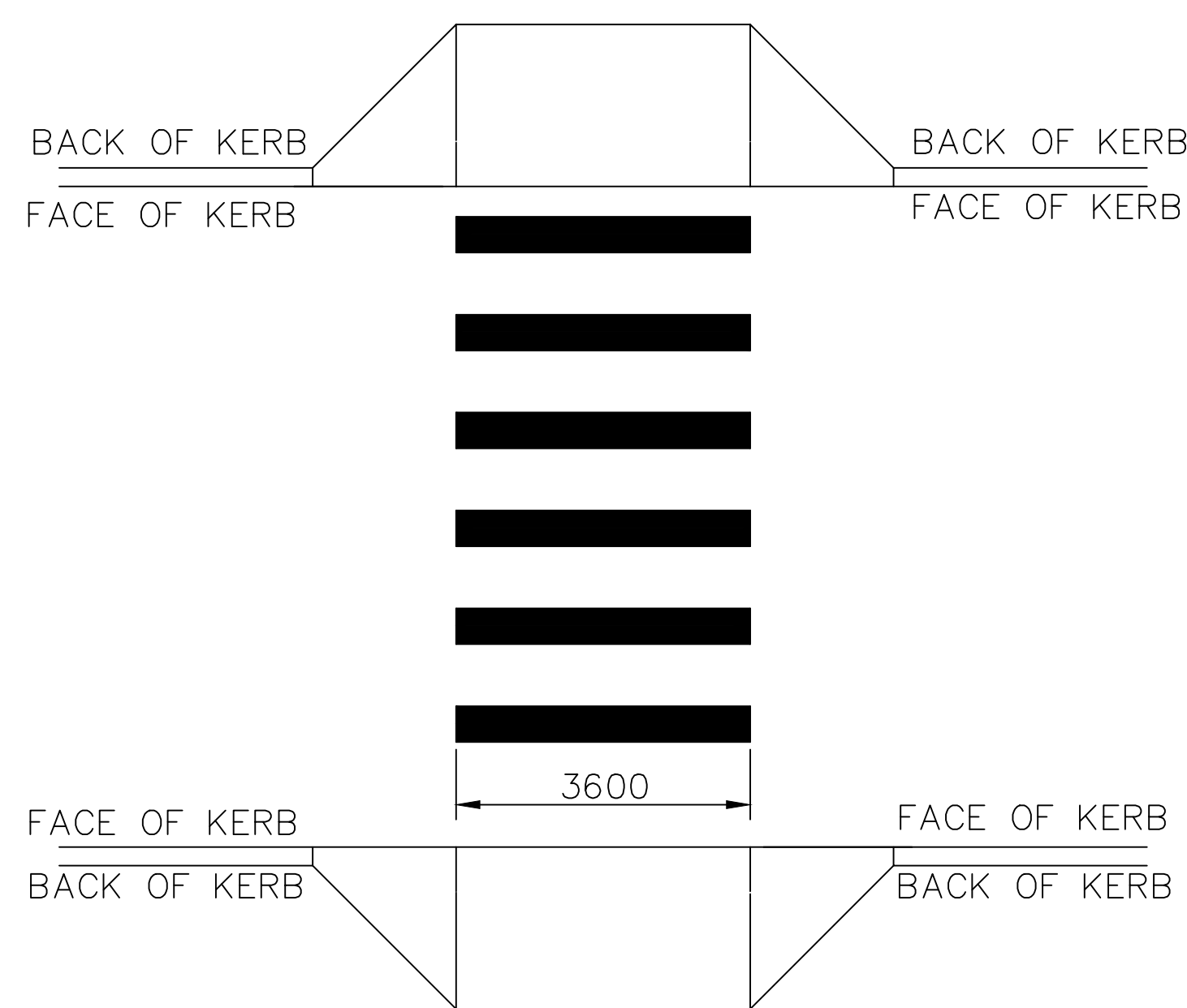
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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-R 11 A		



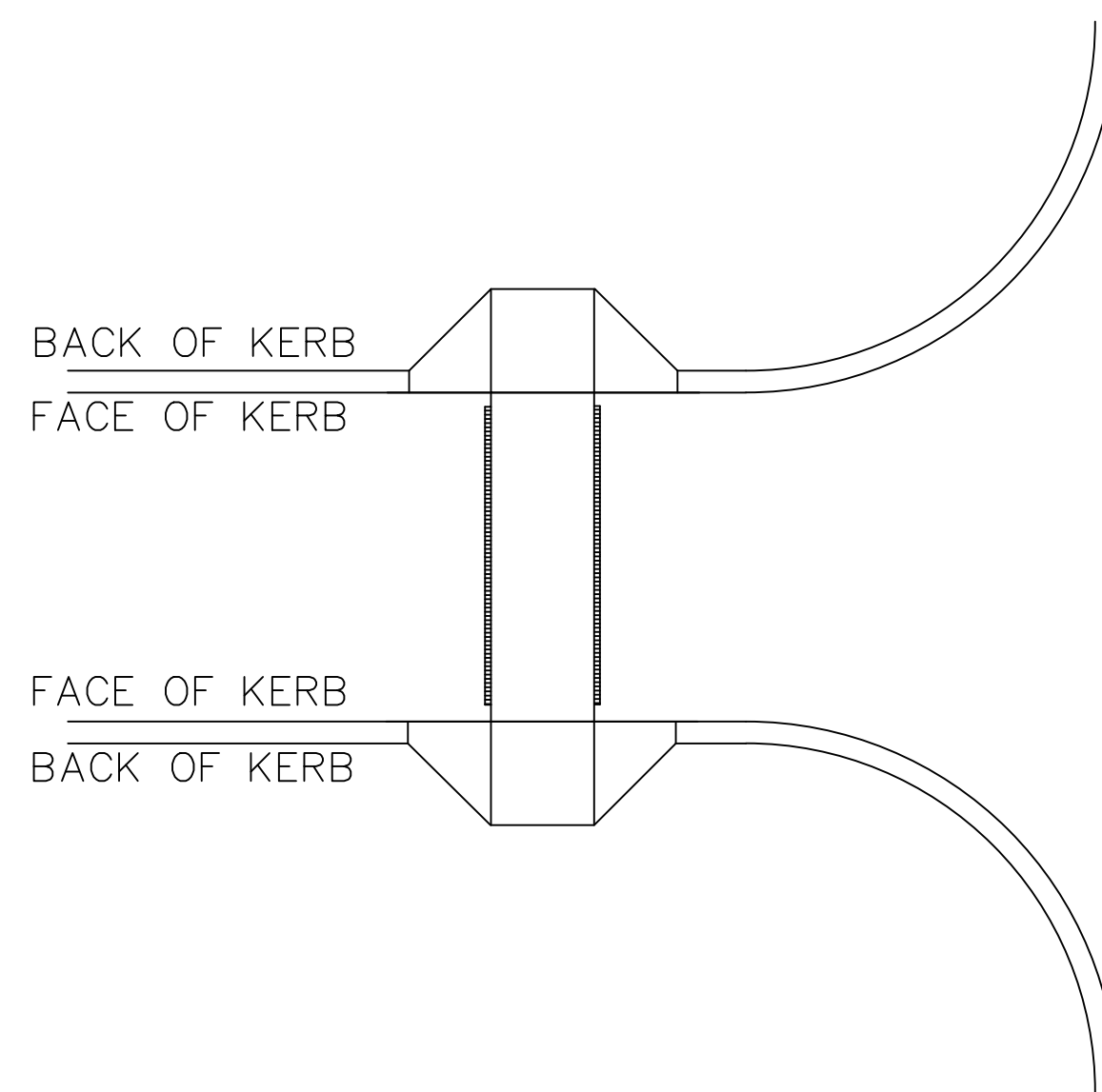
KERB RAMPS FOR ACUTE/OBTUSE INTERSECTION



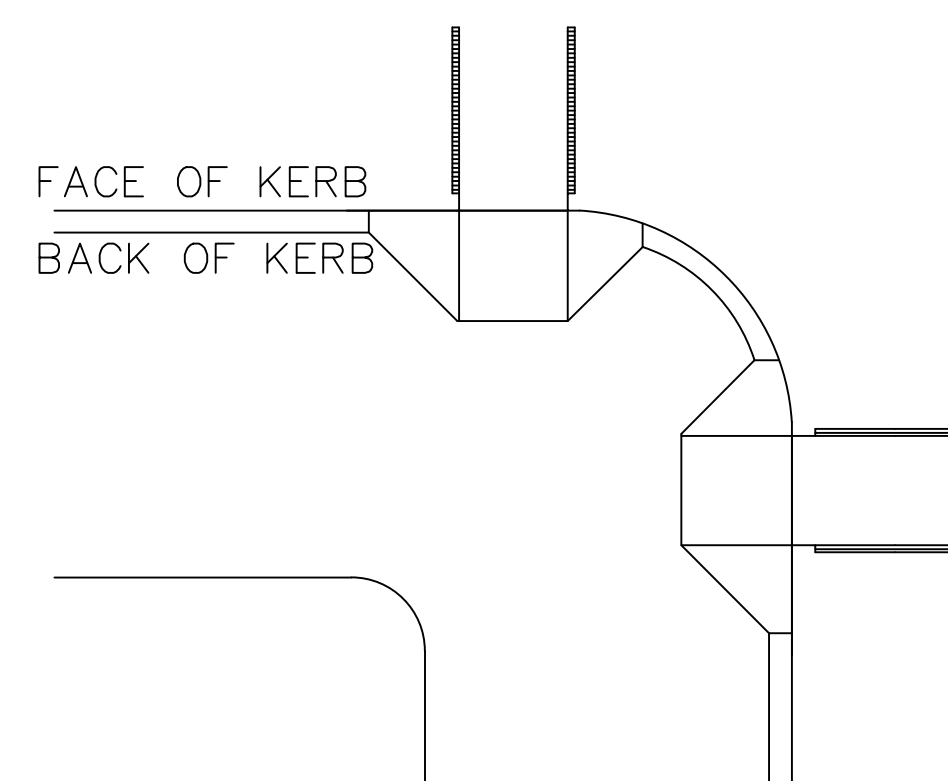
KERB RAMPS FOR OBTUSE INTERSECTION



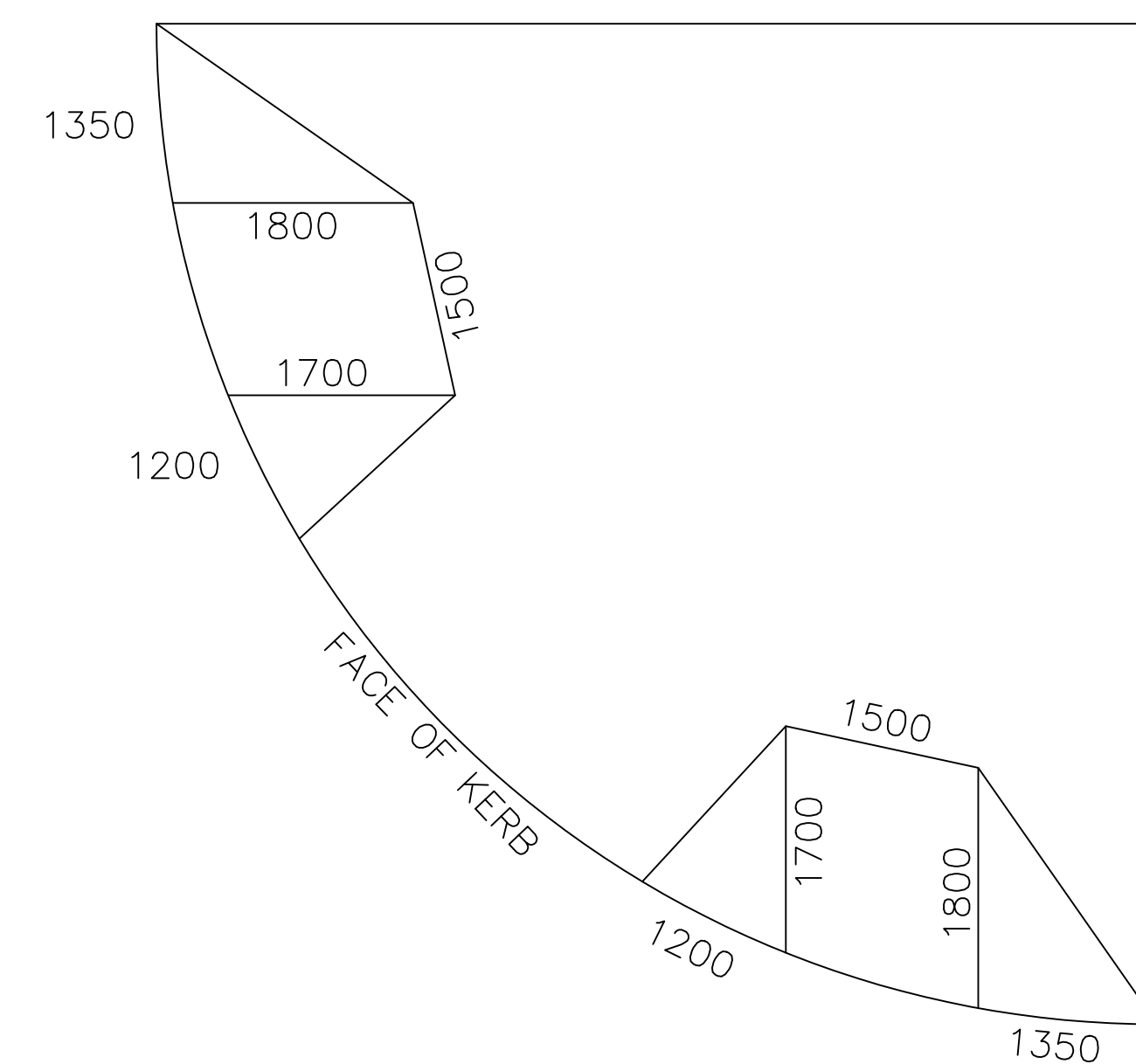
AT PEDESTRIAN CROSSING (ZEBRA)
SEE NOTE 4 ON SD-R 10 A



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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KERB RAMPS LAYOUT AT INTERSECTIONS

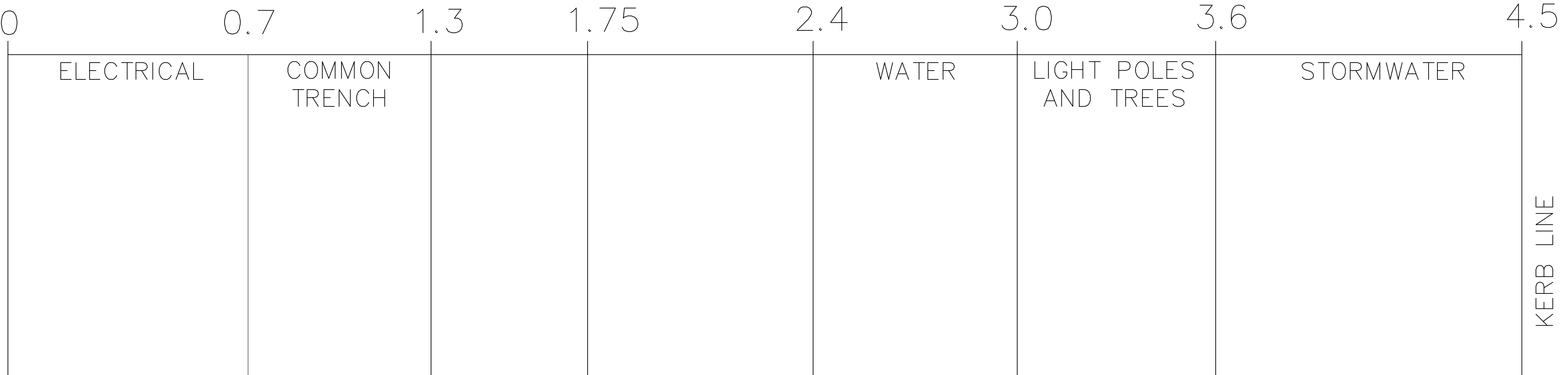


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SD-R 11 B		

DRAWING NUMBER SD-R 11 B

RESERVATIONS 0

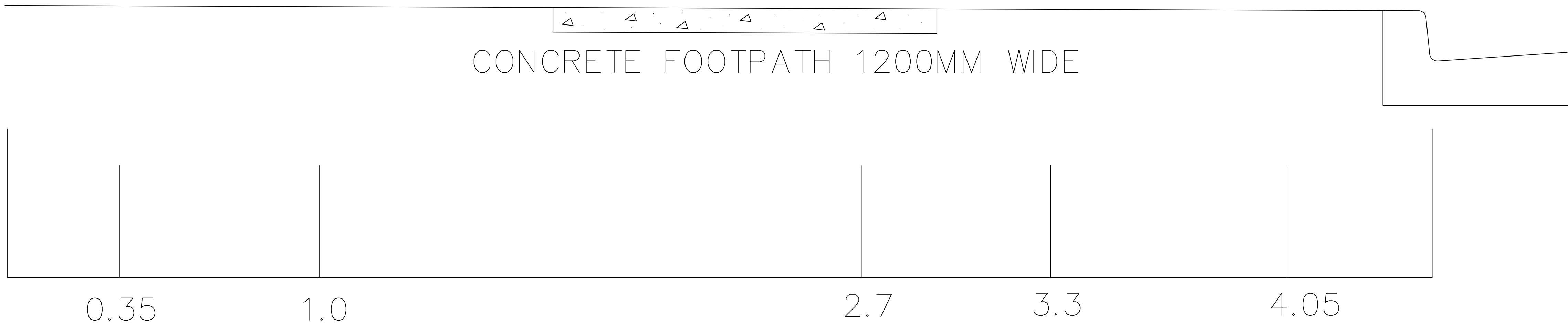
PROPERTY LINE



KERB LINE

CONCRETE FOOTPATH 1200MM WIDE

CENTRE OF ALIGNMENTS



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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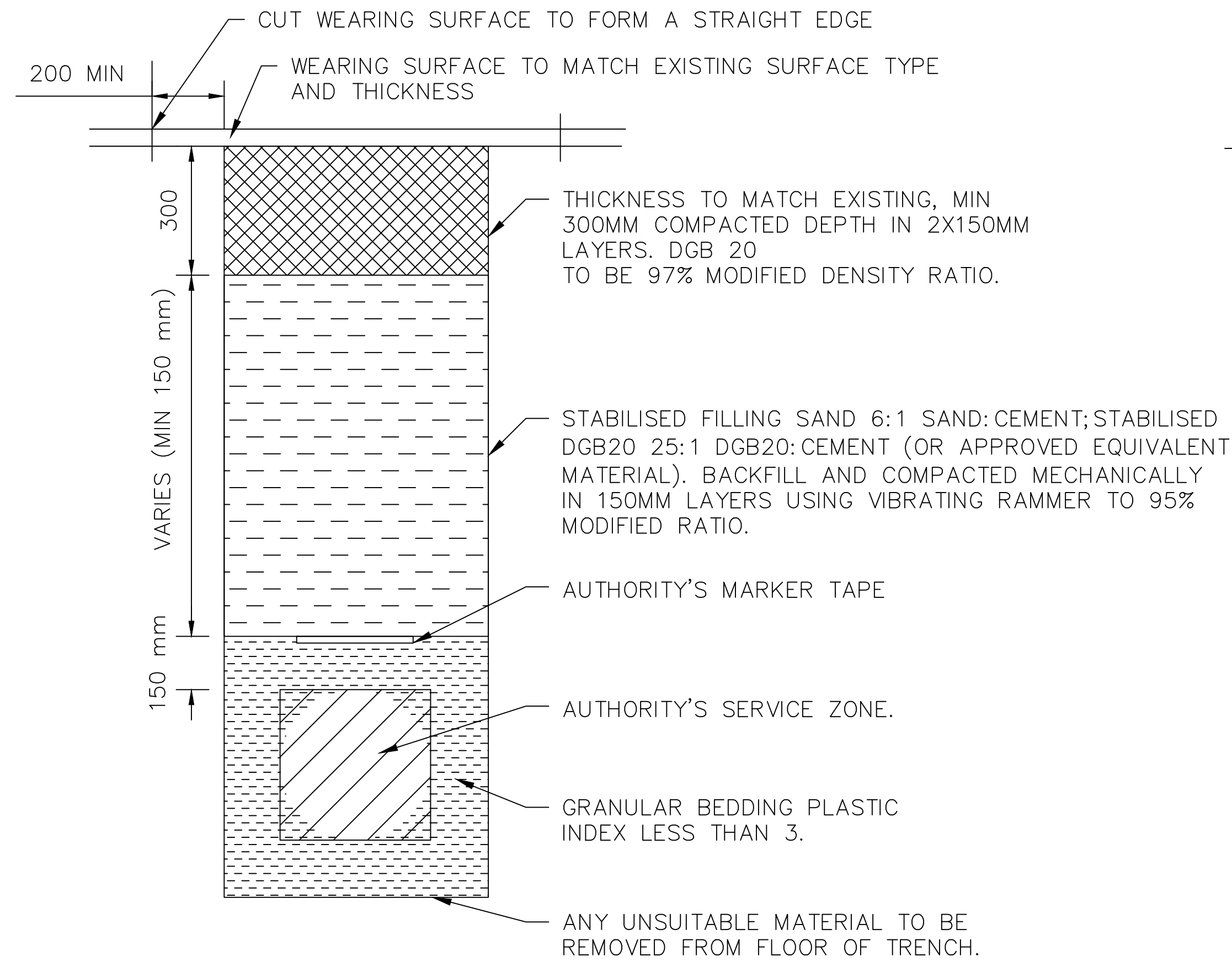
STANDARD SERVICE ALLOCATION
 FOR PUBLIC UTILITY SERVICES IN FOOTPATH AREAS

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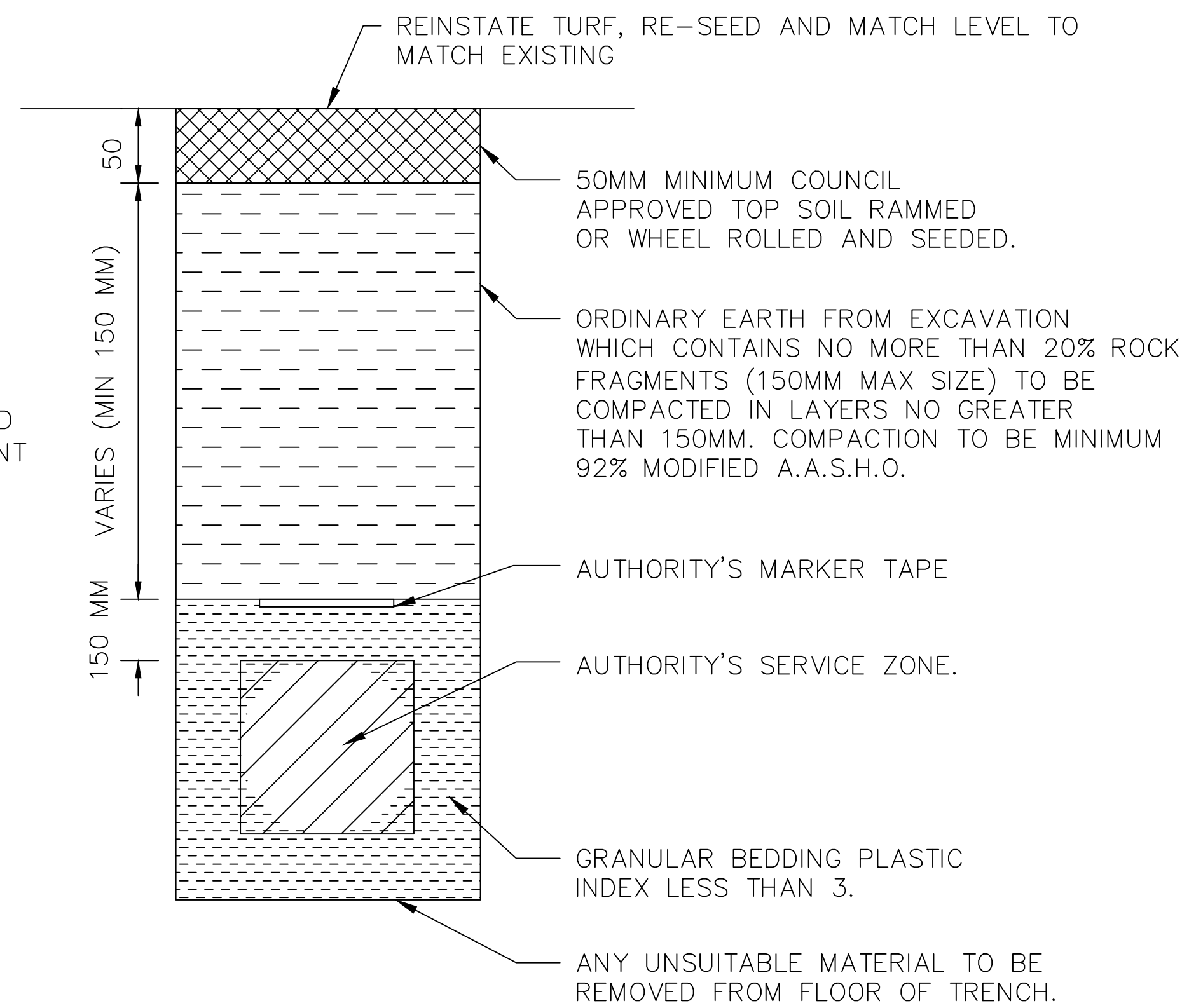
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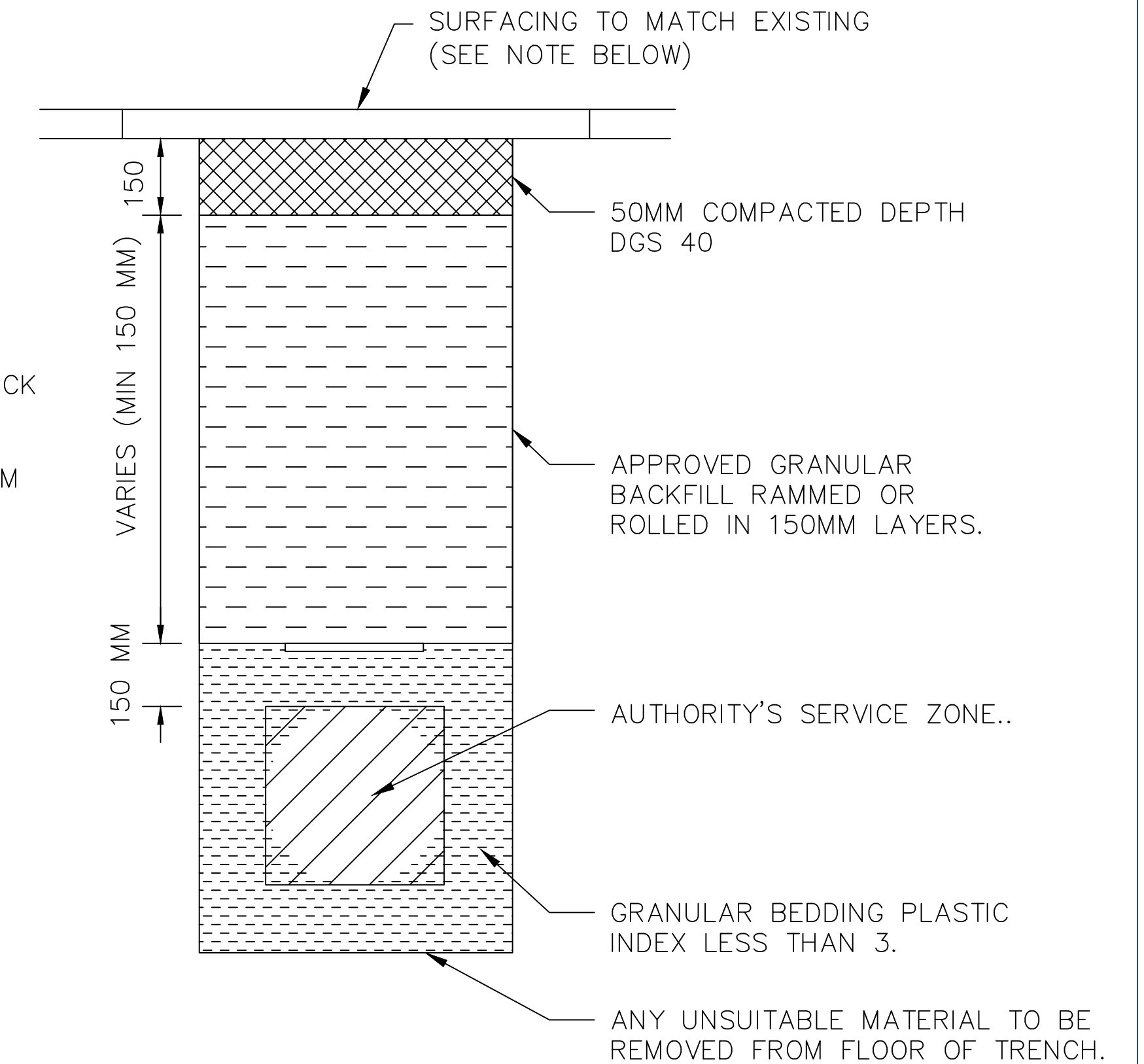
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 15
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
SD-R 12		



