

CIVIL AND DRAINAGE NOTES

- C1. ALL LEVELS ON STRUCTURAL/CIVIL DRAWINGS ARE TO DATUM NOMINATED BY C18. COVER DETAILS PROJECT SURVEYOR. REFER SURVEY DRAWINGS FOR EXISTING BOUNDARIES, LEVELS ETC. ALL LEVELS ARE IN METRES. ALL EXISTING LEVELS SHOWN ARE TO BE CONFIRMED ON SITE.
- C2. PAVEMENT LEVELS ARE FINISHED LEVELS THROUGHOUT.

C5. SUBGRADE PREPARATION:

- C3. ANY EXISTING PAVEMENT, KERB AND CHANNEL, KERB OR THE LIKE THAT IS DAMAGED DURING CONSTRUCTION IS TO BE REINSTATED TO ITS ORIGINAL CONDITION AND TO THE SATISFACTION OF THE RELEVANT AUTHORITY PRIOR TO THE COMPLETION OF WORKS.
- C4. ALL EARTH BATTERS ARE TO BE IN THE RATIO OF 1 TO 4 OR LESS UNLESS NOTED OTHERWISE. BATTERS ARE TO BE KEPT A MINIMUM 1 METRE FROM BUILDINGS, ROADS,
- WALLS AND THE LIKE.
- ALL VEGETATION, TOP SOIL AND FILL MATERIAL SHALL BE REMOVED FROM THE PAVEMENT AREA AND EXTENDING 300mm PAST THE EDGE OF THE PAVEMENT TO EXPOSE THE SUBGRADE MATERIAL AS NOTED IN THE GEOTECHNICAL REPORT. THE SUBGRADE (PRIOR TO ANY FILL OR PAVEMENT BEING PLACED) SHALL BE PROOF ROLLED IN THE PRESENCE OF THE PROJECT GEOTECHNICAL ENGINEER (OR RELEVANT AUTHORITY) AND BE APPROVED TO HAVE A

OF THE SUBGRADE SHOULD BE BETWEEN 90% AND 120% OF O.M.C. ANY SOFT SPOTS ENCOUNTED SHALL BE EXCAVATED AND REPLACED WITH COMPACTED FILL IN LAYERS NOT GREATER THAN 150mm THICK TO A MINIMUM

DENSITY OF 95% M.M.D.D MEASURED IN ACCORDANCE WITH AS 1289.5.2.1.

MINIMUM CBR OF 3% UNLESS NOTED OTHERWISE. THE MOISTURE CONTENT

THE MATERIAL TO BE USED AS FILL SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. THE CLIENT IS TO BE ADVISED OF ANY VARIATION WORKS RELATING TO SUBGRADE PREPARATION PRIOR TO PROCEEDING WITH ANY REMEDIAL

