

Gutter Flow as a function of road slope S

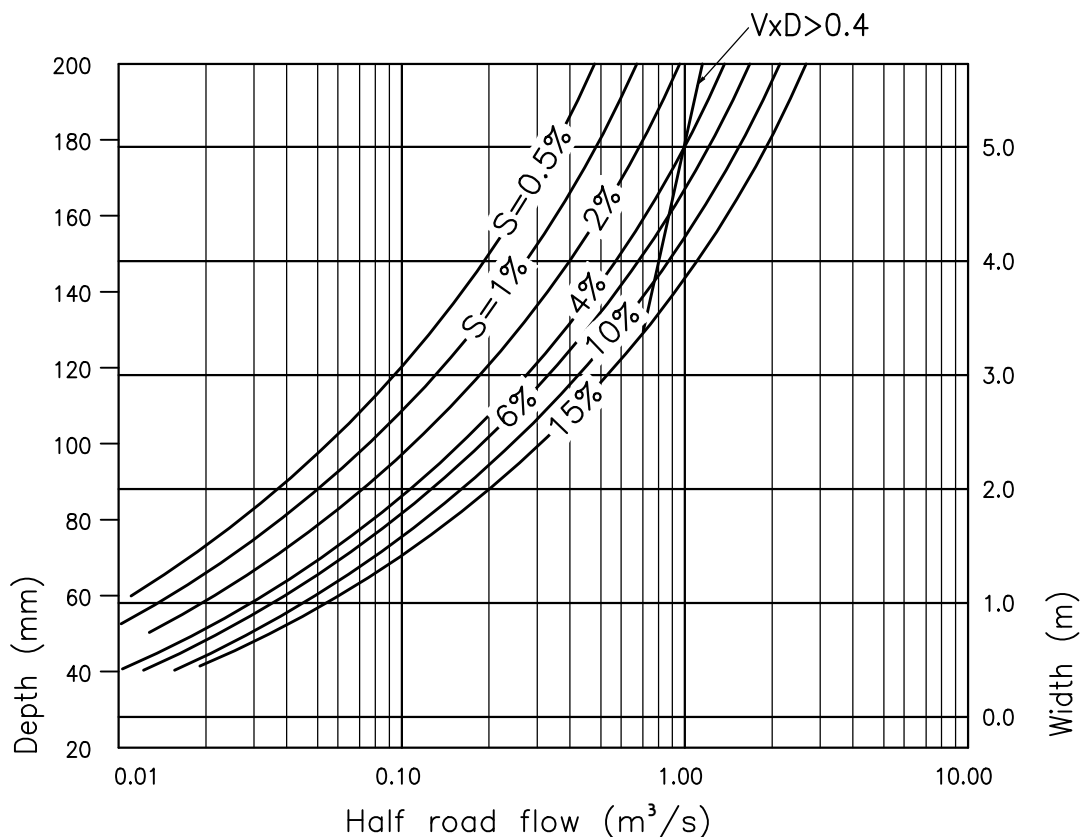


Chart 1: Kerb and Gutter Flow Using Izzard's Equation
Source: QUDM (1992)

Based on 3% road crossfall.
 Barrier kerb type 1 (450mm),
 $n_p = 0.015$
 $n_g = 0.013$

Charts have been sourced from the 'Queensland Urban Drainage Manual' and 'Max Q'.

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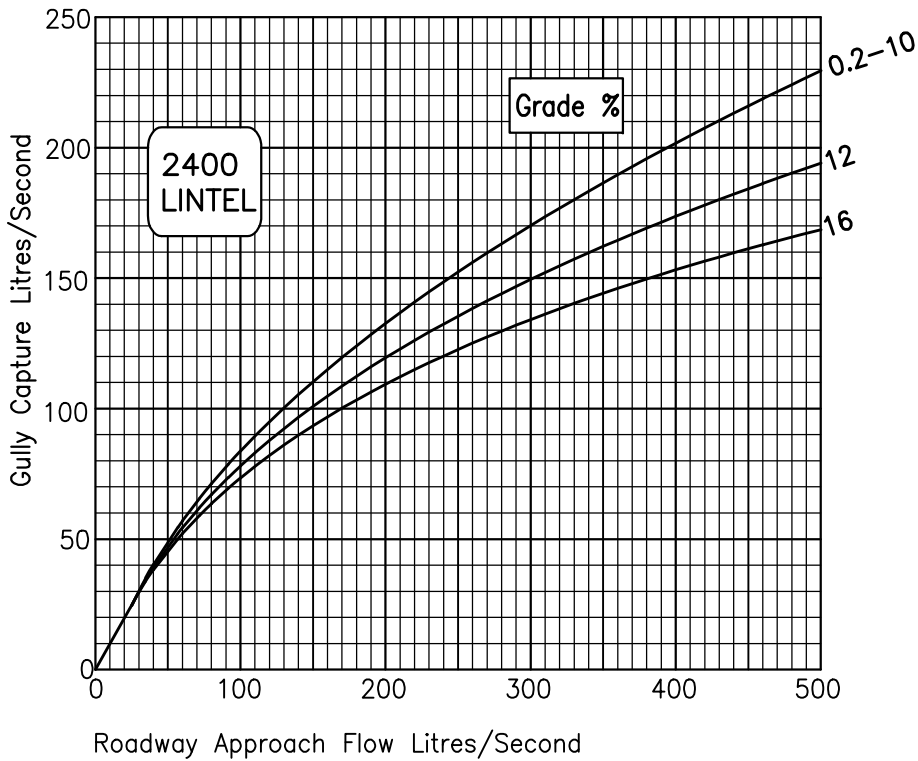
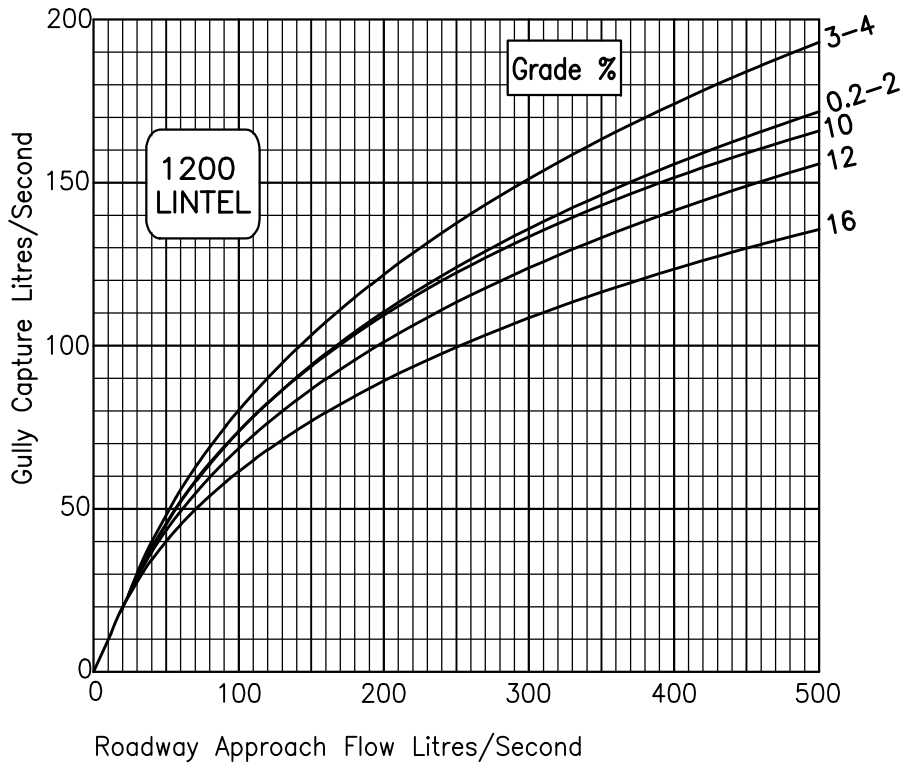


AUCKLAND TRANSPORT
 CODE OF PRACTICE

TITLE **STORMWATER INLET PITS
 DESIGN CHART 1**

SCALE: N.T.S.
 DRAWING No. RD001
 VERSION

TASMAN / MANNING GRATE * BARRIER KERB - 3% CROSSFALL



INLETS ON GRADE

Charts have been sourced from the 'Queensland Urban Drainage Manual' and 'Max Q'.

* Tasman Grate to be used.
Graph taken from Manning's Grate test results. Tasman Grate performance very similar.

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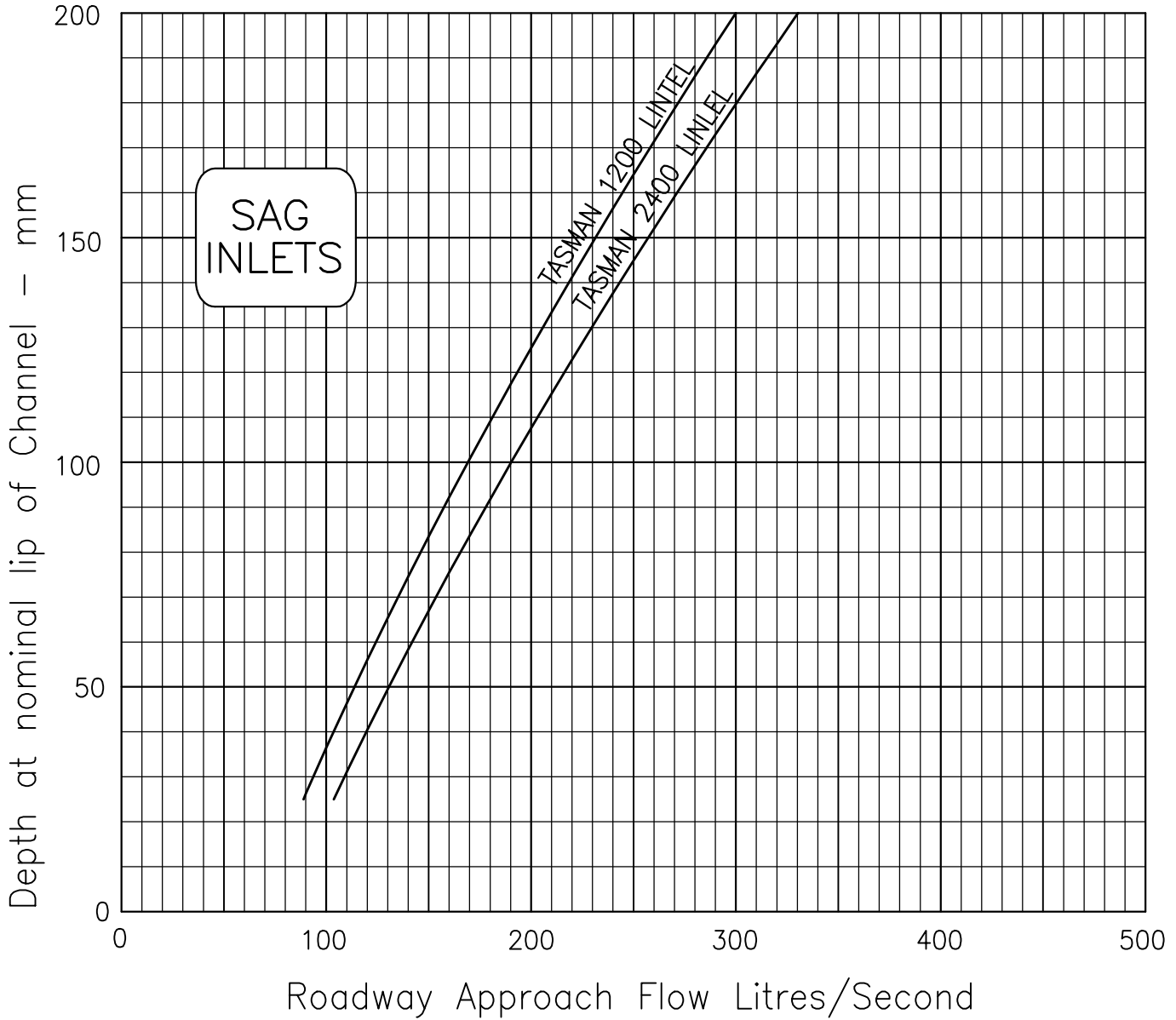


AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

**STORMWATER INLET PITS
DESIGN CHART 2
INLET CAPTURE**

SCALE:
N.T.S.
DRAWING No.
RD002
VERSION



INLETS IN SAGS

ALLOWANCE FOR BLOCKAGE

On grade chart captures, which are for a clean inlet, should be multiplied by a factor of 0.9 for system design. No blockage factor need be applied to sag chart captures, which are derived with the grate covered.

Charts have been sourced from the 'Queensland Urban Drainage Manual' and 'Max Q'.

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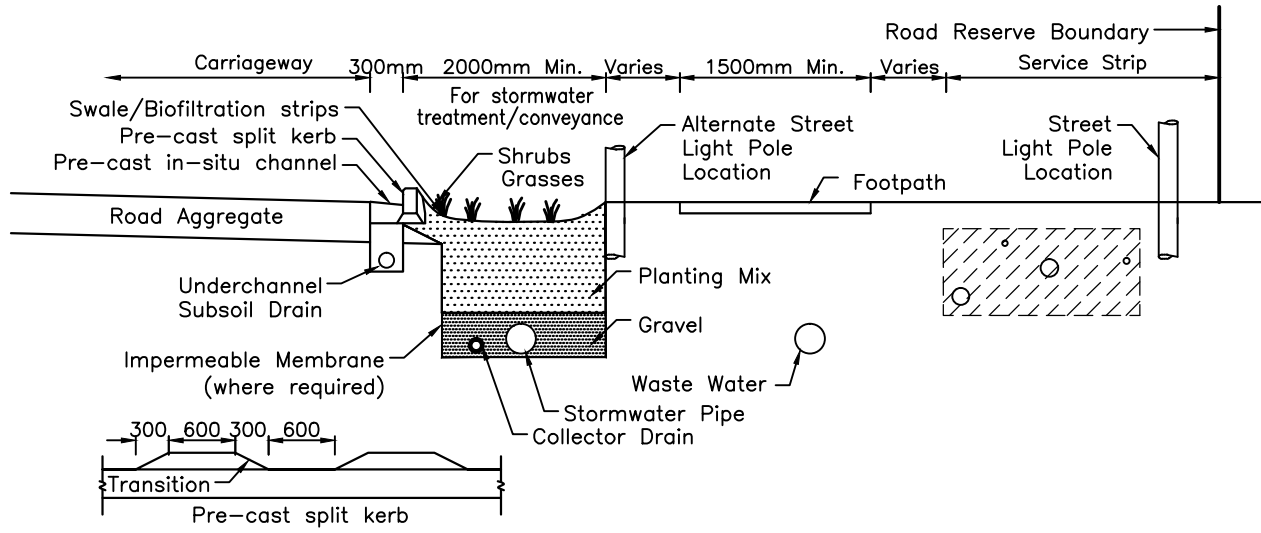
TITLE

**STORMWATER INLET PITS
DESIGN CHART 3
INLET CAPTURE**

SCALE:
N.T.S.

DRAWING No.
RD003

VERSION



BERM INCLUDING BIOFILTRATION TRENCH

NOTE:

1. Stormwater Treatment Strip:
 Details shown are examples only. Treatment practices require detailed stormwater design in accordance with TP10 and design guidelines approved by the Auckland Transport Asset Manager. May be interrupted by indented parking or tree planting where stormwater design permits.
2. Permeable paving design to TP10 general requirements as manufacturers recommendations. Design to be approved by the Auckland Transport Asset Manager.

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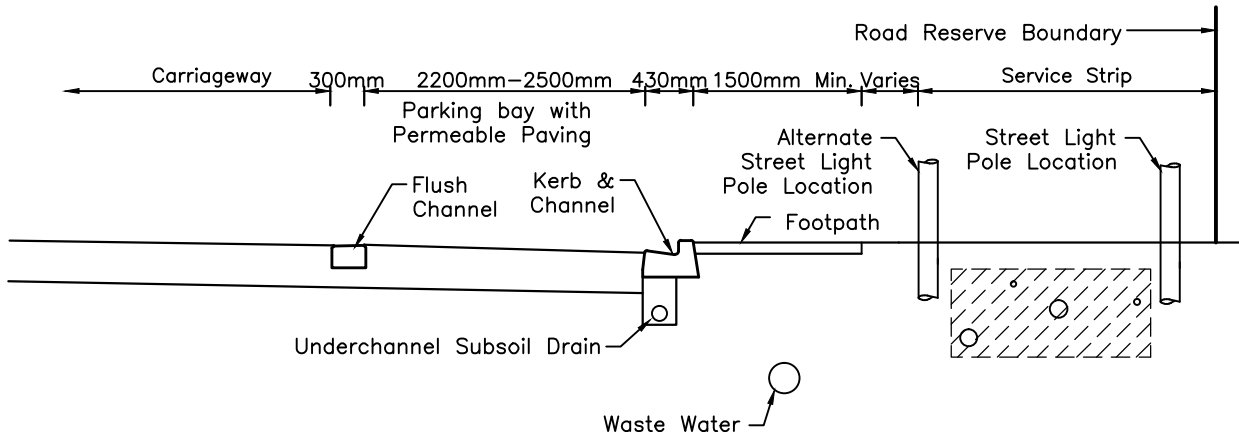


AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

**ROAD BERM WITH
BIORETENSION SWALE**

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| SCALE: | N.T.S. |
| DRAWING No. | RD010 |
| VERSION | |



BERM INCLUDING PERMEABLE PAVED PARKING BAY

NOTE:

1. Stormwater Treatment Strip:
Details shown are examples only. Treatment practices require detailed stormwater design in accordance with TP10 and design guidelines approved by the Auckland Transport Asset Manager. May be interrupted by indented parking or tree planting where stormwater design permits.
2. Permeable paving design to TP10 general requirements and manufacturers recommendations. Design to be approved by the Auckland Transport Asset Manager.
3. Under channel drain may be omitted if a drainage path from the road formation to a collector drain under the stormwater treatment strip is provided.

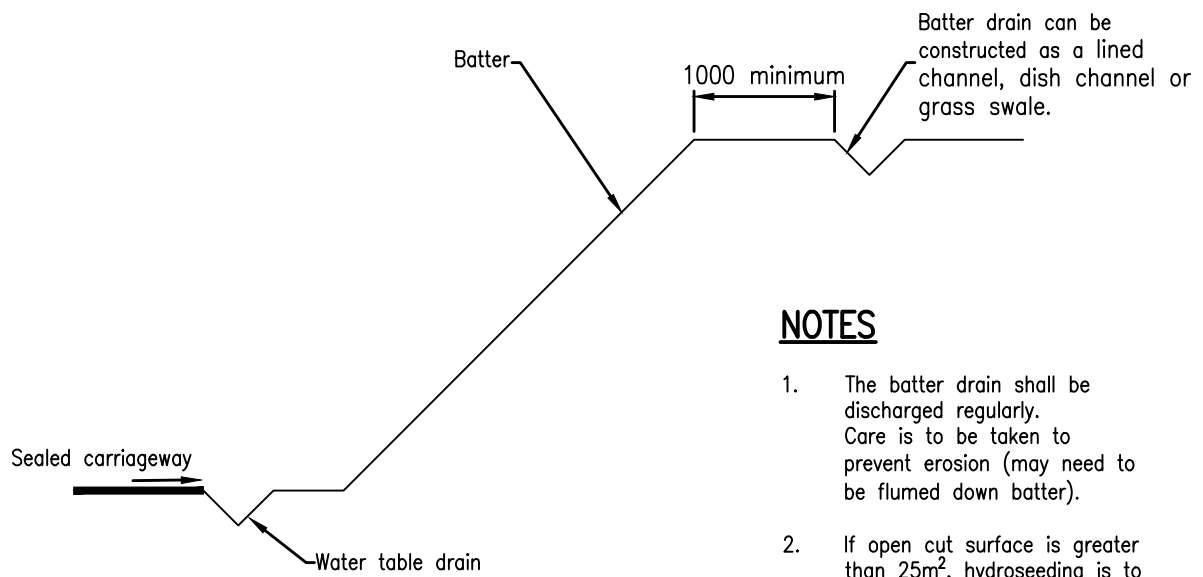
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**ROAD BERM WITH
PERVIOUS PAVED PARKING**

SCALE:
N.T.S.
DRAWING No.
RD011
VERSION



NOTES

1. The batter drain shall be discharged regularly. Care is to be taken to prevent erosion (may need to be flumed down batter).
2. If open cut surface is greater than 25m², hydroseeding is to be completed.

