



STORMWATER

CIVIL

FLOODING

STRUCTURAL

REMEDIAL

20220241



REVISION 01

## PROPOSED CIVIL PLANS

Proposed Torrens Title Subdivision Development  
875 Henry Lawson Drive Picnic Point 2213

Reference  
20220241-DA-CIV-DWG-01

Client  
Project Flow

Architect  
C & A Surveyors





Drawing Register		
Number	Name	Revision
S100	Cover Sheet	01
S101	Specifications Sheet	01
S200	General Arrangement Plan - 1 Of 2	01
S201	General Arrangement Plan- 2 Of 2	01
S300	Stormwater Details	01
S400	Council Standard Drawings- 1 Of 2	01
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# General Notes

1. All work shall be carried out in accordance with council's requirements, building code of Australia, NSW code of practice and the to the relevant service codes.
2. These drawings shall be read in conjunction with all architectural and other consultants' drawings and specifications and with such other written instructions as may be issued during the course of the contract. All discrepancies shall be referred to the superintendent for decision before proceeding with the work.
3. All dimensions shown on the drawings are in meters (u.n.o.). Dimension shall not be obtained by scaling of these drawings. Use figured dimensions only.
4. Benchmarks have been established where indicated on the drawings. All Levels are to Australian height datum A.H.D.). The contractor shall undertake all necessary survey work to ensure that the works are constructed to design line and level.
5. Setting out dimensions and Levels shown on the drawings shall be verified by the contractor.
6. All materials shall be in accordance with the requirements of the relevant codes and the by-laws and ordinances of the relevant building authorities.
7. It is the contractor's responsibility to provide all safety fences, warning signs, traffic diversions and the like during construction. All works to comply with work health and safety requirements and other relevant authority safety requirements.
8. No trees shall be removed, cutback or relocated without the written instruction from the superintendent.
9. Where new works abut existing the contractor shall ensure that a smooth even profile, free from abrupt changes is obtained.
10. All works shall be carried out in accordance with the details shown on the drawings and these specifications.
11. Design Levels given are to finished surface level and inclusive of topsoil (topsoil depth varies)
12. The contractor shall arrange all survey set out to be carried out by a registered surveyor.
13. Care is to be taken when excavating near existing services. No mechanical excavations are to be undertaken over telecommunications or electrical services. Hand excavate in these areas.
14. The locations of underground services shown on the drawing have been plotted from diagrams provided by service authorities. This information has been prepared solely for the authorities own use and may not necessarily be updated or accurate.
15. The position of services as recorded by the authority at the time of installation may not reflect changes in the physical environment after installation.
16. Deboké Engineering Consultants do not guarantee that the services information shown on the drawing shows more than the presence or absence of services, and will accept no liability for inaccuracies in the services information shown from any cause whatsoever.
17. It is the contractor's responsibility to obtain from the utility services authorities a current copy of underground services search for the location of all existing services prior to commencement of any work and notify any conflict with the drawings immediately. Clearance shall be obtained from the relevant regulatory authority. Contractor to keep copy of underground services search on site at all times. Any damages to services or services adjustments shall be carried out by the contractor or relevant authority at the contractor's expense.
18. Prior to the site before submitting the final tender price to assess 'on site' conditions. Failure to do so will forfeit any claim for not being aware of conditions affecting the tender.
19. The contractor shall prepare accurate work-as-executed drawings following the completion of all works.
20. It is the contractor's responsibility to have in place & maintain traffic facilities at all times during construction.
21. Contractor to provide workshop coordinated drawings prior to commencing works on site. Workshop drawings to be reviewed and approved by design engineer.

# Concrete Pavements

1. This section refers to civil concrete works and does not include structural elements such as buildings, below ground structures or retaining walls.
2. All workmanship and materials shall be in accordance with AS3600 current edition with amendments, except where varied by the contract documents.
3. Concrete quality and reinforcing cover

Element	Concrete Strength f <sub>c</sub> (MPa)	Specified Slump	Nominal Aggregate Size	Max. 56Day Drying Shrinkage	Cover (mm)
Kerb and Paths	25	60	20	650microns	TOP 40
Vehicle Pavements	32	80	20	650microns	TOP 40

4. ALL reinforcement shall be firmly supported on mild steel plastic tipped chairs, plastic chairs or concrete chairs at not greater than 1m centres both ways, bars shall be tied at alternate intersections.
5. Cement to be type sl U.N.O. to AS3972-1997:Portland and blended cements', and maximum water/cement ratio of 0.40.  
No admixtures shall be used without the approval of the engineer.
6. Falls in slab as shown on plan maintain minimum slab thickness as shown.
7. The finished concrete shall be a dense homogenous mass, completely filling the concrete, thoroughly embedding the reinforcement and free of stone pockets.
8. Formwork class shall be in accordance with AS3600
9. Surface Finishes:
 

Elements	Formwork class
Stormwater Pit	Off form
Pavements	Machine float or broom finish
Kerbs	Steel float or trowel
10. Curing shall commence within two hours of finishing operations and shall be continued for a minimum of seven days by an approved proprietary compound or by keeping continuously wet.
11. Concrete to be covered by asphalt shall be cured by the use of one of the following:-
  - Bitumen emulsion grade CRS/170 complying with AS1160-1996:bituminous emulsions for the construction and maintenance of pavements' for asphalt wearing surface
  - Chlorinated rubber curing compound complying with AS3799-1998:'Liquid membrane-forming curing compound for concrete' class C type 1d or resin-based curing compound complying with AS3799-1998 class B, type 1d or type 2.
12. Reinforcement symbols:
 

N	denotes grade 450 N bars to AS1302 grade N
R	denotes 230 R hot rolled plain bars to AS1302
SL	denotes hard-drawn wire reinforcing fabric to AS1304
13. Concrete testing shall comply with AS1012:methods of testing concrete' AS amended.
14. Formwork shall be designed and constructed in accordance with AS3610-1995:'formwork for concrete'. formwork shall not be stripped nor props removed without the approval of the engineer.