- C6. ALL DRAINAGE, WORKMANSHIP AND MATERIALS TO COMPLY WITH: AS 3500.3:2018 (STORMWATER DRAINAGE) AS 2870:2011 (RESIDENTIAL SLABS AND FOOTINGS). VICROAD STANDARD DRAWINGAS AND SPECIFICATIONS. RELEVANT AUTHORITY AS APPLICABLE.
- C7. FINISHED SURFACES ADJACENT TO BUILDINGS ARE TO FALL 50mm MIN AWAY FROM BUILDING FOR THE FIRST METRE.
- C8. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND IDENTIFY ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION.
- C9. PRIOR TO COMMENCING WORK THE CONTRACTOR IS TO ENSURE THAT ALL NECESSARY INVESTIGATION IS UNDERTAKEN TO ENSURE THAT THE WORKS CAN BE CONSTRUCTED AS DESIGNED. IF THE WORK CANNOT BE CARRIED OUT AS SHOWN THE CLIENT IS TO BE NOTIFIED IMMEDIATELY.
- C10. REFER TO ARCHITECTS DRAWINGS FOR CONSTRUCTION LEVELS. REFER ANY DISCREPANCIES TO THE ARCHITECT.
- C11. ALL EXISTING UNDERGROUND SERVICES ARE TO BE LOCATED PRIOR TO ANY EXCAVATION AND NO EXISTING SERVICE SHALL BE DISCONNECTED OR DISTURBED WITHOUT THE APPROVAL OF THE CLIENT OR RESPONSIBLE AUTHORITY.
- C12. ALL PIT COVERS TO COMPLY WITH AS3500.3:2018 'STORMWATER AND DRAINAGE' AND AS3996-2006 'ACCESS COVERS AND GRATES'. BUILDER TO CONFIRM ALL PIT COVER TYPES AND FINISH WITH THE ARCHITECT AND/OR SUPERINTENDENT AND ENSURE FIT FOR PURPOSE PRIOR TO ORDERING
- C13. STORMWATER DRAINS SUSPENDED UNDER SLABS OR ALONG WALLS SHALL BE TO APPROVED DETAILS.
- C14. ANY MISALIGNMENTS THAT MAY BE SOLVED BY CORBELLING OF PIT WALLS MAY ONLY BE CARRIED OUT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- C15. ALL DOWNPIPE COLLECTOR PIPES SHALL MATCH DOWNPIPE SIZE (100 DIA MIN) AT A GRADE OF 1 IN 100 UNLESS NOTED OTHERWISE.
- C16. ALL PIPE JUNCTIONS SHALL BE MADE WITH A 45° JOINT.
- C17. CLASS OF PIPES:
- (a) CONCRETE PIPES (RC) SHALL CONFORM TO AS 1342 "PRECAST CONCRETE DRAINAGE PIPES" AND SHALL BE CLASS 2 PIPE WITH SPIGOT AND SOCKET RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL CONCRETE PIPES UNDER PAVEMENTS TO BE CLASS 4
- (b) FIBRE REINFORCED CEMENT PIPES (FRC) SHALL CONFORM TO AS 1342 "PRECAST CONCRETE DRAINAGE PIPES" AND SHALL BE TESTED TO THE REQUIREMENTS OF AS 1712 APPENDIX D "ASBESTOS CEMENT SEWER PIPES". ALL FRC PIPES SHALL BE CLASS X WITH ADCOL "V" RING JOINTS. FOR PIPE SIZES GREATER THAN 300mm ALTERNATIVE JOINTING MAY BE

PERMITTED WITH THE APPROVAL OF THE CITY ENGINEER.

UNPLASTICISED PVC PIPES (UPVC)

(c) (c.1) WITHIN PROPERTY:

ALL UPVC PIPES SHALL CONFORM TO AS 2032 "CODE PRACTISE FOR THE INSTALLATION OF UPVC PIPES" PART 7 AND SHALL BE CLASS 6 SEWER QUALITY OR HEAVY DUTY STORMWATER DEPENDING ON APPLICATION. ALL JOINTING PROCEDURES SHALL CONFORM TO AS 2032 PART 3 AND SHALL BE EITHER SOLVENT WELDED OR RUBBER RING JOINTS.

WITHIN ROAD RESERVE:

(c.2) ALL UPVC PIPES SHALL CONFORM TO AS 1260 "UNPLASTICISED P.V.C (UPVC) PIPES AND FITTING FOR SEWERAGE APPLICATIONS" PARTS 1 TO 5 AND SHALL BE CLASS S.H PIPES