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			

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TRENCH BACKFILL DETAILS
FOR ROAD CROSSINGS

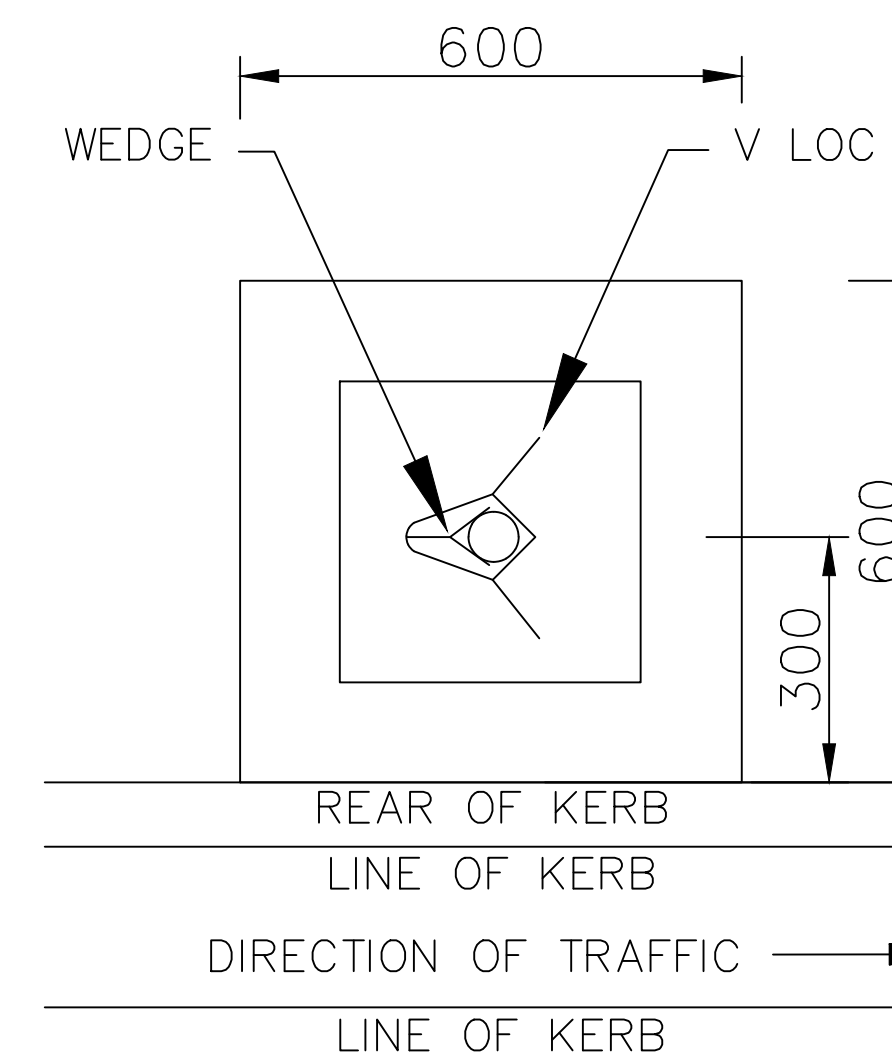
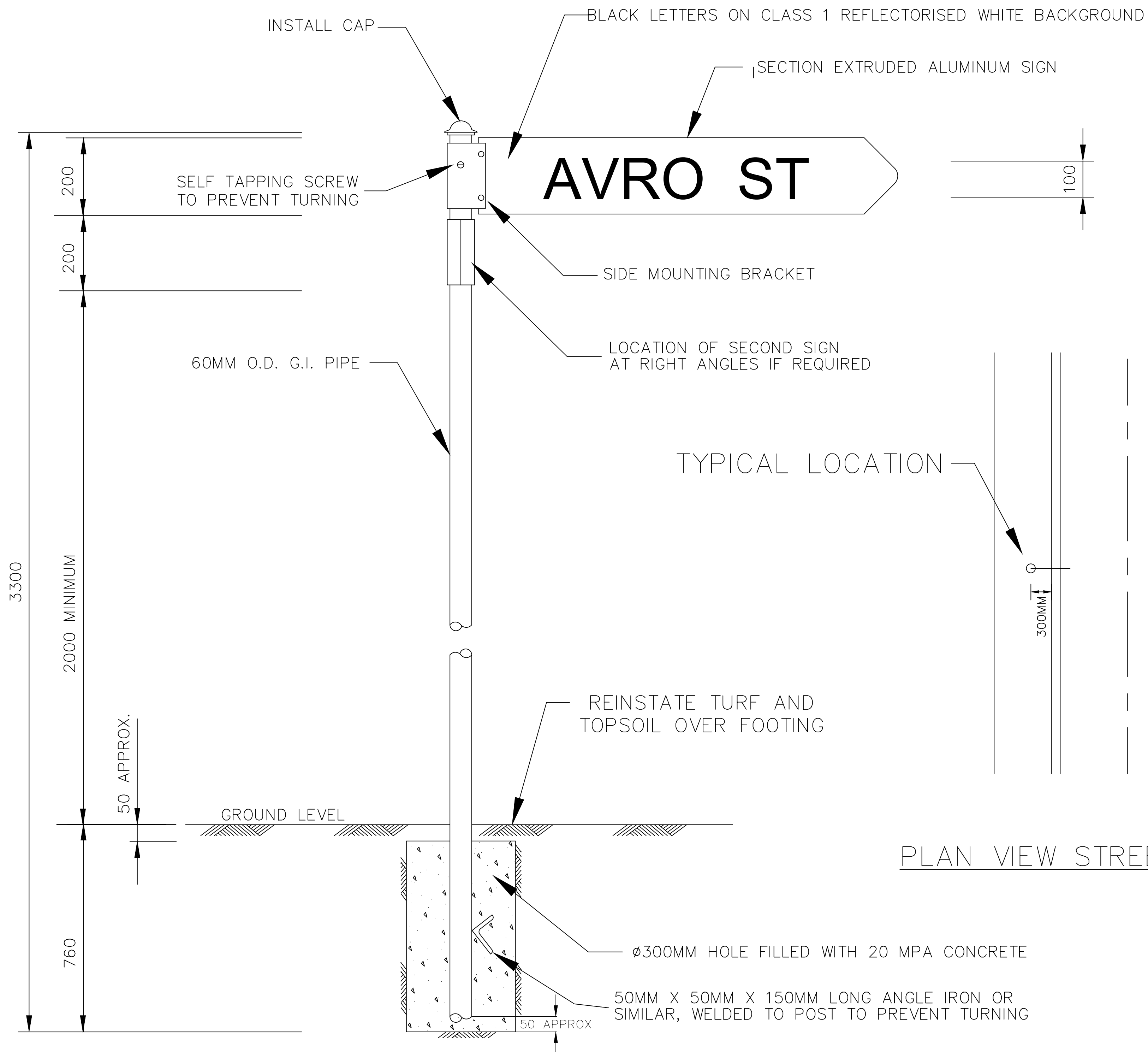
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 SHEET NUMBER 16

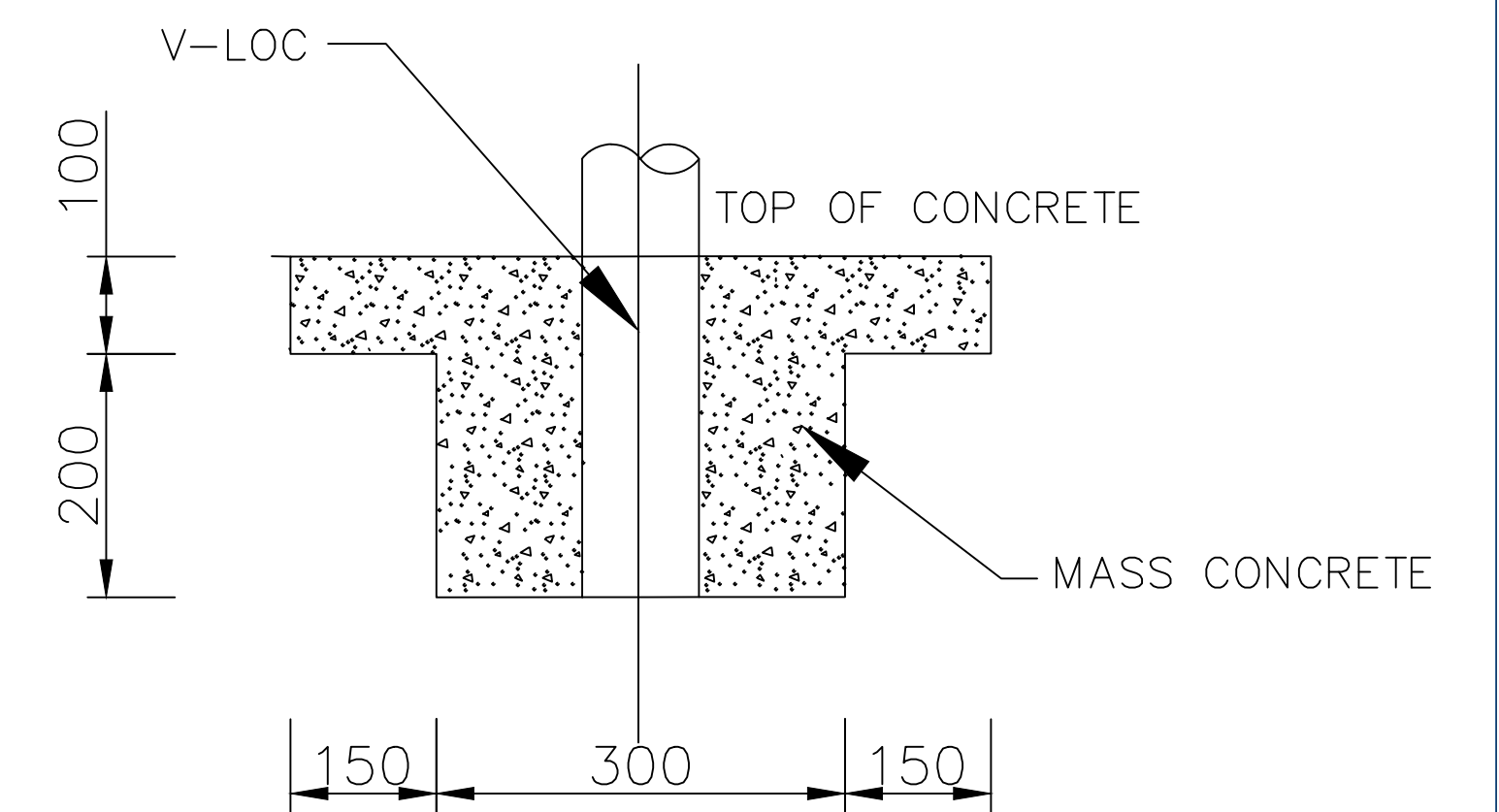
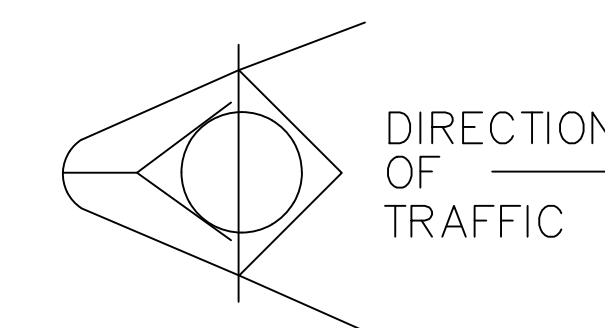
FILE NAME: STANDARD DRAWINGS.DWG
 REVISION GMC-VER-1
 RD: -/-/-/-/-

SD-R 13

DRAWING NUMBER SD-R 13



PLAN



TYPICAL LOCATION

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	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			

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STREET NAME PLATE & POST

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A1 - SCALE AS SHOWN
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 SHEET NUMBER 17

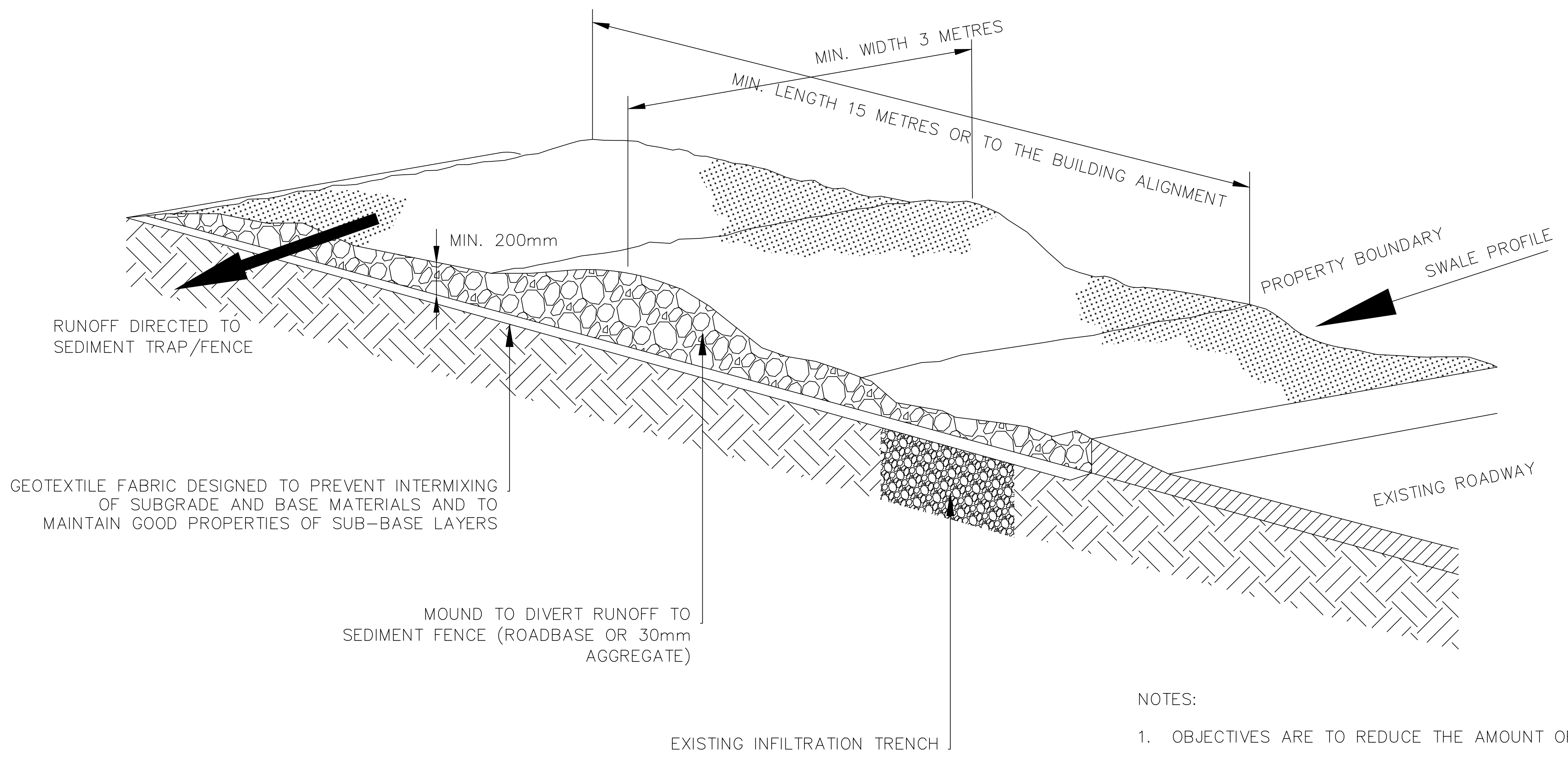
FILE NAME: STANDARD DRAWINGS.DWG

REVISION
 GMC-VER-1

SD-R 14

DRAWING NUMBER SD-R 14

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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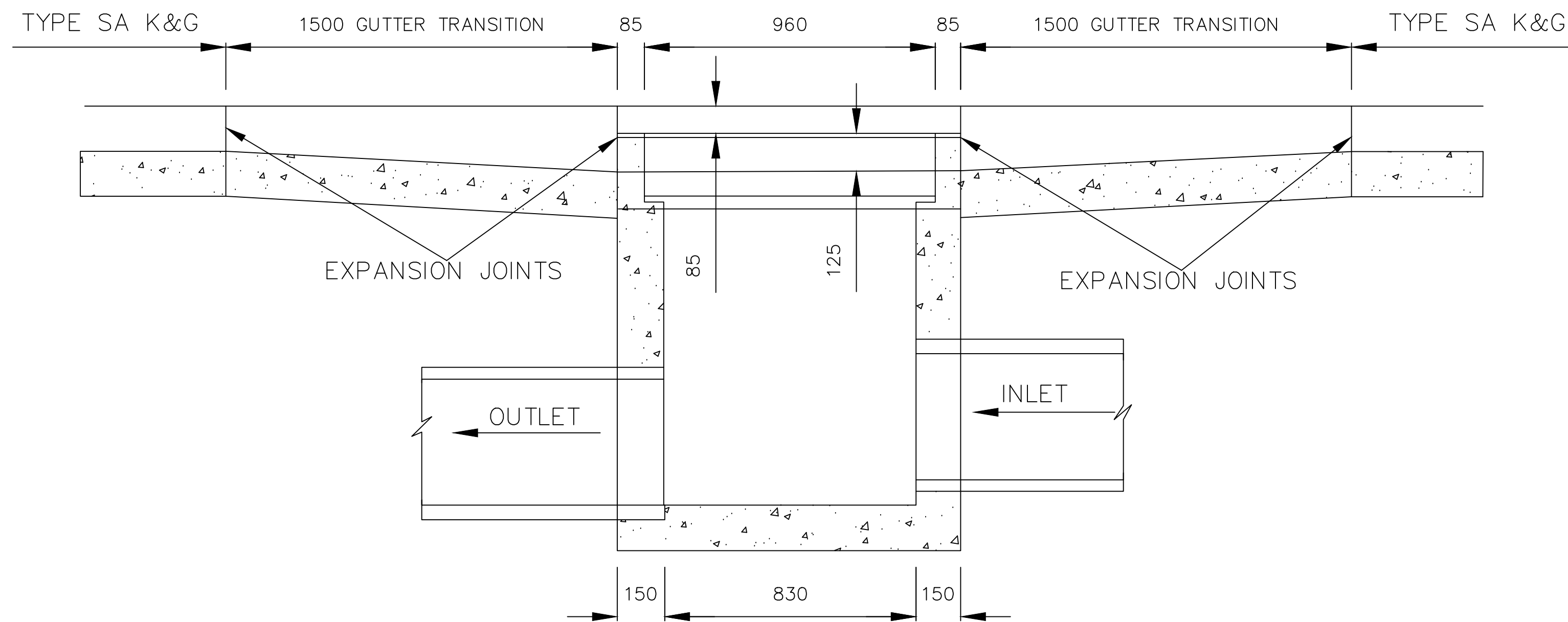
SWALE STABILISED SITE ACCESS

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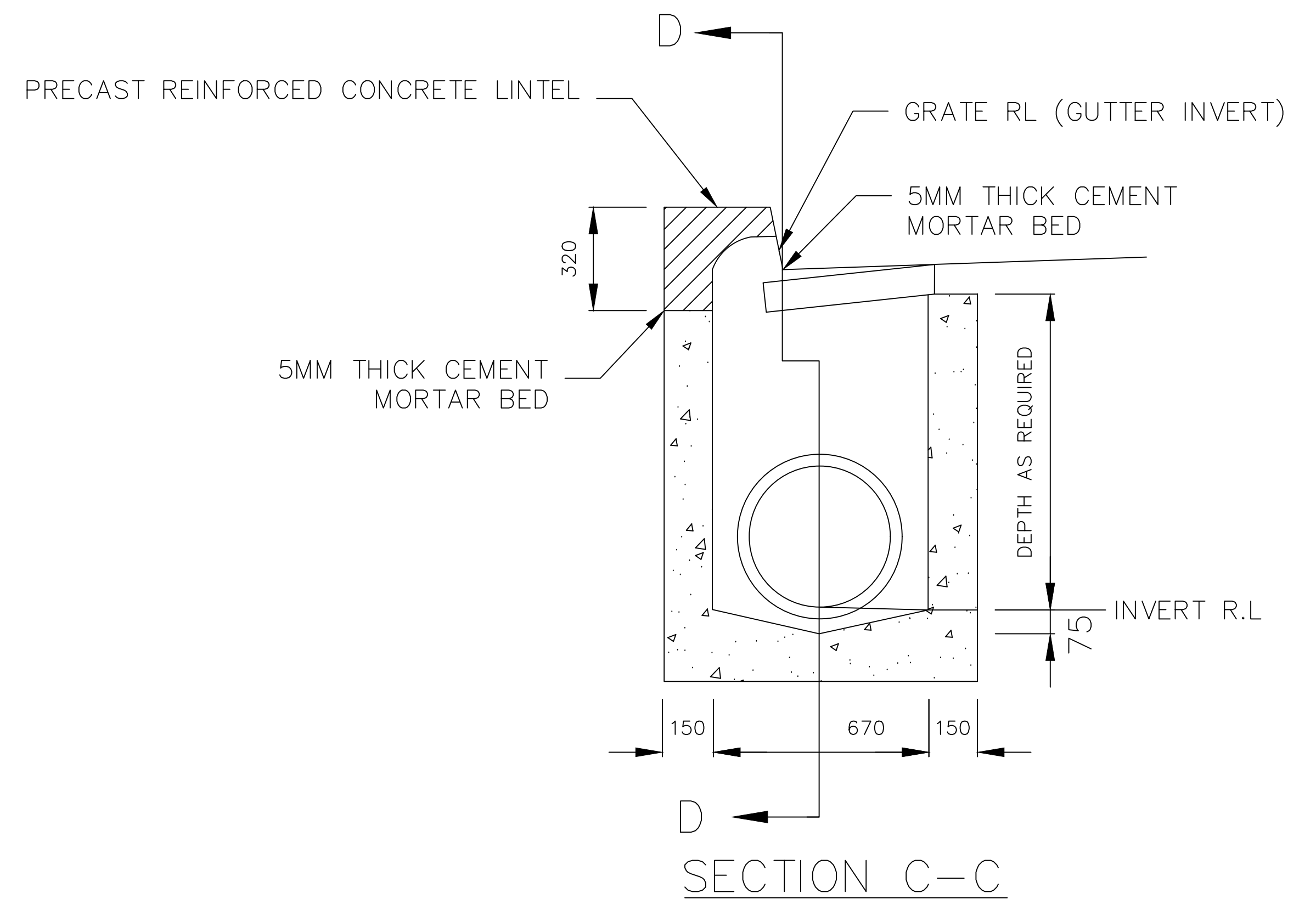
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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-D 01		

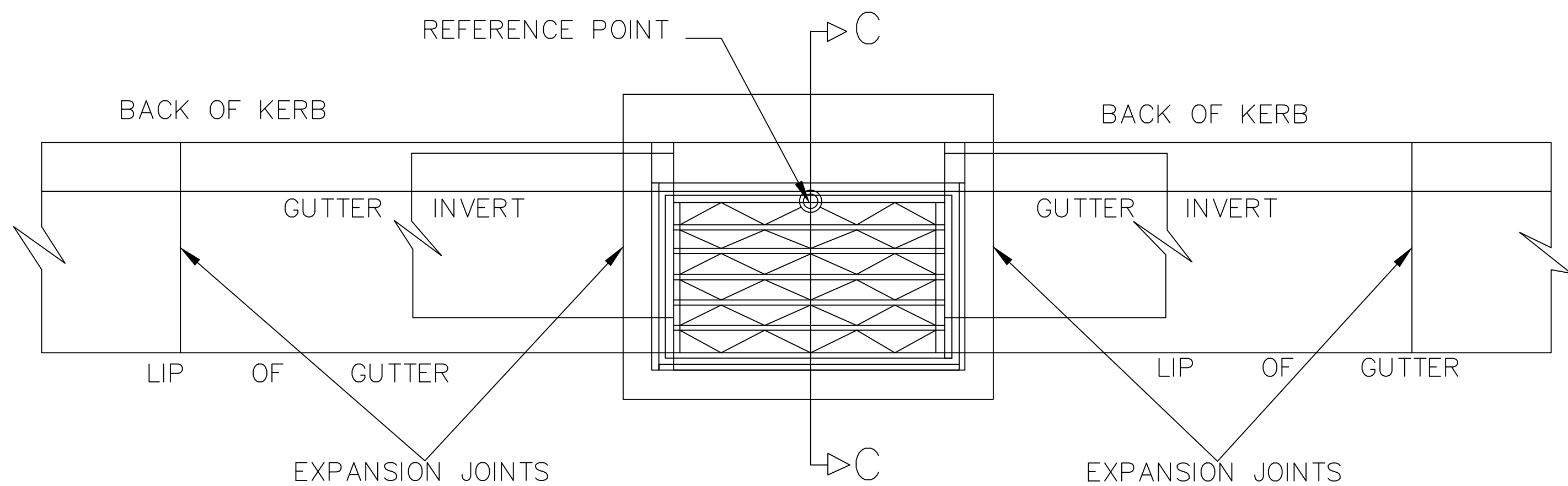
DRAWING NUMBER SD-D 01



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
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			

