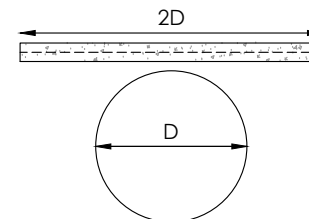


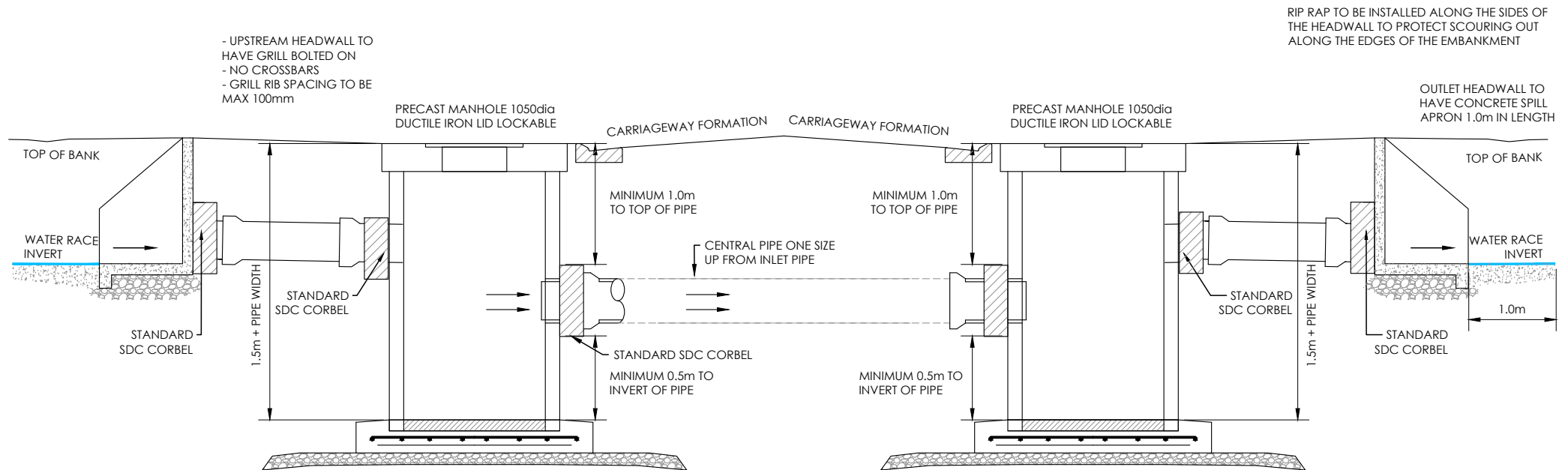
#### NOTES:

1. CULVERT SIZE -CONTACT COUNCILS SURFACE WATER OPERATIONS ENGINEER FOR CULVERT SIZING
2. 1 YEILD JOINT IS REQUIRED AT STRUCTURES I.E. STARTER AND FINISHER REQUIRED.
3. REFER WR 11.0 FOR SIPHON OPTION.
4. RIP RAP TO BE INSTALLED TO SIDES OF HEADWALL FOR SCOUR PROTECTION.
5. MINIMUM PIPE SIZES 300mm WITHIN CARRIAGEWAY. 225mm OUTSIDE OF CARRIAGEWAY
6. WIDTH OF CONCRETE CAP IS TWICE THE DIAMETER OF THE PIPE
7. INVERT PIPE IS TO BE  $\frac{1}{4}$  DIAMETER BELOW INVERT OF WATER RACE

