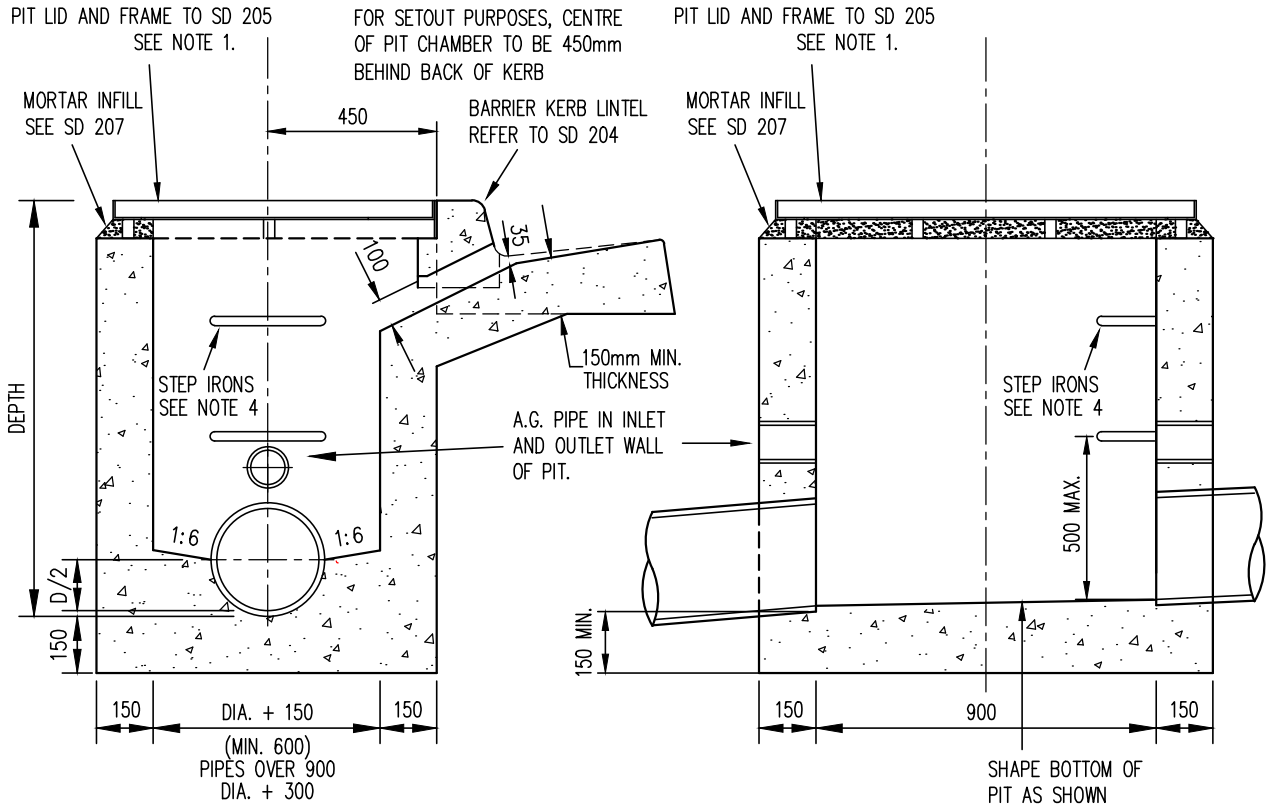
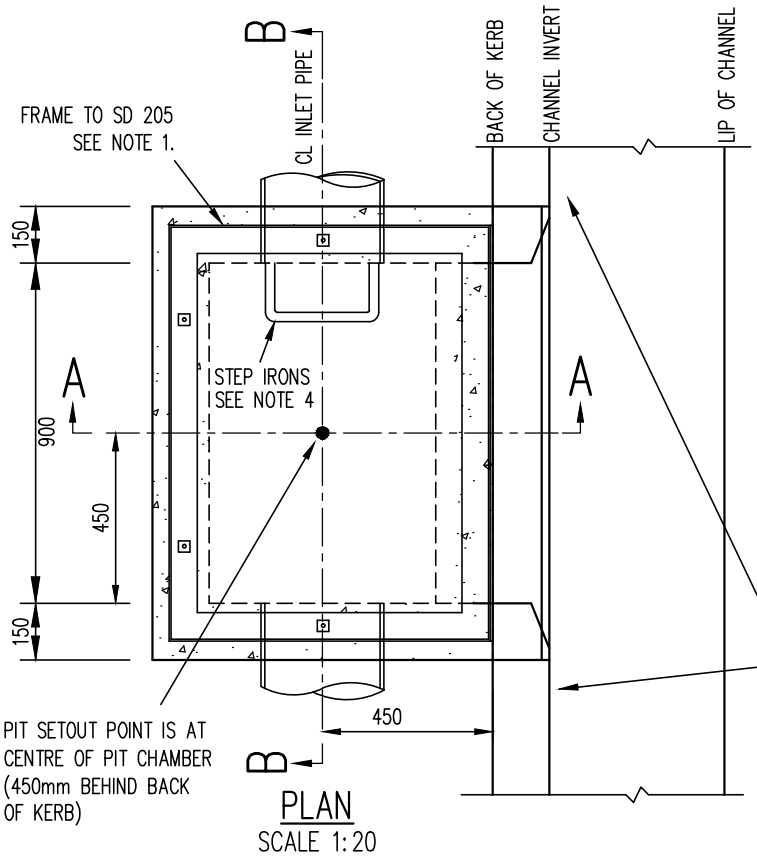


SECTION A–A
SCALE 1:20

SECTION B–B
SCALE 1:20



PLAN
SCALE 1:20

NOTES:

1. COMPOSITE PIT LID AND STEEL FRAME TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205
2. IN NATURE STRIPS PIT LIDS TO BE KHAKI GREEN. IN PLAIN COLOUR CONCRETE PAVING PIT LIDS TO BE STORM GREY. IN OTHER PAVED AREAS COLOUR OF PIT LIDS SHALL BE MATCHED TO COLOUR OF PROPOSED FINISHED SURFACE. CONTACT LID MANUFACTURER TO ARRANGE SUITABLE CUSTOM COLOUR MATCH
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
4. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228. MA. DISTANCE FROM BOTTOM STEP IRON TOP FLOOR OF PIT SHALL BE NO MORE THAN 500mm

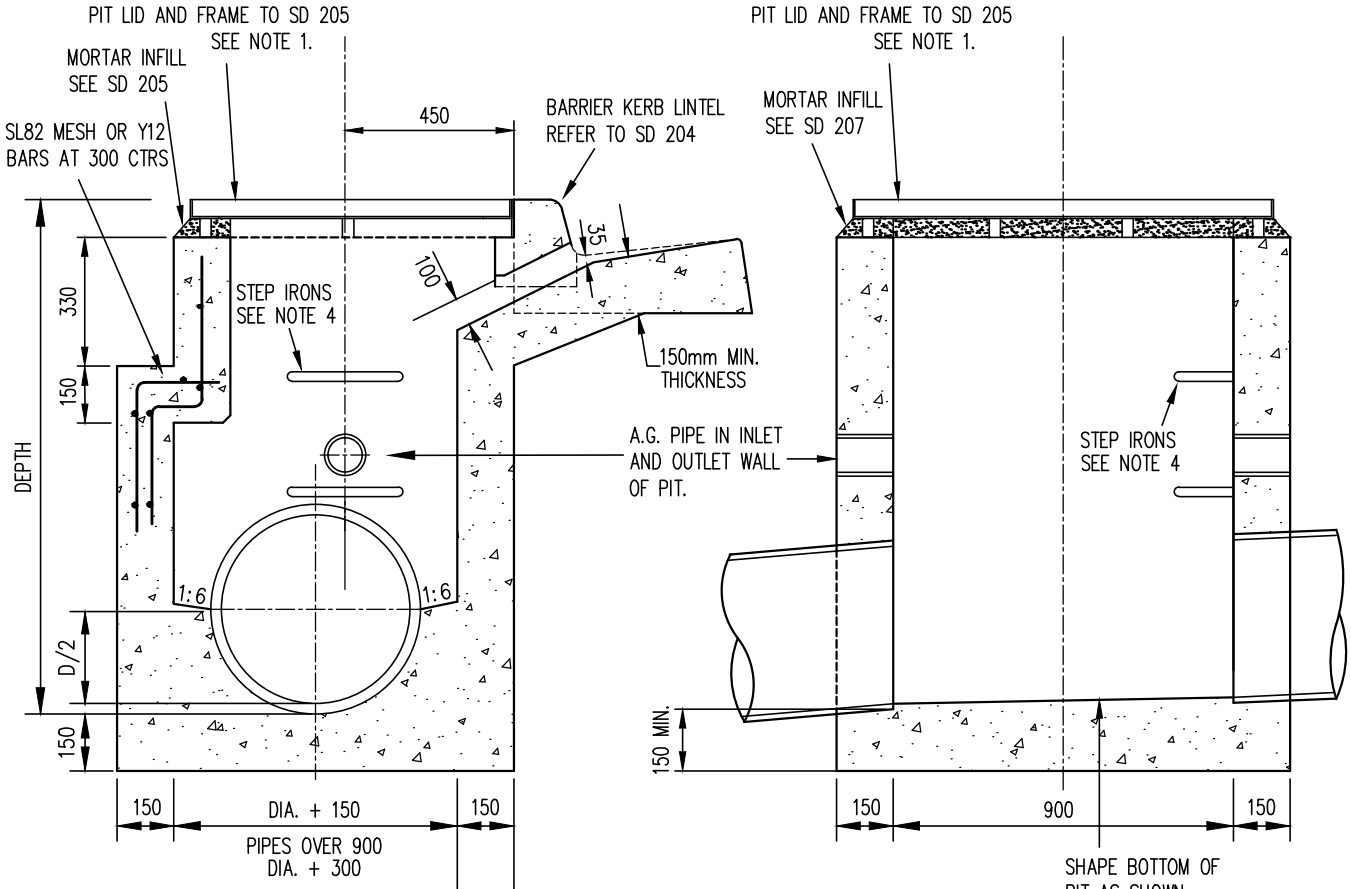
GREATER DANDENONG

SIDE ENTRY PIT TYPE 1A
TO SUIT BARRIER TYPE KERB AND CHANNEL
PIPE DIAMETER UP TO 450mm

LAST UPDATED – SEPTEMBER 2014

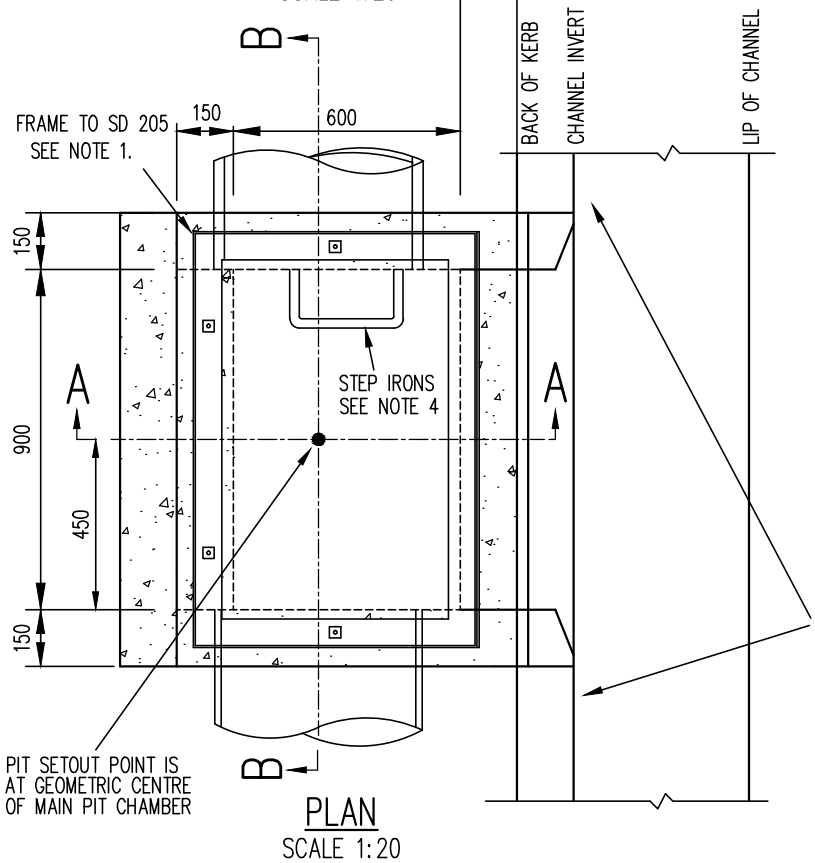
INFRASTRUCTURE PLANNING

SD 200–A



SECTION A–A
SCALE 1:20

SECTION B–B
SCALE 1:20



PLAN
SCALE 1:20

NOTES:

1. COMPOSITE TYPE PIT LID AND STEEL FRAME TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205
2. IN NATURE STRIPS PIT LIDS TO BE KHAKI GREEN. IN PLAIN COLOUR CONCRETE PAVING PIT LIDS TO BE STORM GREY. IN OTHER PAVED AREAS COLOUR OF PIT LIDS SHALL BE MATCHED TO COLOUR OF PROPOSED FINISHED SURFACE. CONTACT LID MANUFACTURER TO ARRANGE SUITABLE CUSTOM COLOUR MATCH
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
4. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228

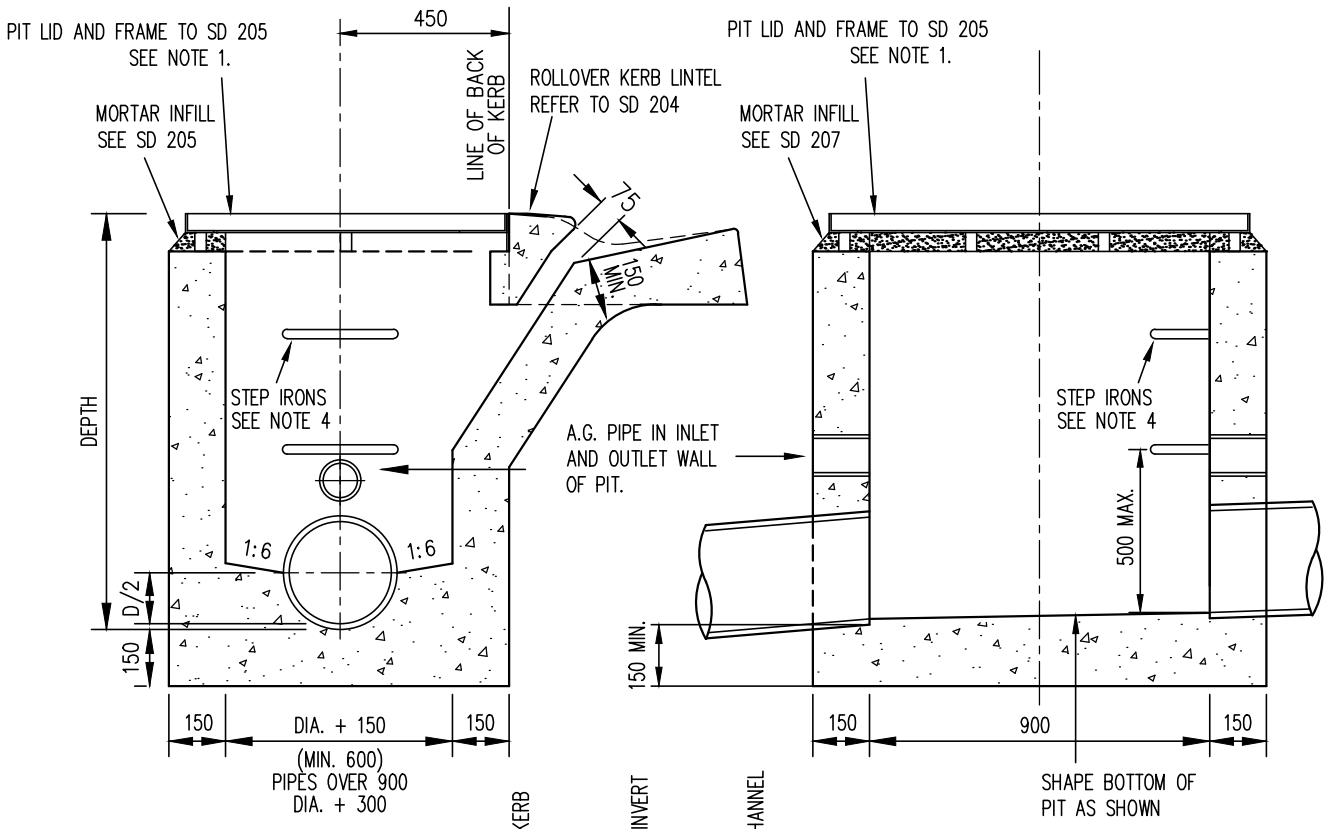
GREATER DANDENONG

SIDE ENTRY PIT TYPE 1B
TO SUIT BARRIER TYPE KERB AND CHANNEL
PIPE DIAMETER EXCEEDS 450mm

LAST UPDATED – MARCH 2015

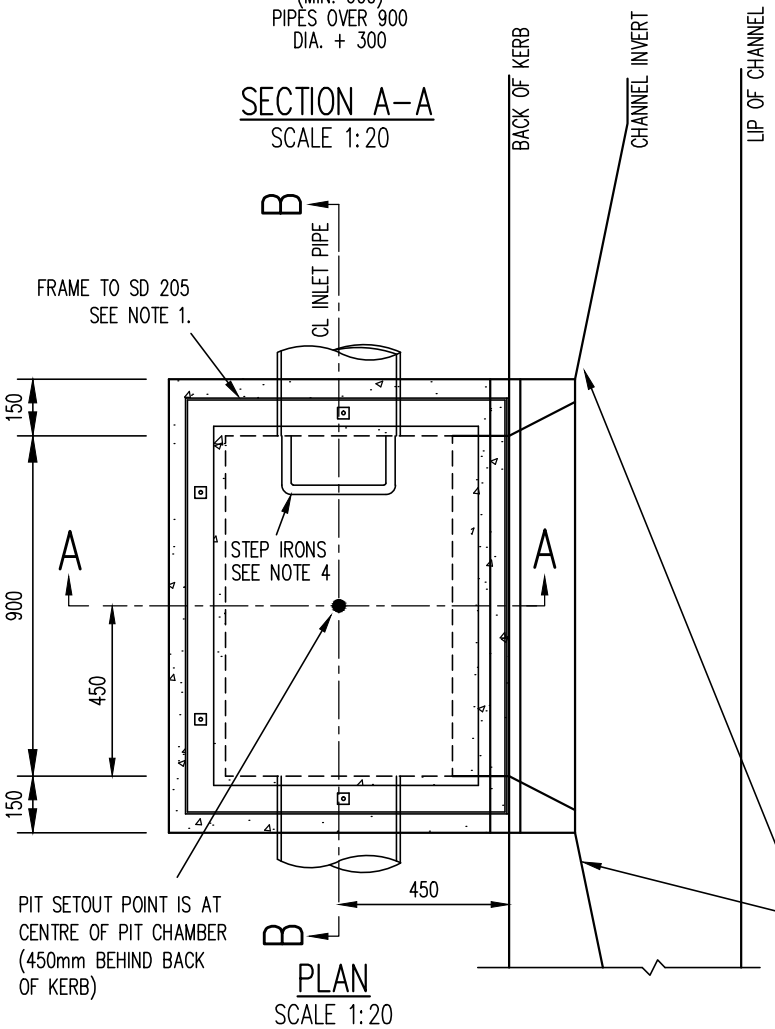
INFRASTRUCTURE PLANNING

SD 201–B



SECTION A–A
SCALE 1:20

SECTION B–B
SCALE 1:20



PLAN
SCALE 1:20

NOTES:

1. COMPOSITE PIT LID AND STEEL FRAME TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205
2. IN NATURE STRIPS PIT LIDS TO BE KHAKI GREEN. IN PLAIN COLOUR CONCRETE PAVING PIT LIDS TO BE STORM GREY. IN OTHER PAVED AREAS COLOUR OF PIT LIDS SHALL BE MATCHED TO COLOUR OF PROPOSED FINISHED SURFACE. CONTACT LID MANUFACTURER TO ARRANGE SUITABLE CUSTOM COLOUR MATCH
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
4. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228. MA. DISTANCE FROM BOTTOM STEP IRON TOP FLOOR OF PIT SHALL BE NO MORE THAN 500mm

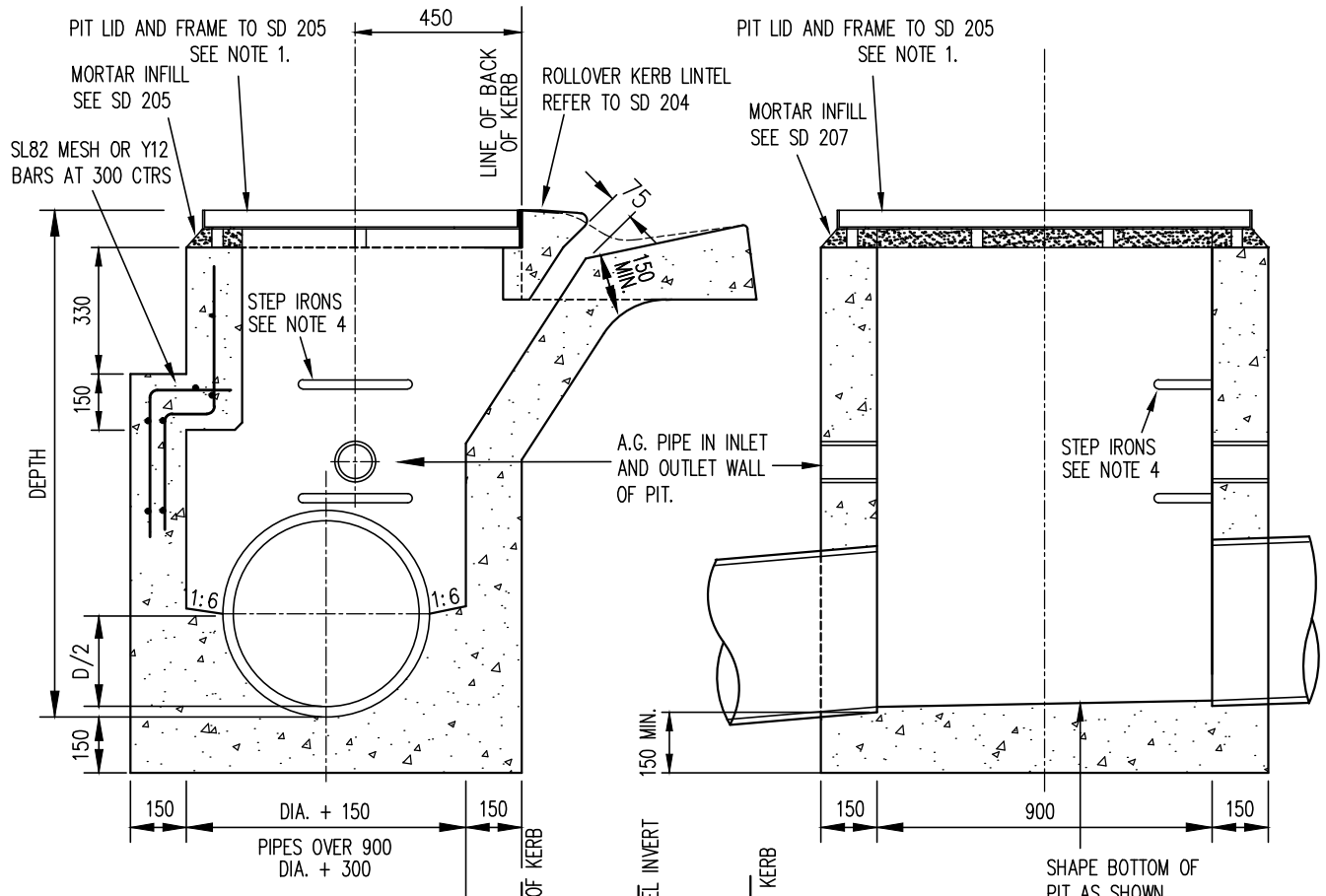
GREATER DANDENONG

SIDE ENTRY PIT TYPE 2A
TO SUIT ROLLOVER TYPE KERB AND CHANNEL (SD 403)
PIPE DIAMETER UP TO 450mm

LAST UPDATED – SEPTEMBER 2014

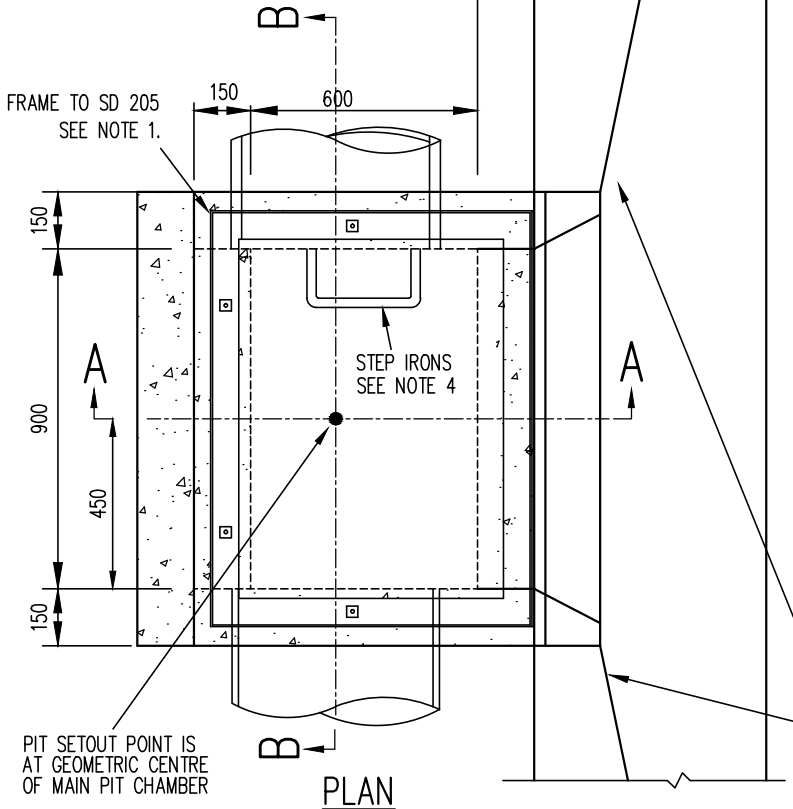
INFRASTRUCTURE PLANNING

SD 202–A



SECTION A–A
SCALE 1:20

SECTION B–B
SCALE 1:20



PLAN
SCALE 1:20

NOTES:

1. COMPOSITE PIT LID AND STEEL FRAME TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205
2. IN NATURE STRIPS PIT LIDS TO BE KHAKI GREEN. IN PLAIN COLOUR CONCRETE PAVING PIT LIDS TO BE STORM GREY. IN OTHER PAVED AREAS COLOUR OF PIT LIDS SHALL BE MATCHED TO COLOUR OF PROPOSED FINISHED SURFACE. CONTACT LID MANUFACTURER TO ARRANGE SUITABLE CUSTOM COLOUR MATCH
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
4. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228

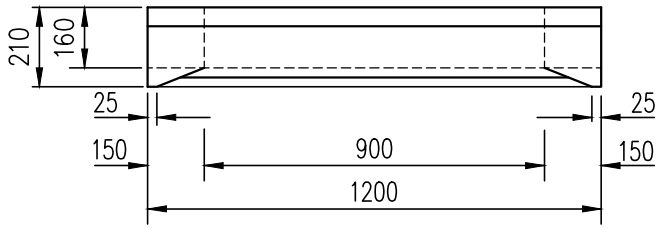
GREATER DANDENONG

SIDE ENTRY PIT TYPE 2B
TO SUIT ROLLOVER TYPE KERB AND CHANNEL (SD 403)
PIPE DIAMETER EXCEEDS 450mm

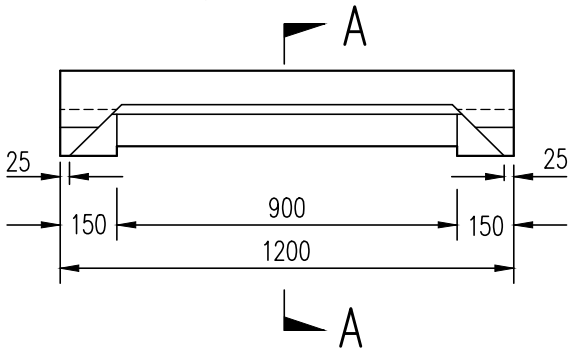
LAST UPDATED – MARCH 2015

INFRASTRUCTURE PLANNING

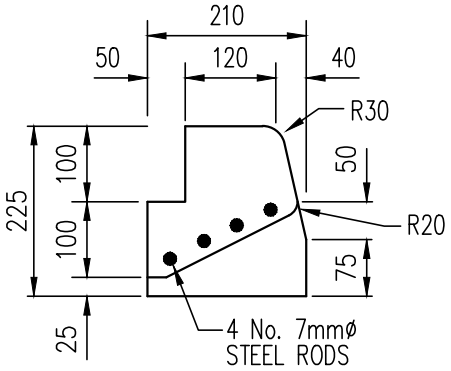
SD 203–B



PLAN
SCALE 1:20
LINTEL TO BE SVC BERWICK TYPE CODE 15.231
OR APPROVED EQUIVALENT

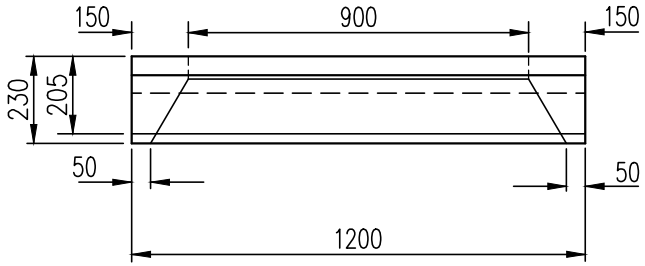


FRONT ELEVATION
SCALE 1:20

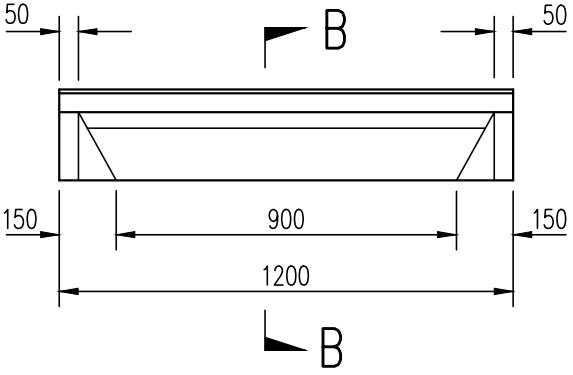


SECTION A–A
SCALE 1:10

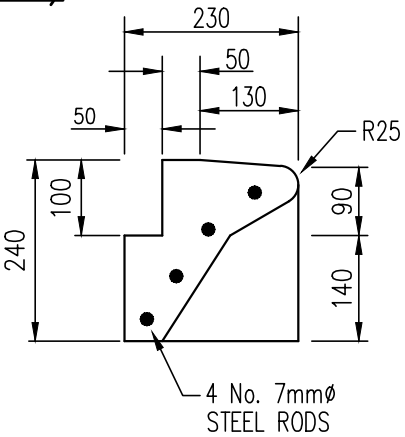
PRECAST LINTEL FOR SIDE ENTRY PITS TYPE 1 (BARRIER KERB SD 400)



PLAN
SCALE 1:20
LINTEL TO BE SVC HASTINGS TYPE CODE 15.232
OR APPROVED EQUIVALENT



FRONT ELEVATION
SCALE 1:20



SECTION B–B
SCALE 1:10

PRECAST LINTEL FOR SIDE ENTRY PITS TYPE 2 (ROLLOVER KERB SD 403)

GREATER DANDENONG

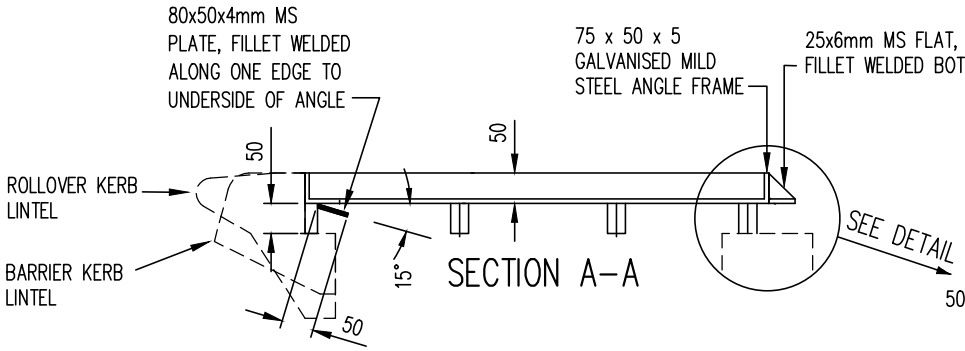
PRECAST LINTELS FOR SIDE ENTRY PITS

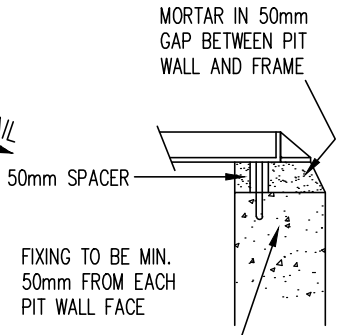
TYPE 1 TO SUIT BARRIER TYPE KERB AND CHANNEL (SD 400)
AND TYPE 2 TO SUIT ROLLOVER KERB AND CHANNEL (SD 403)

LAST UPDATED – SEPTEMBER 2014

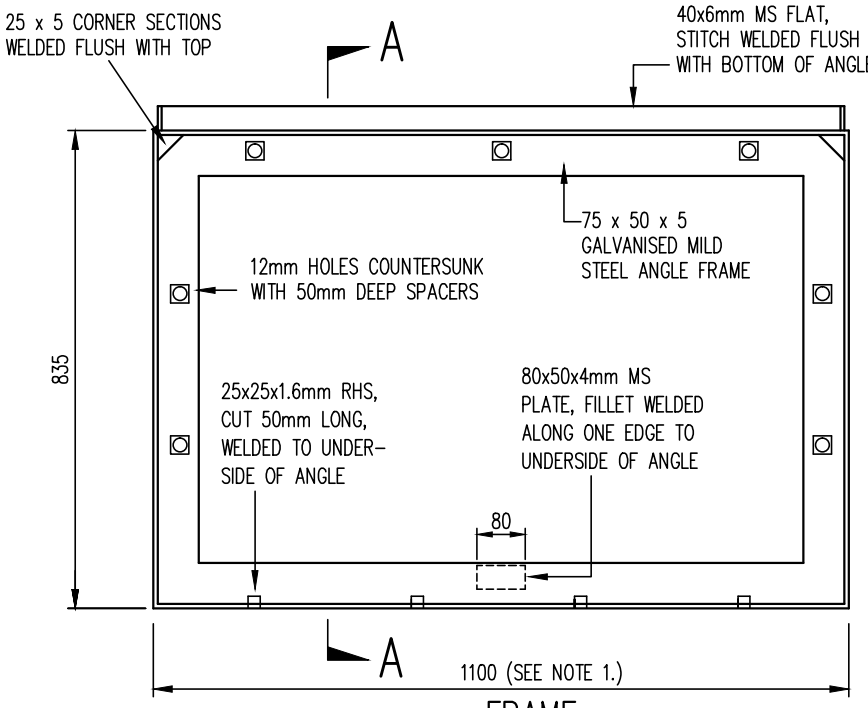
INFRASTRUCTURE PLANNING

SD 204–A

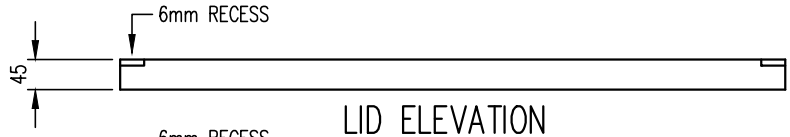




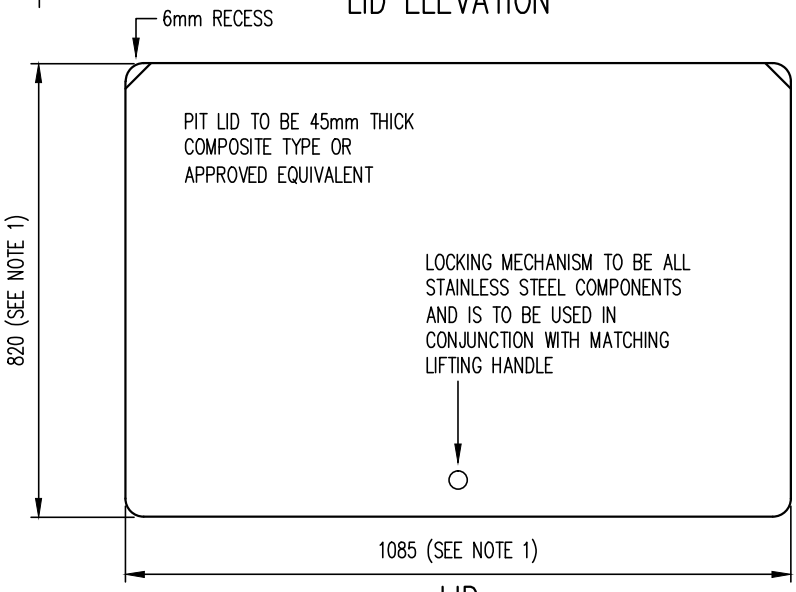
FIXING DETAIL



FRAME



LID ELEVATION



LID

NOTES:

1. DIMENSIONS GIVEN ARE FOR STANDARD TYPE 1 AND TYPE 2 SIDE ENTRY PITS. FOR FITTING TO NON STANDARD PITS WITH DIFFERENT DIMENSIONS OR WITH DIFFERENT SETBACKS FROM BACK OF KERB, STEEL FRAME DETAILS WILL NEED TO BE MODIFIED TO ENSURE THAT FIXING BOLTS ARE LOCATED A MINIMUM OF 50mm FROM THE FACE (INTERIOR OR EXTERIOR) OF THE PIT WALL.

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE AS SHOWN OR COUNCIL APPROVED EQUIVALENT, COMPLIANT WITH AS3996–2006 AND AS 4586–2004.

3. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

GREATER DANDENONG

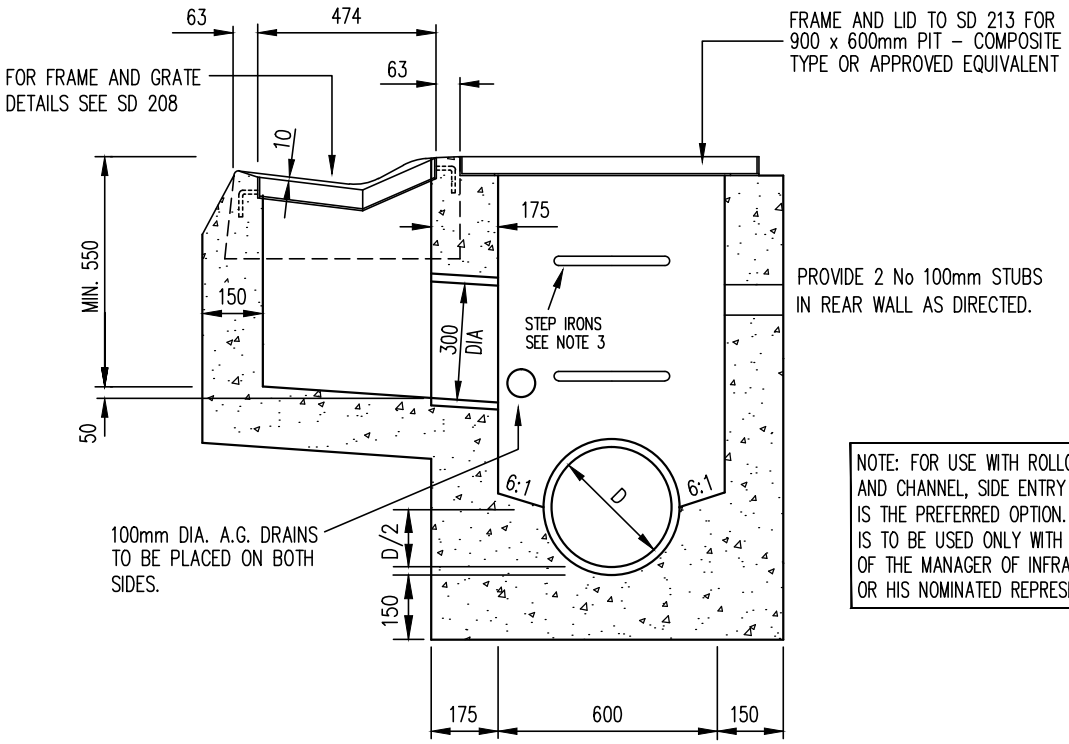
STANDARD PIT LID AND FRAME

FOR SIDE ENTRY PITS TYPE 1 AND 2

LAST UPDATED – SEPTEMBER 2014

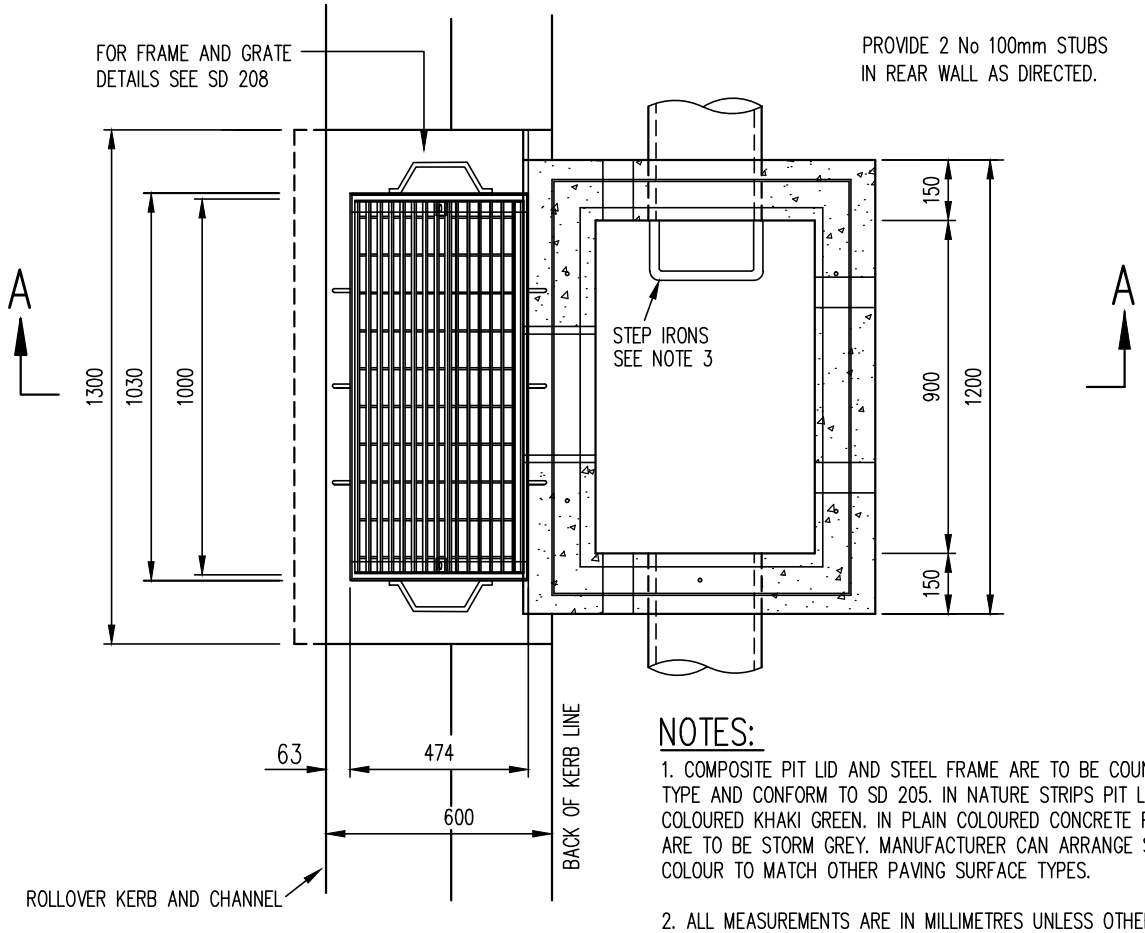
INFRASTRUCTURE PLANNING

SD 205–A



SECTION A–A

NOTE: FOR USE WITH ROLLOVER KERB AND CHANNEL, SIDE ENTRY PIT SD 202 IS THE PREFERRED OPTION. THIS PIT IS TO BE USED ONLY WITH THE APPROVAL OF THE MANAGER OF INFRASTRUCTURE OR HIS NOMINATED REPRESENTATIVE.



PLAN

NOTES:

1. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

2. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

3. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228) MAXIMUM DISTANCE FROM BOTTOM STEP IRON TO FLOOR OF PIT SHALL BE 500mm.

GREATER DANDENONG

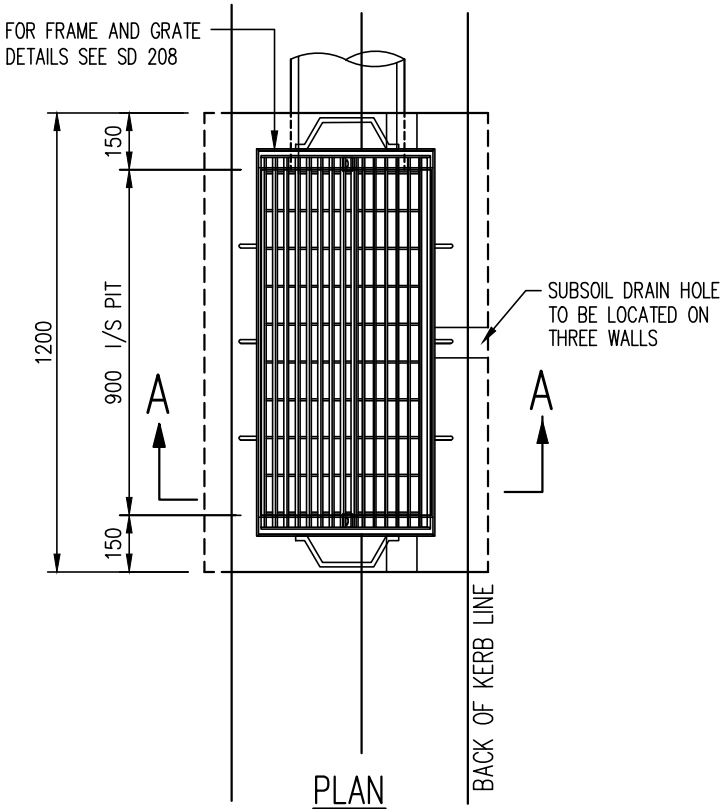
LAST UPDATED – SEPTEMBER 2014

GRATING PIT

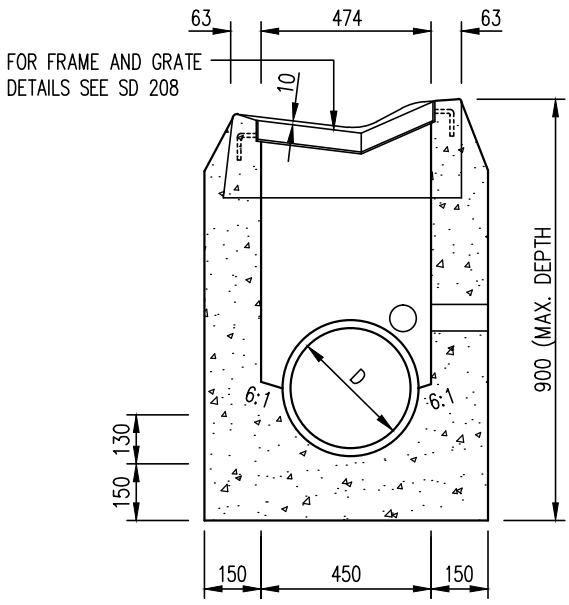
MAIN PIT CHAMBER BEHIND KERB
TO SUIT ROLLOVER KERB AND CHANNEL

INFRASTRUCTURE PLANNING

SD 206–A



PLAN
SCALE 1:20



SECTION A–A
SCALE 1:20

NOTE:

ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

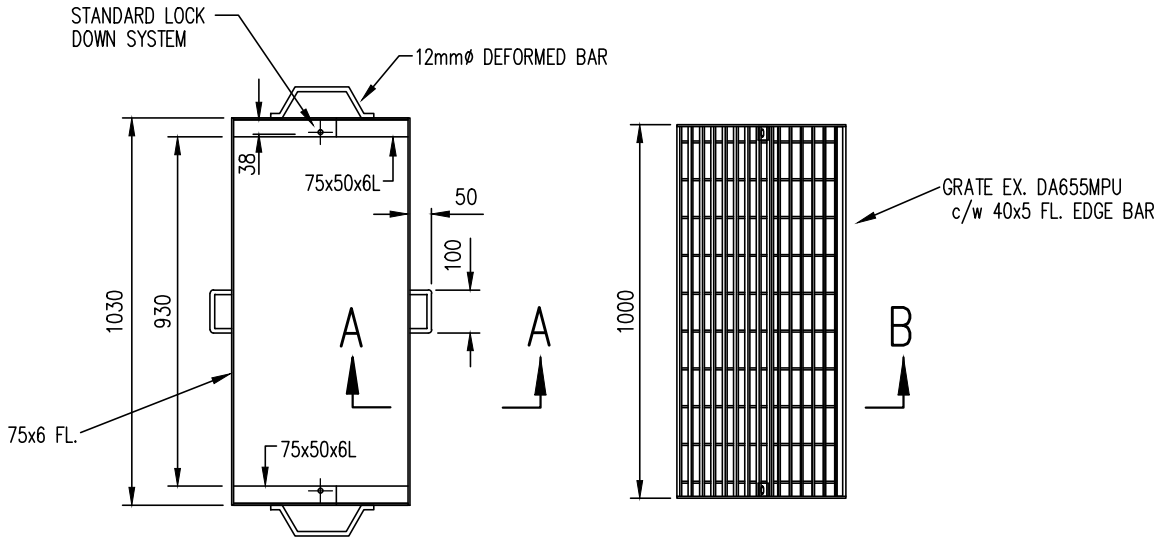
GREATER DANDENONG

GRATING PIT
UNDER ROLLOVER KERB AND CHANNEL

LAST UPDATED – SEPTEMBER 2014

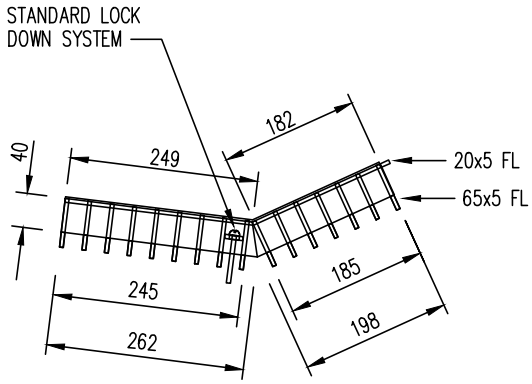
INFRASTRUCTURE PLANNING

SD 207–A



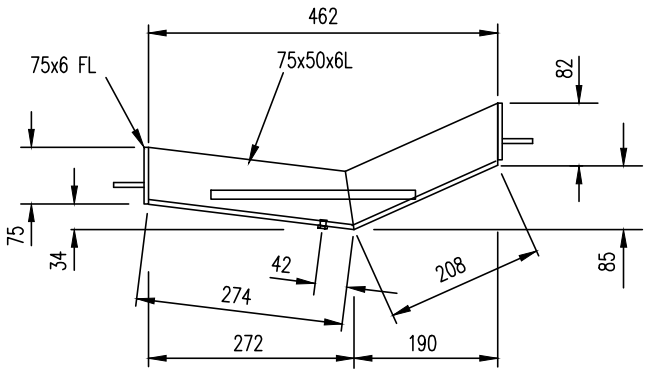
NOTES

1. FINISH – HOT DIPPED GALVANISED.
2. WEIGHT – 58 KG.
3. ALL MEASUREMENTS ARE IN MILLIMETRES.
4. GRATES ARE AVAILABLE FROM WEBFORGE (VIC.) 142–146 FAIRBANKS ROAD, CLAYTON SOUTH Ph 03 8551 2414
   GRATE REFERENCE – MGG94HV21 (WG 21) OR APPROVED EQUIVALENT. GRATES SHALL CONFORM TO AS 3996–2006



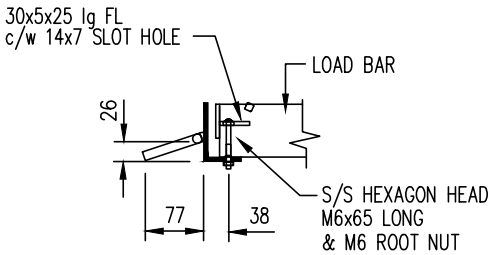
GRATE DETAIL

SCALE 1:10



FRAME DETAIL

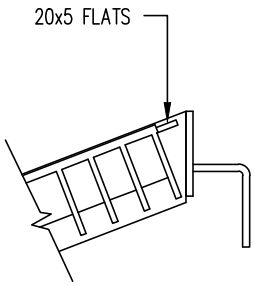
SCALE 1:10



NB. BOLT TO BE SUPPLIED WITH
20mm LONG RUBBER SLEEVE
TO BE CAST INTO CONCRETE

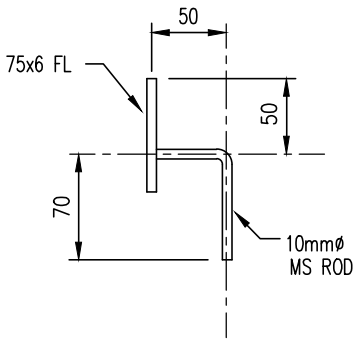
LOCK DOWN DETAIL

SCALE 1:20



SECTION B–B

NOT TO SCALE



SECTION A–A

SCALE 1:5

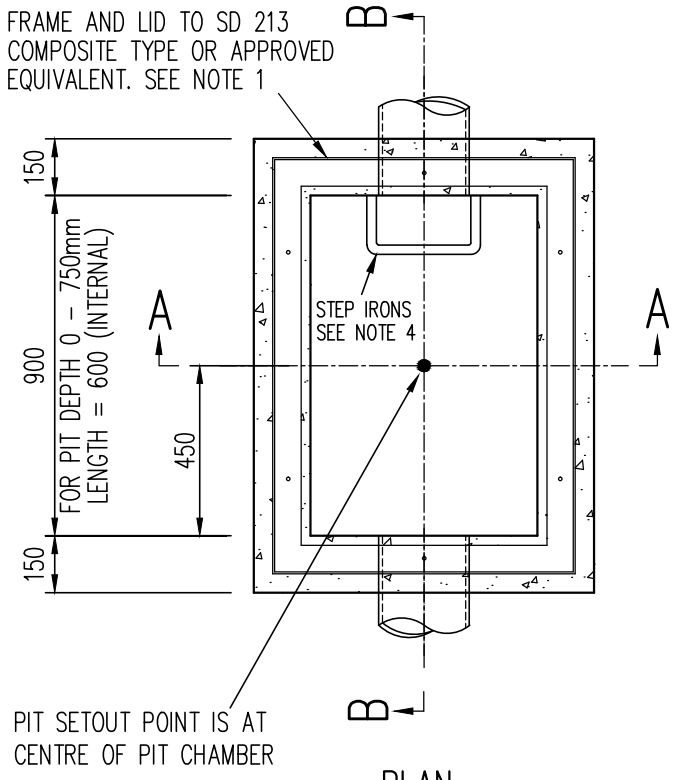
GREATER DANDENONG

GRATING PIT – GRATE AND FRAME
ROLLOVER KERB AND CHANNEL

LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 208–A



PLAN

SCALE 1:20

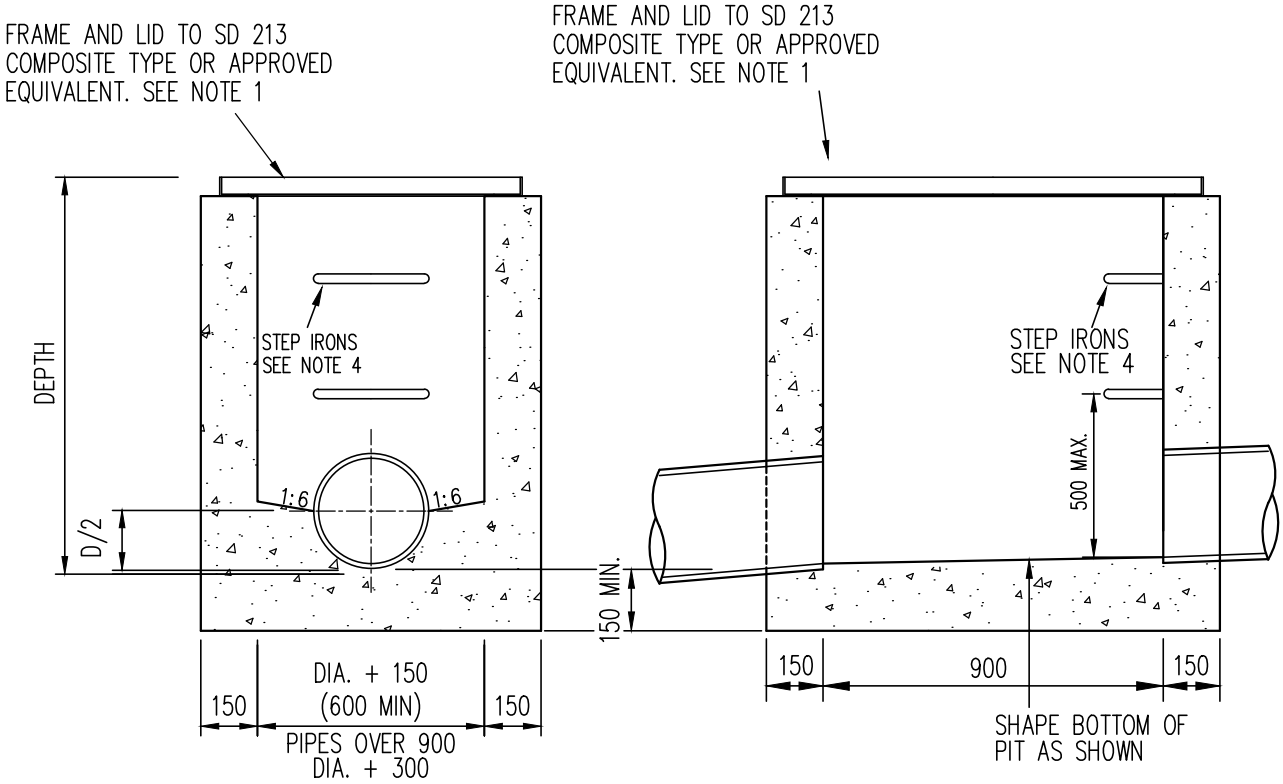
NOTES:

1. FOR FRAME FIXING DETAILS SEE SD 213

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

4. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228) MAXIMUM DISTANCE FROM BOTTOM STEP IRON TO FLOOR OF PIT SHALL BE 500mm.