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SIDE ENTRY PIT
WITHOUT EXTENDED CHAMBER PIT

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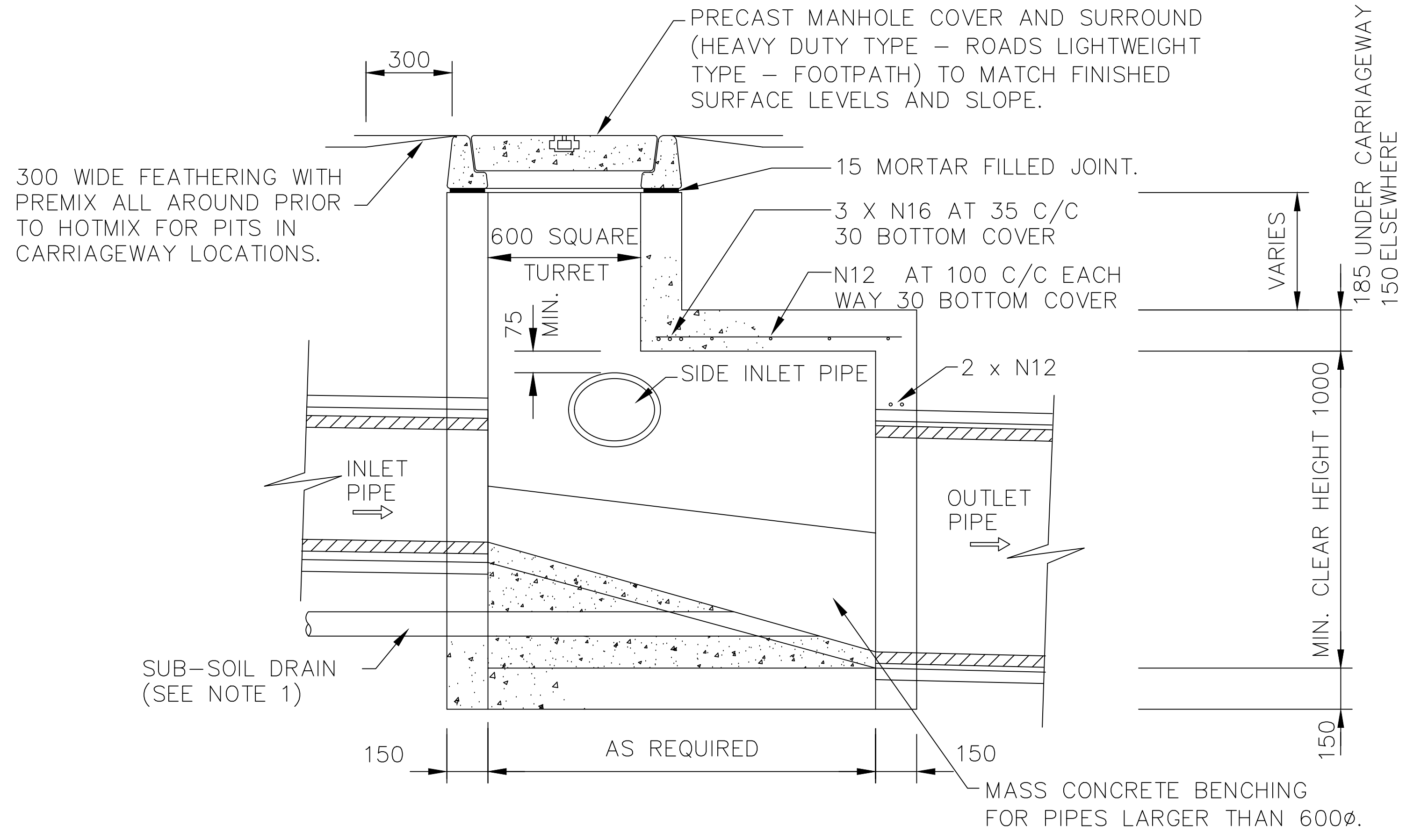
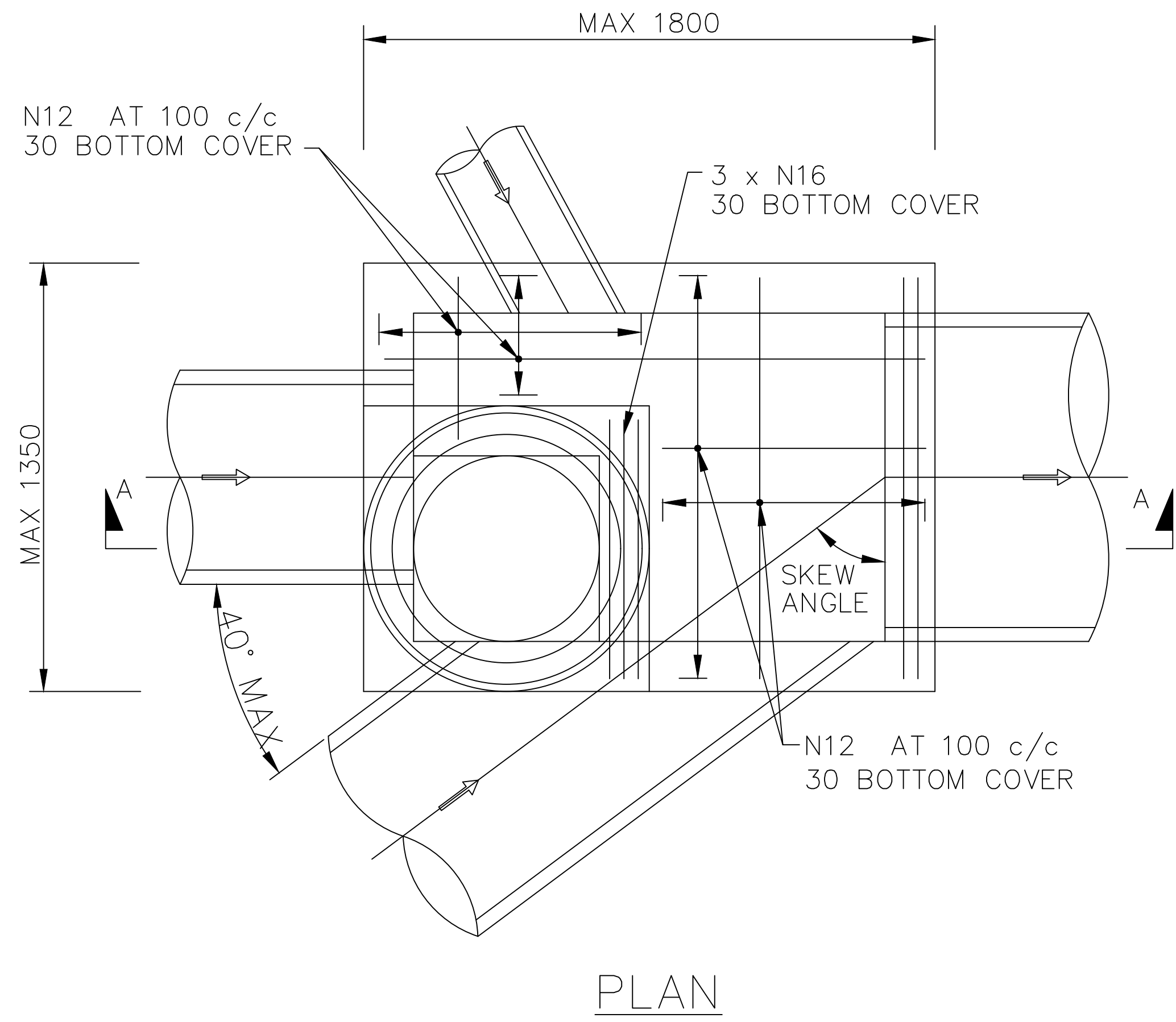
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A1 - SCALE AS SHOWN
 NUMBER OF SHEETS 35
 SHEET NUMBER 19

FILE NAME: STANDARD DRAWINGS.DWG

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SD-D 02



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.

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			

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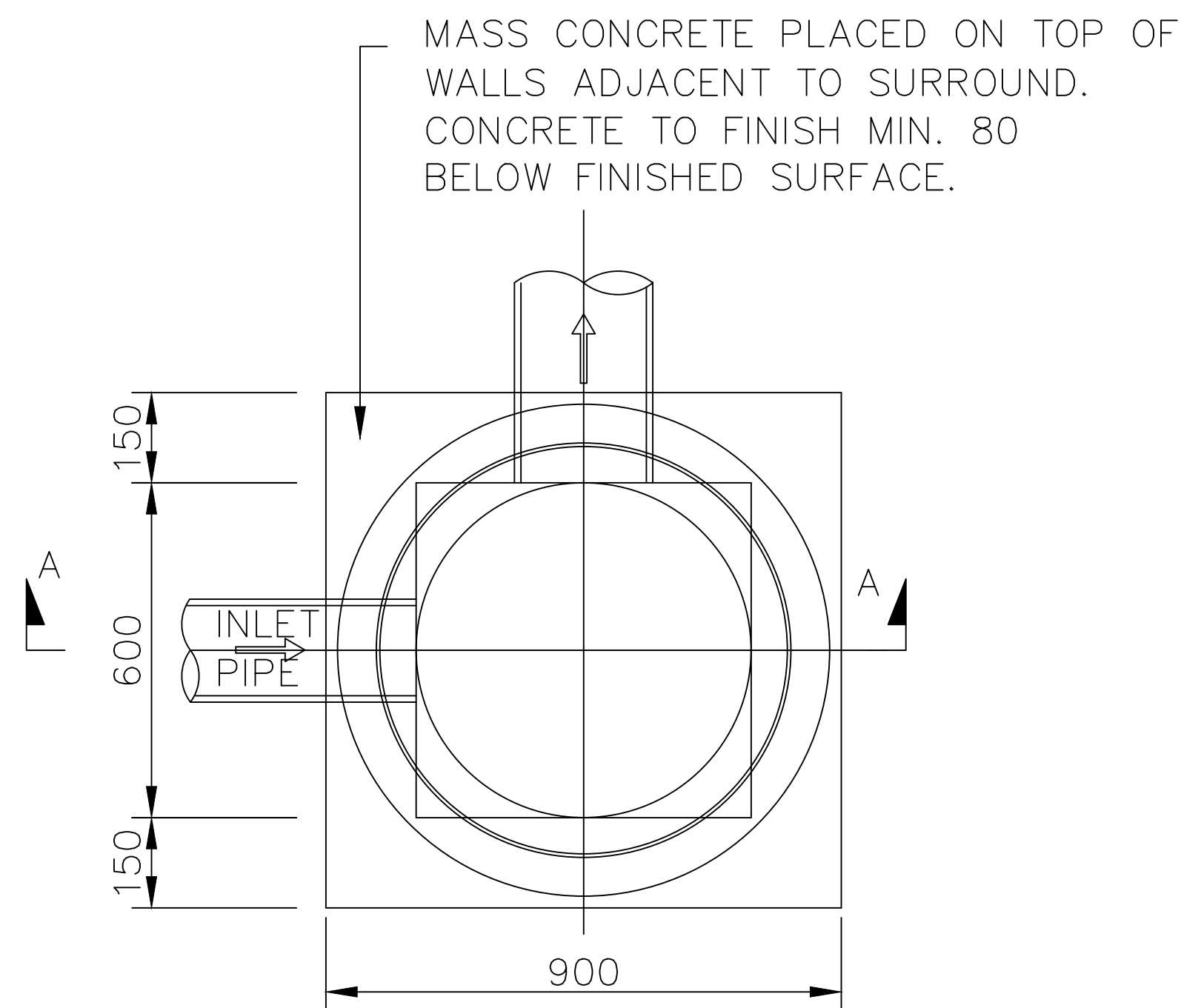
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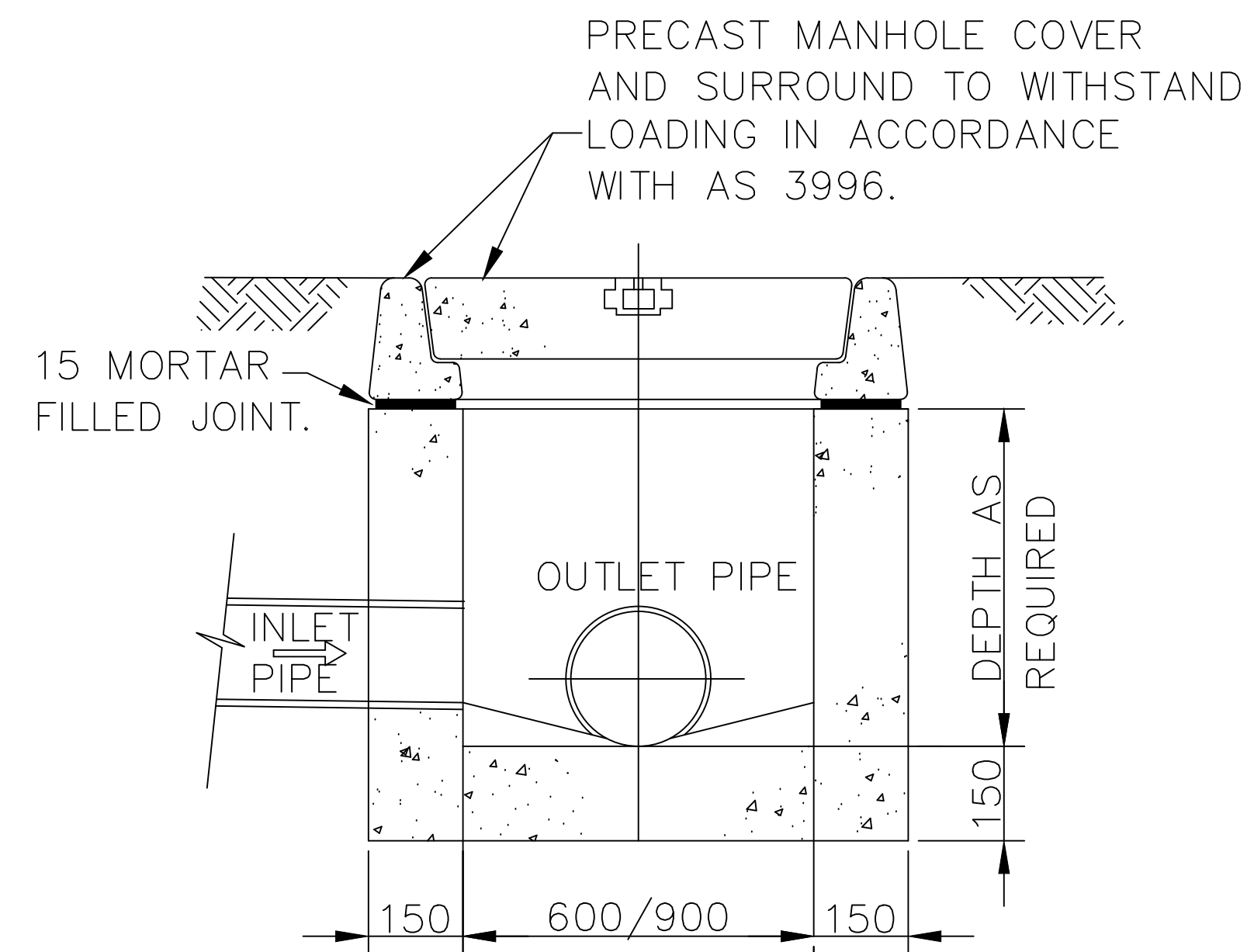
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SD-D 03

DRAWING NUMBER SD-D 03

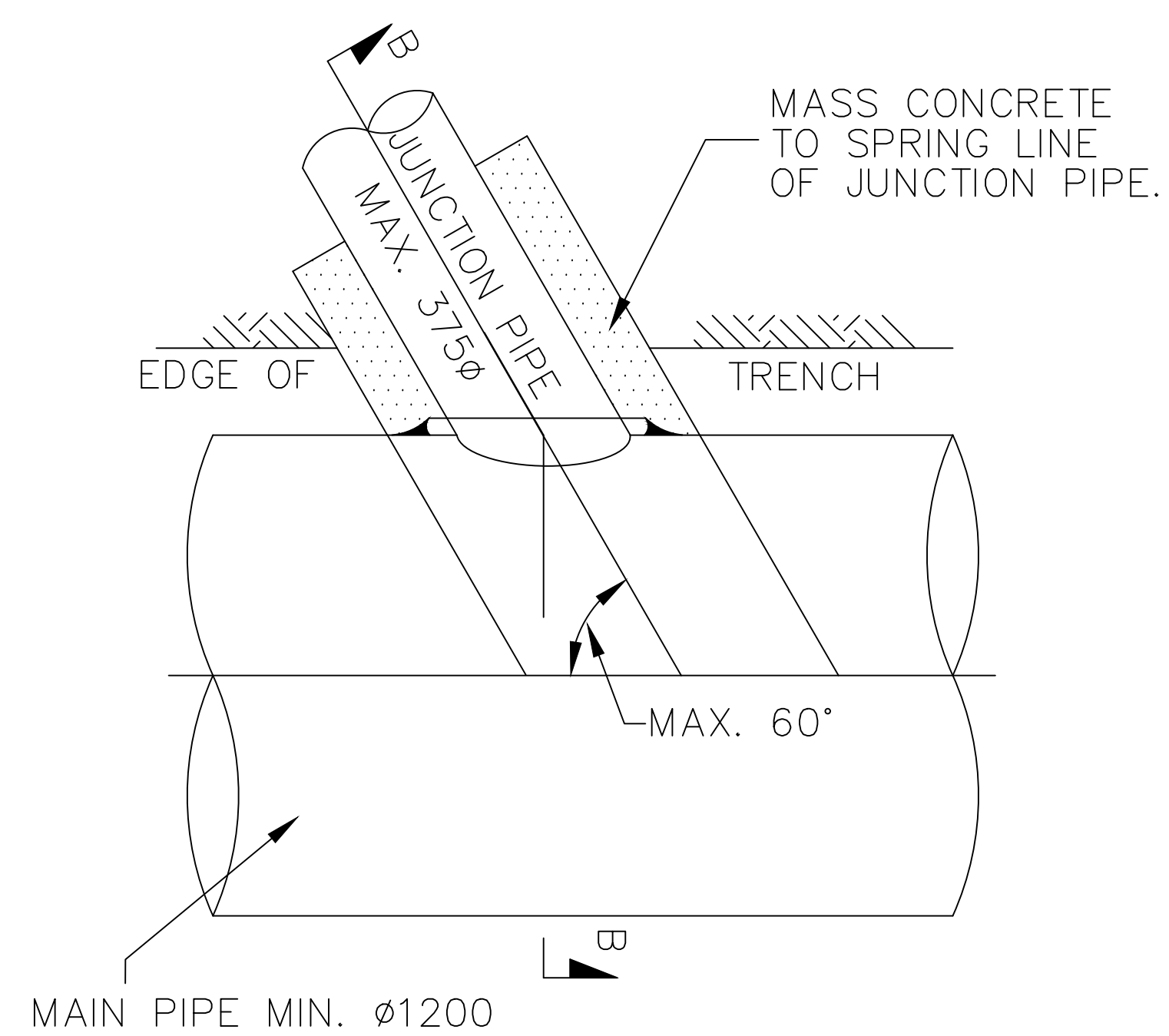


PLAN

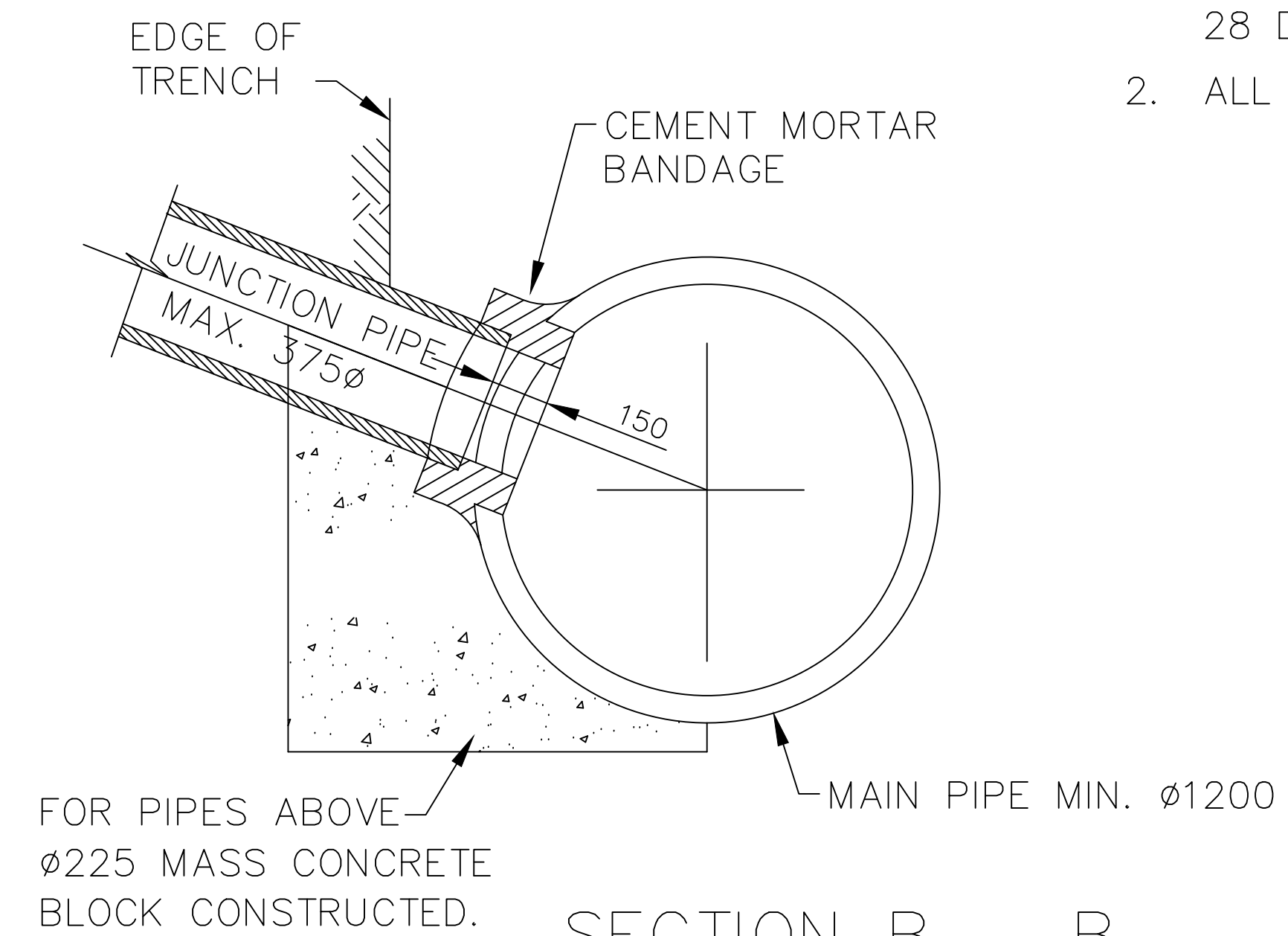


SECTION A - A

CONCRETE INSPECTION PIT



PLAN



SECTION B - B

TYPICAL DIRECT CONNECTION OF SMALL PIPE AND LARGE PIPE

NOTES:

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

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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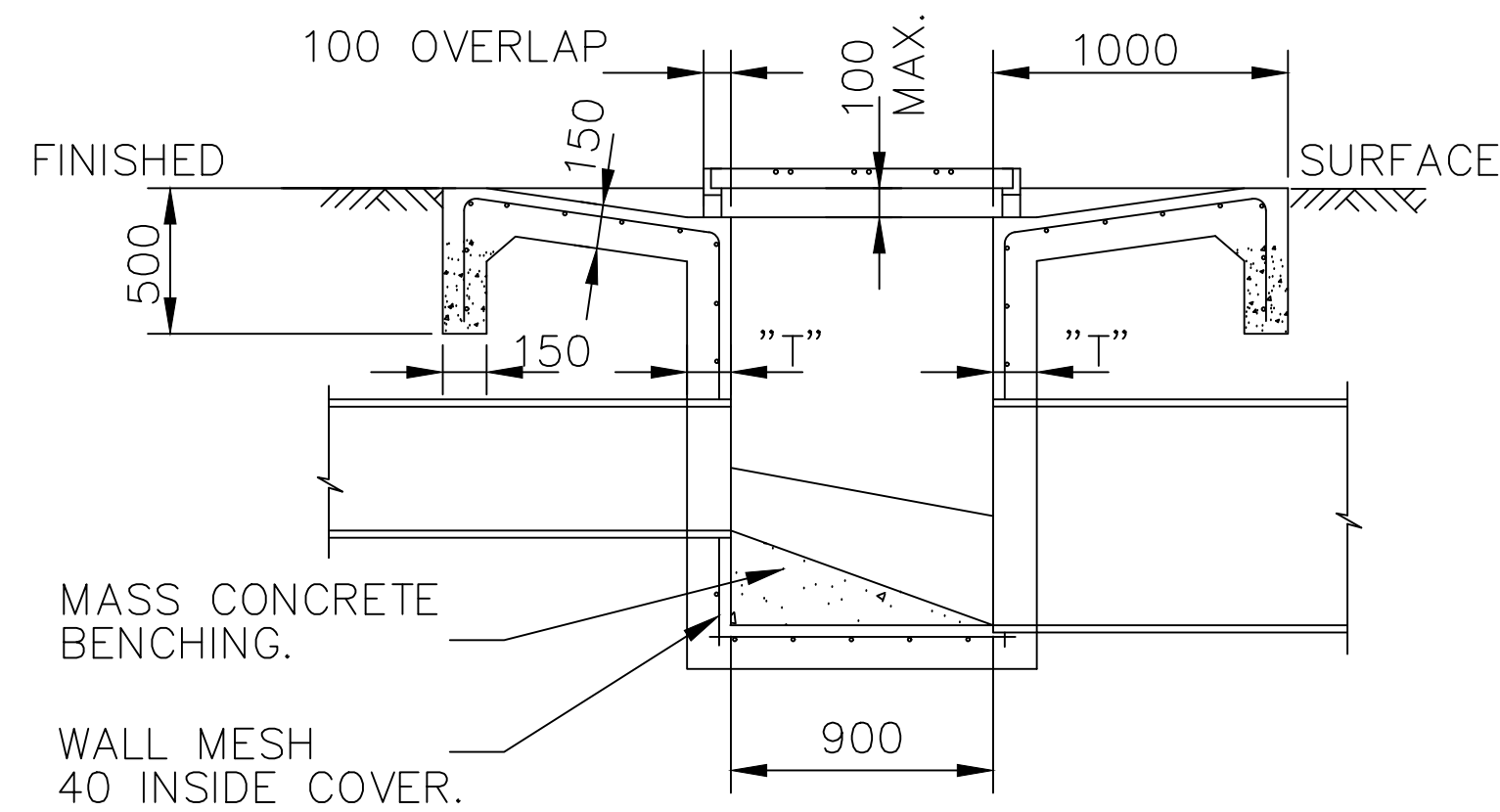
DRAINAGE CONNECTIONS
 MINOR

