KSC STANDARD DRAWING SCHEDULE - ASD 300 SERIES

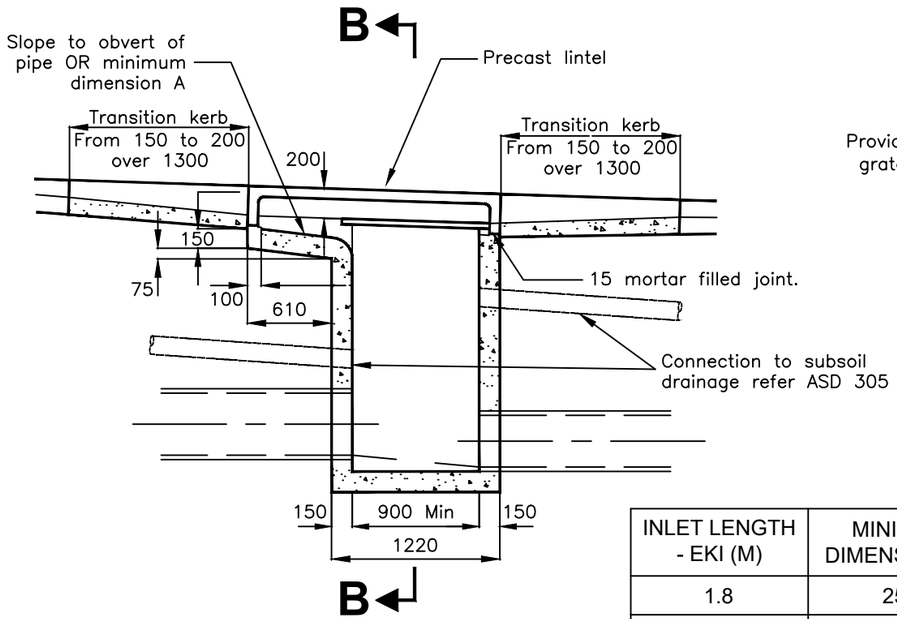
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

KSC STANDARD DRAWING
DRAINAGE - ASD 300 SERIES
DRAWING SCHEDULE

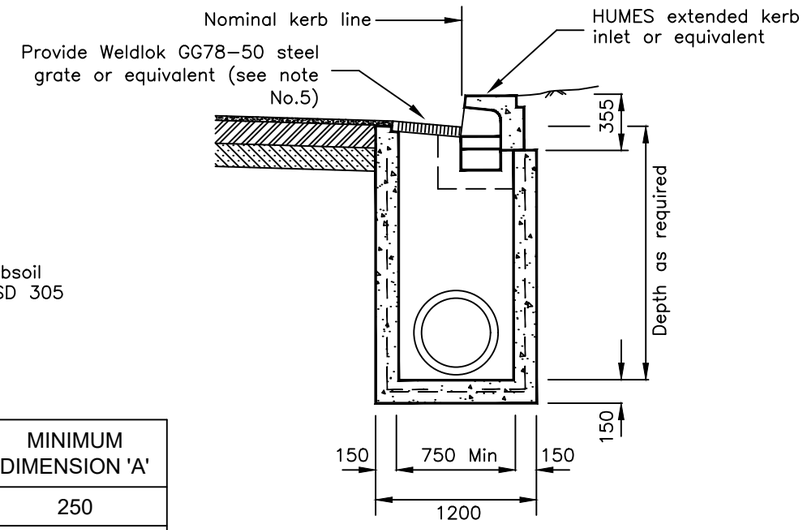
NOT TO SCALE

ASD 300

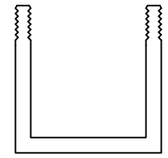


SECTION A-A

INLET LENGTH - EKI (M)	MINIMUM DIMENSION 'A'
1.8	250
2.4	300
3.0	400
3.6	450
4.2	500

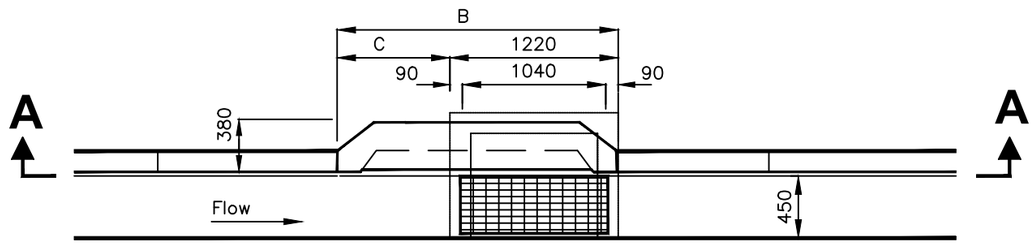


SECTION B-B



STEP IRONS

Provide AYMROO or alternate brand name equivalent plastic encapsulated step irons in accordance with AS 1657 and manufactures requirements directly under lid at 300mm centres where pit is deeper than 1200mm.



PLAN

Nominal Lintel Length	B	C
1200	1825	605
1800	2438	1218
2400	3048	1828
3000	3657	2437
3600	4267	3047

NOTE:

1. Compressive strength, F'c for cast insitu concrete to be min of 32MPa to AS3600
2. All dimensions in mm
3. Provide SL82 mesh centrally placed to walls and base for all pits ≥1.5m deep. Minimum 50mm cover. Return mesh 300mm into base and sides.
4. All exposed steelwork shall be hot dip galvanised in accordance with AS 1650
5. Where a heavy duty steel grate is required a Weldlok GG78-42A grate or equivalent is to be specified.
6. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
7. Provide step irons where pit is deeper than 1.2m at 300mm centers.
8. Grates shall be bicycle safe and be designed with maximum inlet capacity.
9. All pits shall be provided with an approved locking system
10. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

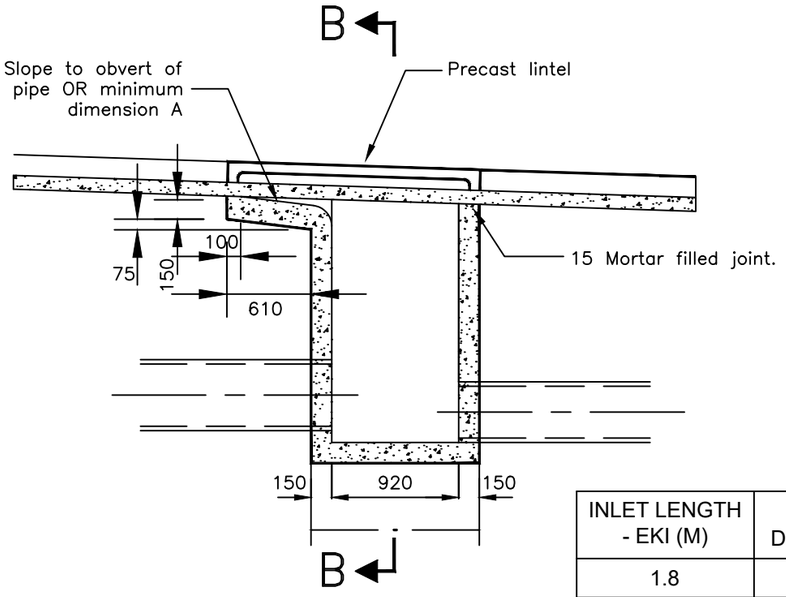
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

KSC STANDARD DRAWING
CAST IN-SITU GRATED GULLY PIT - PIPES UP TO Ø600

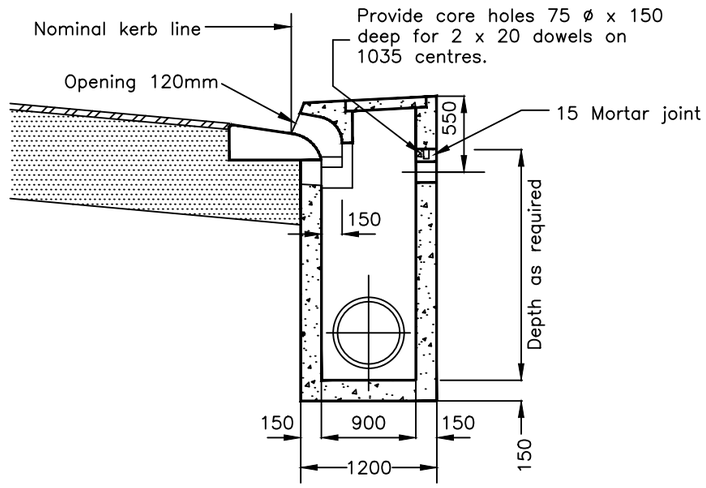
NOT TO SCALE

ASD 301

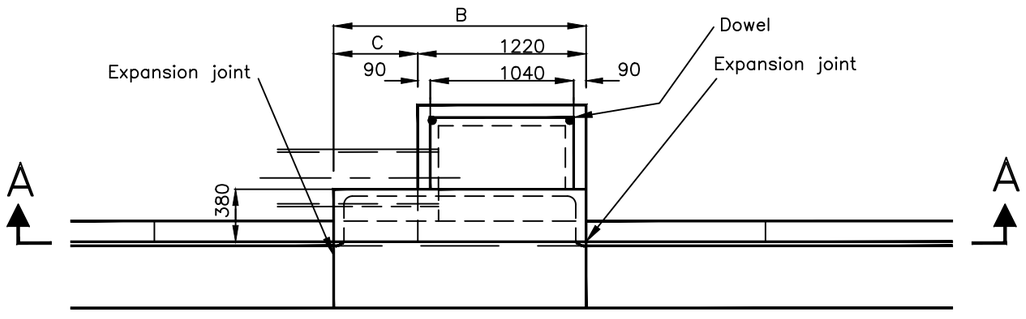


SECTION A-A

INLET LENGTH - EKI (M)	MINIMUM DIMENSION 'A'
1.8	250
2.4	300
3.0	400
3.6	450
4.2	500



SECTION B-B



PLAN

Nominal Lintel Length	B	C
1200	1825	605
1800	2438	1218
2400	3048	1828
3000	3657	2437
3600	4267	3047

NOTE:

1. Compressive strength f'c for cast in-situ concrete to be a minimum of 32MPa at 28 days.
2. All dimensions are in millimetres.
3. Provide SL82 mesh centrally placed to walls and base for pits ≥ 1.5m deep.
4. All steelwork shall be hot dip galvanised in accordance with AS 1650
5. Expansion joints to be 15mm wide for full depth of kerb & gutter, with joint being of a preformed material of bituminous fibreboard.
6. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
7. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
8. Grates shall be bicycle safe and be designed with maximum inlet capacity.
9. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

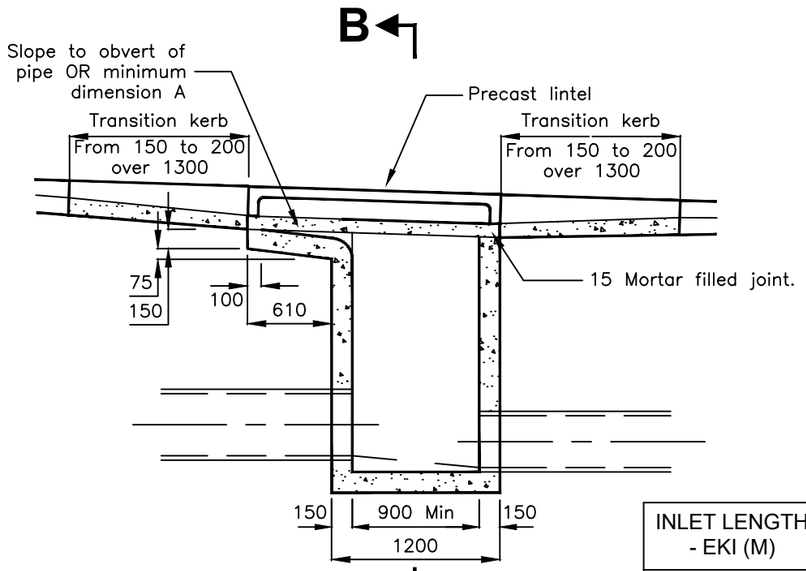
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

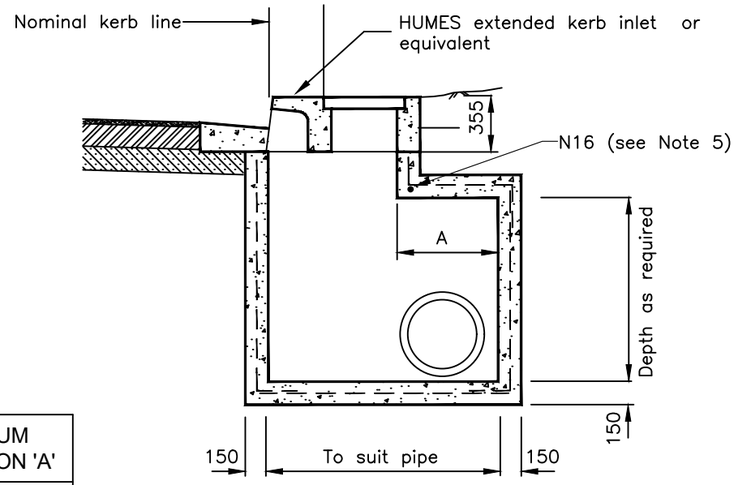
KSC STANDARD DRAWING
REAR ACCESS GULLY PIT - PIPES UP TO Ø600

NOT TO SCALE

ASD 302

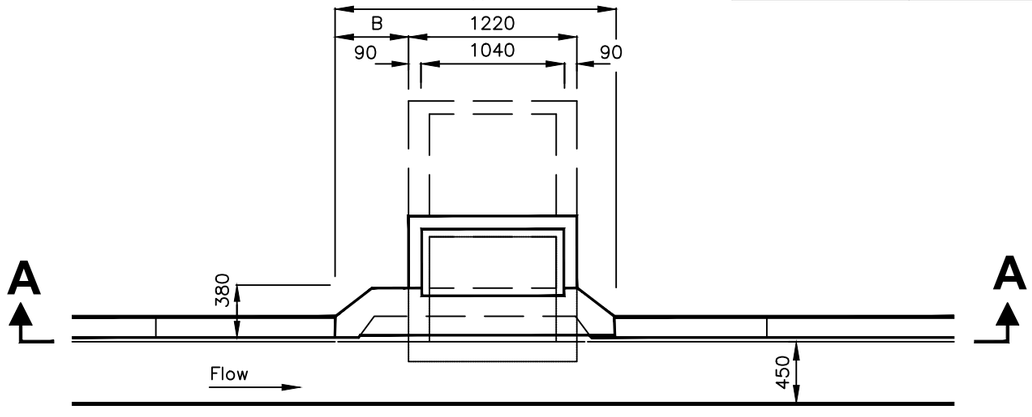


SECTION A-A



SECTION B-B

INLET LENGTH - EKI (M)	MINIMUM DIMENSION 'A'
1.8	250
2.4	300
3.0	400
3.6	450
4.2	500



PLAN

Nominal Lintel Length	A	B
1200	1825	300
1800	2438	913
2400	3048	1523
3000	3657	2132
3600	4267	2742

NOTE:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS3600
2. All dimensions in mm
3. Provide SL82 mesh centrally placed to walls and base for all pits ≥1.5m deep. Minimum 50mm cover. Return mesh 300mm into base and sides.
4. All exposed steelwork shall be hot dip galvanised in accordance with AS 1650
5. Where A > 300 provide N16 reinforcing returned min 400 into pit walls. Where A > 900 design to be certified by Engineer.
6. For connection to subsoil drainage refer to ASD306.
7. For provision of grates in pits refer to ASD 304. Where a heavy duty steel grate is required a Weldlok GG78-42A grate or equivalent is to be specified.
8. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
9. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
10. Grates shall be bicycle safe and be designed with maximum inlet capacity.
11. Base of pit to be benched to minimum half height of pipe
12. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

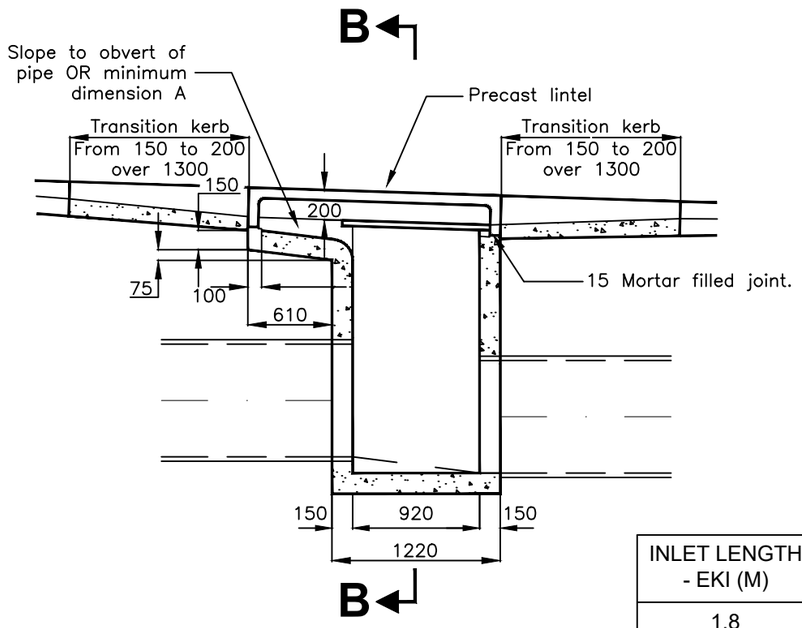
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

KSC STANDARD DRAWING
REAR ACCESS GULLY PIT - PIPES > Ø600

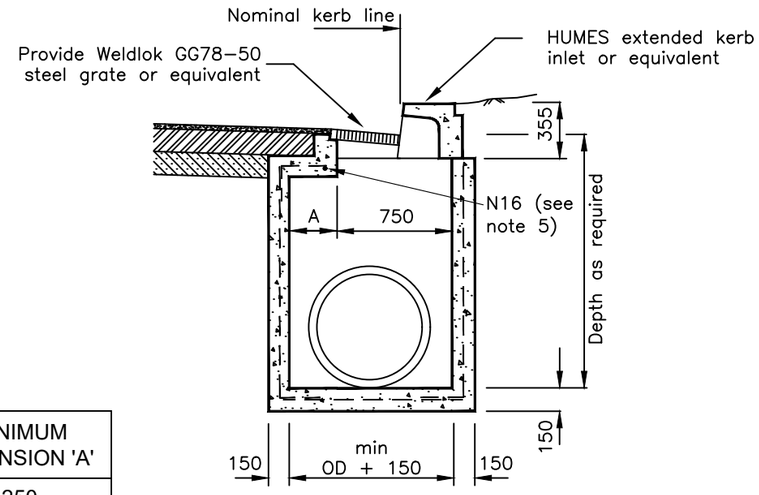
NOT TO SCALE

ASD 303

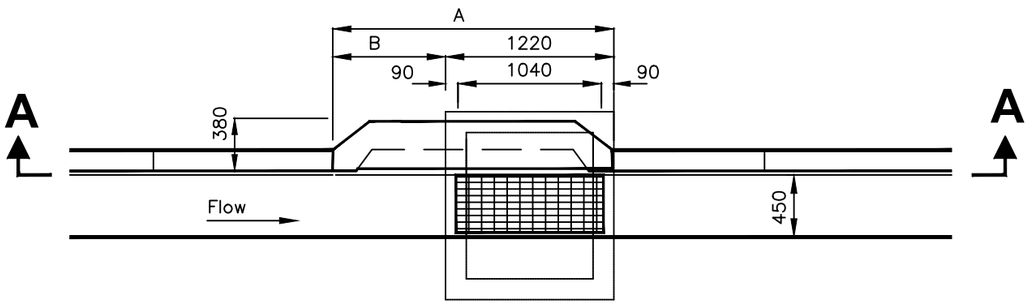


SECTION A-A

INLET LENGTH - EKI (M)	MINIMUM DIMENSION 'A'
1.8	250
2.4	300
3.0	400
3.6	450
4.2	500



SECTION B-B



PLAN

Nominal Lintel Length	A	B
1200	1825	605
1800	2438	1218
2400	3048	1828
3000	3657	2437
3600	4267	3047

NOTES:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS3600
2. All dimensions in mm
3. Provide SL82 mesh centrally placed to walls and base for all pits ≥1.5m deep. Minimum 50mm cover. Return mesh 300mm into base and sides
4. All exposed steelwork shall be hot dip galvanised in accordance with AS 1650
5. Where A > 300 provide N16 reinforcing returned min 400 into pit walls. Where A > 900 design to be certified by Engineer
6. For connection to subsoil drainage refer to ASD305
7. Where a heavy duty steel grate is required a Weldlok GG78-42A grate or equivalent is to be specified
8. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
9. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
10. Grates shall be bicycle safe and be designed with maximum inlet capacity.
11. Base of pit to be benched to minimum half height of pipe
12. All pits shall be provided with an approved locking system
13. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

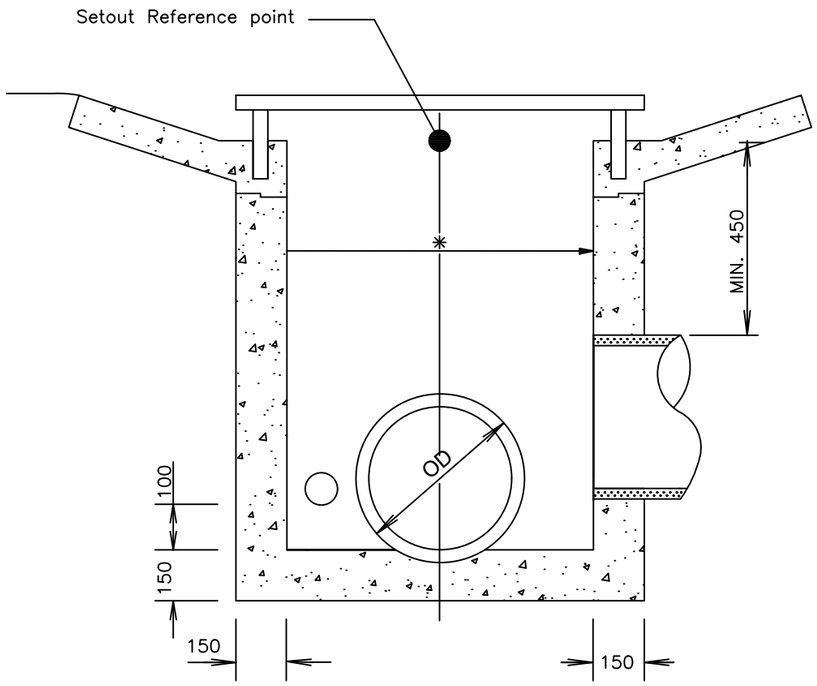
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