# Pavements Notes

1. The subgrade and/or subgrade replacement to be compacted to a minimum relative compaction of 100% when tested in accordance with AS1289-e4.1's standard compaction effect' or a minimum density of 80% for cohesive/less soils.
2. All soft, wet or unsuitable material to be removed as directed by the superintendent & replaced with approved selected fill satisfying the requirements listed below & approved by the superintendent.
  - free from organic & perishable matter
  - maximum particle size 75mm
  - plasticity index between 2% and 15%
3. Compaction testing of the subgrade and the base course shall be carried out by a NATA registered soil laboratory for a maximum of:

Subgrade	- 1 test per 500m <sup>2</sup> (2 test min.)
Base course	- 1 test per 500m <sup>2</sup> (2 test per layer min.)
4. Minimum dry density ratios (AS1289:3.4.1-1993) to be:

base course	98% modified
subbase	95% modified
subgrade	100% standard
subgrade replacement	100% standard
5. The degree of compaction shall be measured by one of the following parameters:-
  - granular fill (non-cohesive soils), the density index (di) determined in accordance with AS1289.e6.1 based on the maximum and minimum dry densities in accordance with AS1289.e5.1 and the field dry density in accordance with AS1289.5.3.2, AS1289.e.3.5 or AS1289.e.8.1.
  - non-granular fill (cohesive soils), the dry density ratio (rd) determined in accordance with AS1289.5.4.1 based on the field dry density in accordance with AS1289.5.3.2 and the maximum dry density in accordance with AS1289.5.1.1.

# Pavement Joints

1. Provide 10mm ABLEFLEX between new concrete works and existing structures.
2. Local authority requirements shall take precedence within the public road reserve.
3. Dowels to be placed on proprietary cradles to ensure correct spacing and alignment.

## Pedestrian Pavements

ALL pedestrian pavements are to be jointed as follows U.N.O on the design drawings

4. Expansion joints are to be located where possible at tangent points of curves and elsewhere at max. 6.0m centres.
5. Weakened plane joints (sawn or tool joints) are to be located at a max. spacing of 1.5m x width of the pavement.
6. Where possible joints should be located to match kerbing and/or adjacent pavement joints.

Typical pedestrian pavement joint arrangement

## Vehicular Pavements

ALL vehicular pavements to be jointed as follows U.N.O on the design drawings.

7. Tied keyed construction joints should generally be located longitudinally at a max. of 6.0m centres.
8. Sawn joints should generally be located laterally at a max. of 6.0m centres with dowelled expansion joints at max. 18.0m centres.

Typical vehicular pavement joint detail.

9. Kerb expansion joints should be formed from 10mm ABLEFLEX for full depth of section.
10. Kerb expansion joints to be located at drainage pits, tangent points of curves / corners and at 12m max centres.
11. Toolled joints to be min 3mm wide and located at max 3m centres.
12. Integral kerb joints shall match the location of pavement joints.

Legend	
	RAINWATER TANK LINES
	STORMWATER LINE
	SUBSOIL LINE
	STORMWATER RISING MAIN
	HIGH LEVEL STORMWATER LINE
	OVERFLOW LINE
	EXISTING STORMWATER LINE
	AUTHORITY STORMWATER LINE
	AUTHORITY SEWER LINE
	AUTHORITY WATER LINE
	AUTHORITY GAS LINE
	AUTHORITY ELECTRICITY LINE
	AUTHORITY UNDERGROUND ELECTRICITY LINE
	AUTHORITY FIBRE OPTIC LINE
	AUTHORITY COMMS LINE
	FENCE LINE
	GRATED SURFACE INLET PIT
	JUNCTION PIT
	KERB INLET PIT
	EXISTING KERB INLET PIT
	EXISTING TELSTRA PIT
	EXISTING HYDRANT
	EXISTING STOP VALVE
	EXISTING POWER POLE
	EXISTING SEWER MANHOLE
	OVERLAND FLOW PATH
	RAINWATER OUTLET
	CLEAR OUT POINT
	CAPPING
	DOWNPIPE DROP
	DOWNPIPE
	SPOT LEVELS
	BENCHMARK
	PROPOSED VEHICULAR CROSSING
	PROPOSED KERB & GUTTER
	PROPOSED FOOTPATH
	PROPOSED DRIVEWAY
	PROPOSED SAW-CUT TO PAVEMENT




The logo consists of a black square on the left containing a white circle with a red border and a red diagonal slash. Inside the circle is a black silhouette of a shovel. To the right of this icon, the words 'DIAL' and 'YOU' are in black, while 'BEFORE' is in red. Below this, the website 'www.1100.com.au' is written in black. A registered trademark symbol (®) is located at the top right of the logo area.

## SERVICES NOTE

SERVICES SHOWN ON PLAN ARE INDICATIVE, EXACT DEPTH AND LOCATION TO BE CONFIRMED ONSITE. CONTRACTOR TO CARRY OUT DIAL BEFORE YOU DIG APPLICATION AND ENGAGE A REGISTERED SURVEYOR TO PEG OUT ALL EXISTING SERVICES PRIOR TO ANY WORK COMMENCING ONSITE.

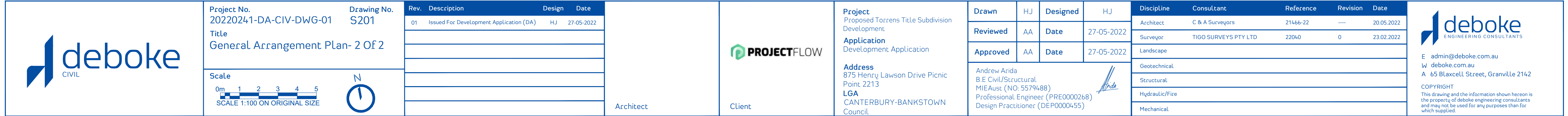
# ABBREVIATIONS

O or DIA	DIAMETER
CO	CLEAR OUT
DDO	DISH DRAIN OUTLET
DP	DOWPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GTD	GRATED TRENCH DRAIN
GSIP	GRATED SURFACE INLET PIT
IL	INVERT LEVEL
KIP	KERB INLET PIT
NGL	NATURAL GROUND LEVEL
OPF	OVERLAND FLOWPATH
OSD	ON-SITE DETENTION
RC	REINFORCED CONCRETE PIPE
RL	REDUCED LEVEL
RWT	RAINWATER TANK
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
TOK	TOP OF KERB
TOW	TOP OF WALL
uPVC	UNPLASTICISED POLYVINYL CHLORIDE