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 PERSONAL PROTECTIVE EQUIPMENT
 MUST BE WORN ON SITE

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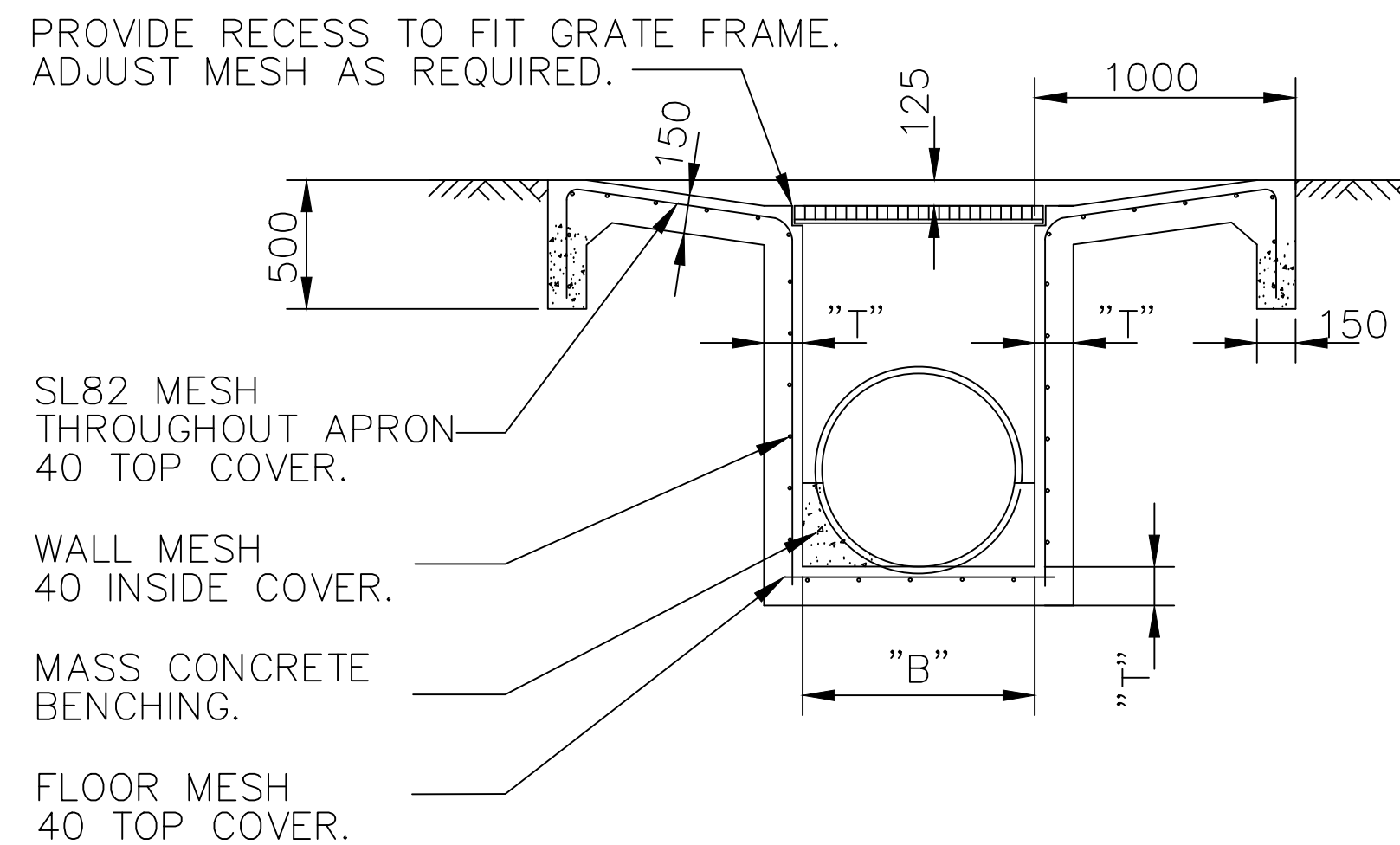
DIAL 1100
 BEFORE YOU DIG

A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 21
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
RD: -/-/-		SD-D 04



SECTION A - A

PIT TYPE A - RAISED GRATE

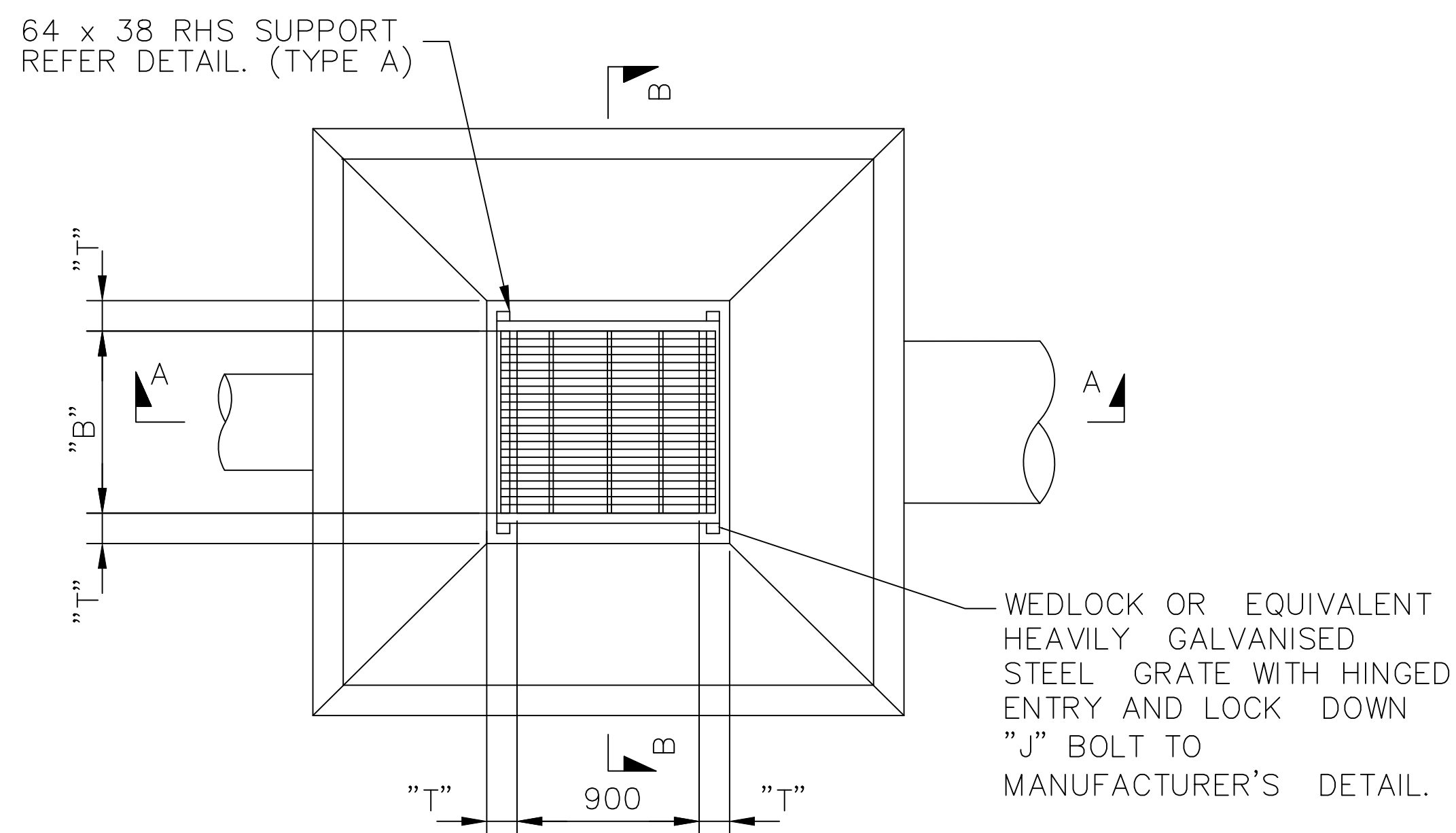


SECTION B - B

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.

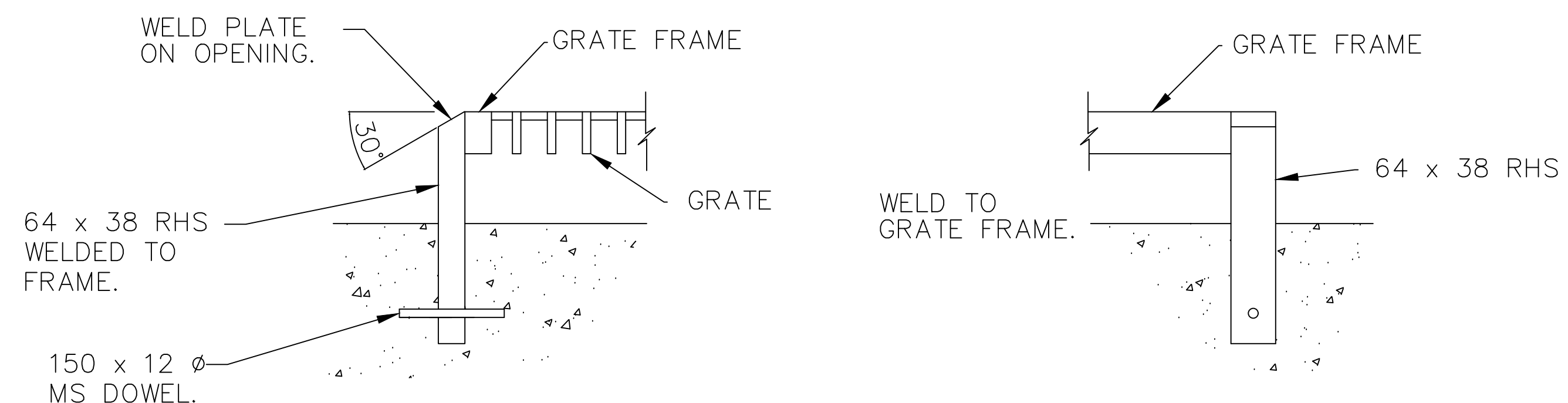


PLAN - PIT TYPE A and B

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	
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SURFACE INLET PITS

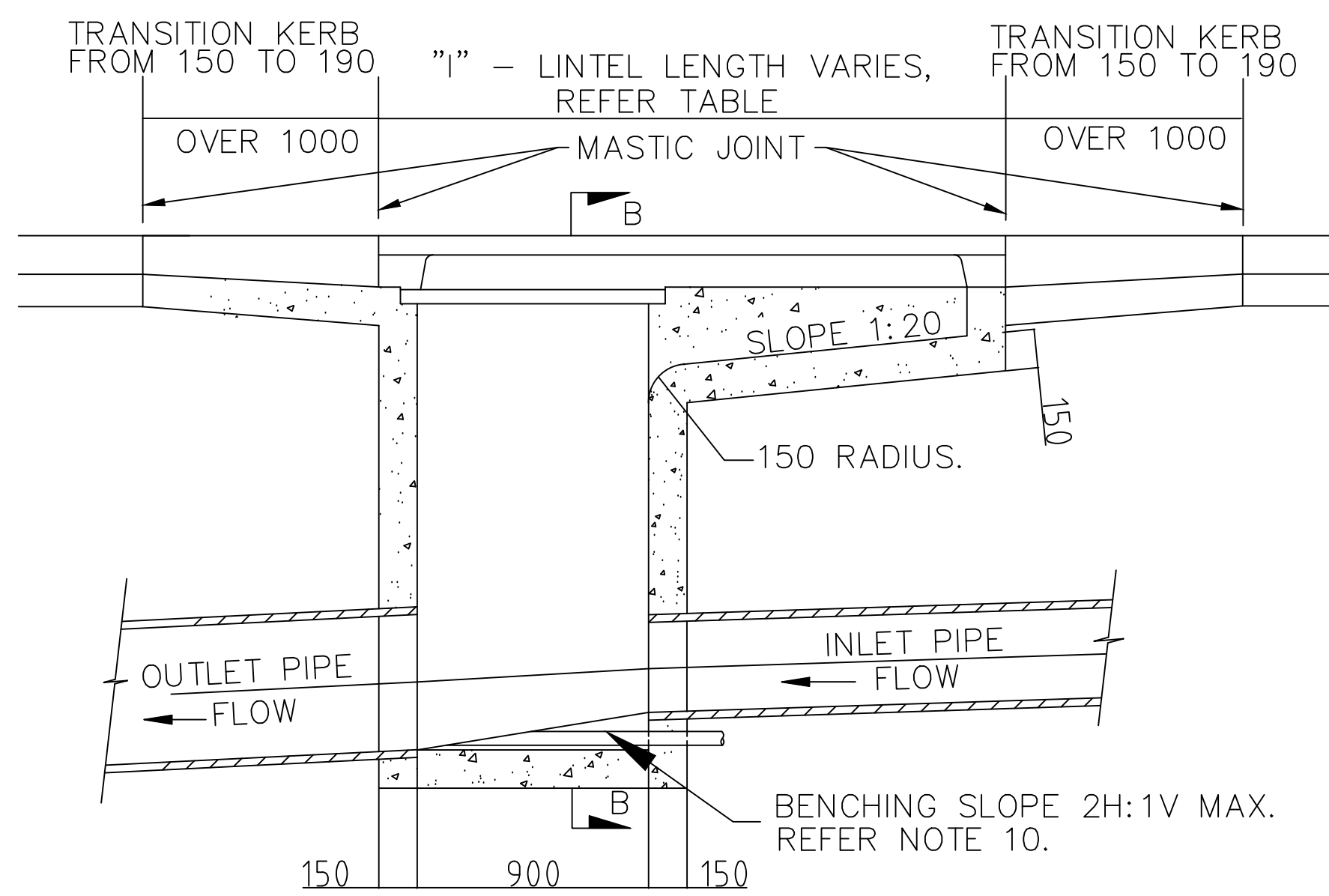
- TYPE A - RAISED GRATE
- TYPE B - FLUSH GRATE

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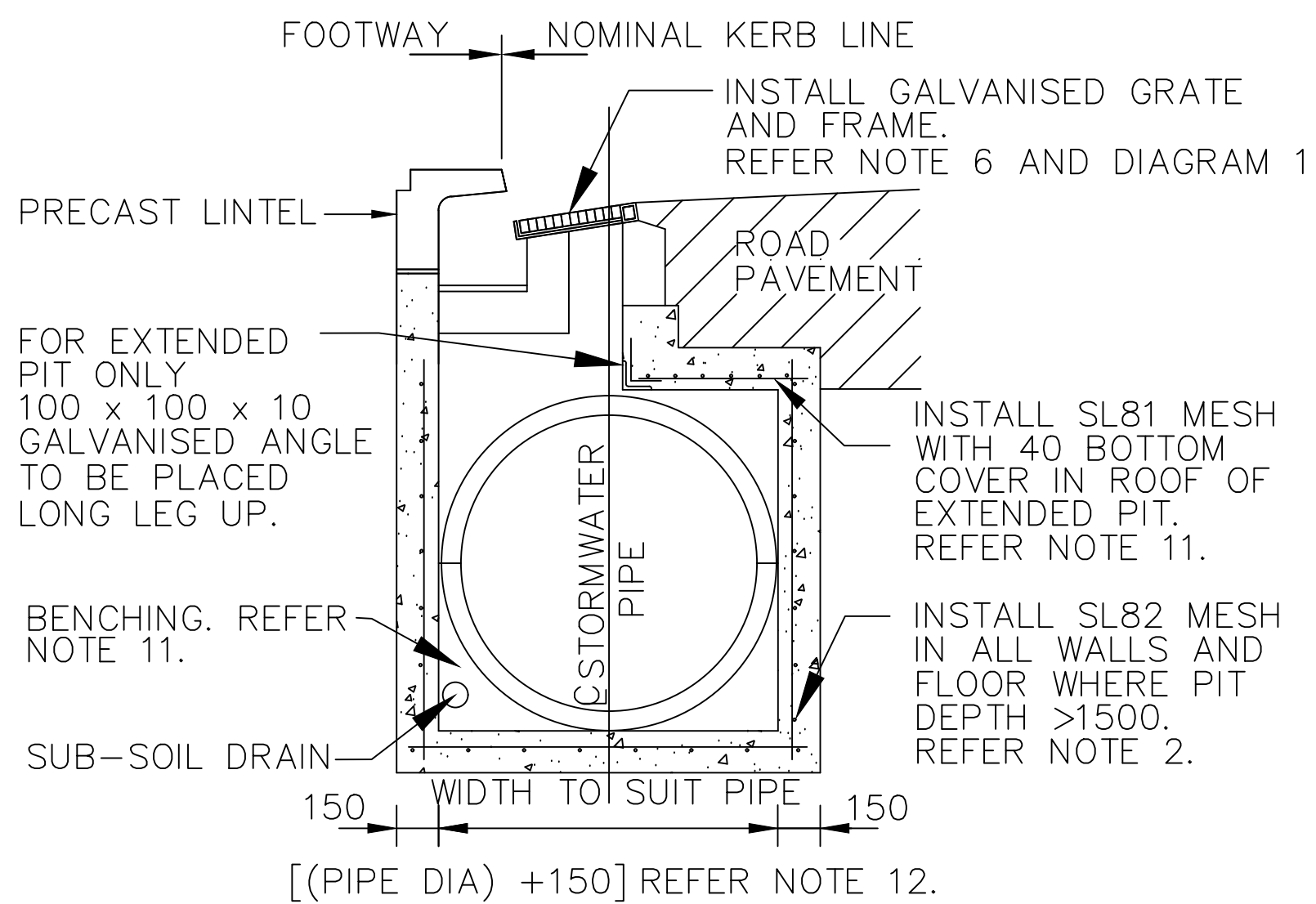
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 NUMBER OF SHEETS 35
 SHEET NUMBER 22
 FILE NAME: STANDARD DRAWINGS.DWG
 REVISION GMC-VER-1
 RD: -/-/-/-

SD-D 05

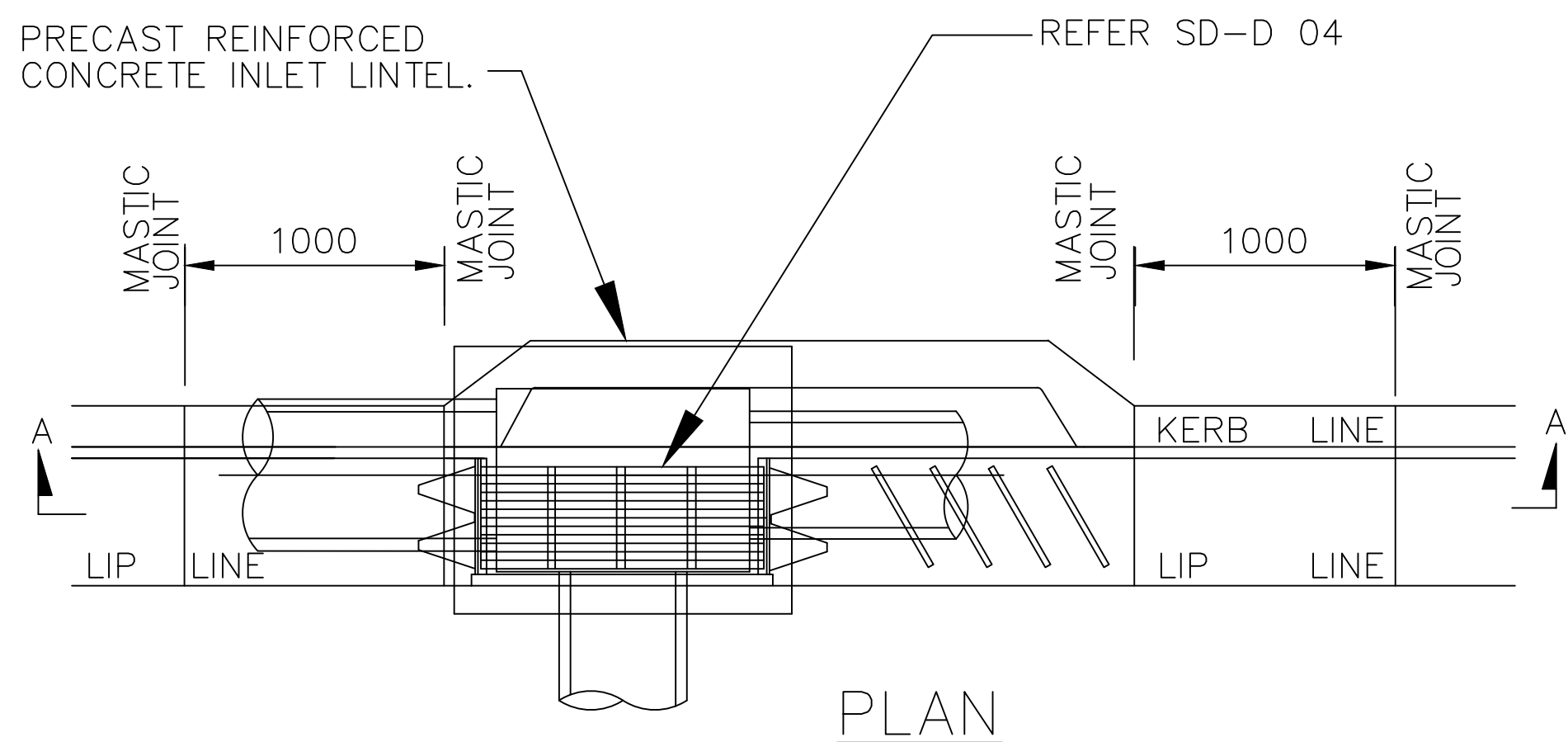
DRAWING NUMBER SD-D 05



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

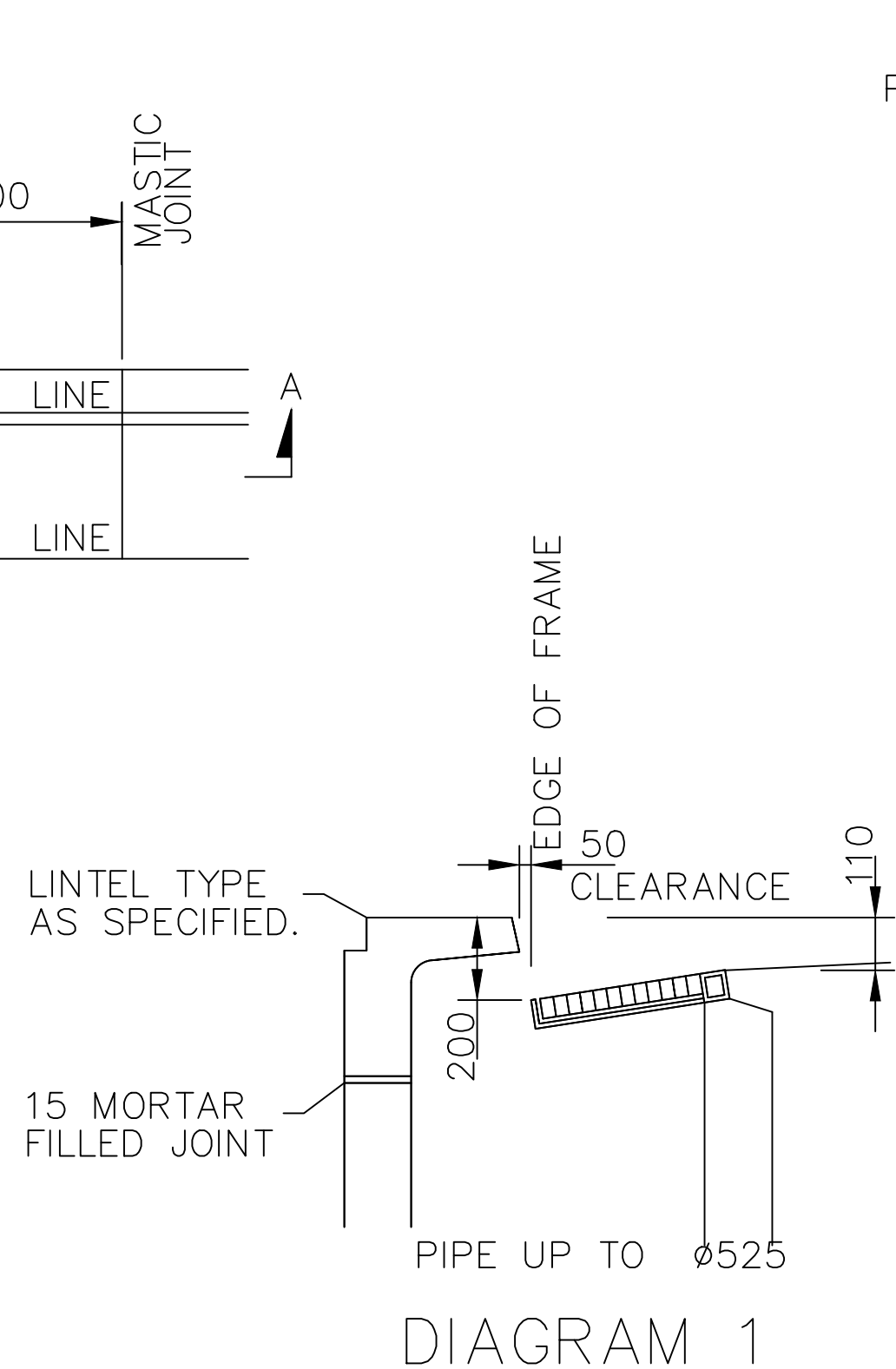
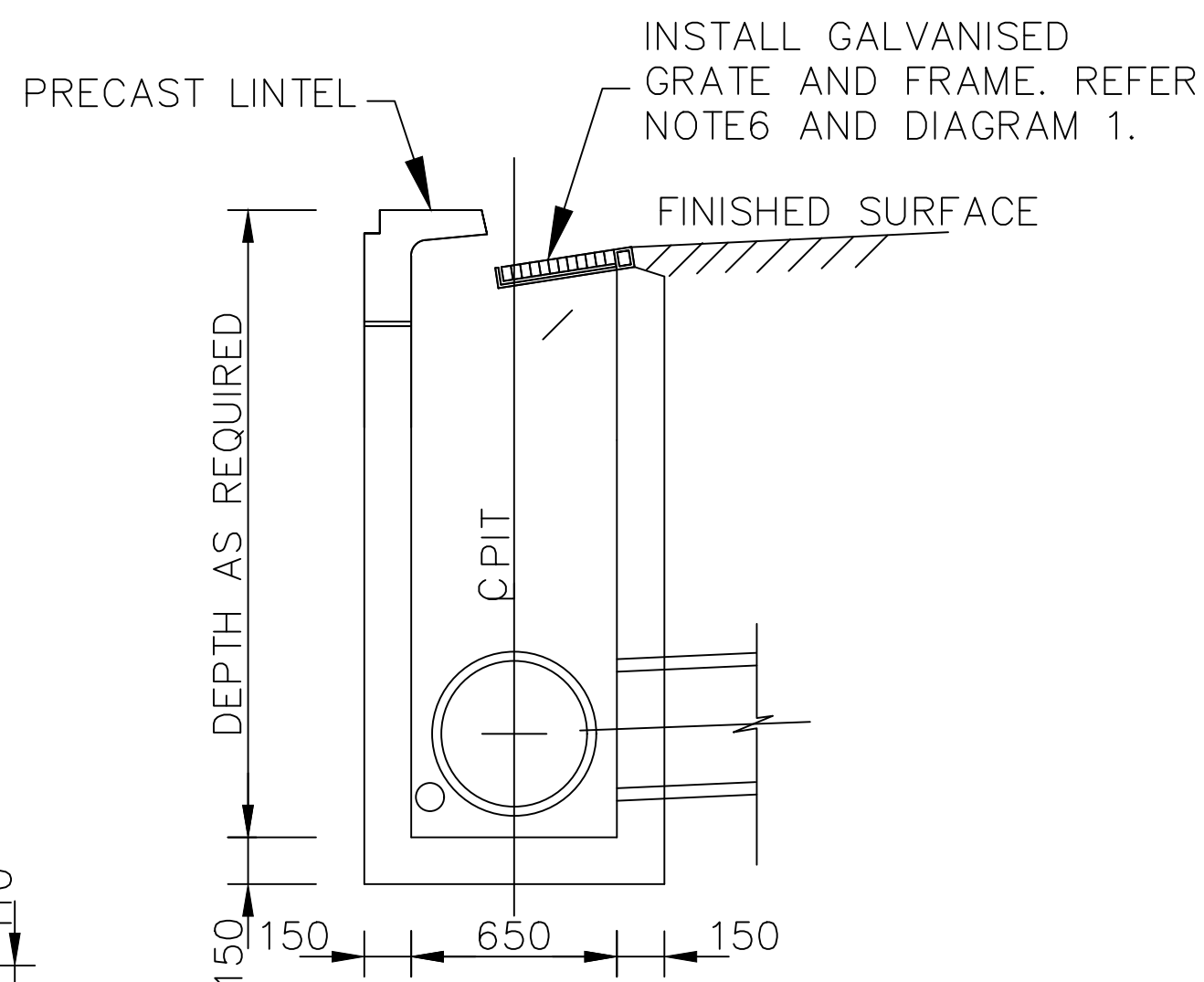