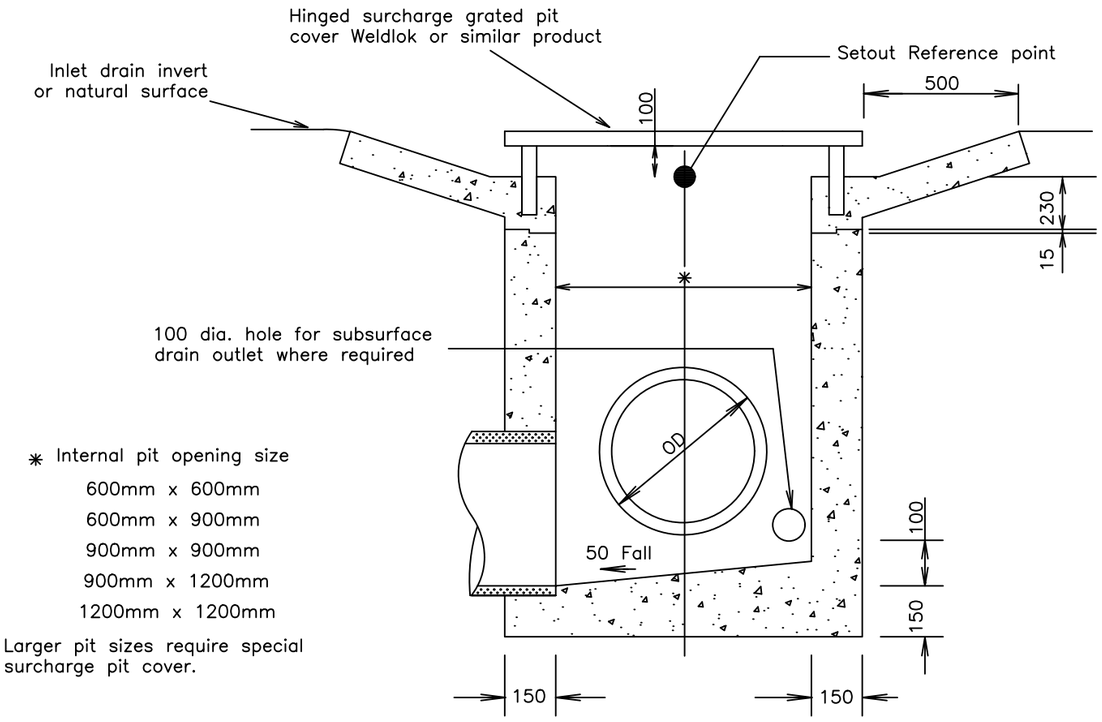
KSC STANDARD DRAWING
CAST IN-SITU GRATED GULLY PIT - PIPES > Ø600 & PIPES IN CARRIAGEWAY

NOT TO SCALE

ASD 304



SECTION AA



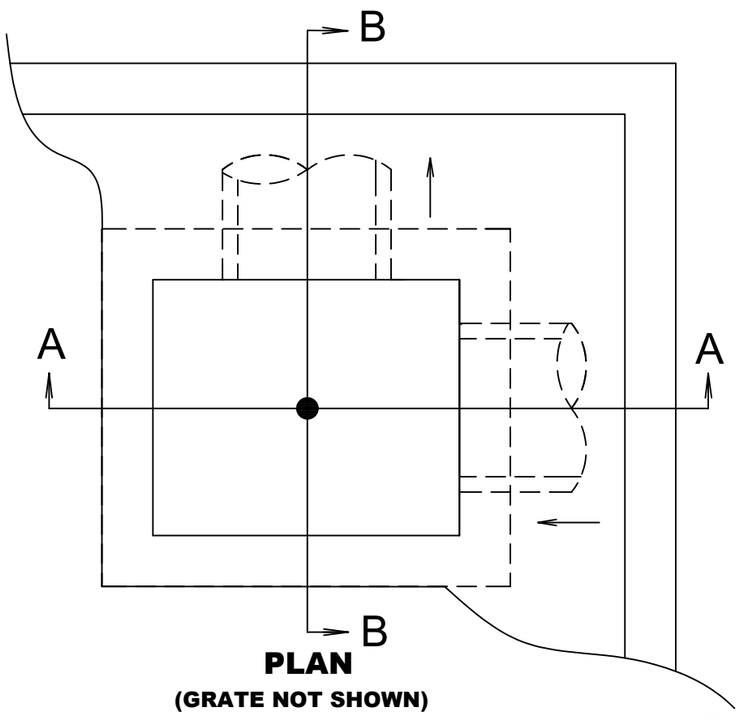
SECTION BB

✳ Internal pit opening size

600mm x 600mm
600mm x 900mm
900mm x 900mm
900mm x 1200mm
1200mm x 1200mm

Larger pit sizes require special surcharge pit cover.

ELEVATION



PLAN

(GRATE NOT SHOWN)

NOTE:

1. Compressive strength f'c for cast insitu concrete to be a minimum of 32mpa at 28 days.
2. All dimensions are in millimetres.
3. Provide SL82 mesh centrally placed to walls of pits > 1.5m deep. 50mm min cover return mesh 300mm into base and sides
4. All steelwork shall be hot dip galvanised in accordance with AS 1650
5. Max depth pit 3500mm
6. Provide min 50mm drop through pit
7. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
8. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
9. All pits shall be provided with an approved locking system
10. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

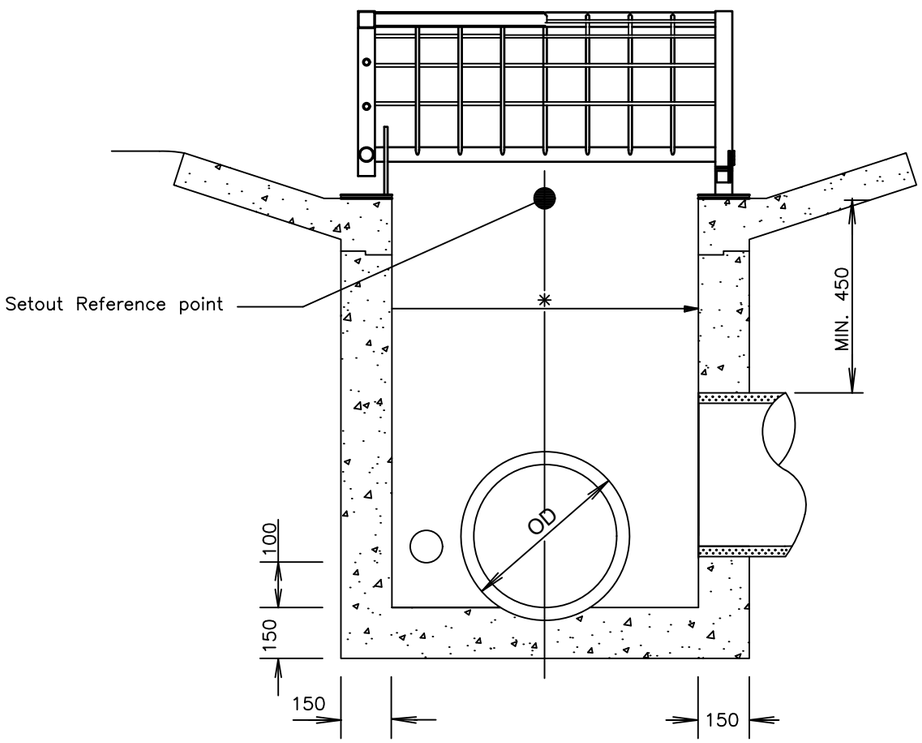
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

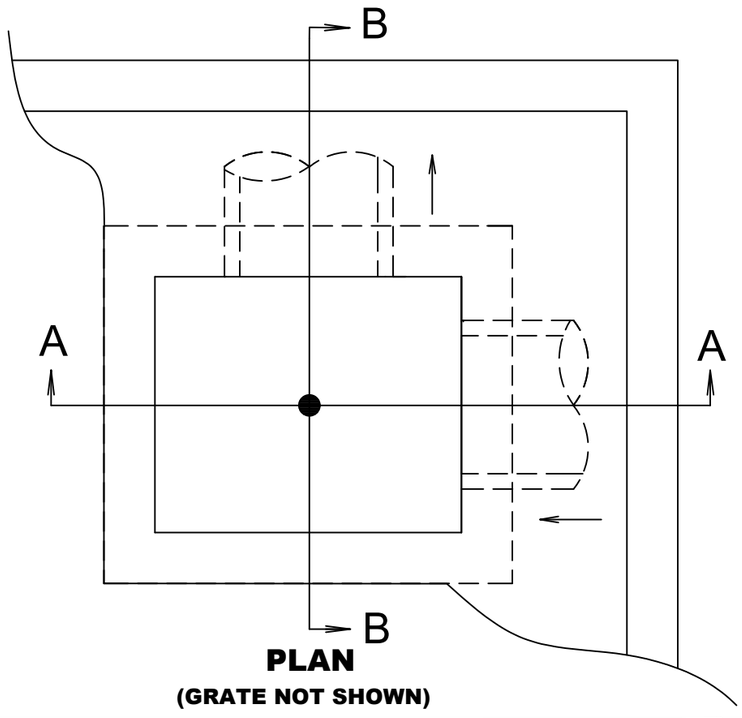
KSC STANDARD DRAWING
CAST INSITU STANDARD SURFACE INLET PIT

NOT TO SCALE

ASD 305

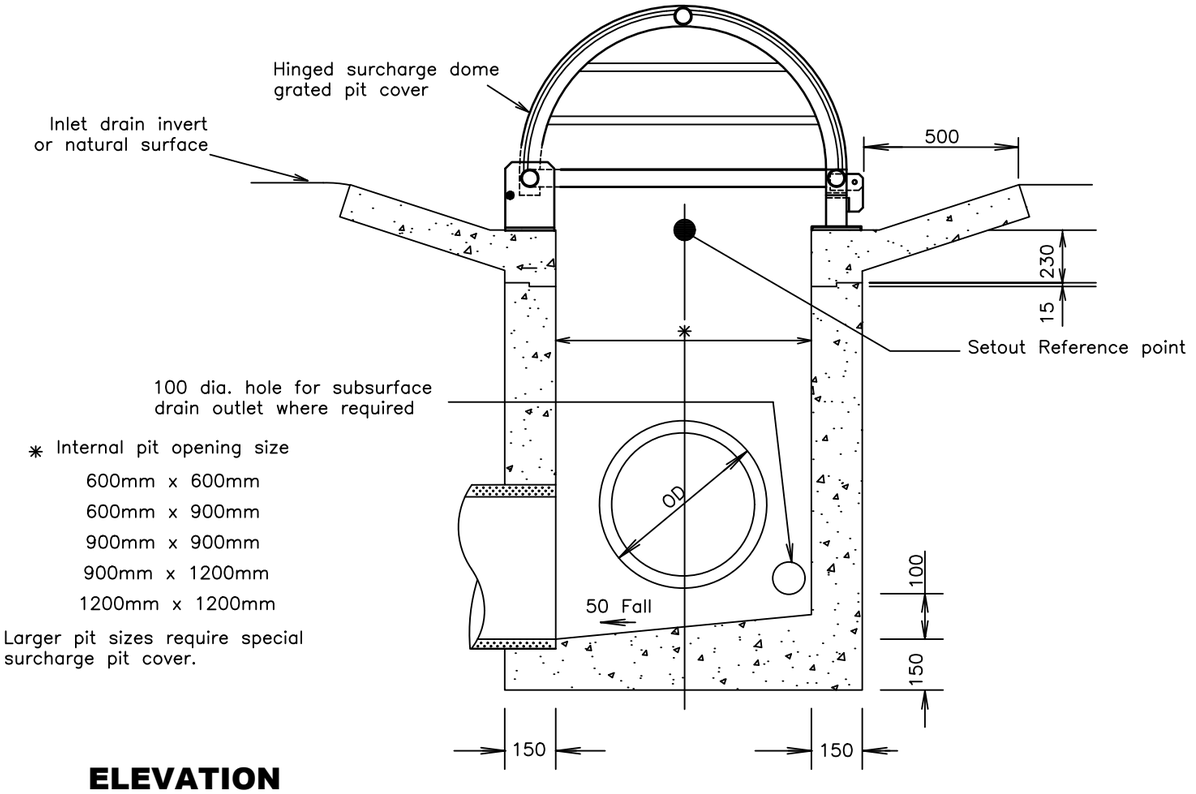


SECTION AA



PLAN

(GRATE NOT SHOWN)



ELEVATION

SECTION BB

✳ Internal pit opening size

600mm x 600mm

600mm x 900mm

900mm x 900mm

900mm x 1200mm

1200mm x 1200mm

Larger pit sizes require special surcharge pit cover.

NOTE:

1. Compressive strength f'c for cast insitu concrete to be a minimum of 32mpa at 28 days.
2. All dimensions are in millimetres.
3. Provide SL82 mesh centrally placed to walls of pits > 1.5m deep. 50mm min cover return mesh 300mm into base and sides
4. All steelwork shall be hot dip galvanised in accordance with AS 1650
5. Max depth pit 3500mm
6. Provide min 50mm drop through pit
7. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
8. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
9. All pits shall be provided with an approved locking system
10. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

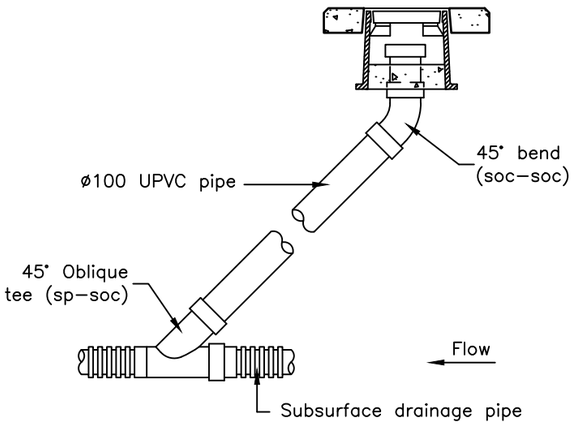
KEMPSEY Shire Council

KSC STANDARD DRAWING

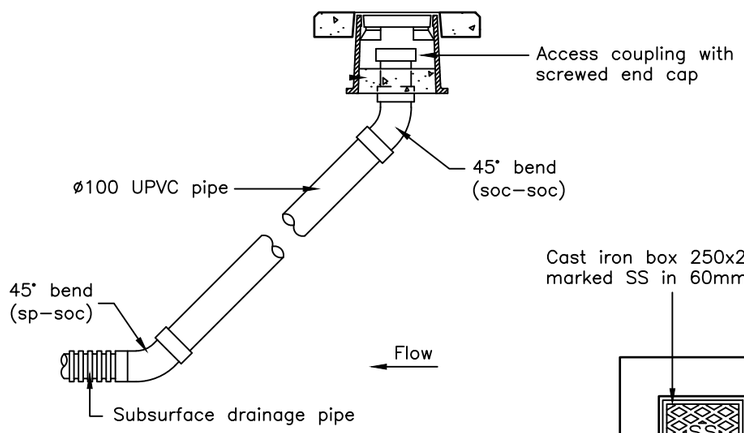
HIGH CAPACITY CAST INSITU STANDARD SURFACE INLET PIT

NOT TO SCALE

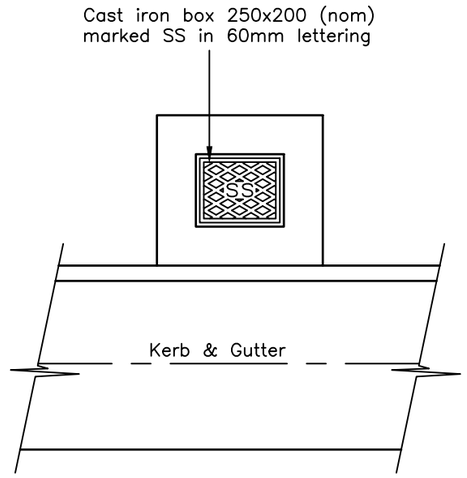
ASD 306



FLUSHING POINT ON LINE



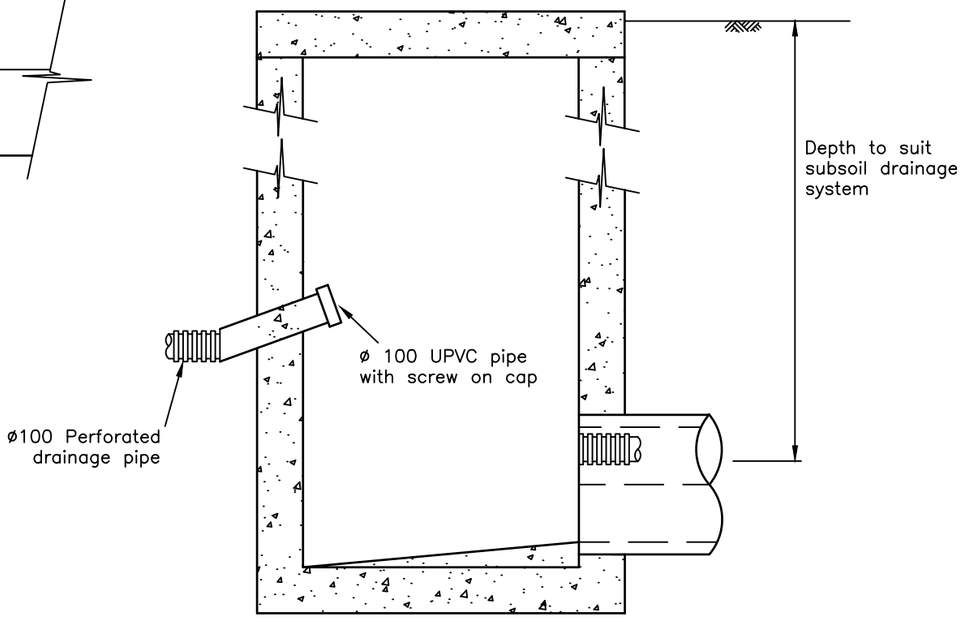
FLUSHING POINT HEAD OF LINE



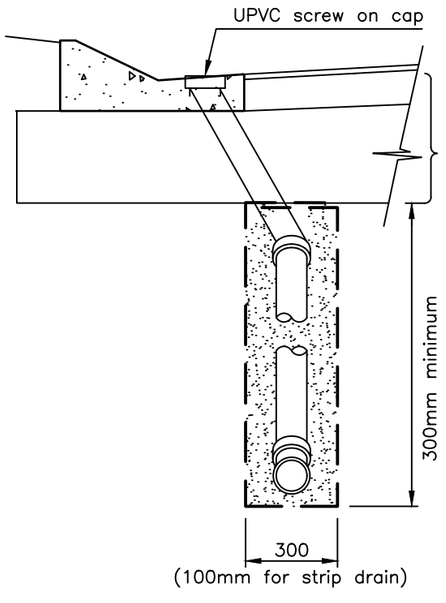
PLAN

NOTES:

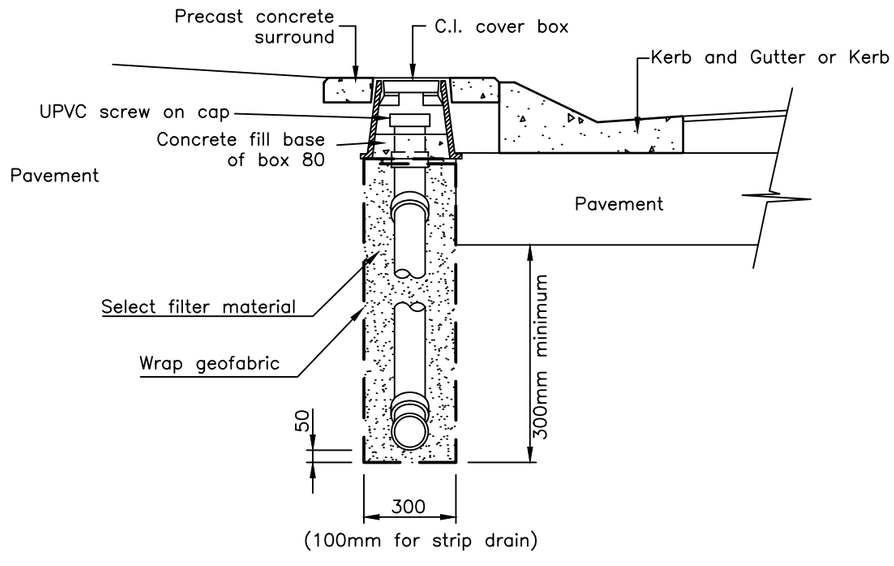
1. Construction shall be in accordance with Aus-Spec #1 sections C230 and C231
2. Provide flushing points at max 50m centres and outlets at max 100m centres
3. Select filter material shall be meet the requirements of Type A filter material, Aus-Spec #1 C230.12
4. All filter material shall be geotextile wrapped, min 140 g/m² non woven geotextile to AS 3706
5. Subsoil drainage pipe shall be slotted UPVC or perforated, ribbed HDPE to AS2439.1
6. Minimum longitudinal grades for pipes shall be: ribbed HDPE pipe - 1.5%, slotted UPVC pipe - 1%, 450mm strip drain - 0.5%
7. UPVC pipe and fittings shall be min Class 12
8. Road crossings to be Sewer Heavy grade UPVC Pipe



PIT CONNECTION



ALT. DETAIL
Pavement Rehabilitation



TRENCH DETAILS

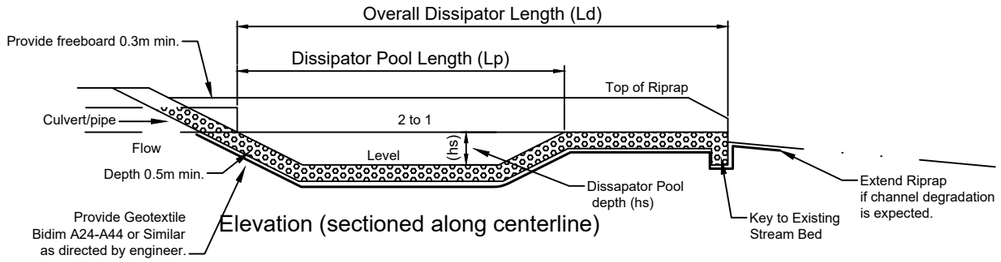
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