LOCATION	MINIMUM COVER (mm)	
	CAST IRON, GALVANIZED STEEL	PLASTICS
1. NOT SUBJECT TO VEHICULAR LOADING		
a) WITHOUT PAVEMENT -		
i) FOR SINGLE DWELLING; OR	100	100
ii) FOR OTHER THAN SINGLE DWELLINGS	100	300
b) WITH PAVEMENT OF BRICK OR UNREINFORCED CONCRETE	100*	100*
2. SUBJECT TO VEHICULAR LOADING		
a) OTHER THAN ROADS:		
i) WITHOUT PAVEMENT	300	450
ii) WITH PAVEMENT OF -		
A) REINFORCED CONCRETE FOR HEAVY VEHICULAR LOADING; OR	NIL*	100*
B) BRICK OR UNREINFORCED CONCRET FOR LIGHT VEHICULAR LOADING.	NIL*	75*
b) ROADS:		•
i) SEALED; OR	600	600
ii) UNSEALED	600	750
3. SUBJECT TO CONSTRUCTION EQUIPMENT LOADING OR IN EMBANKMENT CONDITIONS	600	750
4. LAND ZONE OF AGRICULTURAL USE	600	600
*DELOW THE HINDERCIDE OF THE DAYEMENT		

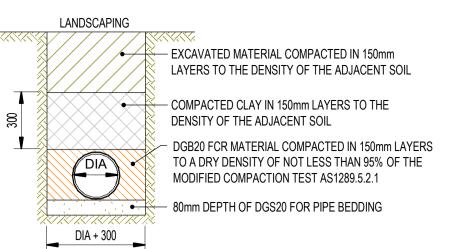
- *BELOW THE UNDERSIDE OF THE PAVEMENT.
- C19. WHERE A DRAIN IS LAID PARALLEL TO A FOOTING IT IS TO BE LOCATED SUCH THAT THE BASE OF ANY OF THE TRENCH IS NOT BELOW THE LINE OF INFLUENCE OF THE FOOTING WHICH IS 1H: 1V IN CLAY OR 2H: 1V IN SAND SOILS.
- C20. ALL DRAINAGE EXCAVATIONS ARE TO BE BACKFILLED WITH A SUITABLE APPROVED MATERIAL. UNDER SEALED PAVEMENTS AND BUILDING SLABS, THIS SHALL BE 20mm, DGS20. BACKFILL TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm LOOSE THICKNESS TO A DRY DENSITY OF NOT LESS THAN 95% OF THE MODIFIED COMPACTION TEST AS 1289.5.2.1
- C21. FOR CONCRETE HEADWALL DETAILS REFER RELEVANT AUSTRALIAN STANDARDS AUTHORITY REQUIREMENT OR RMS SPECIFICATIONS.
- C22. ALL CONCRETE SHALL BE 32MPa STRENGTH GRADE COMPLYING WITH THE REQUIREMENTS OF AS 1379:1991. UNLESS SPECIFIED OTHERWISE.
- C23. ALL PIPING THAT PENETRATES A FOOTING/STRUCTURE IS TO BE LAGGED WITH A COMPRESSIBLE MATERIAL, 50mm MINIMUM.
- C24. CONTRACTOR / BUILDER IS TO COMPLETE ALL LINE MARKINGS AS INDICATED ON ARCHITECTURAL DRAWINGS AND SPECIFICATIONS UNLESS NOTED OTHERWISE. REFER TO ARCHITECT FOR SET OUT OF LINE MARKING. ALL LINE MARKING TO BE COMPLETED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AUTHORITY REQUIREMENT OR RMS SPECIFICATIONS.
- C25. CONTRACTOR / BUILDER SHALL ALLOW FOR AND OBTAIN ALL NECESSARY AUTHORITY APPROVALS AND PERMITS.
- C26. UNLESS NOTED OTHERWISE, ALL PAVEMENT CONSTRUCTION TO FOLLOW THE RELEVANT RMS OR LOCAL AUTHORITY STANDARDS AND SPECIFICATIONS.

