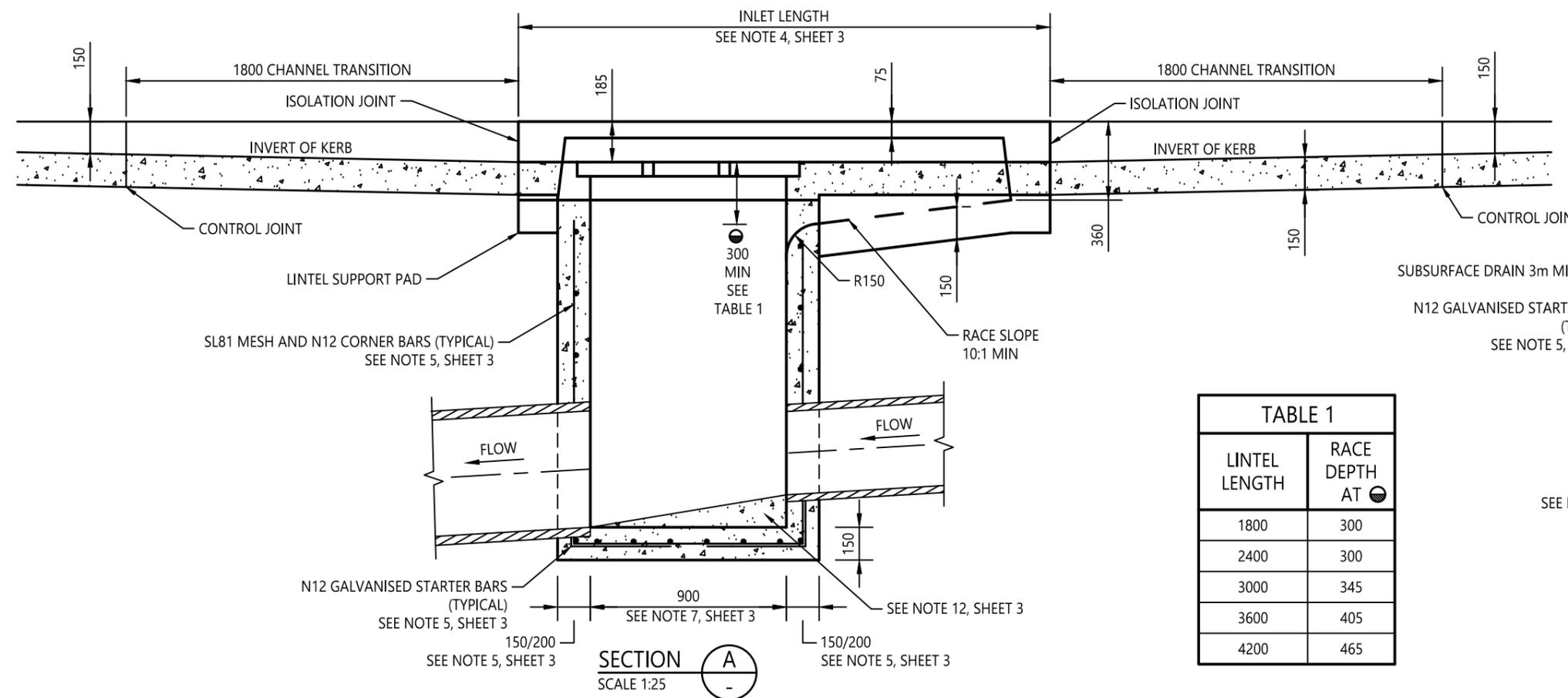
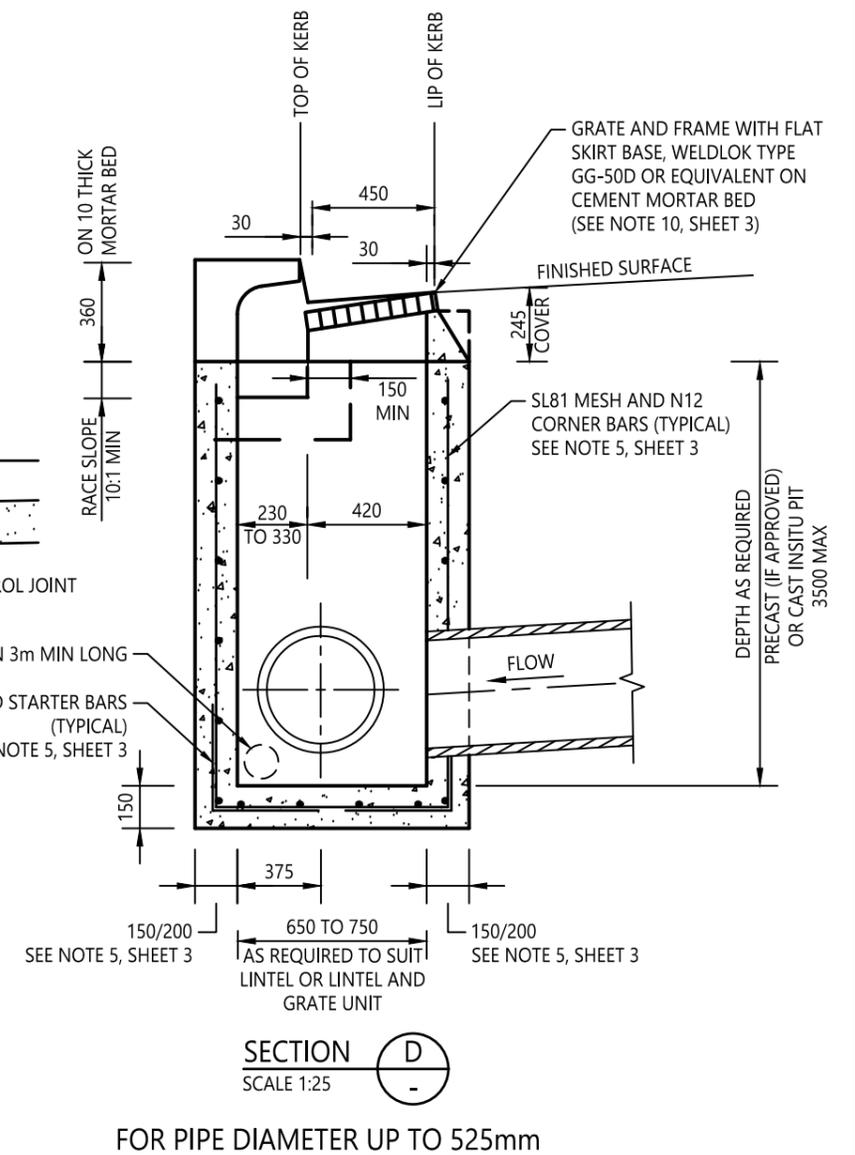
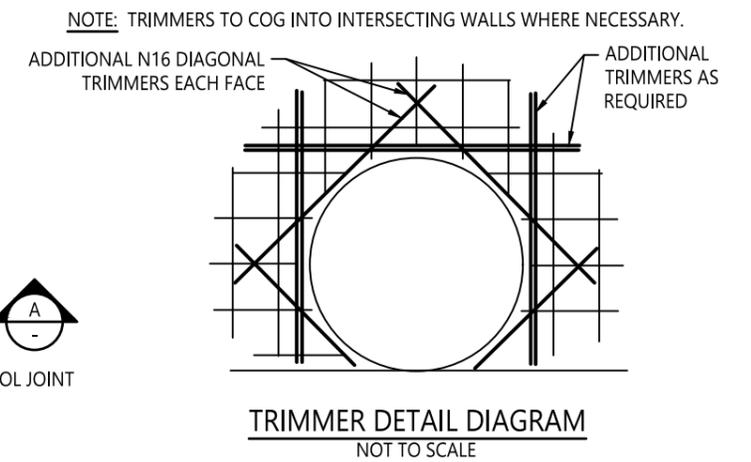


PLAN
STANDARD PIT (ON GRADE)
 SCALE 1:25



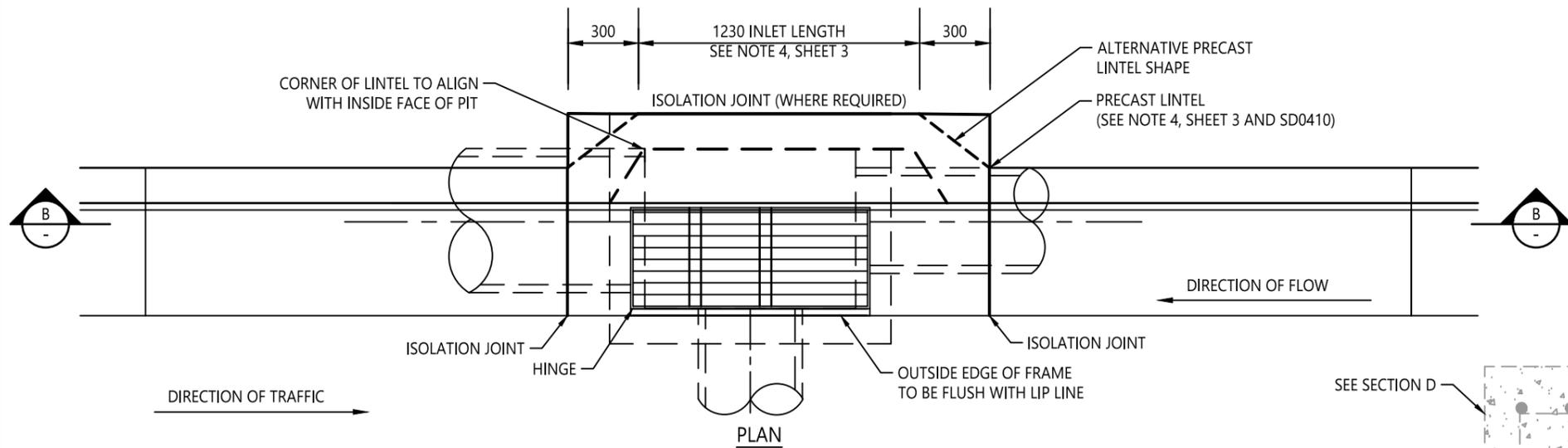
SECTION A
 SCALE 1:25

LINTEL LENGTH	RACE DEPTH AT
1800	300
2400	300
3000	345
3600	405
4200	465



FOR PIPE DIAMETER UP TO 525mm

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING
					0 250 500 750 1000 1250	CHECKED	M BAMBER			
					1:25	DATE	28/4/20	STANDARD GRATED GULLY PIT		DRAWING NUMBER
						UNIT MANAGER APPROVAL				SD0401
						ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE		REV
										-
										SHEET 1 OF 3
										A3



STANDARD PIT (NO RAMP)
SCALE 1:25

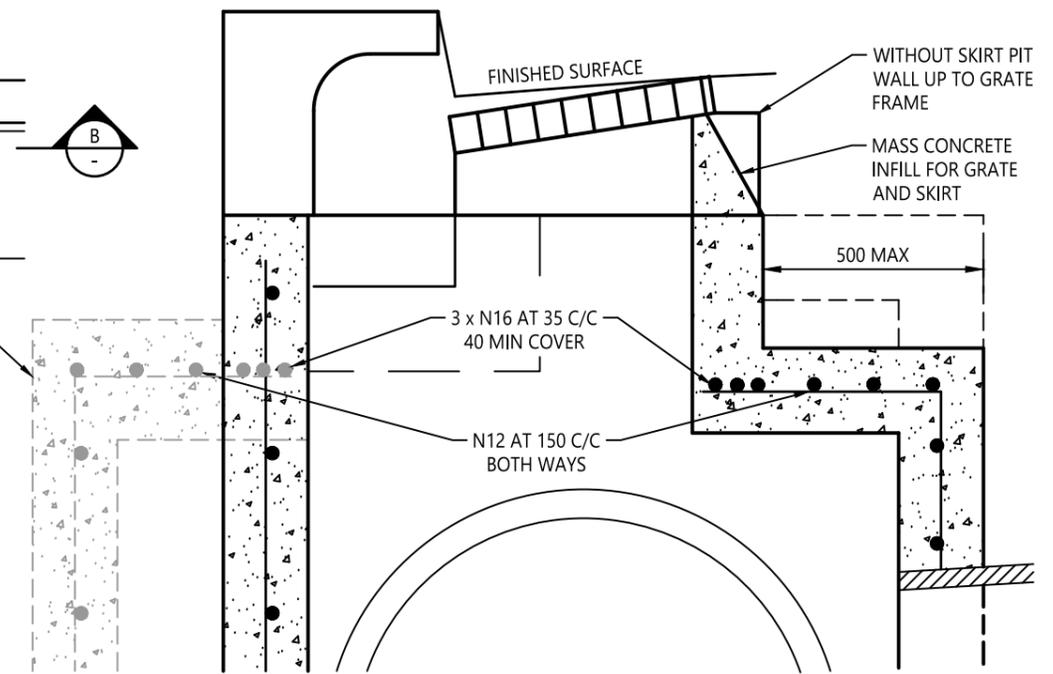
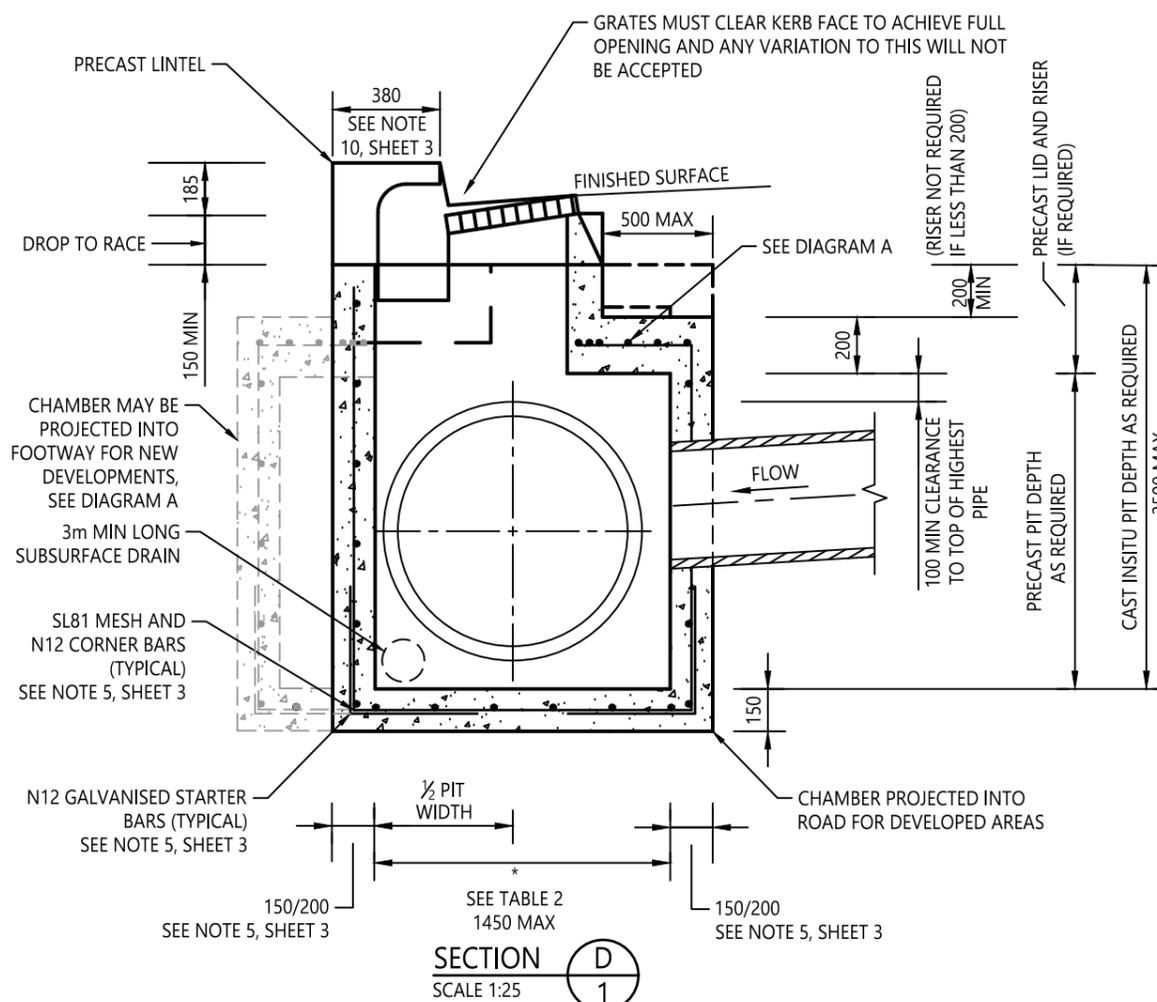