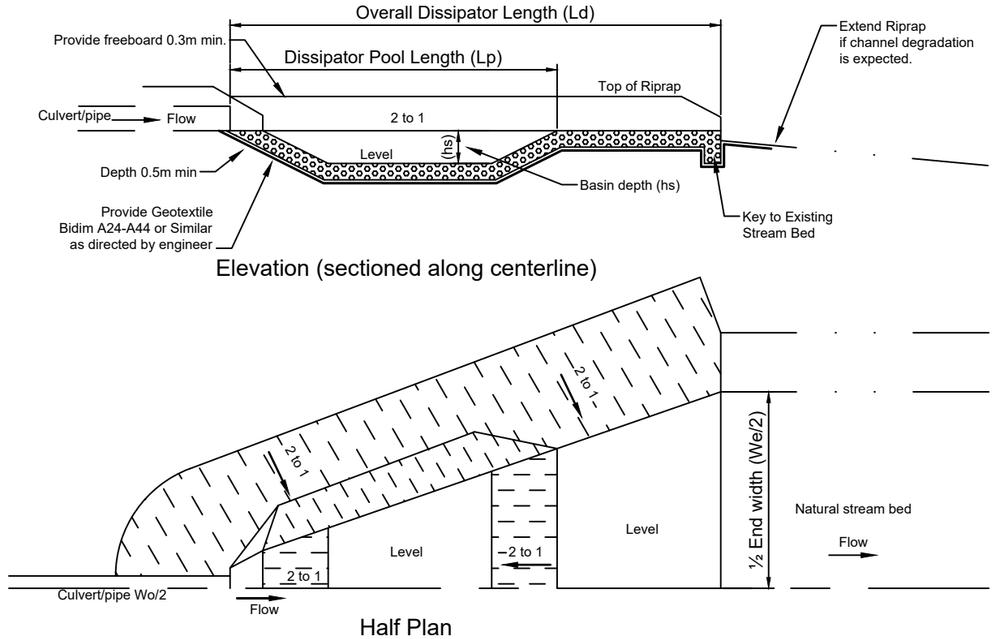
KSC STANDARD DRAWING STANDARD SUBSOIL DRAINAGE DETAILS

NOT TO SCALE

ASD 307



Riprap Outlet Protection/ Energy Dissipator Pipe Outlet Only



Riprap Outlet Protection/ Energy Dissipator Pipe Outlet with Headwall

Pipe Culvert Rip Rap Outlet Treatment						
Pipe Size (mm)	Pipe Grade %	Outlet Rock Dia. (m)	Overall Length (m)	Exit Width (m)	Dissapator Pool Length (m)	Dissapator Pool Depth (m)
300ø	< 0.5	0.1	1.50	1.20	n/a	n/a
	0.5- 2.0	0.1	1.0	1.0	1.0	0.10
	2.0 - 2.5	0.2	2.0	1.5	1.0	0.10
	2.5 - 3.0	0.2	2.5	2.0	1.5	0.20
	3.0 - 4.0	0.2	3.0	2.0	2.0	0.20
	4.0 - 5.0	0.2	4.0	3.0	2.5	0.25
	>5.0	detailed design rqd. Based on flow & velocity				
375ø	< 0.5	0.1	1.5	1.5	n/a	n/a
	0.5 - 2.0	0.1	1.5	1.0	1.0	0.10
	2.0 - 3.0	0.2	1.5	1.5	1.0	0.10
	3.0 - 4.0	0.2	2.0	1.5	1.5	0.15
	4.0 - 5.0	0.2	2.5	2.0	2.0	0.20
	>5.0	detailed design rqd. Based on flow & velocity				
450ø	< 0.5	0.2	2.5	2	n/a	n/a
	0.5 - 1.0	0.2	2.5	2	n/a	n/a
	1.0 - 2.0	0.2	1.0	1.0	1.0	0.10
	2.0 - 3.0	0.2	1.5	1.0	1.0	0.10
	3.0 - 4.0	0.2	2.0	2.0	1.5	0.15
	4.0 - 5.0	0.2	3.5	3.0	2.5	0.25
	>5.0	detailed design rqd. Based on flow & velocity				
525ø	< 0.5	0.2	1.5	1.5	n/a	n/a
	0.5 - 1.0	0.2	0.5	0.5	0.5	0.10
	1.0 - 2.0	0.2	1.0	1.0	1.0	0.10
	2.0 - 3.0	0.2	2.0	2.0	1.5	0.15
	3.0 - 4.0	0.2	3.5	3.0	2.0	0.20
	4.0 - 5.0	0.2	4.0	3.5	2.5	0.25
	>5.0	detailed design rqd. Based on flow & velocity				
600ø	<0.5	0.2	2.5	2	n/a	n/a
	0.5 - 2.0	0.2	2.0	1.5	1.0	0.10
	2.0 - 3.0	0.3	2.5	2.0	1.5	0.15
	3.0 - 4.0	0.3	3.0	2.5	2.0	0.20
	4.0 - 5.0	0.3	4.0	3.5	2.5	0.25
	>5.0	detailed design rqd. Based on flow & velocity				

NOTES:
1. Warp basin to conform to natural stream channel. Top of riprap in floor of basin should be at the same level or lower than natural channel at the end of the basin.
2. Culvert end treatment may be varied to suit site conditions.
3. A small diameter pipe should be provided to drain pool during periods of low flow.

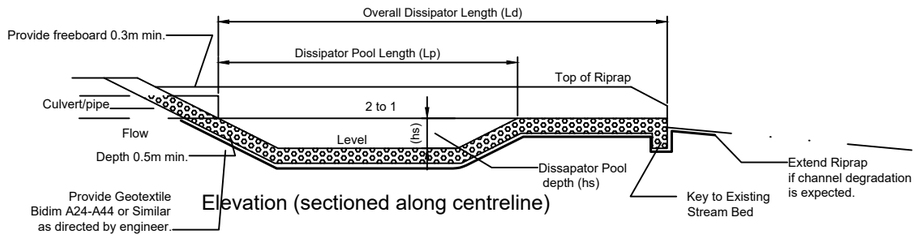
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

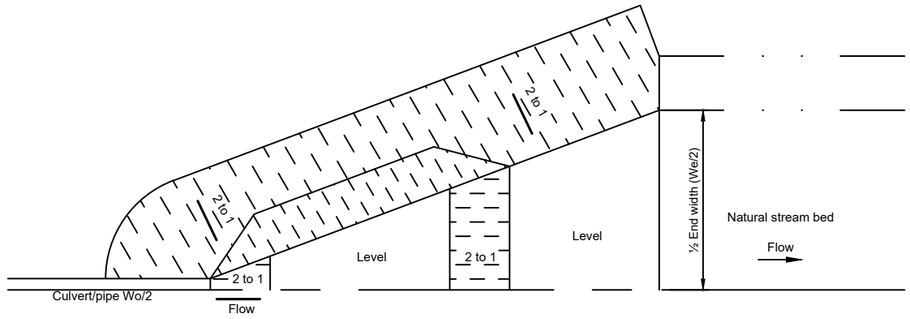
KSC STANDARD DRAWING
RIPRAP OUTLET PROTECTION 300 - Ø600mm PIPE

NOT TO SCALE

ASD 308

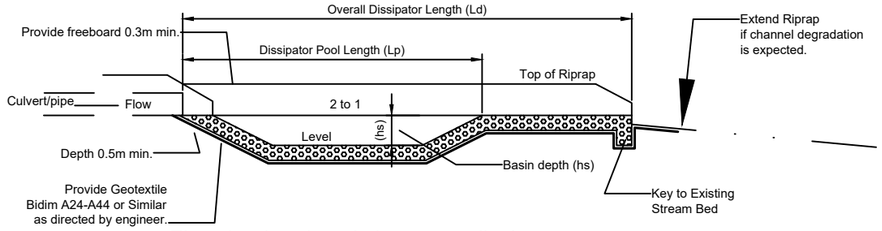


Elevation (sectioned along centreline)

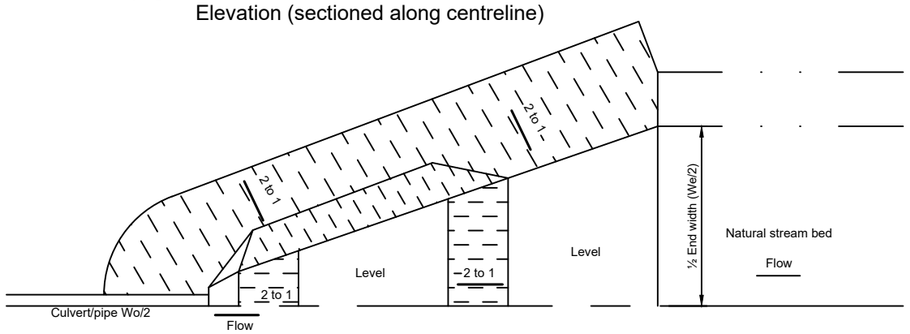


Half Plan

Riprap Outlet Protection/ Energy Dissipator
Pipe Outlet Only



Elevation (sectioned along centreline)



Half Plan

Riprap Outlet Protection/ Energy Dissipator
Pipe Outlet with Headwall

Pipe Culvert Rip Rap Outlet Treatment						
Pipe Size (mm)	Pipe Grade %	Outlet Rock Dia. (m)	Overall Length (m)	Exit Width (m)	Dissapator Pool Length (m)	Dissapator Pool Depth (m)
750ø	0.0 - 1.0	0.2	1.5	1.5	n/a	n/a
	1.0 - 2.0	0.3	1.0	1.0	0.5	0.10
	2.0 - 3.0	0.3	1.0	1.0	1.0	0.10
	3.0 - 4.0	0.3	2.0	2.0	1.5	0.15
	4.0 - 5.0	0.3	3.0	3.0	2.0	0.20
	>5.0	detailed design rqd. Based on flow & velocity				
900ø	0.0 - 1.0	0.2	3.0	3.0	n/a	n/a
	1.0 - 2.0	0.3	2.0	2.0	1.0	0.10
	2.0 - 3.0	0.3	3.5	3.5	2.5	0.25
	3.0 - 4.0	0.3	4.0	4.0	3.0	0.30
	4.0 - 5.0	0.3	7.0	6.5	4.5	0.35
	>5.0	detailed design rqd. Based on flow & velocity				
1050ø	< 0.5	0.2	3.0	3.1	n/a	n/a
	0.5 - 1.0	0.3	4.0	4.0	2.5	0.25
	1.0 - 2.0	0.3	5.0	5.0	3.5	0.30
	2.0 - 5.0	0.3	5.0	5.0	3.5	0.35
	>5.0	detailed design rqd. Based on flow & velocity				
1200ø	< 0.5	0.2	6.0	6.5	n/a	n/a
	< 0.5	0.3	5.0	5.5	3.5	0.30
	0.5 - 1.0	0.3	7.0	7.0	4.5	0.45
	1.0 - 4.0	0.4	3.0	3.0	2.0	0.20
	4.0 - 5.0	0.4	4.5	5.0	3.0	0.30
	>5.0	detailed design rqd. Based on flow & velocity				
1500ø	< 0.5	0.2	6.0	7.0	n/a	n/a
	< 0.5	0.3	5.0	6.0	3.5	0.4
	0.5 - 2.0	0.4	3.0	3.5	2.0	0.2
	2.0 - 4.0	0.4	4.5	5.5	3.0	0.3
	4.0 - 5.0	0.4	5.5	7.0	4.0	0.4
	>5.0	detailed design rqd. Based on flow & velocity				
1800ø	< 0.5	0.3	6	8	n/a	n/a
	< 0.5	0.4	4.5	6	3	0.3
	0.5 - 5.0	0.4	10	13	7	0.7
	>5.0	detailed design rqd. Based on flow & velocity				
2100ø	< 0.5	0.4	7.5	10.5	n/a	n/a
	< 0.5	0.4	10	13.5	7	0.8
	< 0.5	0.5	8	11	5.5	0.7
	> 1.0	detailed design rqd. Based on flow & velocity				

NOTES:

1. Warp basin to conform to natural stream channel. Top of riprap in floor of basin should be at the same level or lower than natural channel at the end of the basin.
2. Culvert end treatment may be varied to suit site conditions.
3. A small diameter pipe should be provided to drain pool during periods of low flow.

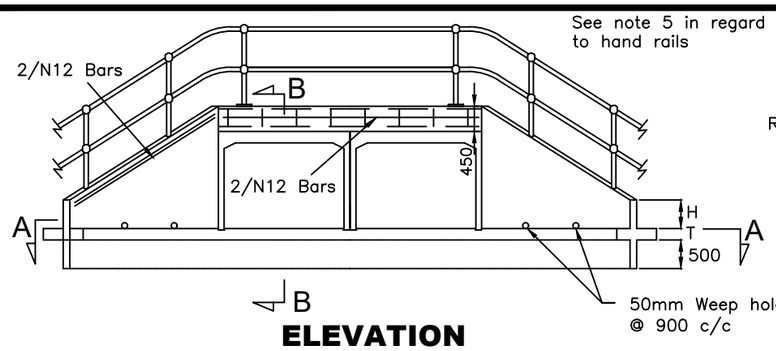
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

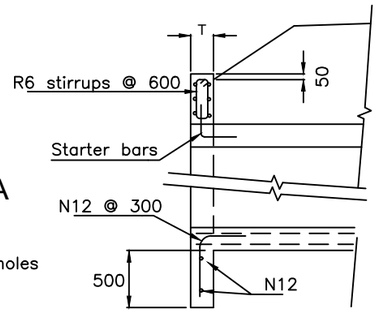
KSC STANDARD DRAWING
RIPRAP OUTLET PROTECTION Ø750 - 2100mm PIPE

NOT TO SCALE

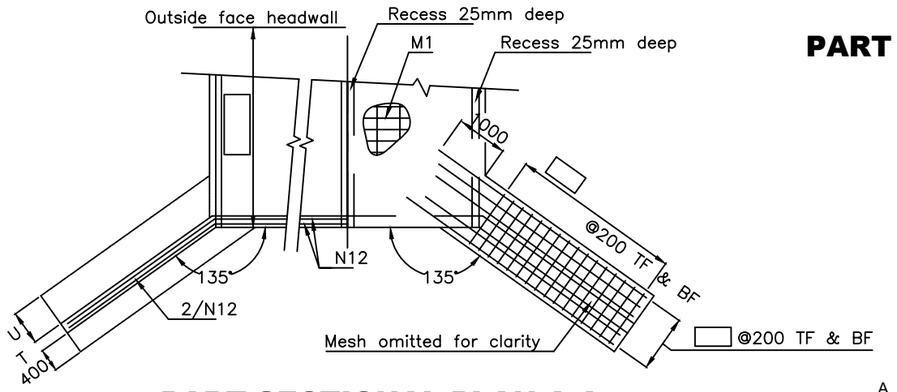
ASD 309



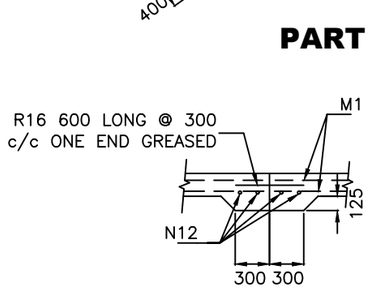
ELEVATION



PART SECTION B-B

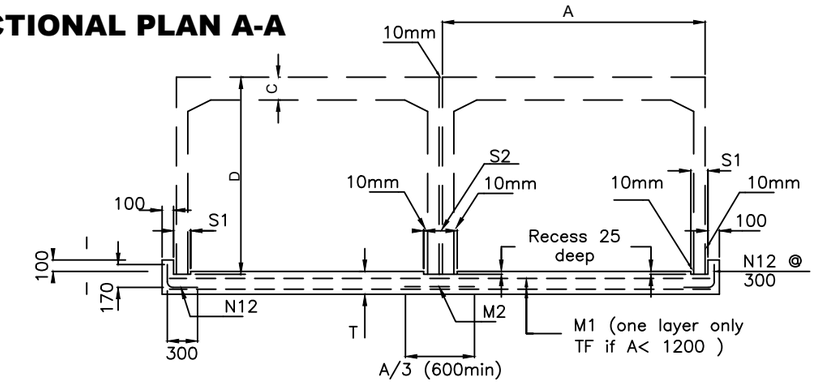


PART SECTIONAL PLAN A-A

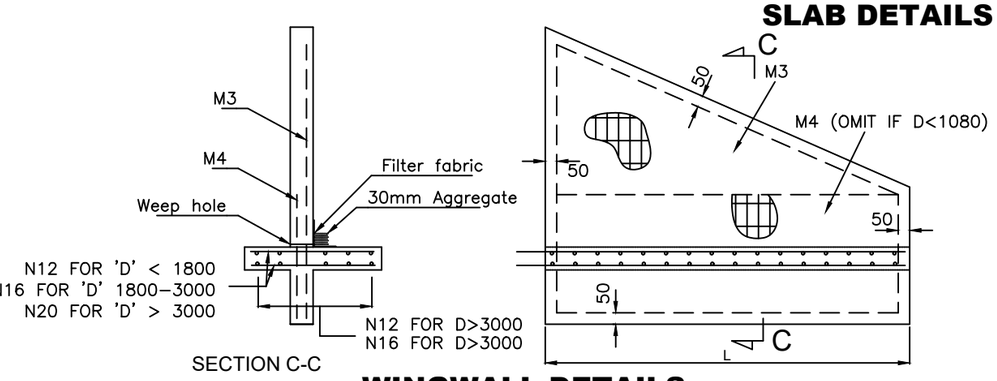


SLAB JOINT DETAIL

USE WHEN DISTANCE BETWEEN HEADWALLS > 12m



SLAB DETAILS



WINGWALL DETAILS

NOTE:

1. Concrete strength to be 32MPa at 28 days
2. When culverts are to be built in saltwater a sulphate resistant cement is to be used
3. All exposed corners and re-entrant corners are to be chamfered 25mm
4. Reinforcement clear cover to be in accordance with AS3600
5. Pedestrian barriers (eg. handrails) must be installed in pedestrian accessible areas where the drop exceeds 900mm or as directed by Council. See standard drawing ASD806 for hand rail details
6. Where headwalls are installed in proximity to the adjoining road pavement, the designer must make an assessment of the related hazards, and provide guardrail (or equivalent) where necessary

NOM. SIZE	A	C	S1	S2	D	H	L	T	U	MESH	NOM. SIZE	A	C	S1	S2	D	H	L	T	U	MESH
600x300	763	102	94	178	402	240	1000	175	400	RL918	2700x600	2969	190	134	258	800	340	1400	260	500	RL1118
600x375	763	102	92	174	477	260	1100	175	425	RL918	2700x750	2975	190	134	258	952	390	1600	260	550	RL1118
600x450	763	102	91	172	552	290	1200	175	450	RL918	2700x900	2981	190	134	258	1105	440	1800	260	600	RL1118
750x300	917	102	97	184	402	240	1000	175	400	RL918	2700x1200	2993	190	134	258	1409	540	2300	260	700	RL1118
750x450	917	102	95	178	552	290	1200	175	450	RL918	2700x1500	3007	190	134	258	1714	640	2700	260	800	RL1118
750x600	917	102	94	172	702	340	1400	175	500	RL918	2700x1800	3019	190	134	258	2019	740	3100	260	900	RL1118
900x375	1076	102	98	186	477	260	1100	175	425	RL918	2700x2100	3031	190	134	258	2324	840	3500	260	1000	RL1118
900x450	1076	102	97	184	552	290	1200	175	450	RL918	2700x2400	3045	190	134	258	2628	940	4000	260	1100	RL1118
900x600	1076	102	94	180	702	340	1400	175	500	RL918	2700x2700	3057	190	134	258	2933	1040	4400	260	1200	RL1118
900x750	1076	102	91	174	852	390	1600	175	550	RL918	3000x900	3310	225	147	284	1115	440	1800	275	600	RL1118
1050x450	1234	115	100	190	565	290	1200	175	450	RL918	3000x1200	3322	225	147	284	1419	540	2300	275	700	RL1118
1050x600	1234	115	97	184	715	340	1400	175	500	RL918	3000x1500	3336	200	134	258	1724	640	2700	275	800	RL1118
1050x750	1234	115	94	178	865	390	1600	175	550	RL918	3000x1800	3348	200	134	258	2029	740	3100	275	900	RL1118
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1200x450	1394	125	103	196	575	290	1200	175	450	RL718	3000x2400	3374	200	134	258	2638	940	4000	275	1100	RL1118
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1500x1500	1788	150	122	234	1674	640	2700	175	800	RL718	3300x3300	3717	225	147	284	3578	1240	5300	290	1400	RL1218
1800x600	2055	150	122	234	760	340	1400	200	500	RL818	3600x900	3946	250	160	310	1165	440	1800	305	600	RL1218
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1800x1200	2079	150	122	234	1369	540	2300	200	700	RL818	3600x1800	3984	250	160	310	2079	740	3100	305	900	RL1218
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2400x1200	2688	175	122	234	1379	540	2300	240	700	RL1018	4200x2700	4627	275	172	334	3018	1040	4400	325	1200	RL1118
2400x1500	2702	175	122	234	1684	640	2700	240	800	RL1018	4200x3000	4639	275	172	334	3323	1140	4800	325	1300	RL1118
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2400x2100	2726	175	122	234	2294	840	3500	240	1000	RL1018	4200x3600	4665	275	172	334	3923	1340	5600	325	1500	RL1118
2400x2400	2740	175	122	234	2598	940	4000	240	1100	RL1018											

REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

KSC STANDARD DRAWING
PRECAST BOX CULVERTS - SLAB & HEADWALL

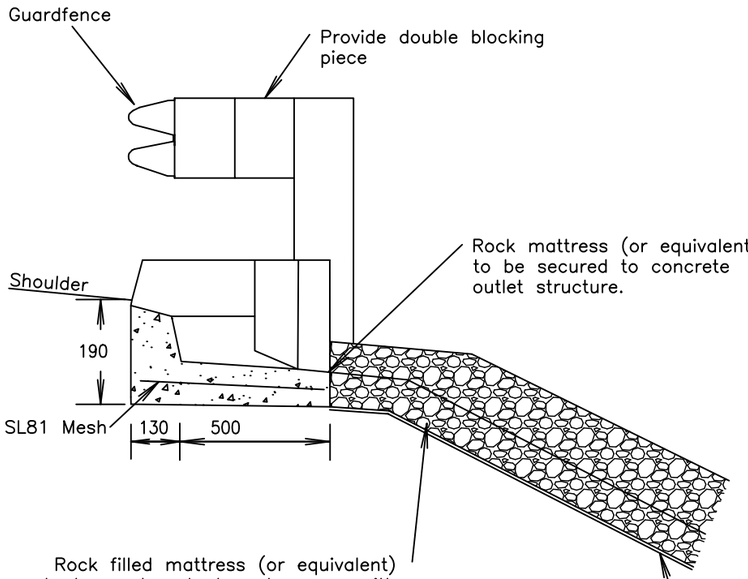
NOT TO SCALE

ASD 310

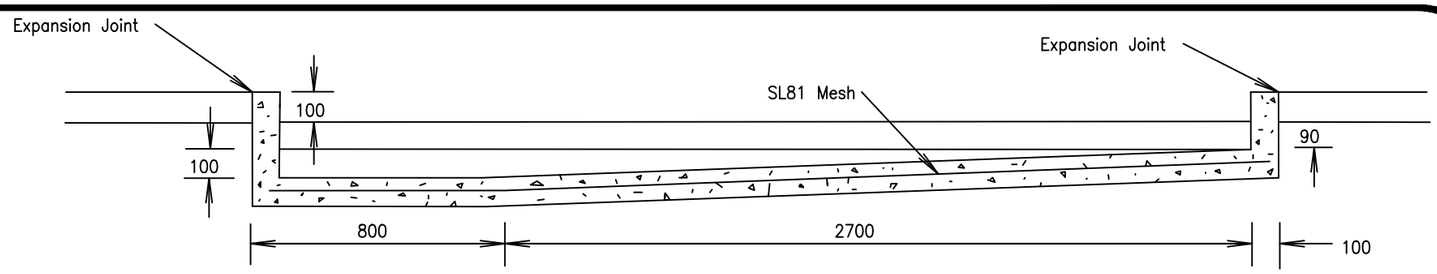
NOTES:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS3600
2. Construction shall be in accordance with Aus-Spec # 1, C223 - Drainage Structures
3. Construct gully pit to suit direction of flow
4. Place geotextile filter fabric as specified under all rock filled wire mattress
5. On rock faced batters terminate drain at top of rock facing
6. All dimensions are in millimetres