SECTION A–A

SCALE 1:20

SECTION B–B

SCALE 1:20

GREATER DANDENONG

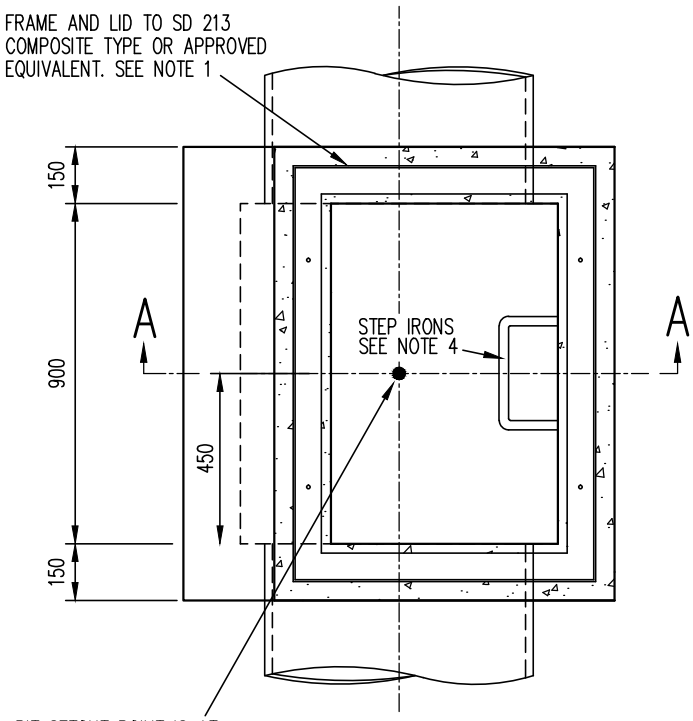
JUNCTION PIT

PIPE DIAMETER UP TO 450mm

LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 209–A



PLAN

SCALE 1:20

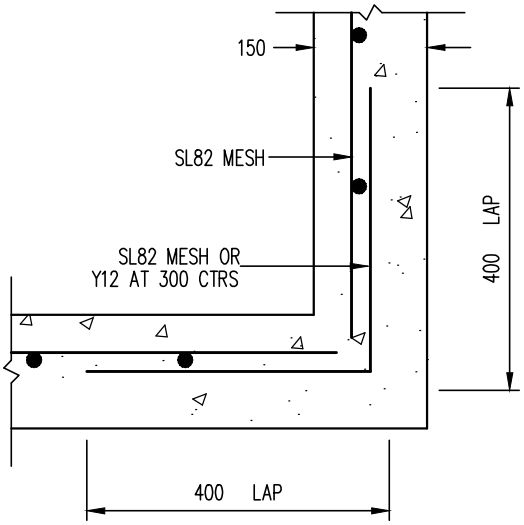
NOTES

1. FOR FRAME FIXING DETAILS SEE SD 213

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

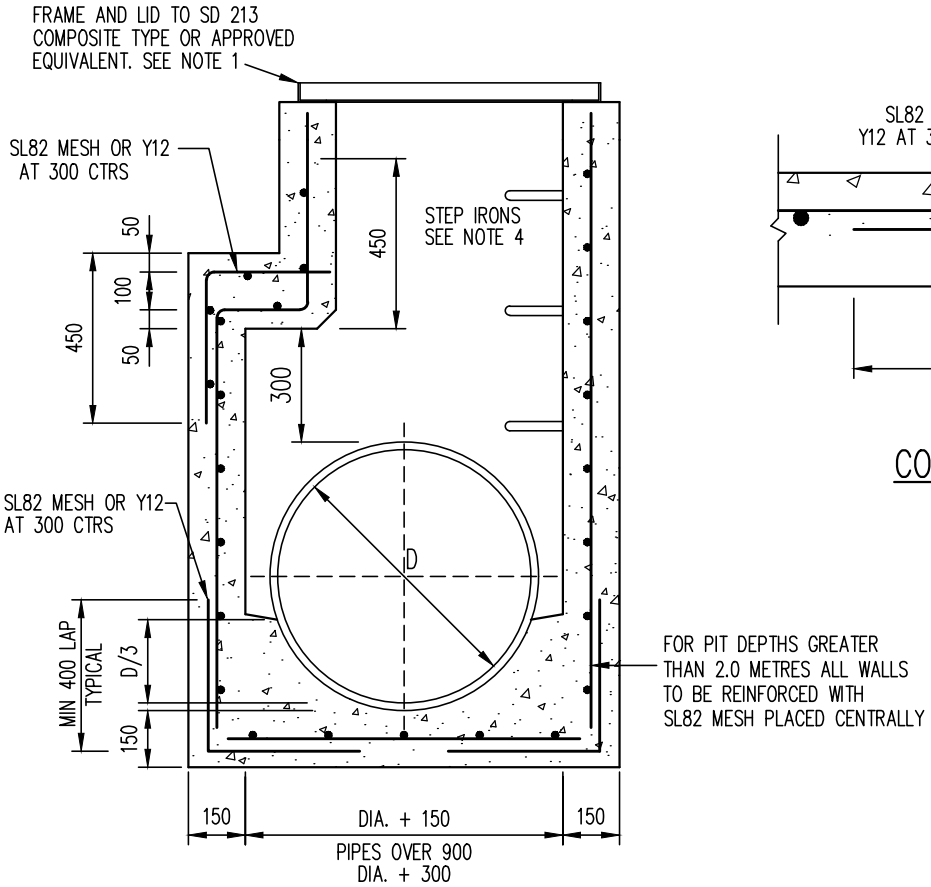
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

4. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228)



PLAN OF
CORNER DETAIL

SCALE 1:10



FOR PIT DEPTHS GREATER THAN 2.0 METRES ALL WALLS TO BE REINFORCED WITH SL82 MESH PLACED CENTRALLY

SECTION A–A

SCALE 1:20

GREATER DANDENONG

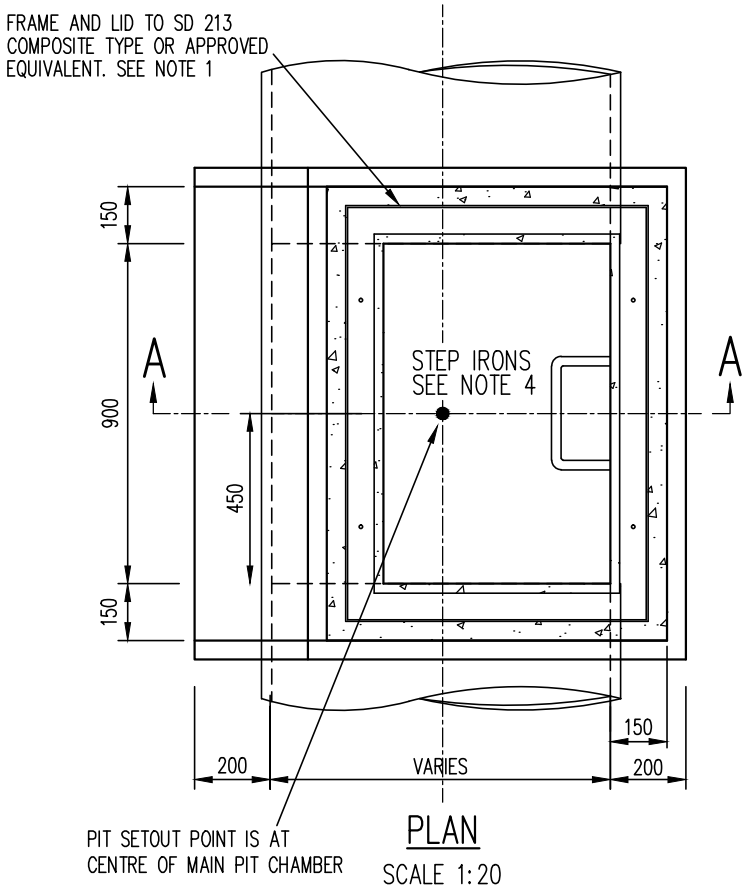
JUNCTION PIT

PIPE DIAMETER EXCEEDS 450mm

LAST UPDATED – MARCH 2015

INFRASTRUCTURE PLANNING

SD 210–B



PLAN

SCALE 1:20

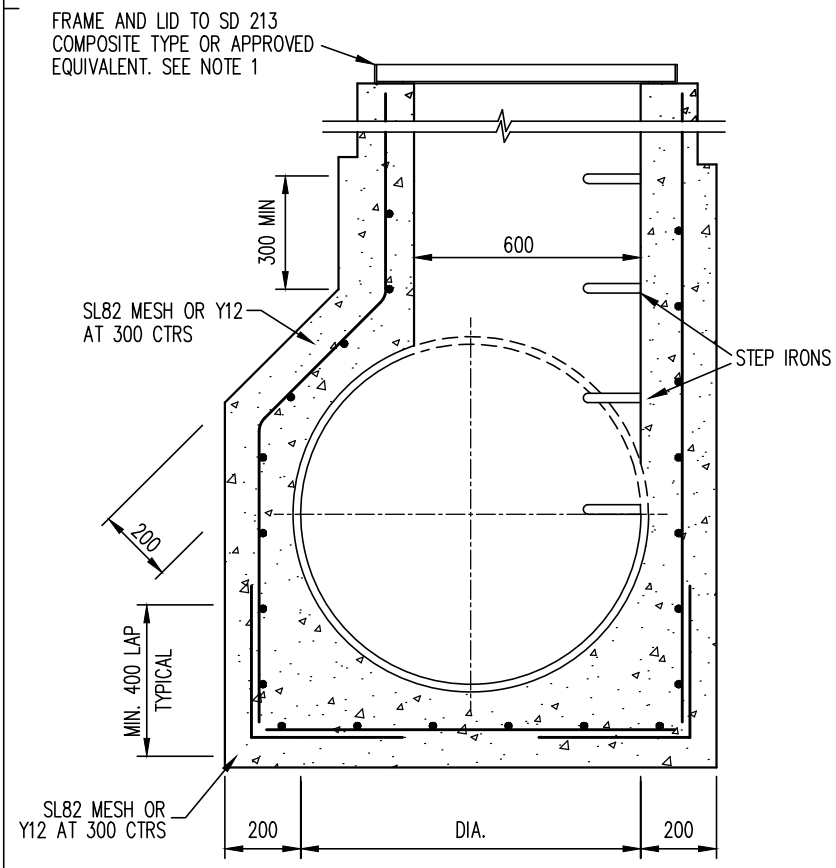
NOTES:

1. FOR FRAME FIXING DETAILS SEE SD 213

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

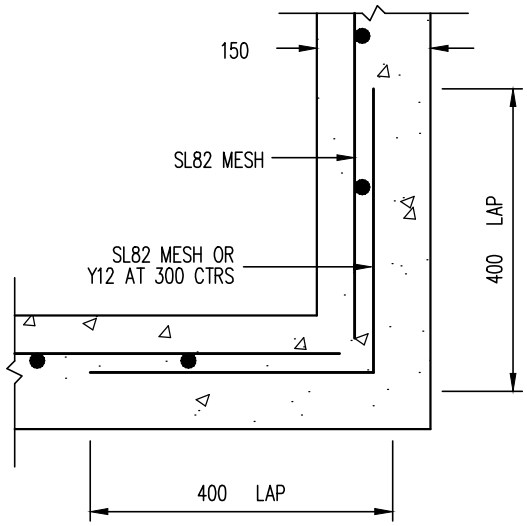
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

4. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228)



SECTION A–A

SCALE 1:20



PLAN OF
CORNER DETAIL

SCALE 1:10

GREATER DANDENONG

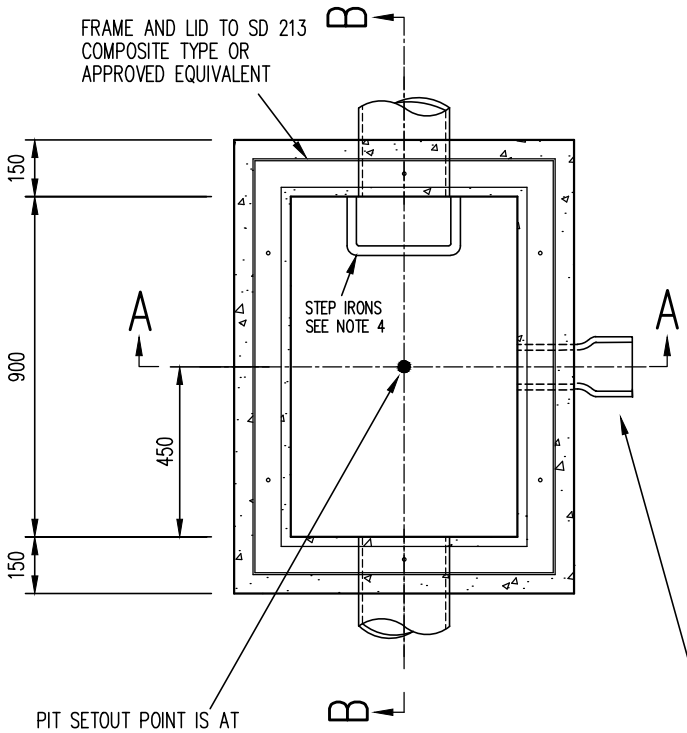
MAIN DRAIN JUNCTION PIT

PIPE DIAMETER 900mm AND ABOVE

LAST UPDATED – MARCH 2015

INFRASTRUCTURE PLANNING

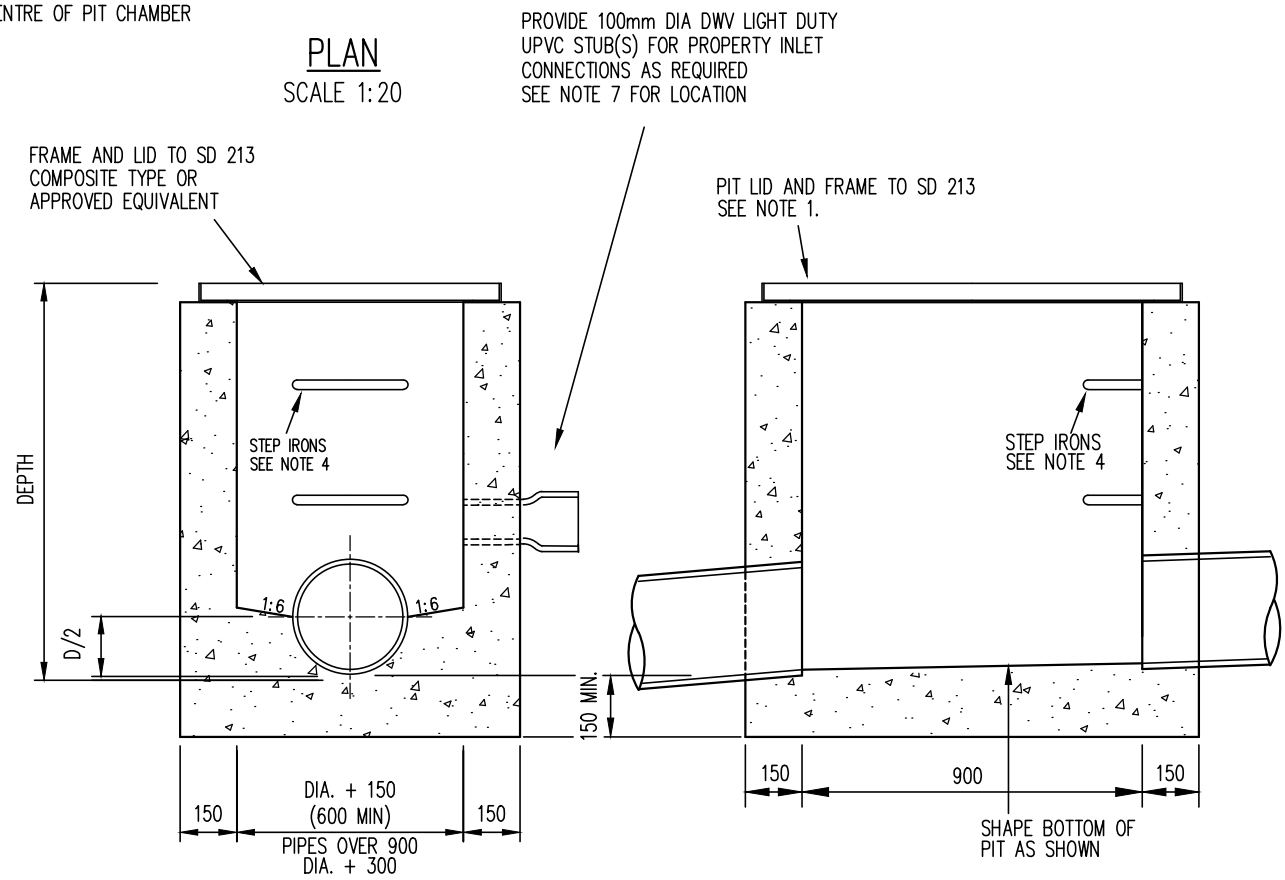
SD 211–B



PLAN
SCALE 1:20

NOTES:

1. FOR FRAME FIXING DETAILS SEE SD 213
2. PIT LIDS TO BE KHAKI GREEN.
3. ALL MEASUREMENTS ARE IN MILLIMETRES.
4. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228
5. IF PIT DEPTH IS LESS THAN 750mm PIT LENGTH CAN BE REDUCED TO 600mm
   600 x 600mm PIT TO BE FITTED WITH 800 x 800mm FRAME AND LID (COMPOSITE TYPE)
6. IF PIPE DIAMETER EXCEEDS 450mm PIT TO BE CORBELLED AND REINFORCED AS PER SD 210.
7. 100mm DIA SEWER CLASS UPVC STUB(S) FOR PROPERTY INLET CONNECTIONS TO BE PROVIDED AS REQUIRED LOCATE STUBS AS APPROPRIATE FOR CONNECTIONS OF PROPERTY INLETS AND HOUSE DRAINS AS DETAILED ON DESIGN CONSTRUCTION PLANS.
   STUBS TO BE PLACED AT AN APPROPRIATE DEPTH TO ALLOW FOR ACCEPTABLE GRADES AND COVER ON HOUSE DRAINS. (DESIRABLE MINIMUM COVER 500 – 600mm)