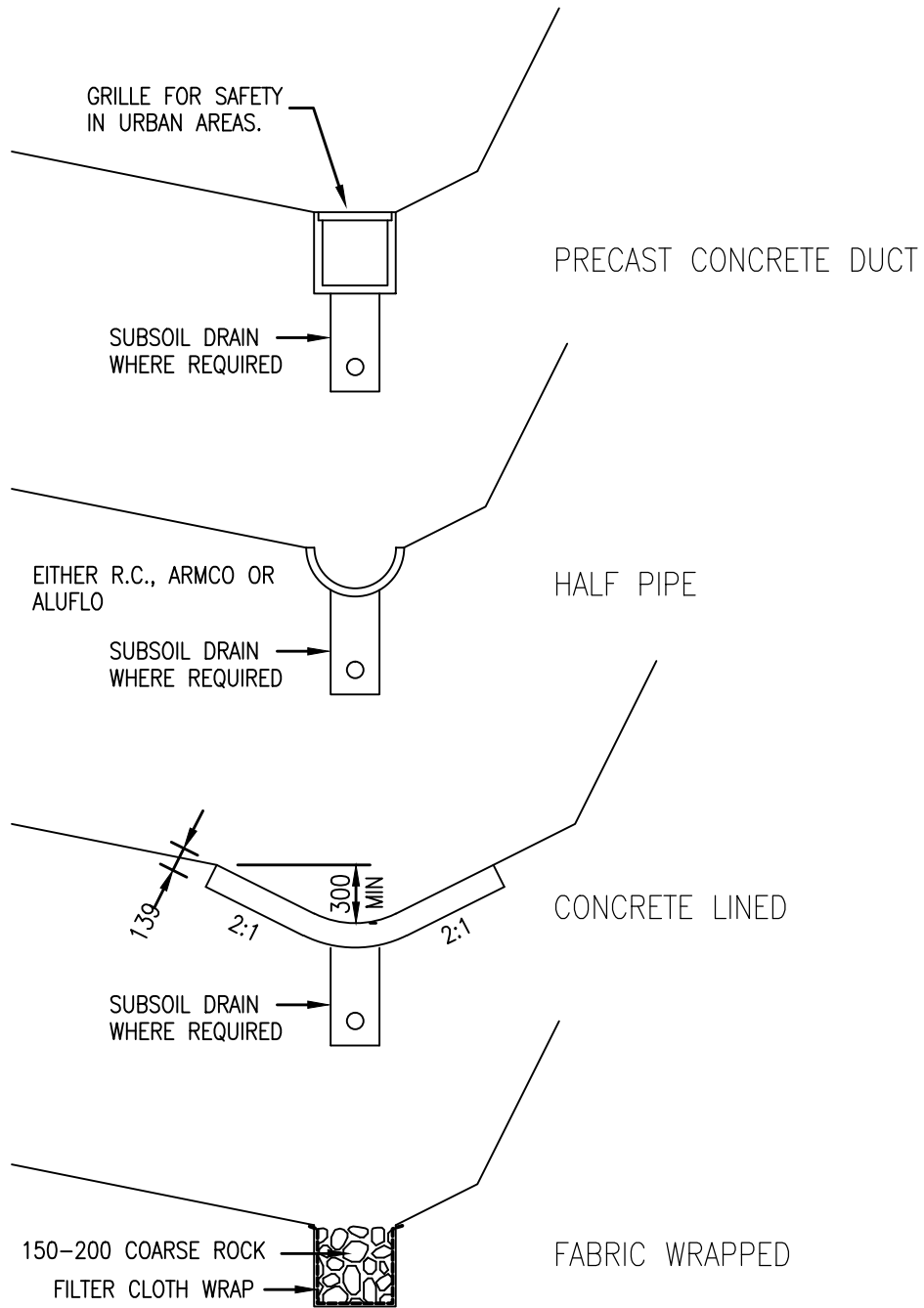
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE **BATTER DRAIN
DETAIL**

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| SCALE: | N.T.S. |
| DRAWING No. | RD020 |
| VERSION | |



NOTES

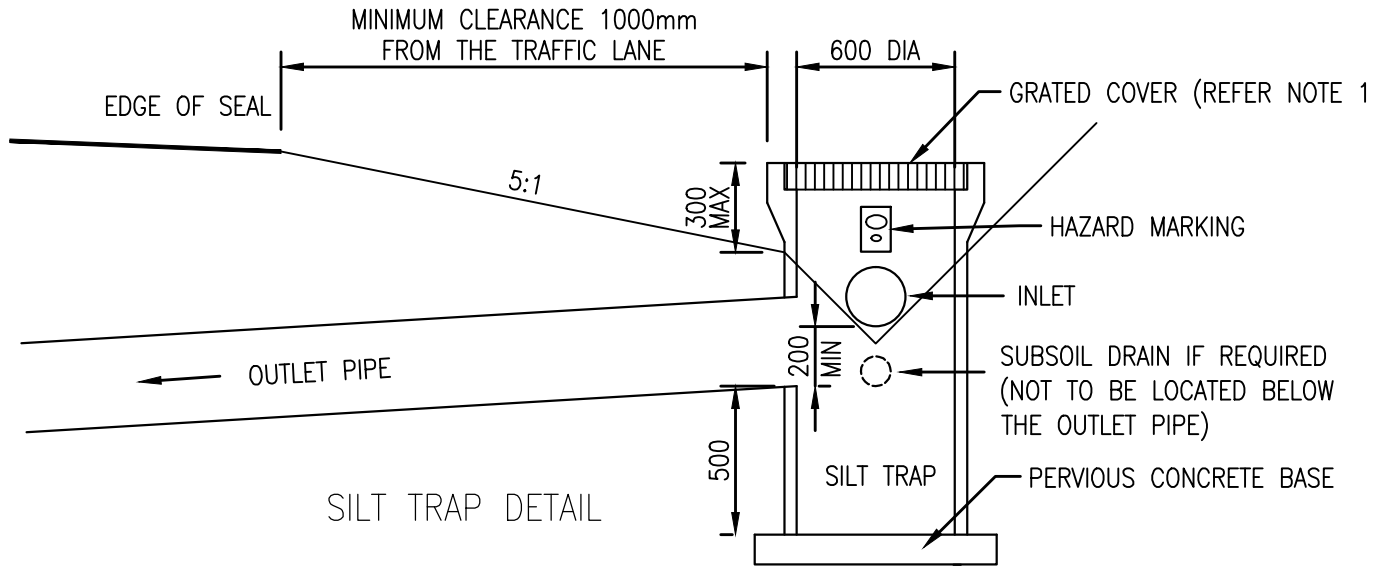
1. SIDE DRAIN TO BE SIZED SUCH THAT IT CATERS FOR CONTRIBUTING CATCHMENT.
2. A SUBSOIL DRAIN SHOULD BE PROVIDED WHERE THE OPEN DRAIN IS LOCATED ALONG THE EDGE OF THE SEAL.

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| AUCKLAND TRANSPORT CODE OF PRACTICE | |
| TITLE | RURAL SIDE DRAIN IN CUTTING |

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| SCALE: | N.T.S. |
| DRAWING No. | RD021 |
| VERSION | |



NOTE :-

1. FIT TOP OF PIPE WITH GRATED COVER IN COLLAR. COVER AND FIXING DETAILS TO BE APPROVED BY THE ENGINEER.

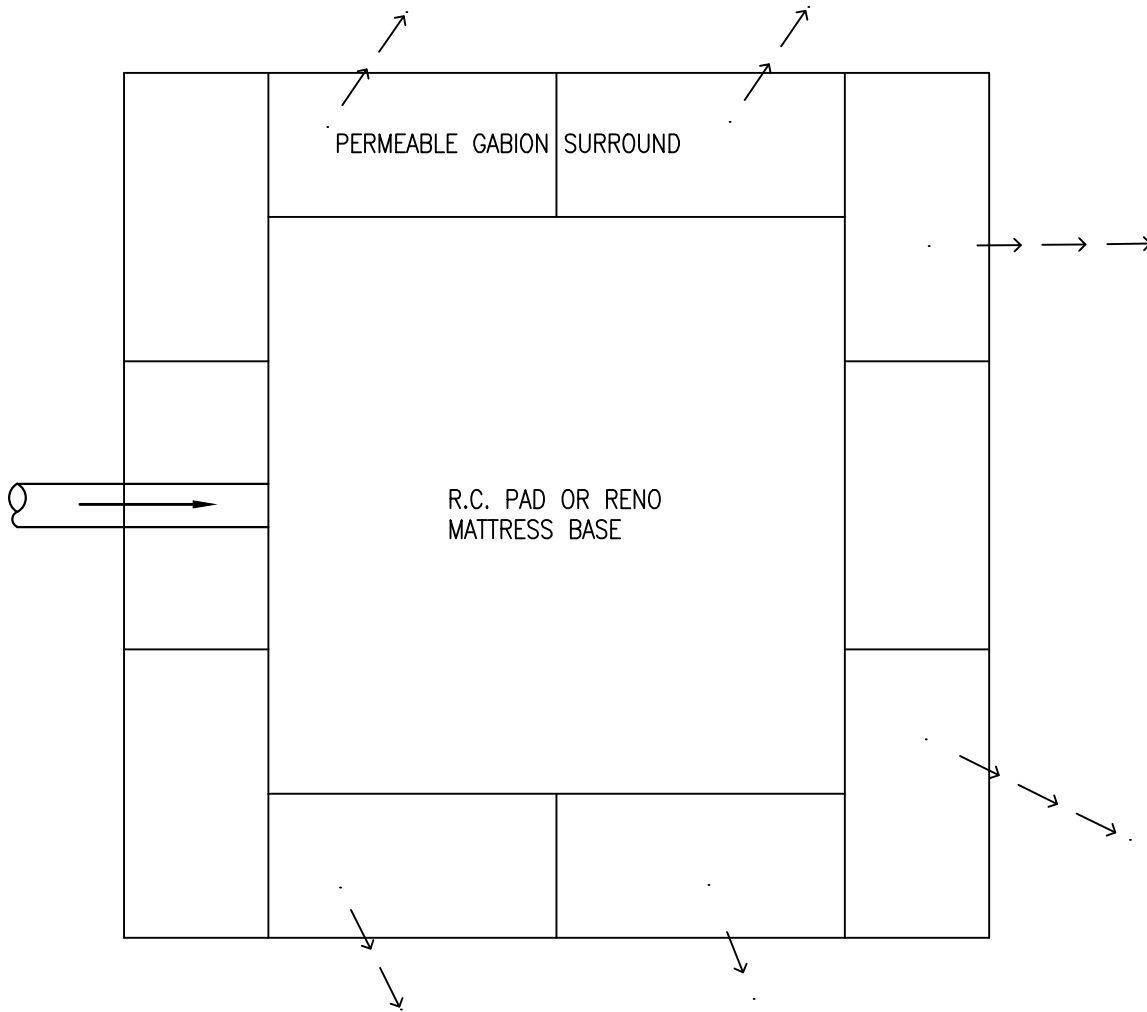
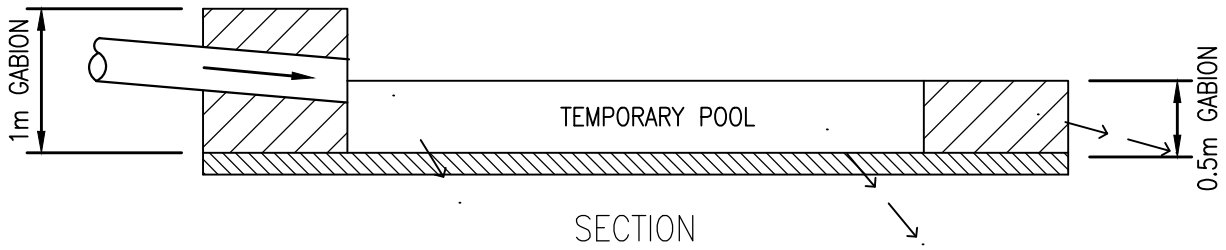
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**RURAL SIDE DRAIN
CULVERT INLET**

SCALE:
N.T.S.
DRAWING No.
RD022
VERSION



PLAN

GABION PONDING & SEEPAGE THROUGH SIDES & BASE

FOR USE IN PROTECTED BUSH AREAS

NOTE: SPECIFIC DESIGN REQUIRED OF SEEPAGE SYSTEM SUCH THAT IT CATERS FOR CONTRIBUTING CATCHMENT .

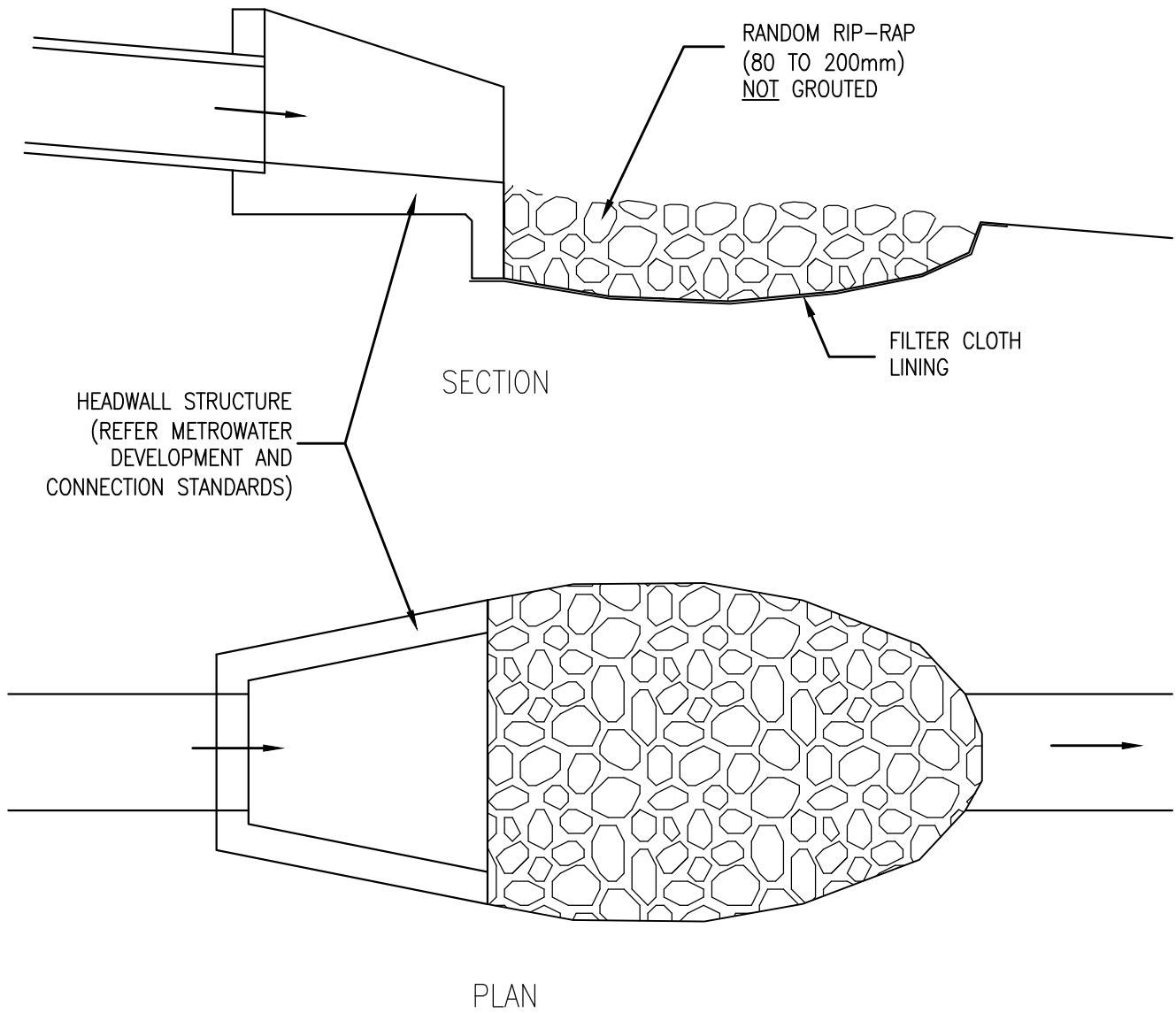
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE **RURAL SIDE DRAIN
CULVERT OUTLET - 1**

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| SCALE: | N.T.S. |
| DRAWING No. | RD023 |
| VERSION | |



USE WHERE EMERGENT VELOCITIES > 1.0m/sec

COMBINE WITH BAFFLES FOR HIGH VELOCITIES > 2.0m/sec

NOTE: DISSIPATION BASIN TO BE SIZED SUCH THAT IT CATERS FOR CONTRIBUTING CATCHMENT.

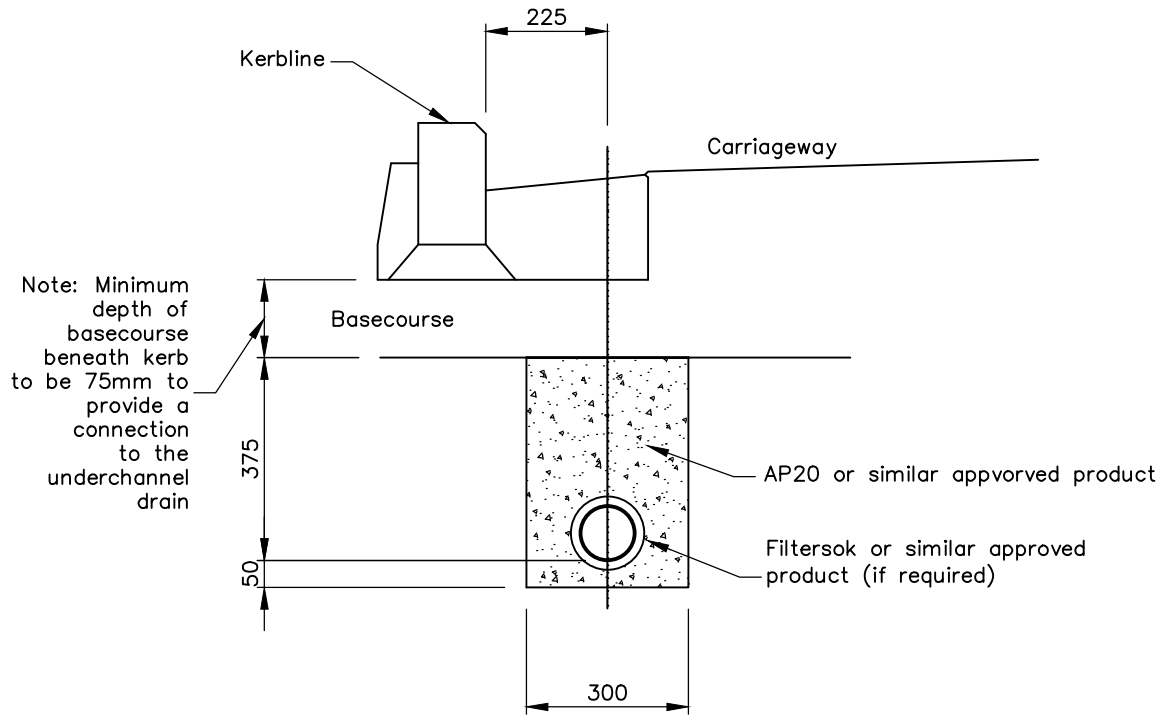
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**RURAL SIDE DRAIN
CULVERT OUTLET - 2**

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| SCALE: N.T.S. |
| DRAWING No. RD024 |
| VERSION |



KERBED SUBSOIL DRAIN

NOTE

1. Construct subsoil drain after stabilisation of subgrade.

2. Underchannel Drains

Shall be approved perforated drain pipe of 100mm internal diameter unless specified or scheduled otherwise. Subsoil drain pipes shall comply with the requirements of TNZ Specifications F/2. Trench backfill shall be approved AP20 material or similar. Trench backfill shall be approved 30/10 scoria or similar if a filter sock is provided. Depth below subgrade to be 375mm.

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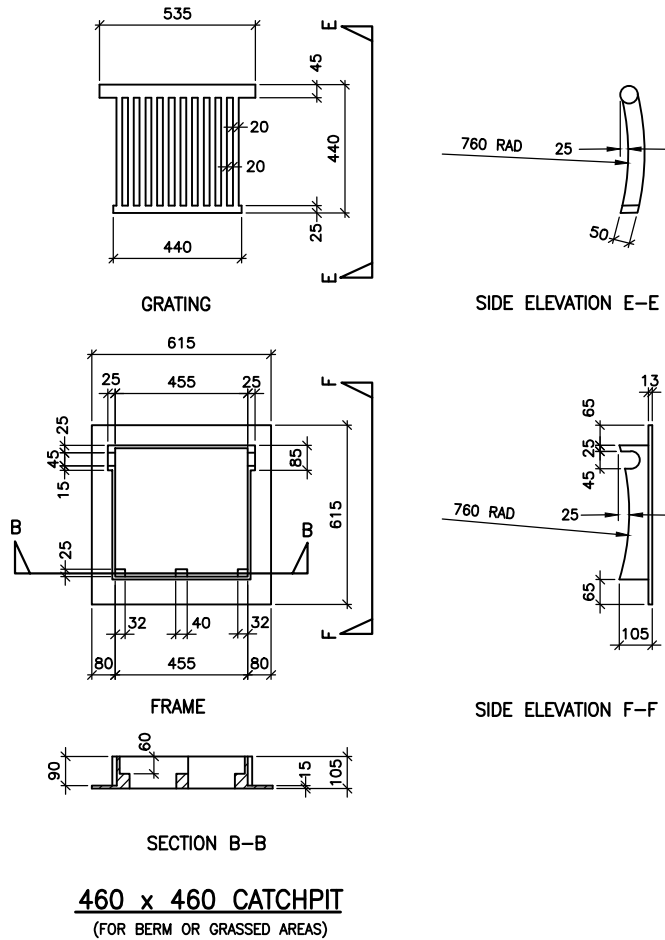
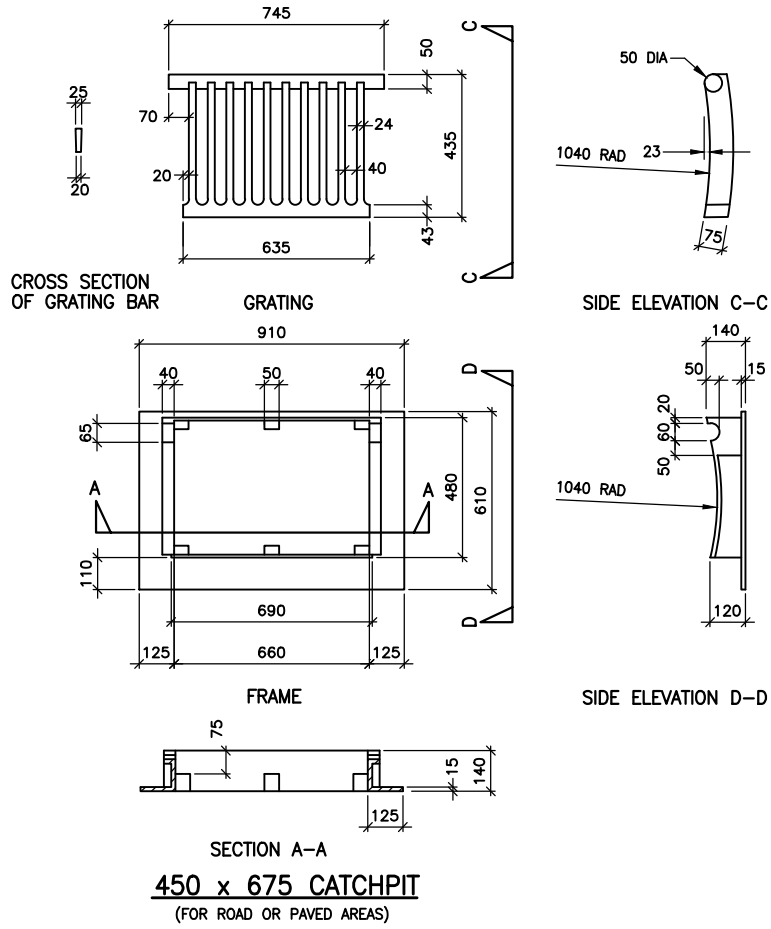
TITLE

SUBSOIL DRAIN

SCALE:
N.T.S.