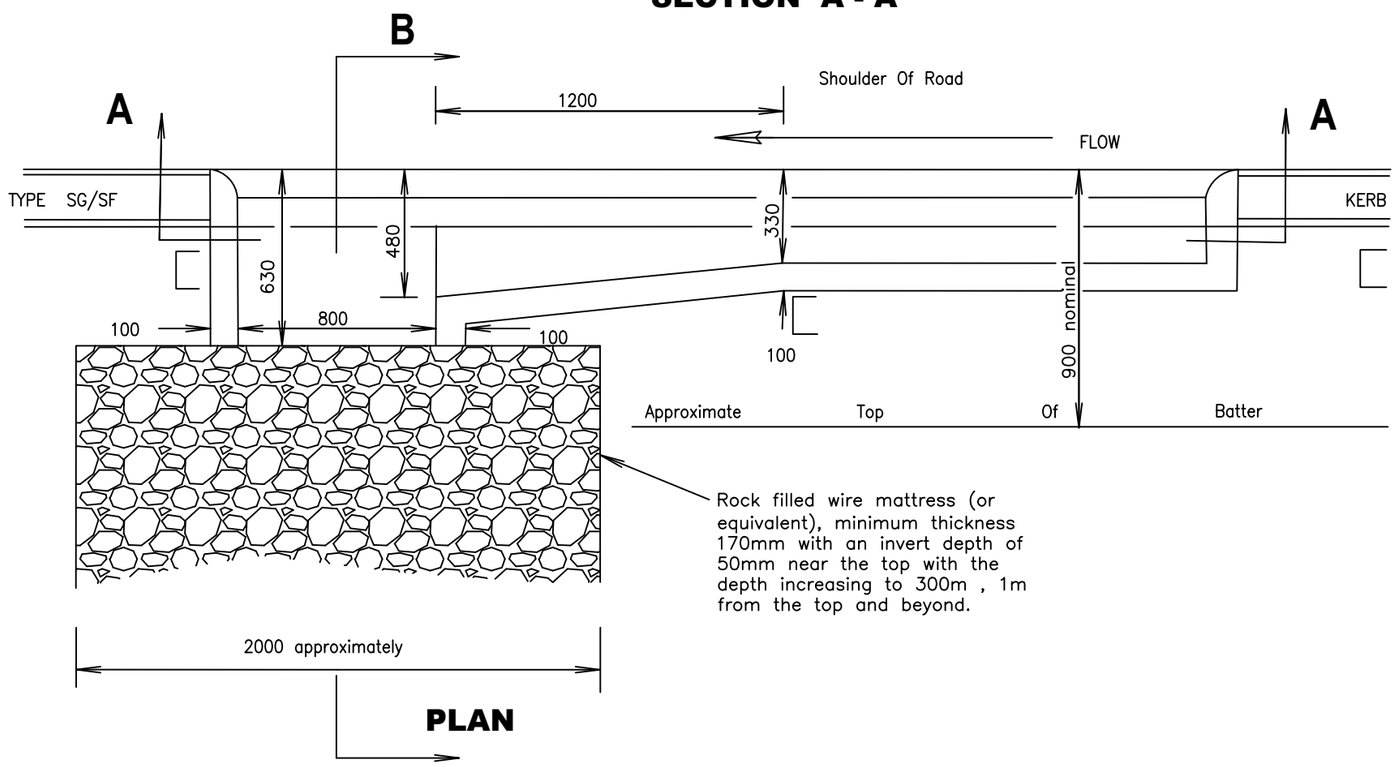
This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.C03.A REFER CURRENT OR EQUIVALENT EDITION BEFORE USE.



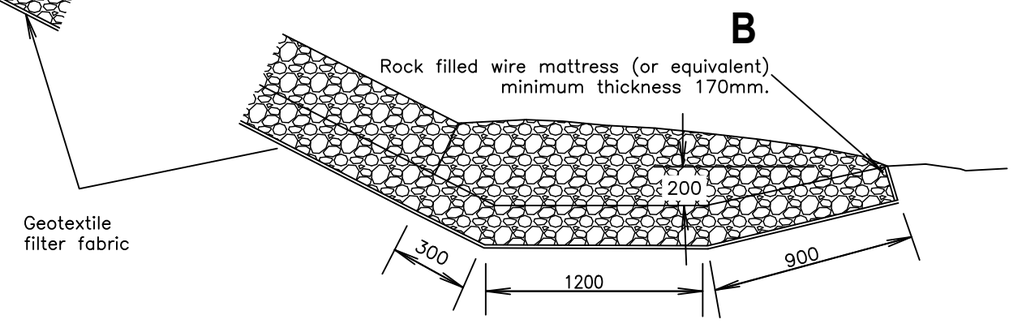
SECTION B - B



SECTION A - A



PLAN



DETAIL OF SPILLWAY OUTLET

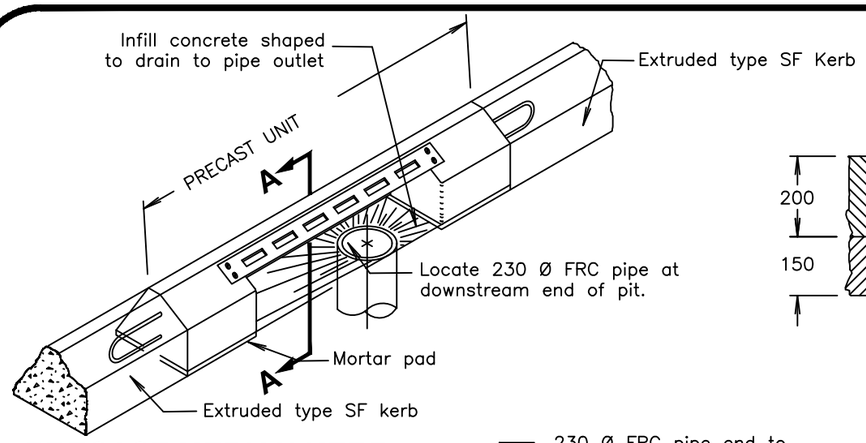
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

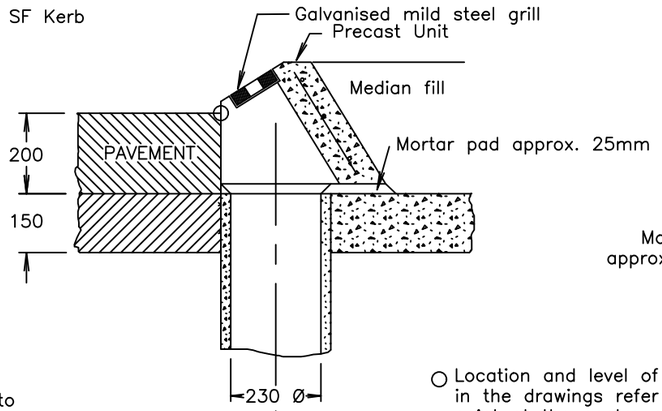
KSC STANDARD DRAWING
TYPE SG / SF KERB OUTLET WITH EMBANKMENT BATTER SLOPE DRAIN

NOT TO SCALE

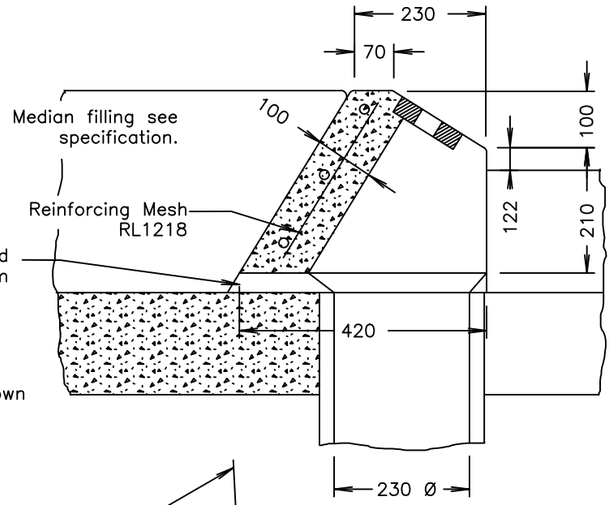
ASD 311



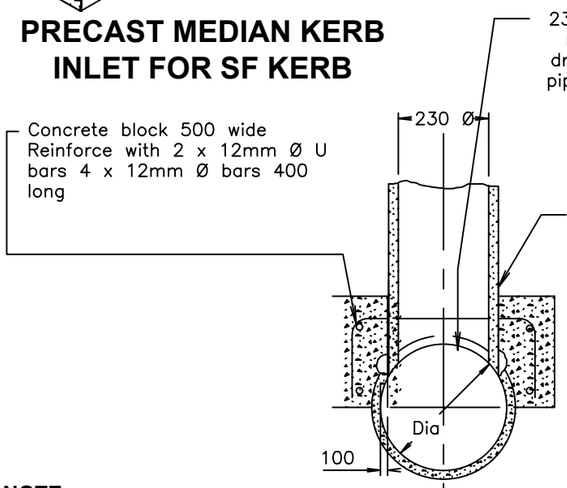
PRECAST MEDIAN KERB INLET FOR SF KERB



○ Location and level of pit shown in the drawings refer to this point at the centre of the inlet.



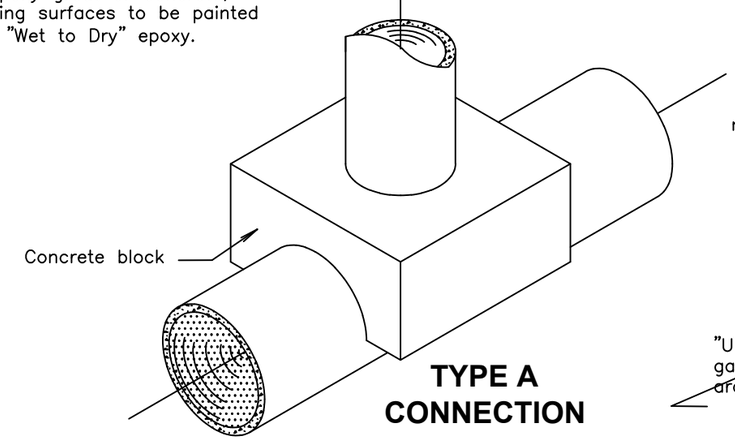
SECTION 'AA'



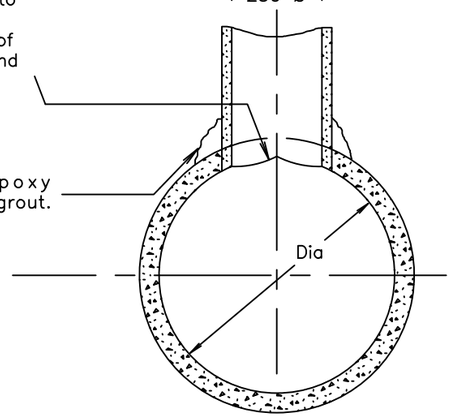
TYPE 'A'

NOTE

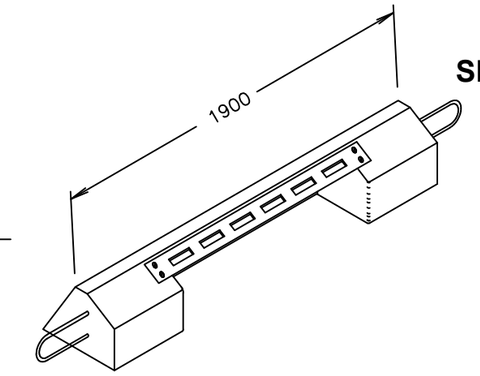
Immediately prior to application of epoxy grout or concrete, jointing surfaces to be painted with "Wet to Dry" epoxy.



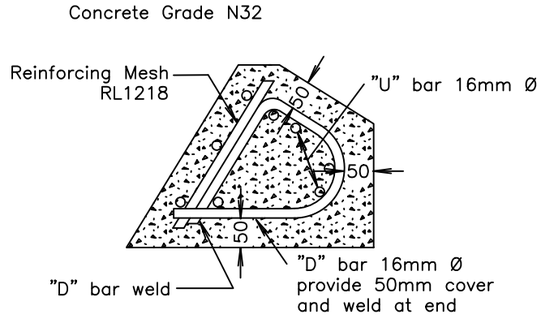
TYPE A CONNECTION



TYPE 'B' SECTION 'AA'



PRECAST MEDIAN KERB INLET



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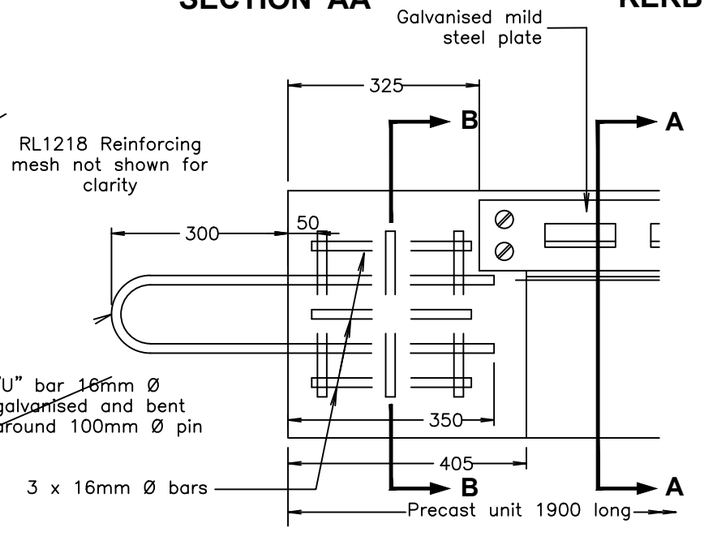


ELEVATION

NOTE

Reinforcement and end treatment to be duplicated at other end.
All dimensions are in millimetres unless otherwise stated.

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B11.A REFER CURRENT OR EQUIVALENT EDITION BEFORE USE.

CONNECTION TYPES

TYPE A :- 300-525mm Ø R.C.P.
TYPE B :- 600mm + Ø R.C.P.

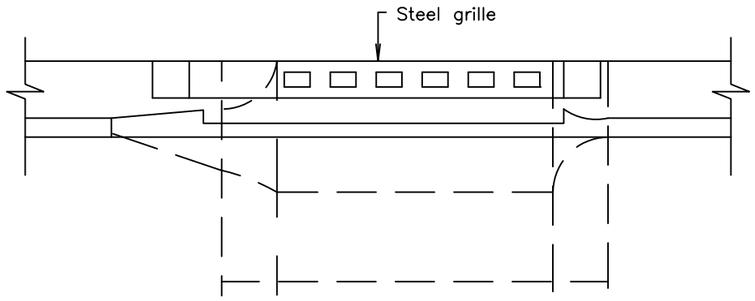
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

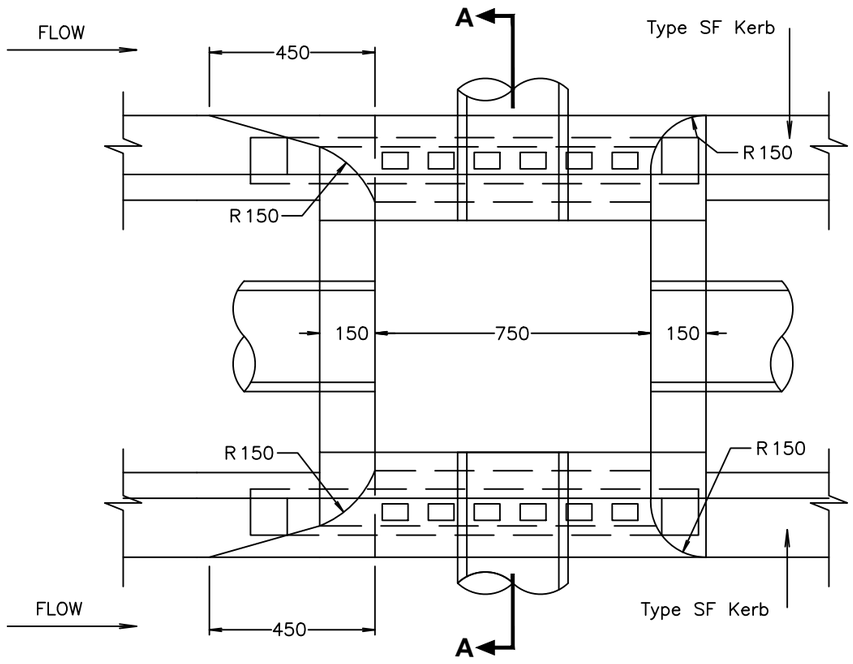
KSC STANDARD DRAWING
PRECAST MEDIAN KERB INLET FOR SF KERB

NOT TO SCALE

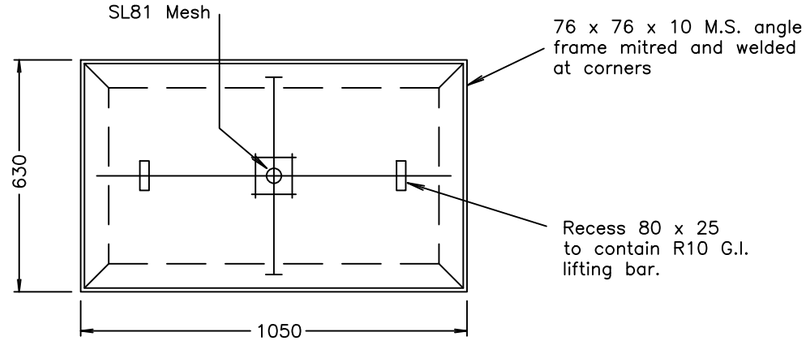
ASD 312



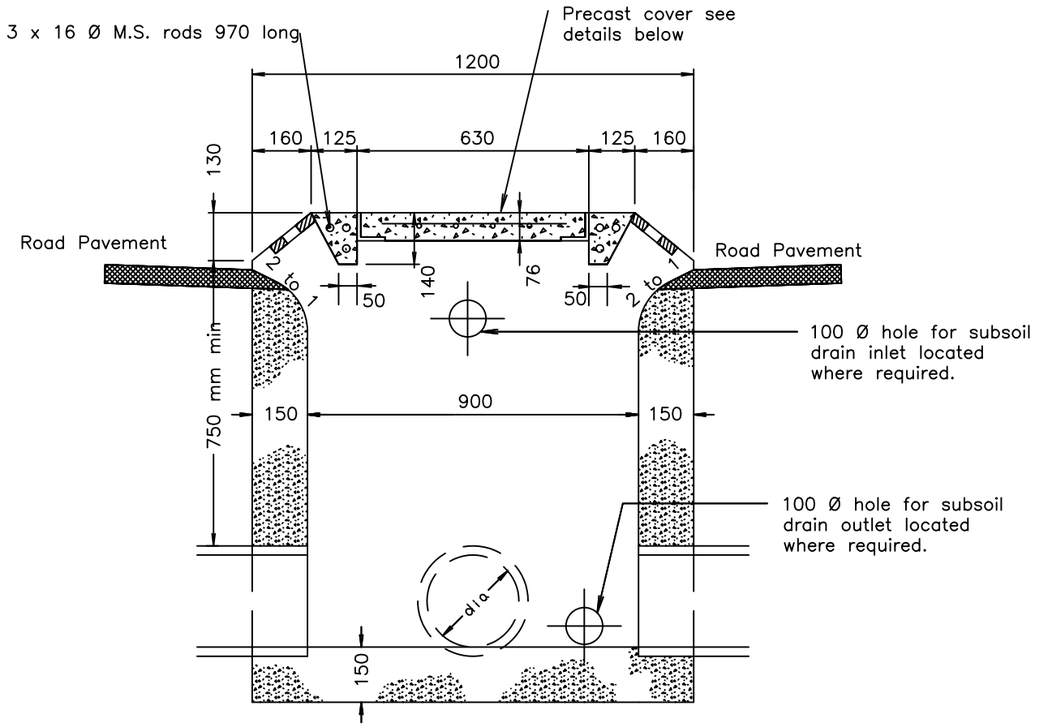
ELEVATION OF INLET



PLAN WITH COVER AND GRILLE REMOVED



PLAN OF PIT COVER



SECTION AA

NOTES:

1. *Compressive strength, F'c for cast insitu concrete to be min N32 to AS 3600.*
2. *All exposed edges to be rounded with 20mm radius.*
3. *All mild steel material to be galvanised on completion in accordance with AS1650.*
4. *Side walls of all pits deeper than 1500 are to be reinforced with one layer of SL82 mesh returned 300 into base.*
5. *Depth of pit not to exceed 3500.*
6. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD300 for Step Iron details.
7. *For connection to subsoil drainage refer to ASD305. 8. All dimensions are in millimetres.*

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B10.A REFER TO CURRENT EQUIVALENT EDITION BEFORE USE.