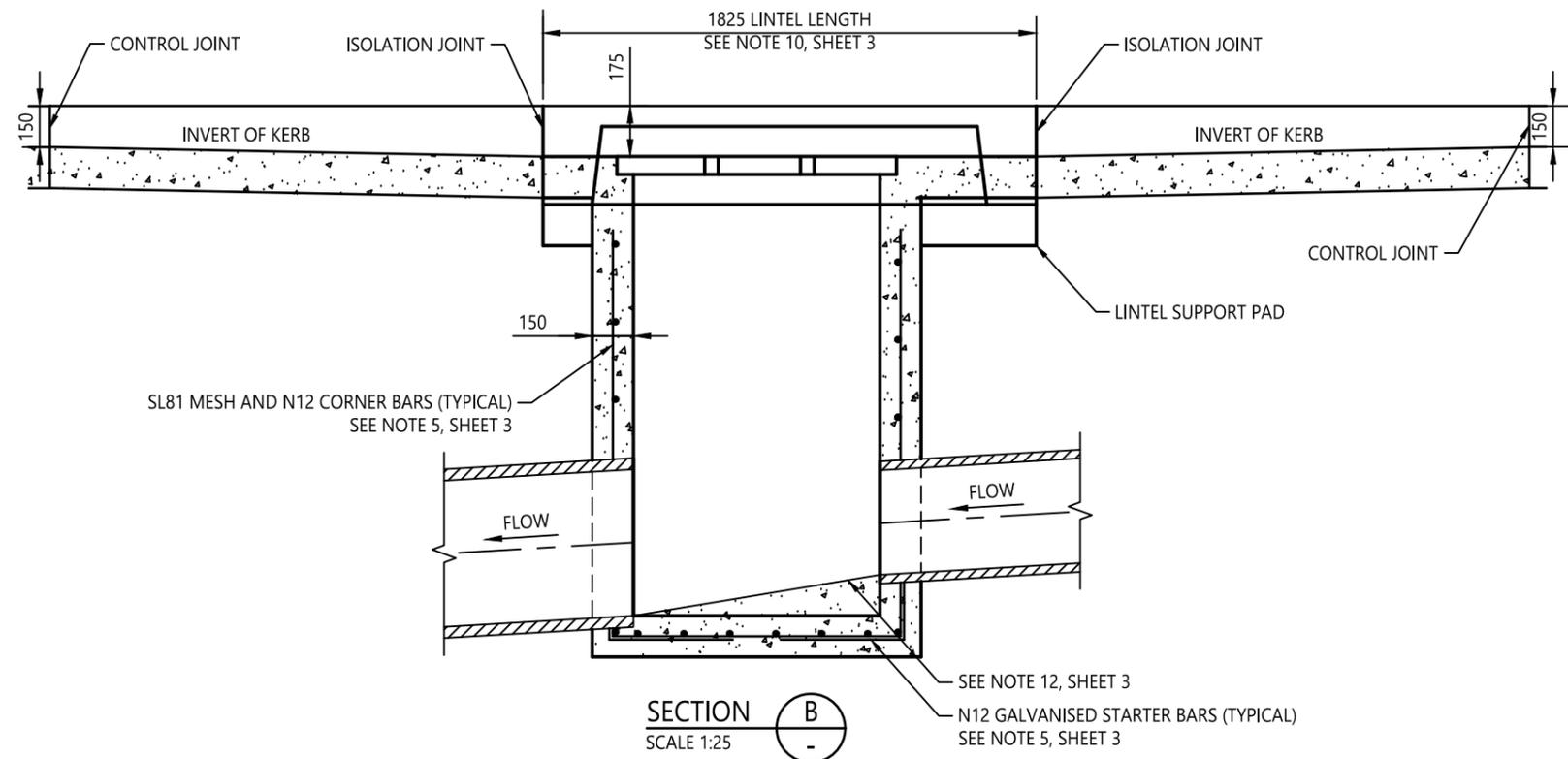
DIAGRAM A
NOT TO SCALE

TABLE 2	
*	PIPE DIAMETER RANGE
900	600mm TO 750mm INCLUSIVE
1200	825mm TO 900mm INCLUSIVE
D+250	FOR PIPES > 900mm
ND+[(N-1)x250]+250	FOR MULTIPLE PIPES

(WHERE N=NUMBER OF LINES)

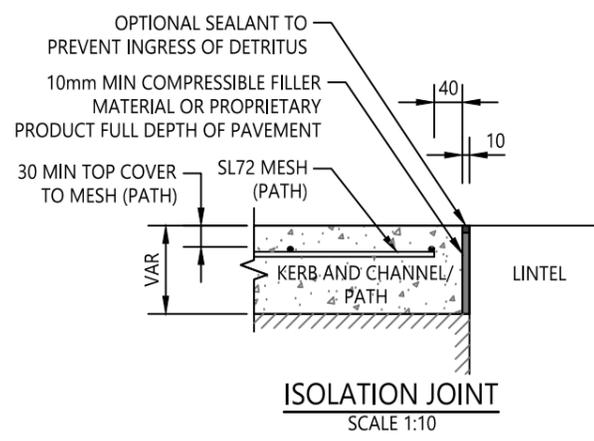
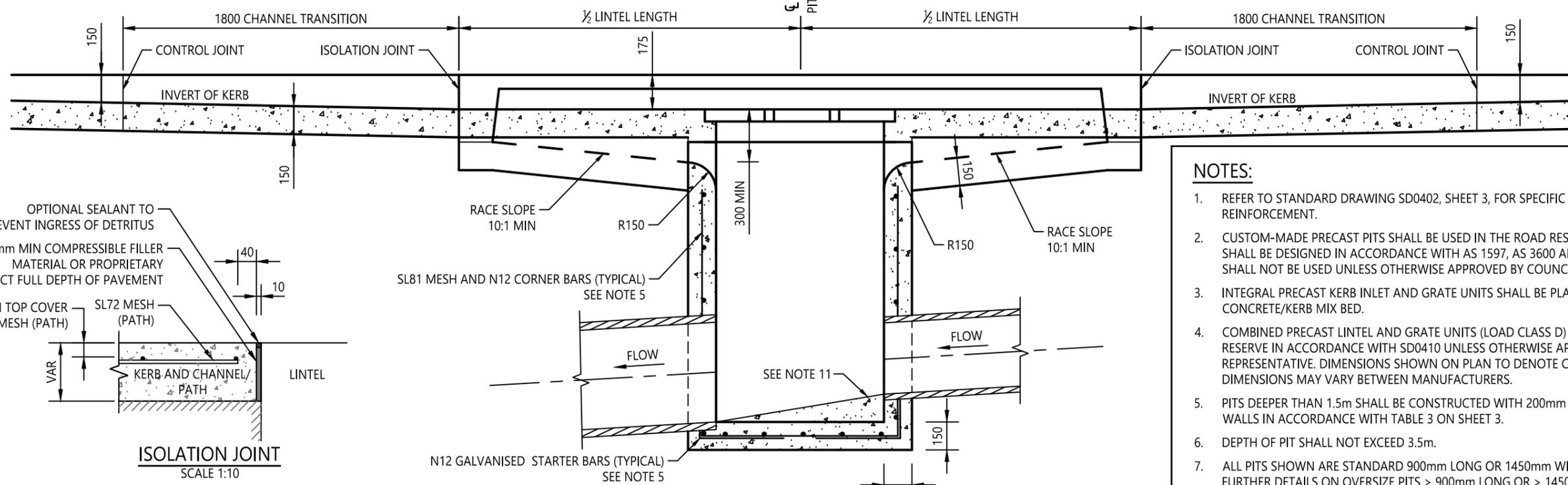
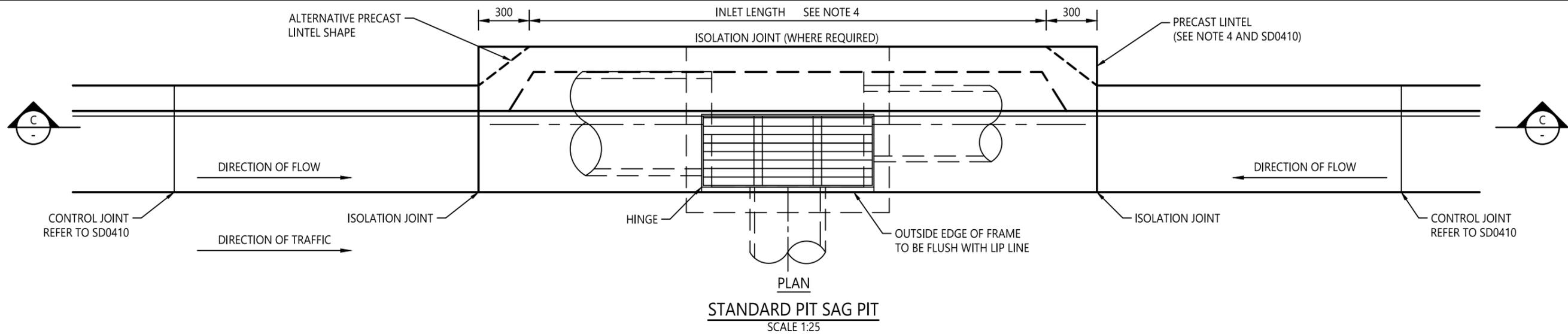


(ENLARGED CHAMBER) FOR PIPE DIAMETER ABOVE 525mm AND MULTIPLE PIPES



SECTION B
SCALE 1:25

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING 0 250 500 750 1000 1250 1:25	DRAWN	C SHEPPEARD		Central Coast Council STORMWATER DRAINAGE SERIES STANDARD GRATED GULLY PIT	STANDARD DRAWING	
						CHECKED	M BAMBER			DRAWING NUMBER	REV
						DATE	28/4/20			SD0401	-
						UNIT MANAGER APPROVAL 				SHEET 2 OF 3	A3
ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN						ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE		© Central Coast Council 2020	

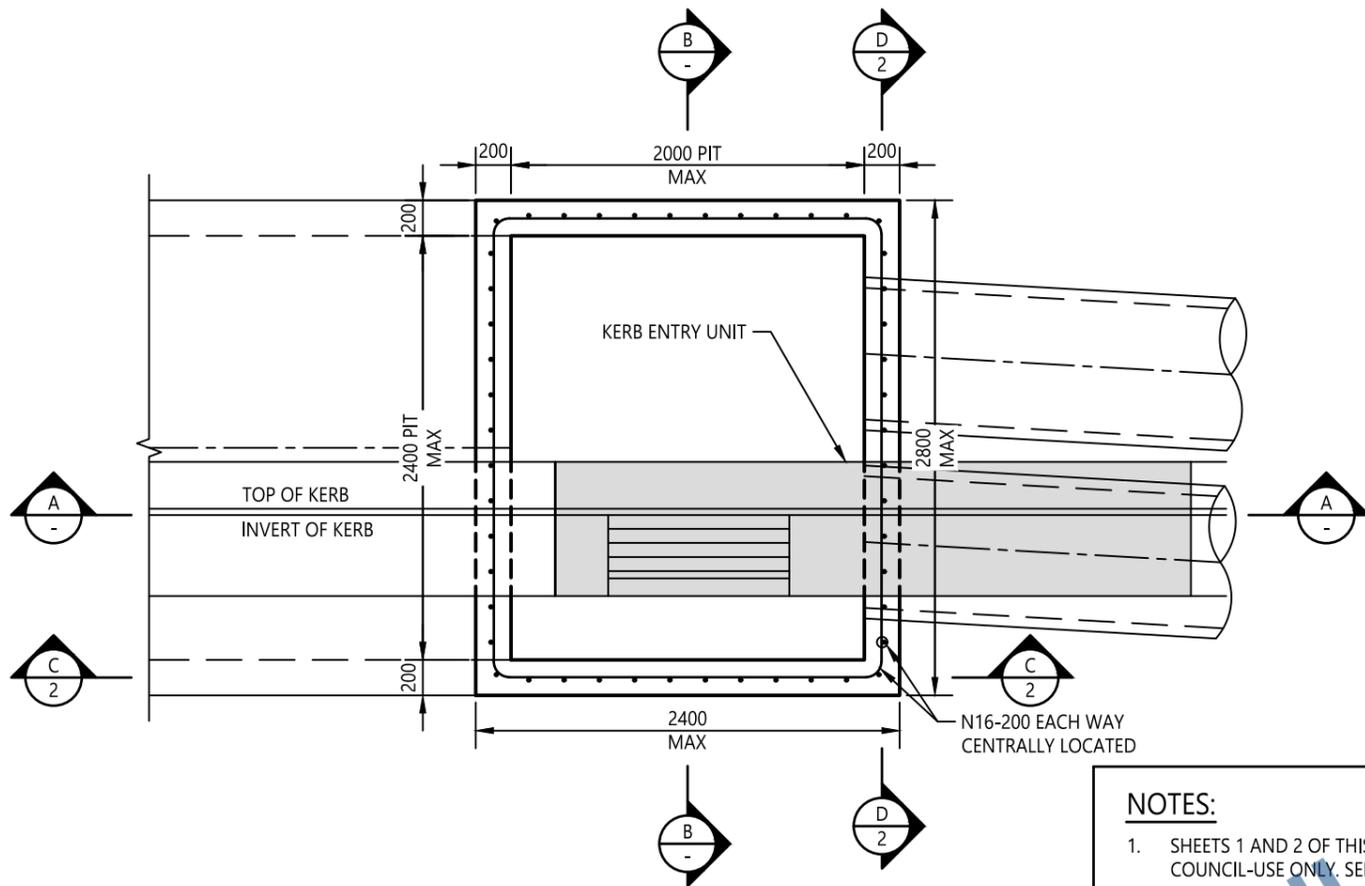


- NOTES:**
- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
 - CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
 - INTEGRAL PRECAST KERB INLET AND GRATE UNITS SHALL BE PLACED ON A 150mm MINIMUM N20 CONCRETE/KERB MIX BED.
 - COMBINED PRECAST LINTEL AND GRATE UNITS (LOAD CLASS D) SHALL BE USED IN THE ROAD RESERVE IN ACCORDANCE WITH SD0410 UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE. DIMENSIONS SHOWN ON PLAN TO DENOTE CLEAR OPENINGS. MIN SIZE 1.2m. DIMENSIONS MAY VARY BETWEEN MANUFACTURERS.
 - PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 3 ON SHEET 3.
 - DEPTH OF PIT SHALL NOT EXCEED 3.5m.
 - ALL PITS SHOWN ARE STANDARD 900mm LONG OR 1450mm WIDE. REFER TO SD0402 FOR FURTHER DETAILS ON OVERSIZE PITS > 900mm LONG OR > 1450mm WIDE.
 - PIPE PENETRATIONS INTO PIT WALLS SHALL INCLUDE STEEL REINFORCEMENT TRIMMER BARS AS SHOWN IN TRIMMER DETAIL DIAGRAM ON SHEET 1.
 - CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 - WELDLOK GRATE WITH FLAT SKIRT BASE TYPE GG 52D OR WELDLOK GRATE AND FRAME TYPE GG 50D OR APPROVED EQUIVALENT TO BE USED. GRATE AND FRAME SHALL BE LOAD CLASS D HOT-DIP GALVANISED 80-85 MICRONS THICK. ALL GRATES SHALL BE BICYCLE SAFE AND PROVIDED WITH LOCKING CLIP.
 - PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
 - ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED. NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
 - 100φ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.
 - THIS STANDARD DRAWING REFERS TO PITS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENTS. TOTAL ISOLATION OF PITS IS REQUIRED ADJACENT TO RIGID PAVEMENTS.

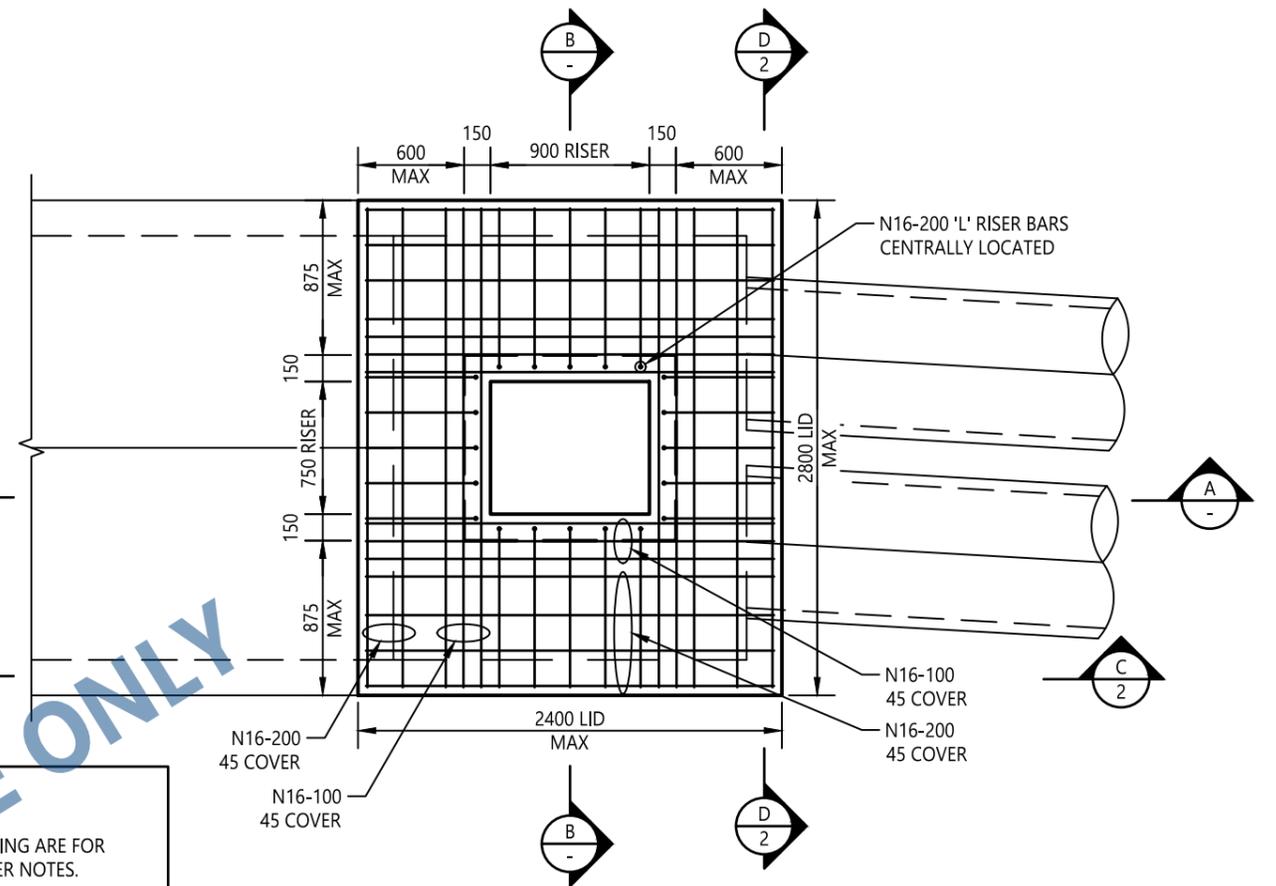
INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTES 1 AND 2 BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

- NOTES:**
- REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS
 - PIT WALLS AND BASE ON STATE ROADS AND B-DOUBLE ROUTES SHALL BE REINFORCED WITH RL1218 MESH - REFER TO TfNSW STANDARD DRAWING R0220 SERIES

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	STORMWATER DRAINAGE SERIES STANDARD GRATED GULLY PIT	STANDARD DRAWING	
					0 100 200 300 400 500 1:10 0 250 500 750 1000 1250 1:25	CHECKED	M BAMBER			DRAWING NUMBER	REV
						DATE	28/4/20			SD0401	-
						UNIT MANAGER APPROVAL				SHEET 3 OF 3	A3
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN		ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE			