DRAWING No.
RD025

VERSION

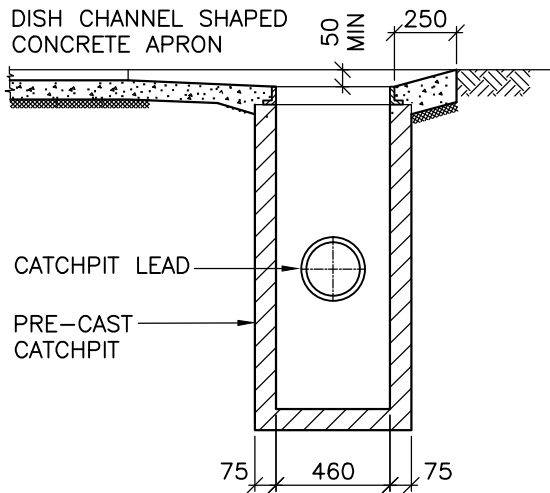


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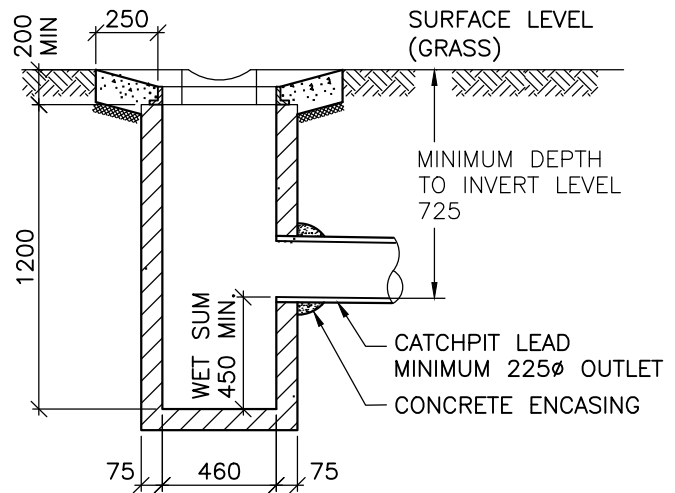


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| AUCKLAND TRANSPORT CODE OF PRACTICE | |
| TITLE | CATCHPIT GRATINGS and FRAMES |

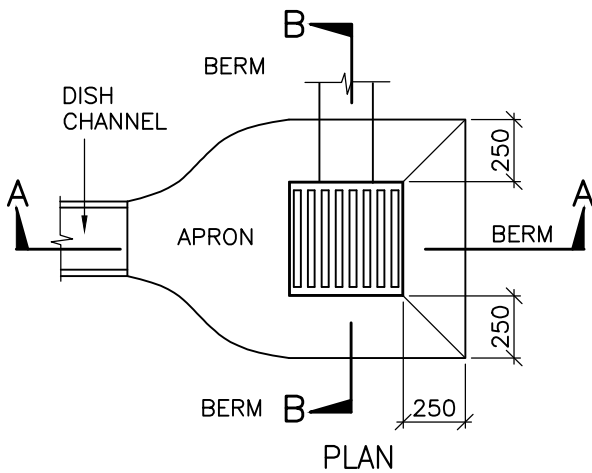
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| DRAWING No. | RD030 |
| VERSION | |



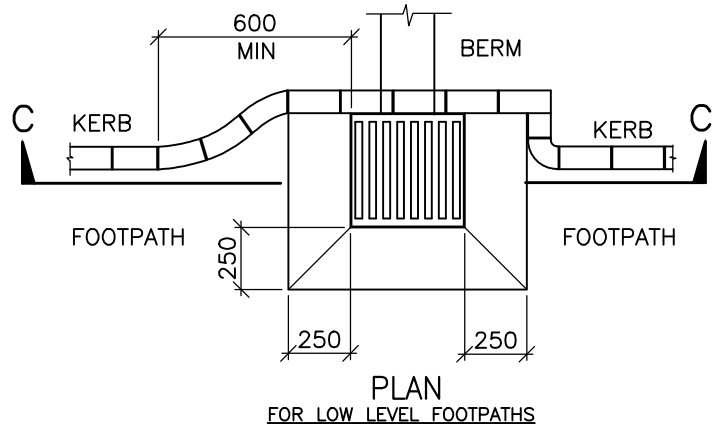
SECTION A-A



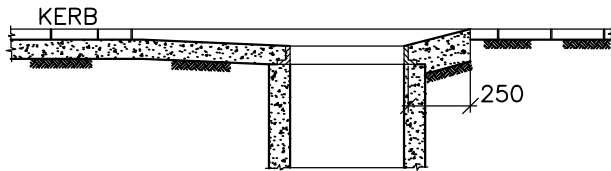
SECTION B-B



PLAN



PLAN FOR LOW LEVEL FOOTPATHS



SECTION C-C

NOTES

1. Concrete 25MPa, Fair faced finish.
2. Cast Iron hardware to be supplied ex. approved Foundry.
3. Half syphon to be used in combined catchment areas only.
4. Catchpits to be 1.4m deep.
5. For design purposes, inlet capacity = 10 l/s
6. Nominal Dimensions only. Refer "Manufacturers Precast Field Catchpit Specifications". Minimum wall thickness 75 mm, Sump depth 450 min. Minimum depth to catchpit lead invert 725mm in grassed areas.
7. Increase class of pipe where minimum cover of 900mm cannot be achieved for Catchpit leads.

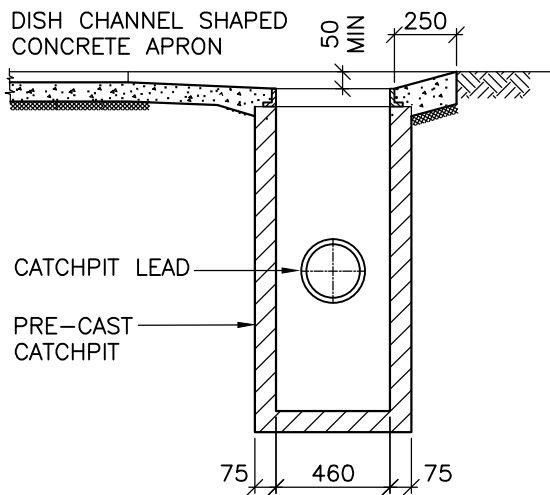
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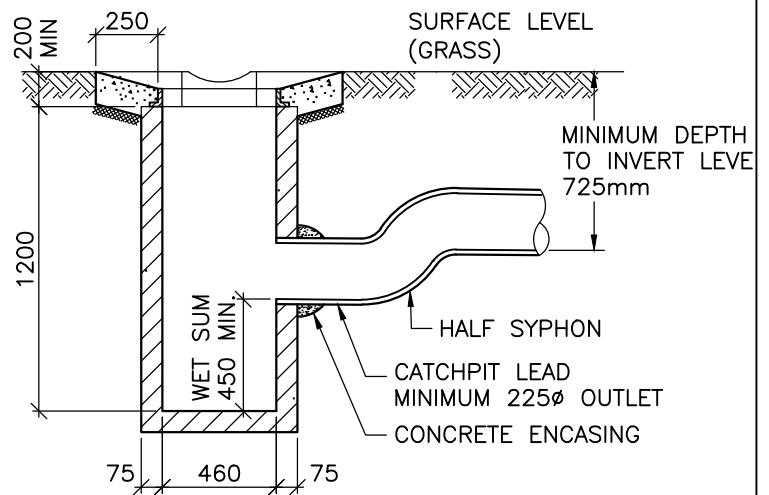
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**FIELD CATCHPIT
440 x 440**

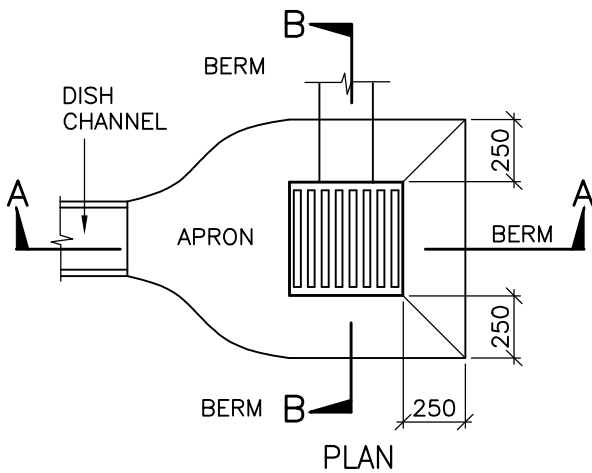
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DRAWING No.
RD031
VERSION



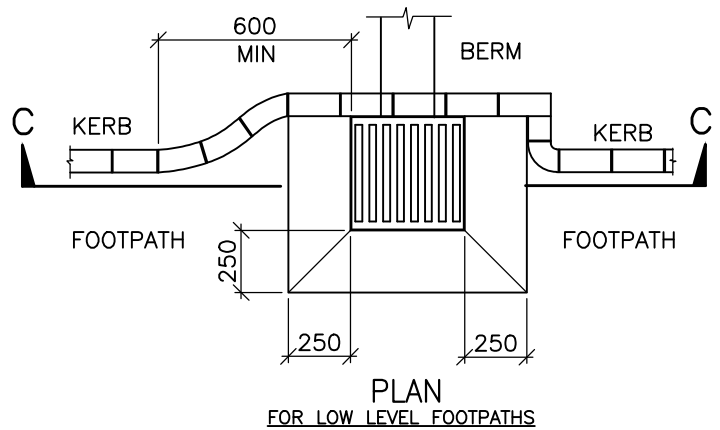
SECTION A-A



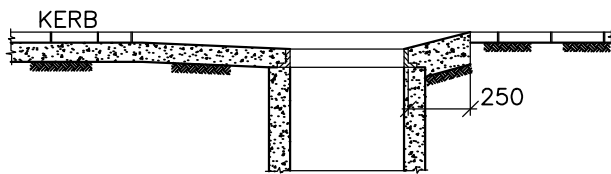
SECTION B-B



PLAN



PLAN FOR LOW LEVEL FOOTPATHS



SECTION C-C

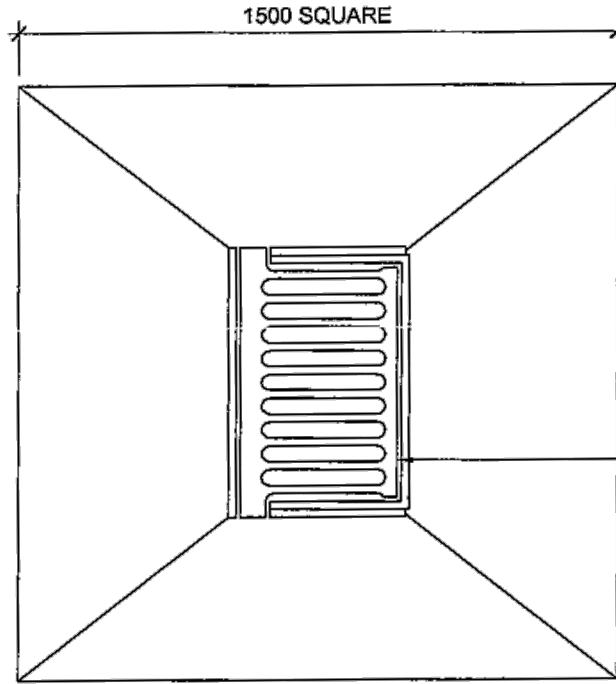
NOTES

1. Concrete 25MPa, Fair faced finish.
2. Cast Iron hardware to be supplied ex. approved Foundry.
3. Half siphon to be used in combined catchment areas only.
4. Catchpits to be 1.4m deep.
5. For design purposes, inlet capacity = 10 l/s
6. Nominal Dimensions only. Refer "Manufacturers Precast Field Catchpit Specifications". Minimum wall thickness 75 mm, Sump depth 450 min. Minimum depth to catchpit lead invert 725mm in grassed areas.
7. Increase class of pipe where minimum cover of 900mm cannot be achieved for Catchpit leads.

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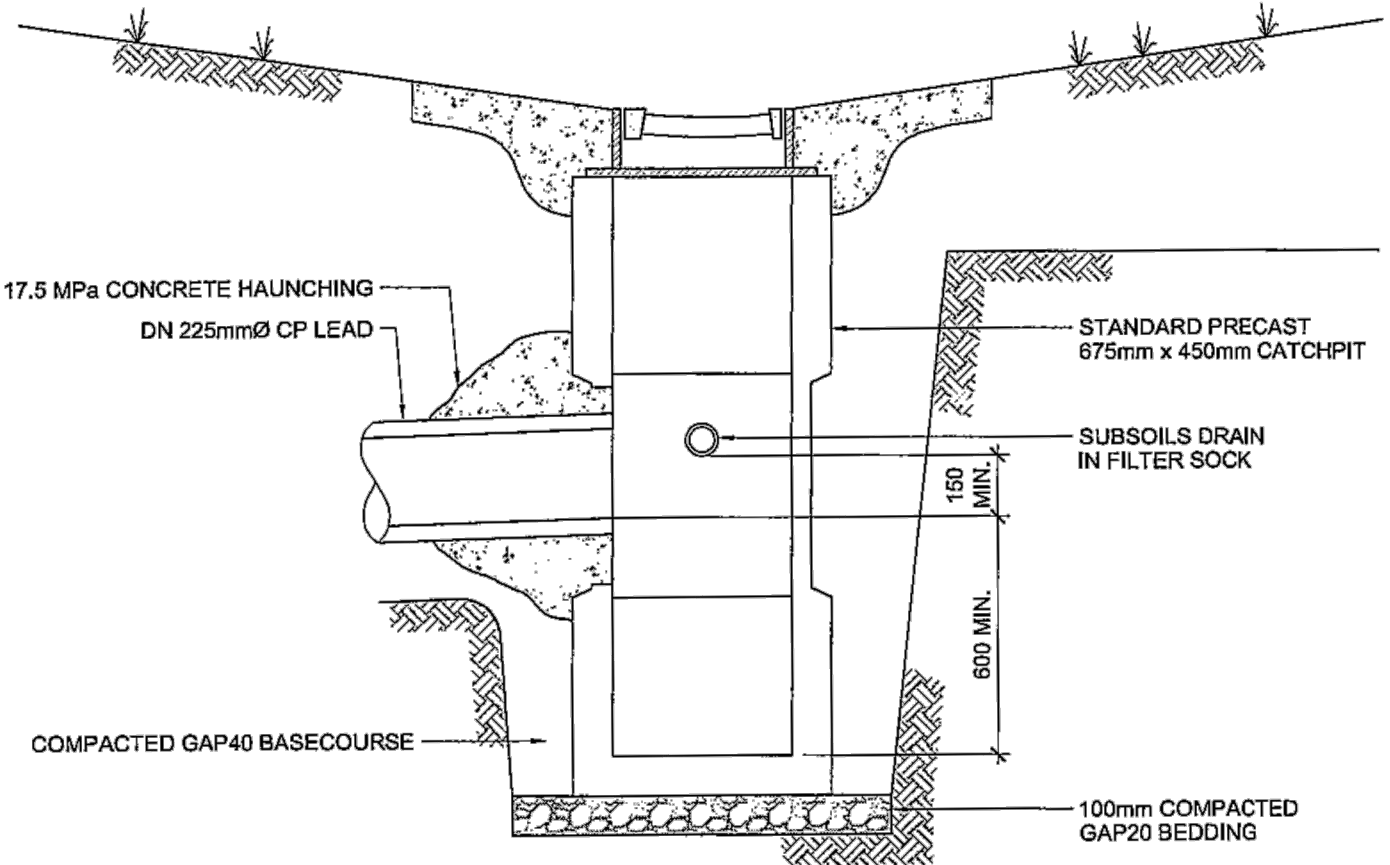
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| TITLE | FIELD CATCHPIT 440 x 440 with HALF SYPHON | DRAWING No. RD032 |
| | | VERSION |



PLAN

CONCRETE 100mm THICK WITH ONE LAYER OF STEEL MESH

675mm x 450mm HEAVY DUTY CAST IRON CATCHPIT GRATING AND FRAME. NOTE THAT CAPTIVE GRATES ARE REQUIRED



SECTION A-A

17.5 MPa CONCRETE HAUNCHING
DN 225mmØ CP LEAD

STANDARD PRECAST
675mm x 450mm CATCHPIT

SUBSOILS DRAIN
IN FILTER SOCK

COMPACTED GAP40 BASECOURSE

100mm COMPACTED
GAP20 BEDDING

NOTES

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. ALL CONCRETE TO BE ORDINARY GRADE, 17.5MPa AT 28 DAYS.
3. ALL PIPES TO BE FINISHED FLUSHED WITH INSIDE WALL OF CATCHPIT

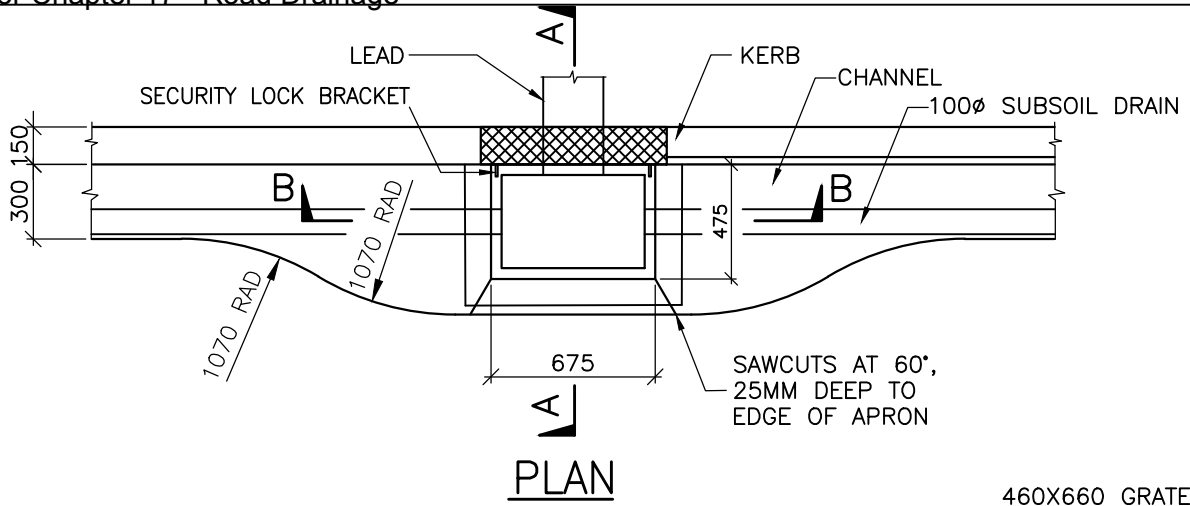
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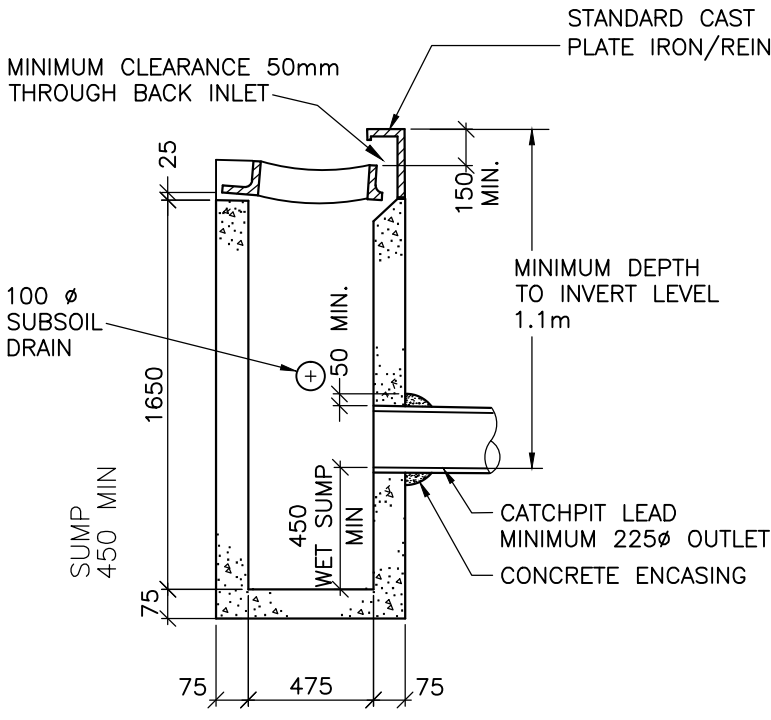
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**FIELD CATCHPIT
675 x 440**

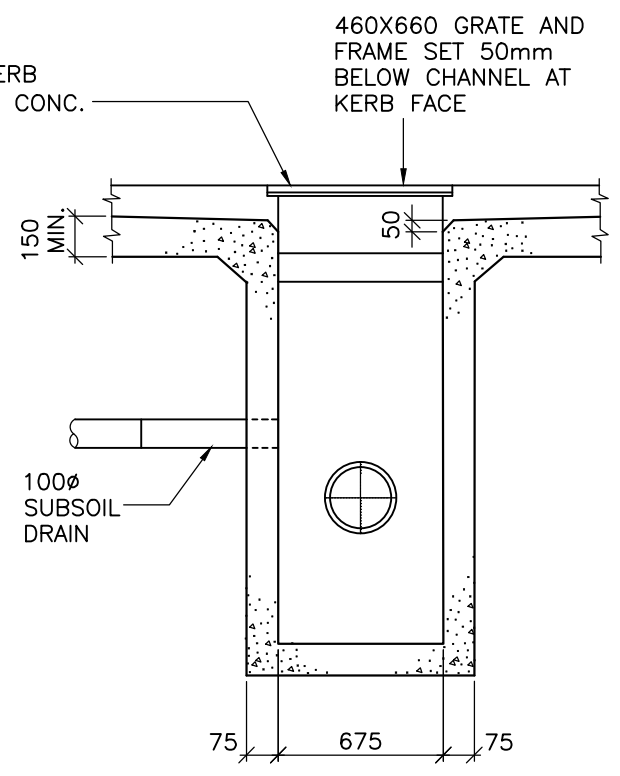
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DRAWING No.
RD033
VERSION



PLAN



SECTION A-A



SECTION B-B

NOTES

1. Concrete to be 25MPa. Fair faced finish.
2. Cast Iron hardware to be supplied ex. approved Foundry. To include security lock bracket.
3. Where double pits are required, two back inlet units may be installed side by side.
4. For concrete kerbs and for bluestone kerbs use cast-iron back inlet.
5. Nominal Dimensions only – refer Manufacturers "Precast Back Entry Catchpit" specification. Minimum wall thickness 75 mm, sump depth 450 min. Minimum depth to catchpit lead invert 1.1m.
6. Increase Class of pipe for catchpit lead if cover under carriageway < 1.2m