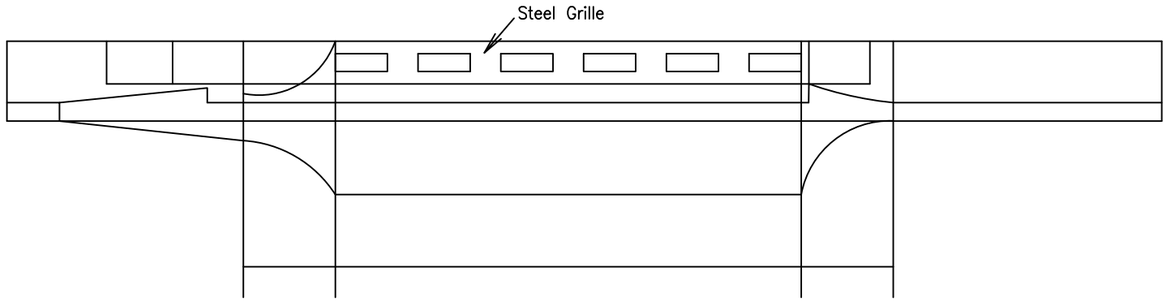
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

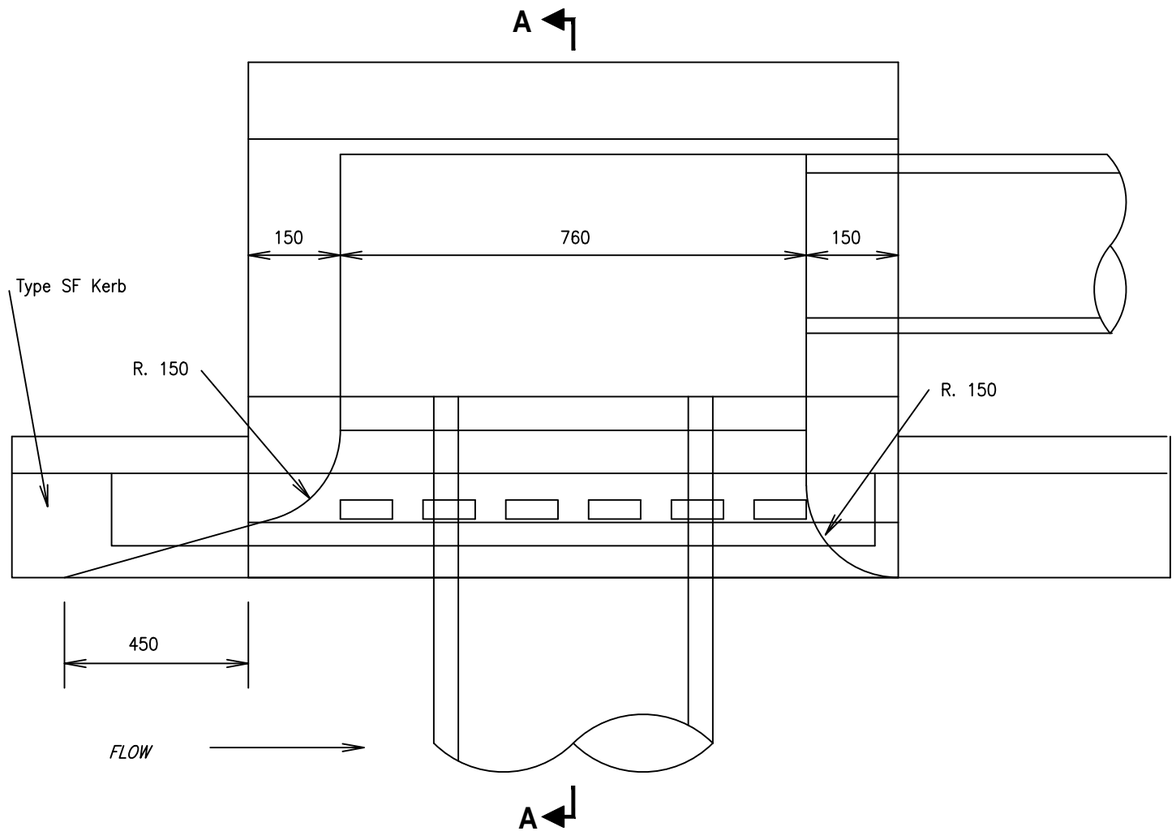
KSC STANDARD DRAWING
STANDARD DOUBLE INLET GULLY PIT FOR TYPE SF KERB

NOT TO SCALE

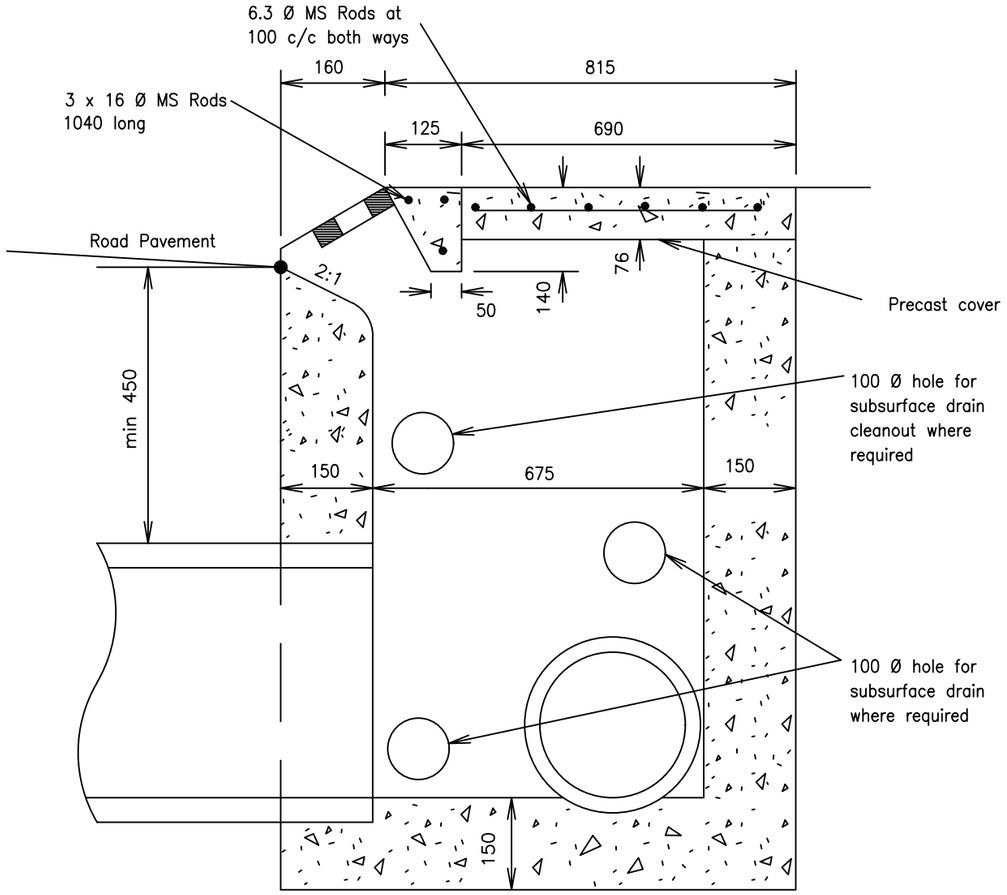
ASD 313



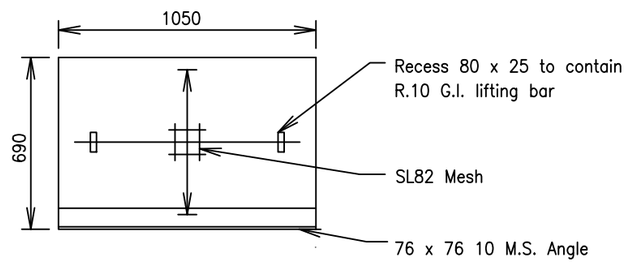
ELEVATION OF INLET



PLAN WITH COVER AND GRILLE REMOVED



SECTION A - A



CONCRETE COVER

NOTES:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS 3600.
2. Side walls of pits deeper than 1500 are to be reinforced with one layer of SL82 mesh returned 300 into base.
3. Depth of pit not to exceed 3500.
4. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD300 for Step Iron details.
5. All exposed edges to be rounded to 20 radius.
6. For pipes greater than 450mm Ø * = nOD + (n - 1) OD/2 + 200 n = number of pipes 8. Surface of precast cover to be finished with materials and method similar to that specified for median paving.
7. All mild steel material to be galvanised on completion in accordance with AS 1650.
8. For connection to subsoil drainage refer to ASD305.
9. All Dimensions are in millimetres.

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B09.A REFER TO CURRENT EQUIVALENT EDITION BEFORE USE.

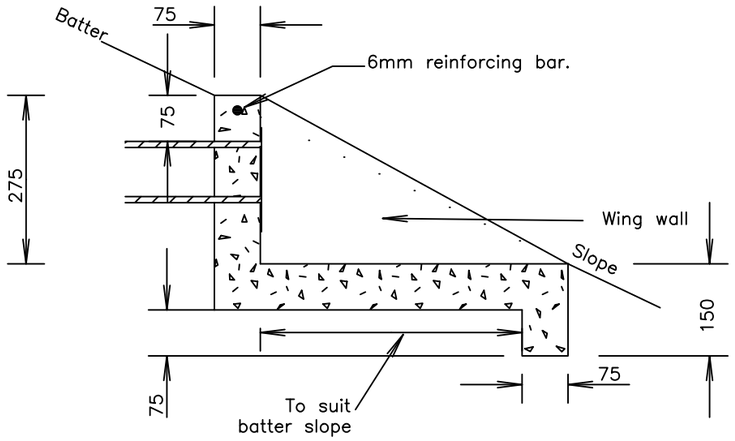
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

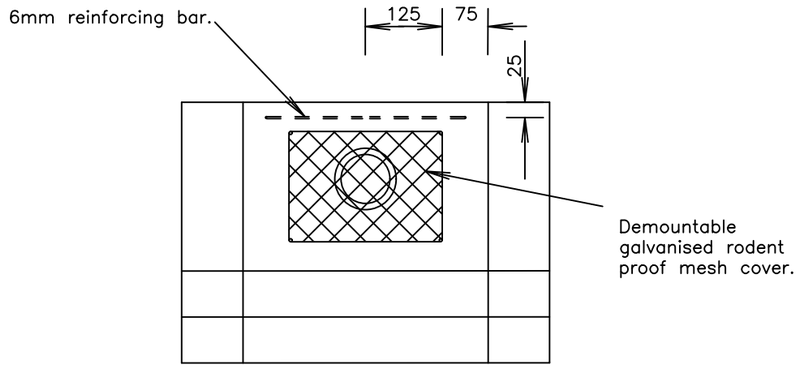
KSC STANDARD DRAWING
SINGLE INLET GULLY PIT FOR TYPE SF KERB

NOT TO SCALE

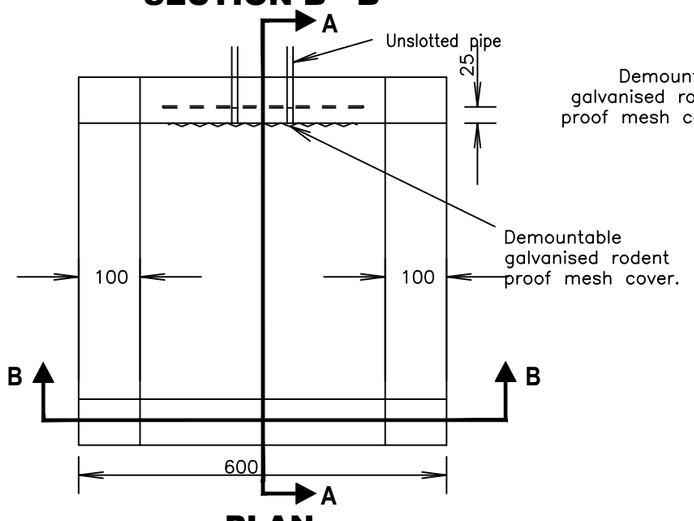
ASD 314



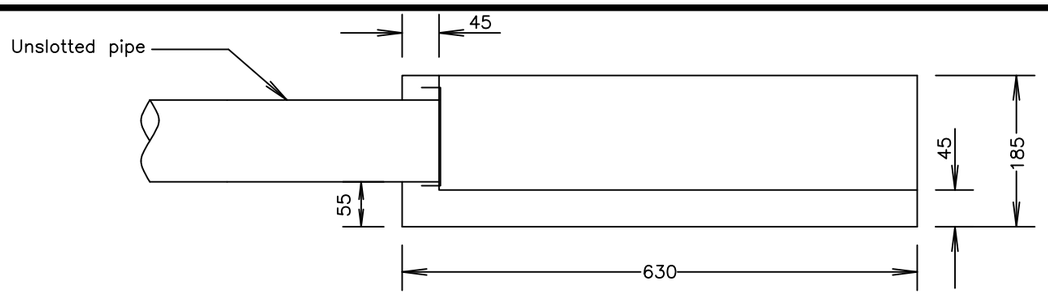
SECTION A-A



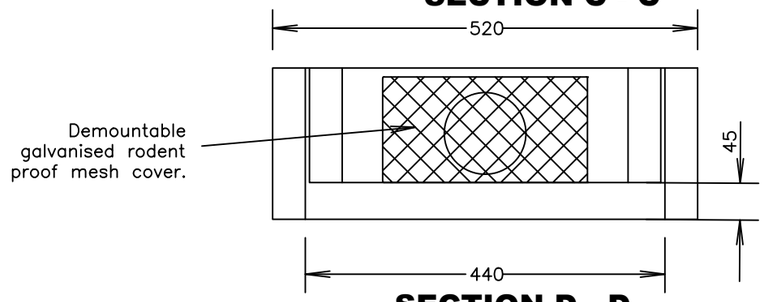
SECTION B - B



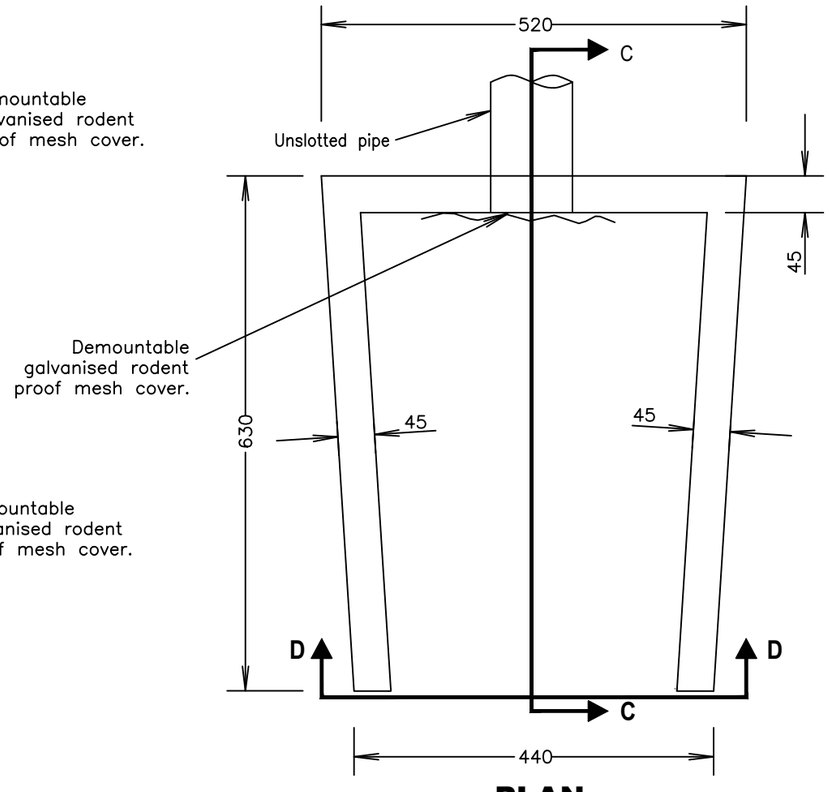
PLAN
STEEP BATTER
Steeper than 4 Hor. : 1 Vert.



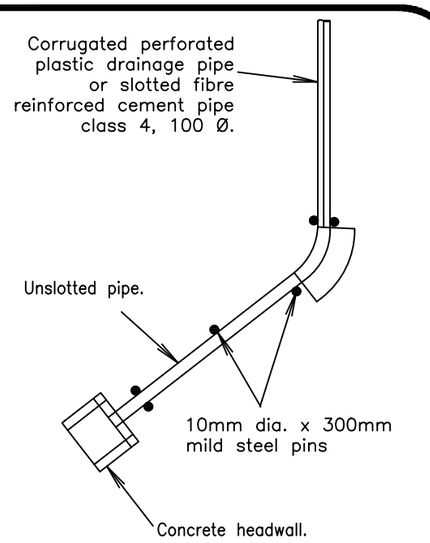
SECTION C - C



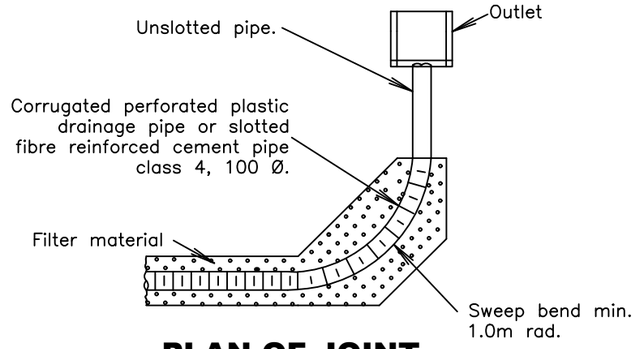
SECTION D - D



PLAN
FLAT BATTER
4 Hor. : 1 Vert. or flatter.



OUTLET DETAILS TO HEADWALL



PLAN OF JOINT
(Used where subsurface drain turned at right angles across shoulder to outlet.)

NOTES:

1. Compressive strength F'c for cast insitu. Concrete to be min N32 to AS 3600.
2. All dimensions in millimetres unless otherwise stated

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R33.A04.B REFER CURRENT EQUIVALENT EDITION BEFORE USE

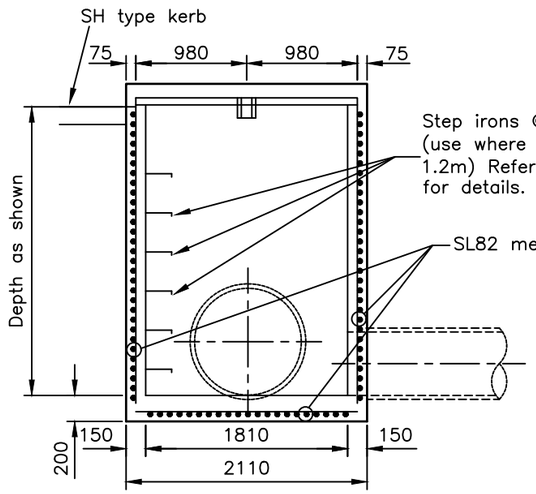
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

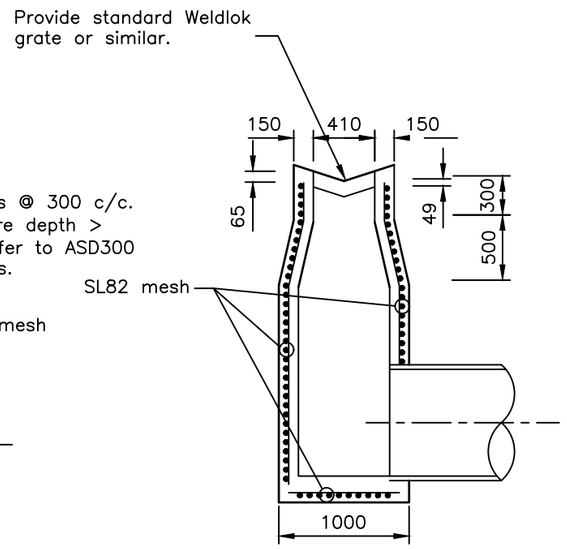
KSC STANDARD DRAWING CAST INSITU OUTLET STRUCTURES FOR SUBSURFACE DRAINS

NOT TO SCALE

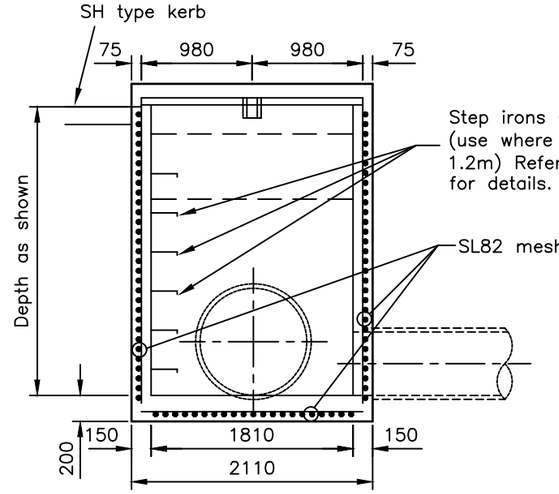
ASD 315



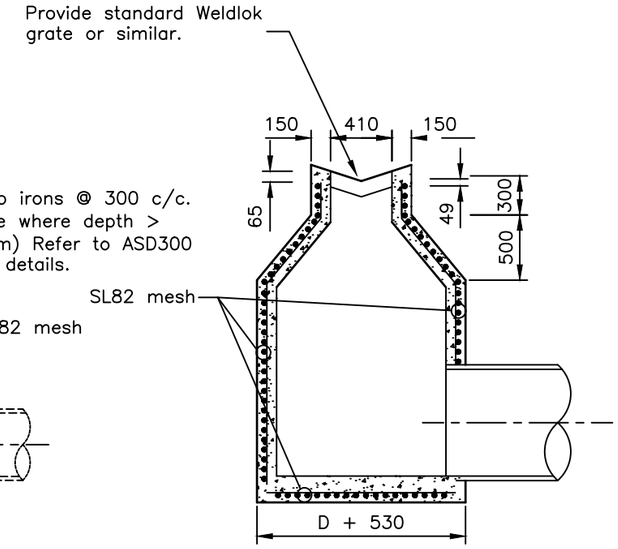
SECTION A-A



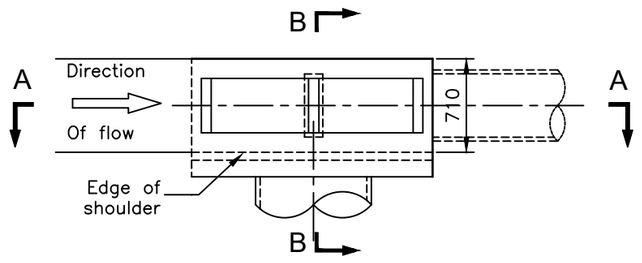
SECTION B-B



SECTION A-A

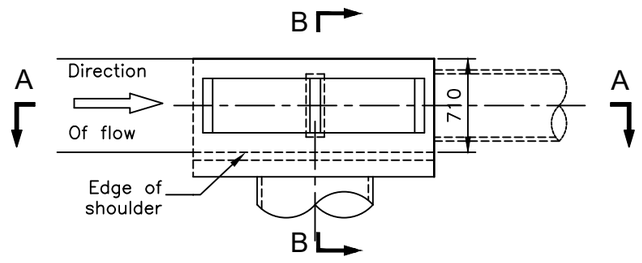


SECTION B-B



PLAN

'V' DRAIN FOR PIPE Ø450 OR LESS



PLAN

'V' DRAIN FOR PIPE Ø525 OR GREATER

NOTE:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS3600
2. All dimensions in mm
3. Provide SL82 mesh centrally placed to walls and base for all pits >1.5m deep. Minimum 50mm cover. Return mesh 300mm into base and sides
4. All exposed steelwork shall be hot dip galvanised in accordance with AS 1650

