

GENERAL

- G1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING:
- A. SEWERAGE CODE OF AUSTRALIA WSA 02-2002-2.2 SYDNEY WATER EDITION 1 - VERSION 3 - PART 3
  - B. WSA 201-2013-1.1 MANUAL FOR SELECTION AND APPLICATION OF PROTECTIVE COATINGS AND SYDNEY WATER SUPPLEMENT TO WSA 201
  - C. SYDNEY WATER LIST OF ACCEPTABLE PRODUCT SPECIFICATIONS.
  - D. WSA 114-2002 INDUSTRY STANDARD FOR CONCRETE SPECIAL CLASS
  - E. DTC/2000 MAINTENANCE HOLES, CAST IN-SITU REINFORCED CONCRETE SEWERS ≤ DN450
  - F. DTC/2200 DN1200 MAINTENANCE HOLES, CAST IN-SITU REINFORCED CONCRETE SEWERS ≤ DN450
  - G. DTC/2201 DN1800 MAINTENANCE HOLES, CAST IN-SITU REINFORCED CONCRETE SEWERS DN500 - DN750
  - H. DTC/2202 DN1200 MAINTENANCE HOLES, CAST IN-SITU PLAIN CONCRETE WALL, SEWERS ≤ DN450
  - I. DTC/2203 DN1050 MAINTENANCE HOLES, CAST IN-SITU PLAIN CONCRETE WALL, SEWERS ≤ DN300
  - J. WSA-2011 INDUSTRY STANDARD FOR DUCTILE IRON ACCESS COVERS FOR WATER SUPPLY & SEWERAGE
- G2. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- G3. SETTING OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS NOT TO BE OBTAINED BY SCALING THE DRAWINGS.
- G4. WHERE PROPRIETARY PRODUCTS HAVE BEEN SPECIFIED, A SUITABLE EQUIVALENT MAY BE USED WHERE APPROVED BY SYDNEY WATER. PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- G5. USE OF STANDARD DESIGNS MAY INTRODUCE UNINTENDED SAFETY RISKS FOR SITE SPECIFIC APPLICATION. THE USER SHALL ADDRESS SAFETY RISKS THROUGH SITE SPECIFIC ASSESSMENT.
- G6. THE USER IS RESPONSIBLE FOR DESIGN OF ANY TEMPORARY WORKS.

FOUNDATIONS

- F1. MINIMUM ALLOWABLE BEARING PRESSURES FOR MAINTENANCE HOLES SHALL BE:

DEPTH TO SEWER INVERT	MINIMUM ALLOWABLE BEARING CAPACITY
0 - 6m	100 kPa
6 - 10m	180 kPa

THE USER SHALL BE RESPONSIBLE FOR VALIDATING THE MINIMUM ALLOWABLE BEARING PRESSURE.

- F2. ANY OVER-EXCAVATION OR VOIDS OF FOUNDATION MATERIALS TO BE FILLED WITH NORMAL CLASS N15 MASS CONCRETE TO AS 1379.
- F3. BLINDING CONCRETE OR BEARING SURFACE SHALL BE SATURATED WITH WATER AND EXCESS REMOVED IMMEDIATELY PRIOR TO POURING CONCRETE BASE.

STRUCTURAL CRITERIA

- SD1. SOIL PROPERTIES:
- ϕ' = 30°
  - DENSITY (γ) = 20kN/m³
  - COEFFICIENT OF EARTH PRESSURE AT REST Ko = 0.5
- SD2. LOADS:
- LIVE LOAD:
    - SUBJECT TO VEHICULAR TRAFFIC - SM1600 TO AS5100.2
    - NOT SUBJECT TO VEHICULAR TRAFFIC - CLASS B TO AS3996
  - SURCHARGE AROUND STRUCTURES = 20 kPa
  - GROUND WATER AT SURFACE
- SD3. CONCRETE EXPOSURE CLASSIFICATION:
- DTC/2200 - C (AS3735) ≤ DN300, D (AS3735) - DN375, DN450
  - DTC/2201 - D (AS3735)
  - DTC/2202 - C (AS3735)
  - DTC/2203 - C (AS3735)

FORMWORK

- FW1. FORMWORK AND CONCRETE FINISHES SHALL BE IN ACCORDANCE WITH AS 3610. SURFACE EXPOSED TO VIEW - CLASS 2. SURFACE NOT EXPOSED TO VIEW - CLASS 4.
- FW2. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa PRIOR TO STRIPPING OF FORMWORK.