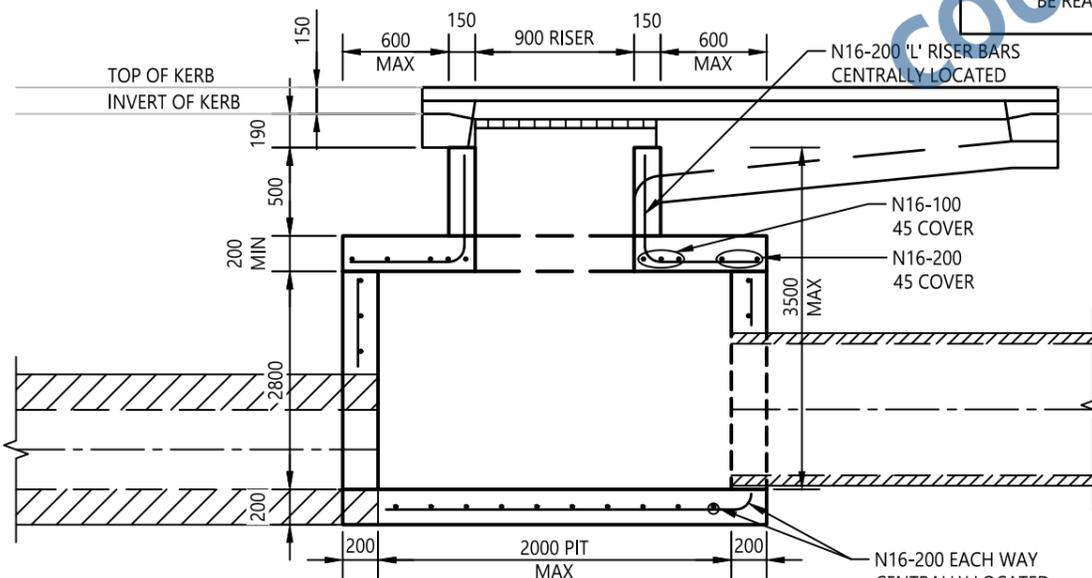
WALL REINFORCEMENT PLAN
SCALE 1:40



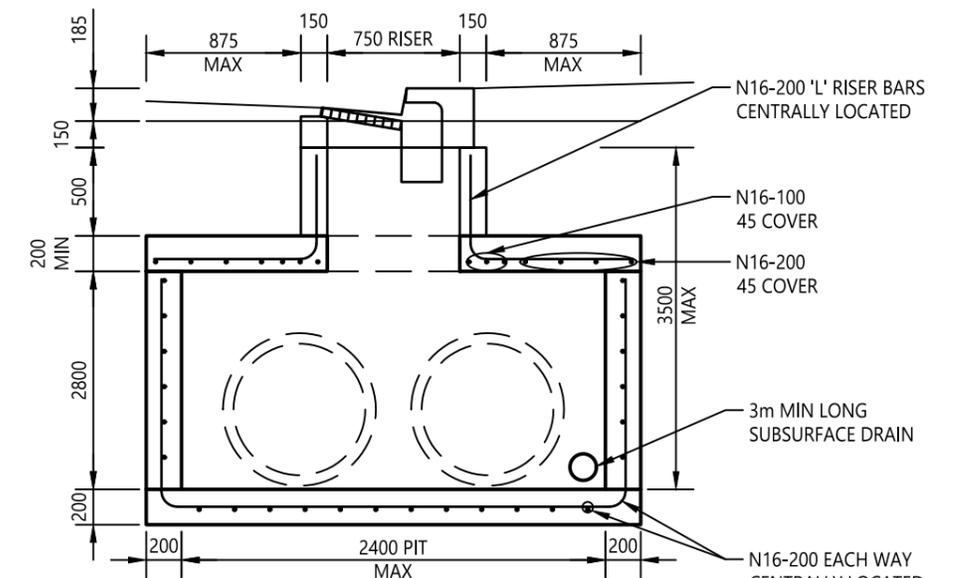
LID REINFORCEMENT PLAN
SCALE 1:40

NOTES:

1. SHEETS 1 AND 2 OF THIS STANDARD DRAWING ARE FOR COUNCIL-USE ONLY. SEE SHEET 3 FOR OTHER NOTES.
2. LARGER SIZE PITS OR IRREGULAR SHAPED PITS SHALL BE DESIGNED BY A SUITABLY QUALIFIED AND EXPERIENCED CIVIL/STRUCTURAL ENGINEER.
3. THE BENEFIT OF CONSTRUCTING A RISER WOULD NOT LIKELY BE REALISED FOR PIT DEPTHS <3m.



SECTION A
SCALE 1:40



SECTION B
SCALE 1:40

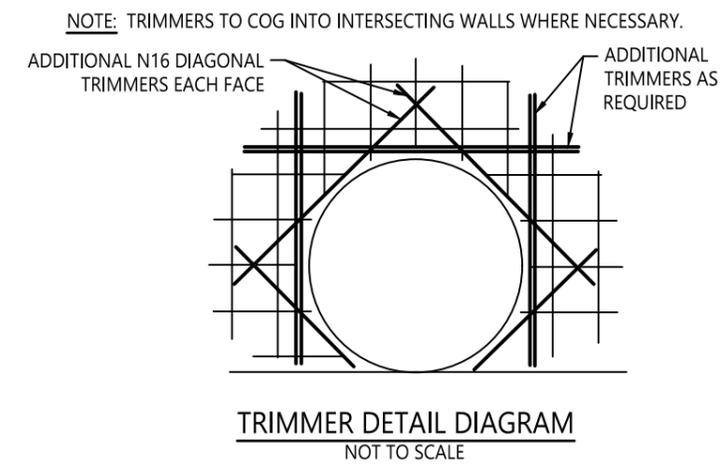
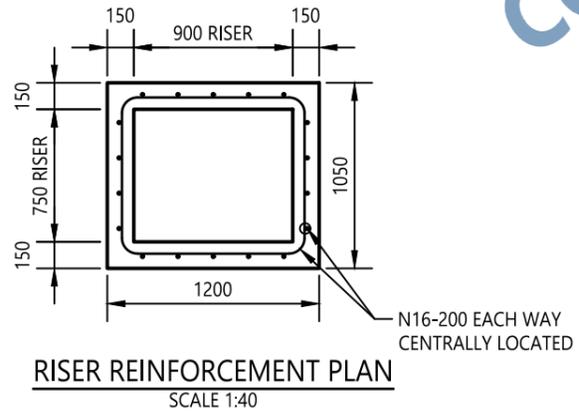
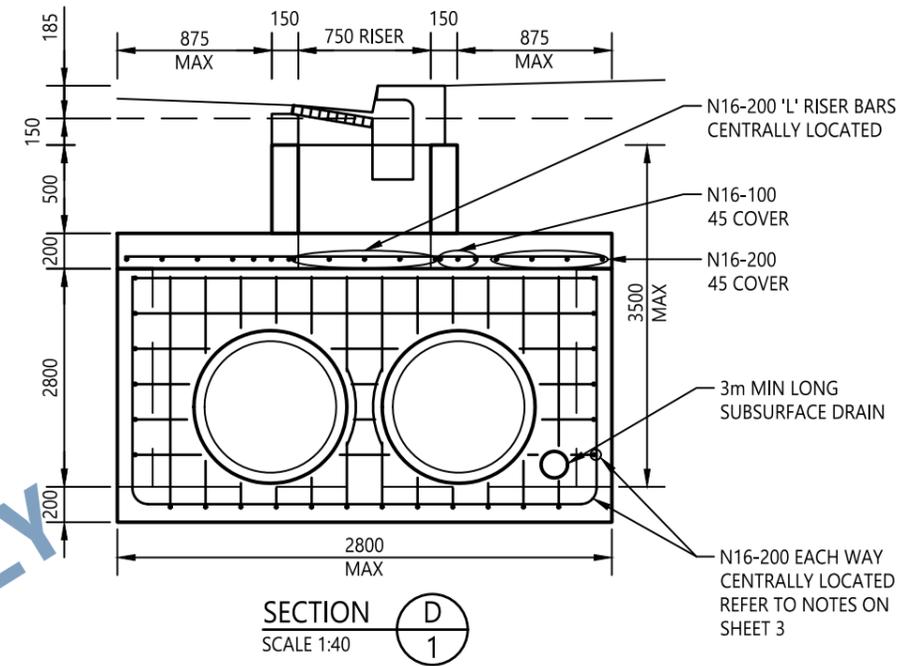
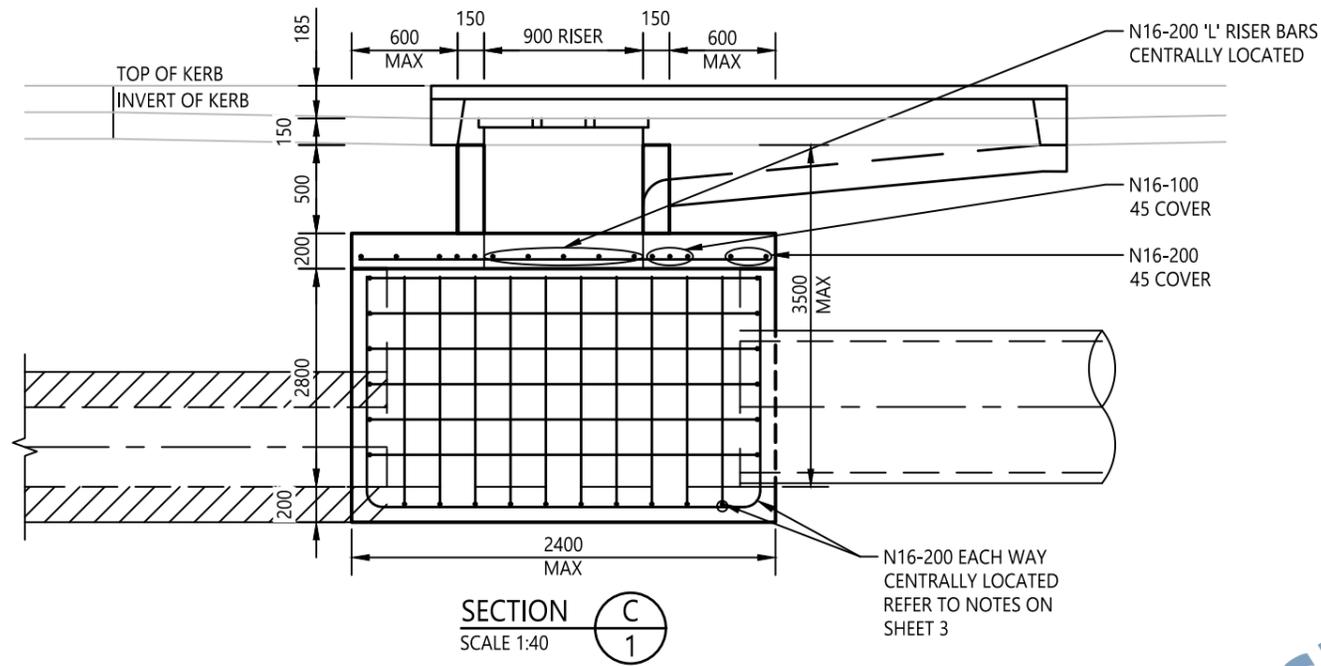
SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS
0 400 800 1200 1600 2000	CHECKED	M BAMBER
1:40	DATE	28/4/20
ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	UNIT MANAGER APPROVAL	
	<i>[Signature]</i>	
	ASSETS PLANNING AND DESIGN	

DRAWN	T WILLIS
CHECKED	M BAMBER
DATE	28/4/20
UNIT MANAGER APPROVAL	
<i>[Signature]</i>	
ASSETS PLANNING AND DESIGN	



Central Coast Council	
STORMWATER DRAINAGE SERIES OVERSIZE GULLY PIT	

STANDARD DRAWING	
DRAWING NUMBER	REV
SD0402	-
SHEET 1 OF 3	A3



COUNCIL-USE ONLY

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS	Central Coast Council	Central Coast Council	STANDARD DRAWING			
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	CHECKED	M BAMBER				DRAWING NUMBER	REV	
					0 400 800 1200 1600 2000	DATE	28/4/20			DRAWING NUMBER	SD0402	REV	-
					1:40	UNIT MANAGER APPROVAL				SHEET 2 OF 3	A3		
						ASSETS PLANNING AND DESIGN				STORMWATER DRAINAGE SERIES OVERSIZE GULLY PIT			
						ROADS TRANSPORT DRAINAGE AND WASTE							

REINFORCED CONCRETE PIT NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- EXPOSURE CLASSIFICATION AND CONCRETE STRENGTH GRADE IN ACCORDANCE WITH TABLE 4.3 AS 3600-2009:

EXPOSURE CLASSIFICATION	CONCRETE STRENGTH GRADE	LOCATION
B1	N32	1 TO 50km FROM COASTLINE
B2	N40	WITHIN 1km OF SALTWATER SHORELINE

- MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL COMPLY WITH TABLE 4.10.3.2 AS 3600-2009:

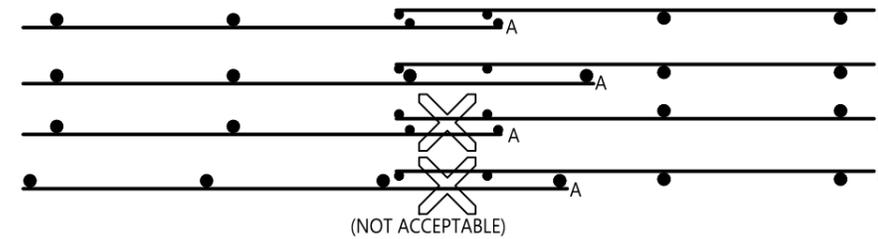
Exposure Classification	REQUIRED COVER (mm)				
	CHARACTERISTIC STRENGTH (f'c)				
	20 MPa	25 MPa	32 MPa	40 MPa	≥50 MPa
A1	20	20	20	20	20
A2	(50)	30	25	20	20
B1	-	(60)	40	30	25
B2	-	-	(65)	45	35
C1	-	-	-	(70)	50
C2	-	-	-	-	65

- DESIGN COVER TO REINFORCEMENT SHALL BE 65mm TO UNPROTECTED GROUND AND 40mm TO EXTERNAL EXPOSURE. THE REINFORCEMENT SHALL BE PLACED TOWARDS THE OUTSIDE FACE OF THE PANEL WITHIN THE ZONE DEFINED BY THESE LIMITS.
- ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON INSULATED STEEL OR PLASTIC CHAIRS, GENERALLY AT NOT GREATER THAN 800mm CENTRES BOTH WAYS.
- ALL TIE WIRES SHALL BE BENT SO AS NOT TO INTRUDE INTO THE COVER ZONE.
- MINIMUM BAR SPLICE SHALL BE 450mm.
- SPLICES IN REINFORCEMENT SHALL ONLY BE MADE IN POSITION SHOWN. LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR AS SHOWN IN THE TABLE BELOW UNLESS OTHERWISE NOTED:

BAR SIZE	LAP MIN
N10	450
N12	500
N16	650
N20	1000

BOTTOM BAR LAPPED AT SUPPORTS AND TOP BAR LAPPED AT MID SPAN

- SLAB MESH SHALL BE LAPPED BY ONE FULL PANEL OF MESH SO THAT THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED SUCH AS SHOWN IN THE DIAGRAM BELOW:

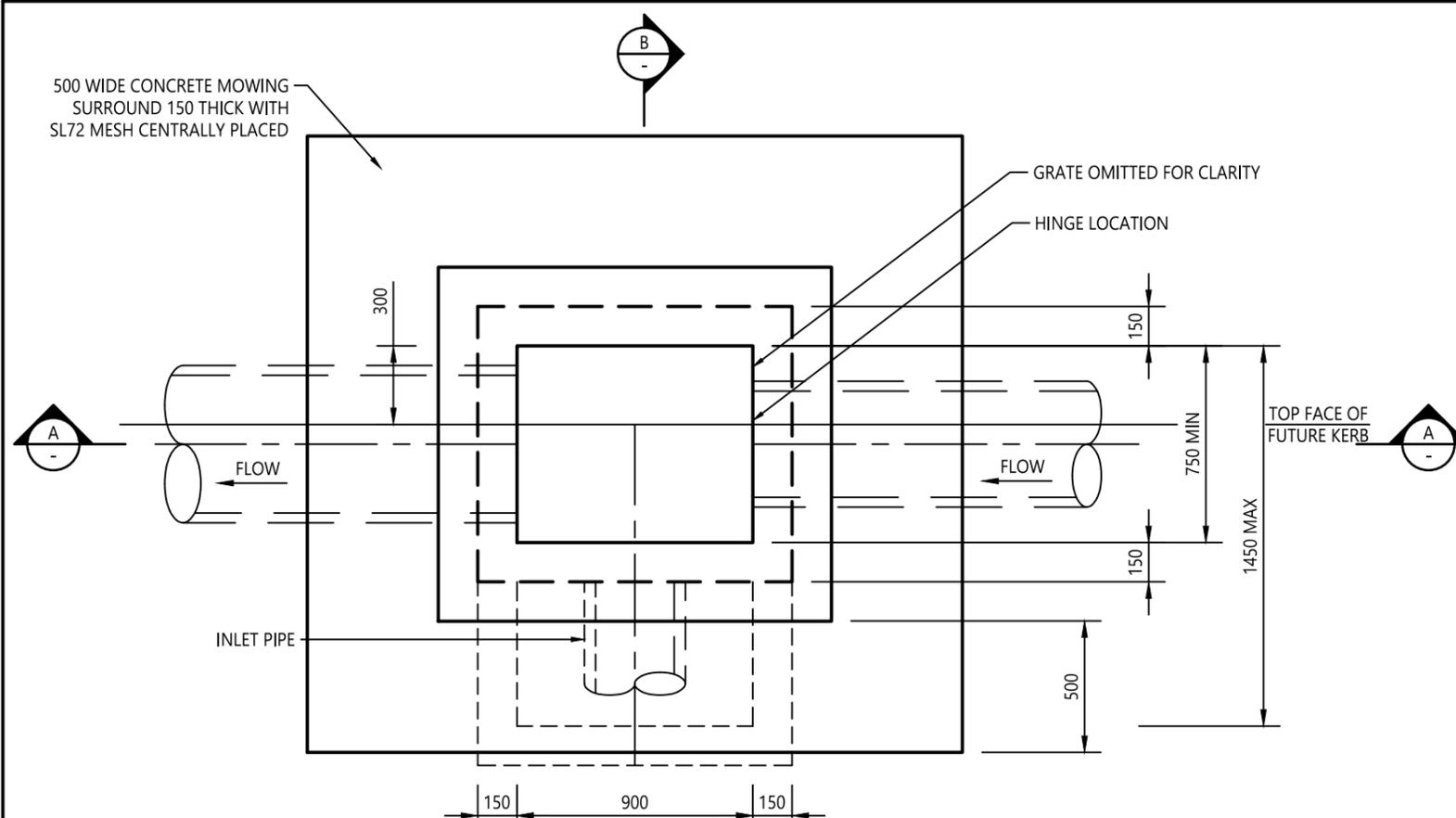


- WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER.
- ALL STEEL REINFORCEMENT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
- ADMIXTURES AND CONCRETE MATERIAL CONTAINING CALCIUM CHLORIDE OR OTHER CHLORIDE SALTS SHALL NOT BE USED. THE MATERIALS, MANUFACTURE, HANDLING, PLACING, FINISHING AND CURING OF THE CONCRETE SHALL BE IN ACCORDANCE WITH AS 3600 AND ACCEPTED BUILDING PRACTICE.