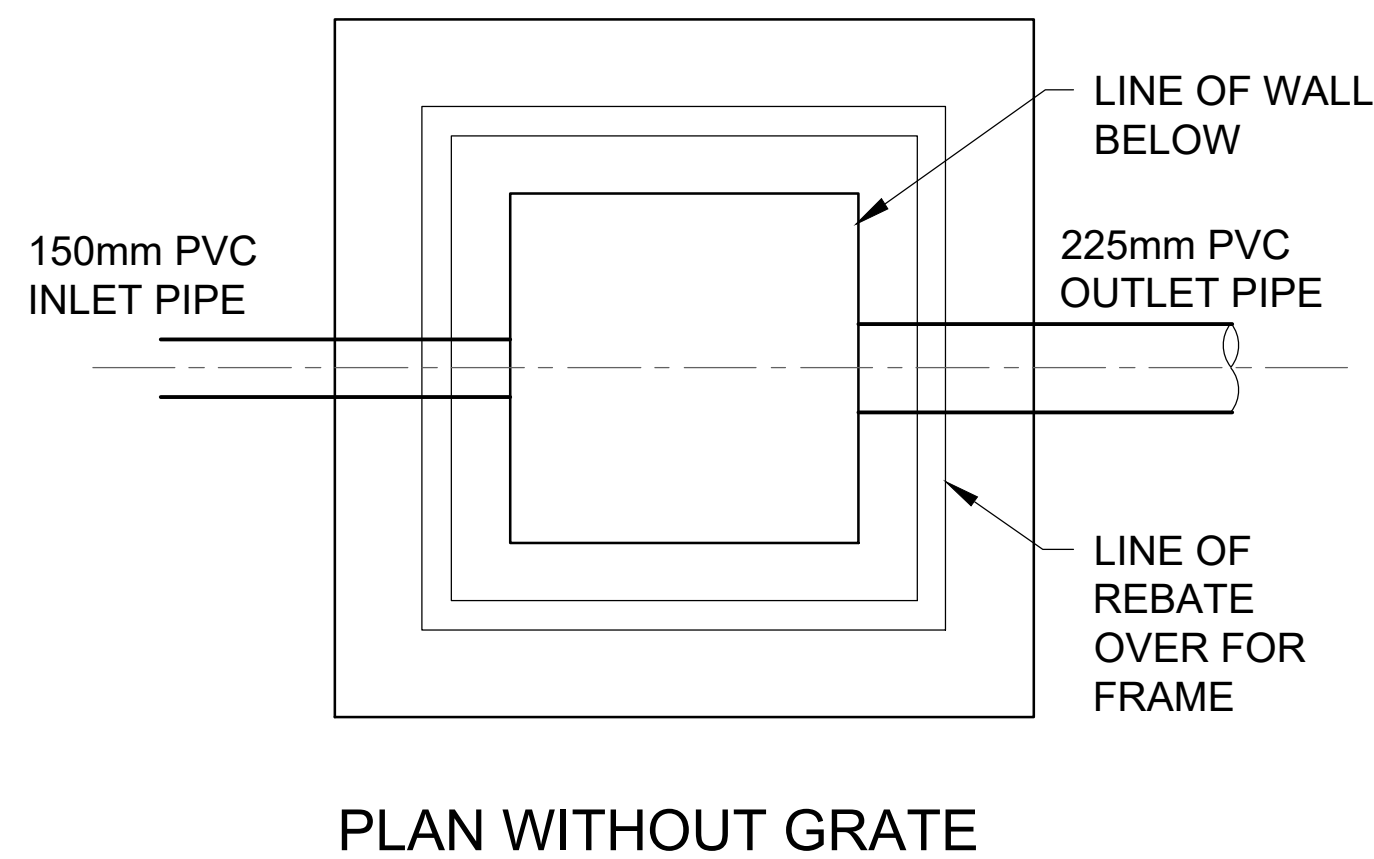
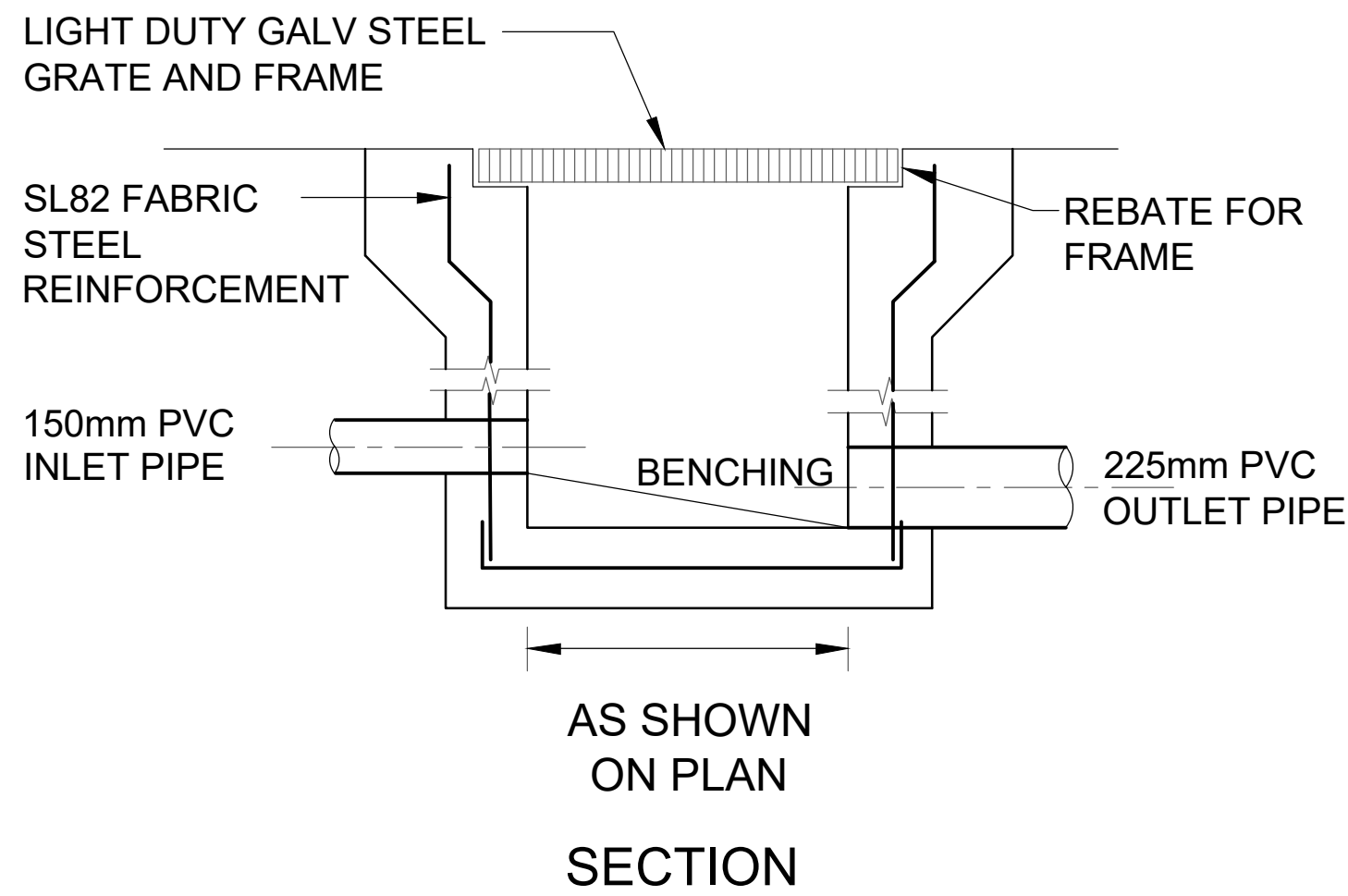
	Project No. 20220241-DA-CIV-DWG-01	Drawing No. S101	<table><tr><th>Rev.</th><th>Description</th><th>Design</th><th>Date</th></tr><tr><td>01</td><td>Issued For Development Application (DA)</td><td>HJ</td><td>27-05-2022</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	Rev.	Description	Design	Date	01	Issued For Development Application (DA)	HJ	27-05-2022																					Architect		<p><b>Project</b> Proposed Torrens Title Subdivision Development</p> <p><b>Application</b> Development Application</p> <p><b>Address</b> 875 Henry Lawson Drive Picnic Point 2213</p> <p><b>LGA</b> CANTERBURY-BANKSTOWN Council</p>	<table><tr><td>Drawn</td><td>HJ</td><td>Designed</td><td>HJ</td></tr><tr><td>Reviewed</td><td>AA</td><td>Date</td><td>27-05-2022</td></tr><tr><td>Approved</td><td>AA</td><td>Date</td><td>27-05-2022</td></tr></table>	Drawn	HJ	Designed	HJ	Reviewed	AA	Date	27-05-2022	Approved	AA	Date	27-05-2022	<table><tr><td>Discipline</td><td>Consultant</td><td>Reference</td><td>Revision</td><td>Date</td></tr><tr><td>Architect</td><td>C &amp; A