#### MINIMUM COVER - CONCRETE CLASS 4 PIPES 600mm

- P.V.C PIPES 750mm
- HELCOR ( CSP ) 600mm
- ALUFLO PIPES 600mm
- POLYETHYLENE PIPES 750mm





#### NOTES:

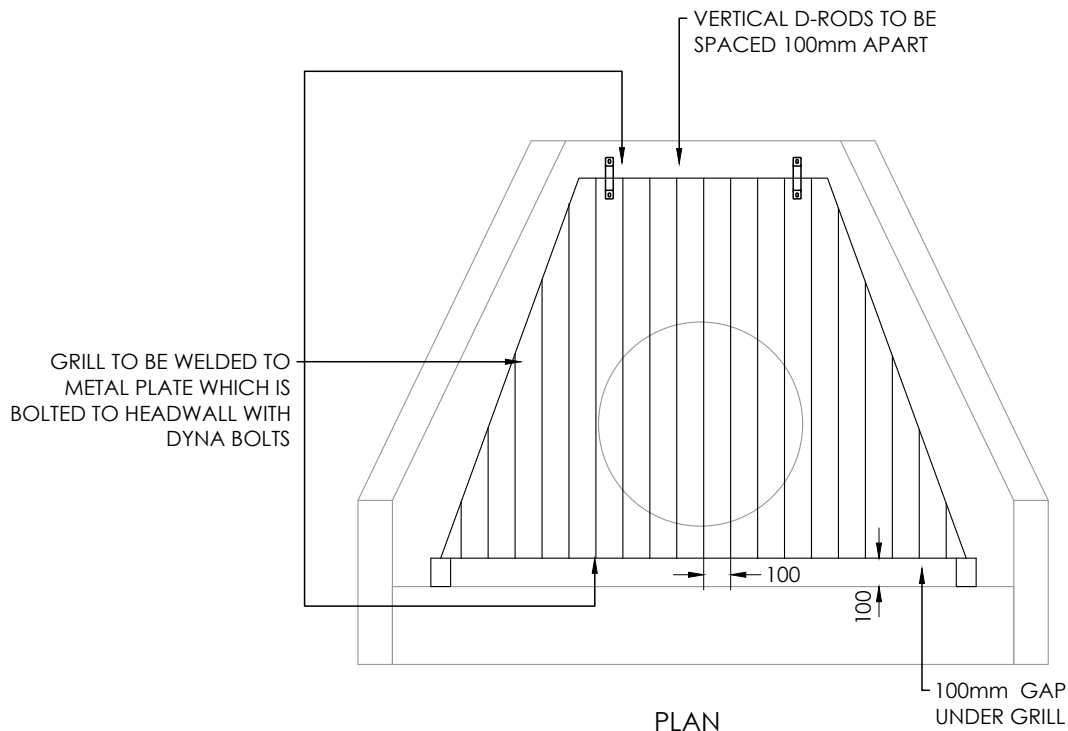
1. CULVERT SIZE - CONTACT COUNCILS SURFACE WATER OPERATIONS ENGINEER

FOR CULVERT SIZING MINIMUM PIPE SIZES

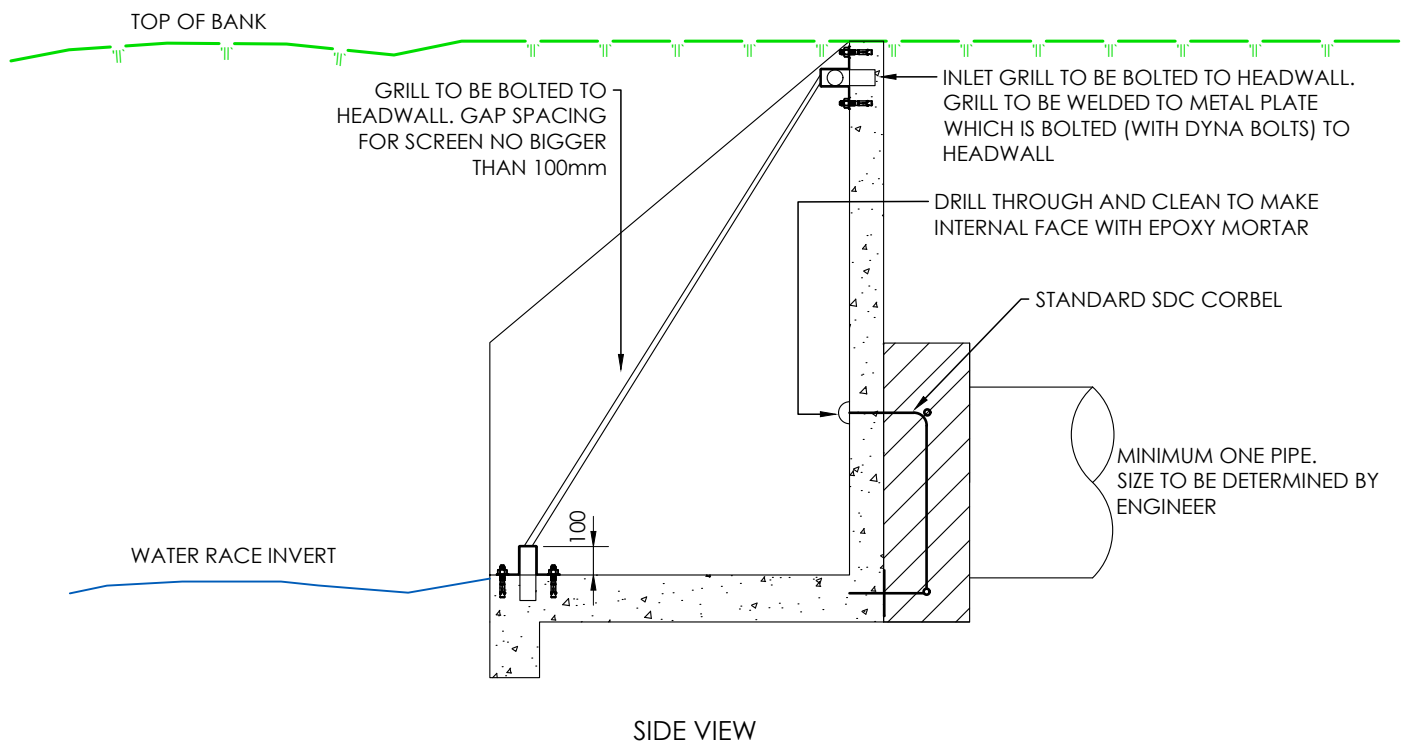
- 300mm WITHIN CARRIAGEWAY.
- 225mm OUTSIDE OF CARRIAGEWAY