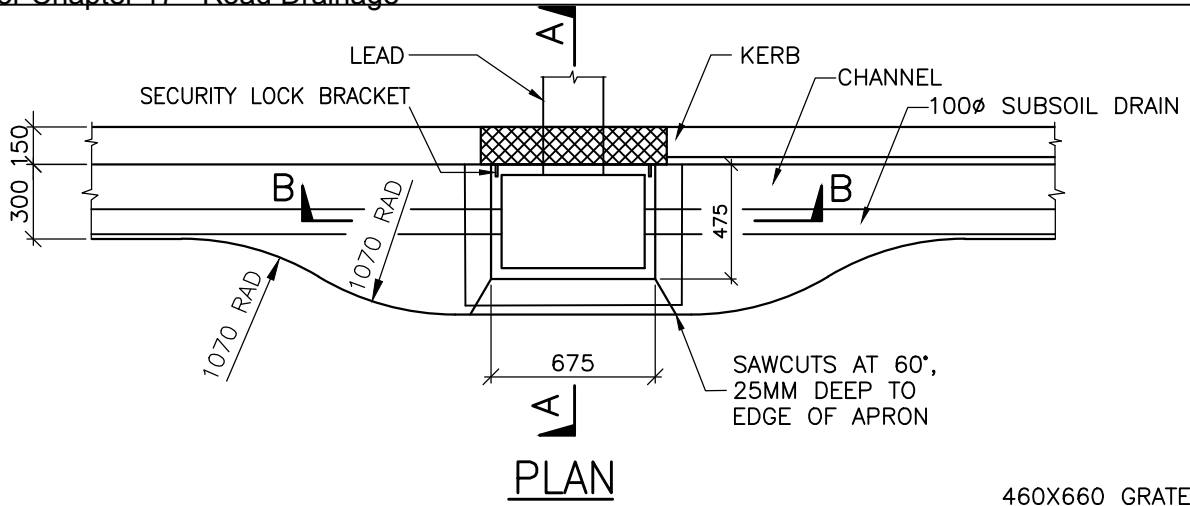
1. For Design purposes, entry flow to catchpit = 16–18 l/s.
2. See table below for Catchpit Efficiency Guide for gradient of channel flow.

| Channel Gradient | % of water collected |
|------------------|----------------------|
| 1% | 82.3 |
| 2% | 78.2 |
| 3% | 76.5 |
| 6% | 71.7 |
| 8% | 64.6 |
| 12% | 59.8 |

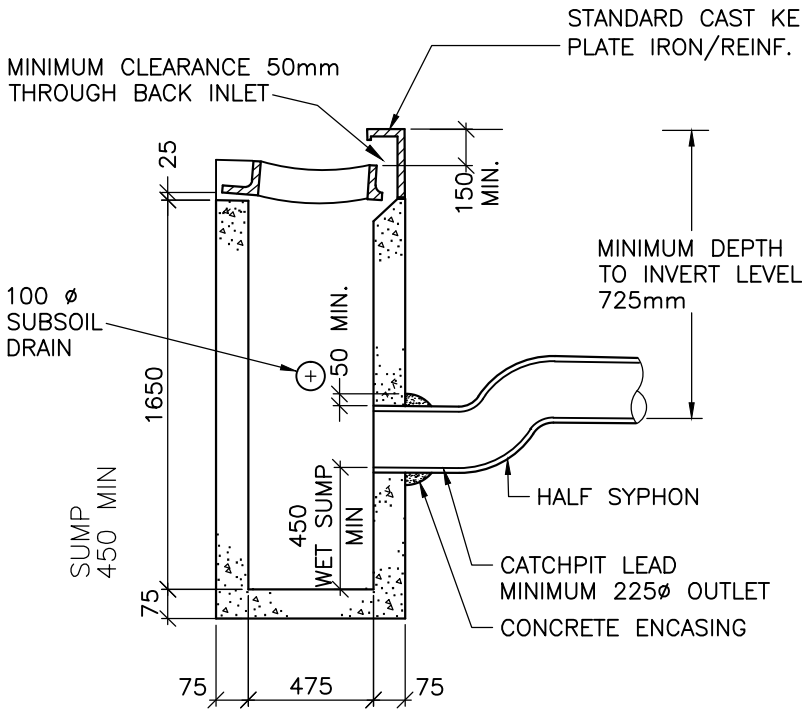
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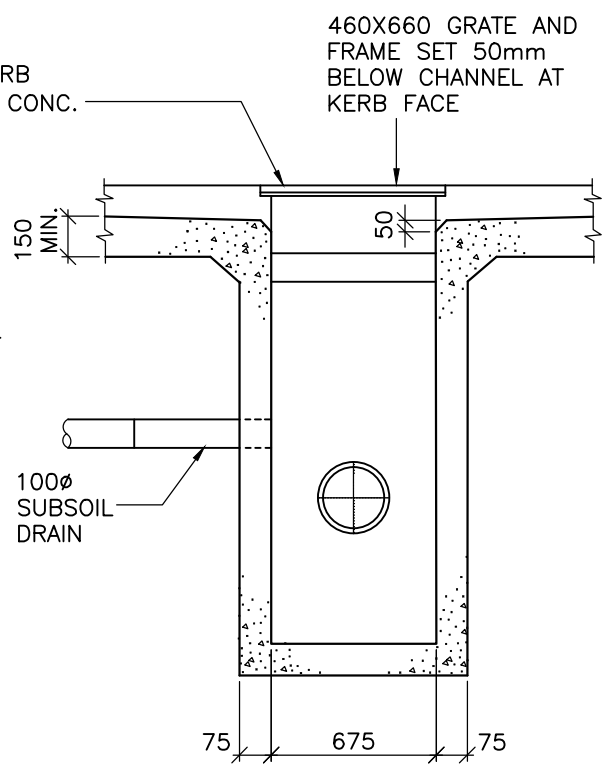
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| AUCKLAND TRANSPORT CODE OF PRACTICE | | SCALE: N.T.S. |
| TITLE | STANDARD CATCHPIT | DRAWING No. RD034 |
| | | VERSION |



PLAN



SECTION A-A



SECTION B-B

NOTES

1. Concrete to be 25MPa. Fair faced finish.
2. Cast Iron hardware to be supplied ex. approved Foundry. To include security lock bracket.
3. Where double pits are required, two back inlet units may be installed side by side.
4. For concrete kerbs and for bluestone kerbs use cast-iron back inlet.
5. Half syphon to be used in combined catchment areas only
6. Nominal Dimensions only – refer Manufacturers "Precast Back Entry Catchpit" specification. Minimum wall thickness 75 mm, sump depth 450 min. Minimum depth to catchpit lead invert 1.1m.
7. Increase Class of pipe for catchpit lead if cover under carriageway < 1.2m

| 1. For Design purposes, entry flow to catchpit = 16–18 l/s. | |
|--|----------------------|
| 2. See table below for Catchpit Efficiency Guide for gradient of channel flow. | |
| Channel Gradient | % of water collected |
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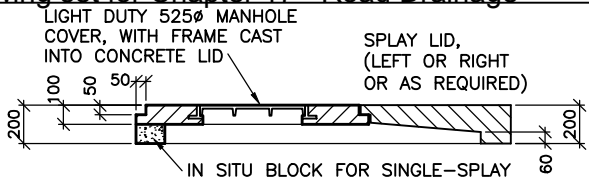
TITLE **STANDARD CATCHPIT with HALF SYPHON**

SCALE: N.T.S.

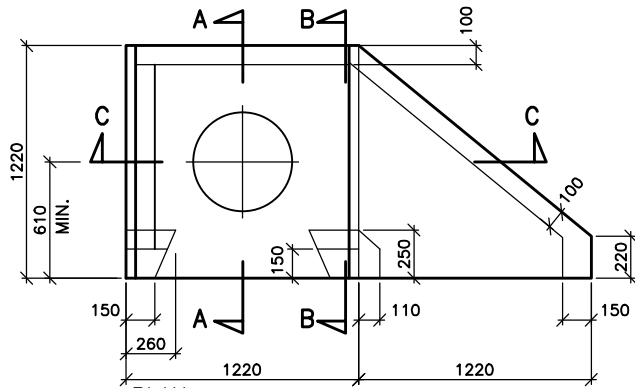
DRAWING No. RD035

VERSION

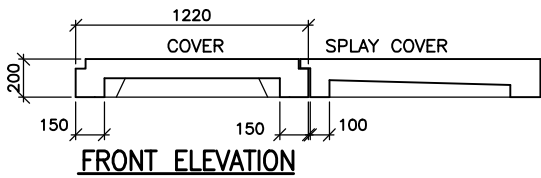
Drawing set for Chapter 17 - Road Drainage



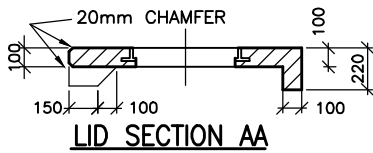
COVER & LID SECTION CC



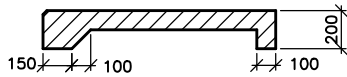
PLAN SINGLE-SPLAY CATCHPIT LID



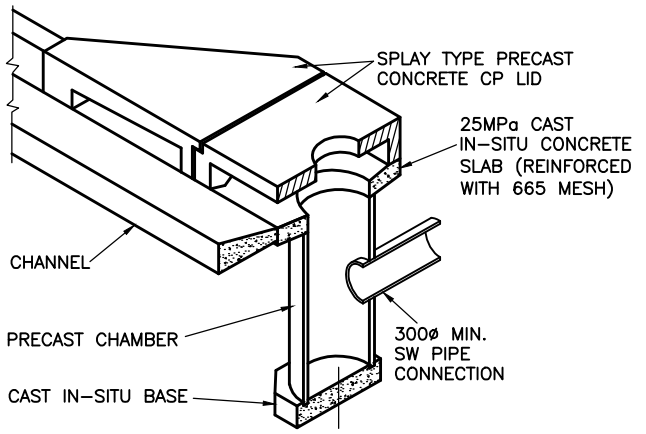
FRONT ELEVATION



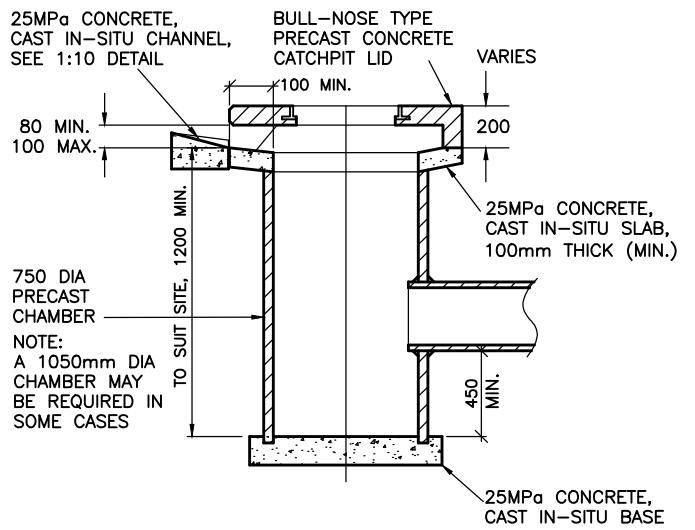
LID SECTION AA



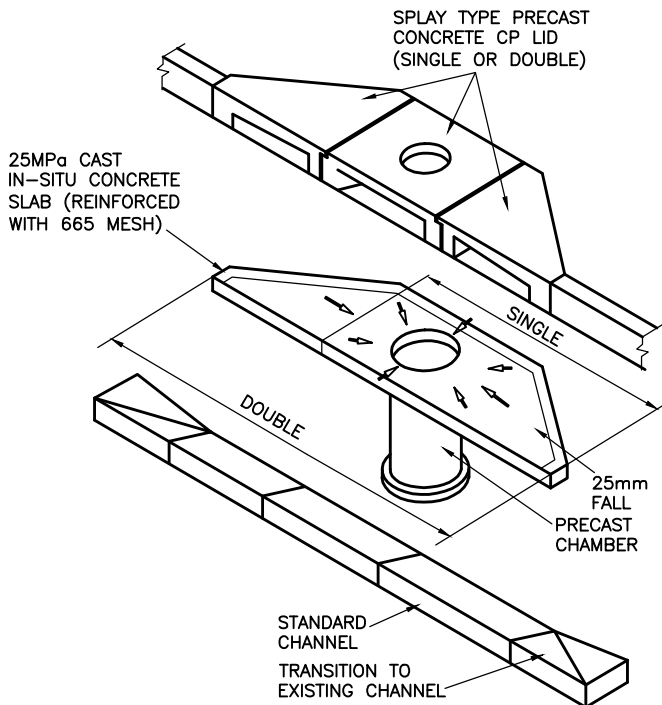
LID SECTION BB



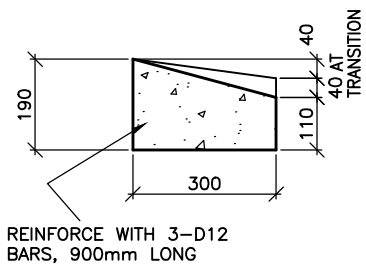
ISOMETRIC VIEW / SECTION



CATCHPIT-SECTION AA



ISOMETRIC VIEW OF CATCHPIT ASSEMBLY (DOUBLE SPLAY SHOWN)

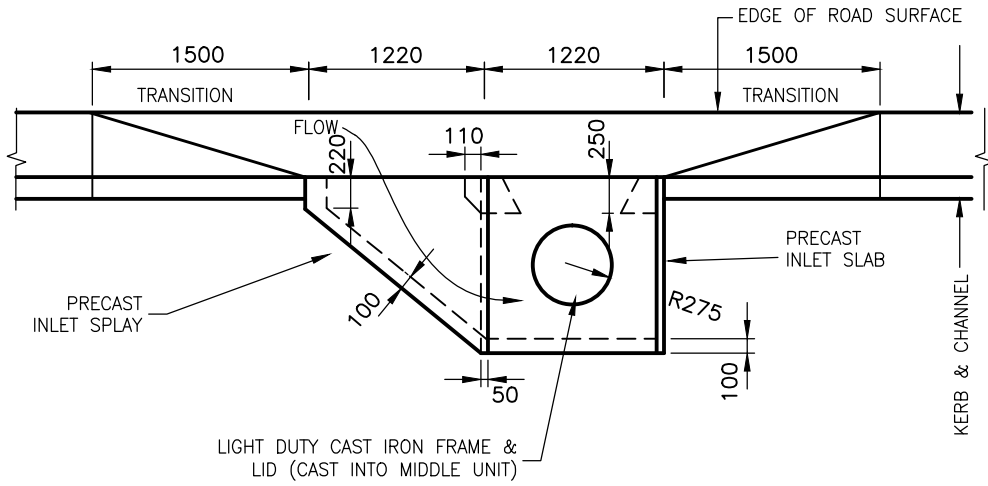


IN-SITU CHANNEL

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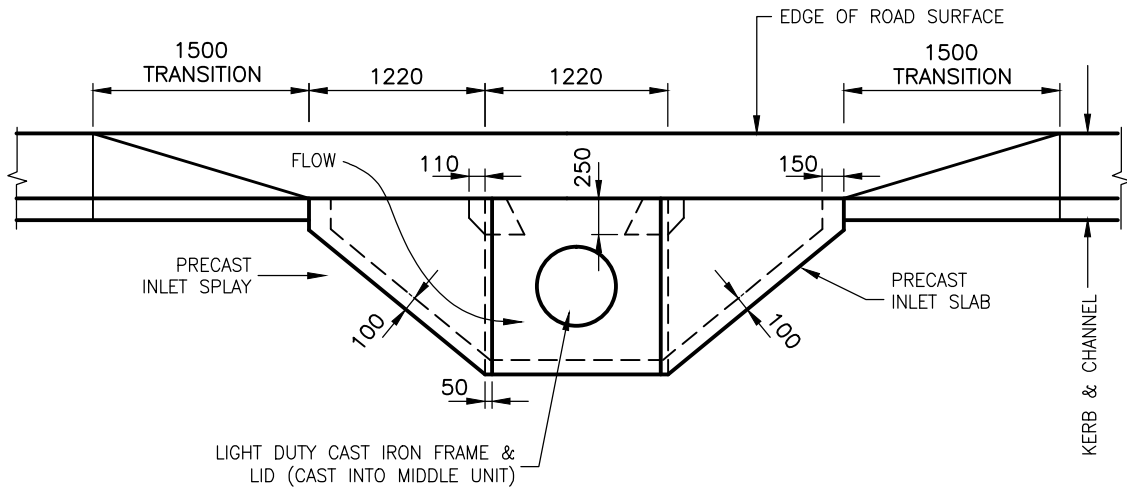


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| TITLE SPLAY CATCHPIT | | DRAWING No. RD036 |
| | | VERSION |



PLAN-SINGLE SPLAY

(DOUBLE OPENING)



PLAN-DOUBLE SPLAY

(TRIPLE OPENING)

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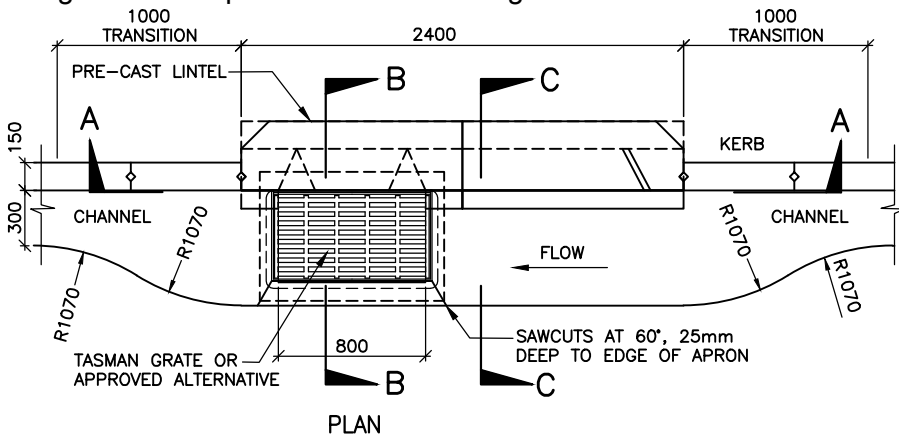
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

**SPLAY CATCHPIT
DETAILS**

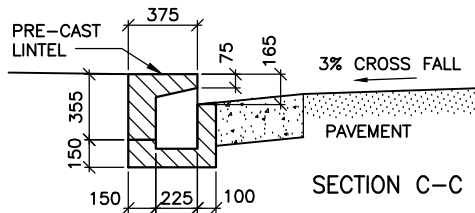
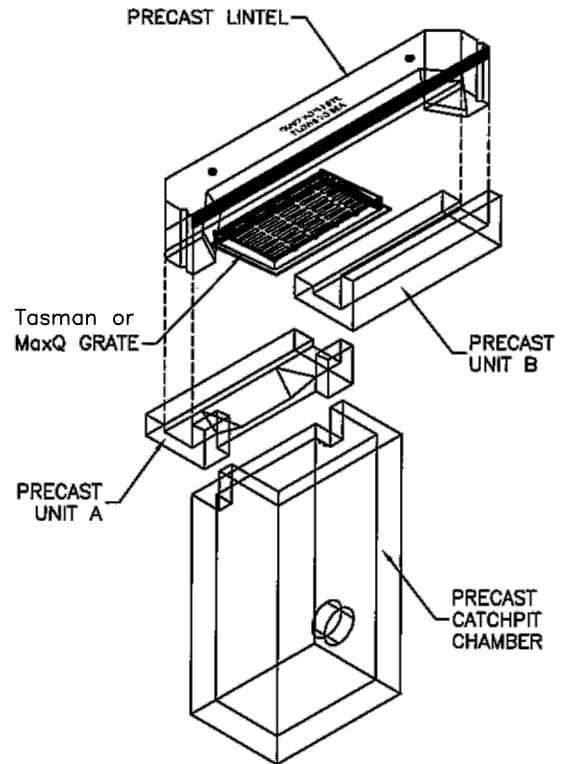
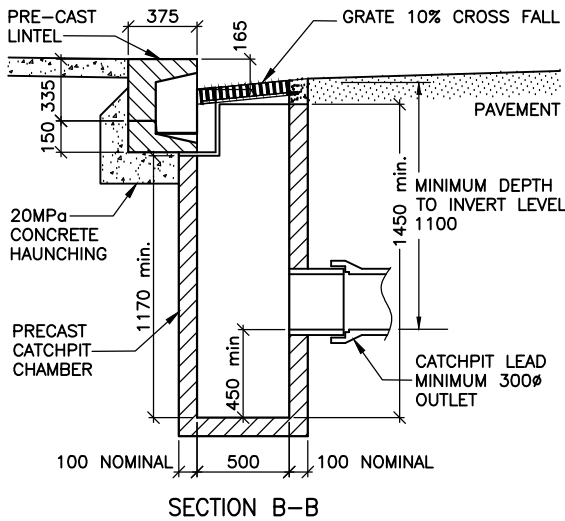
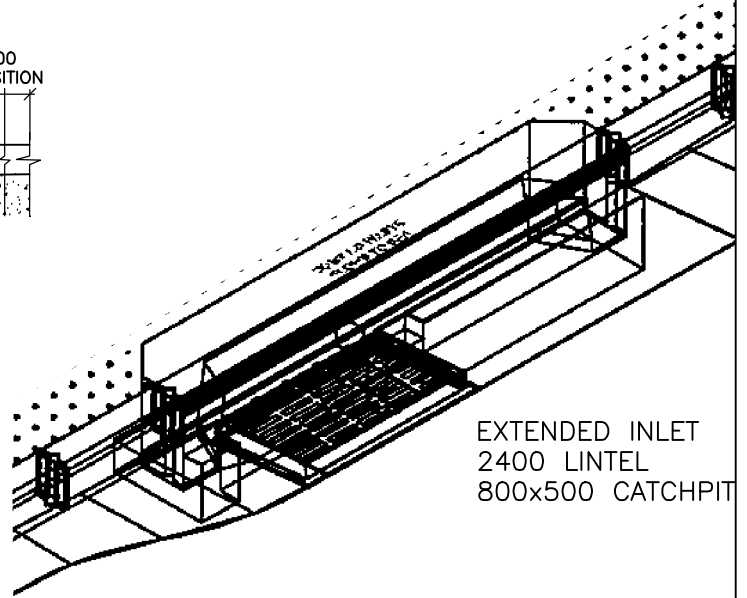
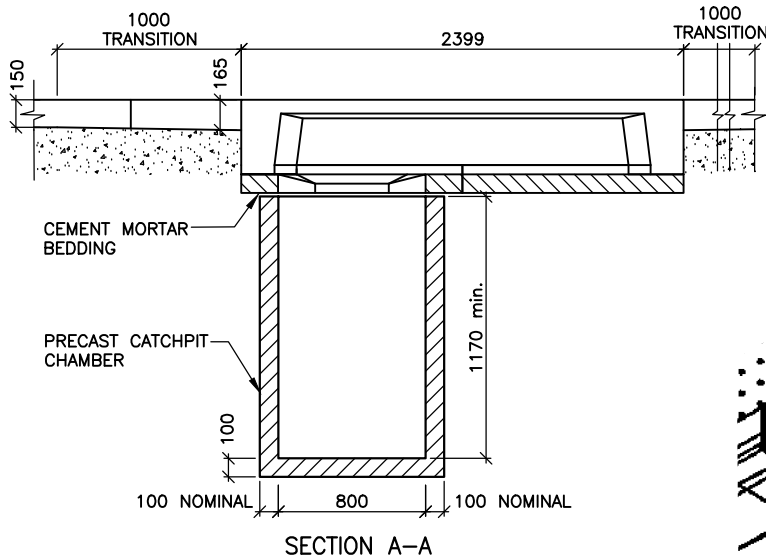
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| SCALE: | N.T.S. |
| DRAWING No. | RD037 |
| VERSION | |

Drawing set for Chapter 17 - Road Drainage



NOTES

1. Concrete to be 25 MPa.
2. Catchpits to be 1.8m deep.
3. Grates shall be max Q 800 x 500.
"Tasman Grates", or approved alternative.
4. Transition-Kerb height changes, from 150 to 165.
5. Precast units A and B with lintel can be retrofitted to existing catchpit.
6. Precast tapers have not been detailed, therefore all dimensions are nominal.
7. When retrofitting unit 'A' to existing catchpit, trim back existing catchpit as shown below. Place unit 'A' centrally over back of catchpit on concrete bedding.