Surveyors</td><td>2146b-22</td><td>----</td><td>20.05.2022</td></tr><tr><td>Surveyor</td><td>TIGO SURVEYS PTY LTD</td><td>22040</td><td>0</td><td>23.02.2022</td></tr><tr><td>Landscape</td><td></td><td></td><td></td><td></td></tr><tr><td>Geotechnical</td><td></td><td></td><td></td><td></td></tr><tr><td>Structural</td><td></td><td></td><td></td><td></td></tr><tr><td>Hydraulic/Fire</td><td></td><td></td><td></td><td></td></tr><tr><td>Mechanical</td><td></td><td></td><td></td><td></td></tr></table>	Discipline	Consultant	Reference	Revision	Date	Architect	C & A Surveyors	2146b-22	----	20.05.2022	Surveyor	TIGO SURVEYS PTY LTD	22040	0	23.02.2022	Landscape					Geotechnical					Structural					Hydraulic/Fire					Mechanical					<div></div> <div>E admin@deboke.com.au W deboke.com.au A 65 Blaxcell Street, Granville 2142</div> <div>COPYRIGHT</div> <div>This drawing and the information shown hereon is the property of deboke engineering consultants and may not be used for any purposes than for which supplied.</div>
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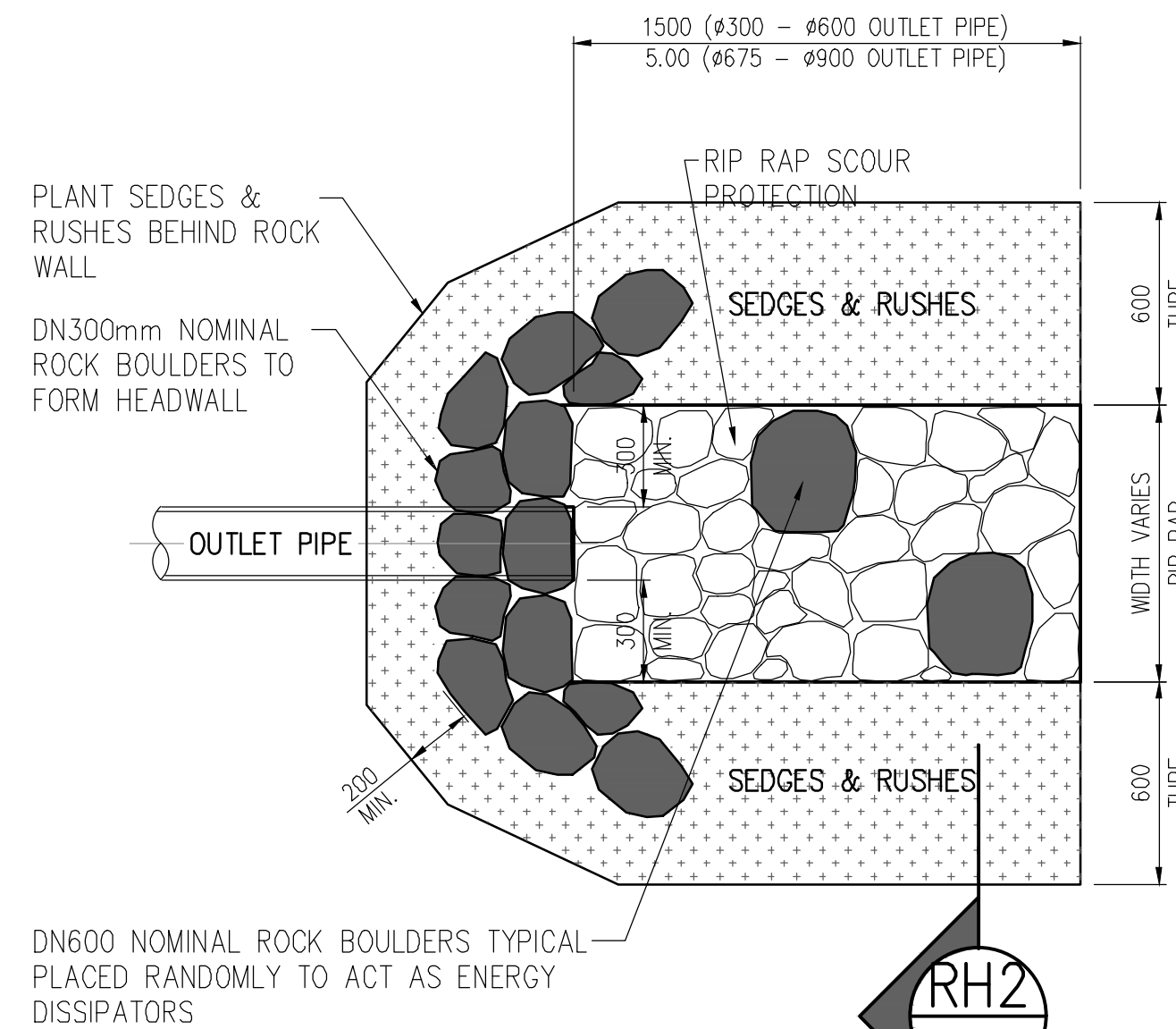
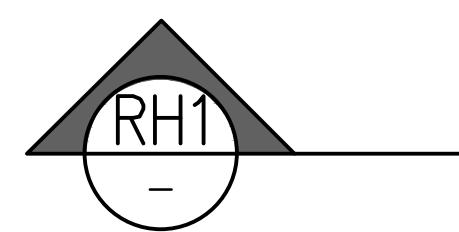