DEPTH TO	MINIMUM INTERNAL DIMENSIONS (mm)			
OUTLET	RECTANGULAR		CIRCULAR	
	WIDTH	LENGTH	DIAMETER	
≤600	350	350	-	
≤600	450	450	600	
>600 <u>≤</u> 900	600	600	900	
>900 <1200	600	900	1000	
>1200	900	900	1000	

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS



DIAL 1100 DIAL BEFORE YOU DIG CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS



PIPE LAYING DETAIL - LANDSCAPE AREAS

- 1. IN REACTIVE SOILS OR WHERE TRENCH IS NEAR FOUNDATIONS, CLAY OR IMPERVIOUS MATERIAL SHALL BE USED AS BACKFILL. WHERE POSSIBLE, MAINTAIN 1.5m HORIZONTAL CLEARANCE FROM BUILDINGS.
- FOR REINFORCED CONCRETE PIPES IF DIAMETER GREATER THAN 300mm, USE A BEDDING DEPTH OF 100mm OF 20mm OR LESS NOMINAL SIZE DGB20.
- 3. ALL TRENCHES OVER 1.5m DEPTH TO BE IN ACCORDANCE WITH CURRENT OH&S (CONFINED SPACES) REGULATIONS AND THE CODE OF PRACTICE FOR CONFINED SPACES.