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AUCKLAND TRANSPORT
CODE OF PRACTICE

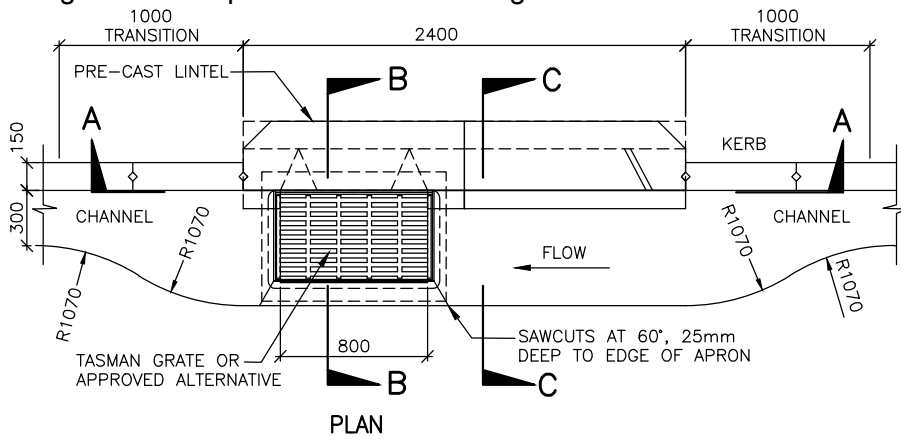
TITLE
STREET CATCHPIT
800 x 500
No Half Syphon

SCALE:
N.T.S.

DRAWING No.
RD038

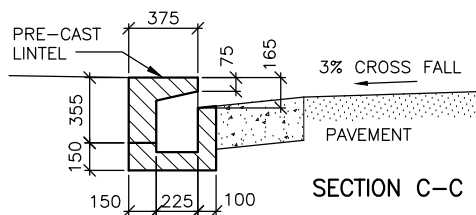
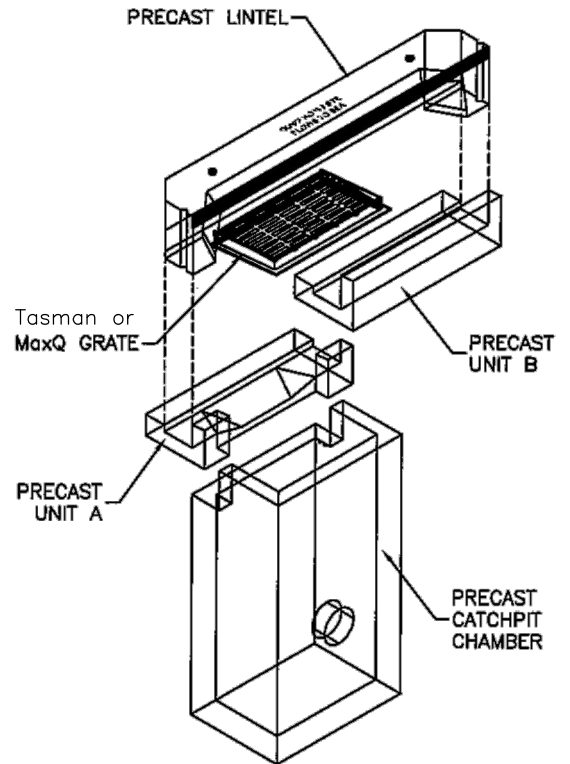
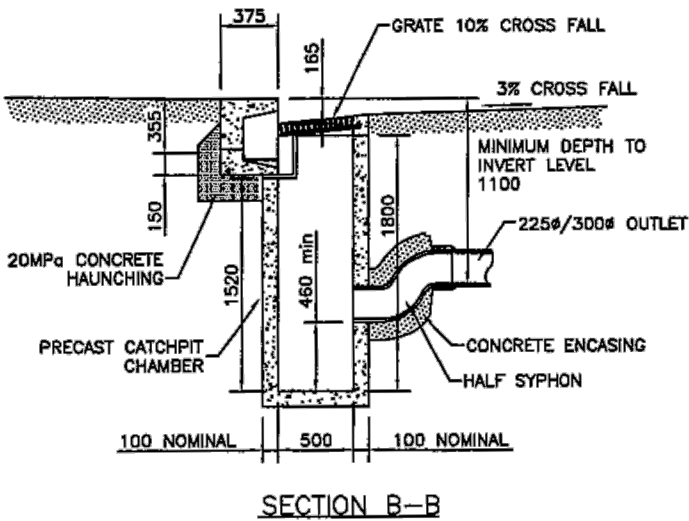
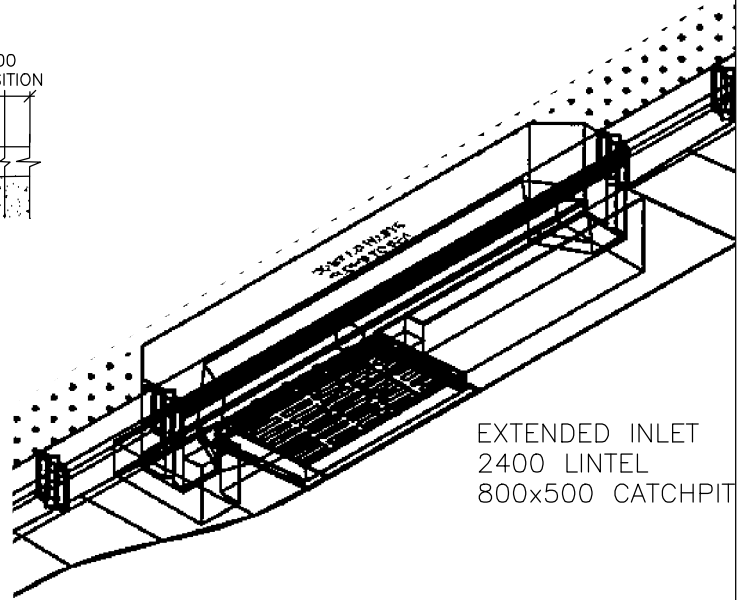
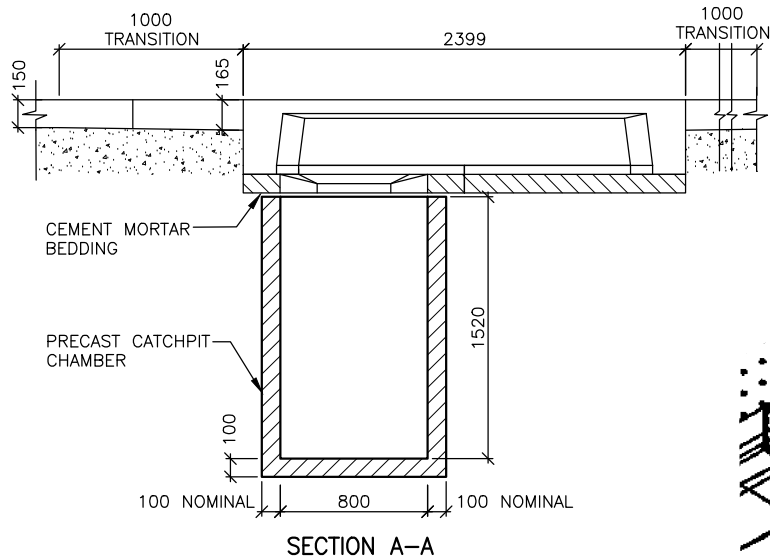
VERSION

Drawing set for Chapter 17 - Road Drainage



NOTES

1. Concrete to be 25 MPa.
2. Catchpits to be 1.8m deep.
3. Grates shall be max Q 800 x 500.
"Tasman Grates", or approved alternative.
4. Transition-Kerb height changes, from 150 to 165.
5. Precast units A and B with lintel can be retrofitted to existing catchpit.
6. Precast tapers have not been detailed, therefore all dimensions are nominal.
7. When retrofitting unit 'A' to existing catchpit, trim back existing catchpit as shown below. Place unit 'A' centrally over back of catchpit on concrete bedding.
8. Half-syphon to be used in combined catchment areas only.



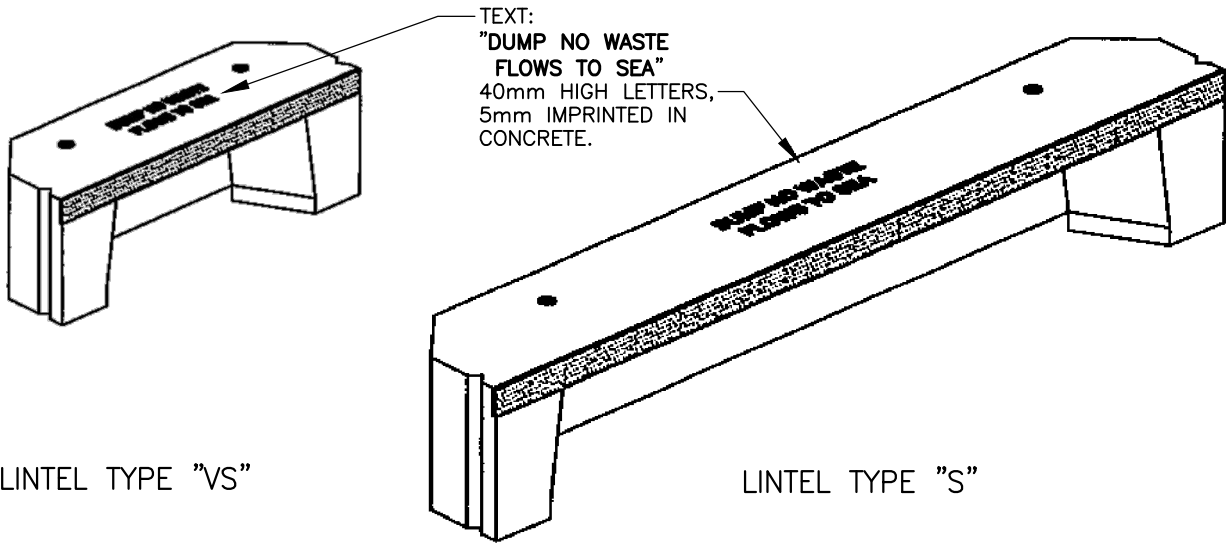
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**STREET CATCHPIT
800 x 500
with Half Syphon**

SCALE:
N.T.S.
DRAWING No.
RD039
VERSION



TEXT:
"DUMP NO WASTE
FLOWS TO SEA"
40mm HIGH LETTERS,
5mm IMPRINTED IN
CONCRETE.

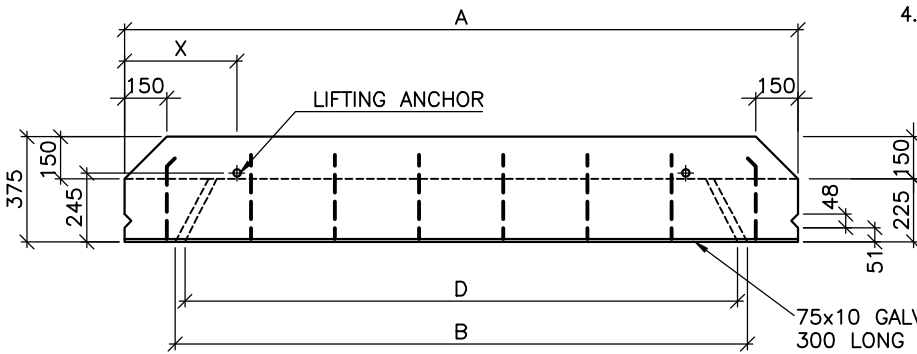
LINTEL TYPE "VS"

LINTEL TYPE "S"

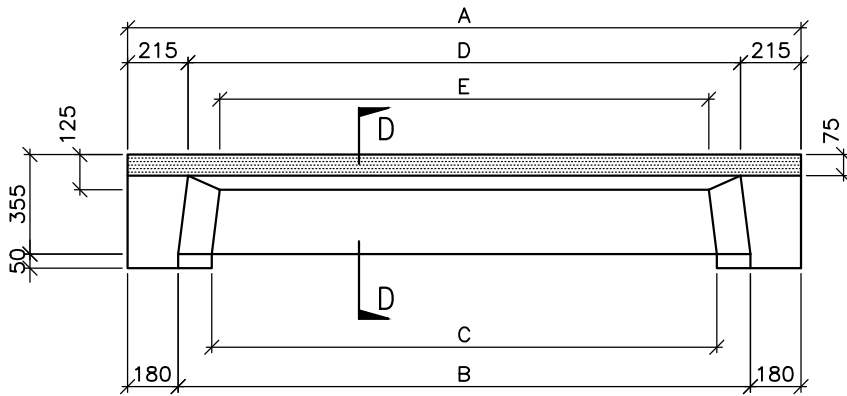
| LINTEL | A | B | C | D | E | X | MASS(kg) |
|--------|------|------|------|------|------|-----|----------|
| VS | 1200 | 840 | 600 | 770 | 543 | 250 | 204 |
| S | 2400 | 2040 | 1800 | 1970 | 1743 | 400 | 499 |

NOTES

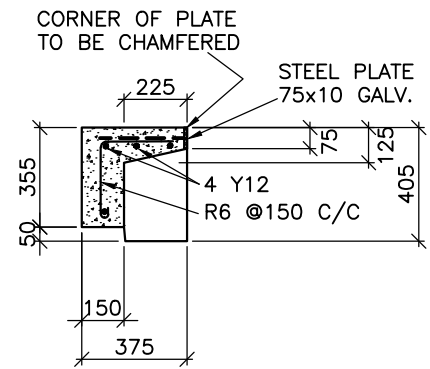
1. Precast Lintel Grade 25MPa concrete.
2. Cover to all bars to be 40mm minimum.
3. Lifting Anchor to be "Swiftlift" or equivalent 1.3 tonne galvanised.
4. Precasting tapers have not been shown. All dimensions nominal



PLAN



ELEVATION



SECTION D-D

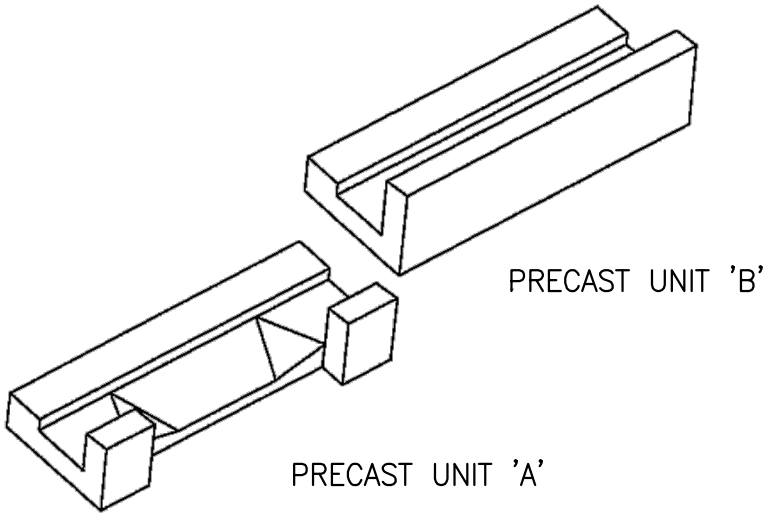
LINTEL DETAIL

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| AUCKLAND TRANSPORT CODE OF PRACTICE | |
| TITLE | STREET CATCHPIT 800 x 500 PRECAST LINTEL DETAILS |

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| SCALE: | N.T.S. |
| DRAWING No. | RD040 |
| VERSION | |

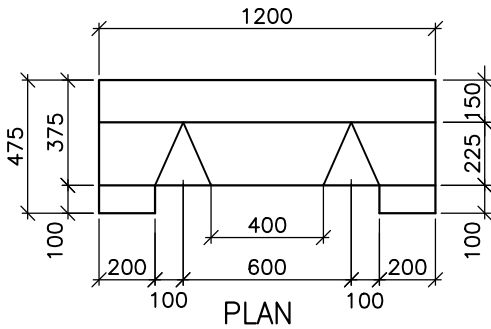


PRECAST UNIT 'B'

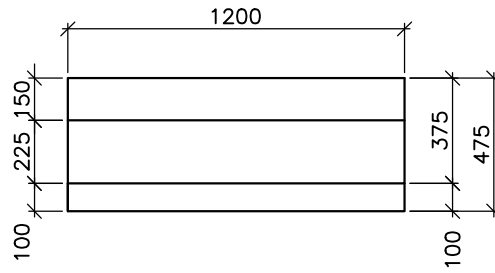
PRECAST UNIT 'A'

NOTES

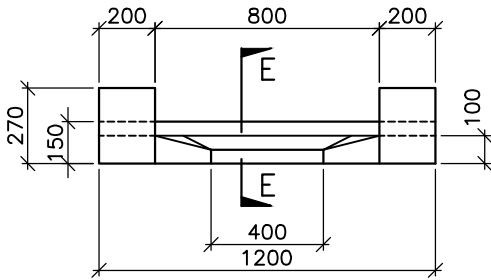
1. Precast Lintel Grade 25MPa concrete.
2. Cover to all bars to be 40mm minimum.
3. Lifting Anchor to be "Swiftlift" or equivalent 1.3 tonne galvanised.
4. Precasting tapers have not been shown.
All dimensions nominal



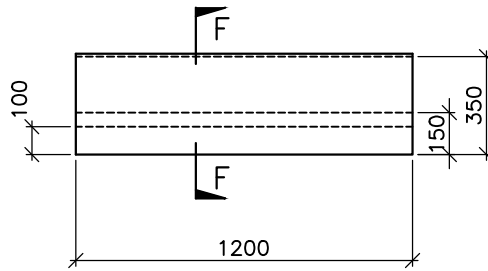
PLAN



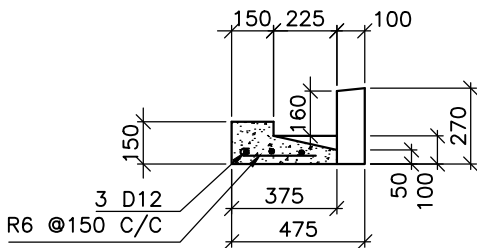
PLAN



ELEVATION

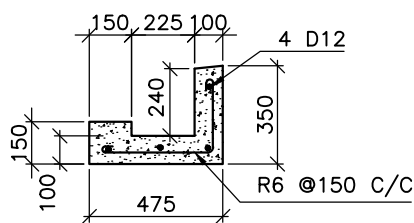


ELEVATION



SECTION E-E

PRE-CAST UNIT 'A'



SECTION F-F

PRE-CAST UNIT 'B'

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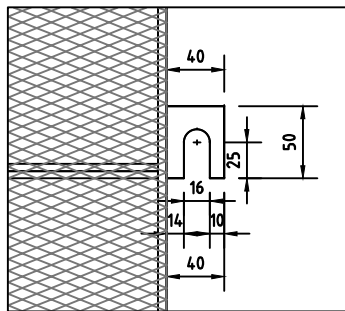
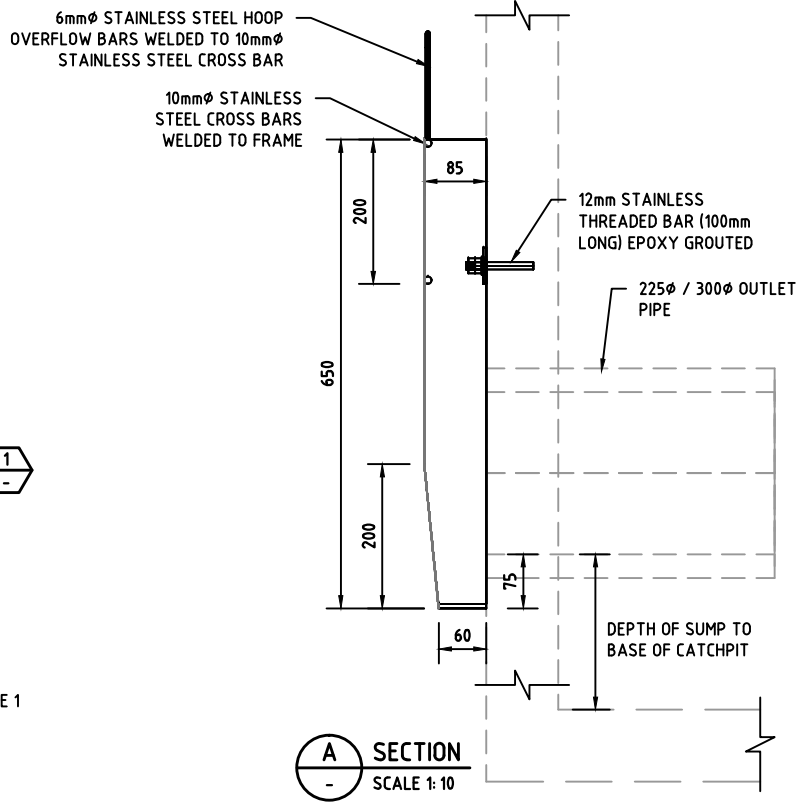
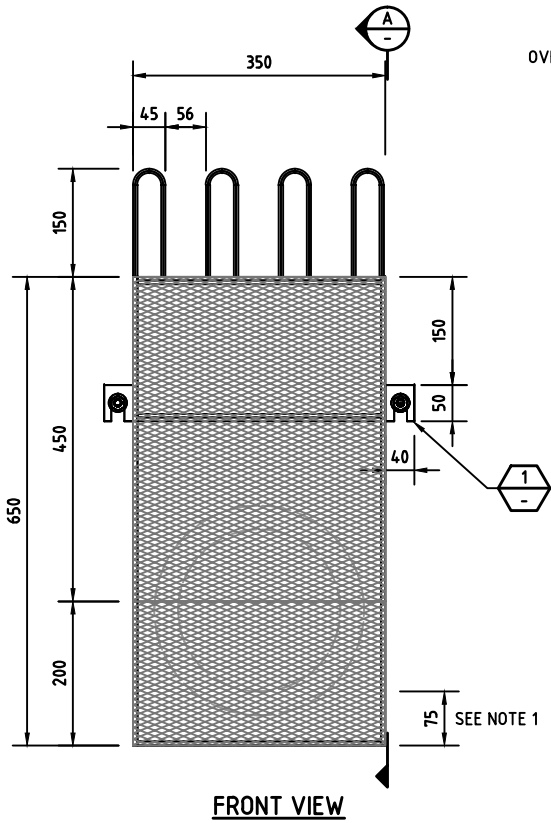
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

**STREET CATCHPIT
800 x 500 PRECAST UNIT
DETAILS**

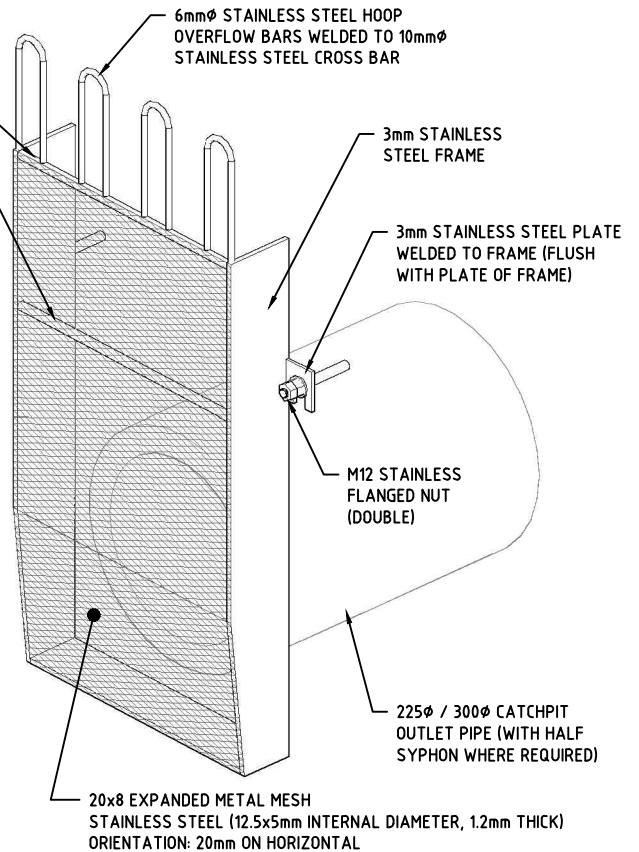
SCALE:
N.T.S.