ELEMENT	SLUMP	AGG. SIZE MAX	CEMENT TYPE	AS 3600 (EXP. CLASS)	ADMIX.
PIT	80	20	A	32 MPa (B1) 40 MPa (B2)	Nil

- NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- ALL CONCRETE SHALL BE COMPACTED WITH AN APPROVED INTERNAL VIBRATOR.
- CONCRETE SHALL BE MOIST CURED FOR 7 DAYS SO THAT THE DESIGN REQUIREMENTS FOR SERVICEABILITY, DURABILITY AND STRENGTH ARE ACHIEVED. EFFECTIVE MOIST CURING MAY BE OBTAINED BY A COMBINATION OF MEANS SUCH AS WET CURING, SEALING WITH PLASTIC SHEETS OR OTHER MEANS APPROVED BY THE ENGINEER. PROPPING AND BACKPROPPING OF FORMWORK, AND STRIPPING OF FORMWORK ARE TO BE IN ACCORDANCE WITH AS 3610 AND AS 3600 UNLESS SPECIFICALLY VARIED BY THE SUPERVISING ENGINEER.
- PIT WALLS HAVE BEEN DESIGNED FOR EARTH PRESSURES WITH LEVEL BACKFILL CONDITIONS. PITS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS 3735-2001 CONCRETE STRUCTURES FOR RETAINING LIQUIDS.
- THE PIT STRUCTURE DETAILED HAS BEEN DESIGNED FOR LOAD CLASS D CLASSIFICATION IN ACCORDANCE WITH AS 3996-2006, WITH A NOMINAL WHEEL LOADING OF 8000kg. PIT COVERS AND GRATES SHALL BE OF ADEQUATE CAPACITY TO COMPLY WITH THE REQUIREMENTS OF THIS CLASSIFICATION.
- AT PENETRATIONS IN SLABS, UNLESS OTHERWISE DETAILED, REINFORCEMENT SHALL NOT BE CUT BUT SHALL BE GATHERED EQUALLY TO EACH SIDE OF PENETRATION AND EXTRA REINFORCEMENT PROVIDED BETWEEN THE PENETRATIONS AS DIRECTED BY THE ENGINEER.
- ALL RODS IN TRIMMER ROD GROUPS OF THE SAME LENGTH ARE TO HAVE A SPACING OF APPROXIMATELY 75mm CENTRES.
- PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
- LARGER SIZE OR IRREGULAR SHAPED PITS SHALL BE DESIGNED BY AN APPROPRIATELY QUALIFIED AND EXPERIENCED ENGINEER.
- DEPTH OF PIT SHALL NOT EXCEED 3.5m.

		SCALE ON ORIGINAL A3 SIZE DRAWING		DRAWN	T WILLIS		Central Coast Council		STANDARD DRAWING	
		NOT TO SCALE		CHECKED	M BAMBER				DRAWING NUMBER	REV
				DATE	28/4/20		SD0402	-		
				UNIT MANAGER APPROVAL			SHEET 3 OF 3		A3	
REV	AMENDMENT	DATE	DRAWN	APRVD	ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE		STORMWATER DRAINAGE SERIES OVERSIZE GULLY PIT	



- NOTES:**
- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
 - CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
 - PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 2.
 - DEPTH OF PIT SHALL NOT EXCEED 3.5m.
 - ALL PITS SHOWN ARE STANDARD 900mm LONG OR 1450mm WIDE. REFER TO SD0402 FOR FURTHER DETAILS ON OVERSIZE PITS > 900mm LONG OR > 1450mm WIDE.
 - CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 - BCP PLD-RSG99 PRECAST APRON WITH GRATE, WELDLOK SPG99 GRATE OR APPROVED EQUIVALENT TO BE USED. GRATE AND FRAME TO BE HOT-DIP GALVANISED 80-85 MICRONS THICK. ALL GRATES TO BE PROVIDED WITH LOCKING CLIP.
 - PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
 - NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
 - ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
 - 100Ø SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.
 - PROVIDE TWO MINIMUM WHITE REFLECTORISED GUIDE POSTS EITHER SIDE OF PIT, WHERE REQUIRED.

TABLE 2 - CONCRETE THICKNESS AND REINFORCEMENT DETAILS

INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTE BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

NOTE: REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS

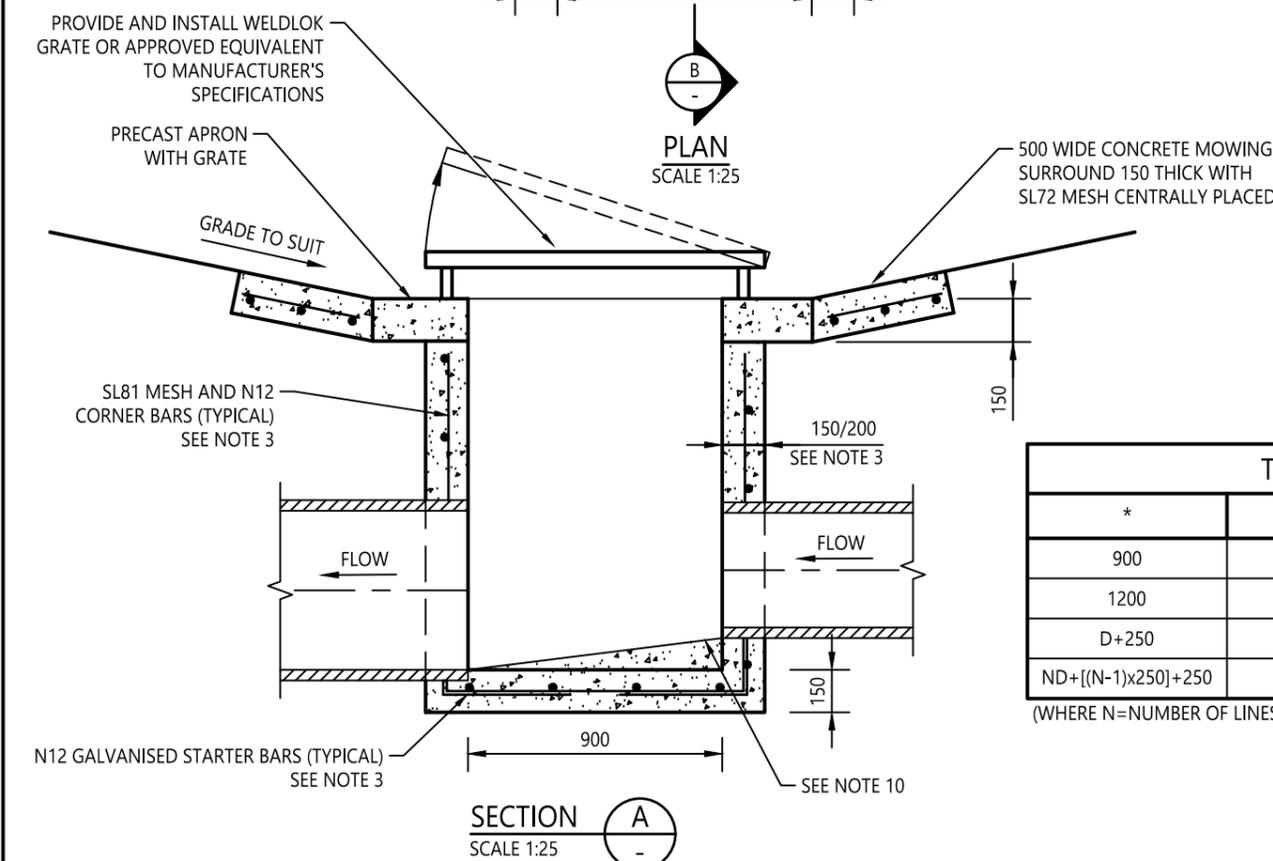
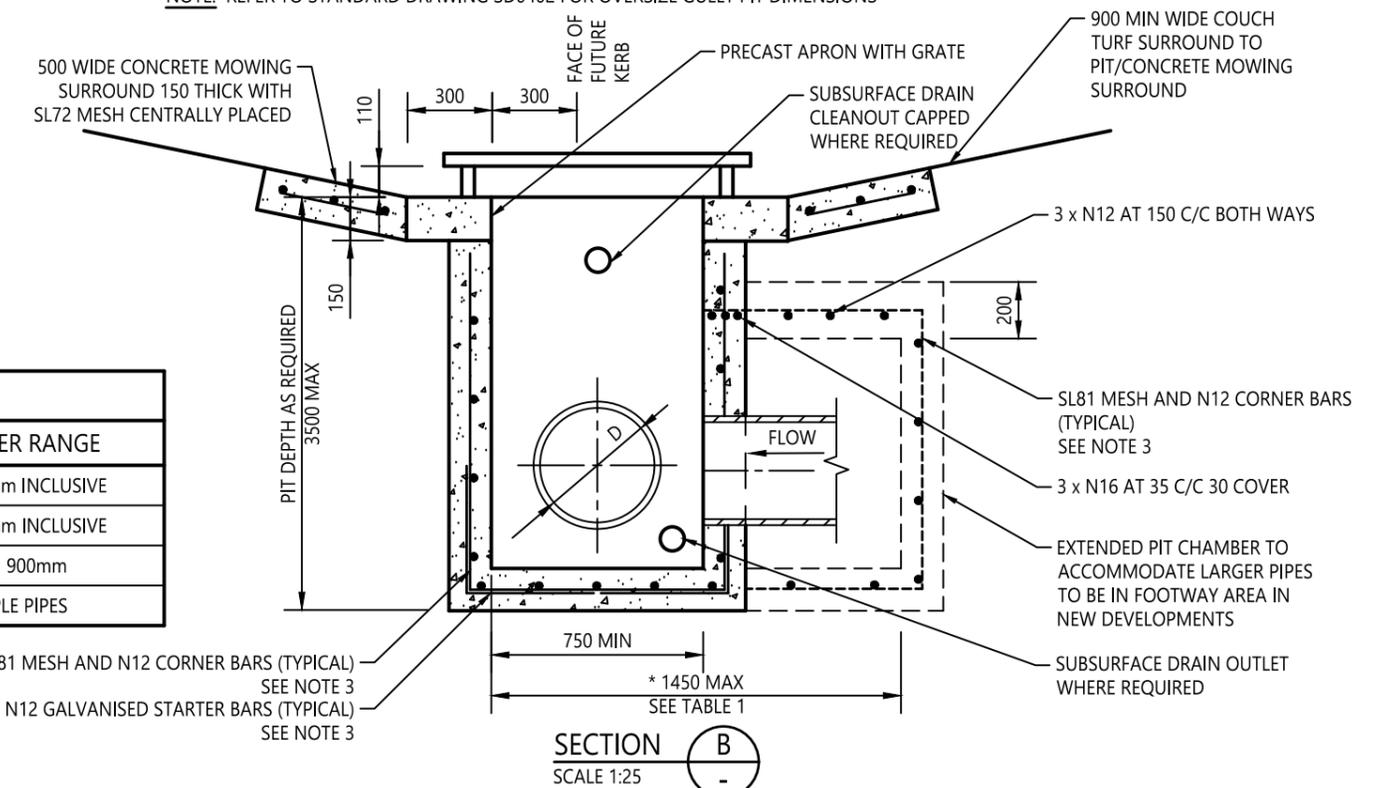


TABLE 1

*	PIPE DIAMETER RANGE
900	600mm TO 750mm INCLUSIVE
1200	825mm TO 900mm INCLUSIVE
D+250	FOR PIPES > 900mm
ND+[(N-1)x250]+250	FOR MULTIPLE PIPES

(WHERE N=NUMBER OF LINES)



REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING

DRAWN C SHEPPEARD
 CHECKED M BAMBER
 DATE 28/4/20
 UNIT MANAGER APPROVAL
 ASSETS PLANNING AND DESIGN



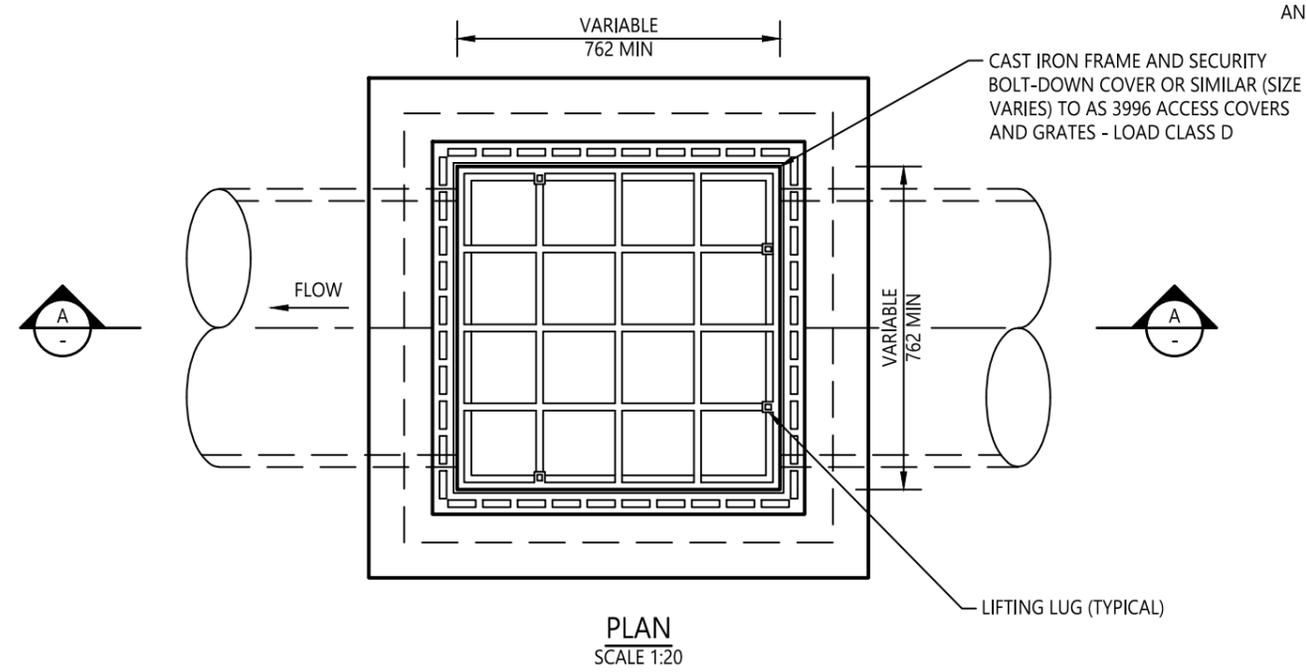
Central Coast Council
 STORMWATER DRAINAGE SERIES
 RAISED GRATED GULLY PIT

STANDARD DRAWING	
DRAWING NUMBER	SD0403
REV	-
SHEET 1 OF 1	A3

INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTES 1 AND 2 BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

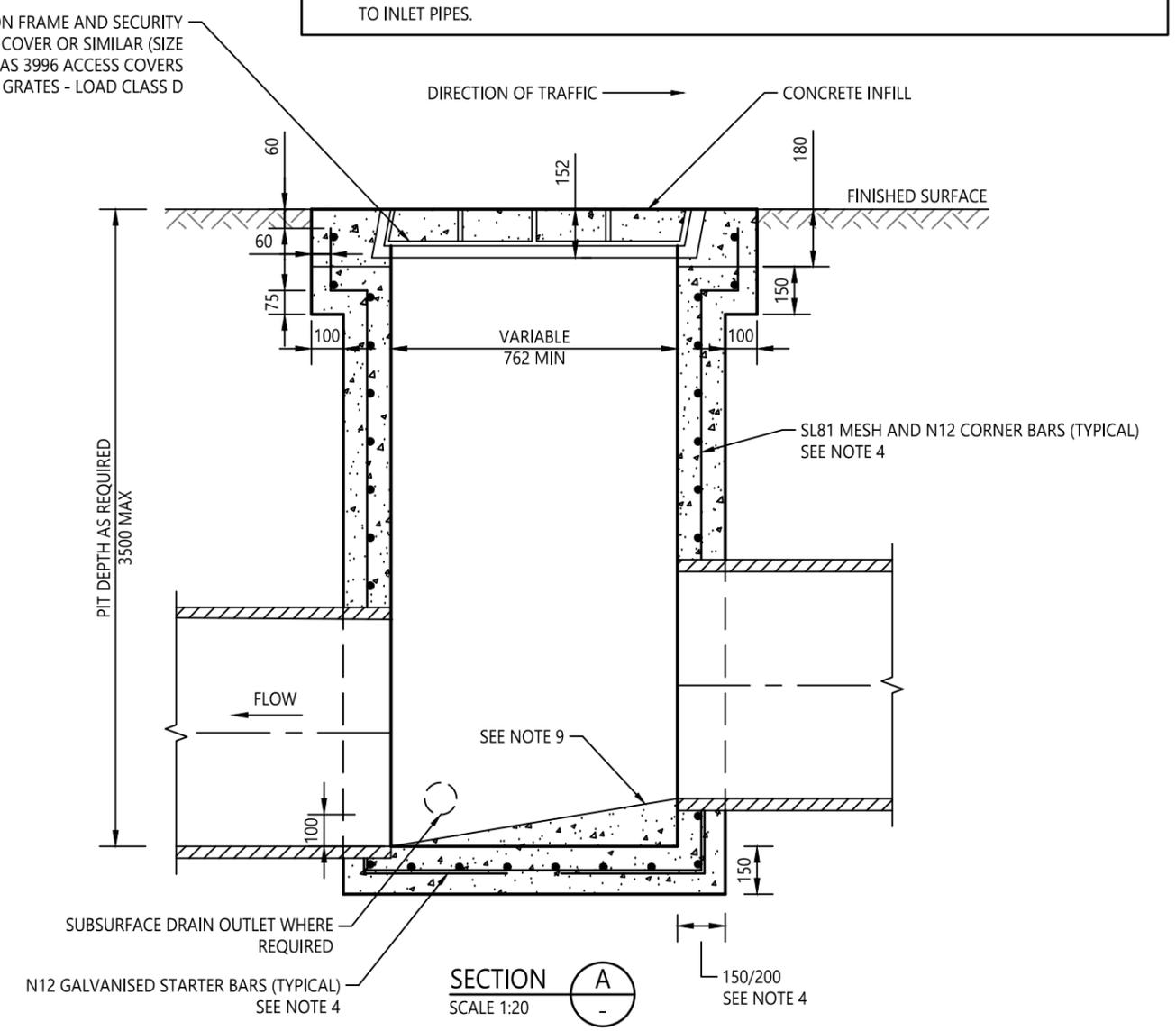
- NOTES:
- REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS
 - PIT WALLS AND BASE ON STATE ROADS AND B-DOUBLE ROUTES SHALL BE REINFORCED WITH RL1218 MESH - REFER TO TfNSW STANDARD DRAWING R0220 SERIES

- NOTES:
- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
 - CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
 - CAST IRON FRAME AND COVER SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
 - PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 1.
 - DEPTH OF PIT SHALL NOT EXCEED 3.5m.
 - PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
 - CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 - NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
 - ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
 - 100φ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.