2. HEADWALL TO MANHOLE 1 YEILD JOINT REQUIRED AT STRUCTURES  
I.E. STARTERS AND FINISHERS .
3. MANHOLE TO MANHOLE 2 YEILD JOINTS REQUIRED AT STRUCTURES  
I.E. FINISHERS, SHORTS AND STARTERS.
4. PRECAST HEADWALLS ARE APPROVED.

5. ALL OPTIONS OTHER THAN HEADWALLS MUST HAVE PRIOR APPROVAL BY SDC WATER OPERATIONS MANAGER.
6. BACK FILL EDGES OF BOTH HEADWALLS WITH RIP RAP TO KEEP EXISTING BANK SHAPE TIDY. INSTALL CONCRETE APRON 1.0m IN LENGTH AT OUTLET OF PIPE .  
INSTALL INLET APRON WITH SUITABLE HARDFILL OR CONCRETE TO TIE INTO HEAD WALL BASE.
7. GALVANISED STEEL GRILLS TO BE INSTALLED ON THE INLET SIDE OF THE HEADWALL. GRILL TO BE DYNA BOLTED TO TOP AND BOTTOM OF PRECAST HEADWALL.
8. INVERT PIPE AT HEADWALL IS TO BE  $\frac{1}{4}$  DIAMETER BELOW INVERT OF WATER RACE.