DRAWING No.
RD041
VERSION



1 DETAIL
SCALE 1:5

10mm ϕ STAINLESS STEEL CROSS BARS WELDED TO FRAME



NOTES:

1. TOP OF UNIT OVERFLOW HOOP BARS TO BE A MINIMUM OF 125mm BELOW UNDERSIDE OF GRATE. BOTTOM EDGE OF UNIT TO BE 75mm BELOW INVERT OF OUTLET PIPE. WHERE ABOVE CRITERIA CANNOT BE MET SPECIFIC DESIGN REQUIRED.
2. DO NOT OVERTIGHTEN FLANGENUTS - ENABLE TetraTrap TO BE REMOVED IF REQUIRED.
3. STAINLESS STEEL MATERIAL:
a) RAISED EXPANDED MESH: 316 FERRITIC STAINLESS STEEL (20x8x1.2mm).
b) FRAME: 316 STAINLESS STEEL
4. SPECIFIC DESIGN TO BE UNDERTAKEN IN TERMS OF COMPATIBILITY WITH CATCHPIT STRUCTURES. PRIORITIES AND CHARACTERISTICS WITHIN CATCHMENTS TO DETERMINE TetraTrap SUITABILITY AND TYPE. APPROVAL BY AUCKLAND TRANSPORT IS REQUIRED.
5. TetraTrap 1: FOR USE IN CATCHPITS WITH A SUMP DEPTH OF 450mm OR GREATER.

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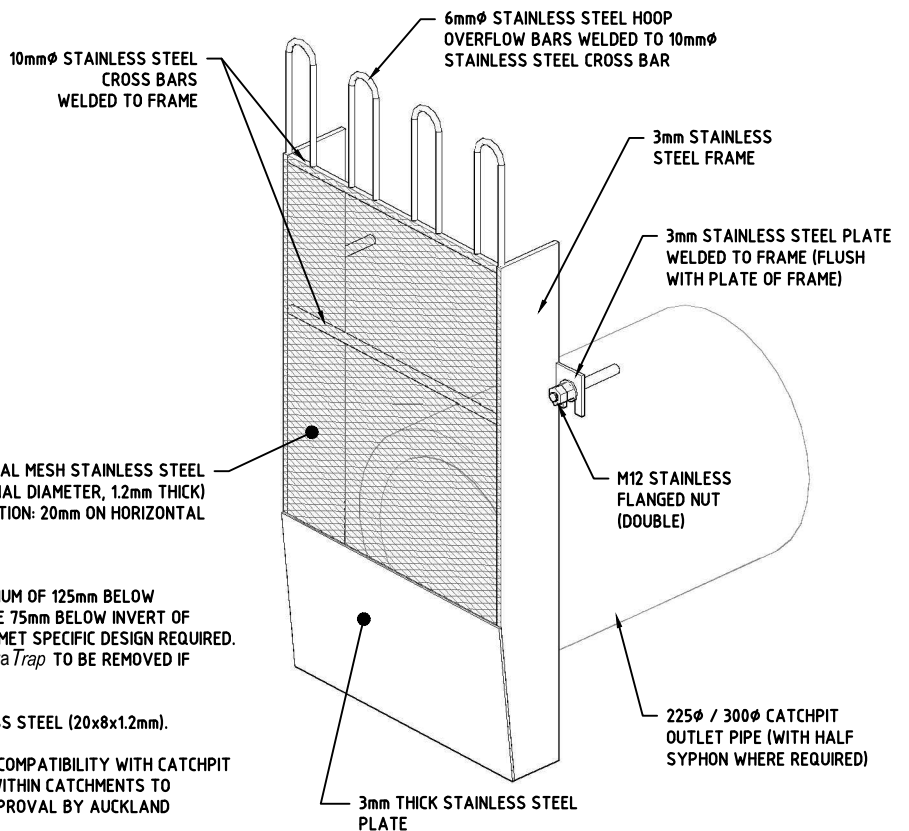
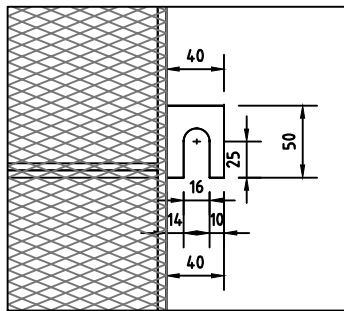
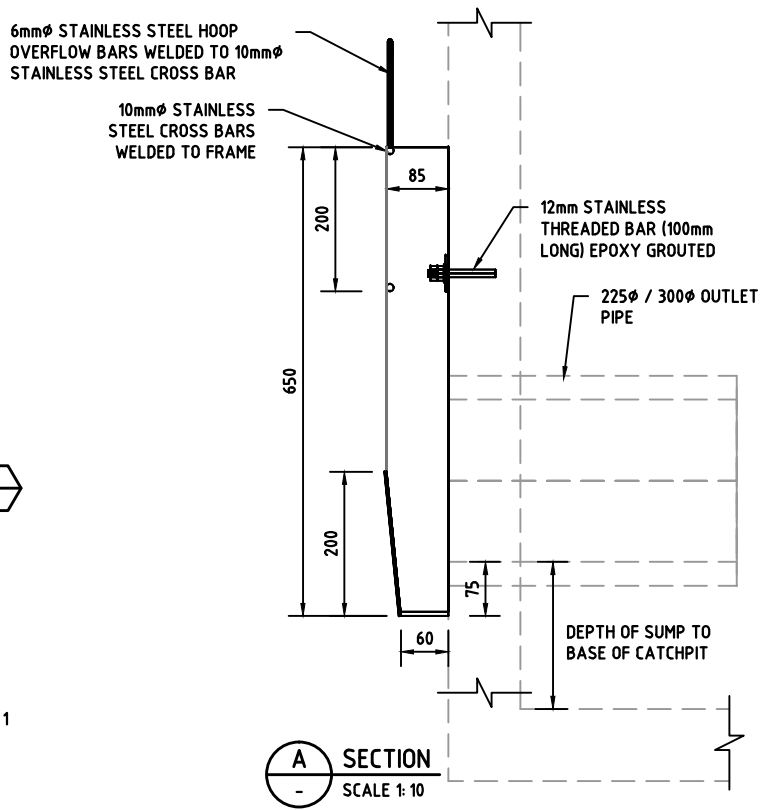
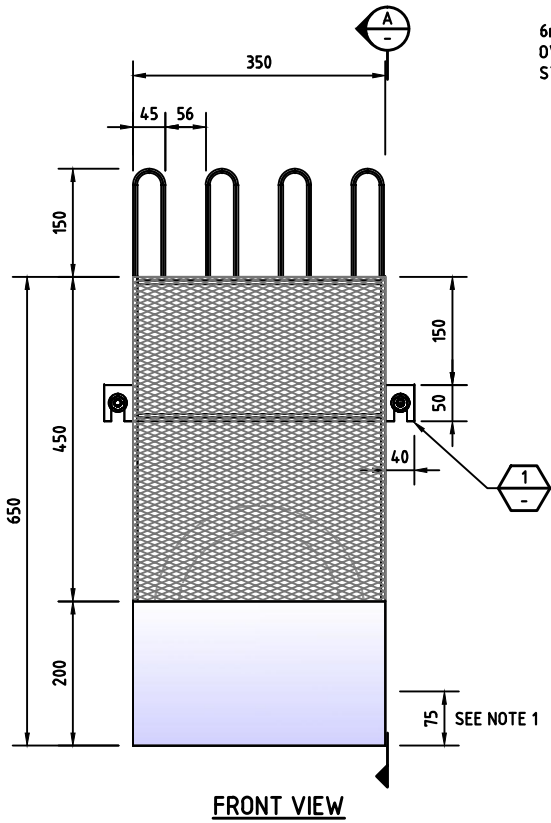


AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

**TETRATRAP
TYPE 1**

SCALE:
As Shown
DRAWING No.
RD042
VERSION



20x8 EXPANDED METAL MESH STAINLESS STEEL
(12.5x5mm INTERNAL DIAMETER, 1.2mm THICK)
ORIENTATION: 20mm ON HORIZONTAL

NOTES:

1. TOP OF UNIT OVERFLOW HOOP BARS TO BE A MINIMUM OF 125mm BELOW UNDERSIDE OF GRATE. BOTTOM EDGE OF UNIT TO BE 75mm BELOW INVERT OF OUTLET PIPE. WHERE ABOVE CRITERIA CANNOT BE MET SPECIFIC DESIGN REQUIRED.
2. DO NOT OVERTIGHTEN FLANGENUTS - ENABLE TetraTrap TO BE REMOVED IF REQUIRED.
3. STAINLESS STEEL MATERIAL:
a) RAISED EXPANDED MESH: 316 FERRITIC STAINLESS STEEL (20x8x1.2mm).
b) FRAME: 316 STAINLESS STEEL
4. SPECIFIC DESIGN TO BE UNDERTAKEN IN TERMS OF COMPATIBILITY WITH CATCHPIT STRUCTURES. PRIORITIES AND CHARACTERISTICS WITHIN CATCHMENTS TO DETERMINE TetraTrap SUITABILITY AND TYPE. APPROVAL BY AUCKLAND TRANSPORT IS REQUIRED.
5. TetraTrap 2: FOR USE IN CATCHPITS WITH A SUMP DEPTH OF 300mm OR GREATER.

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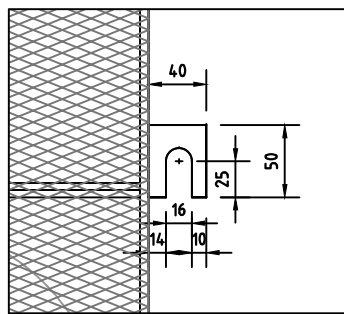
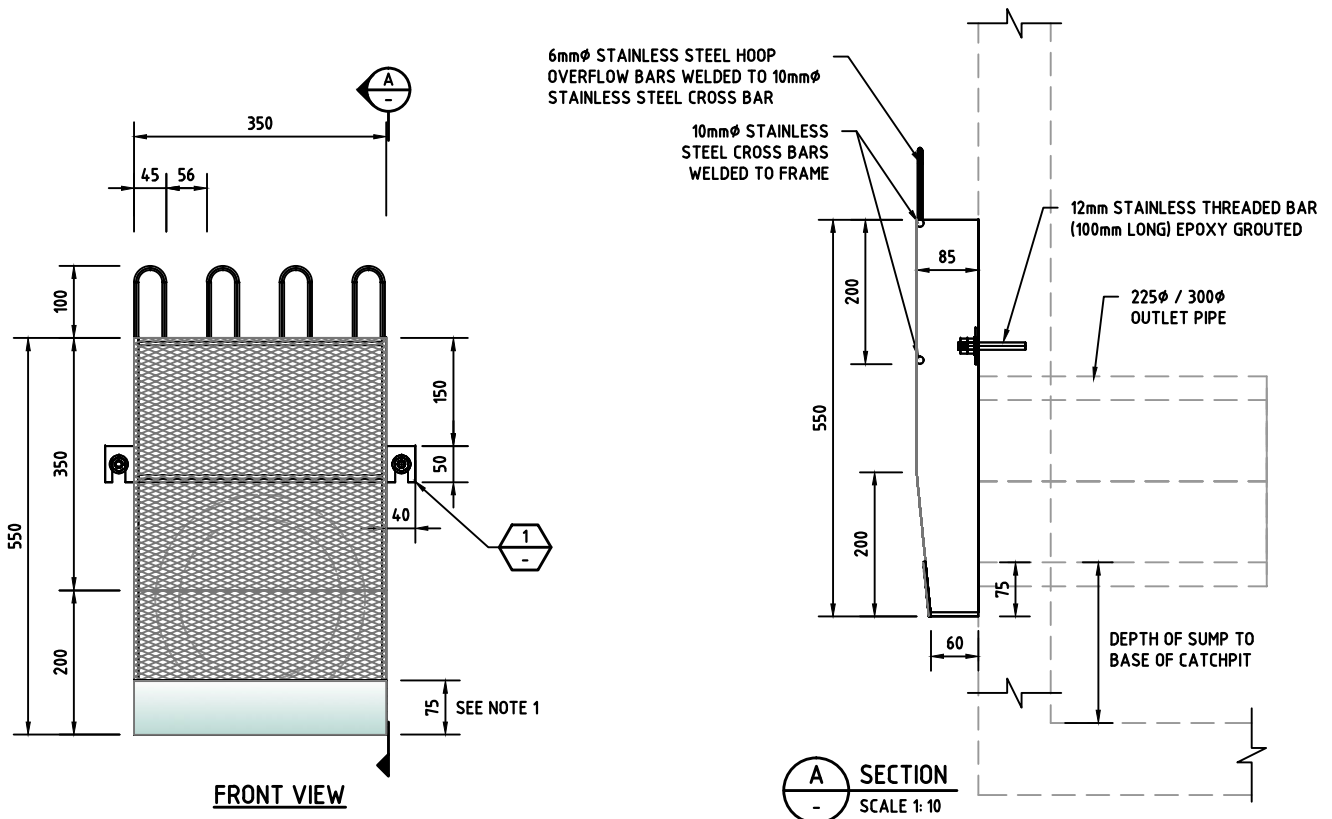


AUCKLAND TRANSPORT
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TITLE

**TETRA TRAP
TYPE 2**

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| SCALE: | As Shown |
| DRAWING No. | RD043 |
| VERSION | |

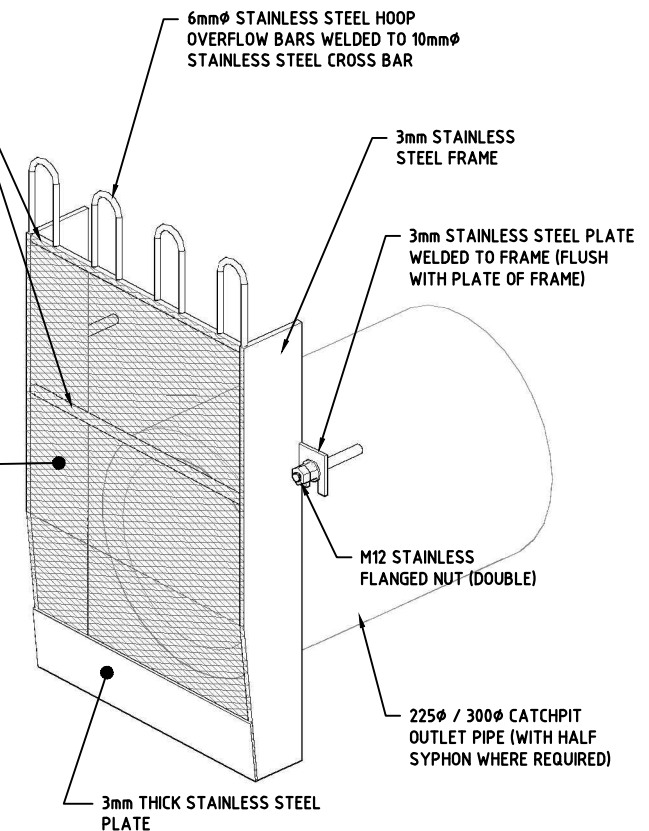


1 DETAIL
SCALE 1:5

20x8 EXPANDED METAL MESH STAINLESS STEEL
(12.5x5mm INTERNAL DIAMETER, 1.2mm THICK)
ORIENTATION: 20mm ON HORIZONTAL

NOTES:

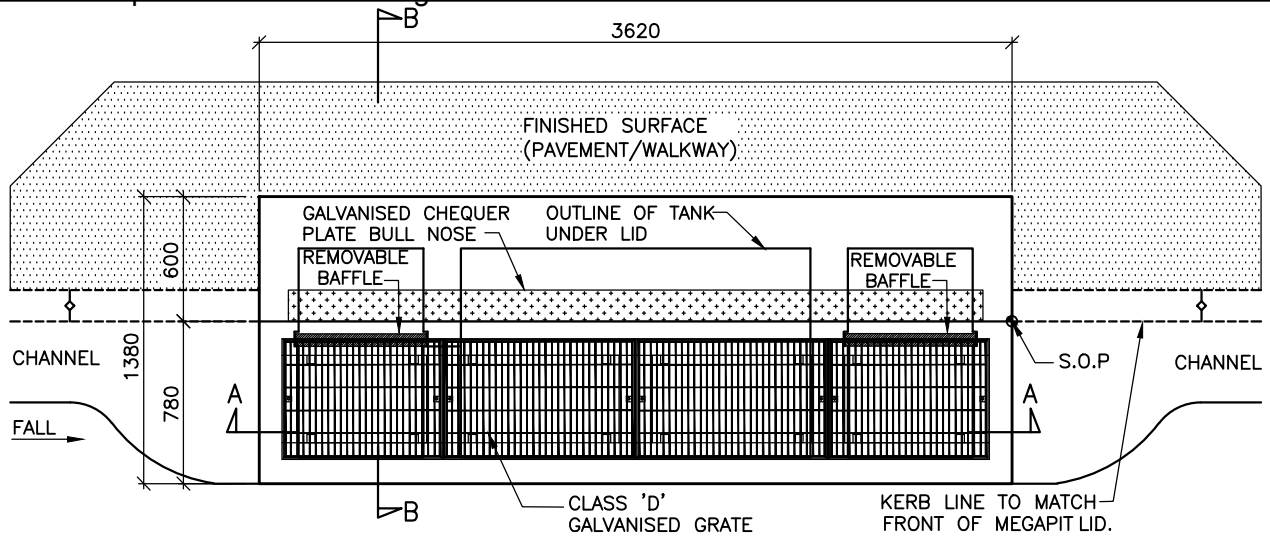
1. TOP OF UNIT OVERFLOW HOOP BARS TO BE A MINIMUM OF 125mm BELOW UNDERSIDE OF GRATE. BOTTOM EDGE OF UNIT TO BE 75mm BELOW INVERT OF OUTLET PIPE. WHERE ABOVE CRITERIA CANNOT BE MET SPECIFIC DESIGN REQUIRED.
2. DO NOT OVERTIGHTEN FLANGENUTS - ENABLE TetraTrap TO BE REMOVED IF REQUIRED.
3. STAINLESS STEEL MATERIAL:
a) RAISED EXPANDED MESH: 316 FERRITIC STAINLESS STEEL (20x8x1.2mm).
b) FRAME: 316 STAINLESS STEEL
4. SPECIFIC DESIGN TO BE UNDERTAKEN IN TERMS OF COMPATIBILITY WITH CATCHPIT STRUCTURES, PRIORITIES AND CHARACTERISTICS WITHIN CATCHMENTS TO DETERMINE TetraTrap SUITABILITY AND TYPE. APPROVAL BY AUCKLAND TRANSPORT IS REQUIRED.
5. TetraTrap 3: FOR USE IN CATCHPITS WITH A SUMP DEPTH OF 400mm OR GREATER AND OUTLET PIPE INVERT TO UNDERSIDE OF CATCHPIT GRATE TO BE A MINIMUM OF 700mm.