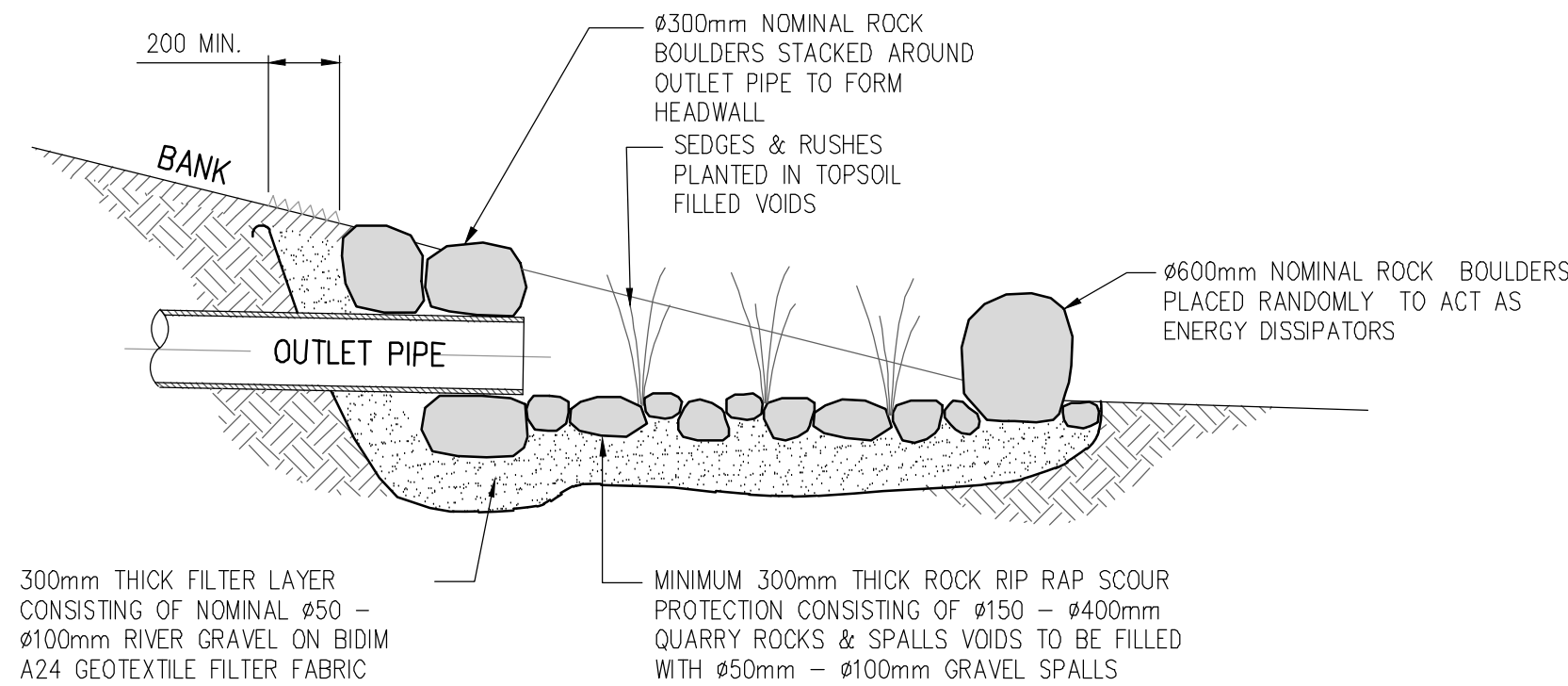




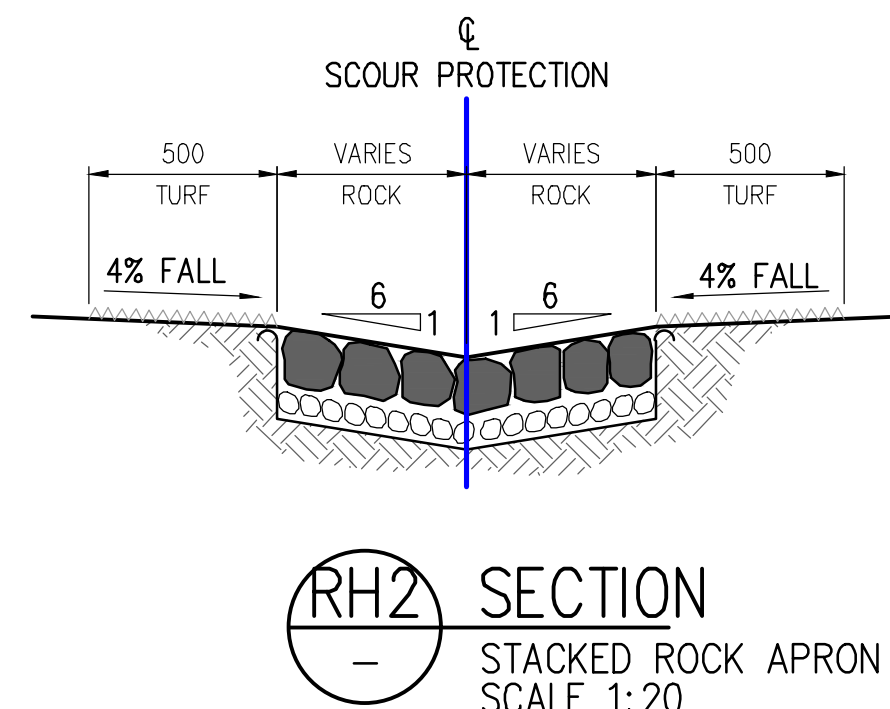
STORMWATER PIT  
SCALE NTS








STACKED ROCK HEADWALL WITH SCOUR PROTECTION  
SCALE 1:20



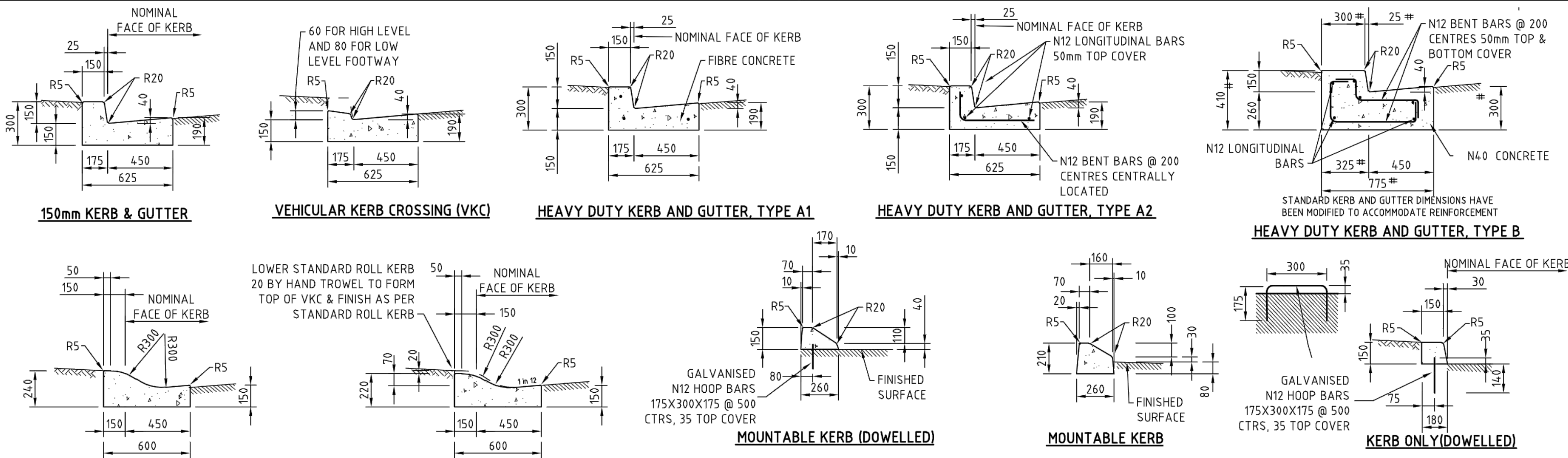
STACKED ROCK HEADWALL  
SCALE 1:20



STACKED ROCK APRON  
SCALE 1:20

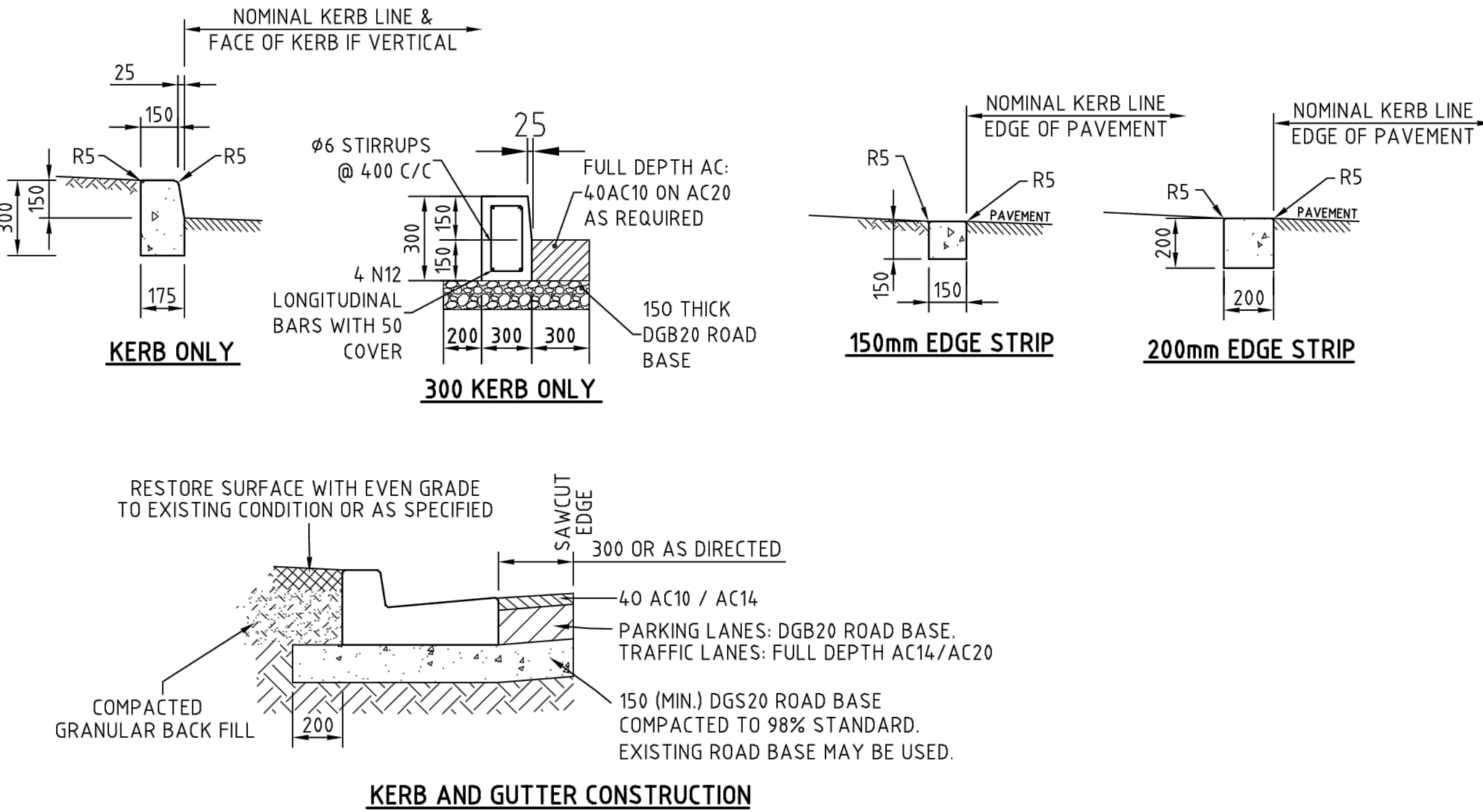
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	<b>Scale</b> 														Geotechnical									
											Client					Structural								
																Hydraulic/Fire								
																Mechanical								





NOTES

- ROAD BASE 150mm THICK TO BE PLACED UNDER ALL KERB & GUTTER, KERB, AND EDGE STRIPS AND COMPACTED TO 98% STANDARD. FOR KERB & GUTTER EXTEND ROAD BASE 200 FROM BACK OF KERB AND 300 FROM EDGE OF GUTTER. FOR KERBS AND EDGE STRIPS EXTEND ROAD BASE 150mm BOTH SIDES. ROAD BASE MATERIAL IS TO BE CRUSHED ROCK OR CRUSHED RECYCLED CONCRETE GRADED TO DGS20.
- MACHINE POURED KERB AND GUTTER TO BE SLIP FORMED USING 20-30MM SLUMP S25A10 CONCRETE. K&G TIED TO CONCRETE BASE USE SLIP FORMED S32A20Q TfNSW MIX. EXTRUDED KERB & GUTTER USING NO SLUMP CONCRETE IS NOT TO BE USED.