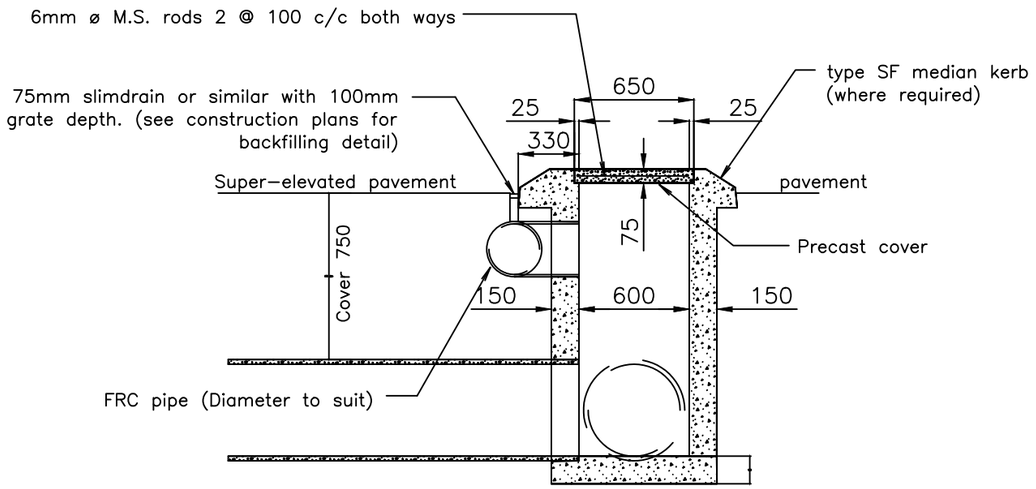
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

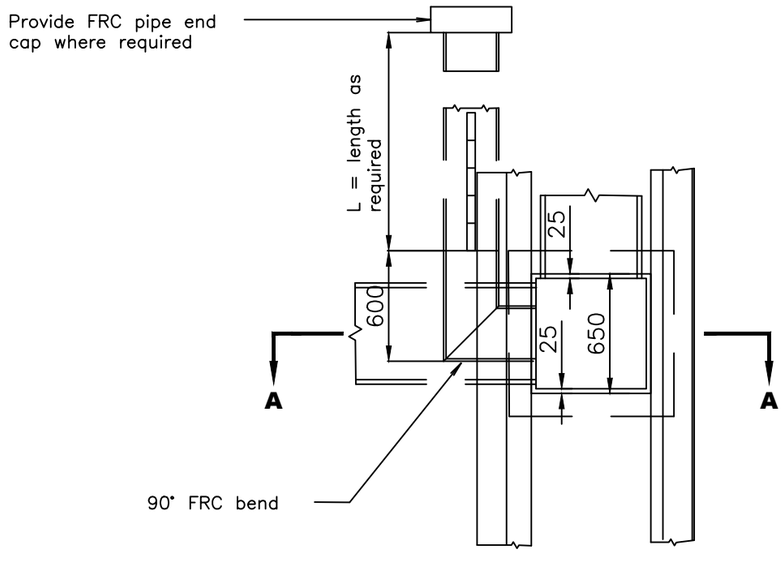
KSC STANDARD DRAWING CAST INSITU GRATED "V" DRAIN PIT FOR SH TYPE DISH DRAIN

NOT TO SCALE

ASD 316



SECTION AA

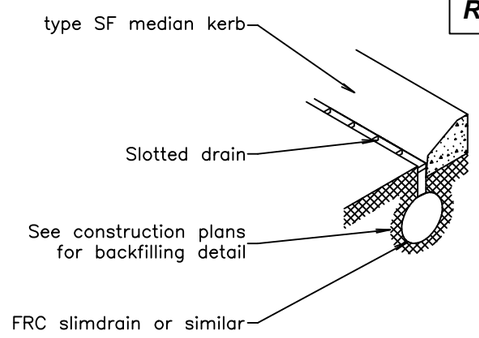


PLAN
[Cover removed]

NOTES:

1. Compressive strength F'c for cast insitu concrete to be min N32 to AS 3600.
2. All dimensions in millimetres
3. Side walls of all pits deeper than 1500mm are to be reinforced with one layer of SL82 mesh returned 300mm into base
4. Depth of pit not to exceed 3500mm
5. Pits deeper than 1200mm to be fitted with galvanised step irons at 300mm centres. Refer to ASD 300
6. All exposed edges to be rounded with 200mm radius
7. Median width as shown is for minimum conditions
8. All reinforcement laps to be 300mm long
9. For use with flexible pavement only

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B48.A.
REFER TO CURRENT EDITION BEFORE USE.



ISOMETRIC VIEW

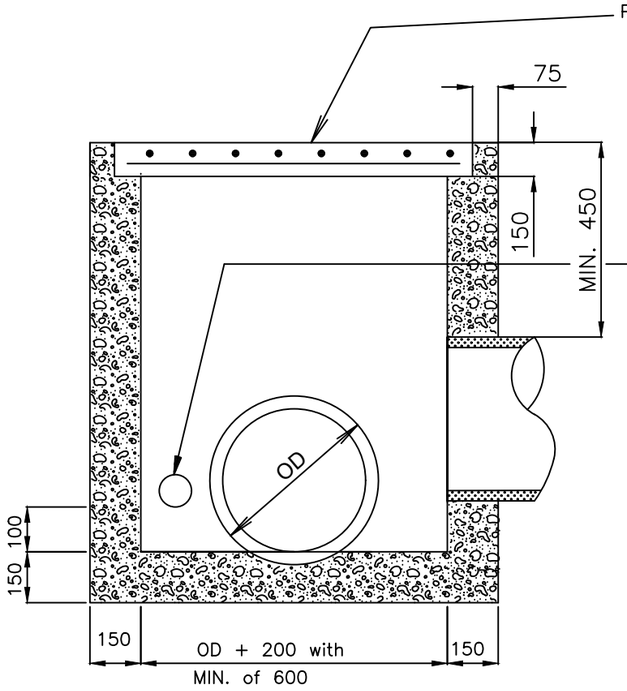
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

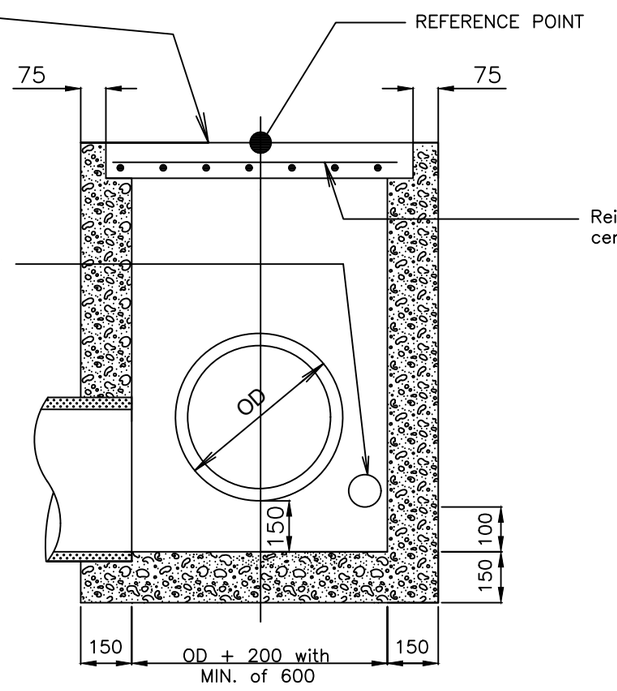
KSC STANDARD DRAWING
CAST INSITU SLIMDRAIN MEDIAN PIT

NOT TO SCALE

ASD 317

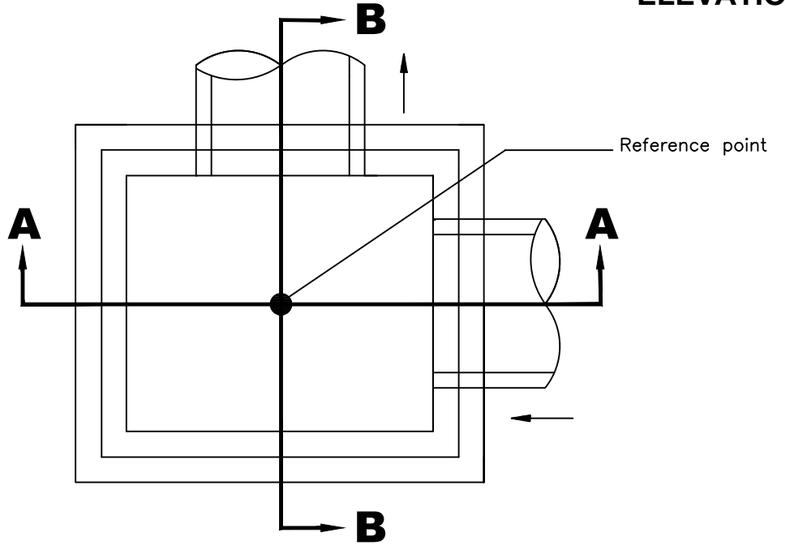


SECTION AA



SECTION BB

ELEVATION



PLAN
(LID REMOVED)

NOTES:

1. Compressive strength F'c for cast insitu concrete to be min N32 to AS 3600
2. All dimensions in millimetres
3. Precast concrete covers to be reinforced with 6 Ø M.S. rods at 100 centres, placed longitudinally and transversely; or F81 mesh
4. Location and level of junction box shown in the drawings refer to this point: ●
5. Side walls of all pits deeper than 1500mm are to be reinforced with one layer of RL1218 mesh returned 300mm into base
6. Depth of pit not to exceed 3500mm
7. Pits deeper than 1200mm to be fitted with galvanised step irons at 300mm centres. See ASD 300
8. All exposed edges to be rounded with 200mm radius
9. At right angle change in pipe direction outlet invert to be 150 below inlet invert
10. All reinforcement laps to be 300mm long
11. Minimum cover of reinforcement shall be 50 unless shown otherwise.
12. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
13. Where incoming/outgoing pipe is greater than or equal to 600mm in diameter, the base of pit to be benched to minimum half height of pipe
14. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B29.A.
REFER TO CURRENT EQUIVALENT EDITION BEFORE USE.

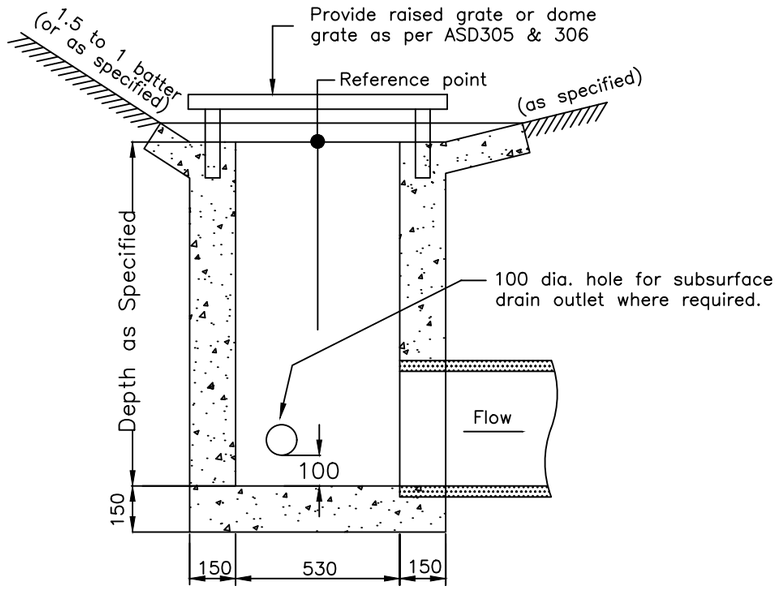
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

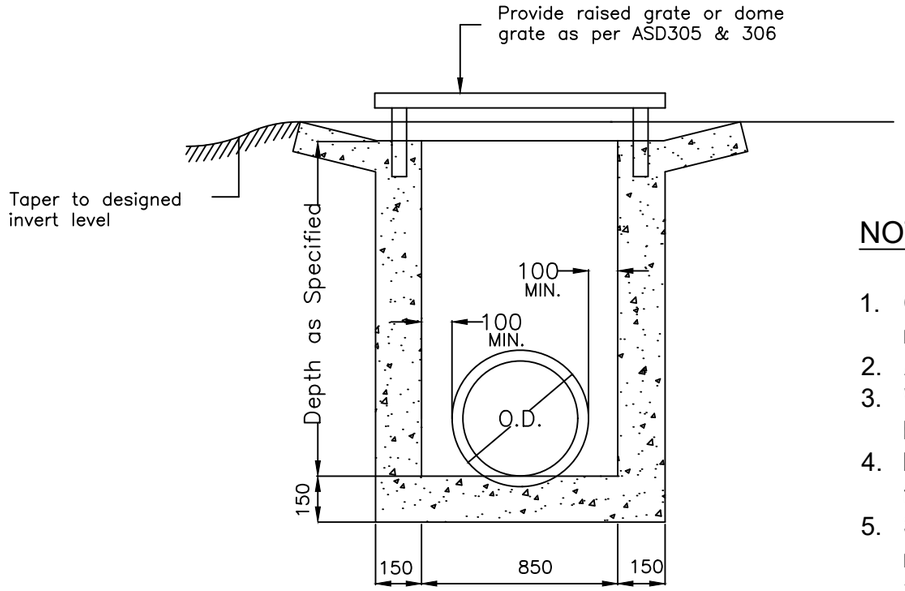
KSC STANDARD DRAWING
STANDARD JUNCTION PIT

NOT TO SCALE

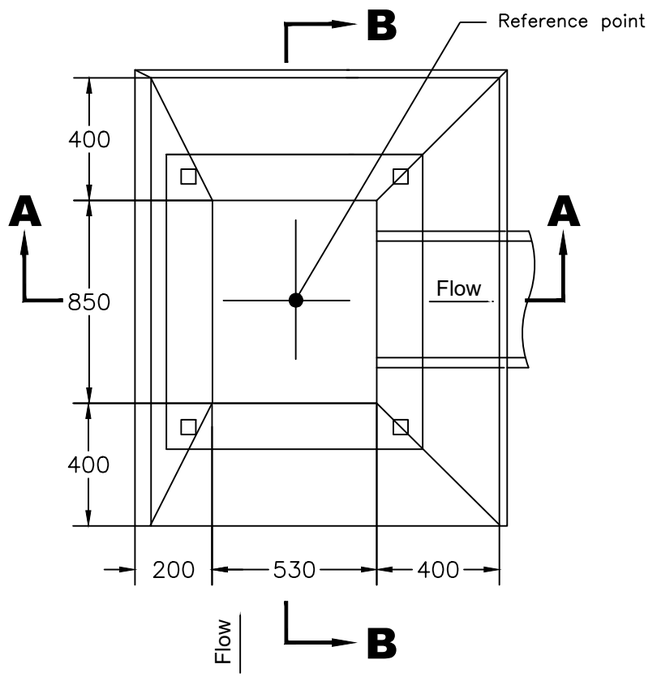
ASD 318



SECTION A-A



SECTION B-B



PLAN
(GRATE REMOVED)

NOTES:

1. Compressive strength F'c for cast insitu concrete to be min N32 to AS 3600
2. All dimensions in millimetres
3. Where pit is located in a sag, inlet depressions are to be provided on both sides of the pit
4. Location and level of grated surface inlet pit shown in the drawings refer to this point: ●
5. Side walls of all pits deeper than 1500mm are to be reinforced with one layer of SL82 mesh returned 300mm into base
6. Depth of pit not to exceed 3500mm
7. Pits deeper than 1200mm to be fitted with galvanised step irons at 300mm centres. See ASD 300
8. All exposed edges to be rounded with 200mm radius
9. All reinforcement laps to be 300mm long
10. Minimum cover of reinforcement shall be 50 unless shown otherwise
11. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
12. Where incoming/outgoing pipe is greater than or equal to 600mm in diameter, the base of pit to be benched to minimum half height of pipe
13. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B27.A. REFER TO CURRENT EQUIVALENT DRAWING BEFORE USE.

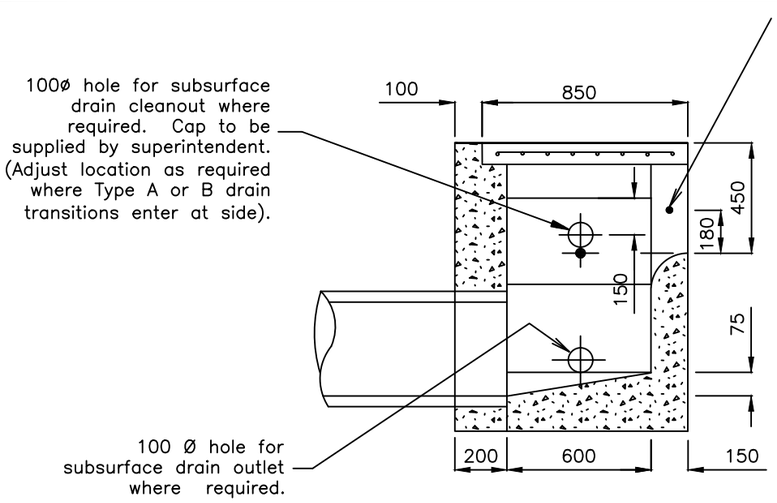
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

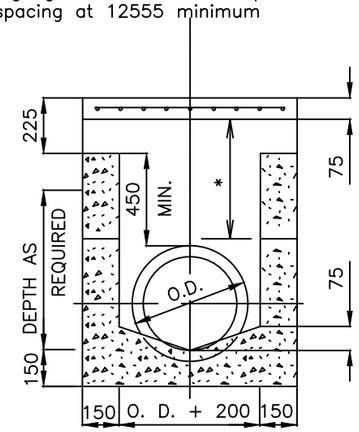
KSC STANDARD DRAWING
CAST INSITU GRATED SURFACE INLET FOR CATCH DRAINS & TABLE DRAINS

NOT TO SCALE

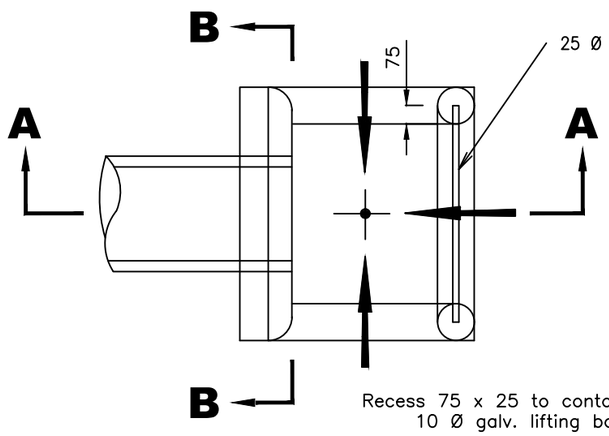
ASD 319



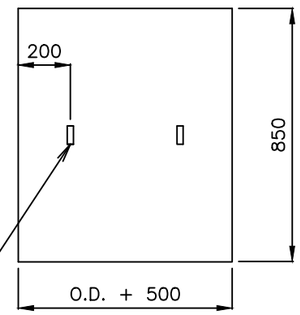
SECTION A-A



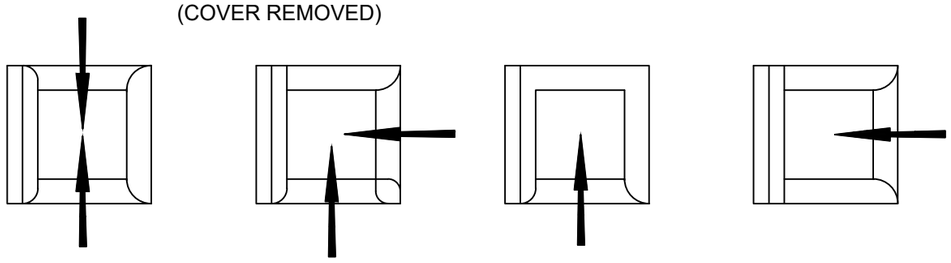
SECTION B-B



PLAN
(COVER REMOVED)



COVER
REINFORCED WITH AS 1304
SL81 CENTRALLY PLACED



TWO INLETS **ONE INLET**

DETAIL OF ALTERNATE INLET ARRANGEMENT

NOTES:

1. Compressive strength F'c for cast insitu concrete to be min N32 to AS3600.
2. All dimensions in millimetres unless otherwise shown.
3. Location and level of surface inlet pit shown in the drawings refer to this point : ●
4. Side walls of all pits deeper than 1500mm are to be reinforced with one layer of SL82 mesh returned 300mm into base.
5. Depth of pit not to exceed 3500mm.
6. All exposed edges to be rounded with 200mm radius.
7. All reinforcement laps to be 300mm long.
8. Minimum cover of reinforcement shall be 50 unless shown otherwise.
9. Where pit is deeper than 1200mm provide step Irons. Refer drawing ASD300 for Step Iron details.
10. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
11. Where incoming/outgoing pipe is greater than or equal to 600mm in diameter, the base of pit to be benched to minimum half height of pipe
12. 150mm stubb line to be provided from rear of pit to facilitate future point of connection from adjoining property. Stubb to extent minimum 300mm from rear of pit and be capped with proprietary fitting.

This plan has been adopted from the plan produced by the Roads and Traffic Authority NSW (RTA), first issued June, 1998. Drawing Number MD.R11.B27.A. REFER TO CURRENT EQUIVALENT DRAWING BEFORE USE.