SECTION A–A
SCALE 1:20

SECTION B–B
SCALE 1:20

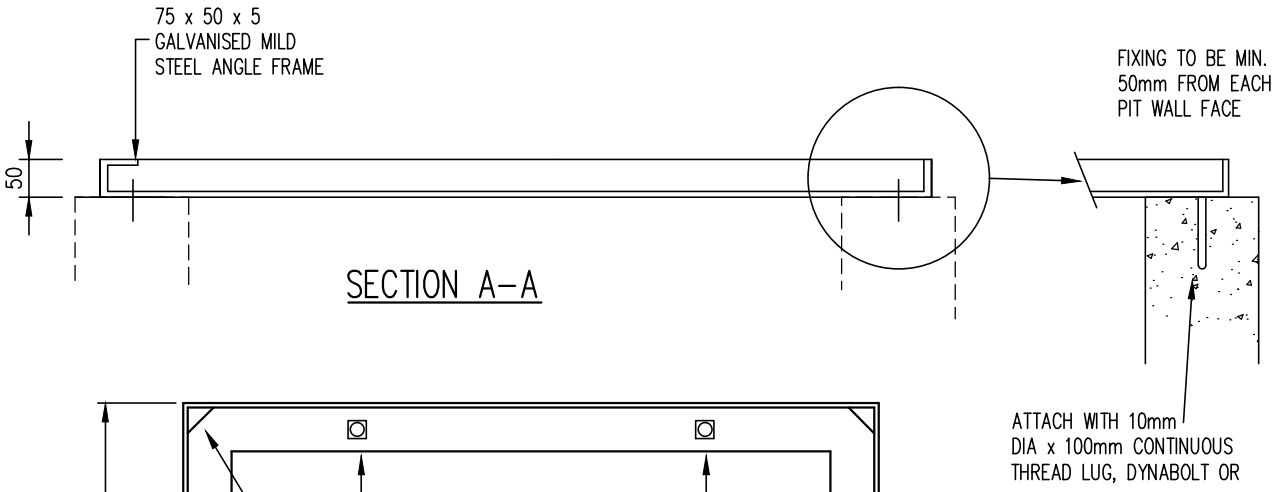
GREATER DANDENONG

LAST UPDATED – SEPTEMBER 2014

EASEMENT PIT

INFRASTRUCTURE PLANNING

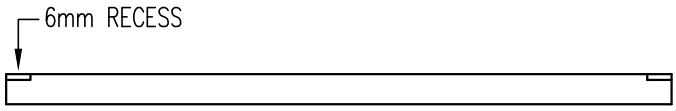
SD 212–A



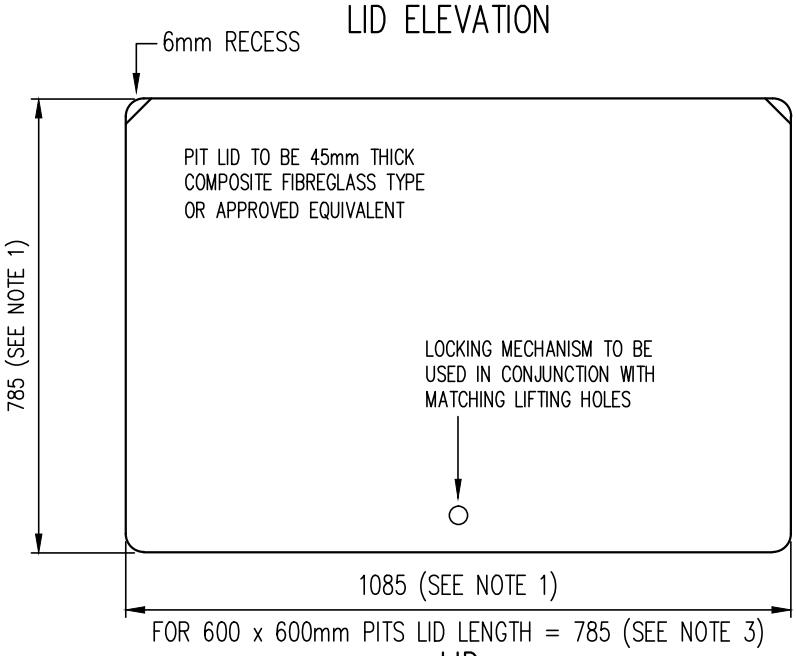
SECTION A–A

FIXING DETAIL

FRAME



LID ELEVATION



LID

NOTES:

1. DIMENSIONS GIVEN ARE FOR STANDARD EASEMENT PITS AND JUNCTION PITS. FOR FITTING TO NON STANDARD PITS WITH DIFFERENT DIMENSIONS FRAME DETAILS WILL REQUIRE MODIFICATION TO ENSURE THAT FIXING BOLTS ARE LOCATED A MIN. OF 50mm FROM THE FACE, (INTERIOR OR EXTERIOR) OF THE PIT WALL.
2. IN NATURE STRIPS AND WITHIN EASEMENTS PIT LIDS ARE TO BE KHAKI GREEN. IN PLAIN COLOUR CONCRETE PAVING PIT LIDS TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR MATCH TO OTHER PAVING SURFACE TYPES
3. FOR 600 x 600mm PITS A 800 x 800mm FRAME AND MATCHING LID IS AVAILABLE

GREATER DANDENONG

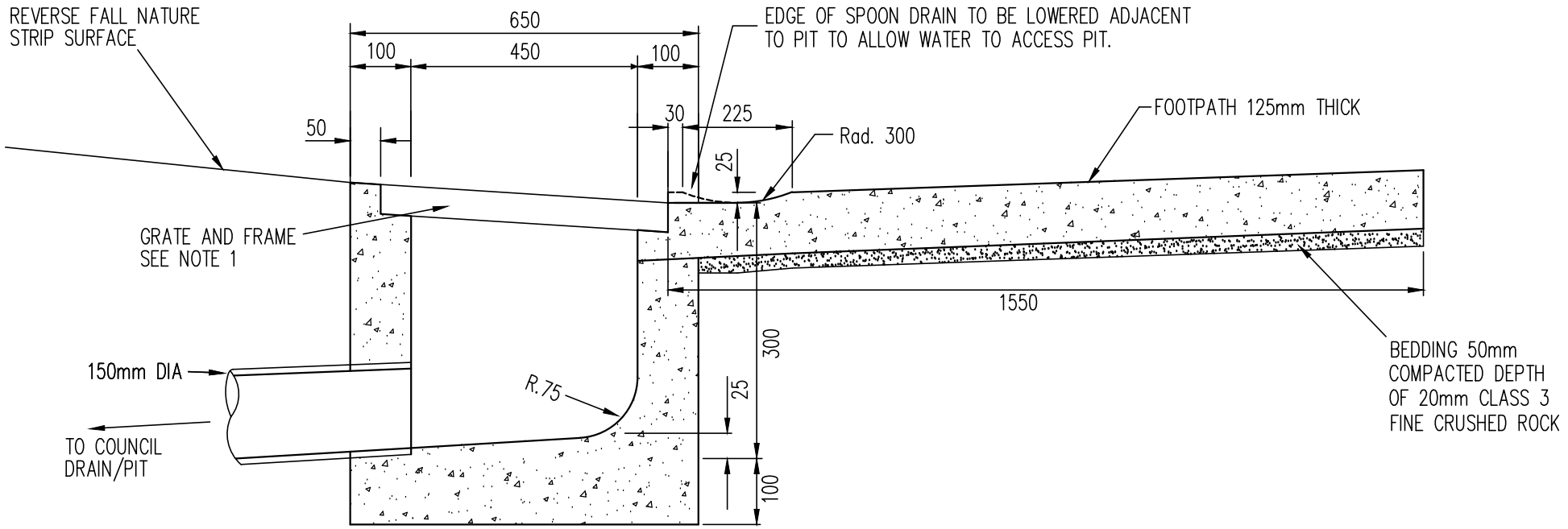
STANDARD PIT LID AND FRAME

FOR EASEMENT AND JUNCTION PITS

LAST UPDATED – MARCH 2015

INFRASTRUCTURE PLANNING

SD 213–B



ELEVATION OF PATH, SPOON DRAIN AND PIT

NOT TO SCALE

NOTES:

1. GALVANISED STEEL GRATE AND FRAME TO BE R&S ROAD SAFETY GRATING NO. SG-H-MSG-W4545 (OR APPROVED EQUIVALENT). GRATING SHALL BE PEDESTRIAN AND BICYCLE SAFE TO AS 3996-2008
2. INTERNAL DIMENSIONS OF PIT TO BE 450 x 450mm
3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

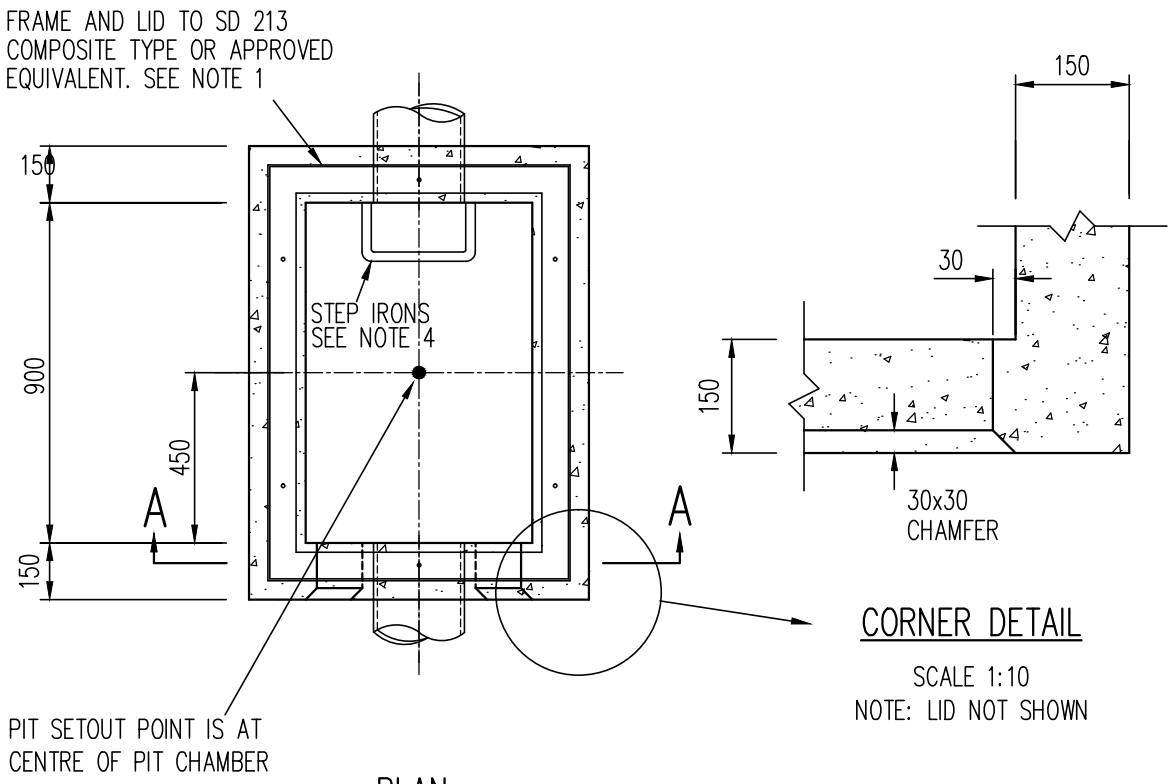
GREATER DANDENONG

FOOTPATH GRATING PIT AND SPOON DRAIN

LAST UPDATED – APRIL 2015

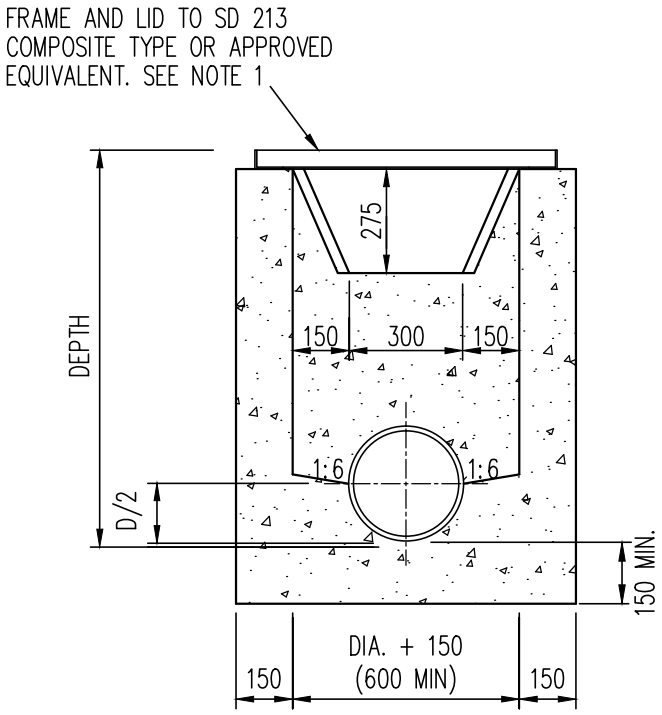
INFRASTRUCTURE PLANNING

SD 214-B



PLAN
SCALE 1:20

CORNER DETAIL
SCALE 1:10
NOTE: LID NOT SHOWN



SECTION A–A
SCALE 1:20

NOTES:

1. FOR FRAME FIXING DETAILS SEE SD 213

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. PIT LIDS ARE TO COLOURED KHAKI GREEN.

3. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

4. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228) MAXIMUM DISTANCE FROM BOTTOM STEP IRON TO FLOOR OF PIT SHALL BE 500mm.

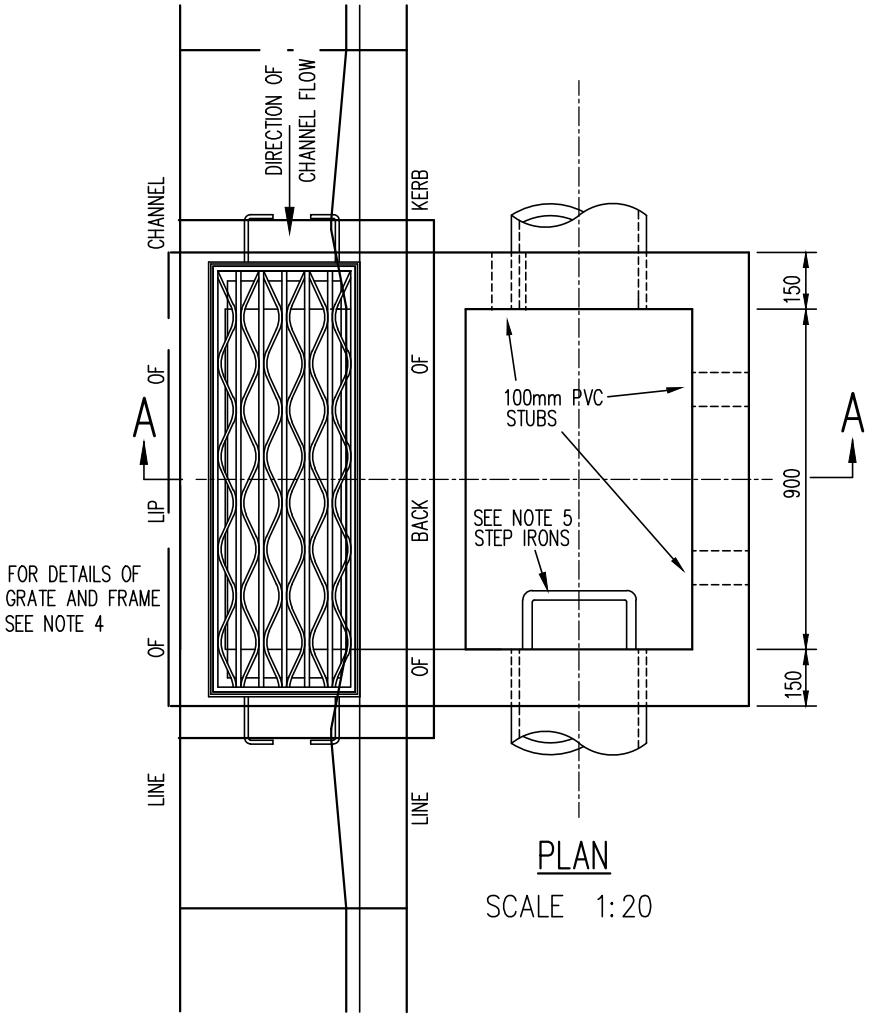
GREATER DANDENONG

ROADSIDE CATCH PIT
900 X 600mm

LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 215–A



PLAN

SCALE 1:20

NOTES

1. GRATE AND SIDE ENTRY PIT FOR PIPE DIAMETERS UP TO 450mm

2. COMPOSITE PIT LID AND STEEL FRAME ARE TO BE COUNCIL APPROVED TYPE AND CONFORM TO SD 205. IN NATURE STRIPS PIT LIDS ARE TO COLOURED KHAKI GREEN. IN PLAIN COLOURED CONCRETE PAVING PIT LIDS ARE TO BE STORM GREY. MANUFACTURER CAN ARRANGE SUITABLE CUSTOM COLOUR TO MATCH OTHER PAVING SURFACE TYPES.

3. FOR PIT LID FRAME FIXING DETAILS SEE SD 213

4. GALVANISED STEEL GRATE AND FRAME TO BE R&S GRATINGS MODEL NO.– FW–1000–0290–050–A–C–X–B–GF OR APPROVED EQUIVALENT.

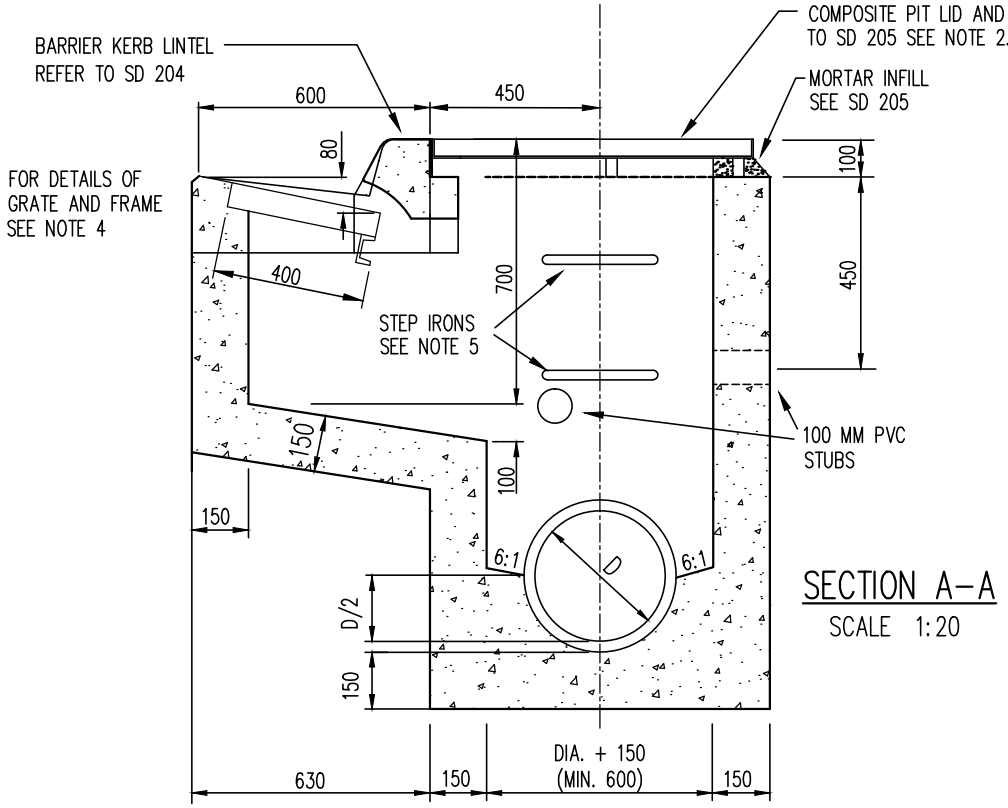
5. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228) MAXIMUM DISTANCE FROM BOTTOM STEP IRON TO FLOOR OF PIT SHALL BE 500mm.

6. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

7. PROVIDE 100mm DIA PVC STUB IN UPSTREAM END WALL OF PIT 700mm BELOW SURFACE FOR SUBSOIL DRAIN CONNECTIONS. IN BOTH ENDS OF PIT AT LOW POINTS)

8. PROVIDE 2 No. 100mm DIA PVC STUBS IN REAR WALL OF PIT, 500mm BELOW SURFACE FOR HOUSE DRAIN CONNECTIONS AS REQUIRED.

9. CONCRETE STRENGTH F'C = 25MPa



SECTION A–A

SCALE 1:20

GREATER DANDENONG

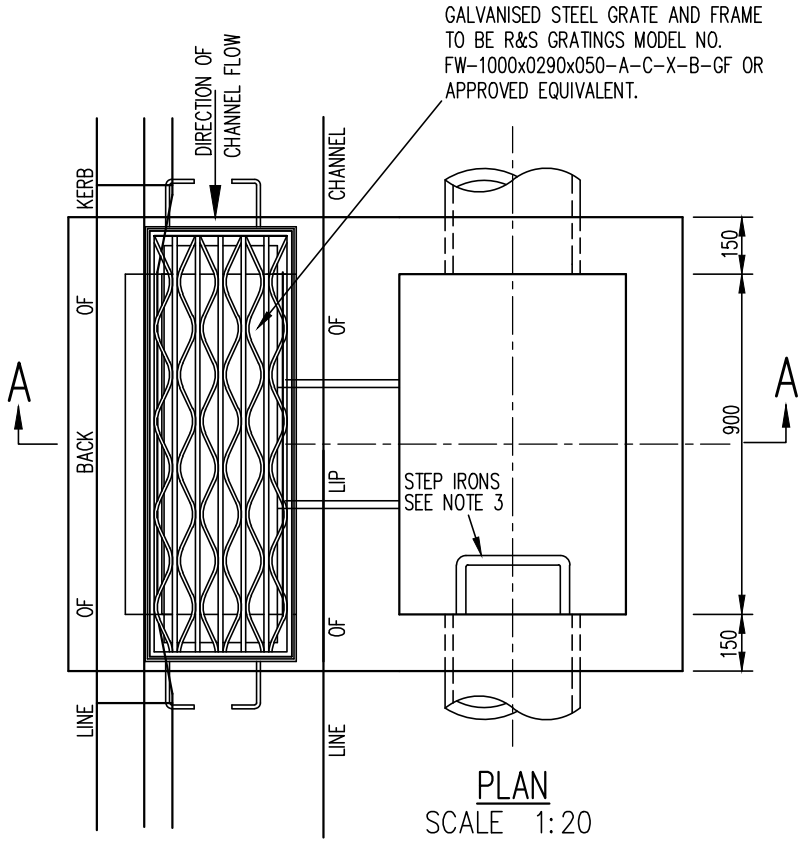
COMBINATION GRATE AND SIDE ENTRY PIT

FOR BARRIER TYPE KERB AND CHANNEL

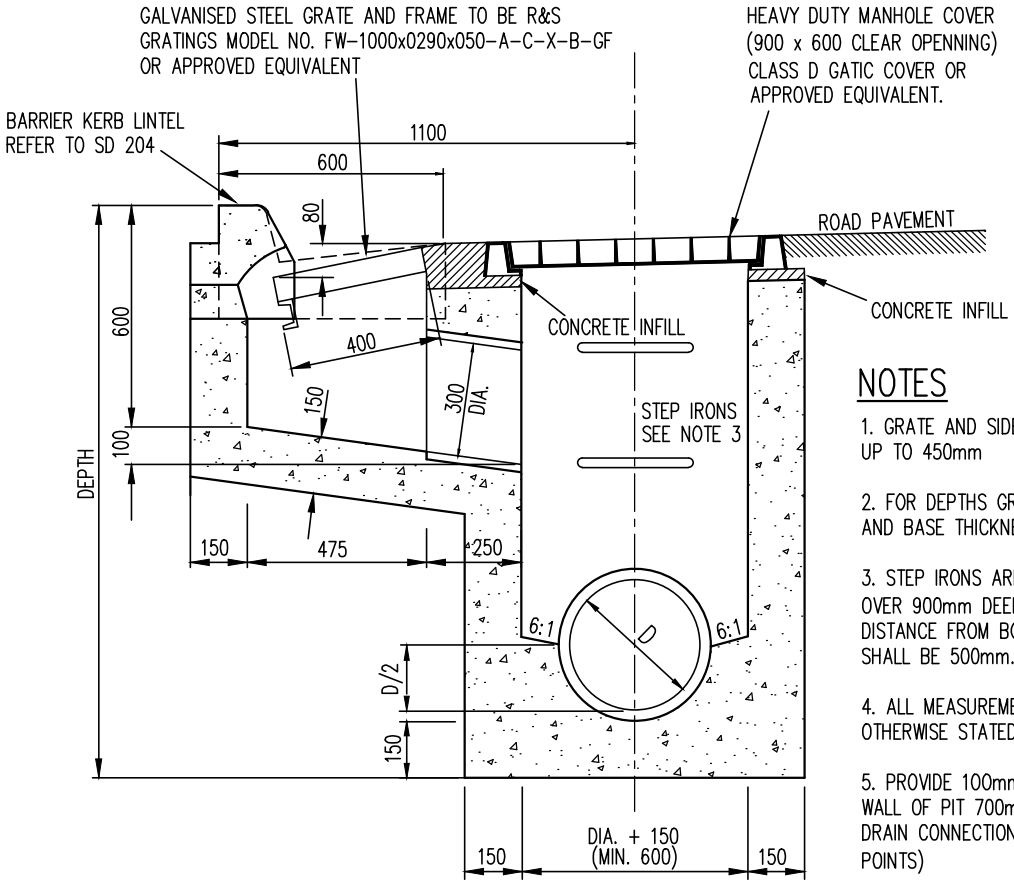
LAST UPDATED – APRIL 2015

INFRASTRUCTURE PLANNING

SD 216–B



PLAN
SCALE 1:20



SECTION A-A
SCALE 1:20

NOTES

1. GRATE AND SIDE ENTRY PIT FOR PIPE DIAMETERS UP TO 450mm

2. FOR DEPTHS GREATER THAN 1.5m MINIMUM WALL AND BASE THICKNESS SHALL BE 200mm

3. STEP IRONS ARE TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. (SEE SD 228) MAXIMUM DISTANCE FROM BOTTOM STEP IRON TO FLOOR OF PIT SHALL BE 500mm.

4. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

5. PROVIDE 100mm DIA PVC STUB IN UPSTREAM END WALL OF PIT 700mm BELOW SURFACE FOR SUBSOIL DRAIN CONNECTIONS. iN BOTH ENDS OF PIT AT LOW POINTS)

6. CONCRETE STRENGTH F'C = 25MPa

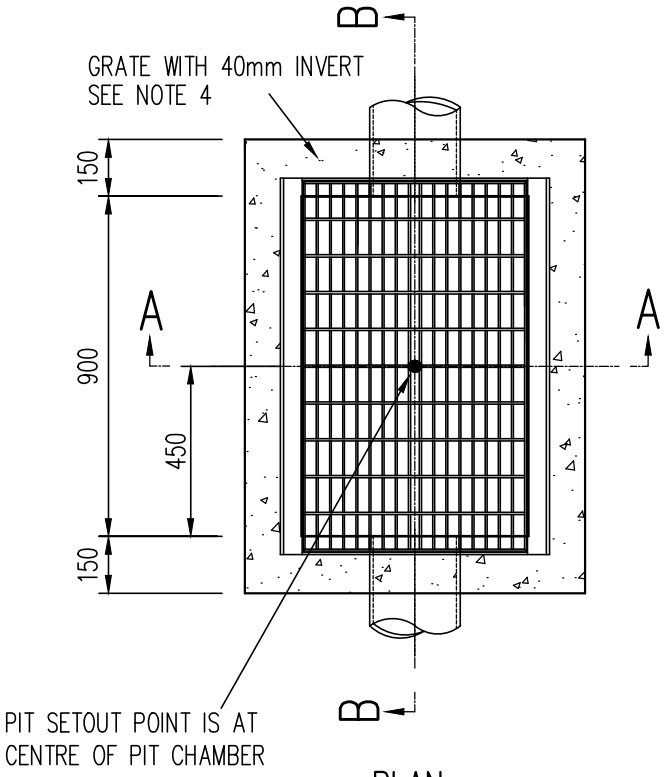
GREATER DANDENONG

COMBINATION GRATE AND SIDE ENTRY PIT
FOR BARRIER TYPE KERB AND CHANNEL WHERE PIPE IS LOCATED UNDER ROAD PAVEMENT

LAST UPDATED – APRIL 2015

INFRASTRUCTURE PLANNING

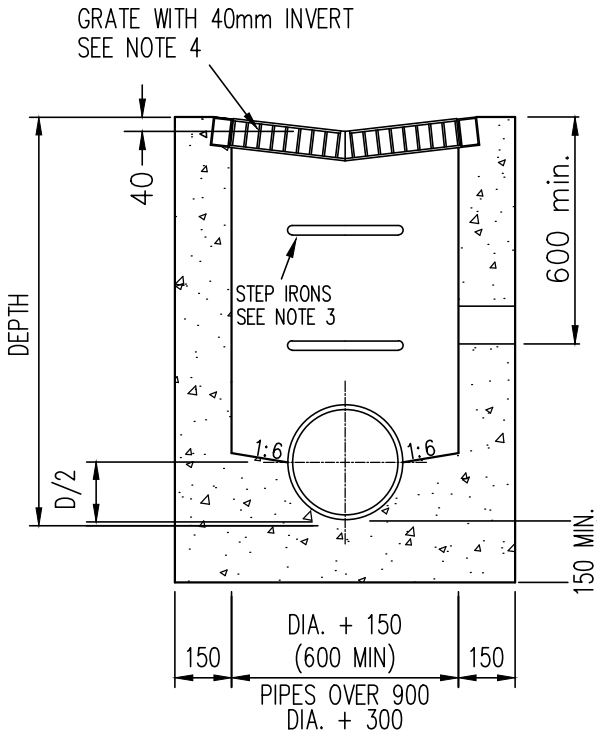
SD 218-B



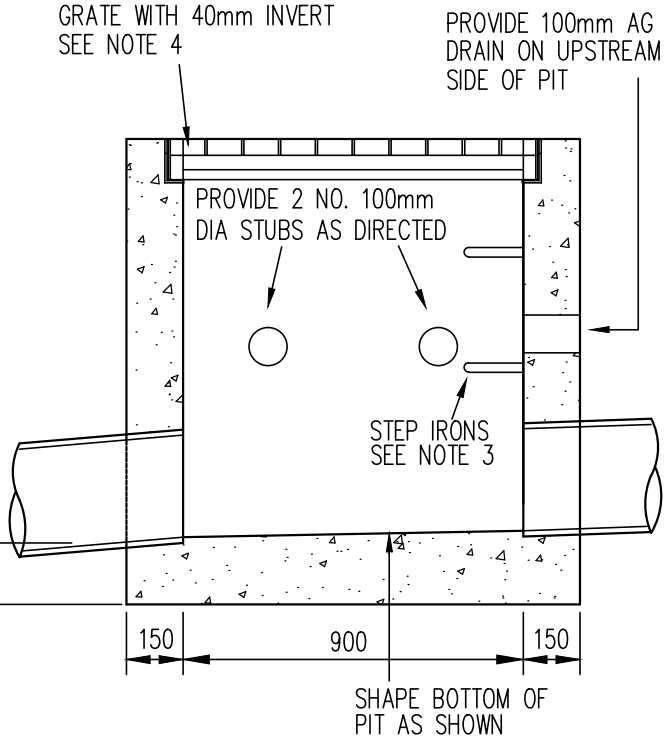
PLAN
SCALE 1:20

NOTES:

1. FOR PIT DEPTH GREATER THAN 1.5 METRES OR PIPE DIAMETER GREATER THAN 450mm REFER TO SD 210 REGARDING CORBELLING, WALL THICKNESS AND REINFORCING OF PIT WALLS
2. ALL MEASUREMENTS ARE IN MILLIMETRES.
3. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228
4. GRATE TO BE HINGED WEBFORGE MODEL MGG96HHV12 (WG-12) OR APPROVED EQUIVALENT WITH 40mm INVERT. GRATE TO BE "BICYCLE SAFE" IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3996-2006
5. WHERE NO AG PIPES ARE CONNECTED, SEAL STUBS WITH GEOTEXTILE FABRIC.



SECTION A-A
SCALE 1:20



SECTION B-B
SCALE 1:20

GREATER DANDENONG

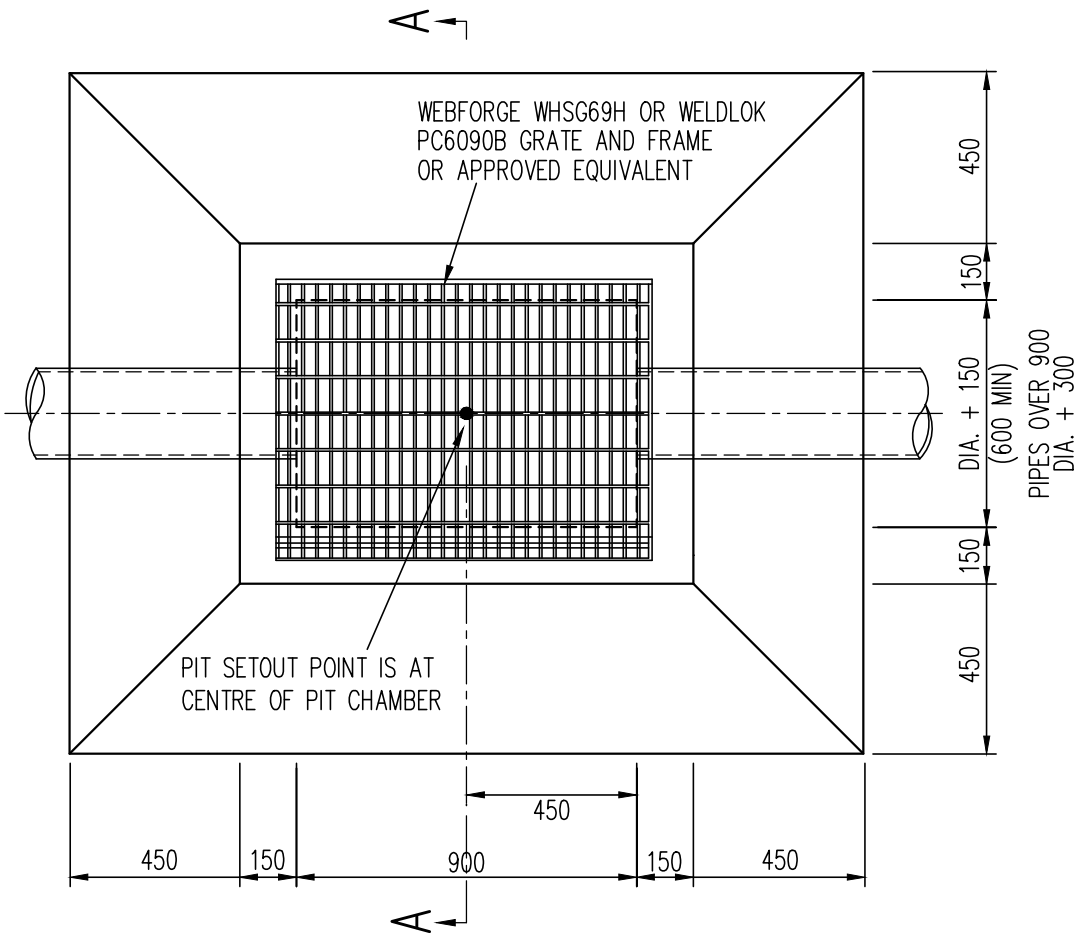
LAST UPDATED - SEPTEMBER 2014

GRATED CATCH PIT

FOR USE IN PAVED AREAS

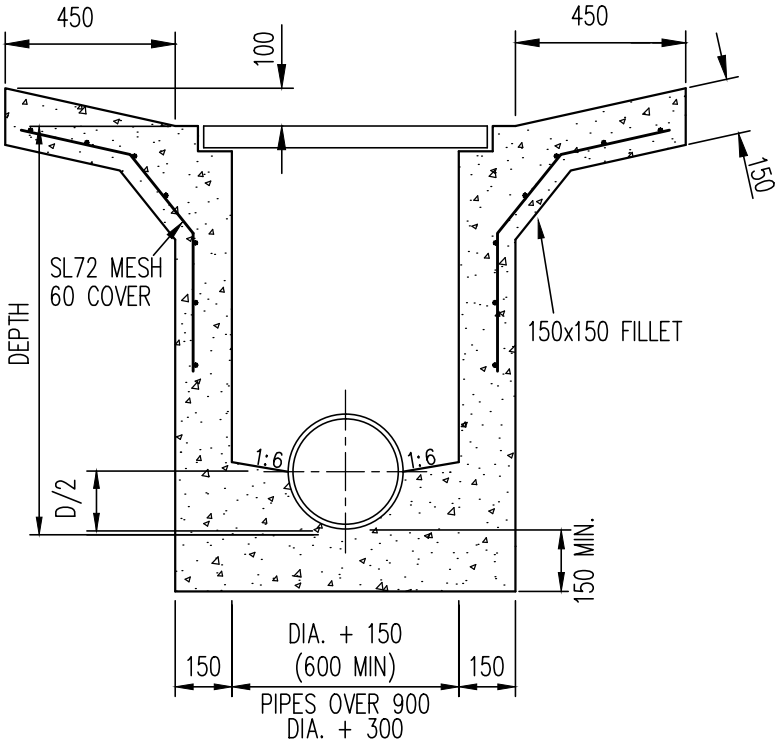
INFRASTRUCTURE PLANNING

SD 219-A



PLAN

SCALE 1:20



SECTION A–A

SCALE 1:20

NOTES:

1. FOR PIT DEPTH GREATER THAN 1.5 METRES OR PIPE DIAMETER GREATER THAN 450mm, REFER TO SD 210 REGARDING CORBELLING, WALL THICKNESS AND REINFORCING OF PIT WALLS
2. ALL MEASUREMENTS ARE IN MILLIMETRES.
3. STEP IRONS TO BE PROVIDED IN ALL PITS OVER 900mm DEEP. SEE SD 228
4. PIT LID TO BE WEBFORGE WHSG69H OR WELDLOK PC6090B GRATE AND FRAME OR APPROVED EQUIVALENT TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS.
5. WHERE NO AG PIPES ARE CONNECTED, SEAL STUBS WITH GEOTEXTILE FABRIC.