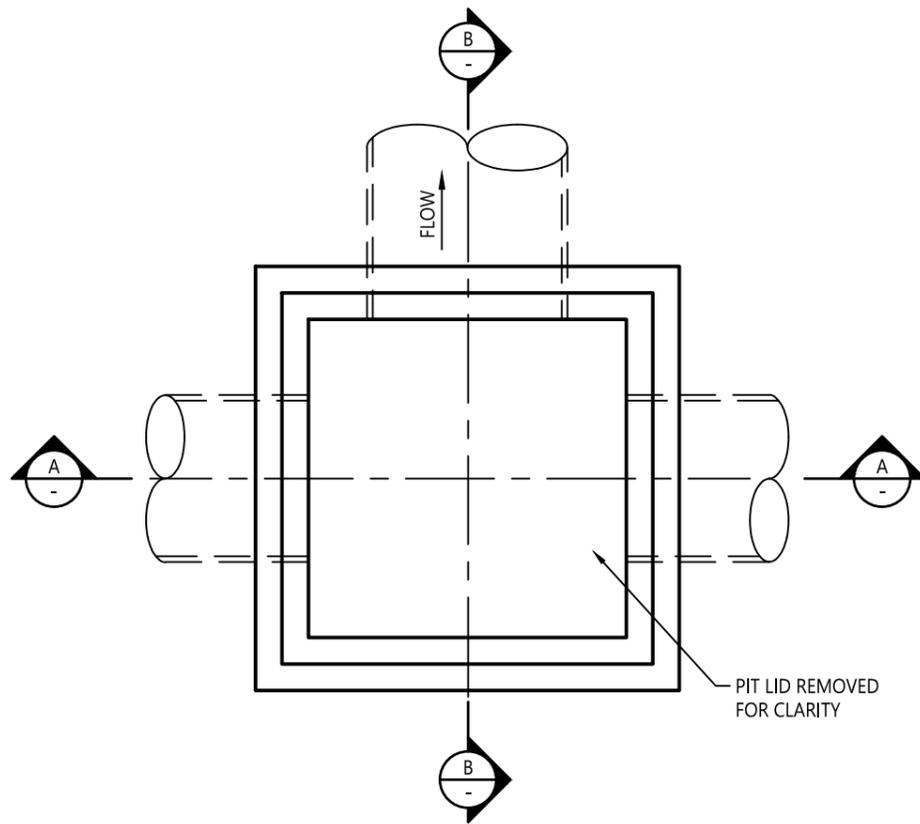
SINGLE	DOUBLE
762 x 762	762 x 1295
914 x 914	762 x 1600
-	914 x 1295
-	914 x 1905

DEPTH	MIN SIZE
0-1200	762 x 762
1200-2400	762 x 1295
> 2400	762 x 1600

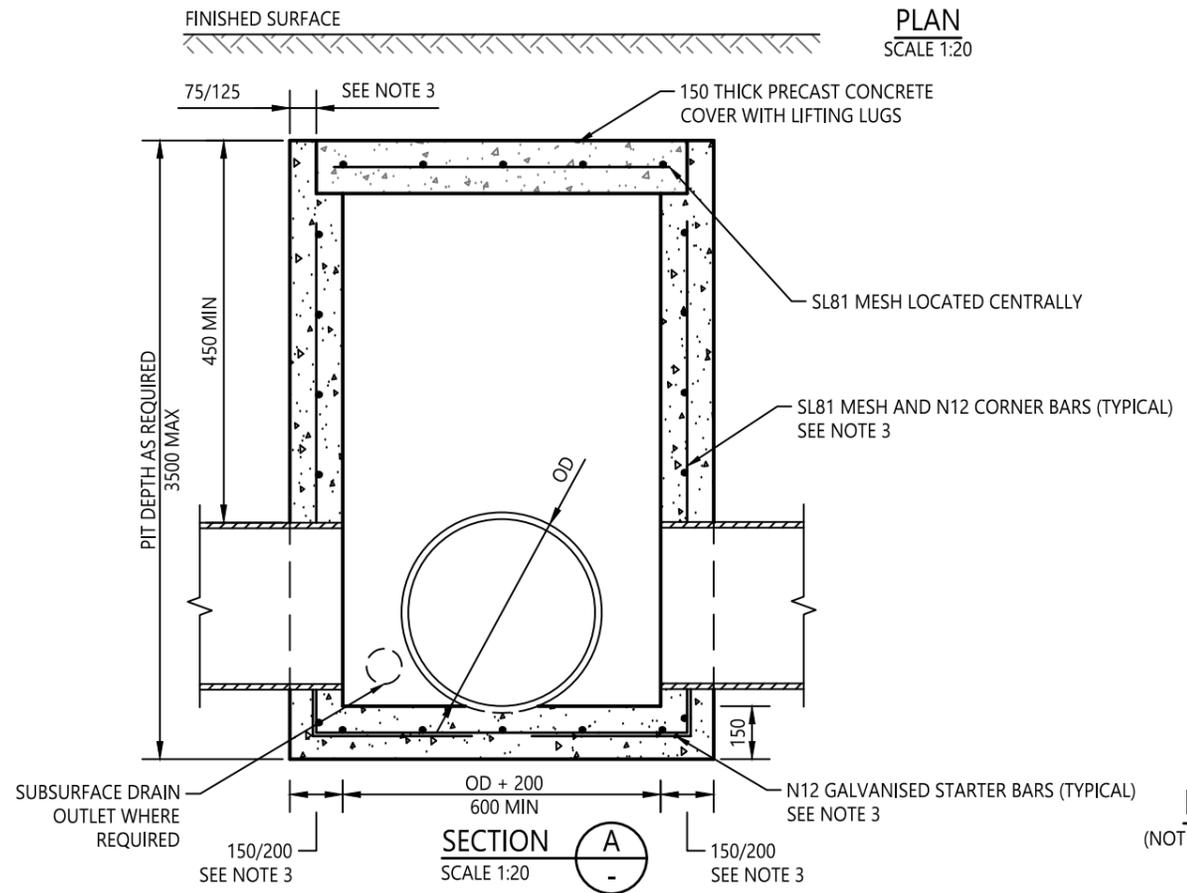


JUNCTION BOX WITH CAST IRON FRAME AND COVER

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING
					0 200 400 600 800 1000	CHECKED	M BAMBER			
					1:20	DATE	28/4/20			SD0404
						UNIT MANAGER APPROVAL				SHEET 1 OF 2
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	ASSETS PLANNING AND DESIGN				A3
						ROADS TRANSPORT DRAINAGE AND WASTE				

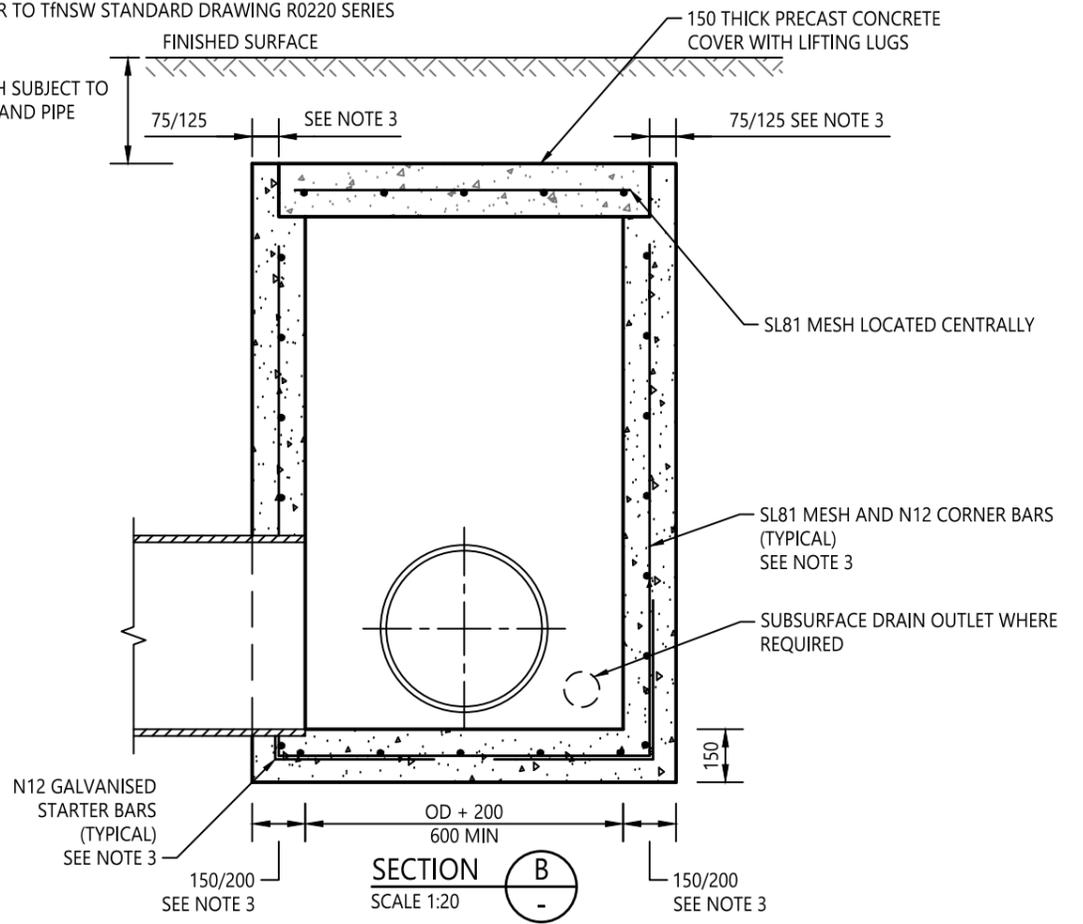


PLAN
SCALE 1:20



SECTION A
SCALE 1:20

VARIABLE COVER DEPTH SUBJECT TO PAVEMENT THICKNESS AND PIPE COVER REQUIREMENTS



SECTION B
SCALE 1:20

NOTES:

1. REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
2. CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
3. PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 2.
4. DEPTH OF PIT SHALL NOT EXCEED 3.5m.
5. CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
6. PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm UNLESS OTHERWISE ADVISED BY COUNCIL'S REPRESENTATIVE.
7. ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED. NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
8. 100φ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.

TABLE 2 - CONCRETE THICKNESS AND REINFORCEMENT DETAILS

INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTES 1 AND 2 BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

NOTES:

1. REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS
2. PIT WALLS AND BASE ON STATE ROADS AND B-DOUBLE ROUTES SHALL BE REINFORCED WITH RL1218 MESH - REFER TO TfNSW STANDARD DRAWING R0220 SERIES

BURIED JUNCTION BOX
(NOT PERMITTED UNLESS SPECIFICALLY APPROVED BY COUNCIL'S REPRESENTATIVE)

SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD
0 200 400 600 800 1000	CHECKED	M BAMBER
1:20	DATE	28/4/20
ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	UNIT MANAGER APPROVAL	
	ASSETS PLANNING AND DESIGN	

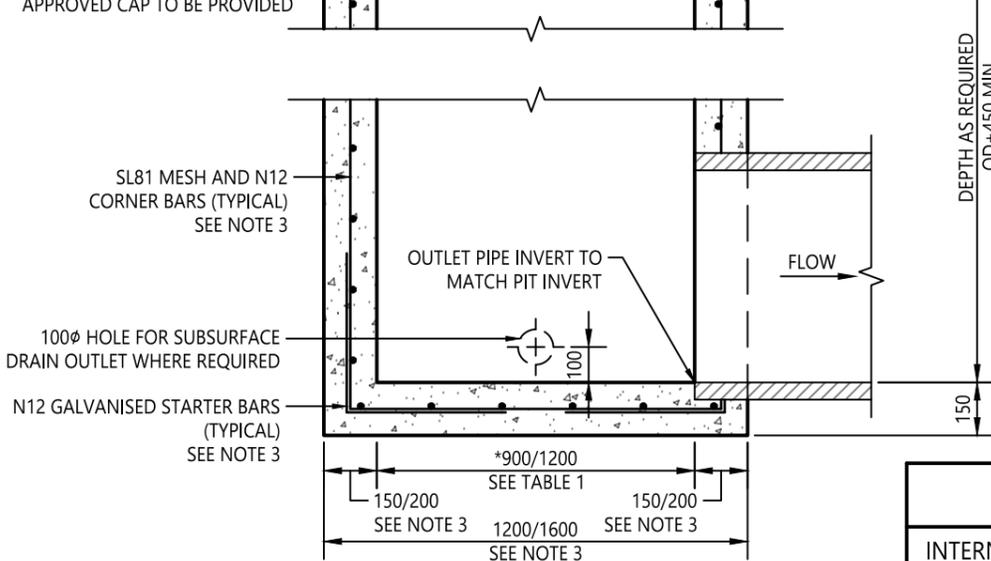
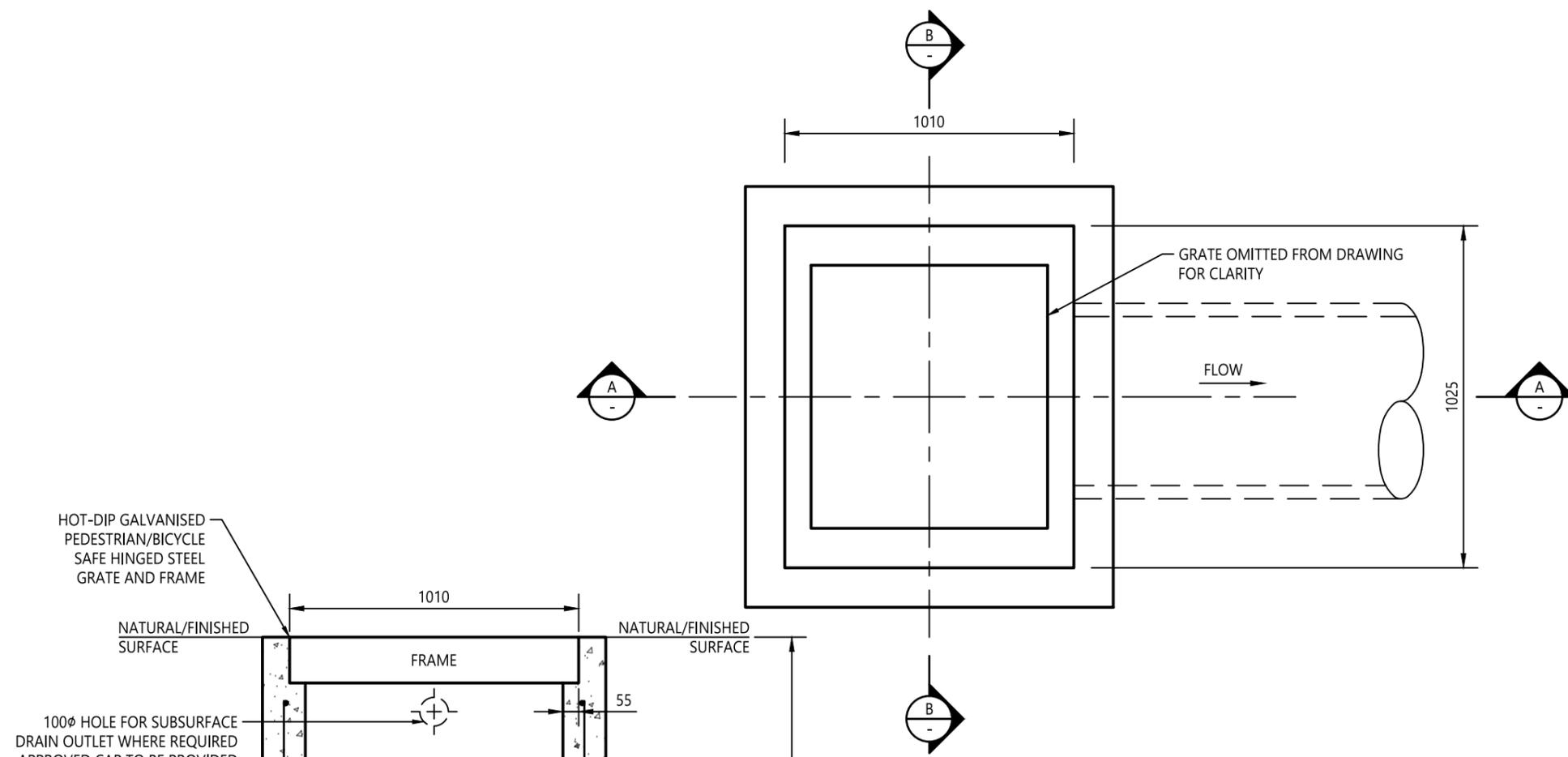


Central Coast Council
STORMWATER DRAINAGE SERIES
JUNCTION BOX

STANDARD DRAWING	
DRAWING NUMBER	REV
SD0404	-
SHEET 2 OF 2	A3

NOTES:

- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
- CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
- PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 2.
- CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
- GRATE AND FRAME SHALL BE WELDLOK GRATE HPG 9090D OR EQUIVALENT.
- PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
- ALL EXPOSED EDGES SHALL BE ROUNDED WITH 20mm RADIUS.
- NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
- ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
- 100 ϕ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.
- PROVIDE 900mm MINIMUM TURF SURROUND AND SHAPE ADJACENT AREAS TO ASSIST WATER COLLECTION.