- HAND POURED KERB & GUTTER AND MISCELLANEOUS KERBS AND EDGE STRIPS: CONCRETE TO BE STRENGTH GRADE N32, OR N40 WHERE KERB & GUTTER / EDGE STRIPS CAN BE TRAFFICKED WITHIN 5 DAYS OF POURING.
- USE HEAVY DUTY K&G WHERE K&G IS ALONG THE EDGE OF A TRAFFIC LANE AND CAN BE TRAFFICKED BY HEAVY VEHICLES.
- TYPE A1 HEAVY DUTY KERB & GUTTER: SFCP FIBRE CONCRETE TO TfNSW MIX S32A20Q WITH BLENDED POLYPROPYLENE MACRO FIBRES: MACRO FIBRE TENSILE STRENGTH 400MPa MIN, LENGTH 40-60MM, ASPECT RATIO 50-100: USE FIBERCON EMESH @ 4KG/M3; NOVOMESH 950 @5KG/M3, OR APPROVED EQUIVALENT. USE TfNSW S40A20Q CONCRETE MIX WHERE KERB & GUTTER WILL BE TRAFFICKED AFTER 6-12 HOURS.
- TYPE A2 AND TYPE B HEAVY DUTY REINFORCED KERB & GUTTER: CONCRETE TO BE STRENGTH GRADE N40
- CONTRACTION JOINTS SHALL BE FORMED EVERY 3m OF LENGTH WITH A GROOVE 40mm DEEP AND 6mm WIDE. EXPANSION JOINTS, 15mm IN WIDTH FOR THE FULL DEPTH SHALL BE CONSTRUCTED AT INTERVALS NOT EXCEEDING 