DIAGRAM 1



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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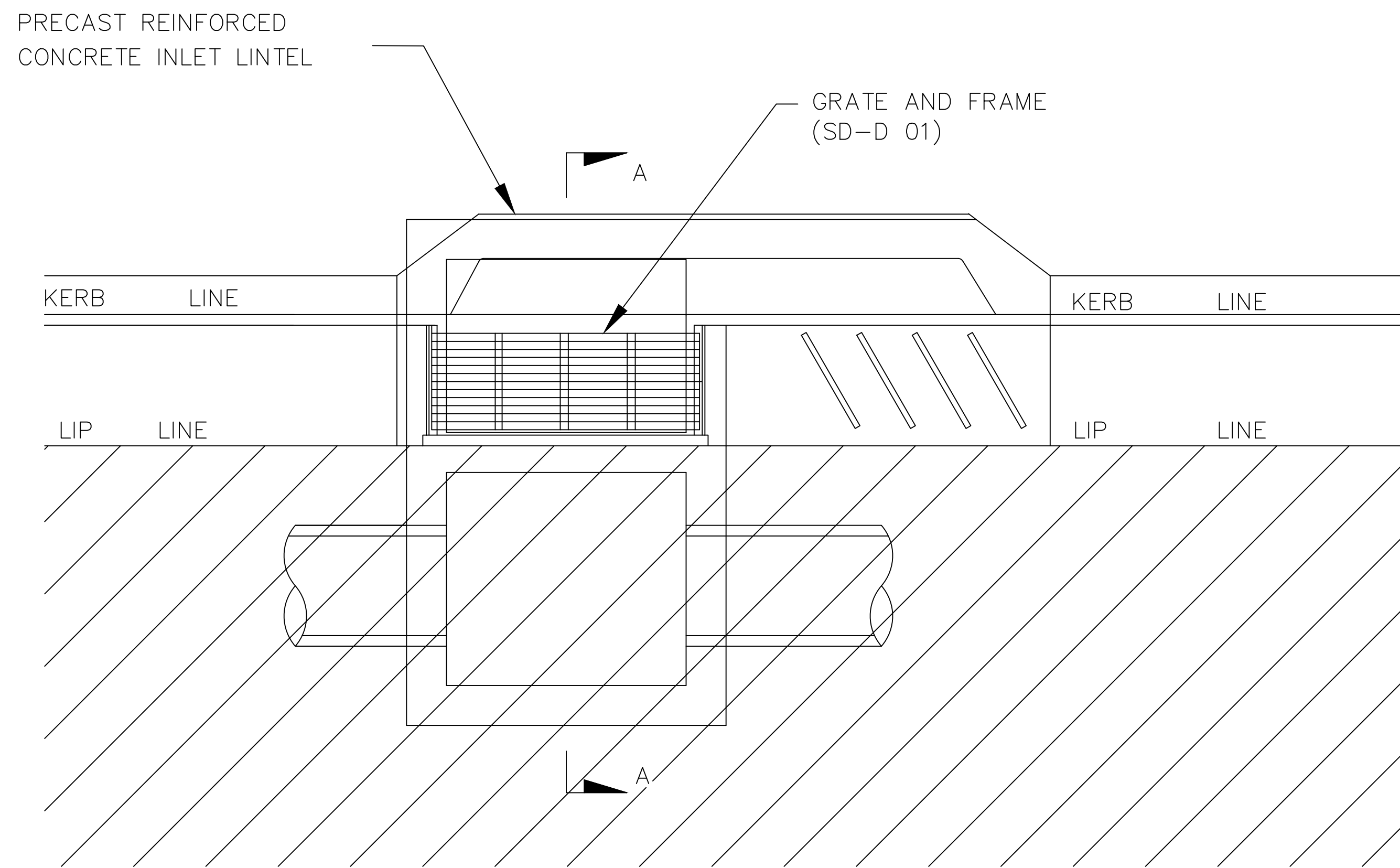
KERB INLET PIT WITH GRATE
EXTENDED CHAMBER PIT

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 MUST BE WORN ON SITE

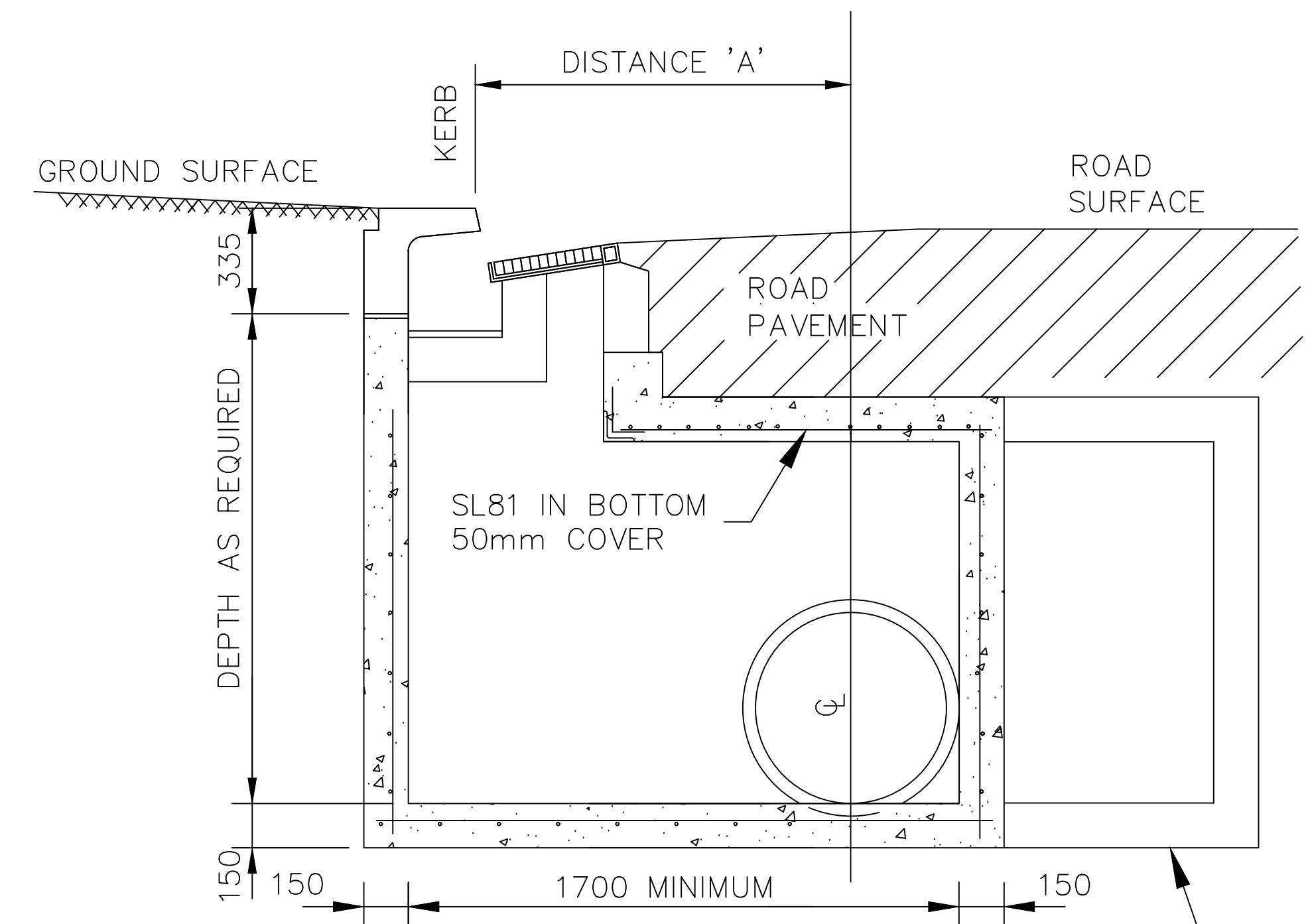
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 23
FILE NAME: STANDARD DRAWINGS.DWG		
REVISION GMC-VER-1	SD-D 06 A	
RD: [Signature]		



PLAN



SECTION A-A

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

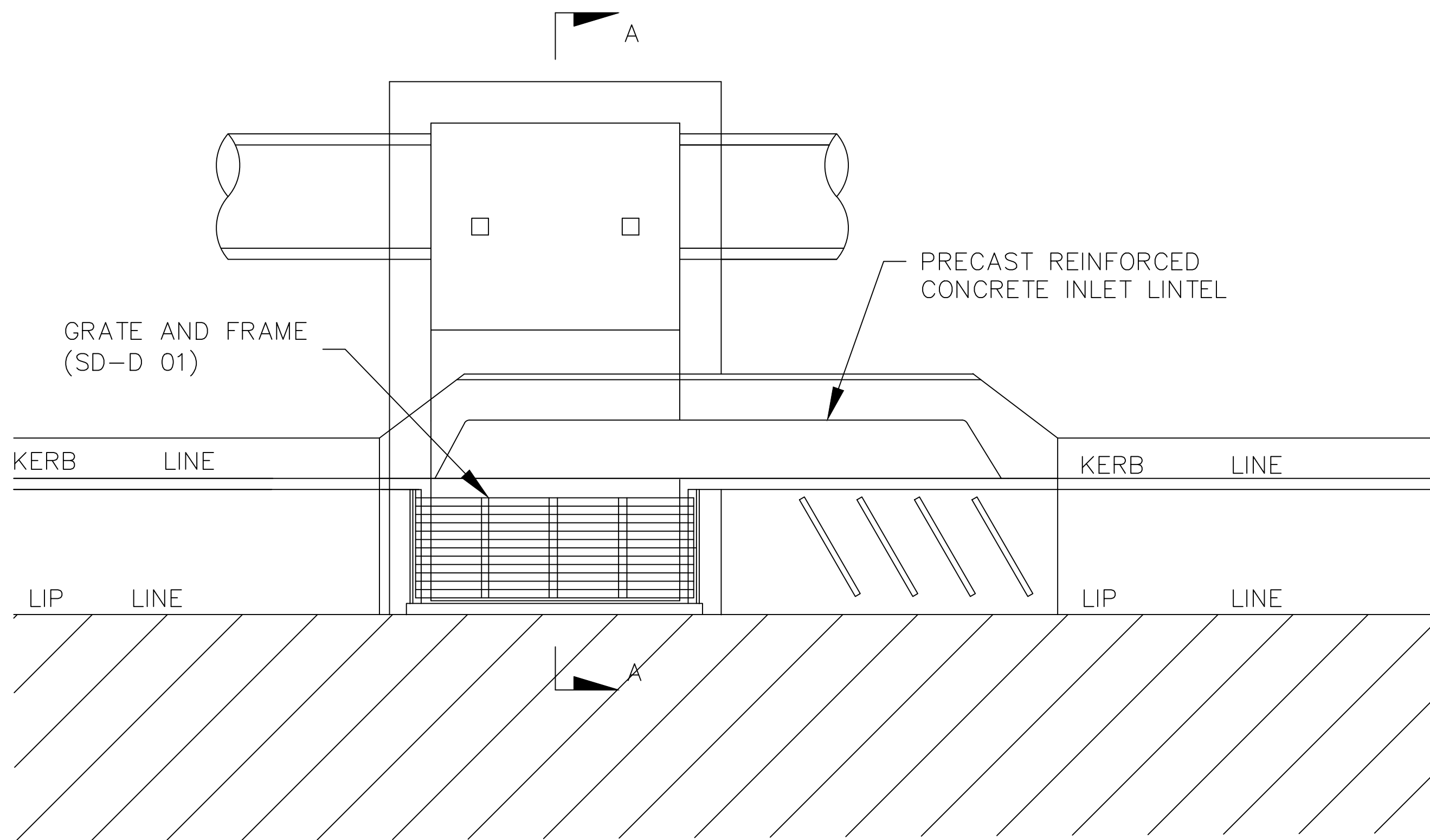
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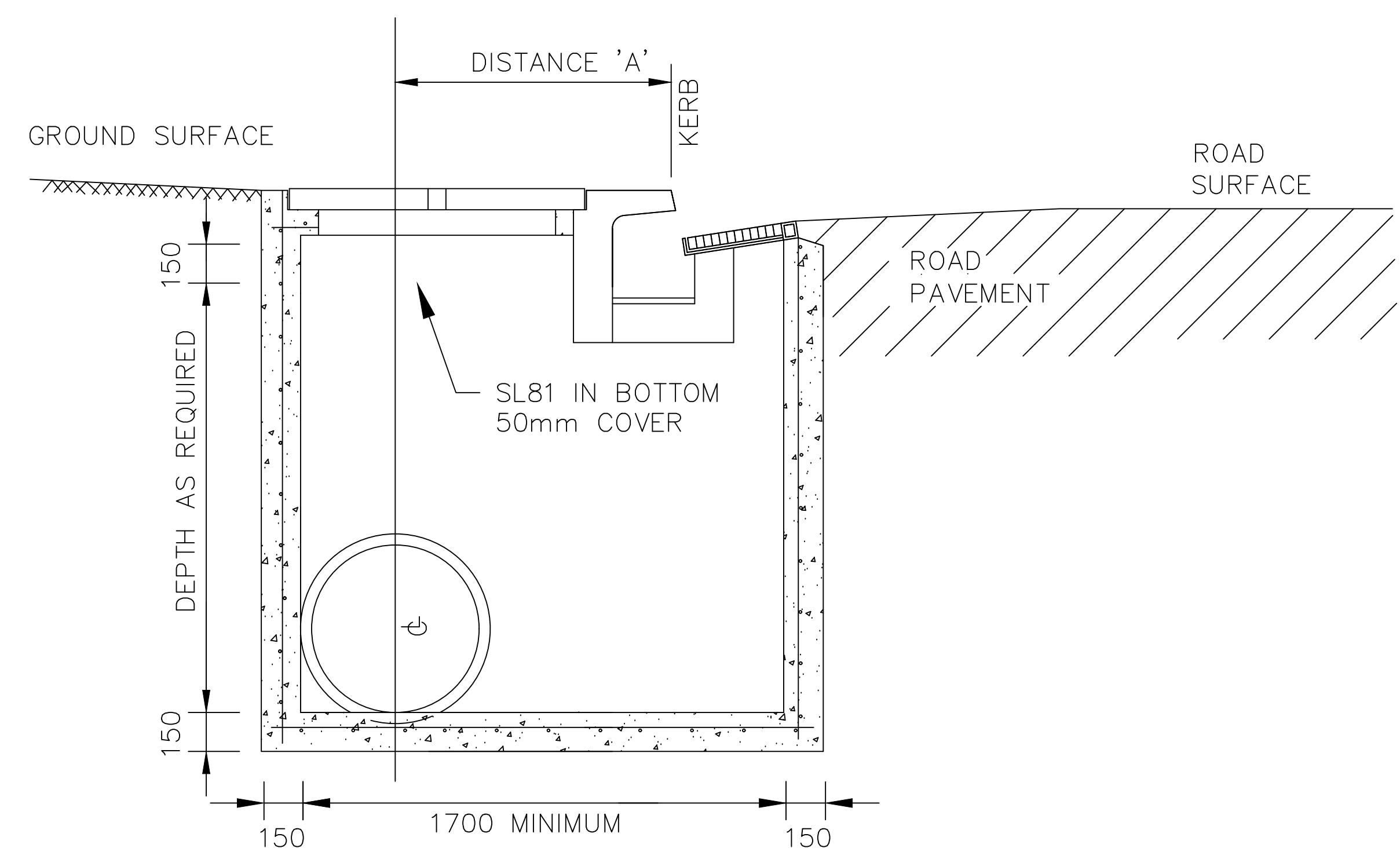
DIAL 1100
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 24
REVISION GMC-VER-1	STANDARD DRAWINGS.DWG	
SD-D 06 B		

DRAWING NUMBER SD-D 06 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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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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KERB INLET PIT WITH GRATE
STORMWATER PIPE BEHIND THE KERB

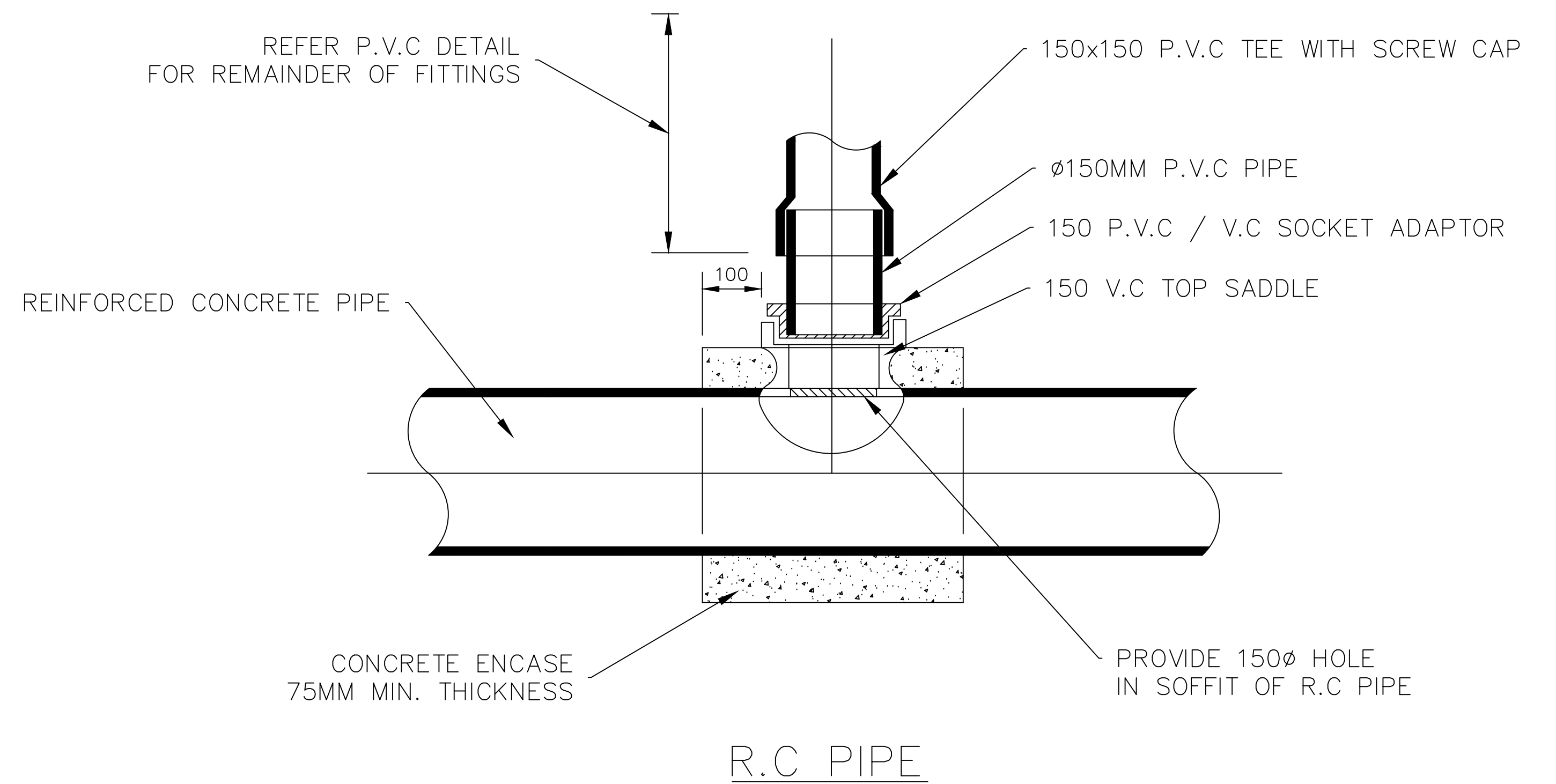
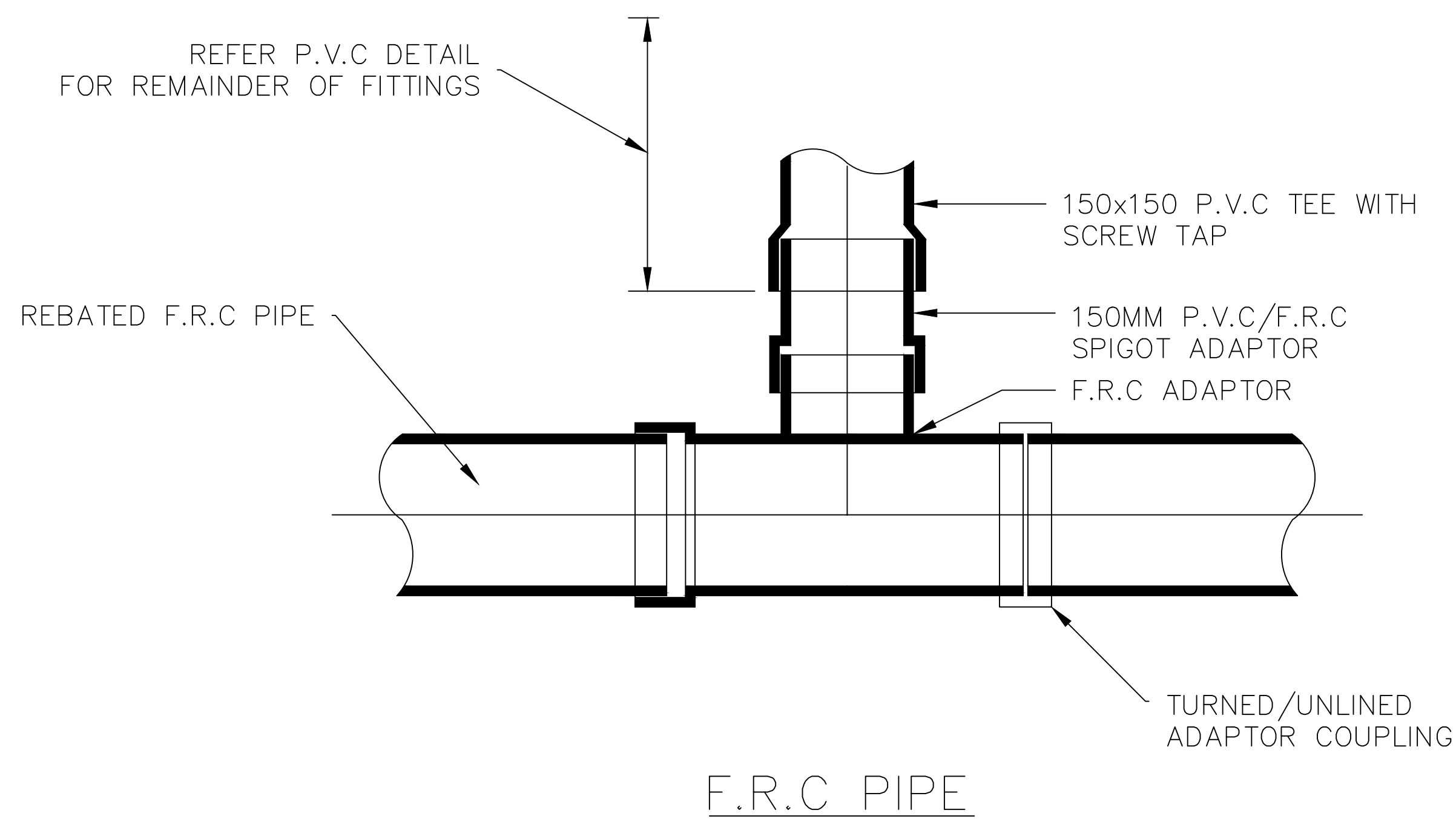
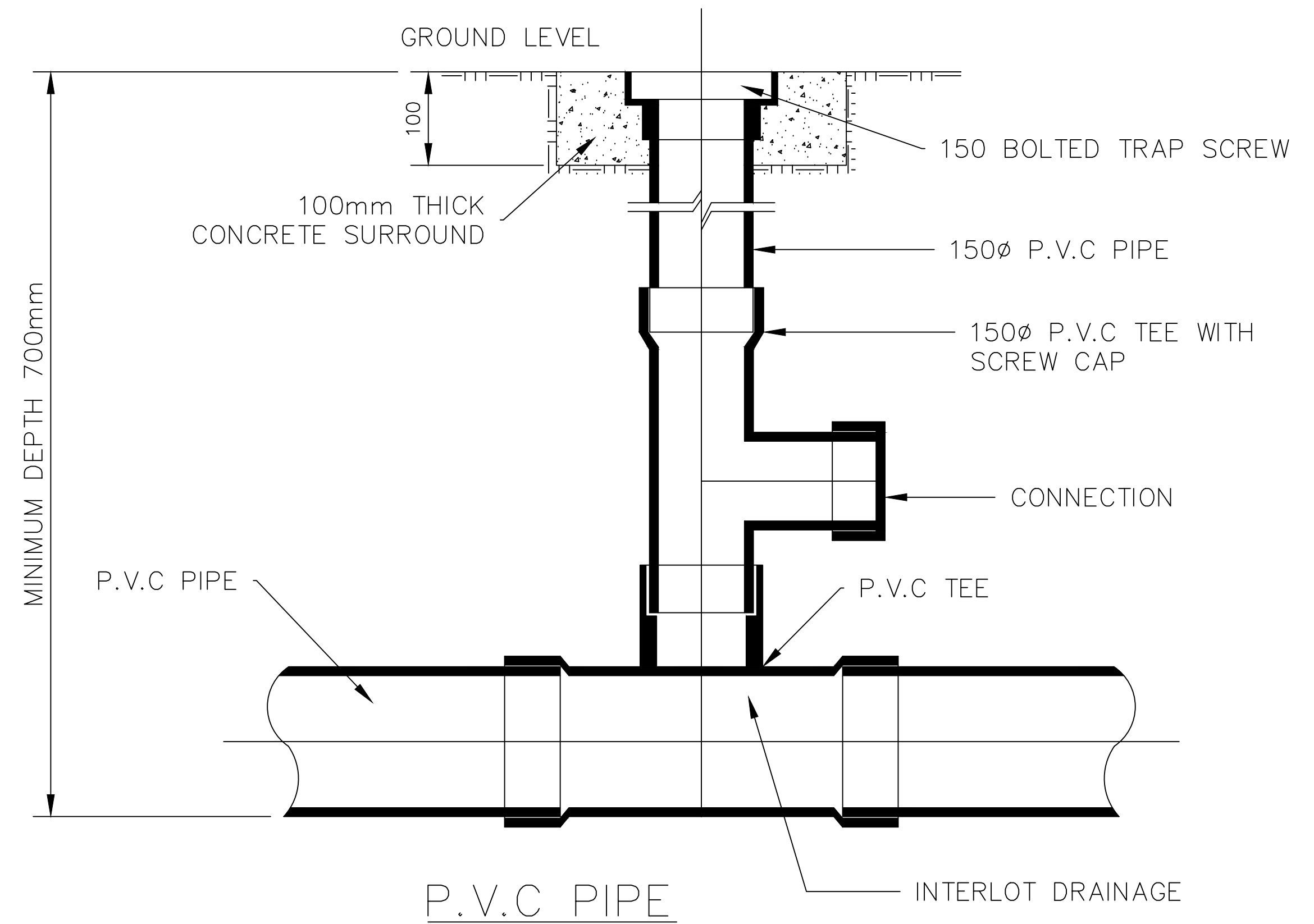
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A1 - SCALE AS SHOWN
 NUMBER OF SHEETS 35
 SHEET NUMBER 25
 FILE NAME: STANDARD DRAWINGS.DWG
 REVISION GMC-VER-1
SD-D 06 C
 RD:

DRAWING NUMBER SD-D 06 C

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	
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DATE: 28/02/2018

INTERLOT DRAINAGE
CONNECTIONS SECTIONAL ELEVATIONS

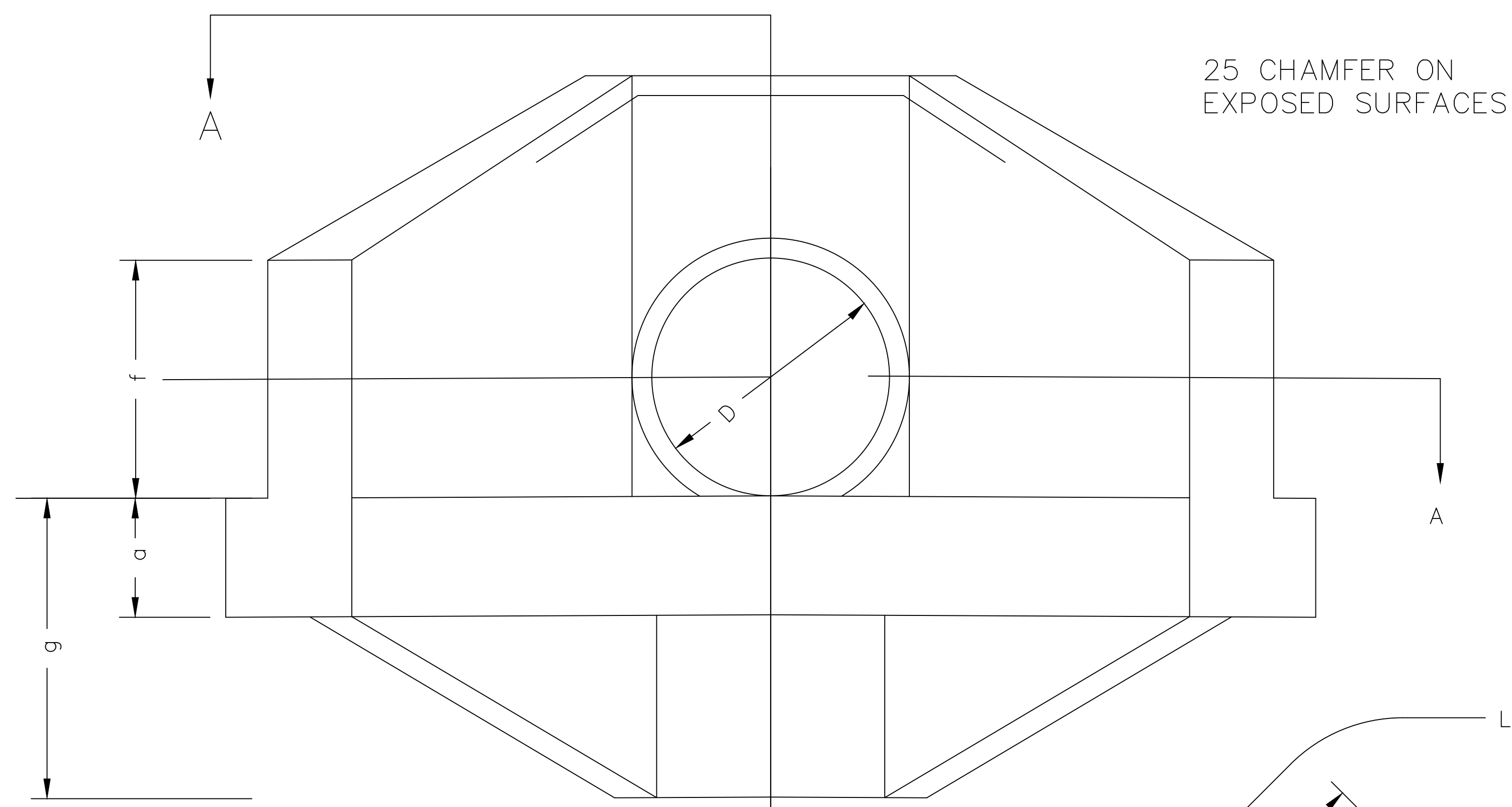
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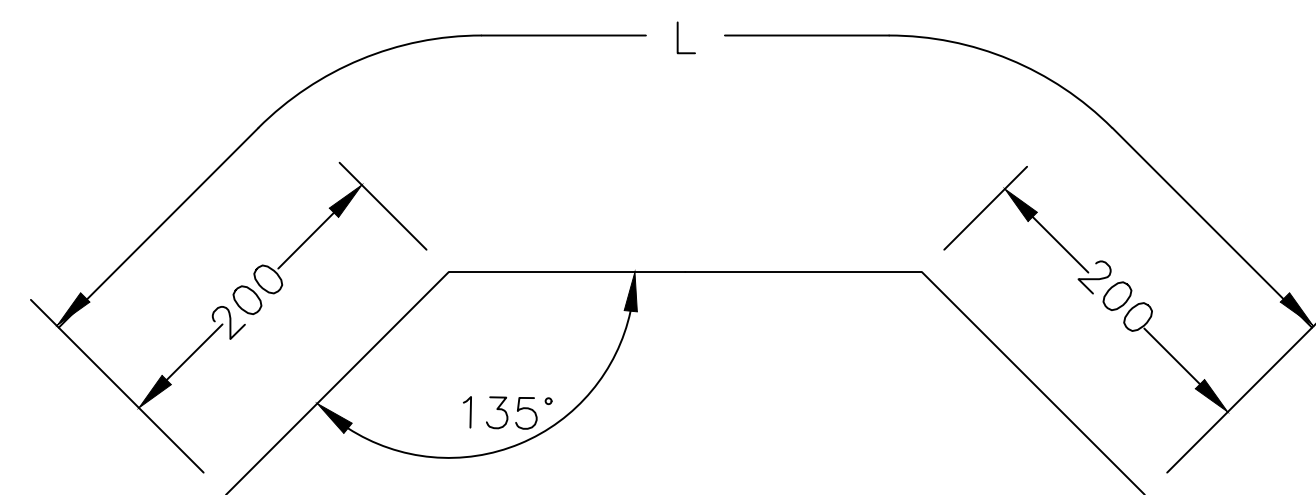
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FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-D 07		

DRAWING NUMBER SD-D 07

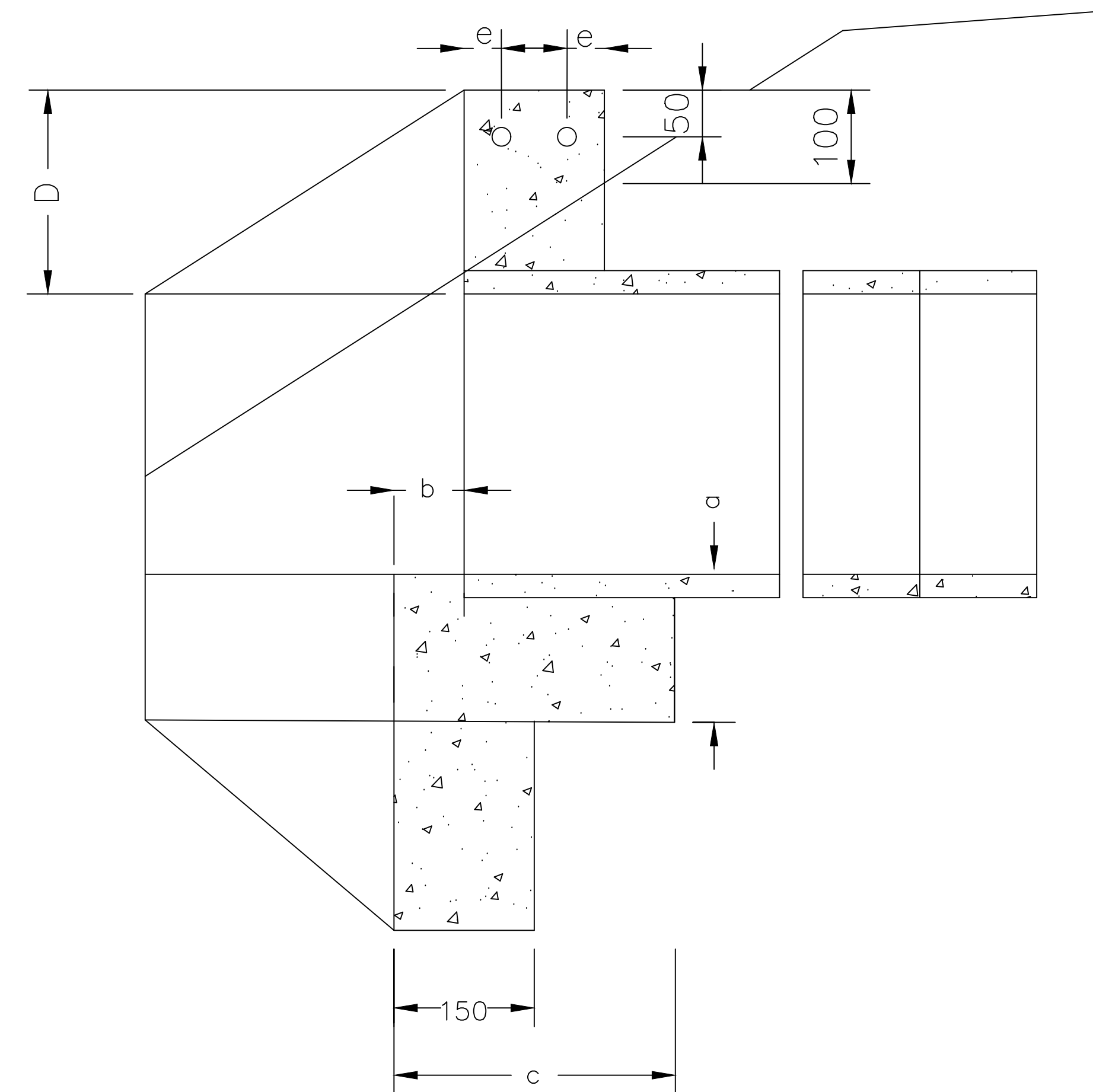


ELEVATION

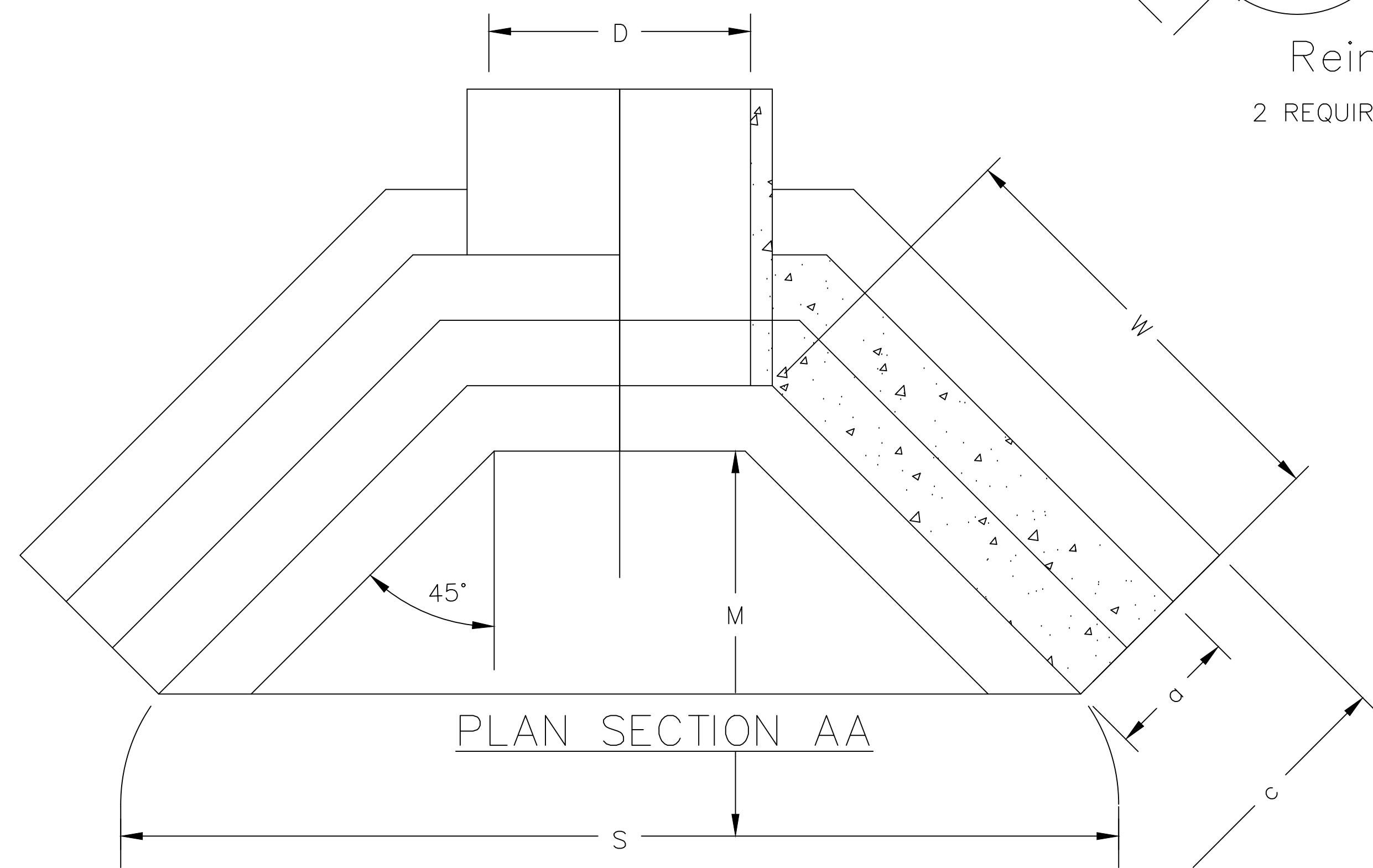
25 CHAMFER ON EXPOSED SURFACES



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	MATTRESS 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	
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WORK AS EXECUTED			

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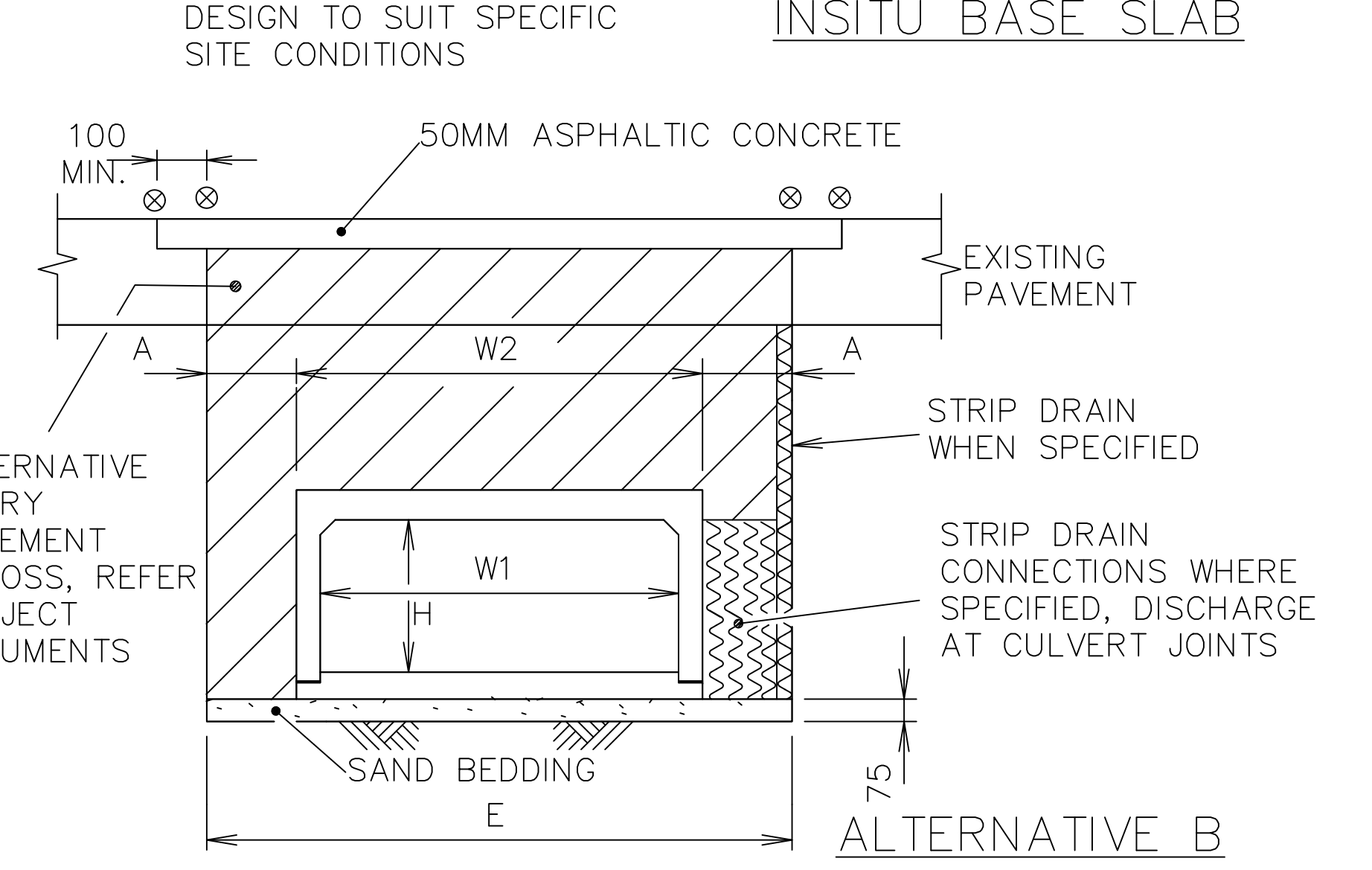
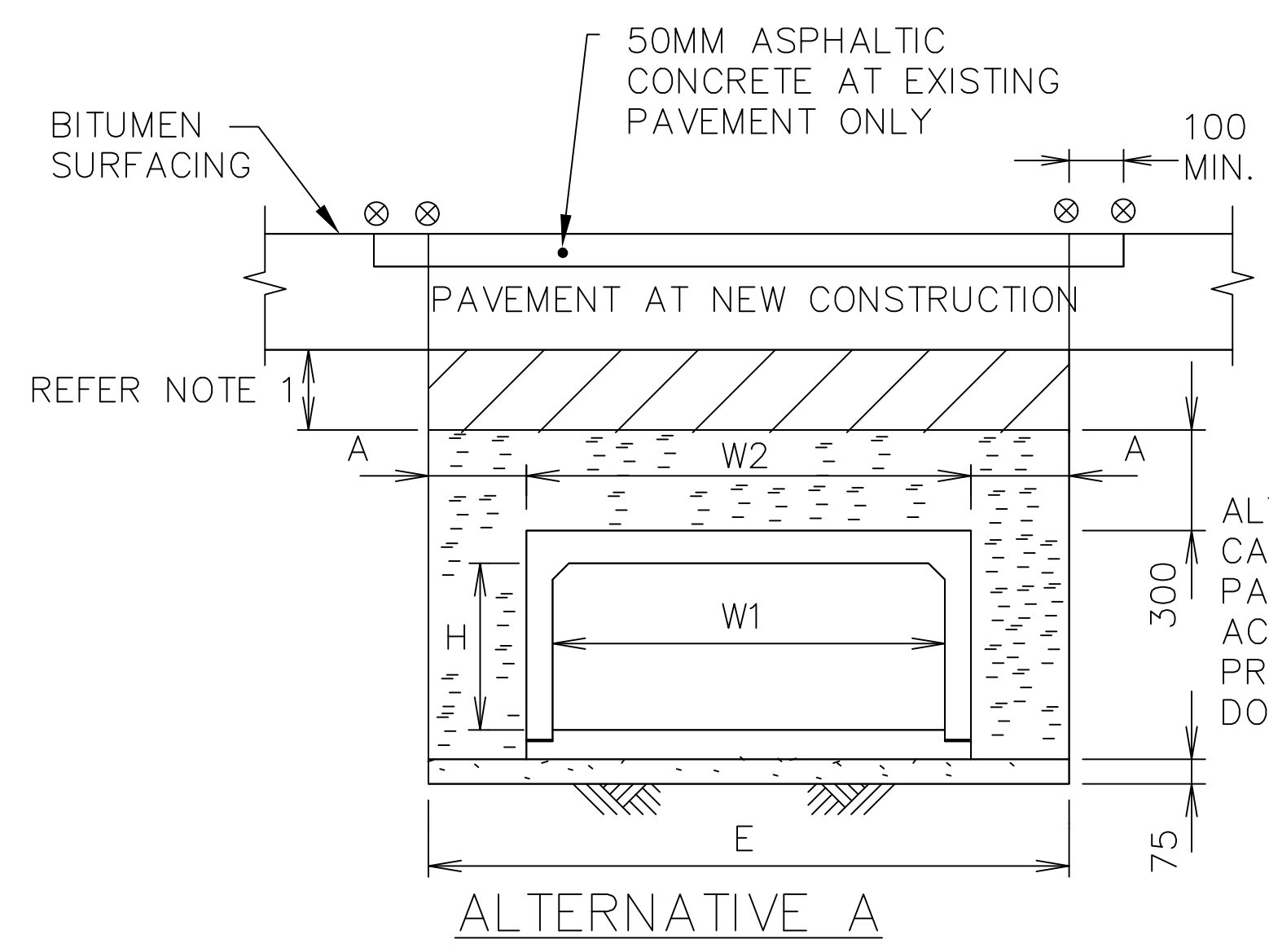
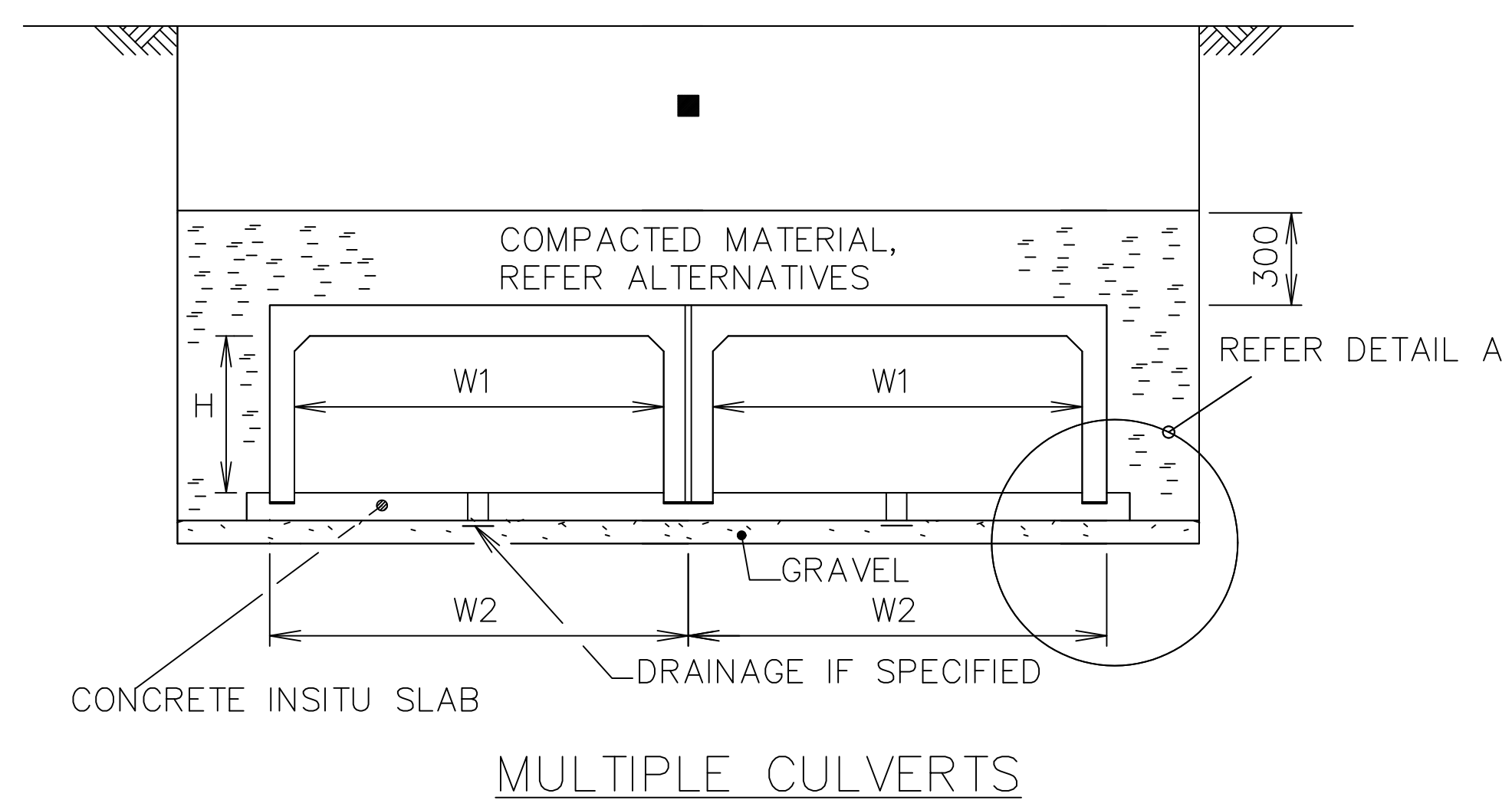
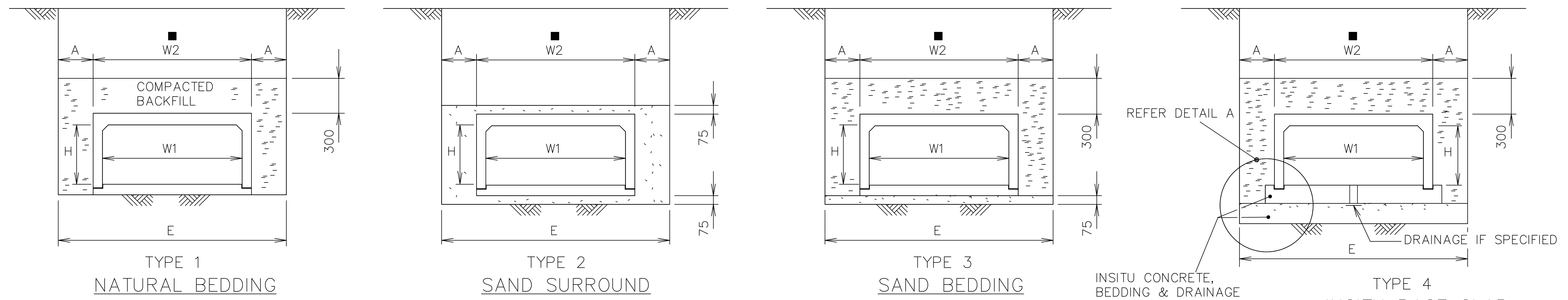
[Signature]
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OPERATIONS