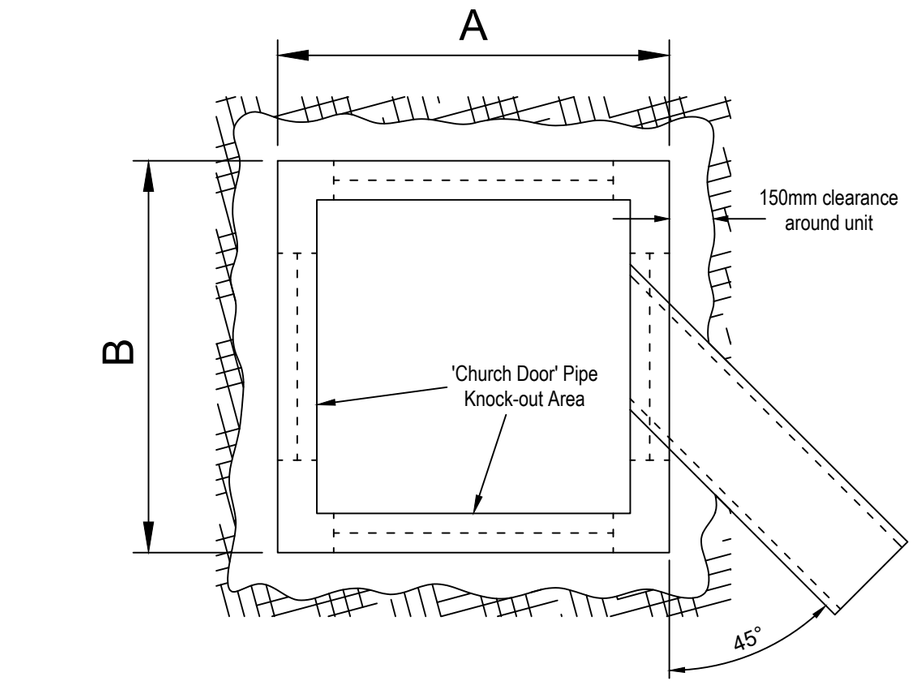
REVISION	DESCRIPTION	INITIAL	DATE
REV 0	REVISION 0	XX	xx/xx/xxxx

KEMPSEY Shire Council

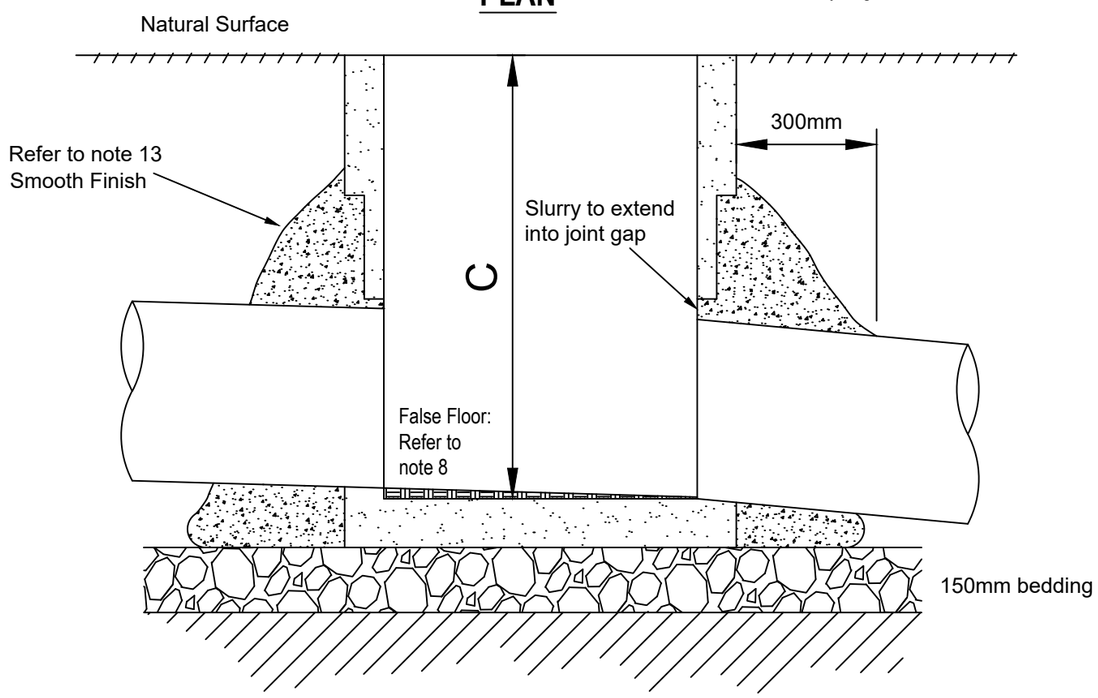
KSC STANDARD DRAWING
SURFACE INLET PIT

NOT TO SCALE

ASD 320



PLAN



ELEVATION

General

1. Precast pits with knockout/weakened walls are not permitted for use in Road Reserves. Where a precast pit is utilised in the public road, it must be a custom precast pit with penetrations cast into the pit at time of manufacture at the correct size, height and orientation
2. Precast concrete stormwater pits that are damaged with unacceptable defects shall be discarded.
3. Precast unit shall be finished design surface levels.

Excavation

4. All excavation must be 150mm clear of the precast unit.
5. A 150mm layer of compacted granular bedding material shall be provided under the unit.

Assembly

6. DO NOT oversize the knockout hole. Only the required size hole to accommodate the outside pipe diameter should be removed.
7. Nothing outside the prescribed knockout section is to be removed.
8. Pipes shall not enter the pit.
9. Pipes shall sit flush with the knockout ledge. Where the base of the pit is lower than pipe invert a false floor shall be pored. The floor shall be graded between upstream and downstream pipe inverts with a smooth finish.
10. For connection to subsoil drainage refer to ASD305. All subsoil drainage connections shall only be through the knockout section and then rendered in accordance with note 12.
11. The knockout sections are designed for pipes entering at 90°. Pipes entering at skewed angles shall be contained within the knockout area. The knockout area width shall be the pipe horizontal skew dimensions.
12. The angle of entry shall be no less then 45 degrees. See table for maximum pipe size.
13. The jointing surface must be clean.
14. Pipe entry joints are to be rendered with an epoxy mortar to be smooth and free from intrusions and to ensure a watertight joint.
15. Concrete backfill (3:1 Sand /cement mortar) shall surround the pipe inlet and outlet to form a bell-housing effect with a smooth finish
16. Step irons at 300 centres required in pits greater than 1200mm deep. Unused step iron holes to be rendered. Refer drawing ASD300 for Step Iron details.
17. Where pre-cast risers are utilised in addition to a pit base, utilise the minimum number of correctly sized risers only (i.e for a 900mm lift, use one 900mm riser instead of 3 x 300mm units).

Backfilling

18. Backfilling around external faces of the precast unit to be selected material, in accordance with C220.08, added in 150mm layers and compacted simultaneously around the structure to avoid differential loading.

Max pipe size for 45° entry angle

A x B x C	Pipe
450 x 450 x 450	None
600 x 600 x 600	225mm Ø
600 x 600 x 750	225mm Ø
900 x 750 x 600	225mm Ø
900 x 900 x 600	225mm Ø
900 x 750 x 900	375mm Ø
900 x 900 x 900	375mm Ø
900 x 900 x 1200	375mm Ø
1200 x 1200 x 1200	525mm Ø

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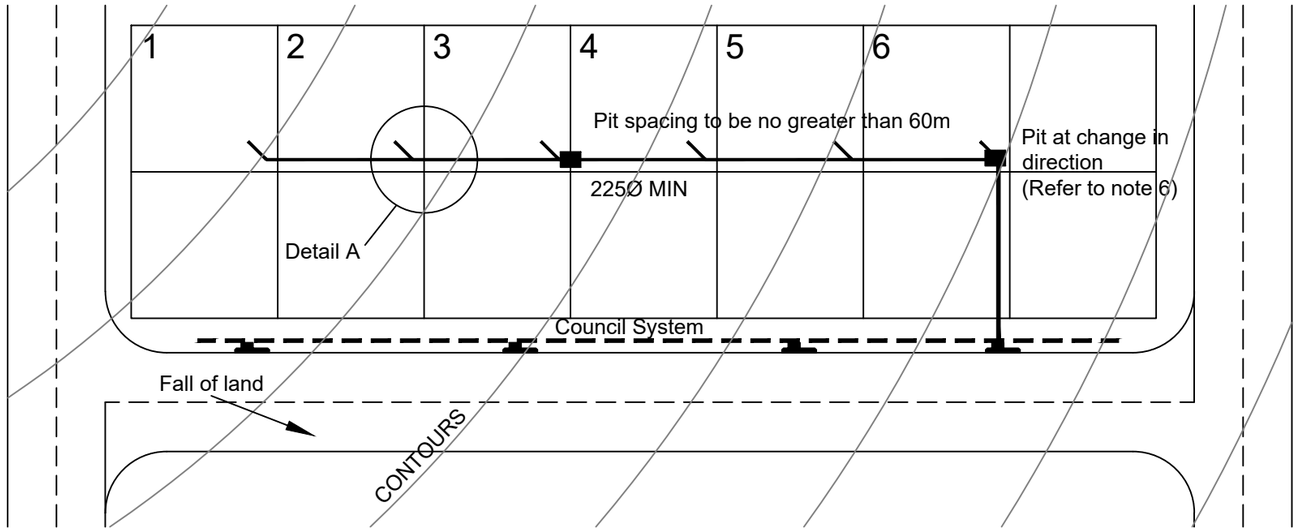
KEMPSEY Shire Council

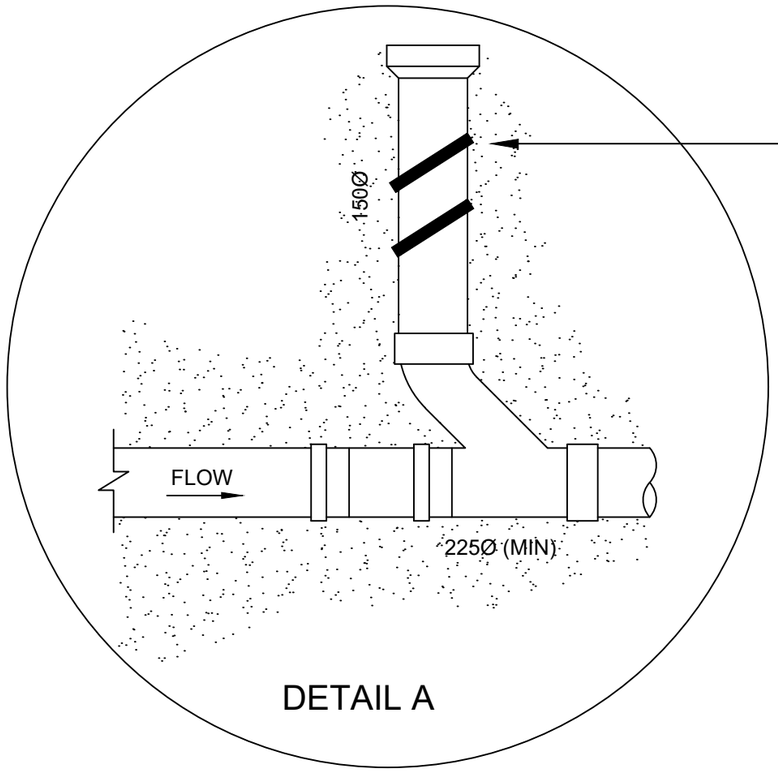
KSC STANDARD DRAWING
PRECAST PIT INSTALLATION

NOT TO SCALE

ASD 321



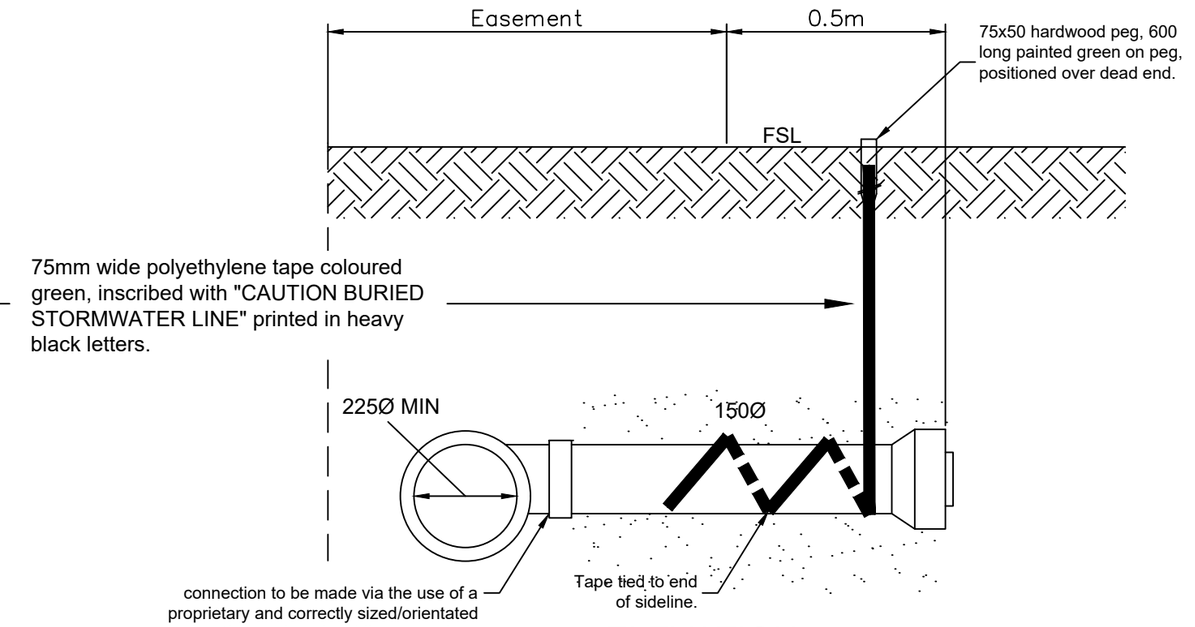
PLAN



DETAIL A

NOTES

1. All dimensions are in millimetres.
2. Locate inspection openings in accordance with design drawings or KSC requirements.
3. All connection types shown in this drawing are applicable to PVC (RRJ) pipes unless otherwise shown.
4. Property connection riser is part of the private stormwater service unless specified otherwise.
5. The maximum number of allotments connected to any interallotment system shall not exceed 6
6. Pit shall be in accordance with with KSC standard drawing ASD320 (Min 600 x 600 internal dimensions)
7. Pits shall be constructed at all changes in direction and the distance between pits shall be no greater than 60m



ELEVATION

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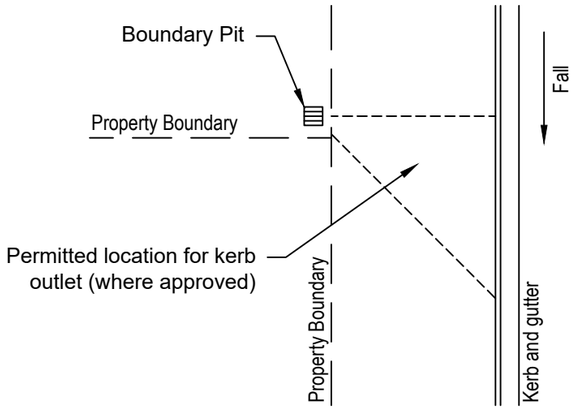
KEMPSEY Shire Council

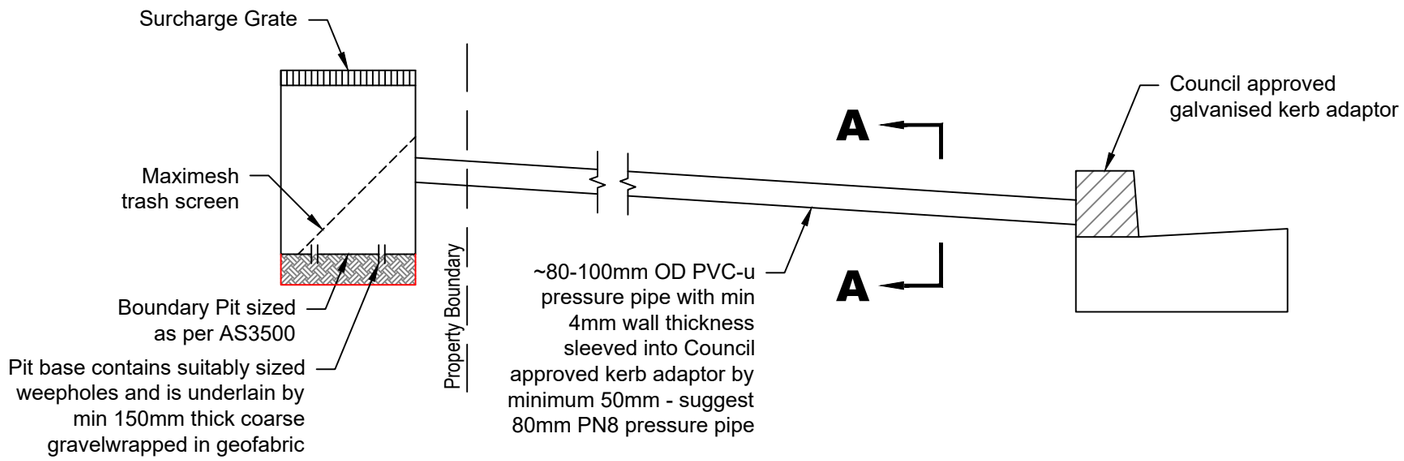
KSC STANDARD DRAWING
INTERALLOTMENT PROPERTY DRAIN CONNECTIONS

NOT TO SCALE

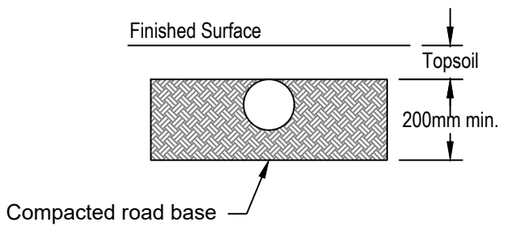
ASD 322



KERB OUTLET LOCATION PLAN



BOUNDARY PIT & KERB OUTLET ARRANGEMENT



SECTION A

NOTES:

1. Discharge to kerb and gutter is only permitted as described in AUSPEC D5
2. For commercial/industrial development, replace 80-100mm PVC-u pipe with suitably sized galvanised RHS & custom kerb adaptor
3. All kerb adaptors shall be galvanised steel & shaped to match the profile of the existing kerb
4. When discharging to a SA profile kerb with a gutter height > 180mm, outlet pipeline may be installed by core hole. Details must be nomintaed on plans submitted for approval with the S138 application
5. No bends or junctions are permitted within the outlet pipeline across the road verge
6. Kerb adaptors/outlets must not be located within 1m of a driveway or within 2m of the upstream side of a stormwater kerb inlet or grated pit

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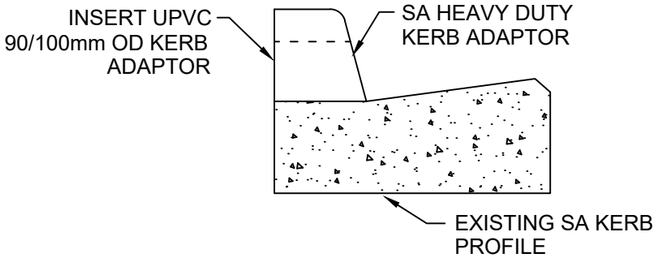
KEMPSEY Shire Council

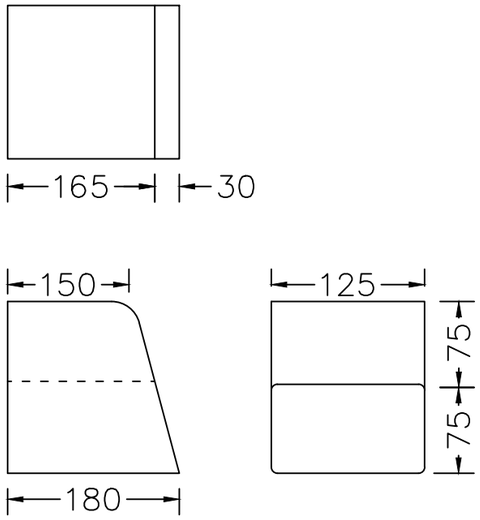
KSC STANDARD DRAWING
STORMWATER CONNECTION TO KERB

NOT TO SCALE

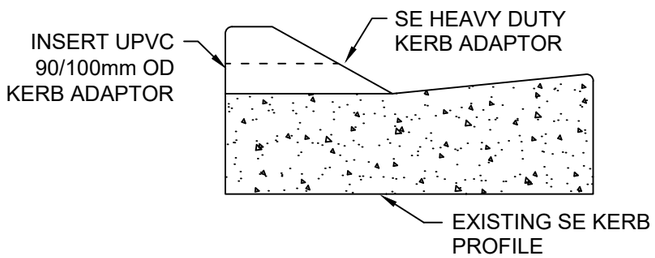
ASD 323



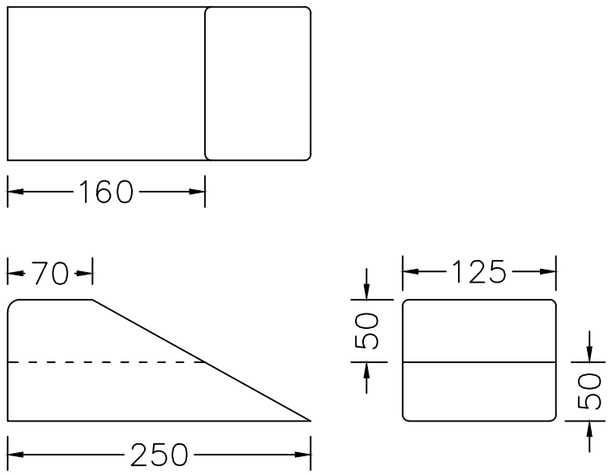
SA KERB WITH HEAVY DUTY KERB ADAPTOR SECTIONAL VIEW



SA HEAVY DUTY KERB ADAPTOR



SE KERB WITH HEAVY DUTY KERB ADAPTOR SECTIONAL VIEW



SE HEAVY DUTY KERB ADAPTOR

NOTE:

1. All heavy duty kerb adapters are to be constructed from 125x75x3mm mild steel
2. All mild steel must be hot dipped galvanised before installation
3. The heavy duty kerb adaptors require a UPVC kerb adaptor to be inserted inside
4. Both kerb adaptors must be grouted in place to stop movement.