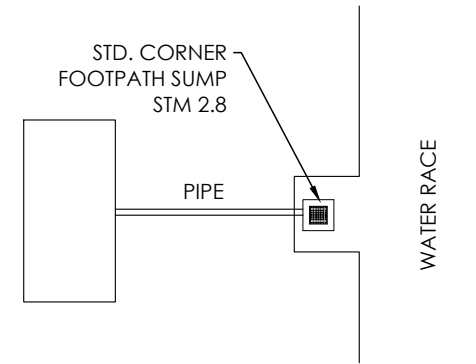


**NOTE:**  
GRILL STRUCTURE AND FITTINGS TO BE GALVANISED AND POWDER COATED

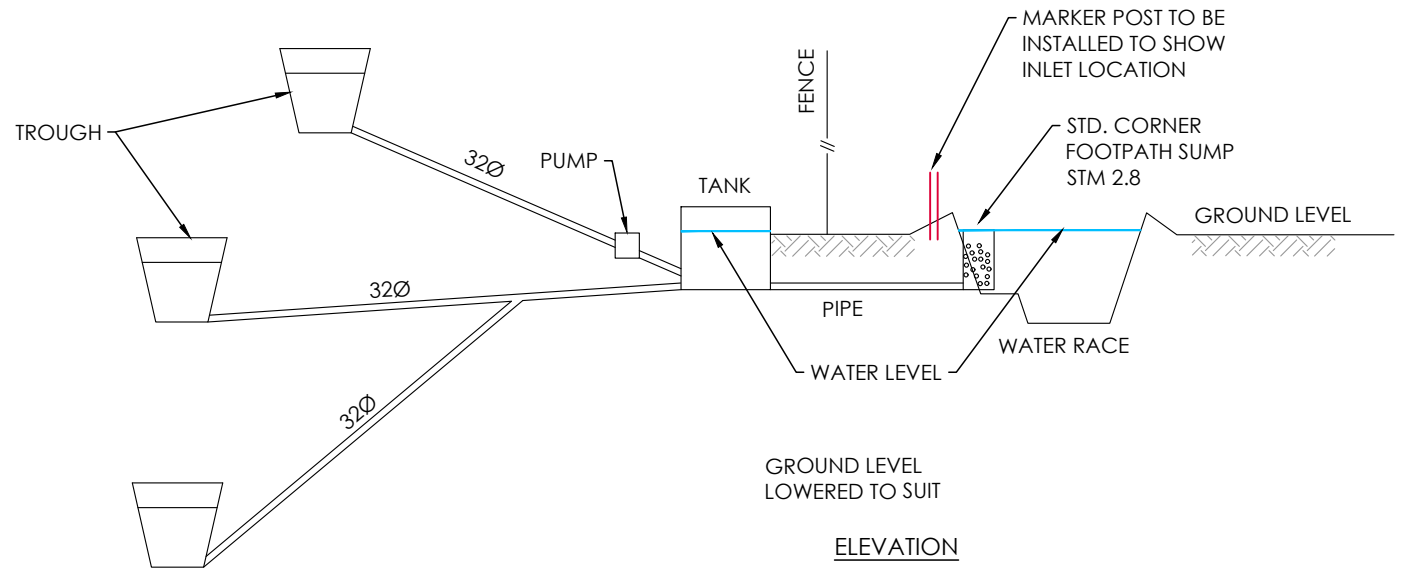


**NOTES:**

- WHERE A WATERING POINT IS TO BE REPLACED OR IS REQUIRED ON A SUBDIVISION FROM A WATER RACE BEYOND THE BOUNDARY THE WATER SHALL BE DELIVERED VIA A PIPE TO THE TROUGH TO ELIMINATE WATER LOSS. ADJACENT LANDOWNERS MUST BE CONSULTED AS RIGHT OF ACCESS IS NOT GUARANTEED.
- THE LEVEL OF THE TOP OF TROUGH IS TO BE HIGHER THAN THE LEVEL OF THE WATER RACE FROM WHICH IT IS PIPED UNLESS A BALL COCK IS INSTALLED TO PREVENT OVERFLOW.
- WHERE THE GROUND IS HIGHER THAN THE ADJACENT RACE THE SITE MUST BE EXCAVATED FOR THE TROUGH.
- THE USE OF DEAD END RACES WITH SOAK PITS IS DISCOURAGED.
- FOR WATER BEING PIPED INTO A STORAGE TANK AND THEN RETICULATED TO OTHER PARTS OF THE FARM. -  
 - A PUMP CAN BE USED TO FURTHER RETICULATE AREAS HIGHER THAN THE TANK.  
 - THE PIPE IS NOT A COUNCIL OWNED ASSET AND WILL BE OWNED BY THE APPLICANT.



INLET DETAIL PLAN  
PLAN



WATER RACE →

1.0m (MIN) BETWEEN  
WATER RACE AND POND

WATER RACE →

INLET  
- 100Ø PVC SN8  
OR 16  
- PE 100, PN 12.5

OUTLET  
- 100Ø PVC SN8 OR 16  
- PE 100, PN 12.5

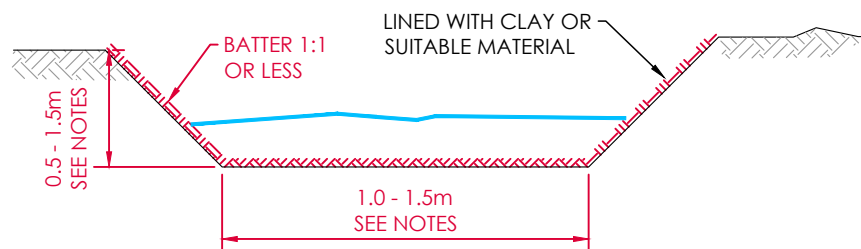
POND  
100m<sup>2</sup>  
DEPTH 400mm

LINED WITH  
SUITABLE MATERIAL  
(REFER TO NOTES)

**NOTES:**

1. LINING OF POND IS TO WR 8.0. AS PER POLICY W102
2. MUST BE APPROVED BY SDC SURFACE WATER ENGINEER . REQUIRES INSPECTION BY SDC PRIOR TO COMMISSIONING

REFER TO WATER RACE MANAGEMENT PLAN FOR DETAILS.