DATE: 28/02/2018

CONCRETE HEADWALL
STANDARD FROM 300MM - 900MM

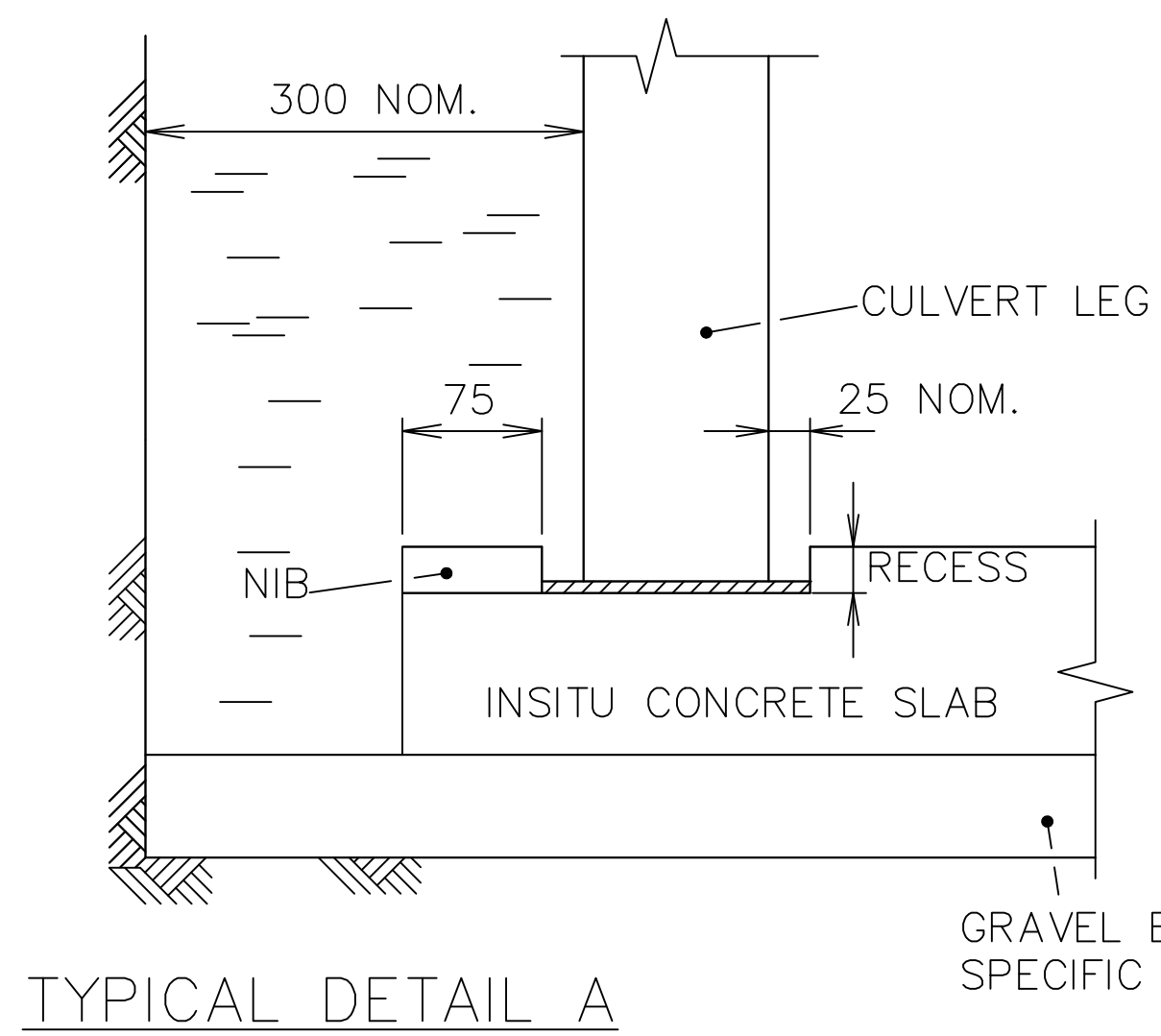


A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 27
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
RD: -/-/-		SD-D 08



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

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

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

- 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	
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DATE: 28/02/2018

PRECAST BOX CULVERTS

EXCAVATION, BEDDING & BACKFILLING

TITLE4

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A1 - SCALE AS SHOWN
NUMBER OF SHEETS 35
SHEET NUMBER 28
FILE NAME: STANDARD DRAWINGS.DWG
REVISION GMC-VER-1
RD: [Signature]

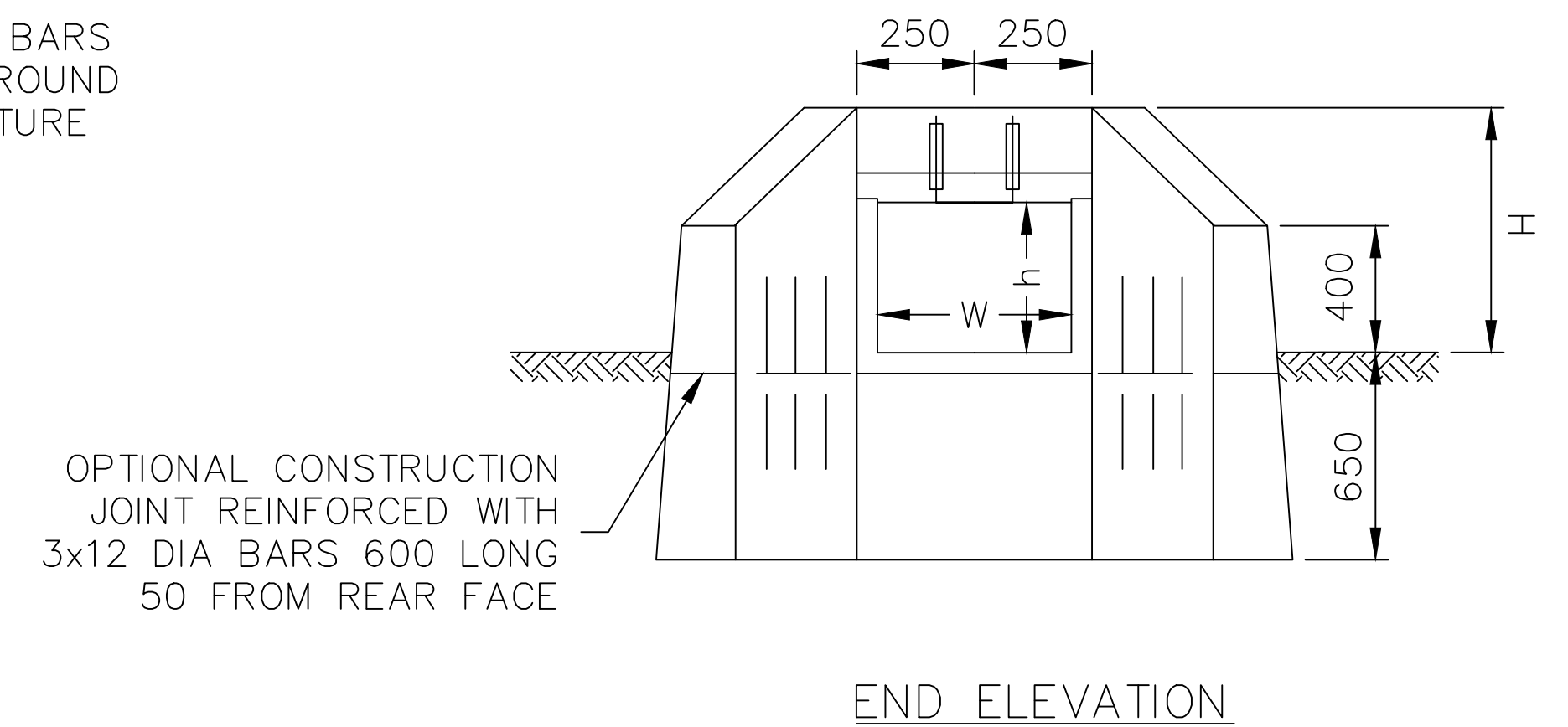
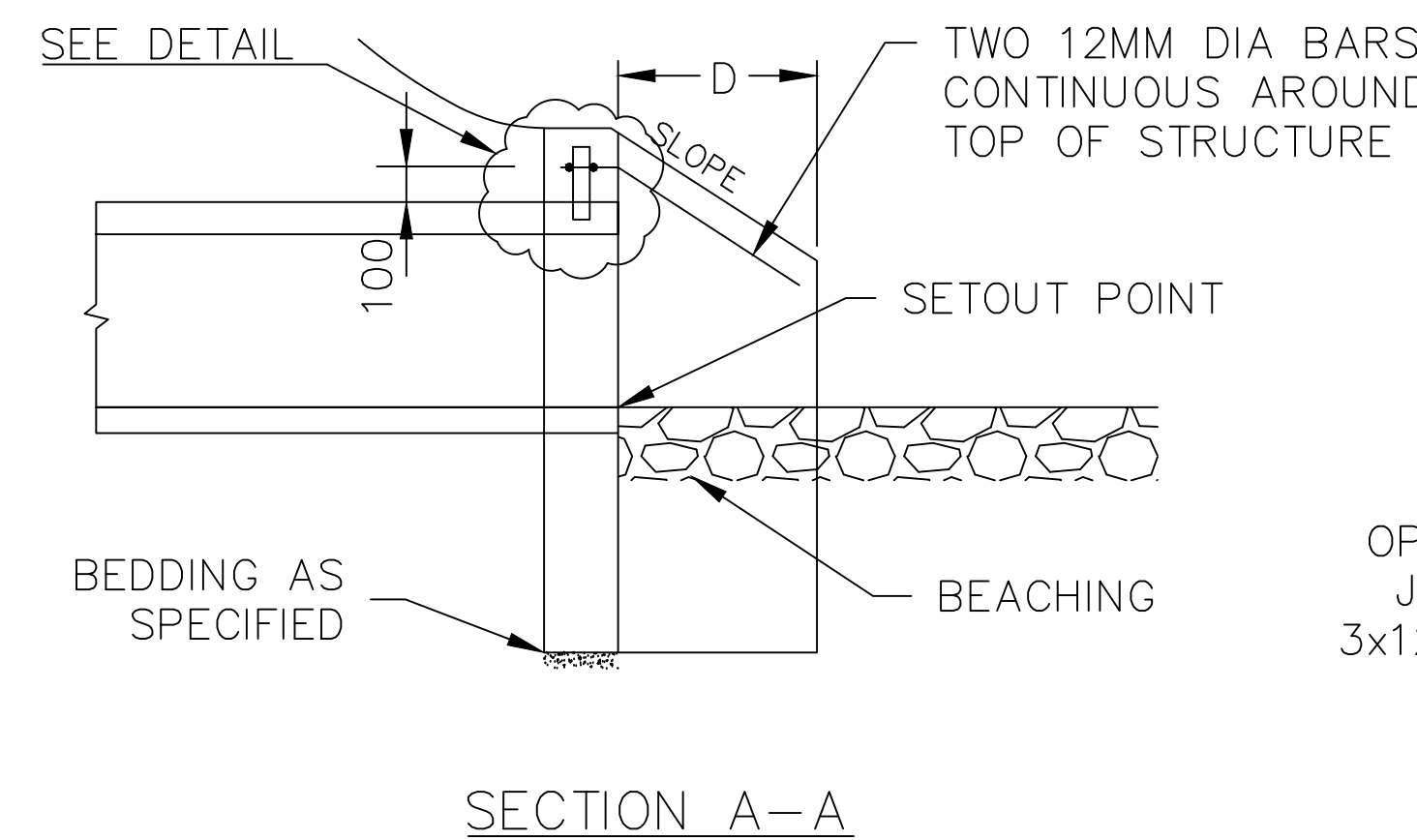
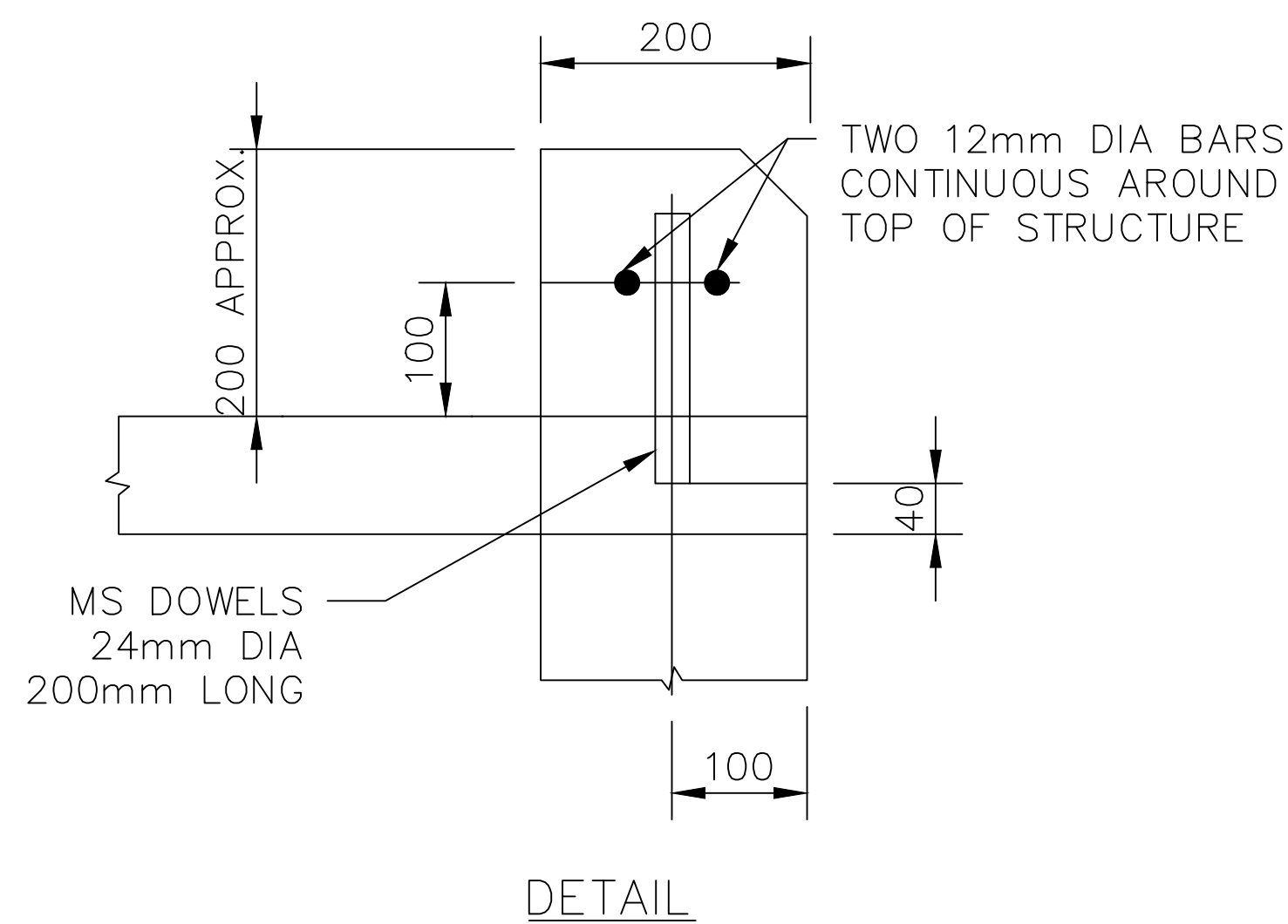
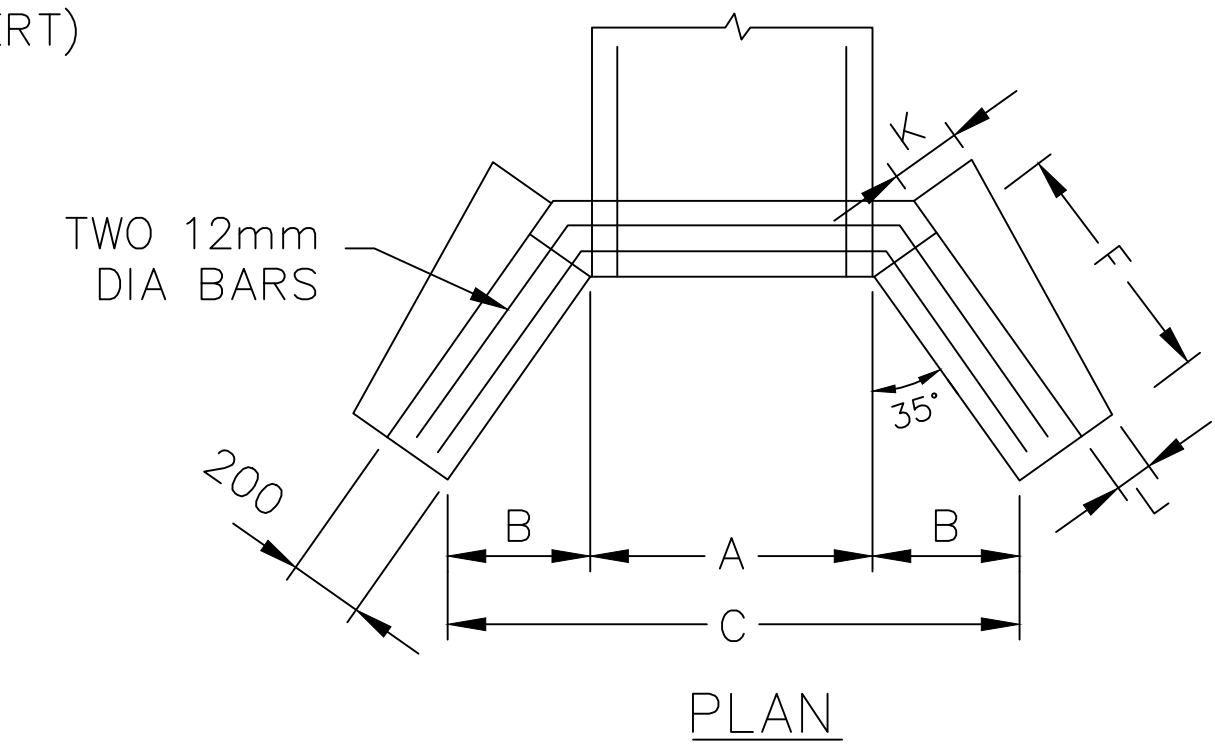
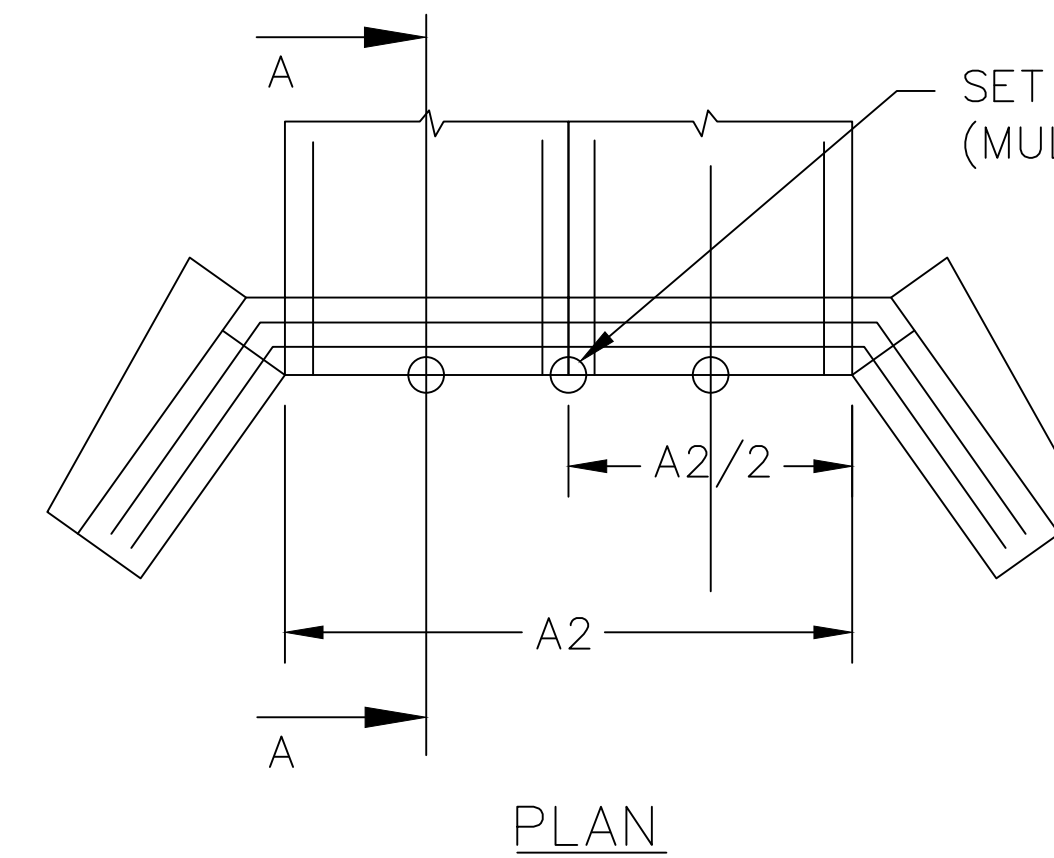
SD-D 09

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
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	
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ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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MASS CONCRETE WINGWALL

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 29
FILE NAME: STANDARD DRAWINGS.DWG	SD-D 10	
REVISION GMC-VER-1 RD: -/-/-		

DRAWING NUMBER 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:

- 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	
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WORK AS EXECUTED			


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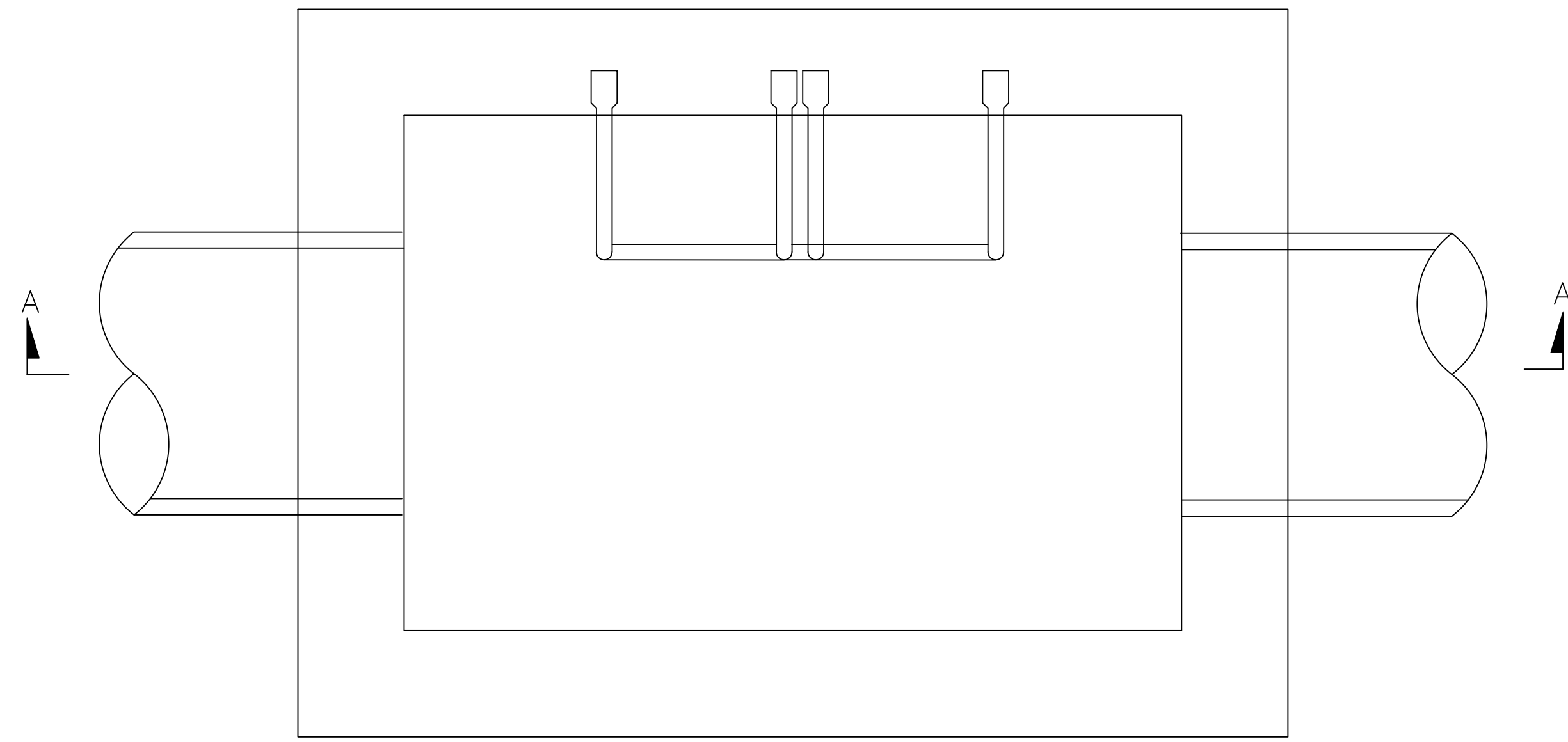
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 GOLBURN MULWAREE
 OPERATIONS
 DATE: 28/02/2018