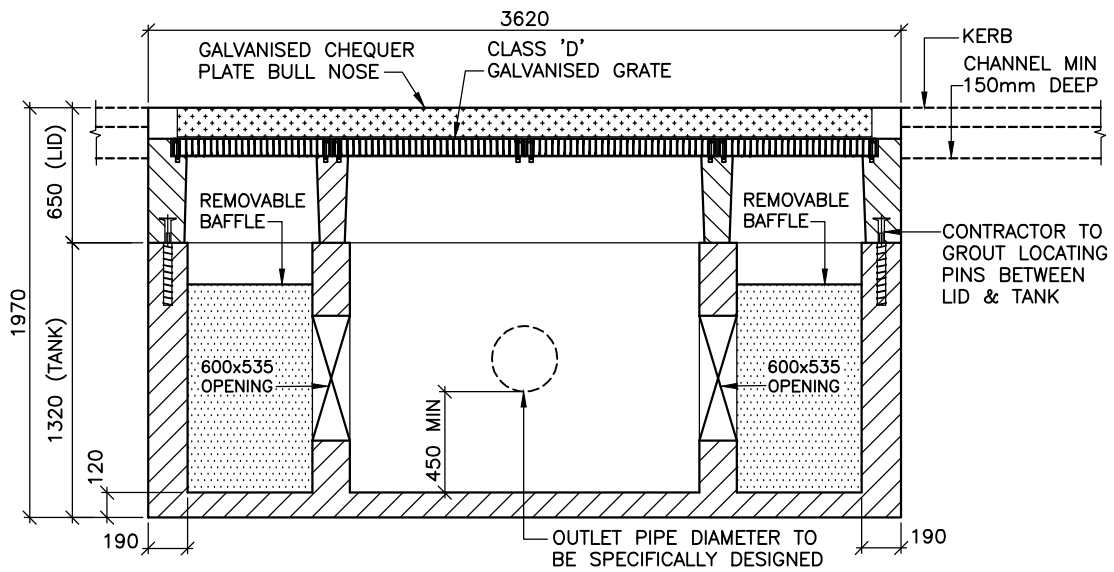
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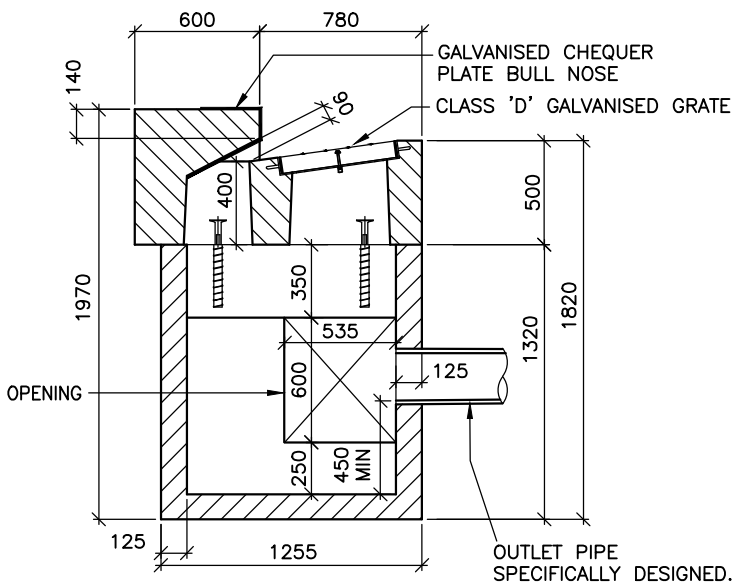
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| AUCKLAND TRANSPORT CODE OF PRACTICE | | SCALE: As Shown |
| TITLE | TETRATRAP TYPE 3 | DRAWING No. RD044 |
| | | VERSION |



MEGAPIT LID PLAN



SECTION A-A



**SECTION B-B (WITHOUT MASS CONCRETE)
FOR UNITS WITHOUT ENVIPOD**

NOTES

1. The precast 'Megapit' Tank Sections are supplied in two configurations depending on the specific site requirements. Higher flows are catered for by increasing the depth & width of the tank section. The lid section contains the extended custom made grate at road level and the extended kerb with the back entry inlet. Refer "Manufactures Megapit Specifications".
2. Epoxy horizontal joint between lid and tank units.
3. Grout locating pins between lid & tank units.
4. The Engineer shall determine the size and position of the outlet pipe. The hole for the outlet pipe shall be drilled and positioned to allow for a minimum sump depth of 450mm.
5. A 'Half Syphon' shall be installed on all 'Megapits' connected to the 'Combined System' in the Auckland-Central area only.
6. Specific design required by a Chartered Engineer for Megapit's draining to soakholes.

| TABLE FOR MEGAPIT DIMENSIONS (IN mm) | | | | |
|--------------------------------------|--------|---------|---------|---------|
| UNIT | LENGTH | BREADTH | DEPTH | WEIGHT |
| TANK STANDARD | 3620 | 1255 | 1320 | 6640 KG |
| TANK (EXTRA DEEP) | 3620 | 1820 | 1840 | 8400 KG |
| LID | 3620 | 1380 | 650/500 | 3760 KG |

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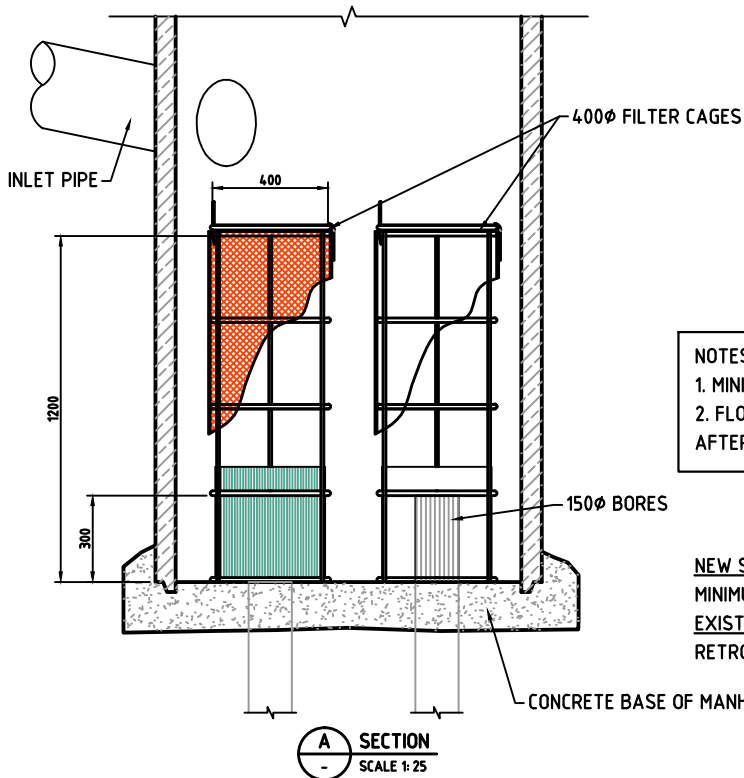
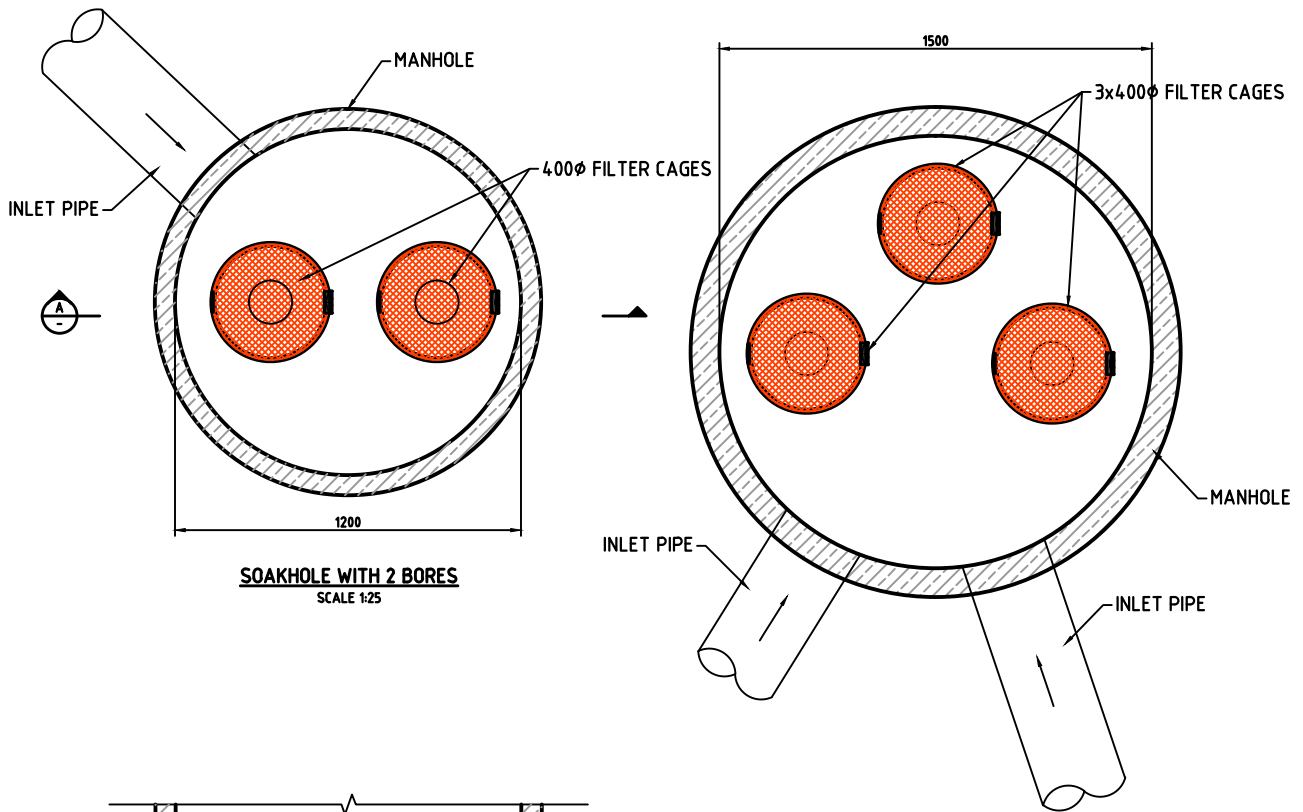


AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE

MEGAPIT

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| SCALE: | N.T.S. |
| DRAWING No. | RD045 |
| VERSION | |



| No. OF BORE | MIN. SOAKHOLE DIAMETER |
|-------------|------------------------|
| 2 | 1200 |
| 3 | 1500 |
| 4 | 1800 |

NOTES:

1. MINIMUM OF TWO BORES TO BE INSTALLED IN SOAKHOLE.
2. FLOW TESTING OF SOAKHOLES TO BE CARRIED OUT BEFORE AND AFTER CAGE INSTALLATION.

NEW SOAKHOLE
MINIMUM DEPTH OF MANHOLE = 2.5m

EXISTING SOAKHOLE
RETROFIT TO EXISTING SOAKHOLE: CAGE HEIGHT = MH DEPTH - 1.0m
MINIMUM CAGE HEIGHT TO BE 1.0m

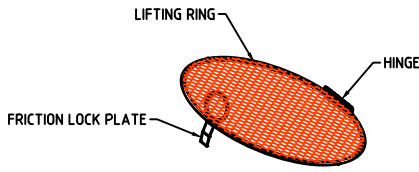
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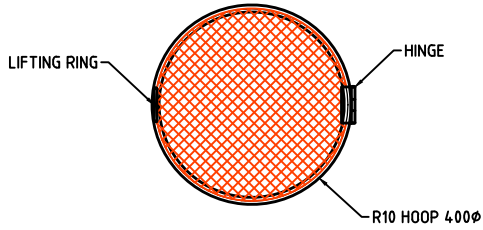
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**SOAKHOLE
PLAN AND SECTION**

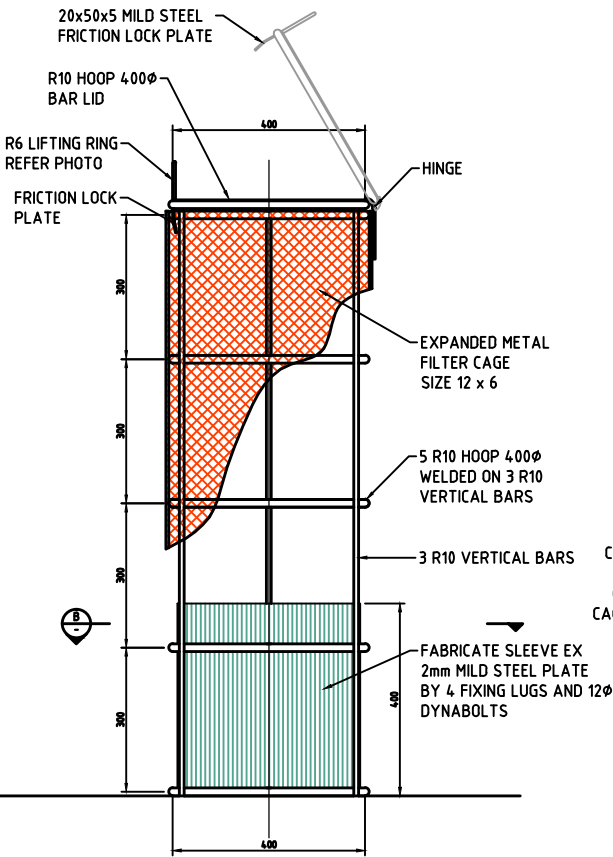
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| SCALE: As Shown |
| DRAWING No. RD050 |
| VERSION |



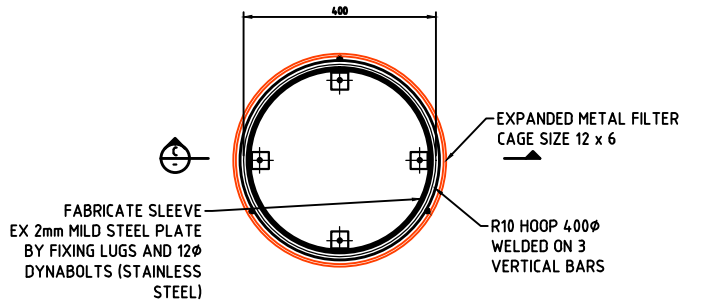
LID 3D VIEW



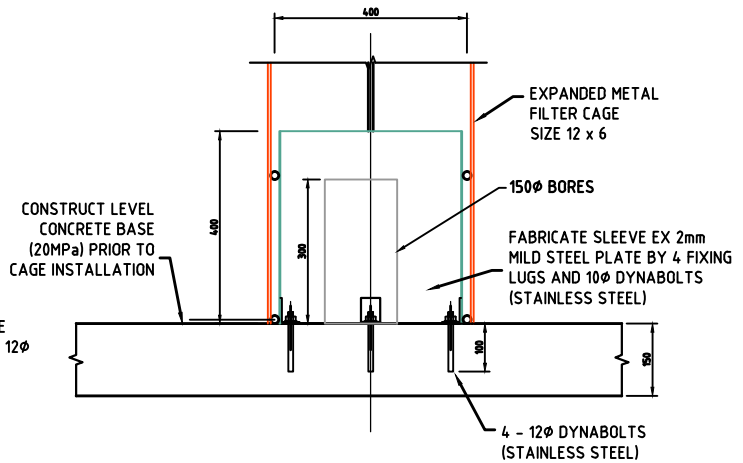
LID



ELEVATION



SECTION B
SCALE 1:15



SECTION C
SCALE 1:15

NOTE:
HOT DIP GALVANISED WHOLE CAGE AND SLEEVE AFTER FABRICATION.
(APPROXIMATE WEIGHT OF WHOLE CAGE 16 TO 18kg)

DETAIL 1 FILTER CAGE DETAIL
SCALE 1:15

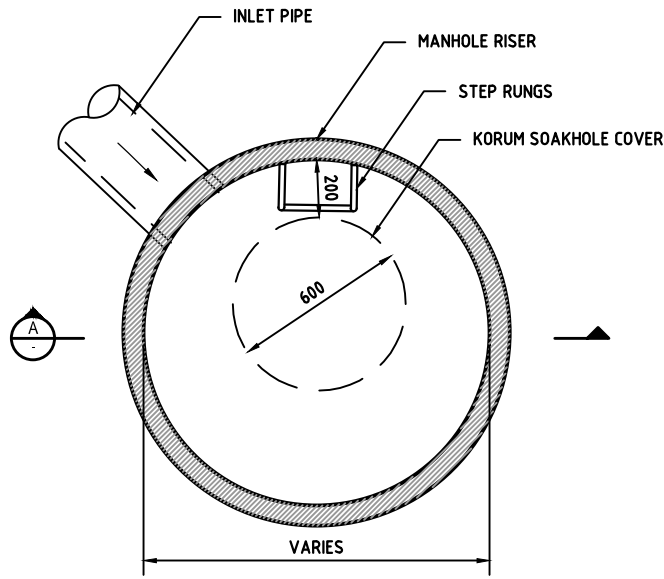
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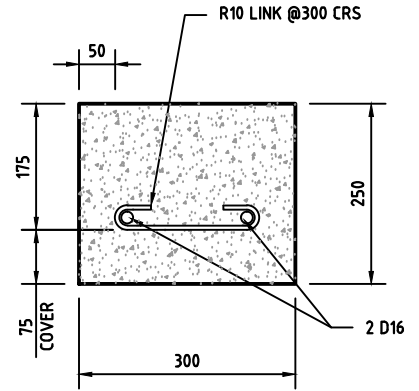
AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE
**SOAKHOLE FILTER CAGE
DETAILS**

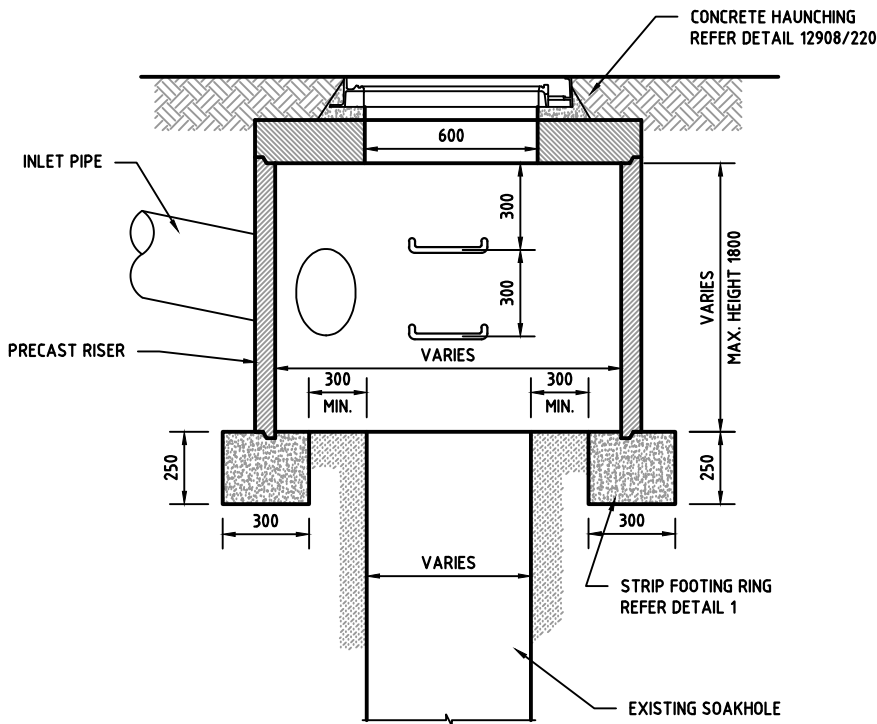
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| SCALE: As Shown |
| DRAWING No. RD051 |
| VERSION |



SOAKHOLE PLAN
SCALE 1:25



1 DETAIL
SCALE 1:10



A SECTION
SCALE 1:25

NOTES:

1. FOOTING CONCRETE TO BE 20MPa.
2. CONFIRM FOOTINGS ARE FOUNDED ON FIRM GROUND OR ROCK.

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AUCKLAND TRANSPORT
CODE OF PRACTICE

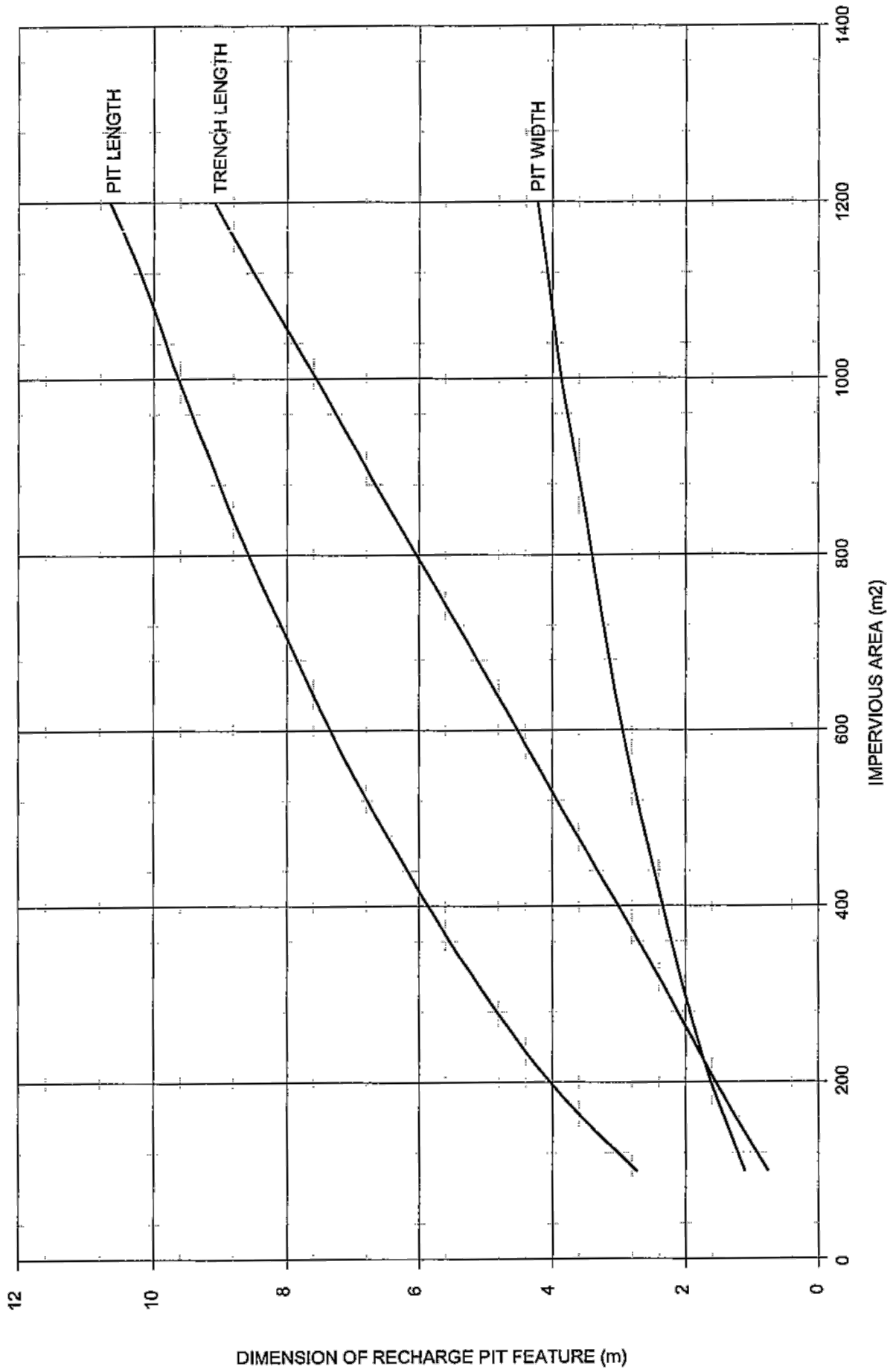
TITLE
**SINGLE BORE
SOAKHOLE**

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| SCALE: | N.T.S. |
| DRAWING No. | RD052 |
| VERSION | |