SECTION A
SCALE 1:20

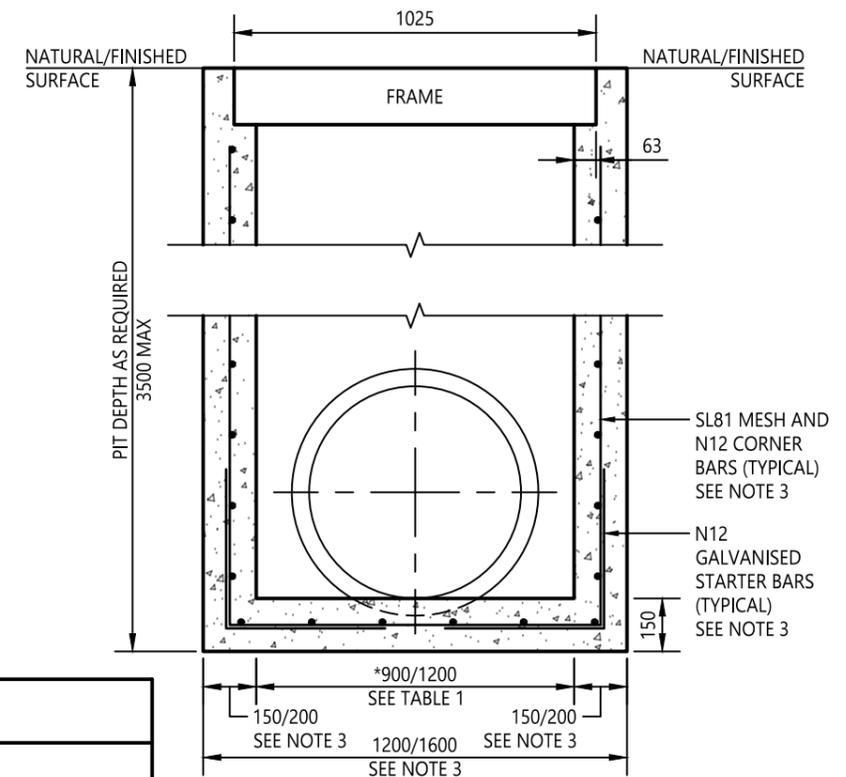
PLAN
SCALE 1:20

*	PIPE DIAMETER RANGE
900	600mm TO 750mm INCLUSIVE
1200	825mm TO 900mm INCLUSIVE

(WHERE N=NUMBER OF LINES)

INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTE BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

NOTE: REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS



SECTION B
SCALE 1:20

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING 0 200 400 600 800 1000 1:20	DRAWN	C SHEPPEARD		Central Coast Council STORMWATER DRAINAGE SERIES FLUSH GRATED GULLY PIT	STANDARD DRAWING	
						CHECKED	M BAMBER			DRAWING NUMBER	REV
						DATE	28/4/20			SD0405	-
						UNIT MANAGER APPROVAL 				SHEET 1 OF 1	A3
ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN						ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE			

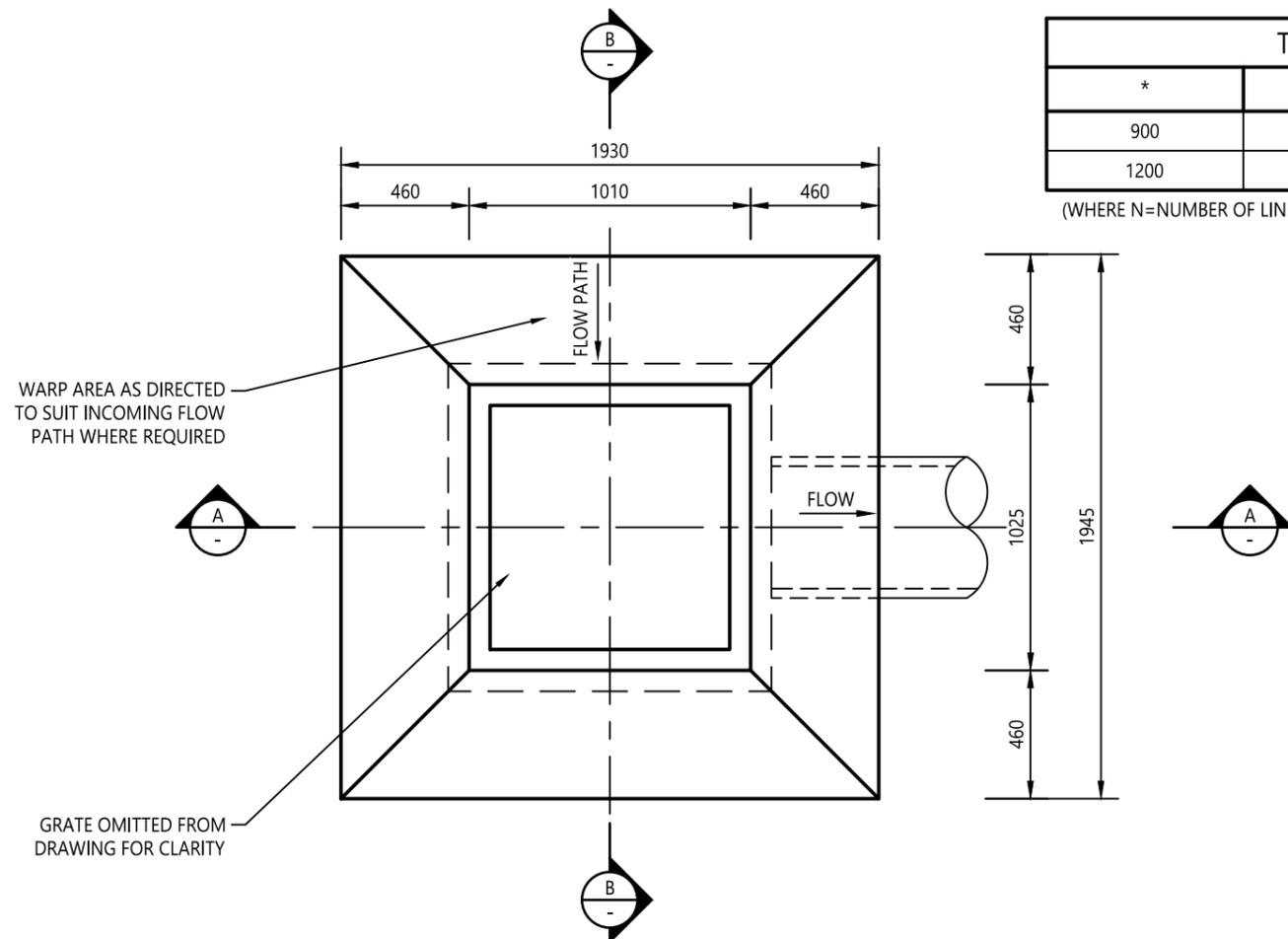


TABLE 1	
*	PIPE DIAMETER RANGE
900	600mm TO 750mm INCLUSIVE
1200	825mm TO 900mm INCLUSIVE

(WHERE N=NUMBER OF LINES)

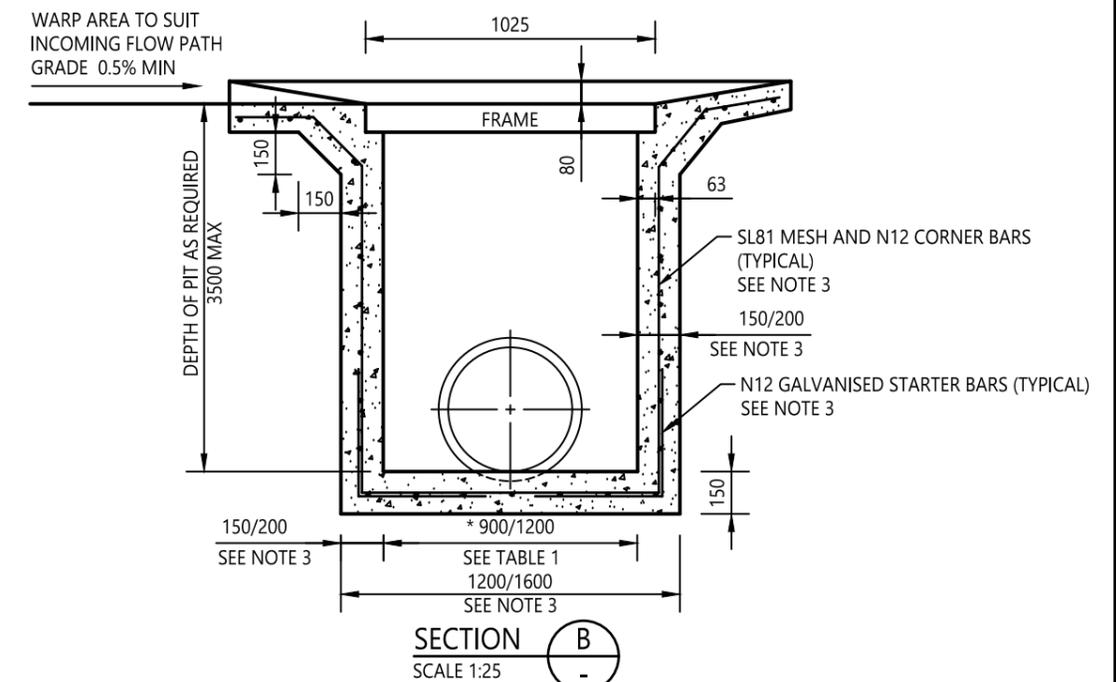
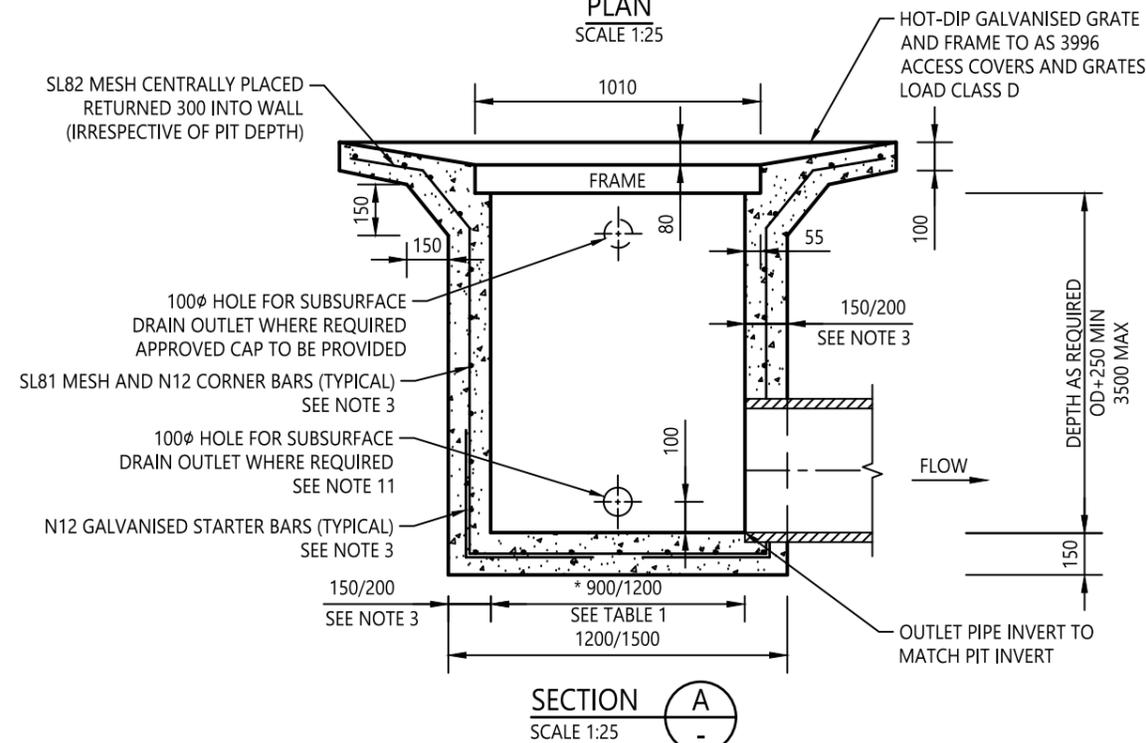
NOTES:

- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
- CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
- PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 2.
- DEPTH OF PIT SHALL NOT EXCEED 3.5m.
- CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
- GRATE AND FRAME SHALL BE LOCKABLE WELDLOK GRATE HPG 9090D OR EQUIVALENT.
- PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
- ALL EXPOSED EDGES SHALL BE ROUNDED WITH 20mm RADIUS.
- NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
- ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
- 100φ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.
- PROVIDE 900mm MINIMUM TURF SURROUND AND SHAPE ADJACENT AREAS TO ASSIST WATER COLLECTION.
- SHAPE ADJACENT AREAS TO ASSIST WATER COLLECTION.

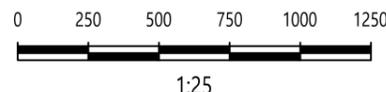
TABLE 2 - CONCRETE THICKNESS AND REINFORCEMENT DETAILS

INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTE BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

NOTES: REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS



SCALE ON ORIGINAL A3 SIZE DRAWING



DRAWN C SHEPPEARD
CHECKED M BAMBER
DATE 28/4/20
UNIT MANAGER APPROVAL
ASSETS PLANNING AND DESIGN

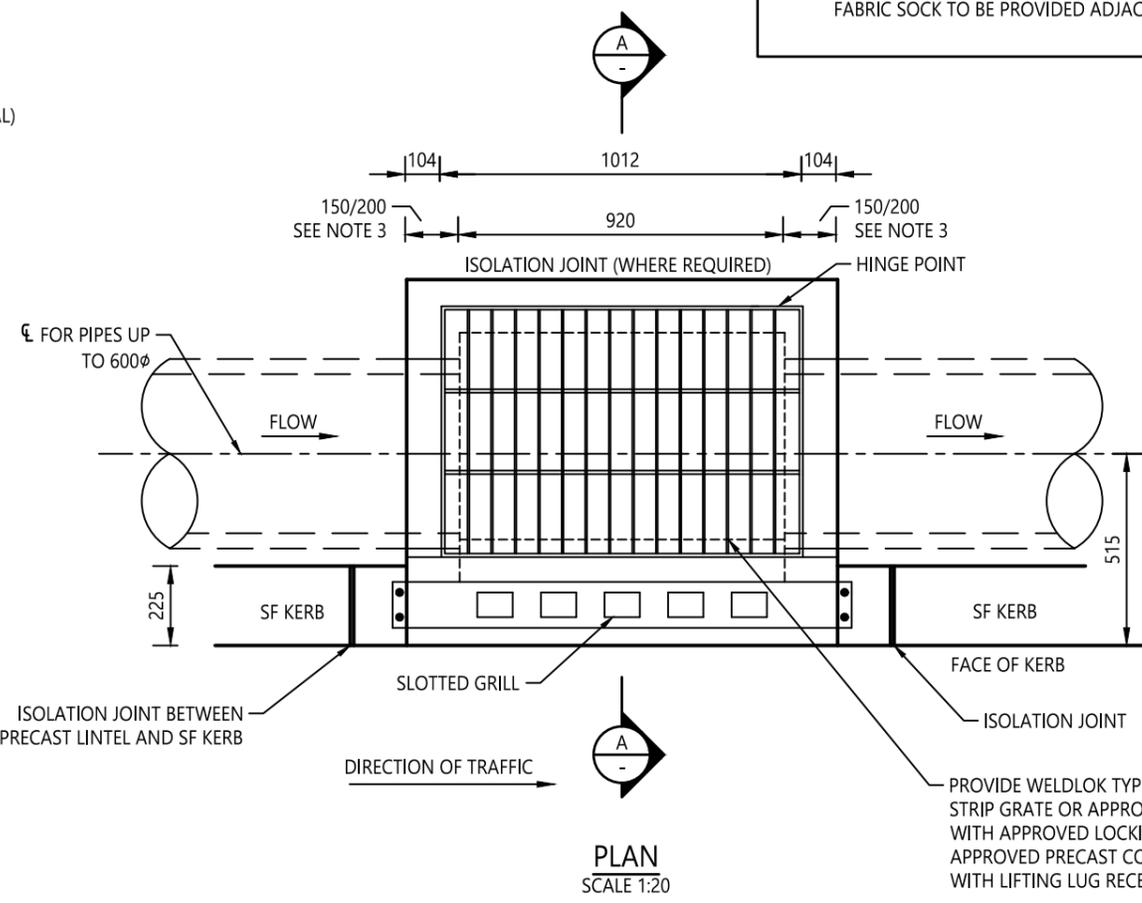
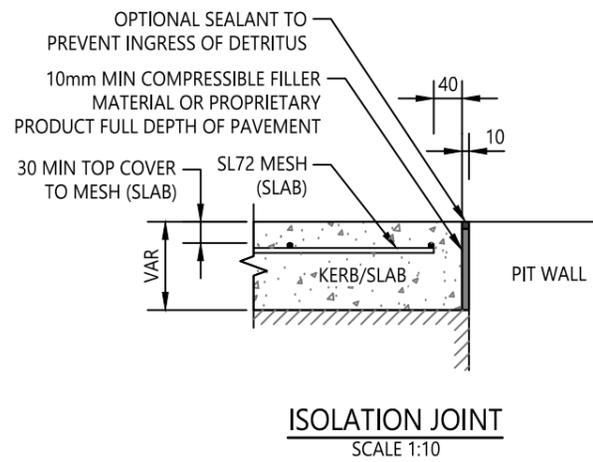
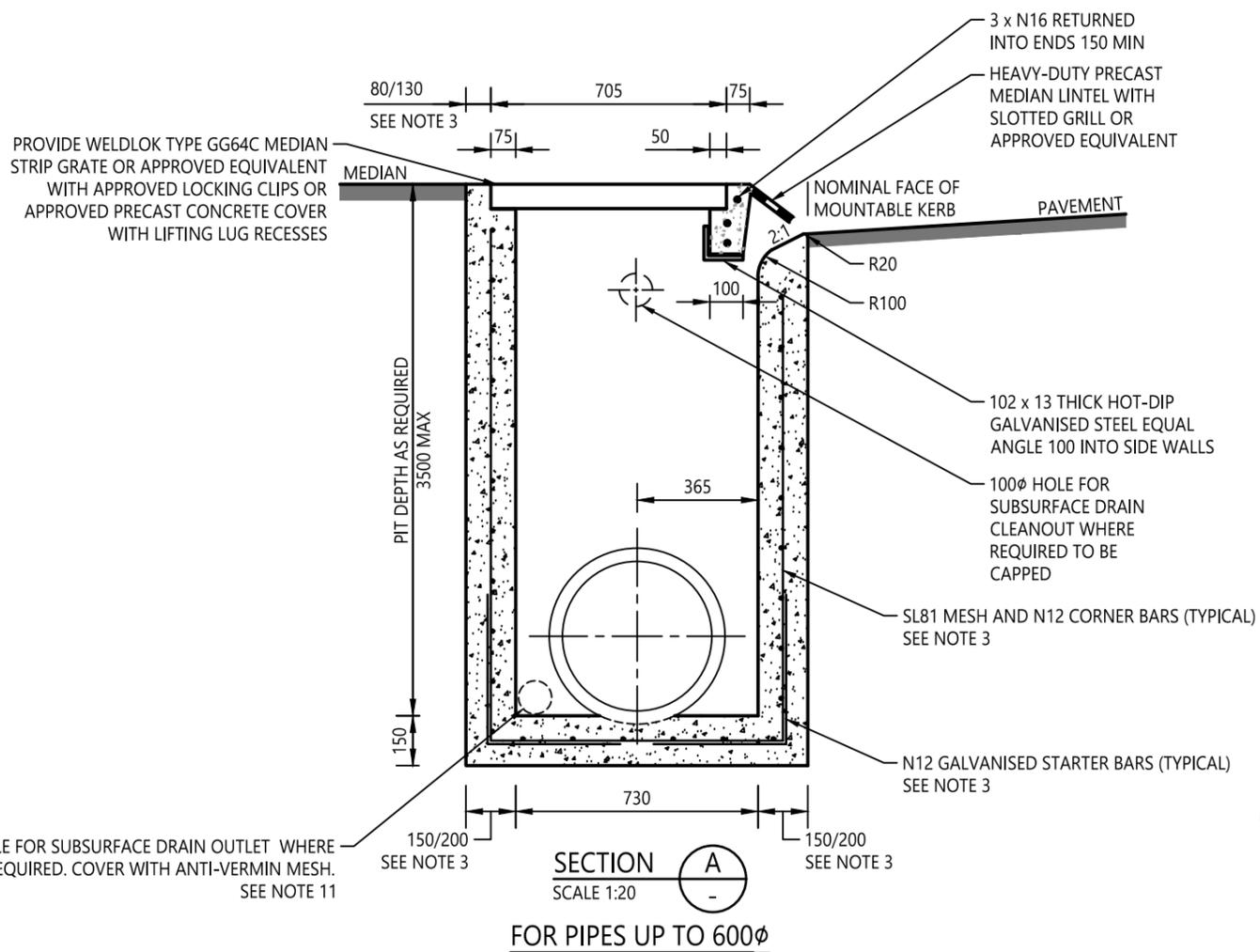