GREATER DANDENONG

GRATED CATCH PIT

FOR USE IN UNPAVED (GRASSED) AREAS

LAST UPDATED – MARCH 2015

INFRASTRUCTURE PLANNING

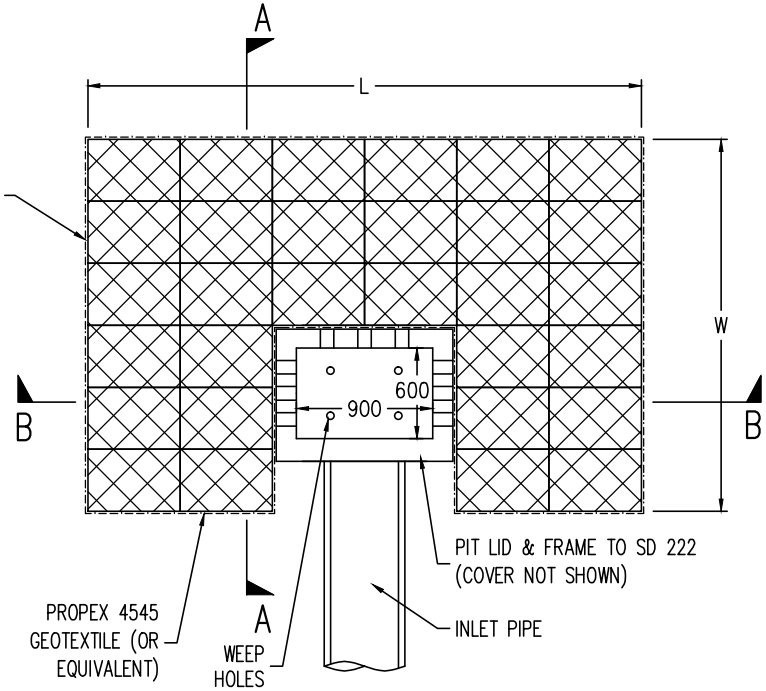
SD 220–B

ATLANTIS D-RAINTANK (OR EQUIVALENT). TANKS TO BE INTERLOCKED TOGETHER VERTICALLY AND FULLY WRAPPED PROPEX 4545 GEOTEXTILE FILTER FABRIC (OR EQUIVALENT).
TANKS TO HAVE THE FOLLOWING PERFORMANCE CRITERIA:

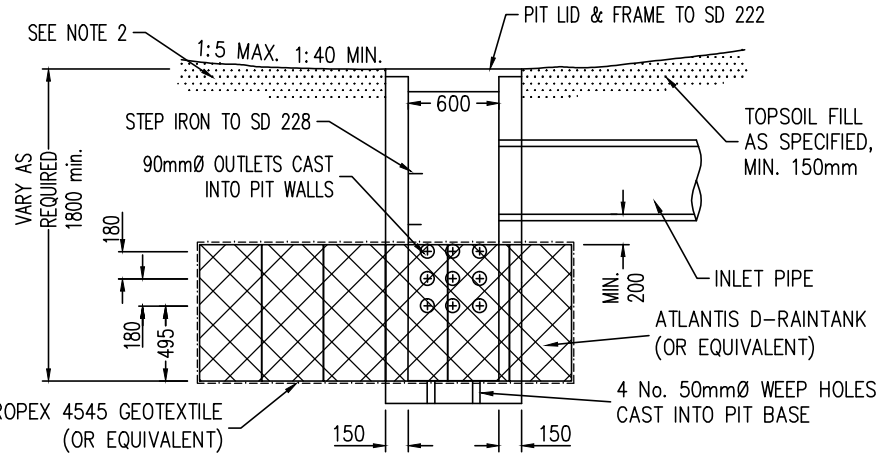
i) TANKS TO HAVE A MINIMUM FLOW RATE OF 2000 l/min UNDER 1.0m STATIC HEAD

ii) TANKS SOLID WALL AREA NOT TO EXCEED 25%

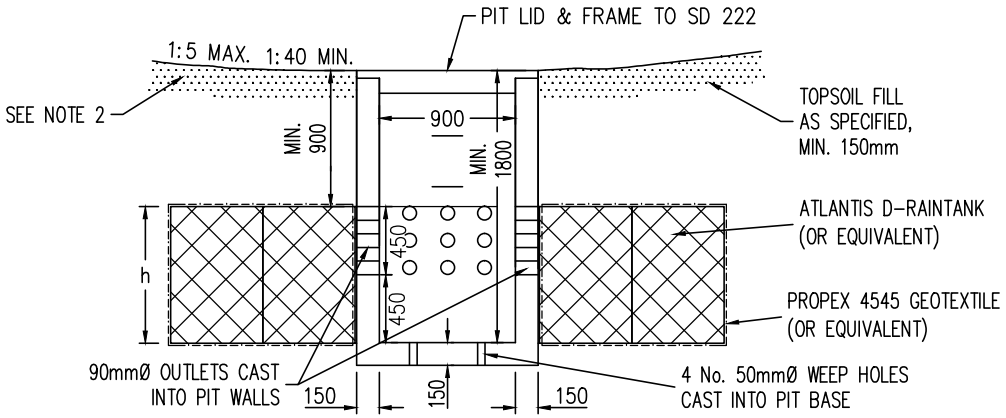
iii) TANKS TO BE MADE FROM RECYCLED PLASTIC MATERIALS



PLAN
SCALE:1:50



SECTION A-A
SCALE:1:50



SECTION B-B
SCALE:1:50

NOTES:

1. FOR USE WITHIN AREAS WITH SANDY SOIL ONLY
2. SOAK AREA TO BE LOCATED IN A NATURAL OR CREATED BASIN (TURKEYS NEST). THE DISTURBED AREA BE ROLLED WITH HAND ROLLER AND SOWN WITH APPROVED GRASS SEED. CREATED BASINS MUST BE CONSTRUCTED SO THEY APPEAR NATURAL.
3. TEST HOLES TO THE FULL DEPTH OF THE PROPOSED SOAKAGE PIT MUST BE DUG TO DETERMINE WHETHER THE SOIL IS SUITABLE AND TEST CARRIED OUT BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO ESTABLISH THE INFILTRATION RATE OF THE SOIL BEFORE THE LOCATION AND DEPTH OF PIT IS FINALISED.
4. MINIMUM SOAKAGE PIT VOLUME 6.8m^3
5. ALL CONCRETE USED ON PIT TO BE 32MPa AND VIBRATED INTO POSITION AS PER AS3600, SECTION 19.
6. ALL MEASUREMENTS IN MILLIMETRES.
7. PIT LID AND FRAME TO SD 222
8. STEP IRONS TO SD 228
9. SEE SHEET 2 FOR SOAKAGE PIT SIZING DESIGN GUIDELINES.

GREATER DANDENONG

SOAKAGE PIT

SHEET 1 OF 2 SHEETS

LAST UPDATED - SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 221-1-A

SOAKAGE PIT SIZING DESIGN GUIDELINES:

DESIGN CRITERIA:

- SOAK PITS TO BE USED ONLY WHERE CATCHMENT HAS NOT POSITIVE OUTFALL
- THE TOTAL VOLUME OF RUNOFF FROM THE CATCHMENT AREA TO THE SOAKAGE PIT SHOULD BE CALCULATED USING A 1 IN 5 YEAR 12 HOUR DURATION ARI DESIGN STORM.
- RUNOFF VOLUME TO BE DETERMINED BY APPLYING COMBINED EQUIVALENT CATCHMENT AREA WITH DESIGN RAINFALL DEPTH (SEE TABLE BELOW).
- THE ENGINEER SHALL DETERMINE APPROPRIATE PROPORTIONS CONTRIBUTING IMPERVIOUS AND PERVIOUS AREAS.
- THE SOAKAGE PIT IS REQUIRED TO EMPTY FROM FULL LESS THAN 50% VOLUME WITHIN 24 HOURS OF THE STORM EVENT.
- NO SURFACE WATTER IS TO RESULT FROM A 1 IN 5 YEAR 12 HOUR ARI STORM EVENT (IE. CONTAINED WITHIN SOAKAGE PIT).
- MAXIMUM ROADWAY FLOODING IS 150mm DEPTH AND IS TO BE CONTAINED WITHIN THE ROAD KERB AND CHANNEL FOR A 1 IN 10 YEAR 24 HOUR ARI STORM EVENT.
- NO ENCROACHMENT WITHIN 300mm OF ANY HABITABLE OR NON HABITABLE FLOOR LEVEL RESULTING FROM THE INUNDATION BY A 1 IN 100 YEAR 24 HOUR ARI STORM EVENT.

EQUATIONS: $I = (\text{Equiv. } A_I + \text{Equiv. } A_P)R$, $O = a_{50}\,fD$, $S = I - O$, $t_{50} = \dfrac{0.5S}{a_{50}\,f}$

WHERE:
- I = INFLOW DRAINED TO SOAKAGE PIT FROM STORM EVENT (m^3),
- A_I = IMPERVIOUS AREA (m^2),
- A_P = PERVIOUS AREA (m^2),
- R = DESIGN RAINFALL DEPTH OBTAINED FROM THE TABLE BELOW (m),
- O = OUTFLOW FROM INFILTRATION INTO THE SOIL DURING STORM EVENT (m^3),
- a_{50} = 50% OF TOTAL AVAILABLE INTERNAL WALL AREA (m^2),
- L & W = LENGTH AND WIDTH OF OVERALL SOAKAGE PIT (m),
- h = OVERALL HEIGHT OF SOAKAGE PIT (m),
- f = SOIL INFILTRATION RATE (m/s),
- D = STORM DURATION (sec),
- S = STORAGE VOLUME OF SOAKAGE PIT AND TURKEYS NEST (IF REQUIRED). (m^3),
- t_{50} = TIME FOR SOAKAGE PIT TO DRAIN TO 50% VOLUME (sec).

DESIGN RAINFALL DEPTH:

ARI	DESIGN RAINFALL DEPTH (mm)
1 IN 5	53.14
1 IN 10	60.54
1 IN 100	96.58

NOTES:

1. FOR USE WITHIN THE CITY OF GREATER DANDENONG ONLY. THE ENGINEER IS RESPONSIBLE FOR THE SIZING OF THE SOAKAGE PIT AND WHILST THESE GUIDELINES REPRESENT BEST PRACTICE, THE ENGINEER SHOULD TAKE INTO CONSIDERATION THE SPECIFIC LOCAL SITE CONDITIONS WHEN SIZING THE SOAKAGE PIT.
2. SEE SHEET 1 FOR SOAKAGE PIT INSTALLATION DETAILS.

EXAMPLE CALCULATION:

DESIGN DATA:

- ASSUME THAT THE TOTAL CATCHMENT IS 0.34 Ha (3,400 m^2), THAT THE IMPERVIOUS AREA IS 0.09 Ha (900 m^2) AND THE PERVIOUS AREA IS 0.25 Ha (2,500 m^2).
- ASSUME THAT 90% OF IMPERVIOUS AND 30% PERVIOUS AREA CONTRIBUTE AS RUNOFF.
- ASSUME OVERALL HEIGHT OF SOAKAGE PIT (h) TO BE 0.903 m.
- USING A 1 IN 5 YEAR 12 HOUR ARI DESIGN STORM, THE RAINFALL DEPTH (R) IS 53.14 mm.
- FROM A SOIL TEST THE INFILTRATION RATE (f) WAS DETERMINED TO BE 1.15 x 10^{-4} m/s.

INFLOW VOLUME TO SOAKAGE PIT CALCULATION:

$I = (\text{Equiv. } A_I + \text{Equiv. } A_P)R$

$I = (900 \times 0.9 + 2{,}500 \times 0.3) \times 0.05314 = \underline{82.90\ m^3}$

SOAKAGE PIT SIZING:

- OUTFLOW FROM SOAKAGE PIT:

  $O = a_{50}\,fD$ & $a_{50} = 2 \times [(L \times 0.5h) + (W \times 0.5h)] = 1.806L$ (ASSUMING $L = W$)

  $O = 1.806L \times 0.000115 \times (12 \times 60 \times 60) = \underline{8.972L}$

- STORAGE VOLUME OF SOAKAGE PIT:

  $S = L \times W \times 0.903 = \underline{0.903L^2}$ (ASSUMING $L = W$) & $S = I - O$, THEREFORE

  $0.903L^2 + 8.972L - 82.90 = 0$,

  SOLVING, $L = \underline{5.825\ m}$ & $S = \underline{30.637\ m^3}$

- THEREFORE ADOPT:

  $L = \underline{6.0\ m}$ & $W = \underline{5.7\ m}$,

  ACTUAL $S = 0.903 \times 6.0 \times 5.7 = \underline{30.88\ m^3}$

CHECK TIME FOR EMPTYING:

ACTUAL $a_{50} = 2 \times [(6.0 \times 0.5 \times 0.903) + (5.7 \times 0.5 \times 0.903)] = \underline{10.565 m^2}$

$t_{50} = \dfrac{0.5S}{a_{50}\,f}$

$t_{50} = \dfrac{0.5 \times 30.88}{10.565 \times 0.000115} = 12709$ sec (JUST UNDER 3 HOURS & 32 MINUTES)

LESS THAN 24 HOURS, THEREFORE OK

GREATER DANDENONG

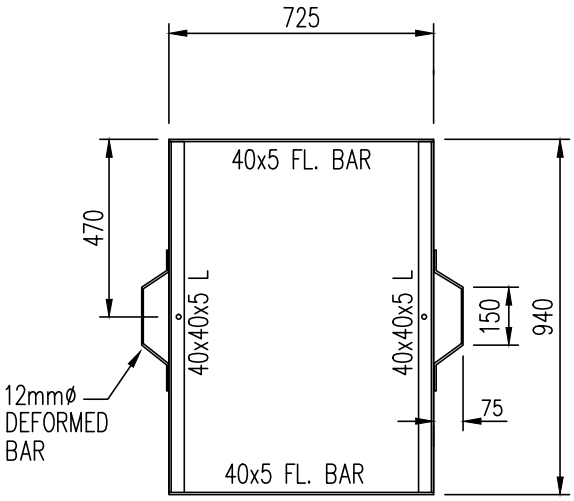
SOAKAGE PIT

SHEET 2 OF 2 SHEETS

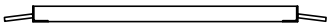
LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 221–2–A



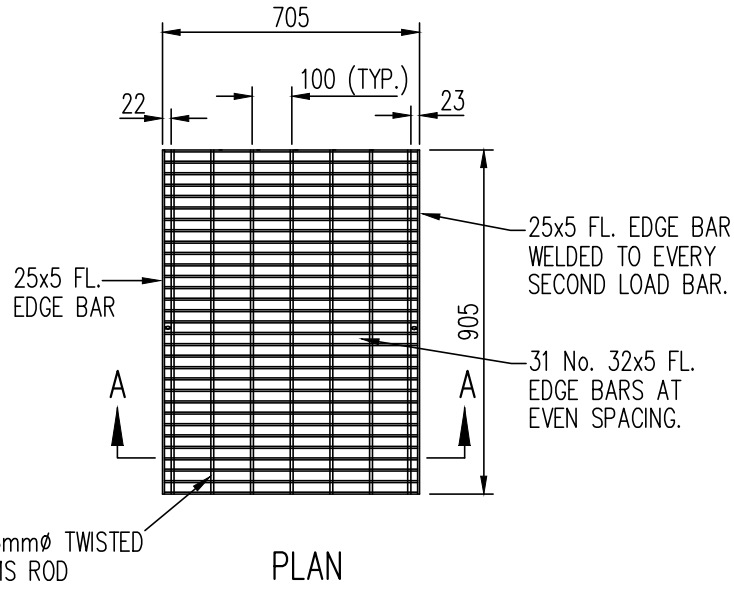
PLAN



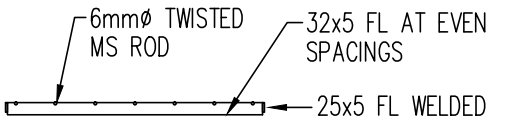
ELEVATION

FRAME DETAIL

SCALE 1:20



PLAN

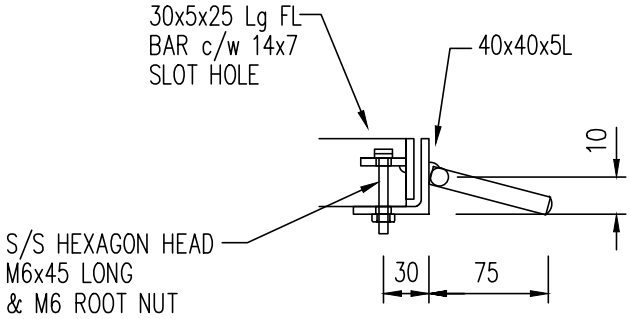


SECTION A–A

SCALE 1:10

GRATE DETAIL

SCALE 1:20



NB: BOLT TO BE SUPPLIED WITH
20mm LONG RUBBER SLEEVE
TO BE CAST INTO CONCRETE.

LOCK DOWN DETAIL

SCALE 1:5

NOTES

1. FINISH – HOT DIPPED GALVANISED.
2. WEIGHT – 40KG.
3. ALL MEASUREMENTS ARE IN MILLIMETRES.
4. GRATES ARE AVAILABLE FROM WEBFORGE (VIC)
   142–146 FAIRBANKS ROAD, CLAYTON SOUTH
   Ph. 03 8551 2414 GRATE REFERENCE – MSG69B

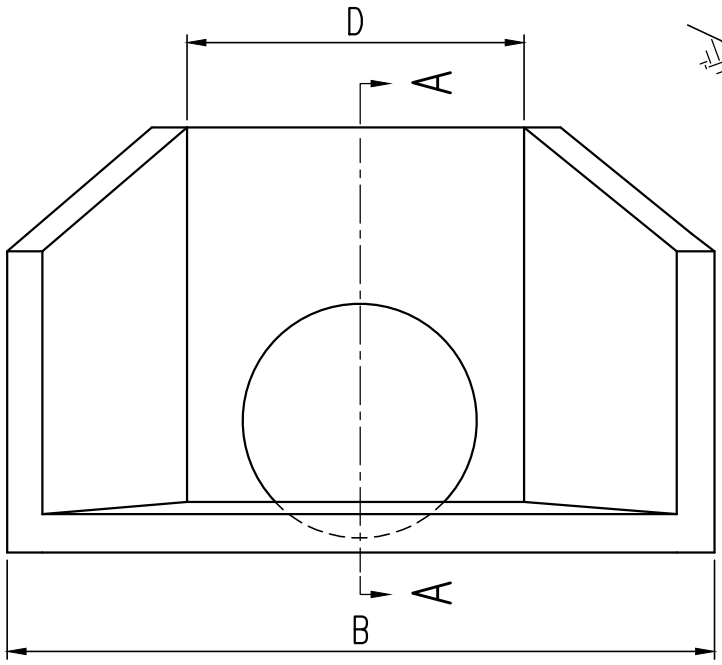
GREATER DANDENONG

LIGHT DUTY STEEL GRATE
AND FRAME FOR SOAKAGE PIT

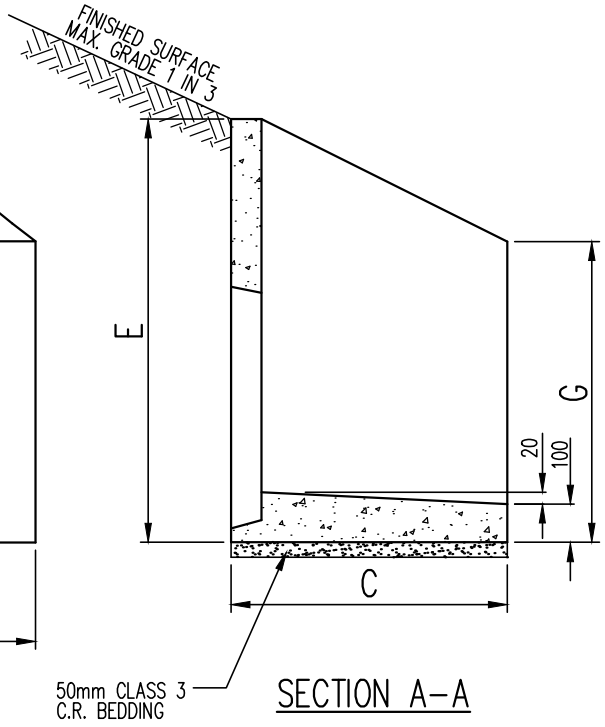
LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

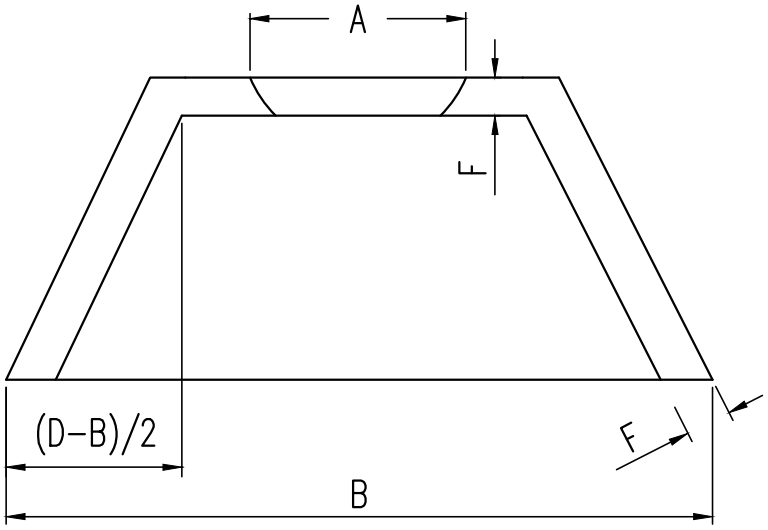
SD 222–A



FRONT ELEVATION



SECTION A–A



PLAN

NOM. PIPE SIZE	NOMINAL DIMENSIONS IN MM						
	A	B	C	D	E	F	G
300	385	1600	640	750	915	95	710
375	475	1600	640	750	915	95	710
450	550	1600	640	750	915	95	710
525	640	1700	685	800	1035	95	775
600	730	1700	685	800	1035	95	775
675	775	2040	1015	1195	1410	92	1095
750	905	2040	1015	1195	1410	92	1095
825	950	2000	1050	1195	1400	92	1095
900	1055	2040	1015	1195	1410	92	1095