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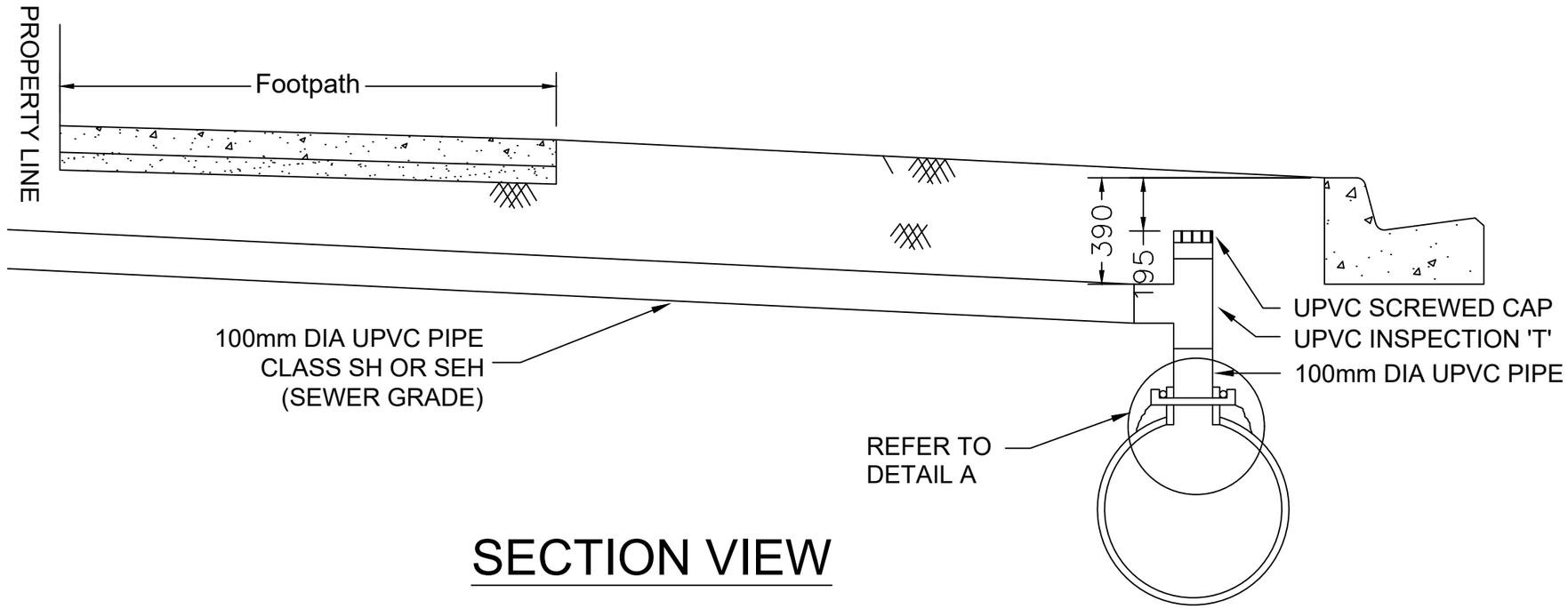
KEMPSEY Shire Council

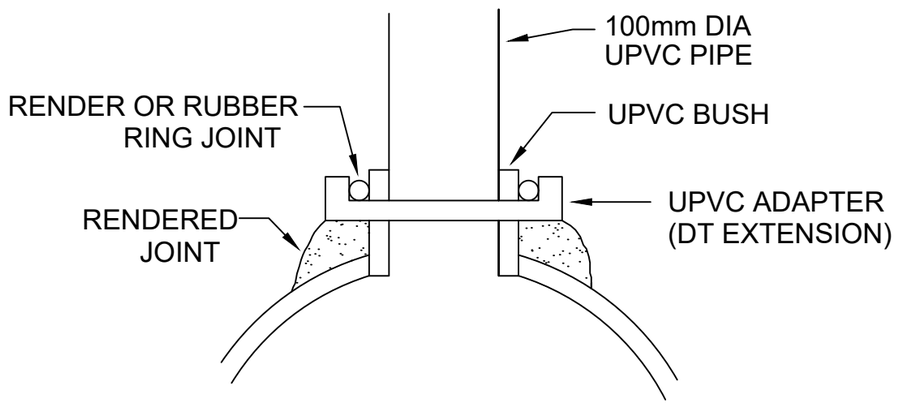
KSC STANDARD DRAWING
HEAVY DUTY KERB ADAPTORS

NOT TO SCALE

ASD 324



SECTION VIEW



DETAIL A

NOTE:

1. All pipes and fittings are to be of class sh or seh UPVC
2. All solvent adhered joins must be completed as per the manufactures recommended instructions
3. The property storm water drain is to extend 500mm into the property and must be taped or have the end capped property storm water drain is to be installed 1.0 metres from the low corner of the lot unless services interfere
4. Where the footpath is not installed a peg is to be inserted at the property storm water drain end
5. The footpath and back of kerb are to be stamped with 'SW' to indicate the line of the property storm water drain

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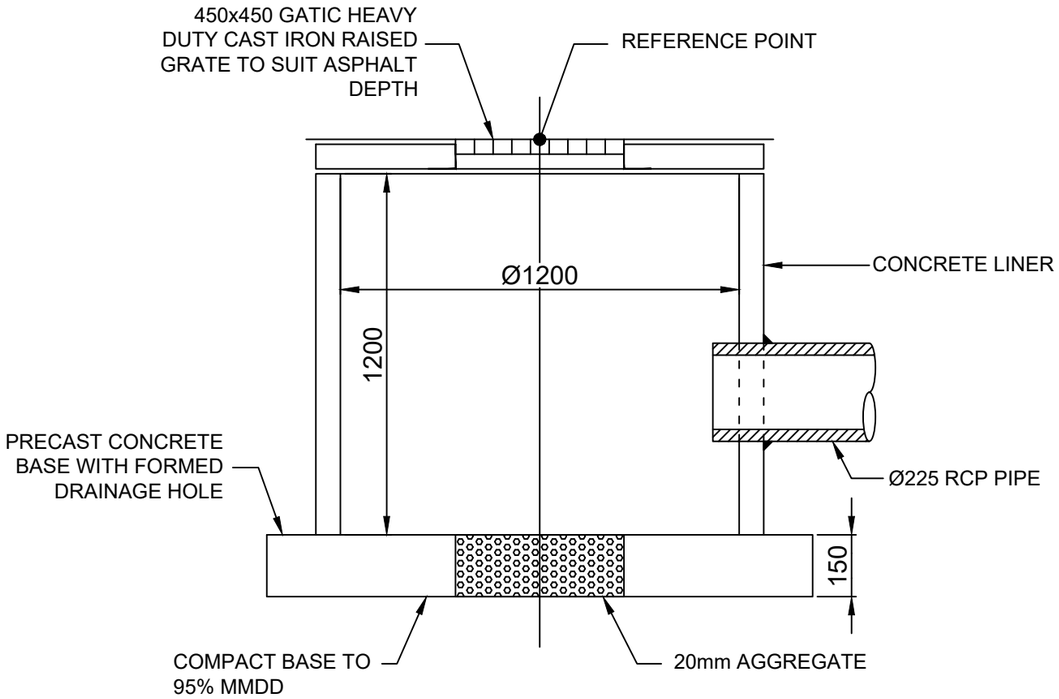
KEMPSEY Shire Council

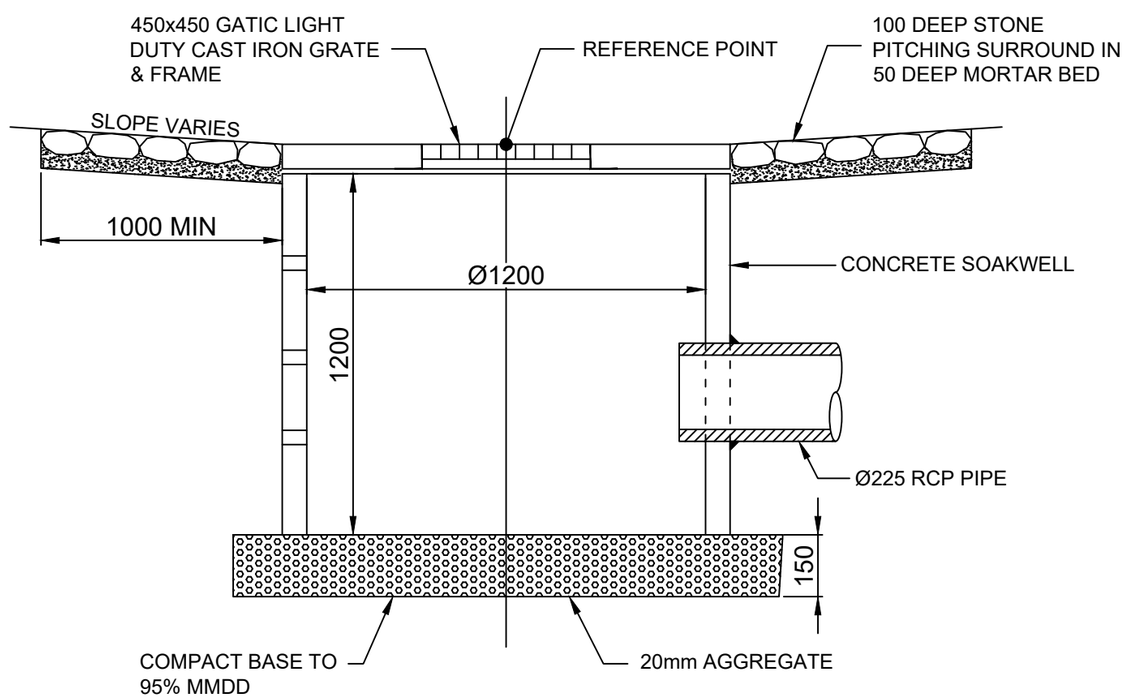
KSC STANDARD DRAWING PROPERTY DRAIN CONNECTION DETAIL

NOT TO SCALE

ASD 325



GRATED PIT DETAIL



SOAKWELL DETAIL

Notes:

1. Use of soakwell pit subject to geotechnical investigation to determine long term site soil permeability and detailed assessment of the rate and volume of stormwater discharge to the pit from the contributing catchment.

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KEMPSEY Shire Council

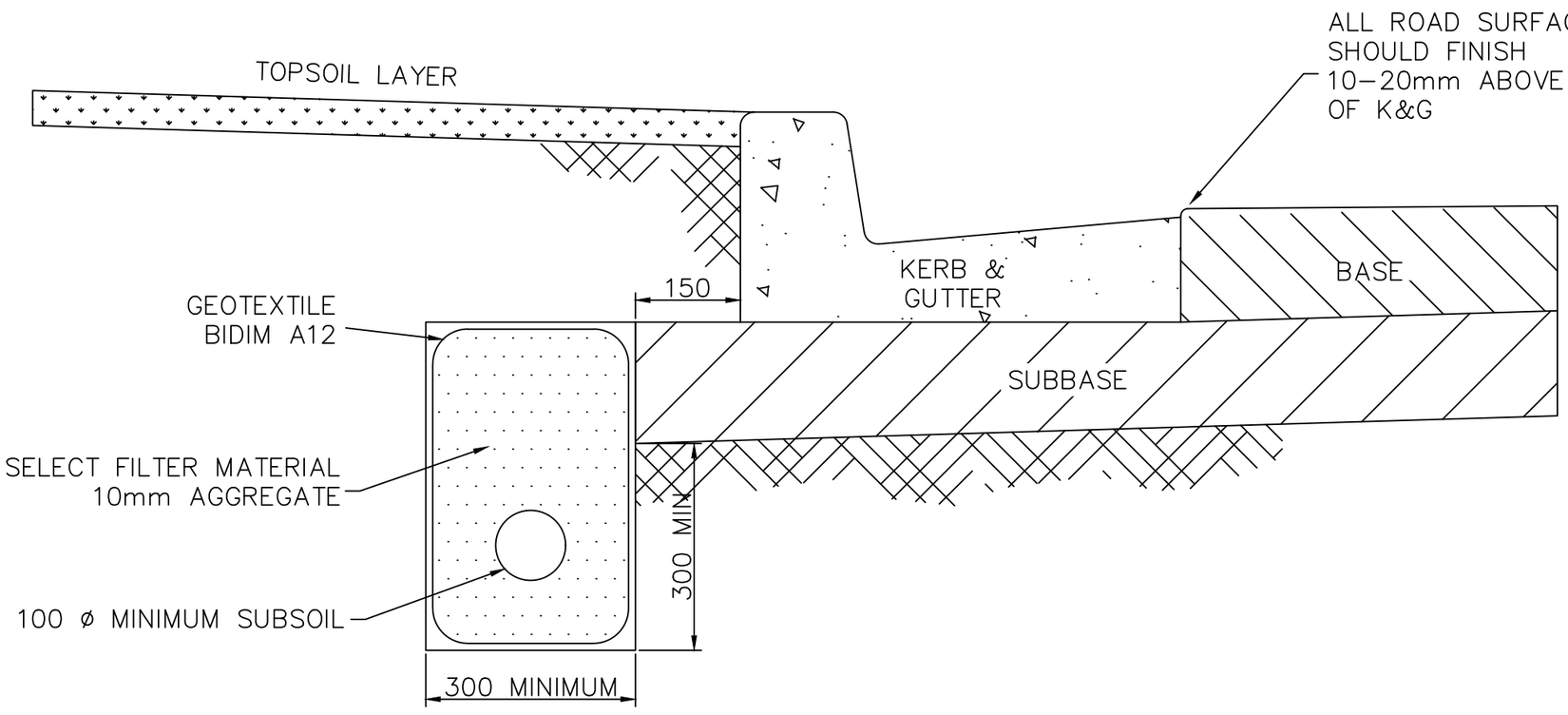
KSC STANDARD DRAWING SOAK WELL PIT

NOT TO SCALE

ASD 326

NOTES:

1. Construction shall be in accordance with Aus-Spec #1 sections C230 and C231
2. Provide flushing points at max 50m centres and outlets at max 100m centres
3. Select filter material shall meet the requirements of Type A filter material, Aus-Spec #1 C230.12
4. All filter material shall be geotextile wrapped, min 140 g/m² non woven geotextile to AS 3706
5. Subsoil drainage pipe shall be slotted UPVC or perforated, ribbed HDPE to AS2439.1
6. Minimum longitudinal grades for pipes shall be: ribbed HDPE pipe - 1.5%, slotted UPVC pipe - 1%, 450mm strip drain - 0.5%
7. UPVC pipe and fittings shall be min Class 12
8. Road crossings to be Sewer Heavy grade UPVC Pipe
9. Refer to ASD305 for further details.



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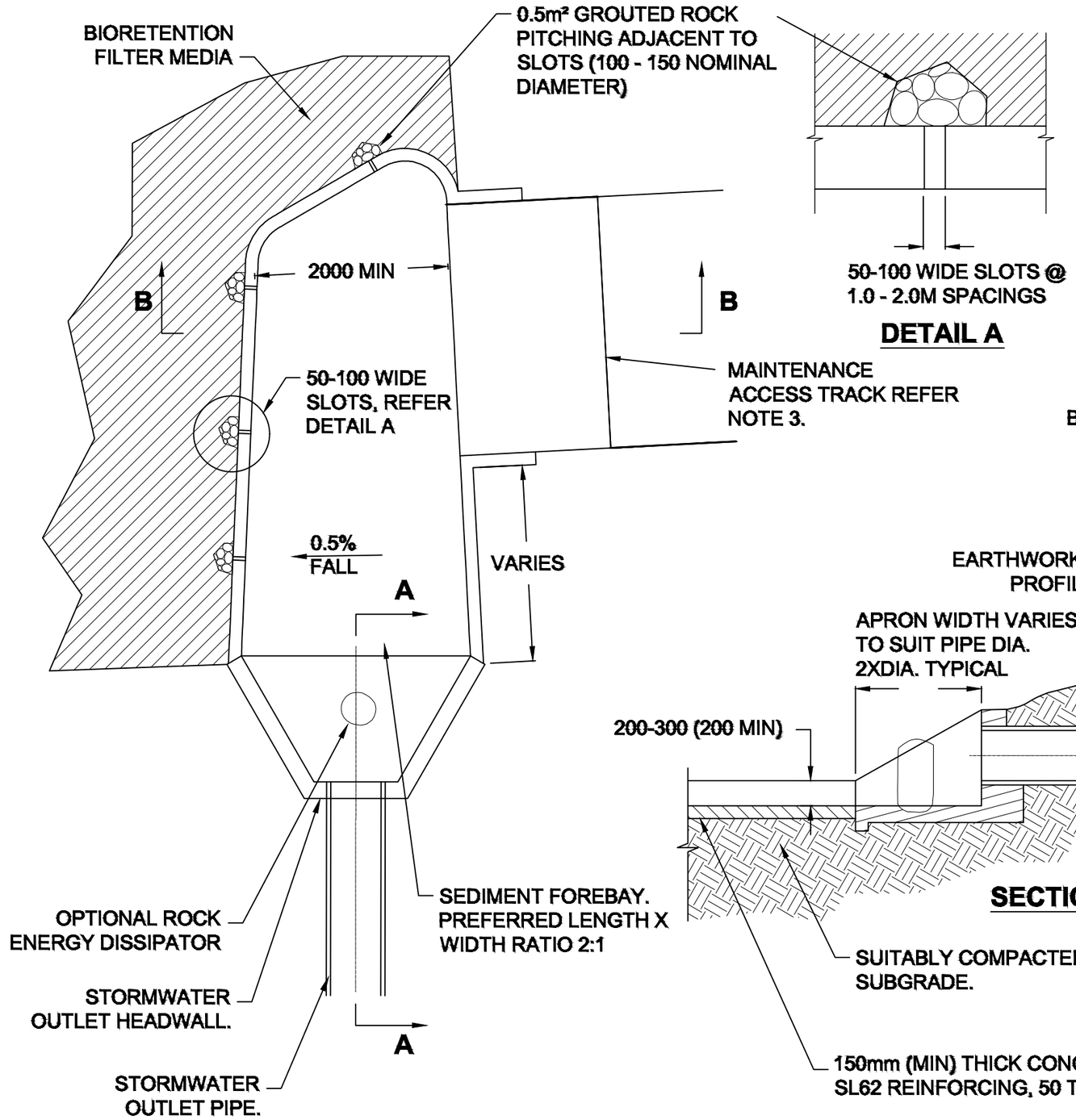
KEMPSEY Shire Council

KSC STANDARD DRAWING
SUB-SURFACE DRAINAGE TYPICAL SECTION

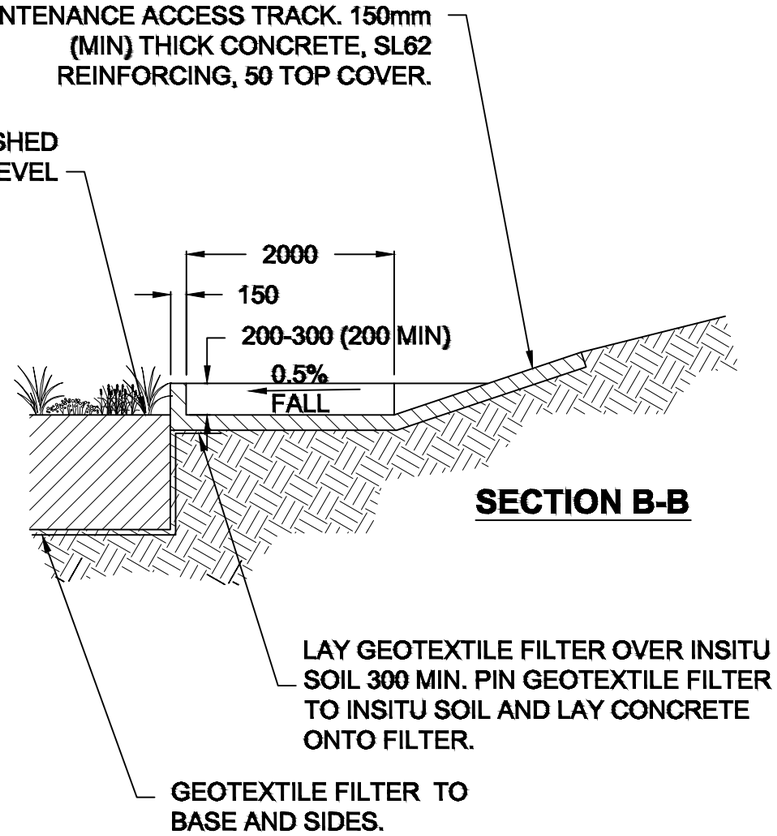
NOT TO SCALE

ASD 327



NOTES

1. REFER TO WATER CYCLE MANAGEMENT GUIDELINES AND SQID GUIDELINES FOR DESIGN GUIDANCE
2. ENGINEERING WORKS TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH COUNCIL'S ENGINEERING GUIDELINES
3. MAINTENANCE ACCESS TRACK MINIMUM WIDTH 3000mm, MAX GRADIENT 1(V) IN 4(H).



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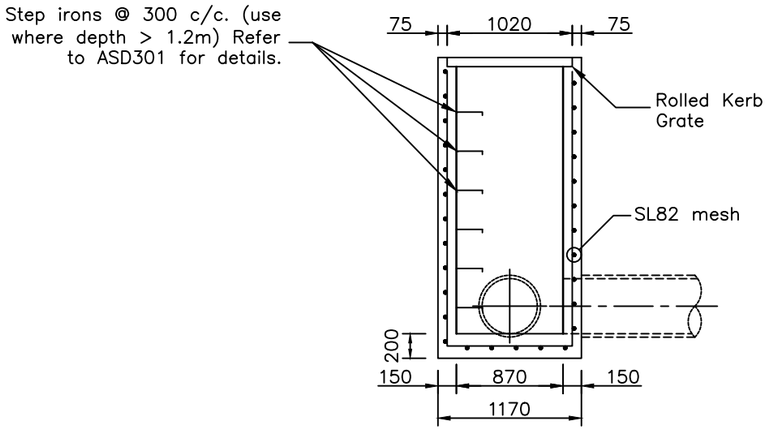
KEMPSEY Shire Council

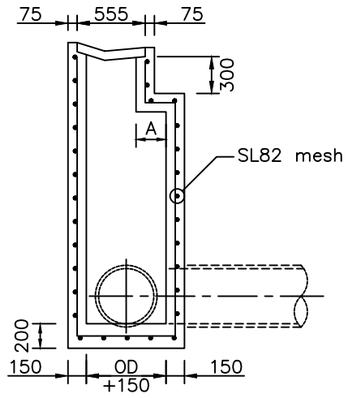
KSC STANDARD DRAWING
BIORETENTION SEDIMENT FOREBAY

NOT TO SCALE

ASD 328



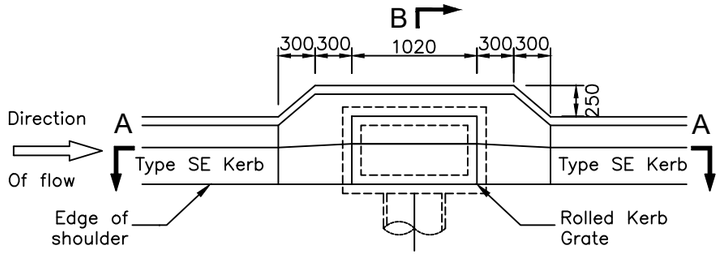
SECTION A-A



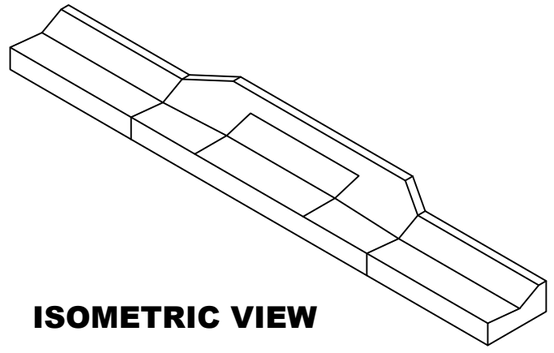
SECTION B-B

NOTES:

1. Compressive strength, F'c for cast insitu concrete to be min N32 to AS3600
2. All dimensions in mm
3. Provide SL82 mesh centrally placed to walls and base for all pits ≥ 1.5m deep. Minimum 50mm cover. Return mesh 300mm into base and sides
4. All exposed steelwork shall be hot dip galvanised in accordance with AS 1650
5. Where A > 300 provide N16 reinforcing returned min 400 into pit walls. Where A > 900 design to be certified by Engineer
6. For connection to subsoil drainage refer to ASD305
7. Where a heavy duty steel grate is required a Weldlok GG78-42A grate or equivalent is to be specified
8. Where pit is deeper than 1200mm provide step irons. Refer drawing ASD301 for Step Iron details.
9. 100mm dia subsoil drainage pipeline 3.0m long and wrapped in fabric sock is to be provided in pipe trenches adjacent to inlet pipes.
10. Grates shall be bicycle safe and be designed with maximum inlet capacity.
11. Base of pit to be benched to minimum half height of pipe
12. All pits shall be provided with an approved locking system



PLAN



ISOMETRIC VIEW

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KEMPSEY Shire Council

KSC STANDARD DRAWING CAST INSITU GRATED PIT FOR TYPE SE KERB

NOT TO SCALE

ASD 329