#### NOTES:

1. ALL NEW AND RELOCATED WATER RACES ARE REQUIRED TO BE LINED WITH A MINIMUM OF 300mm APPROVED LINING MATERIAL.
2. RACES SHOULD BE LINED WITH CLAY OR BENTONITE MIXED WITH NATURAL MATERIAL/GRAVEL. A MIX OF 15% BENTONITE AND 85% GRAVEL MIX COULD BE USED.
3. LIME STABILISATION MAY BE REQUIRED FOR MIXED CLAY LINERS OF 2 - 4% BY WEIGHT.
4. A MAXIMUM PARTICLE SIZE OF 20% OF THE LINER THICKNESS SHOULD BE USED.
5. LINERS SHOULD BE WELL MIXED ONSITE TO ACHIEVE UNIFORM CLAY / BENTONITE DISTRIBUTION.
6. IF USING PURE BENTONITE, LINERS SHOULD BE 20 - 50mm THICK AND COVERED WITH A COMPACTED LAYER OF TOP SOIL / GRAVEL.
7. CHANNEL DIMENSIONS AND BATTERS SHOULD BE AGREED WITH COUNCIL ENGINEER FOR ALL NEW CHANNELS. ACCESS TO CLEAN WATER RACES SHOULD BE PROVIDED FOR IN ALL NEW AND RELOCATED RACES.

#### RELOCATION OF WATER RACE

W106

RELOCATION OF WATER RACE SHALL BE SUBJECT TO:

- RELOCATION OF THE WATER RACE SHALL NOT HAVE A DETRIMENTAL EFFECT ON ANY OTHER WATER RACE USERS OR WATER RACE SYSTEM OPERATION.
- APPLICATION FOR RELOCATION SHALL BE MADE IN WRITING TO THE ASSET DELIVERY MANAGER AND SHALL INCLUDE:
  - A) MAP SHOWING EXISTING AND PROPOSED WORKS.
  - B) SPECIFICATIONS FOR CONSTRUCTION OF WORK.
  - C) NON REFUNDABLE PAYMENT OF APPLICATION FEE AS PER THE ANNUAL REPORT.
- NO WORKS CAN PROCEED UNTIL ENGINEERING APPROVAL OF THE WORKS HAS BEEN OBTAINED FROM THE ASSET DELIVERY MANAGER.
- ALL COST ASSOCIATED, INCLUDING ANY SUPERVISION, WITH THE RELOCATION SHALL BE AT THE APPLICANT'S EXPENSE. IF ANY LEAKAGE OCCURS FROM THE RELOCATED RACE, INCLUDING ANYTIME IN THE FUTURE, THE APPLICANT SHALL UNDERTAKE ALL NECESSARY REPAIRS AS DIRECTED BY THE ASSET DELIVER MANAGER.
- WATER LOSS TEST MUST BE CARRIED OUT IN CONSULTATION WITH THE COUNCIL REPRESENTATIVE PRIOR TO THE WATER BEINGS FULLY DIVERTED. IF THIS IS NOT UNDERTAKEN THE COUNCIL RESERVES THE RIGHT TO DO THIS AT THE APPLICANT'S COST AND ALL REPAIRS MAY BE REQUIRED ARE AT THE APPLICANTS EXPENSE.
- WHEN A WATER RACE RELOCATION APPLICATION IS AN ENHANCEMENT TO THE SCHEME, THEN A COST SHARING ARRANGEMENT MAY BE ENTERED INTO BETWEEN THE COUNCIL AND THE APPLICANT AT THE COUNCIL'S DISCRETION.

UPDATED JUNE 2021 IN POLICY DOCUMENT.

#### NEW RACES OR ASSOCIATED STRUCTURES

W108

INSTALLATION OF NEW RACE WILL BE PERMITTED:

- WHERE NEW PROPERTIES ARE REQUIRED TO BE SERVED.
- TO SERVE ADDITIONAL AREAS OF INDIVIDUAL PROPERTIES.
- CONDITIONS:
  - A) COSTS OF ALL WORKS INCLUDING THE ASSOCIATED SUPERVISION IS AT THE APPLICANT'S EXPENSE
  - B) DESIGN AND CONSTRUCTION TO THE APPROVAL OF THE ASSET DELIVERY MANAGER.
- IF ANY LEAKAGE OCCURS FROM THE RACE, INCLUDING ANYTIME IN THE FUTURE, THE APPLICANT SHALL UNDERTAKE ALL NECESSARY REPAIRS AS DIRECTED BY THE ASSET DELIVER MANAGER.
- A WATER LOSS TEST MUST BE CARRIED OUT IN CONSULTATION WITH THE COUNCIL REPRESENTATIVE PRIOR TO THE WATER BEINGS FULLY DIVERTED. IF THIS IS NOT UNDERTAKEN THE COUNCIL RESERVES THE RIGHT TO DO THIS AT THE APPLICANT'S COST AND ALL REPAIRS MAY BE REQUIRED ARE AT THE APPLICANTS EXPENSE.

UPDATED JUNE 2021 IN POLICY DOCUMENT.