GALVANISED HEAVY DUTY GRATE

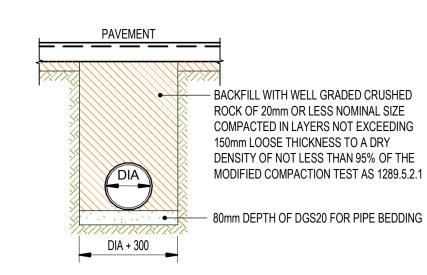
CANNOT RUN ACROSS GRATE. —

MINIMUM LONGITUDINAL

SLOPE 1:200 TO OUTLET

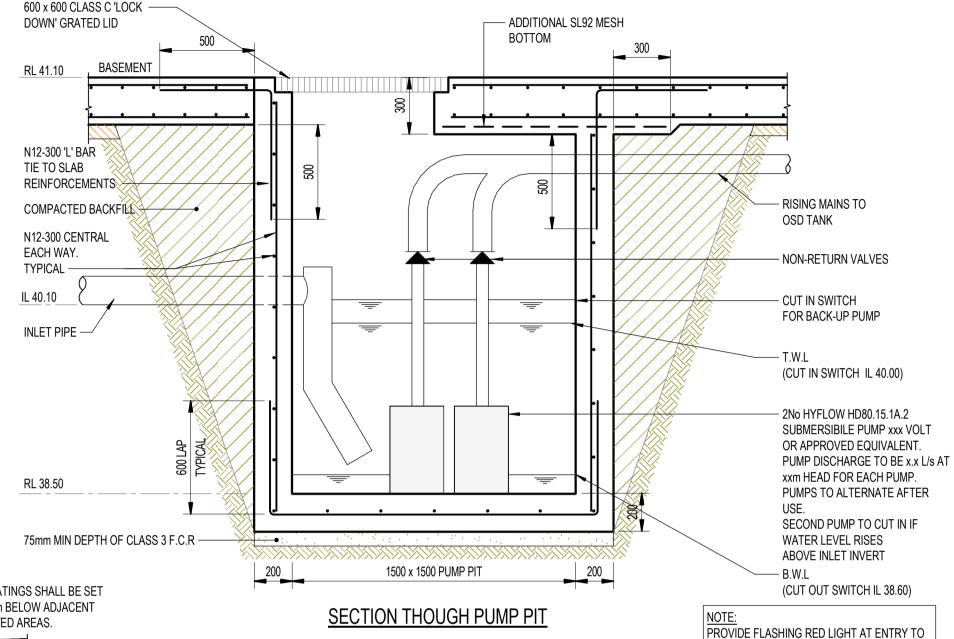
N12-200 EACH WAY

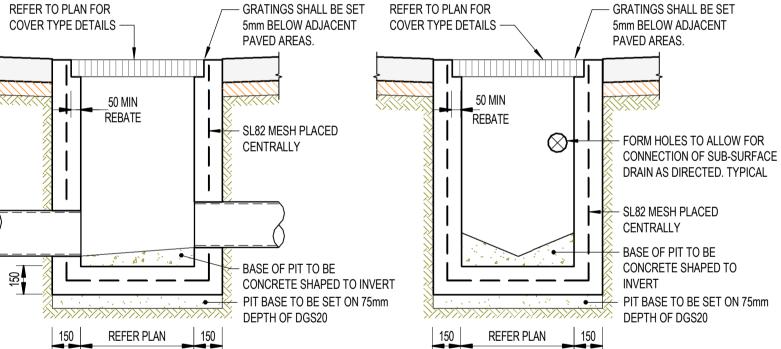
WITH LONGITUDINAL BARS SO WATER



PIPE LAYING DETAIL - PAVED AREAS

- 1. IN REACTIVE SOILS OR WHERE TRENCH IS NEAR FOUNDATIONS, CLAY OR IMPERVIOUS MATERIAL SHALL BE USED AS BACKFILL. WHERE POSSIBLE, MAINTAIN 1.5m HORIZONTAL CLEARANCE FROM BUILDINGS.
- 2. FOR REINFORCED CONCRETE PIPES IF DIAMETER GREATER THAN 300mm, USE A BEDDING DEPTH OF 100mm OF 20mm OR LESS NOMINAL SIZE DGB20.
- 3. ALL TRENCHES OVER 1.5m DEPTH TO BE IN ACCORDANCE WITH CURRENT OH&S (CONFINED SPACES) REGULATIONS AND THE CODE OF PRACTICE FOR CONFINED





OUTLET AT TRENCH

LOWPOINT

GRATED TRENCH DETAIL

SCALE 1:10

- REFER PLANS FOR SLAB AND RAMP

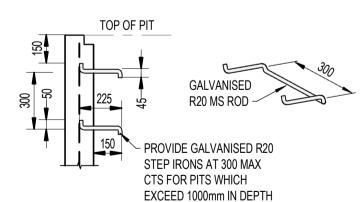
GRATE REINFORCEMENT

REINFORCEMENT. LAP WITH TRENCH

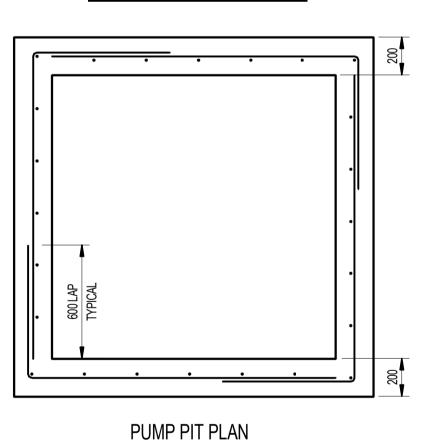
GRATED PIT DETAIL (JUNCTION PIT SIMILAR)

1. ALL GRATED LIDS ARE TO BE FABRICATED TO SUIT INVERT PROFILE

- OF PAVEMENT OR ROAD. 2. ALL JUNCTION PIT LIDS TO BE CAST IRON, CONCRETE INFILL TYPE
- UNLESS NOTED OTHERWISE.
- 3. REFER TO PIT SCHEDULE OR PLAN FOR TYPE AND DIMENSIONS. 4. FOR PITS GREATER THAN 1000mm IN DEPTH, PROVIDE STEP IRONS AT 300mm CTS AS PER DETAIL ON THIS DRAWING.