Central Coast Council

STORMWATER DRAINAGE SERIES
DEPRESSED GRATED GULLY PIT

STANDARD DRAWING

DRAWING NUMBER	REV
SD0407	-
SHEET 1 OF 1	A3



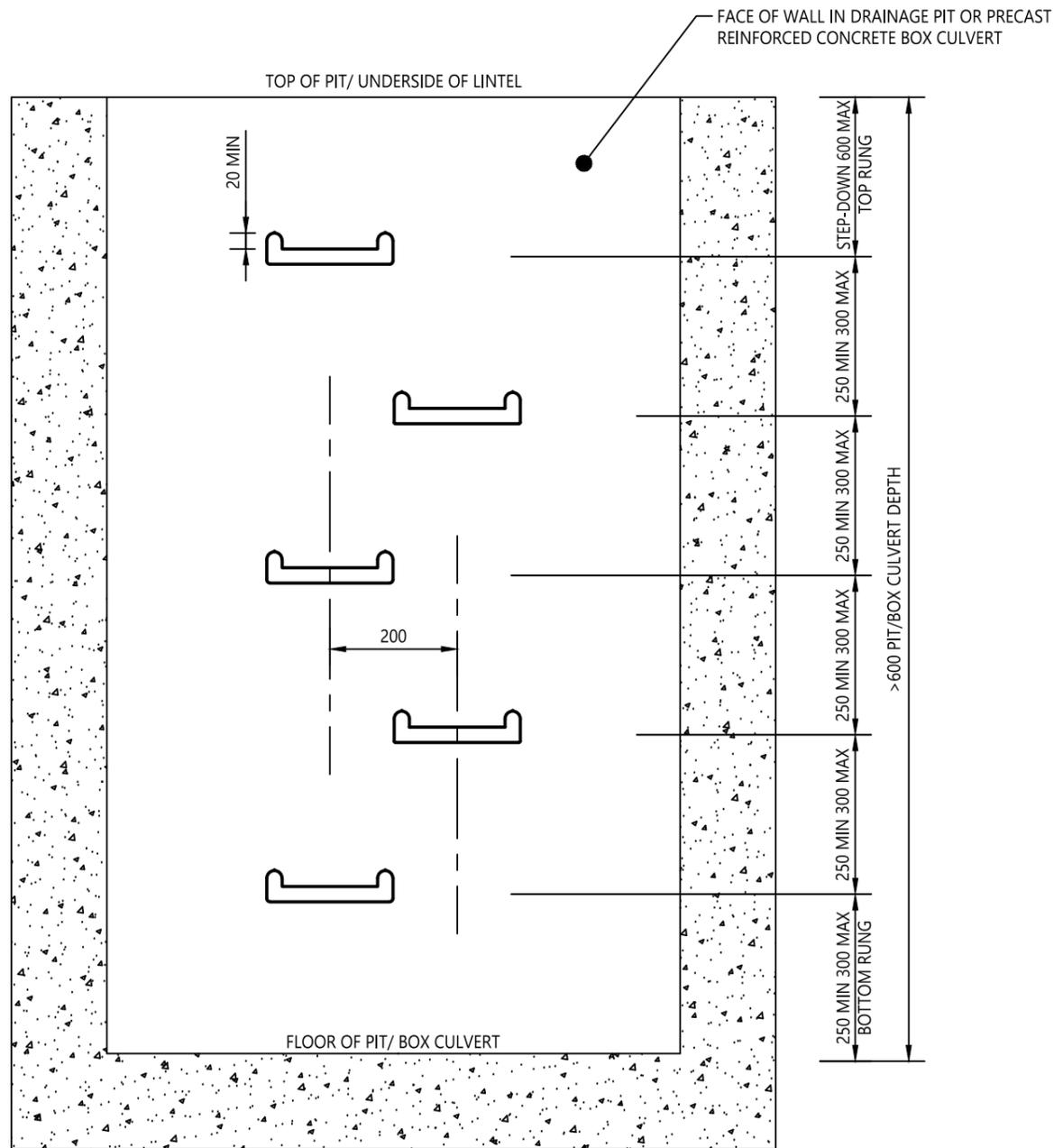
- NOTES:**
- REFER TO STANDARD DRAWING SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
 - CUSTOM-MADE PRECAST PITS SHALL BE USED IN THE ROAD RESERVE WHERE PRACTICABLE AND SHALL BE DESIGNED IN ACCORDANCE WITH AS 1597, AS 3600 AND AS 5100. 'KNOCKOUT PITS' SHALL NOT BE USED UNLESS OTHERWISE APPROVED BY COUNCIL'S REPRESENTATIVE.
 - PITS DEEPER THAN 1.5m SHALL BE CONSTRUCTED WITH 200mm THICK REINFORCED CONCRETE WALLS IN ACCORDANCE WITH TABLE 1.
 - DEPTH OF PIT SHALL NOT EXCEED 3.5m.
 - CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 - GRATE AND LINTEL PLATE SHALL BE HOT-DIP GALVANISED.
 - PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
 - ALL EXPOSED EDGES SHALL BE ROUNDED WITH 20mm RADIUS.
 - NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
 - ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
 - 100 ϕ SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.

TABLE 1 - CONCRETE THICKNESS AND REINFORCEMENT DETAILS

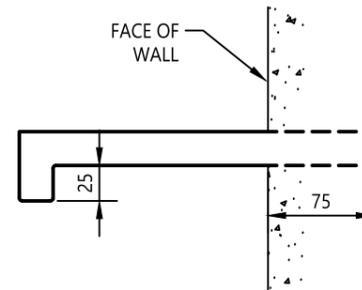
INTERNAL DEPTH (m)	BASE THICKNESS (mm)	WALL THICKNESS (mm)	MAX LENGTH (mm)	MAX WIDTH (mm)	REINFORCEMENT SEE NOTES 1 AND 2 BELOW	
					BASE	WALLS
≤ 1.5	150	150	900	1450	UNREINFORCED	
1.5 - 3.5	150	200			SL81 MESH - N12 500 x 500 GALVANISED STARTER BARS AT 200 C/C AND N12 500 x 500 CORNER BARS AT 400 C/C	
> 3.5	STRUCTURAL ENGINEERING DESIGN REQUIRED					

- NOTES:**
- REFER TO STANDARD DRAWING SD0402 FOR OVERSIZE GULLY PIT DIMENSIONS
 - PIT WALLS AND BASE ON STATE ROADS AND B-DOUBLE ROUTES SHALL BE REINFORCED WITH RL1218 MESH - REFER TO TfNSW STANDARD DRAWING R0220 SERIES

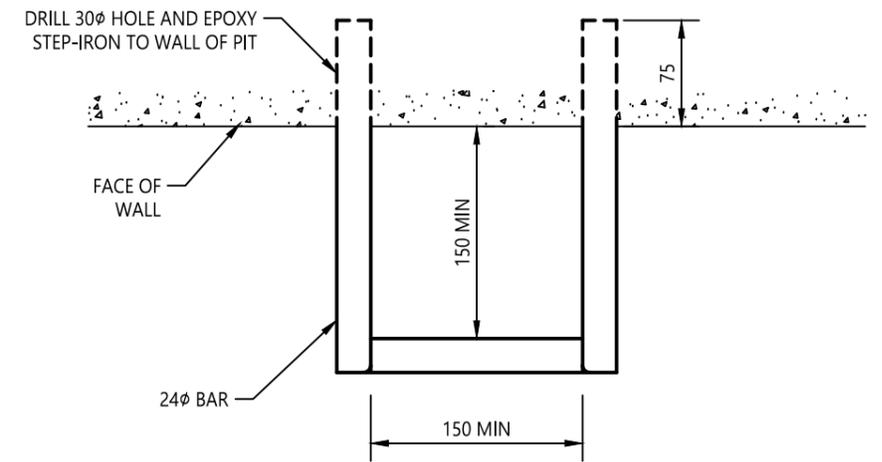
REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING			
					0 100 200 300 400 500 1:10	CHECKED	M BAMBER				DRAWING NUMBER	REV	
					0 200 400 600 800 1000 1:20	DATE	28/4/20			DRAWING NUMBER	SD0408	REV	-
						UNIT MANAGER APPROVAL				SHEET 1 OF 1	A3		
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE		STORMWATER DRAINAGE SERIES MEDIAN GULLY PIT FOR SF KERB			



FRONT ELEVATION
SCALE 1:10



SIDE ELEVATION
SCALE 1:5

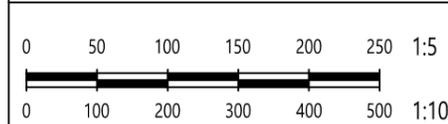


PLAN
SCALE 1:5

NOTES:

1. INDIVIDUAL-RUNG (STEP-IRON) LADDERS SHALL BE PROVIDED FOR PITS DEEPER THAN 600mm AND WHERE THE VERTICAL RISE DOES NOT EXCEED 6m BETWEEN LANDINGS. LADDERS EXCEEDING 3.5m FALL DISTANCE REQUIRE SOME FORM OF FALL ARREST SYSTEM.
2. PRECAST PITS SHOULD BE SUPPLIED WITH PREFABRICATED INDIVIDUAL RUNG (STEP-IRON) LADDERS INSTALLED.
3. INDIVIDUAL-RUNG (STEP-IRON) LADDERS SHALL COMPLY WITH AS 1657.
4. STEP-IRONS SHALL BE FABRICATED FROM 24mm DEFORMED BAR TO AS/NZS 4761 STEEL REINFORCING MATERIALS AND SHALL COMPLY WITH THE LOAD TESTING AND DEFLECTION REQUIREMENTS OF EN 13101.
5. STEP-IRONS SHALL BE HOT-DIP GALVANISED.
6. PROPRIETARY PLASTIC ENCAPSULATED STEP-IRONS OR EQUIVALENT PRODUCT MAY BE USED WHERE APPROVED BY COUNCIL'S REPRESENTATIVE.
7. STEP-IRONS SHALL BE LOCATED CLEAR OF STORMWATER THROUGH FLOWS AND ON WALLS CLEAR OF PIPES, WHERE PRACTICABLE.
8. ALL BENDS IN STEP-IRONS TO BE FORMED AROUND A <10mm PIN.

SCALE ON ORIGINAL A3 SIZE DRAWING



ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN

DRAWN	C SHEPPEARD
CHECKED	M BAMBER
DATE	28/4/20
UNIT MANAGER APPROVAL	
<i>[Signature]</i>	
ASSETS PLANNING AND DESIGN	

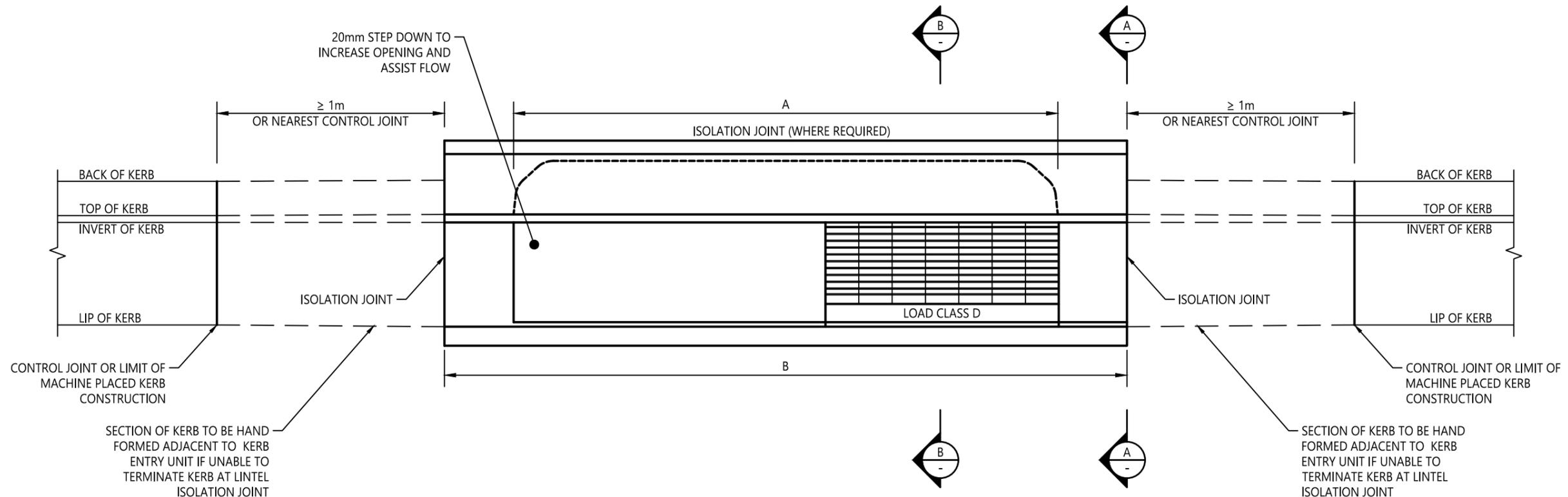


Central Coast Council

STORMWATER DRAINAGE SERIES
INDIVIDUAL-RUNG (STEP-IRON)
LADDER FOR DRAINAGE PITS

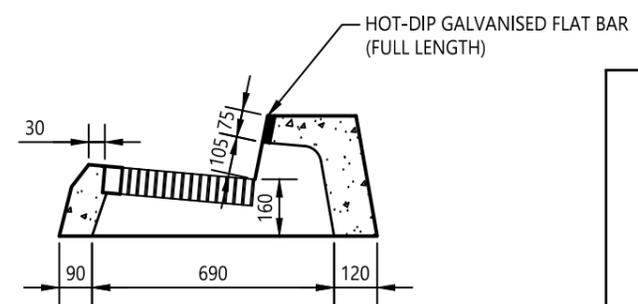
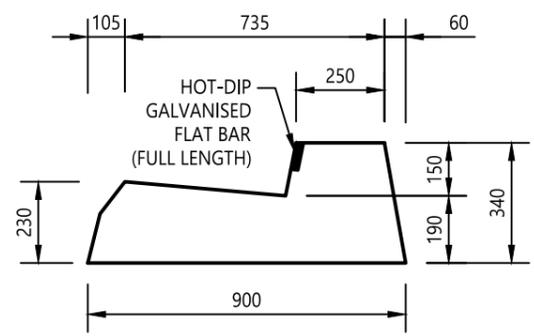
STANDARD DRAWING	
DRAWING NUMBER	REV
SD0409	-
SHEET 1 OF 1	A3

REV	AMENDMENT	DATE	DRAWN	APRVD



PLAN
INTEGRAL PRECAST KERB ENTRY UNIT
 SCALE 1:20

KERB ENTRY UNITS	
OPENING A	OVERALL LENGTH B
1200	1500
1800	2400
2400	3000
3000	3600



INDEX:

SHEET 1: INTEGRAL PRECAST KERB ENTRY UNIT.