TRENCH LENGTH EQUATION
 $y=0.0076x - 0.0332$

PIT LENGTH EQUATION
 $y=0.2275x^{0.5423}$

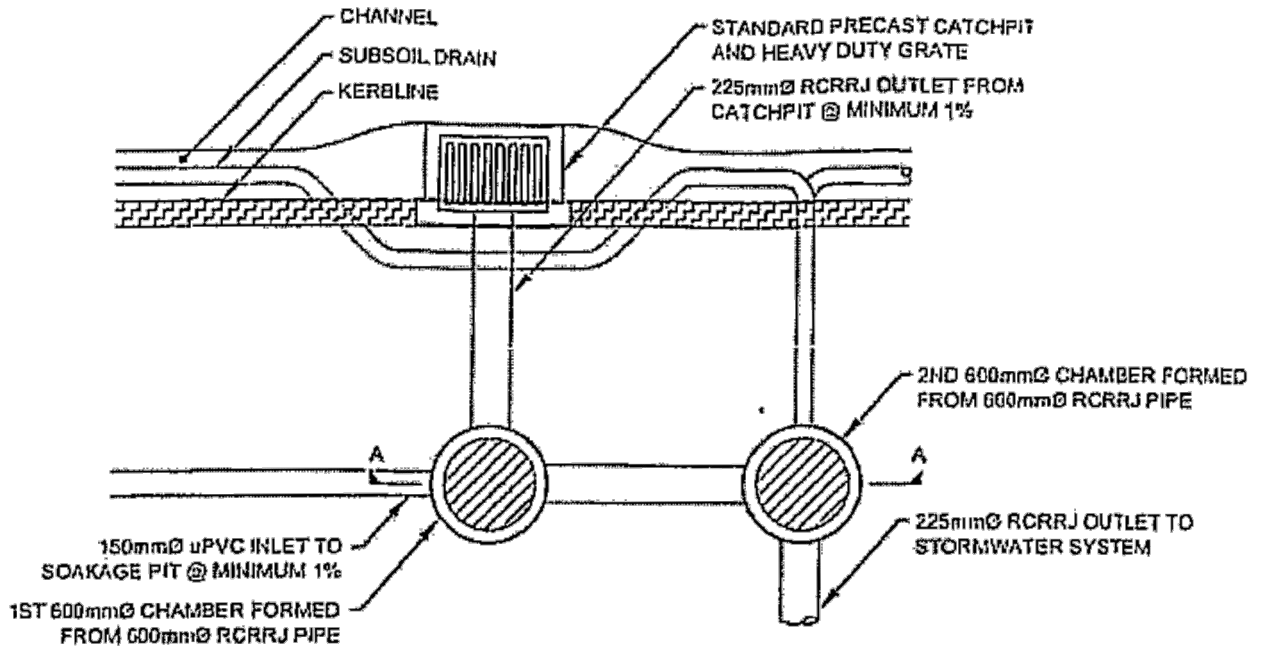
PIT WIDTH EQUATION
 $y=0.091x^{0.5423}$



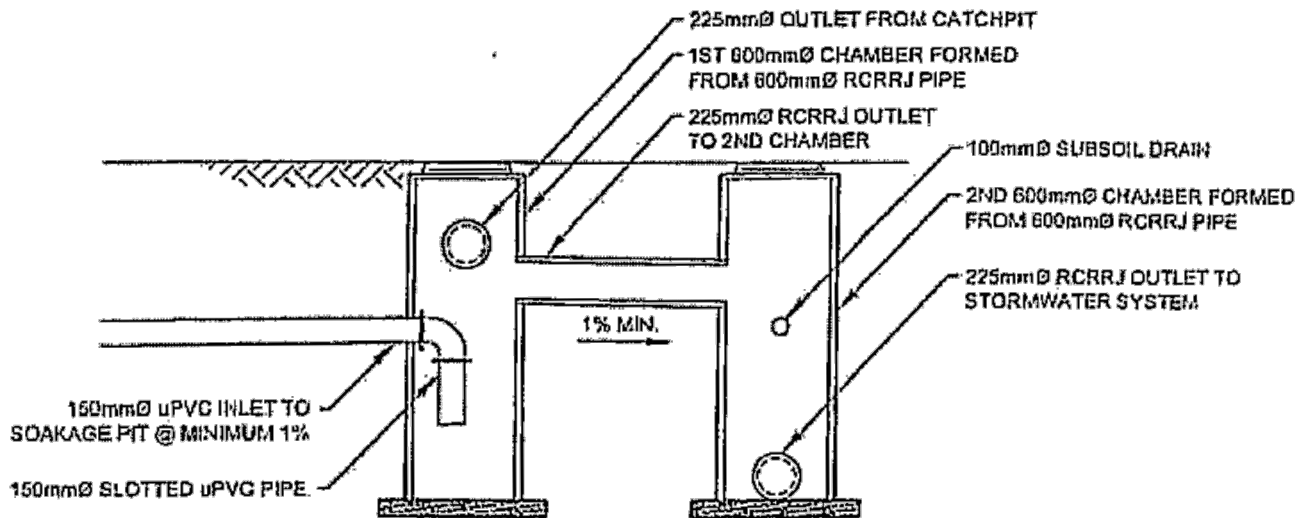
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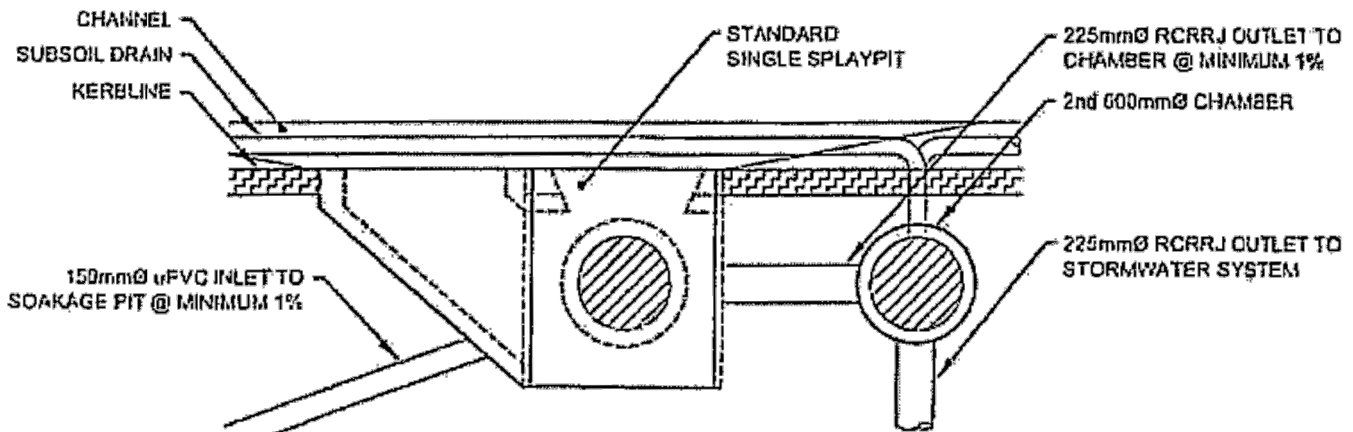
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| AUCKLAND TRANSPORT CODE OF PRACTICE | | SCALE: N.T.S. |
| TITLE | RECHARGE PIT FEATURE DIMENSIONS V IMPERVIOUS AREA | DRAWING No. RD053 |
| | | VERSION |



PLAN: STANDARD CATCHPIT INLET



SECTION A-A



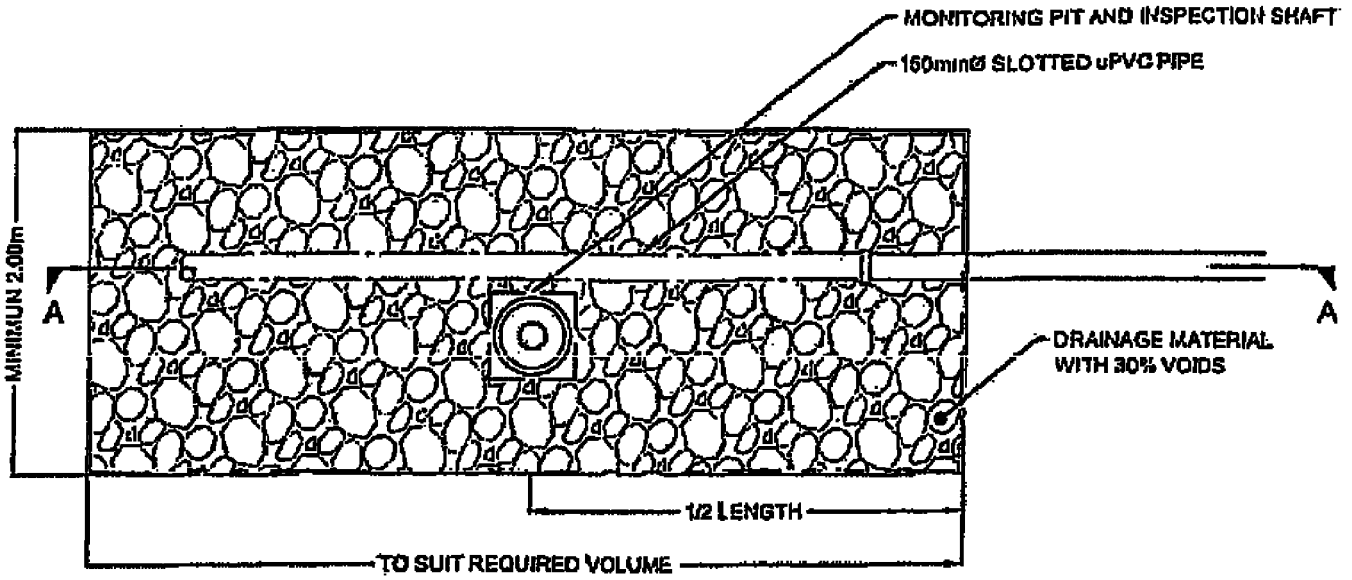
PLAN: STANDARD SPLAYPIT INLET

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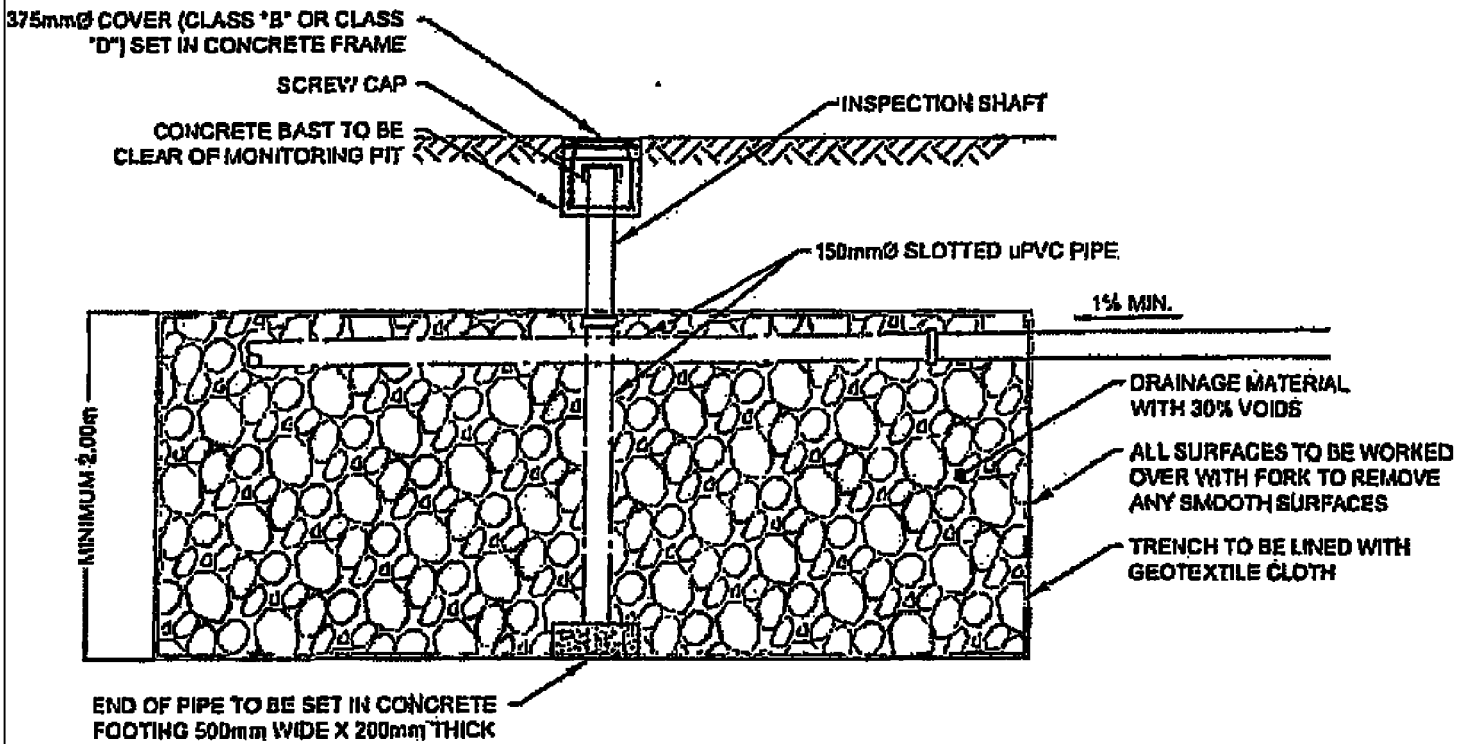
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| AUCKLAND TRANSPORT CODE OF PRACTICE | |
| TITLE | CATCHPIT CONNECTIONS to SOAKAGE PIT |

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| SCALE: | N.T.S. |
| DRAWING No. | RD054 |
| VERSION | |



PLAN VIEW

SCALE 1:25



SECTION A-A

SCALE 1:25

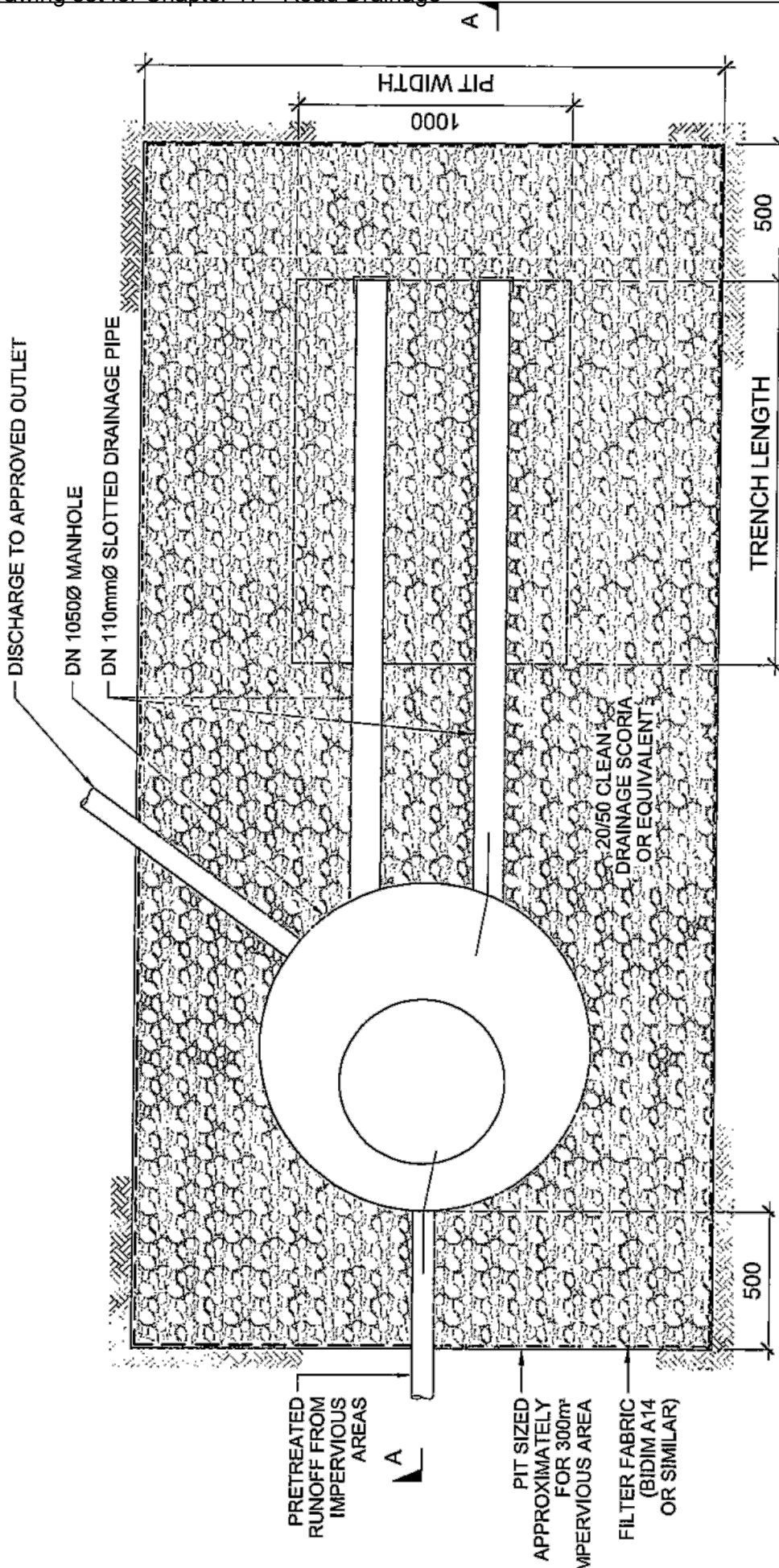
NOTES:

1. STORAGE VOLUME IS APPROXIMATELY 0.3m³ PER 1m² OF SOAKAGE PIT WITH DRAINAGE MATERIAL WITH 30% VOIDS
2. PERCOLATION TESTING AS PER ARC TP10, SECTION B.5.2, IS REQUIRED BEFORE SIZING SOAKAGE SYSTEM

| REVISION | BY | DATE |
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| AUCKLAND TRANSPORT CODE OF PRACTICE | | SCALE: N.T.S. |
| TITLE STANDARD SOAKAGE PIT | | DRAWING No. RD055 |
| | | VERSION |



NOTES

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. PRIVATE SW CONNECTION PIPES LAID WITH <600mm COVER REQUIRE CONCRETE PROTECTION.
3. MANHOLE INSTALLATION AND SW CONNECTION TO THE PUBLIC SYSTEM AS PER THE RELEVANT PARTS OF THE AC/AT CODE.
4. LEAF TRAP TO BE INSTALLED IN ROOF GUTTERS.
5. ALL SCORIA/SOIL INTERFACES TO BE LINED WITH FILTER FABRIC (BIDIM A14 OR SIMILAR).
6. RECHARGE PITS MUST NOT BE LOCATED WITHIN 3.0m OF BUILDINGS OR BOUNDARIES, OR 2.0m OF SANITARY SEWERS.
7. 20mm Ø HOLES IN MH CHAMBER TO BE DRILLED AT 300mm HORIZONTAL SPACING AND 150mm VERTICAL SPACING.
8. DEVICE DIMENSIONS TO BE SIZED IN ACCORDANCE WITH ATCOP-RD053.

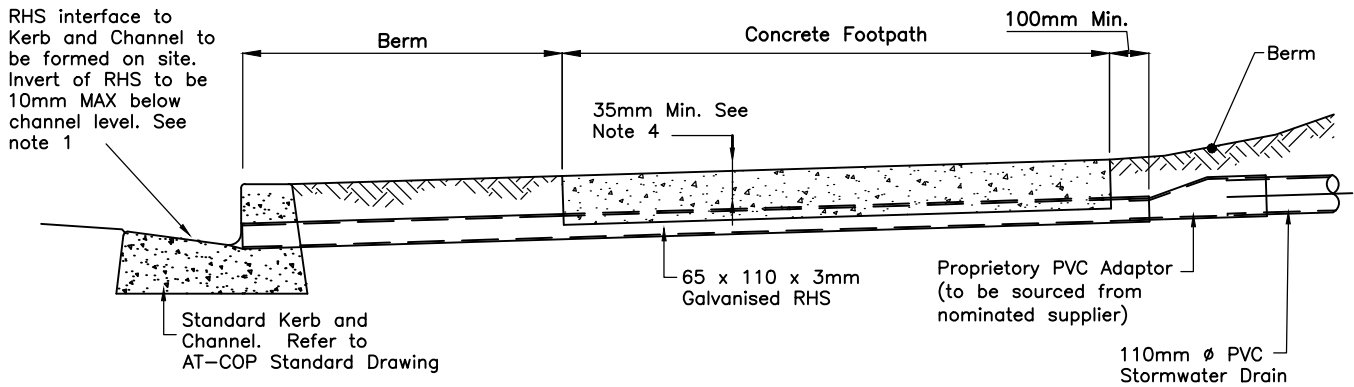
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AUCKLAND TRANSPORT
CODE OF PRACTICE

TITLE **GROUNDWATER RECHARGE PIT
for PEAT AREAS
PLAN**

| | |
|-------------|--------|
| SCALE: | N.T.S. |
| DRAWING No. | RD056 |
| VERSION | |



TYPICAL CROSS SECTION

Scale: Not to Scale

NOTES

1. No Lip allowed if the thickness of the footpath is adequate.
2. All dimensions are in millimetres unless otherwise stated.
3. RHS – Rectangular Hollow Section
4. 35mm min. applies for works on existing footpath.
5. Reinstatement width to be 1m minimum 500mm either side of the new pipe. Kerb cutout to be wide enough to ensure 50mm cover to the new stormwater pipe.
6. Existing kerb to be cut out to facilitate installation of new stormwater pipe and reinstated using epoxy mortar or similar approved to the satisfaction of AT asset manager.

| REVISION | BY | DATE |
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| AUCKLAND TRANSPORT CODE OF PRACTICE | | SCALE: N.T.S. |
| TITLE KERB DISCHARGE | | DRAWING No. RD060 |
| | | VERSION |