CONCRETE

- C1. CONCRETE DIMENSIONS SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- C2. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 75mm UNO.
- C3. CONCRETE SHALL BE SPECIAL CLASS SCC40 TO WSA 114-2002 EXCEPT AS VARIED BELOW:
- SECTION 4 - MIX DESIGN

MINIMUM F'c AT 28 DAYS	40MPa
MINIMUM BINDER CONTENT	450kg/m³
MAXIMUM 56 DAY DRYING SHRINKAGE STRAIN	600 x 10 <sup>-6</sup>
MAXIMUM WATER : CEMENT RATIO	0.45
SLUMP	80 - 120mm

SECTION 6 - SUPPLEMENTARY CEMENTITIOUS MATERIALS

THE TOTAL AMOUNT OF SUPPLEMENTARY CEMENTITIOUS MATERIALS SHALL NOT BE MORE THAN 60% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.

SECTION 6.2 - FLY ASH

THE MAXIMUM AMOUNT OF FLY ASH SHALL BE 25% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.

SECTION 6.3 - SLAG

THE MAXIMUM AMOUNT OF SLAG SHALL BE 50% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.

SECTION 6.5 - AGGREGATES

THE MAXIMUM NOMINAL SIZE OF AGGREGATE SHALL BE 20mm. RECYCLED MATERIAL OR SLAG PRODUCTS SHALL NOT BE USED AS AGGREGATES.

SECTION 6.7 - CHEMICAL ADMIXTURES

WHERE TWO OR MORE ADMIXTURES ARE PROPOSED FOR INCORPORATION INTO A CONCRETE MIX THE MANUFACTURERS SHALL CERTIFY THE COMPATIBILITY OF THE ADMIXTURES.
- C4. CURING OF ALL CONCRETE TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS. POLYETHYLENE SHEETING OR WET HESSIAN MAY BE USED. POLYETHYLENE AND HESSIAN TO BE ADEQUATELY SECURED TO RESIST WIND AND TRAFFIC FORCES. ALTERNATIVE CURING MAY BE ACHIEVED BY APPLYING SIKa ANTISOL WB CURING COMPOUND OR APPROVED EQUIVALENT TO ALL SURFACES IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR A PERIOD OF 14 DAYS.
- C5. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 32 MPa PRIOR TO BACKFILLING AND TESTING OF STRUCTURES. BACKFILL SHALL BE PLACED AND COMPACTED EVENLY AROUND MAINTENANCE HOLES IN LAYERS NOT EXCEEDING 300mm LOOSE THICKNESS.

REINFORCEMENT

- R1. STEEL REINFORCING MATERIALS SHALL BE TO AS/NZS4671.
- SHAPE - D
  - STRENGTH GRADE = 500MPa
  - DUCTILITY CLASS - N
- R2. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY; IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- R3. DESIGNATION OF REINFORCEMENT BARS IS AS IN EXAMPLE:
- No. OF BARS IN A GROUP

NOMINAL BAR SIZE IN mm

17 N20 - 350 EF

BAR GRADE AND TYPE

LOCATION OR COMMENT

SPACING IN mm
- R4. THE FOLLOWING ABBREVIATIONS APPLY TO THE LOCATION OF REINFORCEMENT:
- |    |           |    |          |    |                            |
|----|-----------|----|----------|----|----------------------------|
| EW | EACH WAY  | FF | FAR FACE | CP | CENTRALLY PLACED           |
| EF | EACH FACE | B  | BOTTOM   | BB | BOTTOM BOTTOM (LAID FIRST) |
| NF | NEAR FACE | T  | TOP      | TT | TOP TOP (LAID LAST)        |
- R5. EXTENT OF BARS SHOWN THUS:
- TYPICAL BAR
- R6. SPLICE REINFORCEMENT ONLY AT LOCATIONS SHOWN ON DRAWINGS. LAP LENGTHS TO COMPLY WITH THE FOLLOWING UNLESS NOTED OTHERWISE.
- N12 - 400 LAP
  - N16 - 500 LAP
  - N20 - 650 LAP
- R7. LOAD BEARING WELDED JOINTS FOR THE TRANSMISSION OF LOADS BETWEEN REINFORCEMENT IS NOT PERMITTED. NON LOAD BEARING WELDED JOINTS (TACK WELDS) TO KEEP REINFORCEMENT IN POSITION DURING FABRICATION, TRANSPORT & CONCRETING, IS PERMITTED WHERE WELDING WILL NOT IMPACT DUCTILITY OF REINFORCEMENT. WELDING SHALL BE IN ACCORDANCE WITH AS 1554.3. LAP LENGTHS SHALL NOT BE REDUCED DUE TO WELDING.



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APPROVED

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ENGINEERING & ENVIRONMENTAL SERVICES

C	REVISD GENERAL, FOUNDATION AND REINFORCEMENT NOTES	RL	18/03/15
B	GENERAL REVISION	RL	01/03/13
A	ORIGINAL ISSUE	PJG	31/01/12
LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE

DEEMED TO COMPLY DRAWINGS	
MAINTENANCE HOLES CONSTRUCTION NOTES	

DTC 2000	
ISSUE	DATE
C	18/03/15