MASS CONCRETE WINGWALL
QUANTITIES

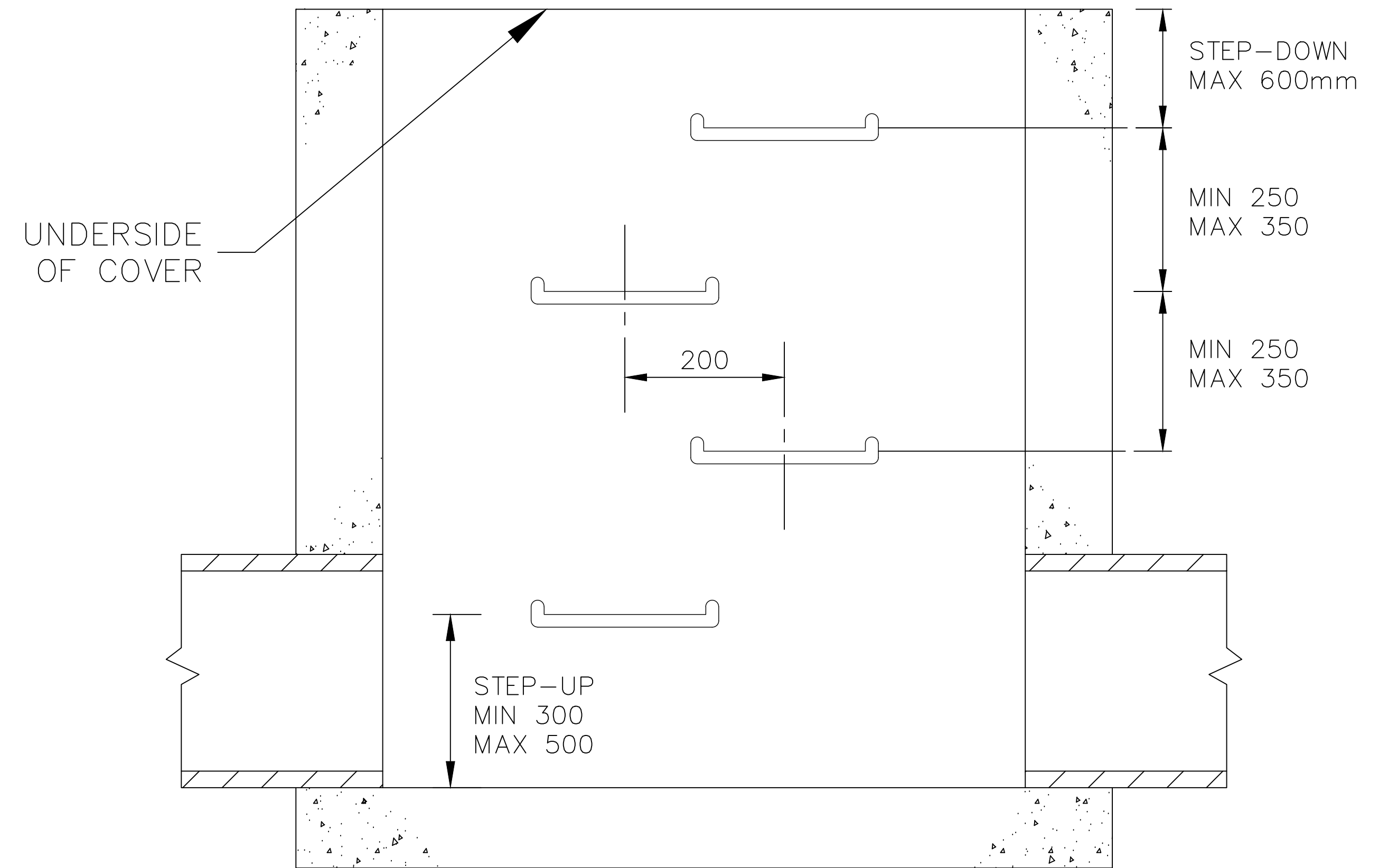
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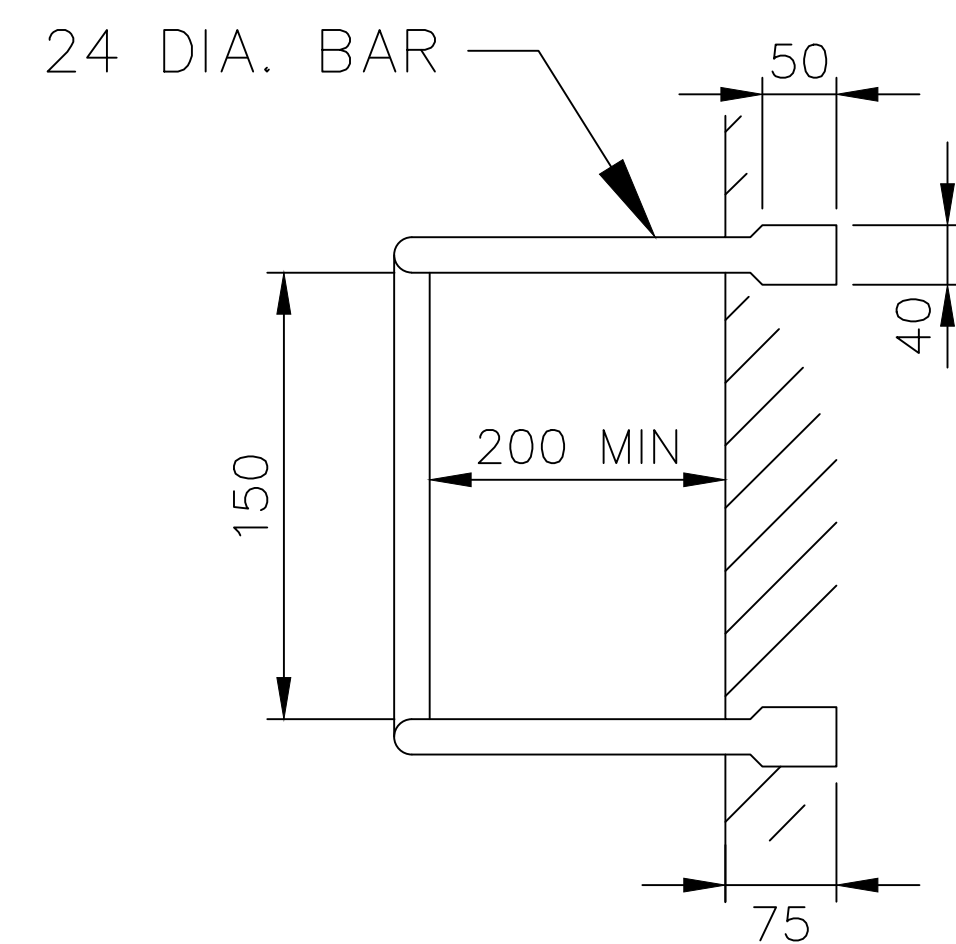
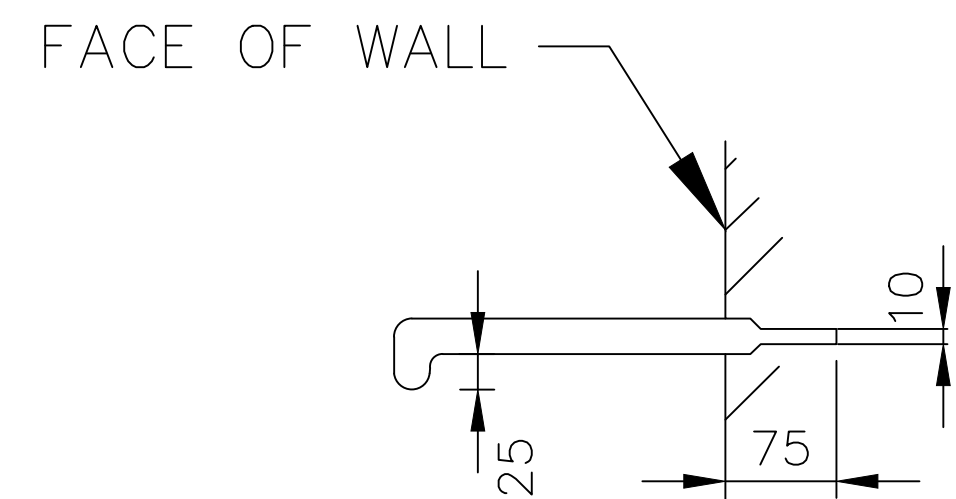
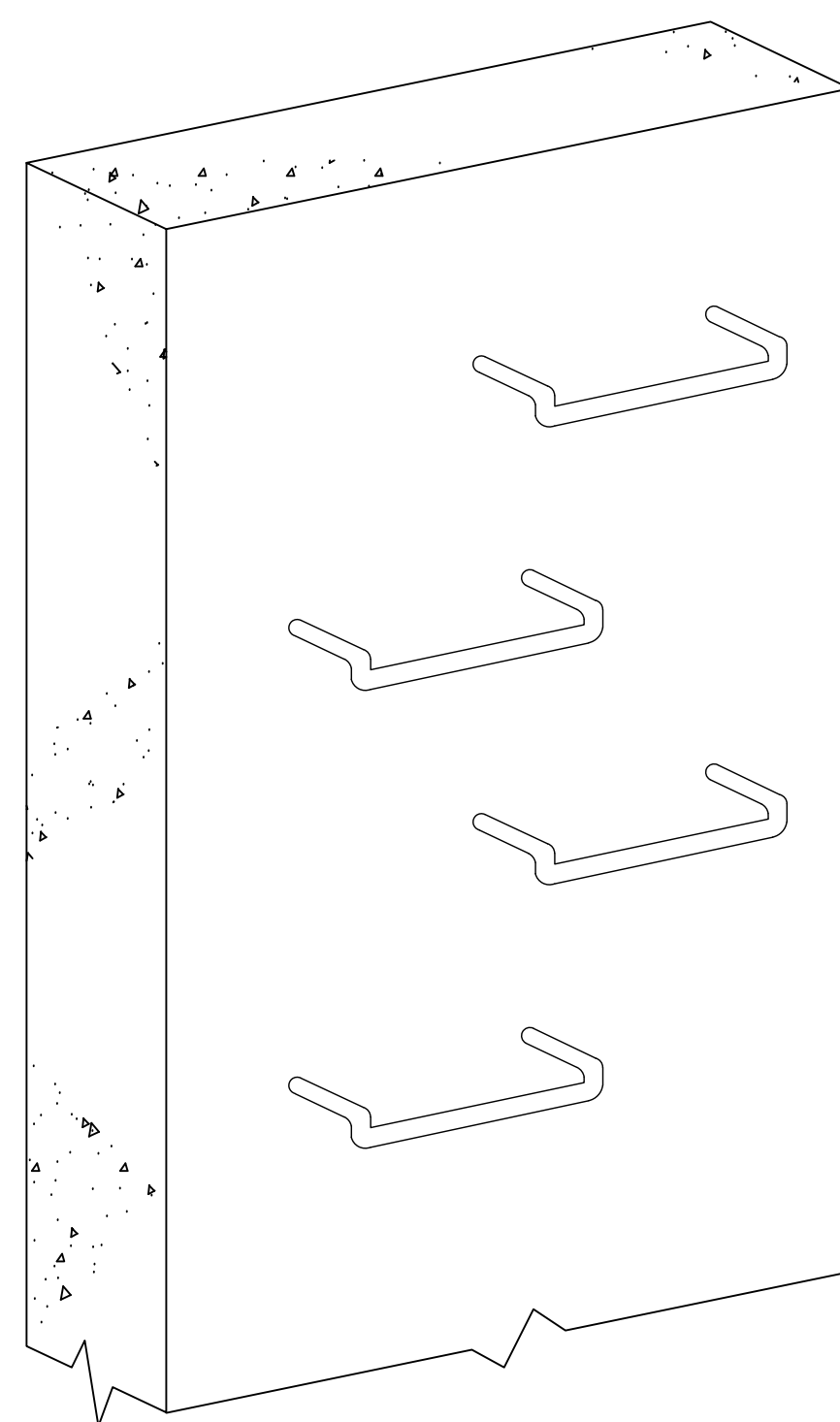
A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 30
FILE NAME: STANDARD DRAWINGS.DWG	SD-D 11	
REVISION GMC-VER-1 RD: -/-/-		



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			


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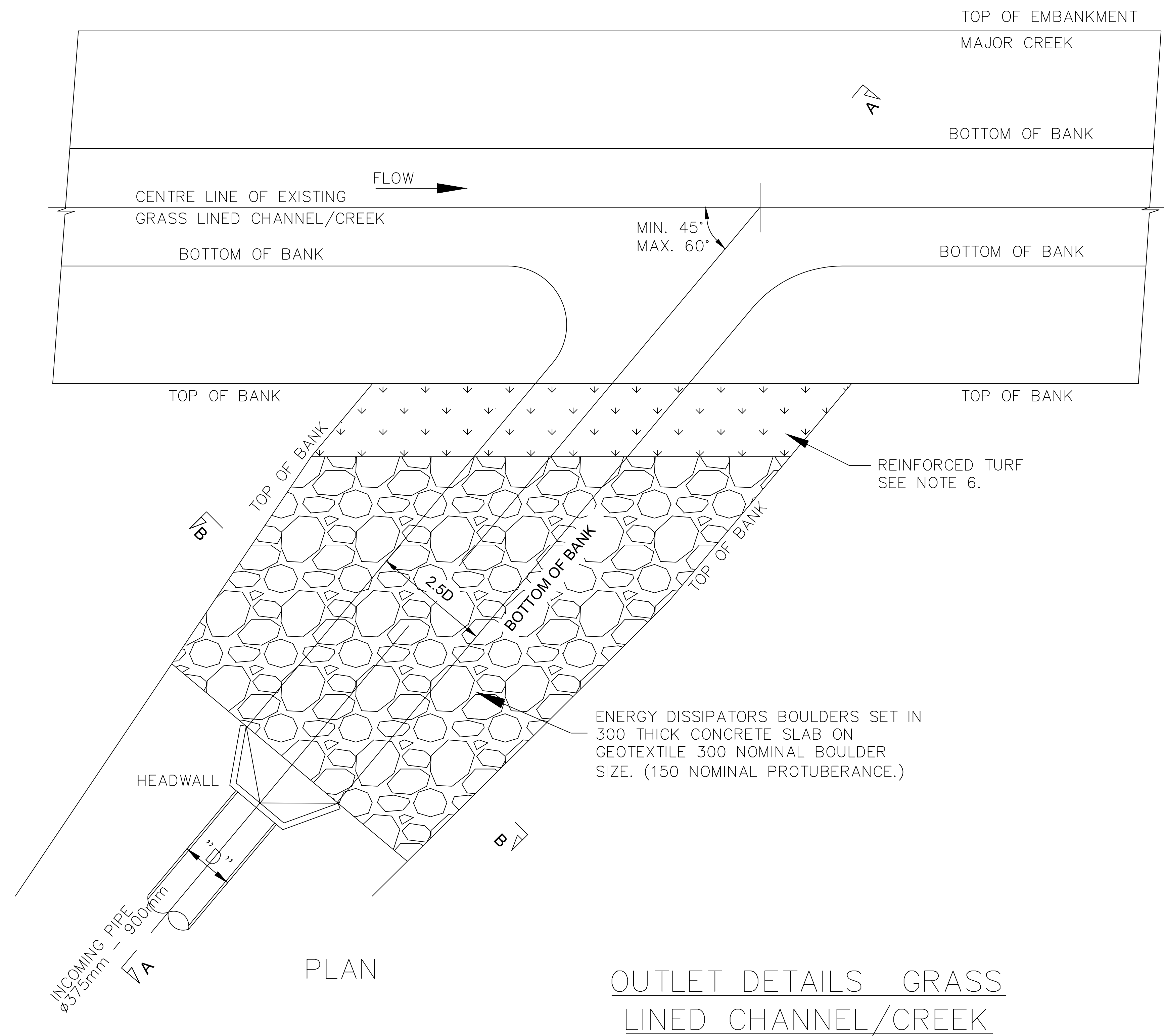
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STEP IRON DETAILS

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 31
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	SD-D 12

DRAWING NUMBER SD-D 12



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	
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WORK AS EXECUTED			

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OUTLET DETAILS
GRASS LINED CHANNEL

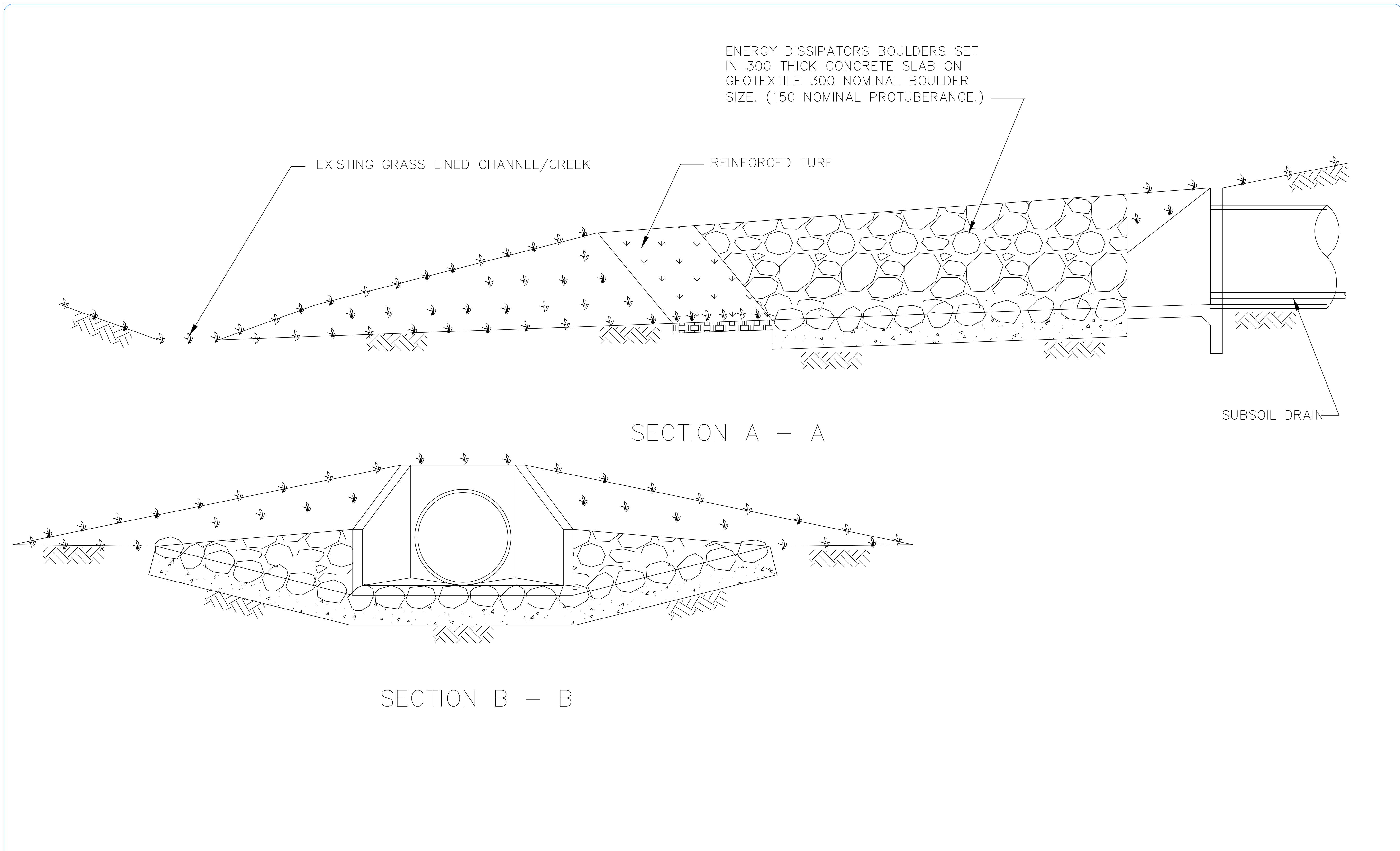
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A1 - SCALE AS SHOWN
 NUMBER OF SHEETS 35
 SHEET NUMBER 32

FILE NAME: STANDARD DRAWINGS.DWG

REVISION
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SD-D 13 A



SECTION A - A

SECTION B - B

OUTLET DETAILS GRASS
LINED CHANNEL

DRAWING NUMBER SD-D 13 B

INDEX	NAME	DATE	AMENDMENTS
SURVEYED			
DESIGNED & DRAFTED	T.DIMEC	08/05/2012	
DESIGN REVIEWED	T.DIMEC	08/05/2012	
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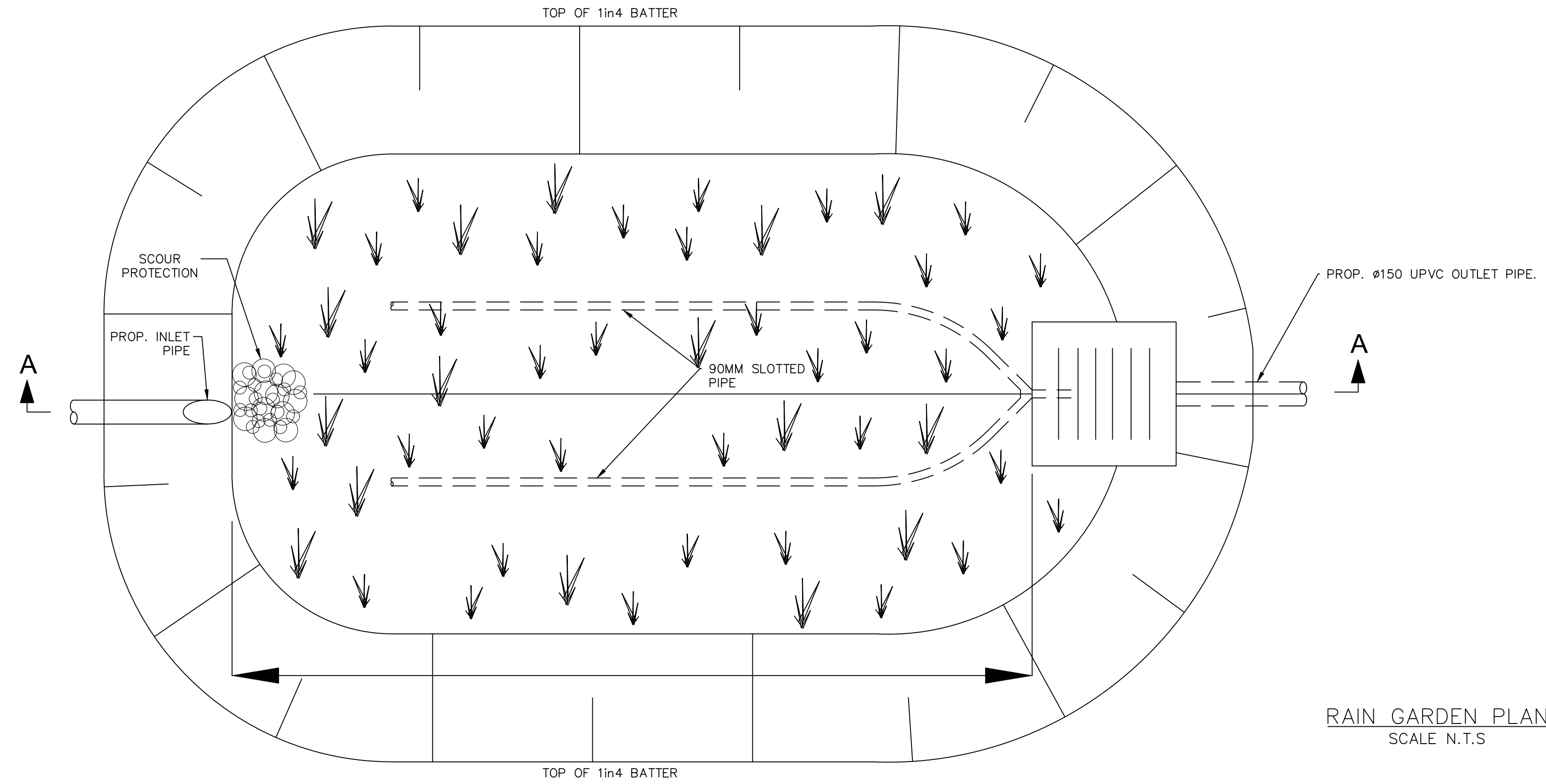
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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 33
FILE NAME: STANDARD DRAWINGS.DWG	REVISION GMC-VER-1	
SD-D 13 B		

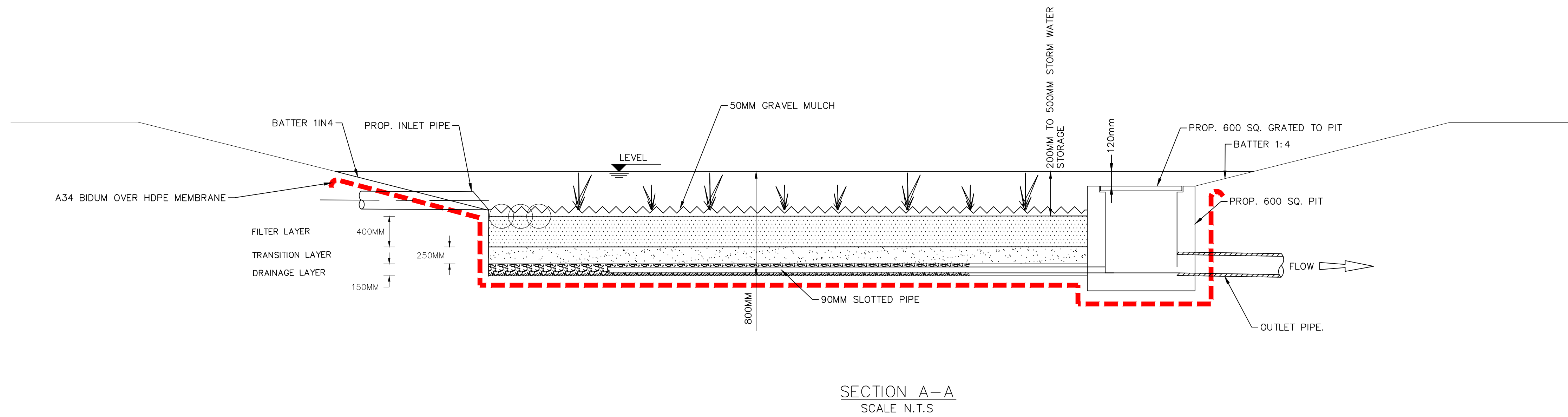
RD: *[Signature]*

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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WORK AS EXECUTED			

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RAIN GARDEN
 TYPICAL DOMESTIC RAIN GARDEN

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A1 - SCALE AS SHOWN	NUMBER OF SHEETS 35	SHEET NUMBER 34
REVISION GMC-VER-1	FILE NAME: STANDARD DRAWINGS.DWG	SD-D 14 A

DRAWING NUMBER 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 100m ³ 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). ACCEPTABLE RANGE (%W/W) RETAINED (< 0.05 mm) CLAY & SILT < 3% (< 0.05 mm) VERY FINE SAND 5-30% (0.05 – 0.15 mm) FINE SAND 10-30% (0.15 – 0.25 mm) MEDIUM SAND 40-60% (0.25 – 0.5 mm) COARSE SAND < 25% (0.5 – 1.0 mm) VERY COARSE SAND 0-10% (1.0 – 2.0 mm) FINE GRAVEL < 3% (2.0 – 3.4 mm) ORGANIC CONTENT < 5%

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 1,500mm² OPENINGS/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:

1. SPACED AT A MAXIMUM OF 1m CENTRES.
2. 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:

1. DURING BULK EARTHWORKS PHASE A SEDIMENT BASIN IN PLACE OF THE FINAL BIORETENTION.
2. FOLLOWING COMPLETION OF BULK EARTHWORKS A SACRIFICIAL BASIN SHOULD BE CONSTRUCTED TO HAVE THE SUBDIVISION CERTIFICATE / LINEN PLANS RELEASED.
3. 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
SURVEYED			
DESIGNED & DRAFTED	A.SINGH	03/03/2022	
DESIGN REVIEWED	P.NUNN	03/03/2022	
FINAL DESIGN CHECKED	M.O'ROURKE	03/03/2022	
ISSUED FOR CONSTRUCTION			
WORK AS EXECUTED			

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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

BIORETENTION NOTES

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

DRAWING NUMBER SD-D 14 B