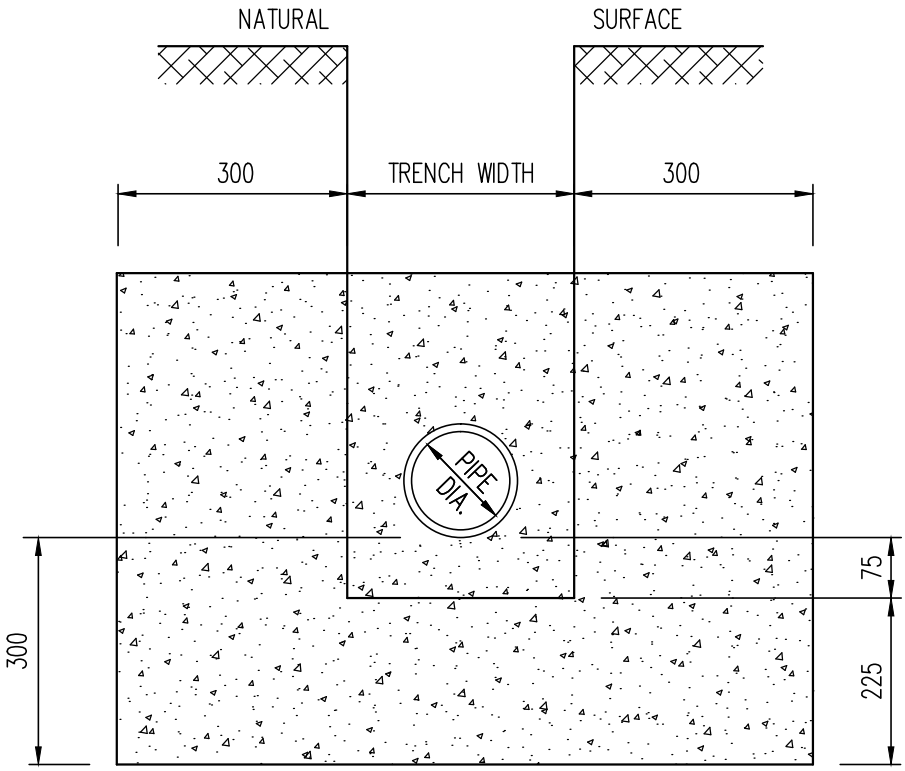
GREATER DANDENONG

PRECAST CONCRETE ENDWALL

LAST UPDATED – SEPTEMBER 2014

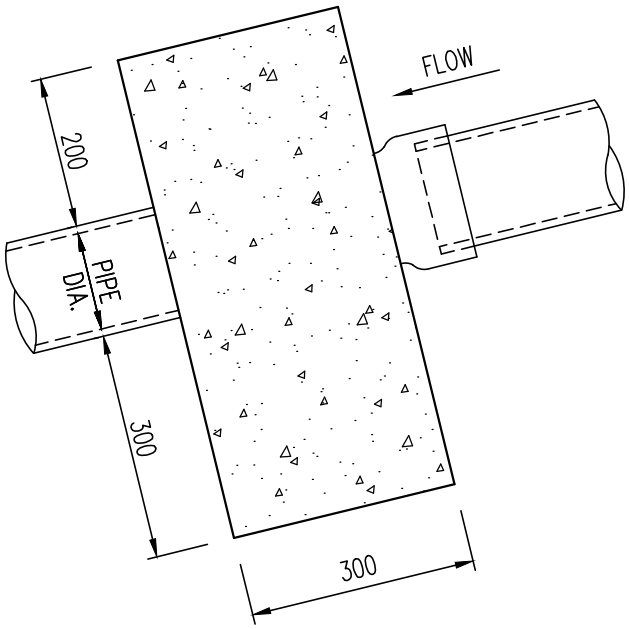
INFRASTRUCTURE PLANNING

SD 223–A



FRONT ELEVATION

SCALE 1:10



SIDE ELEVATION

SCALE 1:10

NOTES

1. USE FOR PIPES ON GRADES OF 1 IN 10 OR GREATER.
2. LOCATION OF ANCHORS
   GRADIENT OF 1 IN 3 TO 1 IN 10 – MAX. SPACING 10 METRES
   GRADIENT GREATER THAN 1 IN 3 – MAX. SPACING AS DIRECTED
3. ALL DIMENSIONS ARE IN MILLIMETRES.

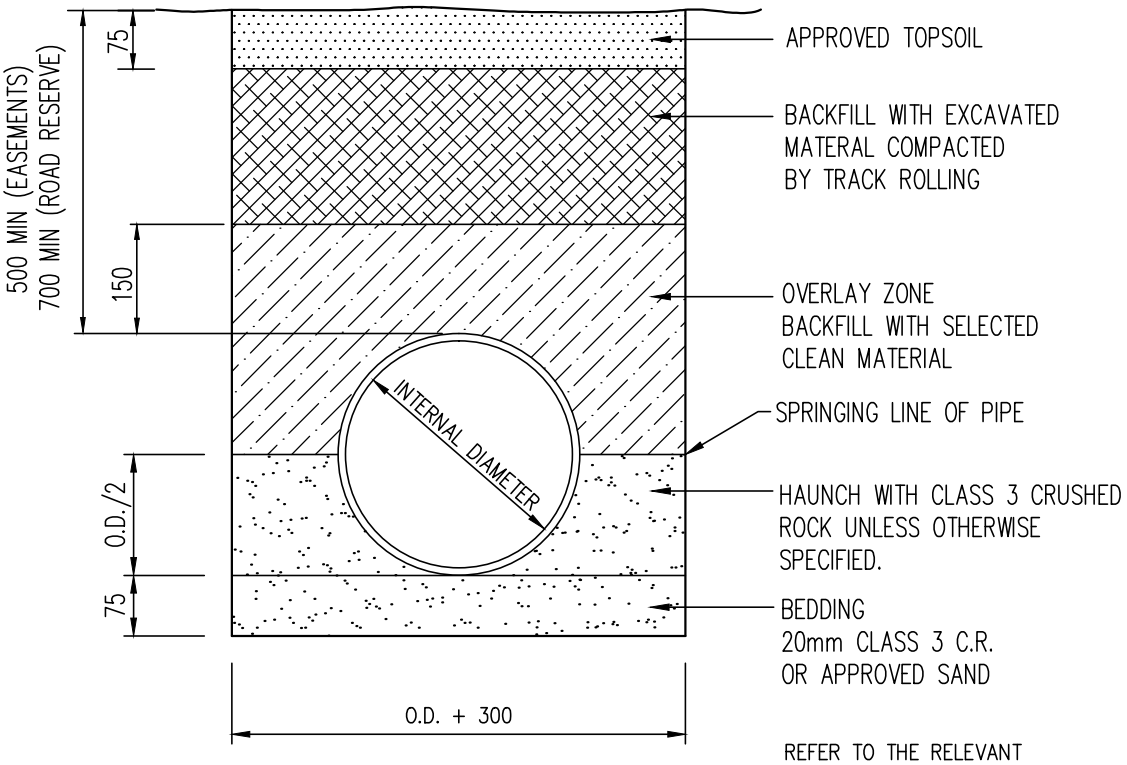
GREATER DANDENONG

LAST UPDATED – SEPTEMBER 2014

DRAINAGE PIPELINE ANCHOR BLOCK

INFRASTRUCTURE PLANNING

SD 224–A



PIPE BEDDING DETAIL

SCALE 1:10

NOTES

1. ALL TRENCHES UNDER KERB AND CHANNEL, DRIVEWAYS, FOOTPATHS AND ROAD PAVEMENT SHOULD BE BACKFILLED AS PER STANDARD SPECIFICATION.
2. ALL 150 PIPES TO BE PVC (SH), 225 TO BE PVC (SH) OR RRJ R.C./FRC, ALL PIPE SIZES TO BE RUBBER RING JOINTED (RRJ)
3. ALL R.C./ F.R.C. PIPES TO BE CLASS 2 UNLESS SPECIFIED DIFFERENTLY.
4. EASEMENT DRAINS TO BE LOCATED TO ENSURE 500mm MINIMUM FROM EDGE OF PIPE TO EDGE OF EASEMENT. REINSTATEMENT WORKS REFER TO NOTE 1.
5. IF TRENCH IS WITHIN 150mm OF KERB THEN TRENCH IS TO BE BACKFILLED WITH SELECT BACKFILL FROM SITE AS DIRECTED. FOR NEW WORKS OR REINSTATEMENT WORKS REFER TO NOTE 1.
6. MINIMUM PIPE REQUIREMENTS UNDER ROAD PAVEMENTS AND TAKING ROAD RUNOFF TO BE 300mm DIA. RRJ R.C.

GREATER DANDENONG

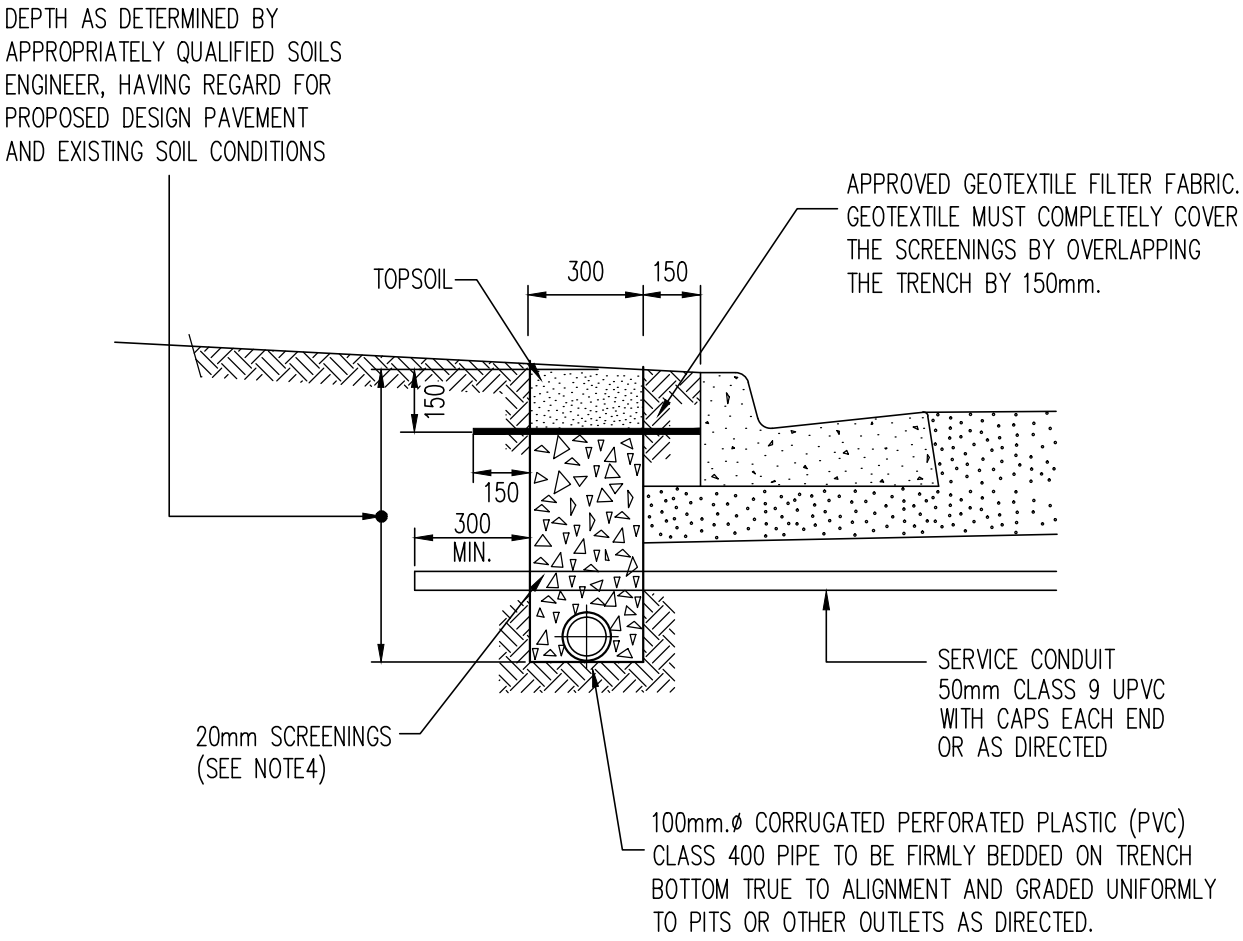
PIPE LAYING DETAIL

FOR PIPES NOT UNDER ROAD PAVEMENT

LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 225–A



LOCATION OF SUBSOIL DRAINAGE PIPE

SCALE 1:20

NOTES

1. DEFLECT TRENCH OVER LAST 2.0m TO CONNECT TO PITS
2. A.G. DRAIN TO BE A MINIMUM OF 25mm CLEAR BELOW SERVICE CONDUITS
3. A.G. DRAINS TO BE LOCATED BEHIND KERB AND CHANNEL
4. BACKFILL TO BE:
   (i) 20mm SCREENINGS
   (ii) 20mm CLEAN SCORIA
   (iii) 20mm RECYCLED CONCRETE WITH NO FINES
   (iv) 20mm NO FINES CONCRETE

GREATER DANDENONG

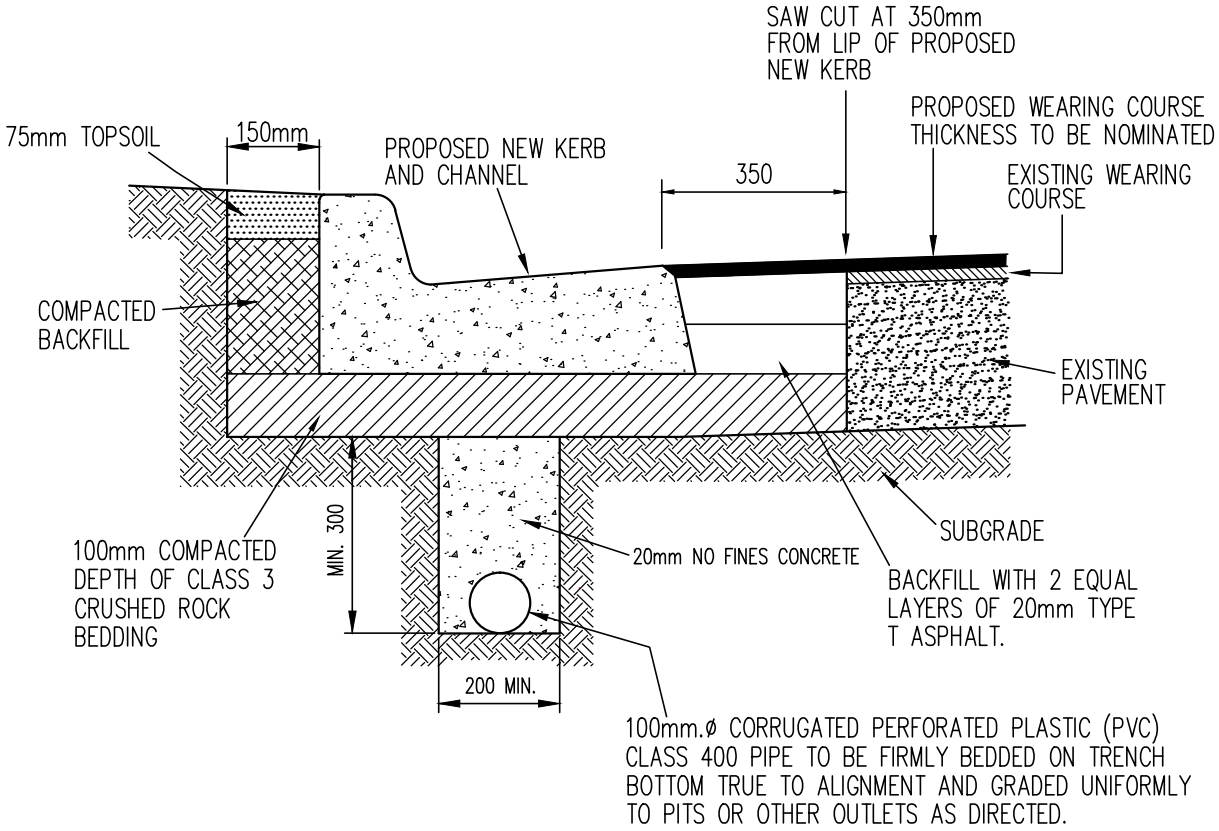
SUBSOIL DRAINAGE

NEW WORKS

LAST UPDATED – SEPTEMBER 2014

INFRASTRUCTURE PLANNING

SD 226–A



NOTES

1. DEFLECT TRENCH OVER LAST 2.0m TO CONNECT TO PITS

2. SUBSOIL DRAIN TO BE A MINIMUM OF 25mm CLEAR BELOW SERVICE CONDUITS ON BOTH SIDES OF ROAD

3. SUBSOIL DRAINS TO BE LOCATED UNDER KERB AND CHANNEL

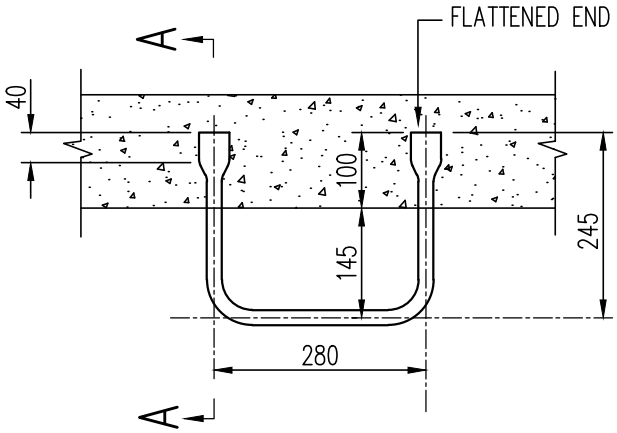
GREATER DANDENONG

KERB AND CHANNEL RECONSTRUCTION DETAIL
SHOWING LOCATION OF SUBSOIL DRAINS

LAST UPDATED – SEPTEMBER 2014

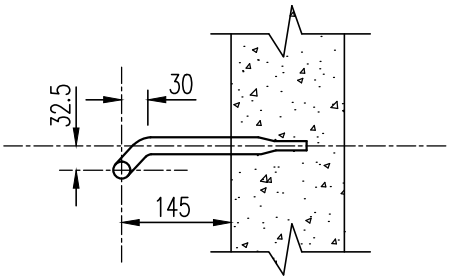
INFRASTRUCTURE PLANNING

SD 227–A



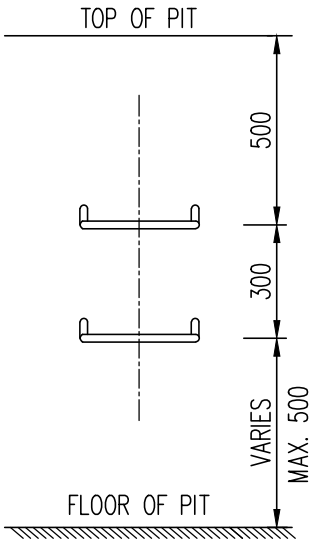
PLAN

SCALE 1:10



SECTION A–A

SCALE 1:10



ELEVATION

SCALE 1:20

NOTES

1. STEP IRONS FROM 20mmø STEEL BAR, HOT DIP GALVANIZED
2. PROVIDE STEPIRONS IN ALL PITS OVER 900mm DEPTH.
3. STEPIRONS TO BE LOCATED IN PIT WALLS, CLEAR OF PIPES WHERE POSSIBLE
4. MEASUREMENTS ARE IN MILLIMETRES.

GREATER DANDENONG

LAST UPDATED – SEPTEMBER 2014

STEP IRONS

INFRASTRUCTURE PLANNING

SD 228–A