15m AND WHERE THE KERB OR GUTTER ABUTS AGAINST PITS OR OTHER HARD SURFACES AND AT BOTH SIDES OF KERB LAYBACKS FOR VEHICULAR OR PEDESTRIAN ACCESS. EXPANSION JOINTS, 15mm WIDE, SHALL CONSIST OF PREFORMED JOINTING MATERIAL OF BITUMINOUS FIBREBOARD.
- PROPERTY DRAINAGE IS TO BE RECONNECTED TO KERB USING APPROVED KERB CONNECTORS FINISHED FLUSH WITH KERB FACES. REFER TO CBC STANDARD DWG. S-107. PROPERTY DRAINAGE PIPES ARE TO BE RELAID AS REQUIRED TO PROVIDE 0.75% MINIMUM FALL.
- BOXING OF EXISTING ROAD PAVEMENT ALONG GUTTER IS TO BE REINSTATED AS FOLLOWS: FOR TRAFFIC LANES COMPACTED FULL DEPTH AC14 AND AC20. FOR PARKING LANES OR TEMPORARY BACKFILL WHERE THE ROAD IS BEING RESURFACED PAVEMENT IS TO BE 80MM AC10 / AC14 WEARING COURSE ON COMPACTED 120 DGB20 ROAD BASE. TEMPORARY AC SEAL CAN BE 40MM AC10/AC14 IF THE PAVEMENT RESURFACING IS 80MM OR GREATER.
- ALL ASPHALT SHALL BE PROPRIETARY HOT MIX IN ACCORDANCE WITH AUS-SPEC 1144, PLACED AND COMPACTED AT A MINIMUM TEMPERATURE OF 140°C. THE USE OF COLD MIX IS NOT PERMITTED.



ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE



CITY OF CANTERBURY BANKSTOWN

STANDARD  
KERB & GUTTER, KERB, AND EDGE STRIPS

SECTION DETAILS AND GENERAL NOTES

STD DWG N°

S-001

Sheet N°: 1 of 1  
Revision: 17/12/21

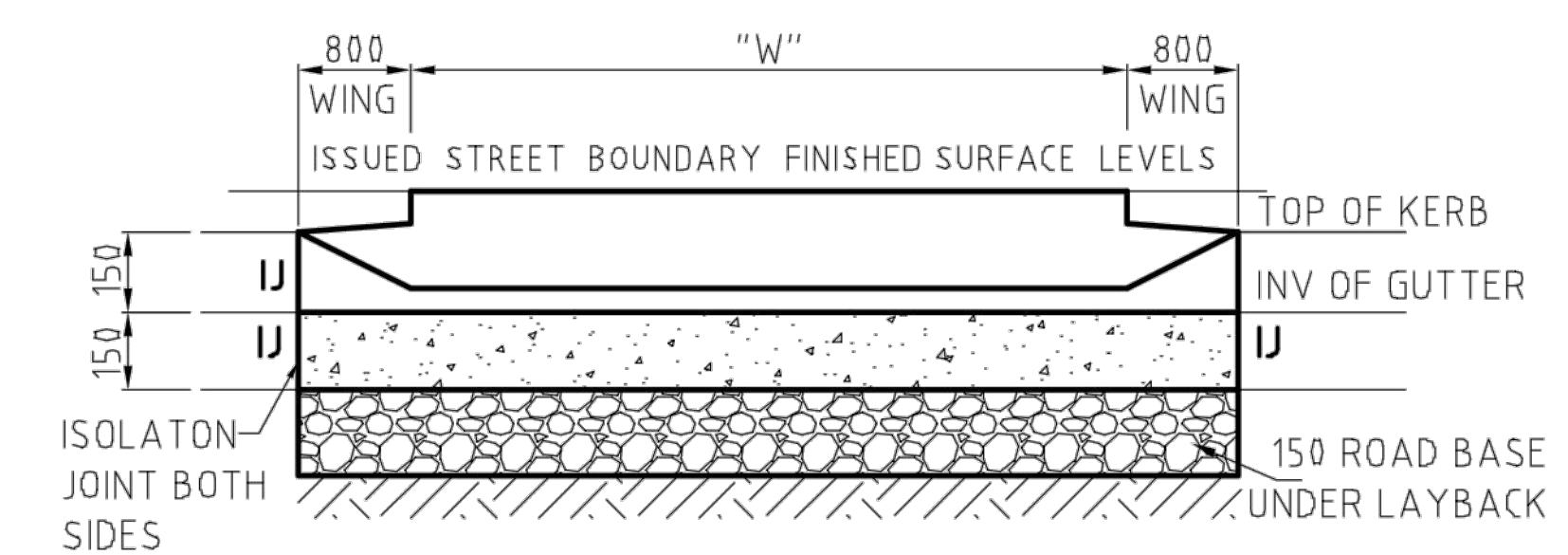
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Technical drawing of a kerb section showing dimensions and materials. The drawing includes the following details:

- Overall Dimensions:**
  - Top width: 25
  - Top width (inner): 150
  - Top width (outer): 625
  - Left height: 300
  - Left height (inner): 150
  - Right height: 190
  - Bottom width (inner): 175
  - Bottom width (outer): 450
- Materials:**
  - Concrete (indicated by a dotted pattern)
  - Wearing surface (indicated by a cross-hatched pattern)
- Curbs and Radii:**
  - Top left corner: R5
  - Top right corner: R5
  - Inner corner: R20
- Labels:**
  - NOMINAL
  - FACE OF KERB

AC10

250

150

R5

300

150

150

R20

NOMINAL FACE OF KERB

SAWCUT GUTTER

DEFORMED TIE BAR,  $\phi 12\text{mm}$  GRADE D500N 300 LONG, AT 300 SPACING.

75

175

450

625

DRILL AND EPOXY BAR 150 INTO EXISTING CONCRETE AT MID DEPTH.

PAVEMENT

SECTION B2 - TYPE B2

MATCH LAYBACK ISOLATION JOINT

SAWCUT FOR K&G REMOVAL

SECTION B2 - TYPE B2

REFER TO ATTACHED 'DESIGN LEVELS'  
PLAN FOR LEVELS AND DIMENSIONS



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BANKSTOWN**

File Name:	S-007.dwg
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