TYPICAL STEP IRON DETAIL



A 24 HOUR x 12 MONTHLY EMERGENCY AND MAINTAINENCE CONTRACT SHALL BE OBTAINED FROM A

COMPANY CAPABLE OF EXECUTING THE WORK THAT SHALL BE KEPT IN FORCE BY THE PROPERTY

CARRY OUT ROUTINE MAINTAINENCE TO PUMPS AS RECOMMENDED BY THE MANUFACTURE CHECK OPERATIONAL SEQUENCE OF LEVEL SWITCHES, PUMPS AND CONTROL PANEL. 6. THE EMERGENCY CONTRACT SHALL PROVODE A 24 HOUR x 7 DAY PER WEEK SERVICE.

THE CONTRACTOR SHALL PROVIDE A NAME PLATE STATING NAME, WORKING HOURS, TELEPHONE NUMBER AND OUT OF HOURS NUMBER AND SUCH NAME PLATE SHALL BE FIXED TO THE FRONT OF THE

THE MAINTAINENCE CONTRACT SHALL BE CARRIED OUT EVERY THREE (3) MONTHS AND SHALL INCLUDE

PUMP PIT MAINTAINENCE SCHEDULE

THE FOLLOWING ACTIVITIES:

A. PUMPS FOR WEAR

B. PUMP OIL SEALS

C. PUMP STRAINER AND CLEAN.

CHECK:

CONTROL PANEL.

OWNER(S) FOR THE LIFE OF THE BUILDING.

CLEAN OUT PIT OF ALL SILT AND DEBRIS.

CHECK AND CLEANOUT, IF NECESSARY, ALL PIPELINES.

POWER BACK-UP NOTE POWER BACK-UP SUPPLY IS REQUIRED TO MAINTAIN PUMP OPERATION FOR MINIMUM 3 HOURS IN THE EVENT OF POWER FAILURE. REFER TO THE PUMP MANUFACTURERS FOR

CARPARK IN THE EVENT OF PUMP FAILURE.

LIGHT TO FLASH UNTIL TURNED BY MANUAL

SWITCH. POWER TO PUMPS BY ELECTRICAL

CONTRACTOR

DETAILED DESIGN OF PUMP PIT TO BE CONFIRMED DURING CC DOCUMENTATION

DETAILS AND REQUIREMENTS.

Suite 14.02. Level 14, 49 York Street

ISSUE

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A SECTION 4.55 ISSUE

1 PRELIMINARY ISSUE

CIVIL NOTES AND DETAILS SHEET

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PRELIMINARY ISSUE

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REVISION

DESIGNING THE FUTURE

Melbourne Sydney Geelong Ballarat

CIVIL LEGEND

LEVEL

√P99.99

ŢK99.99

JW99.99

TP99.99

IL99.99

P99.50

P100.00

-AG----AG-

• DP

FW/FA

• DR

TD

ITEM

TOP OF KERB LEVEL

TOP OF WALL LEVEL

INTERMEDIATE CONTOURS

TOP OF PIT LEVEL

MAIN CONTOURS

STORMWATER PIPE

WATER SERVICE

SEWER SERVICE

ELECTRICITY SEVICE

TELECOM SERVICE

GAS SERVICE

FLOOR WASTE

FROM ABOVE

TO BELOW

DROPPER

PIT NUMBER

FOR DETAILS)

JUNCTION PIT (JP)

GRATED PIT (GP)

SIDE ENTRY PIT (SEP)

GRATED TRENCH DRAIN (TD)

BASEMENT SPOON DRAIN

BARRIER KERB & CHANNEL

PAVEMENT SPOON DRAIN

BARRIER KERB

RETAINING WALL

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28/06/22

16/06/22

DATE

POLY PIT (PP)

DOWNPIPE

OVERHEAD ELECTRICITY SEVICE

FLOOR WASTE WITH DROPPER

FLOOR WASTE WITH DROPPER

INSPECTION OPENING

VERTICAL STRIP DRAIN

(REFER PIT SCHEDULE

AGI PIPES

INVERT LEVEL

EXISTING

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×EK99.99

EW99.99

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-AG----AG-

-W-----W-

-S----S-

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Ex DP

NOT FOR CONSTRUCTION OR PRICING