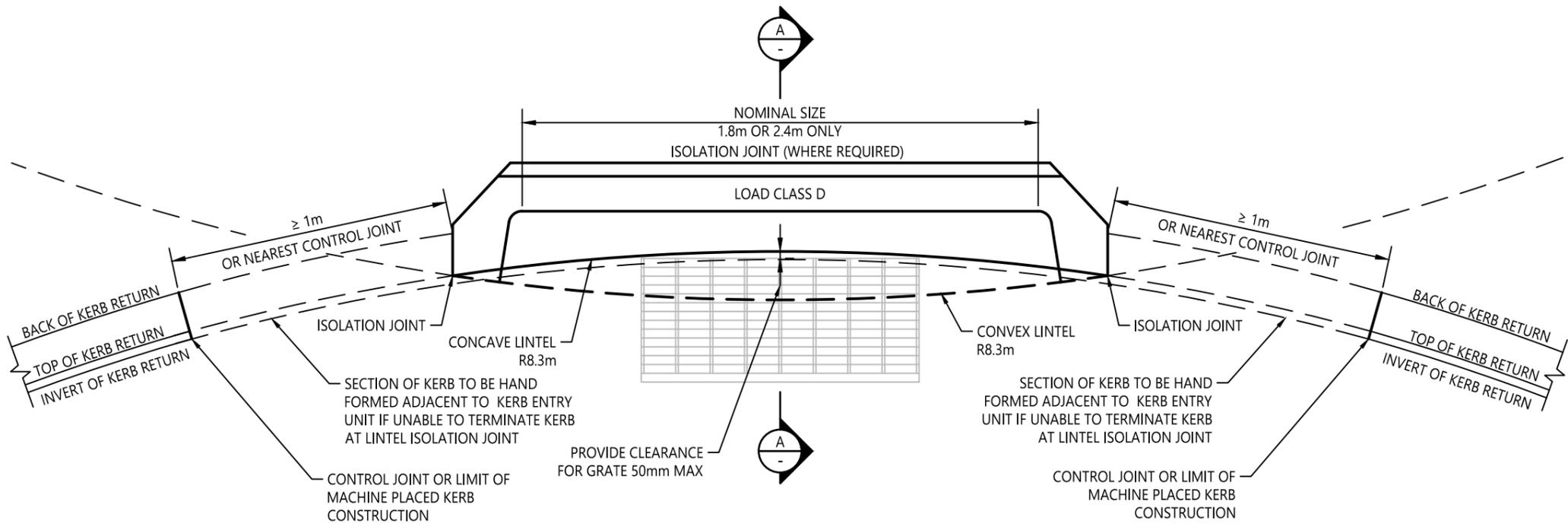
SHEET 2: PRECAST STAND-ALONE STRAIGHT AND CURVED KERB LINTEL UNIT.

SHEET 3: INFILL DETAILS BEHIND LINTELS AND JOINT DETAILS.

NOTES:

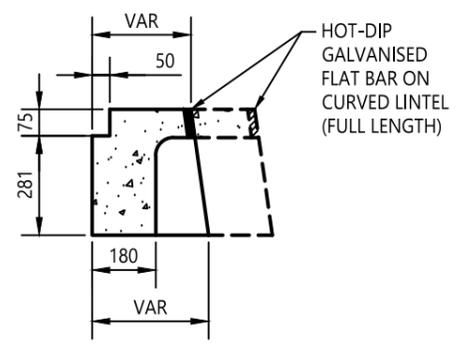
1. CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
2. COVER TO REINFORCEMENT SHALL BE 40mm MINIMUM UNLESS OTHERWISE SPECIFIED.
3. EXPOSED SURFACES SHALL BE OFF-STEEL FORM FINISH OR OF HIGH QUALITY STEEL FLOAT FINISH.
4. ALL EXPOSED EDGES SHALL BE ROUNDED WITH A 10mm RADIUS.
5. HOT-DIP GALVANISING SHALL BE IN ACCORDANCE WITH AS 4680.
6. INTEGRAL KERB ENTRY UNIT BASED ON BCP PRECAST PRODUCT DIMENSIONS AND SHALL BE LOAD CLASS D.
7. PRODUCT DIMENSIONS VARY BETWEEN MANUFACTURERS.

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD		Central Coast Council STORMWATER DRAINAGE SERIES PRECAST CONCRETE LINTELS	STANDARD DRAWING	
					 1:20	CHECKED	M BAMBER			DRAWING NUMBER	REV
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	DATE	28/4/20			SD0410	-
					UNIT MANAGER APPROVAL					SHEET 1 OF 3	A3
					ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE				

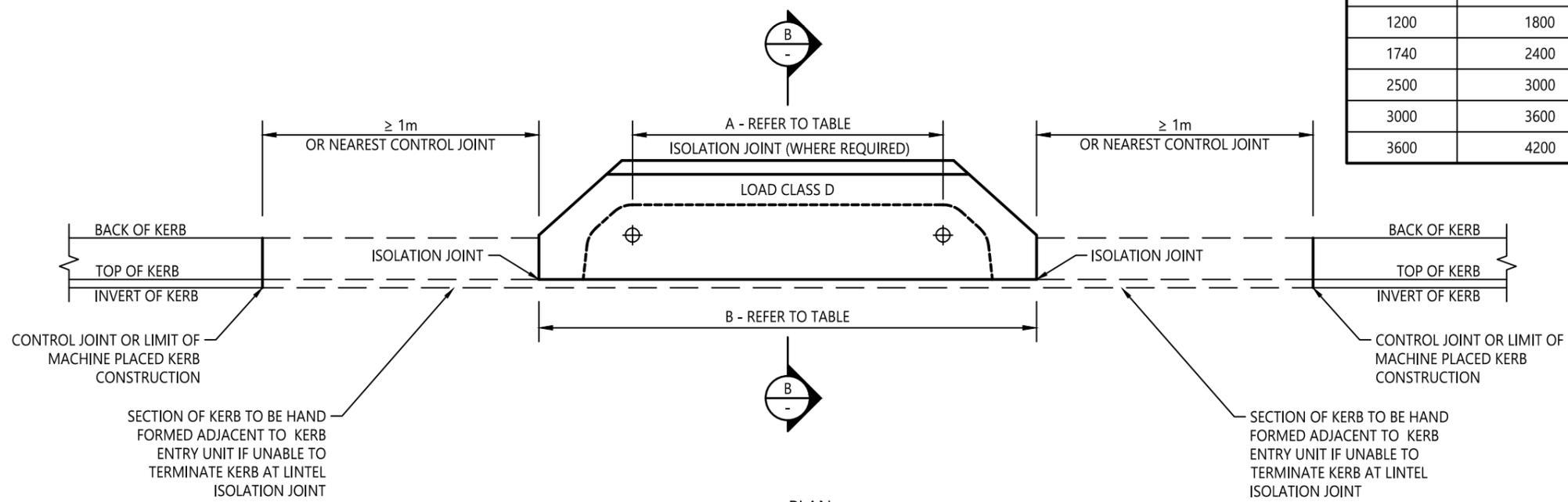


PLAN
PRECAST STAND-ALONE CURVED KERB LINTEL UNIT
 SCALE 1:20

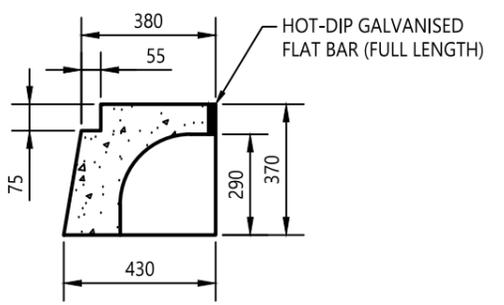
STAND-ALONE STRAIGHT KERB LINTELS	
OPENING A	OVERALL LENGTH B
900	1500
1200	1800
1740	2400
2500	3000
3000	3600
3600	4200



SECTION A
 SCALE 1:20



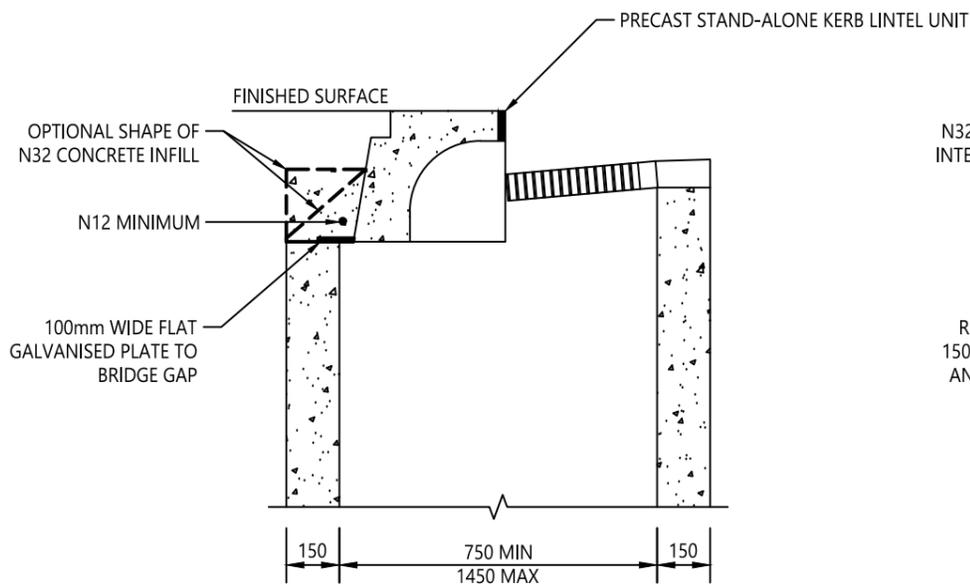
PLAN
PRECAST STAND-ALONE STRAIGHT KERB LINTEL UNIT
 SCALE 1:20



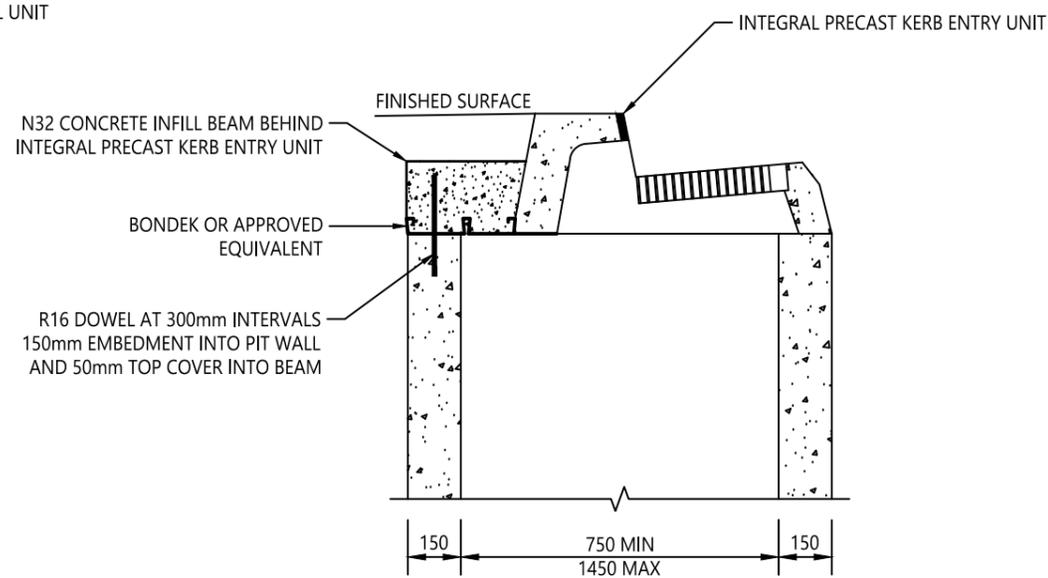
SECTION B
 SCALE 1:20

- INDEX:**
- SHEET 1:** INTEGRAL PRECAST KERB ENTRY UNIT.
 - SHEET 2:** PRECAST STAND-ALONE STRAIGHT AND CURVED KERB LINTEL UNIT.
 - SHEET 3:** INFILL DETAILS BEHIND LINTELS AND JOINT DETAILS.
- NOTES:**
- CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 - COVER TO REINFORCEMENT SHALL BE 40mm MINIMUM UNLESS OTHERWISE SPECIFIED.
 - EXPOSED SURFACES SHALL BE OFF-STEEL FORM FINISH OR OF HIGH QUALITY STEEL FLOAT FINISH.
 - ALL EXPOSED EDGES SHALL BE ROUNDED WITH A 10mm RADIUS.
 - HOT-DIP GALVANISING SHALL BE IN ACCORDANCE WITH AS 4680.
 - STAND-ALONE LINTEL UNIT BASED ON BCP PRECAST PRODUCT DIMENSIONS AND SHALL BE LOAD CLASS D.
 - CURVED LINTEL UNIT BASED ON ROCLA PRODUCT DIMENSIONS AND SHALL BE LOAD CLASS D.
 - PRODUCT DIMENSIONS VARY BETWEEN MANUFACTURERS.

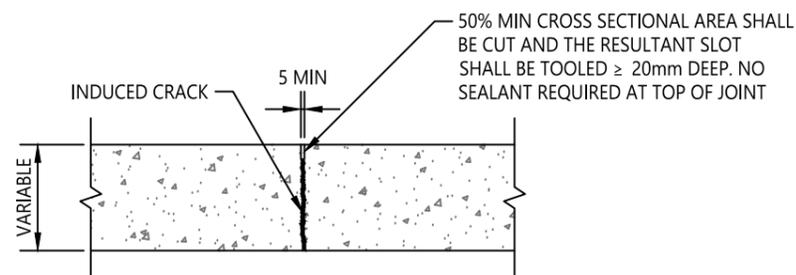
REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD		Central Coast Council STORMWATER DRAINAGE SERIES PRECAST CONCRETE LINTELS	STANDARD DRAWING	
					 1:20	CHECKED	M BAMBER			DRAWING NUMBER	REV
						DATE	28/4/20			SD0410	-
						UNIT MANAGER APPROVAL				SHEET 2 OF 3	A3
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN		ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE			



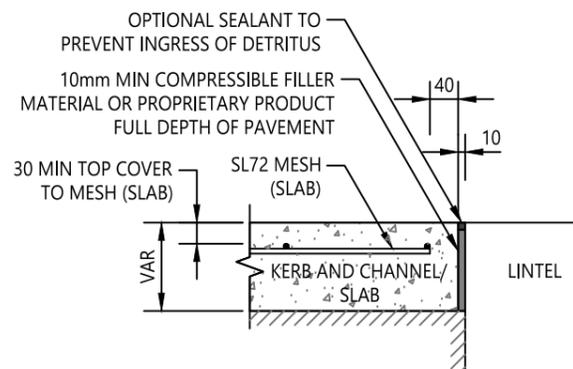
INFILL DETAILS BEHIND PRECAST STAND-ALONE KERB LINTEL UNIT FOR PITS WIDER THAN 650mm
SCALE 1:20



INFILL DETAILS BEHIND PRECAST INTEGRAL KERB ENTRY UNIT FOR PITS WIDER THAN 650mm
SCALE 1:20



CONTROL JOINT IN KERB AND CHANNEL
SCALE 1:10



ISOLATION JOINT
SCALE 1:10

INDEX:

- SHEET 1:** INTEGRAL PRECAST KERB ENTRY UNIT.
- SHEET 2:** PRECAST STAND-ALONE STRAIGHT AND CURVED KERB LINTEL UNIT.
- SHEET 3:** INFILL DETAILS BEHIND LINTELS AND JOINT DETAILS.

NOTES:

1. CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
2. COVER TO REINFORCEMENT SHALL BE 40mm MINIMUM UNLESS OTHERWISE SPECIFIED.
3. EXPOSED SURFACES SHALL BE OFF-STEEL FORM FINISH OR OF HIGH QUALITY STEEL FLOAT FINISH.
4. ALL EXPOSED EDGES SHALL BE ROUNDED WITH A 10mm RADIUS.
5. HOT-DIP GALVANISING SHALL BE IN ACCORDANCE WITH AS 4680.
6. STAND-ALONE LINTEL UNIT BASED ON BCP PRECAST PRODUCT DIMENSIONS AND SHALL BE LOAD CLASS D.
7. CURVED LINTEL UNIT BASED ON ROCLA PRODUCT DIMENSIONS AND SHALL BE LOAD CLASS D.
8. PRODUCT DIMENSIONS VARY BETWEEN MANUFACTURERS.

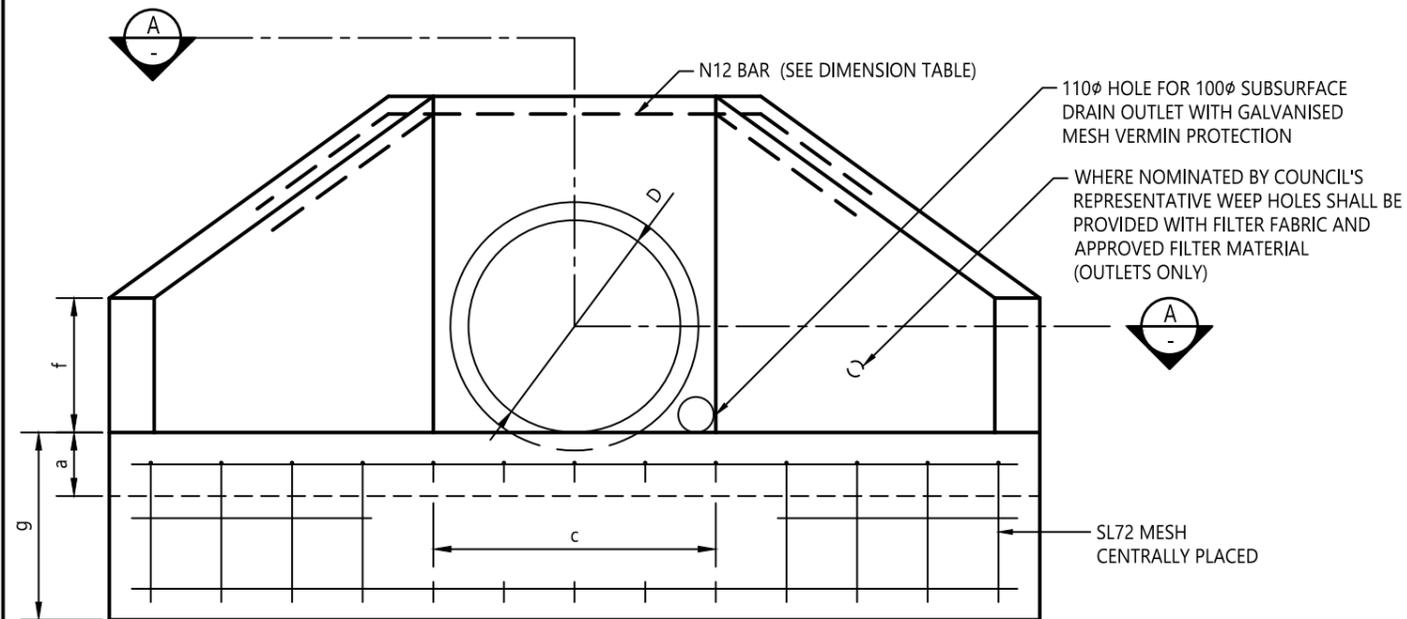
CONTROL JOINT (CJ) NOTES:

1. SAW CUT DEPTH OF THE WEAKENED PLANE JOINT SHALL BE 0.25 TIMES THICKNESS OF SLAB.
2. CONTROL JOINT SPACING SHALL BE 3m MAXIMUM IN KERB AND CHANNEL.
3. MAXIMUM CONTROL JOINT SPACING SHALL BE NO GREATER THAN 1.5 TIMES THE WIDTH OF THE SLAB PANEL.

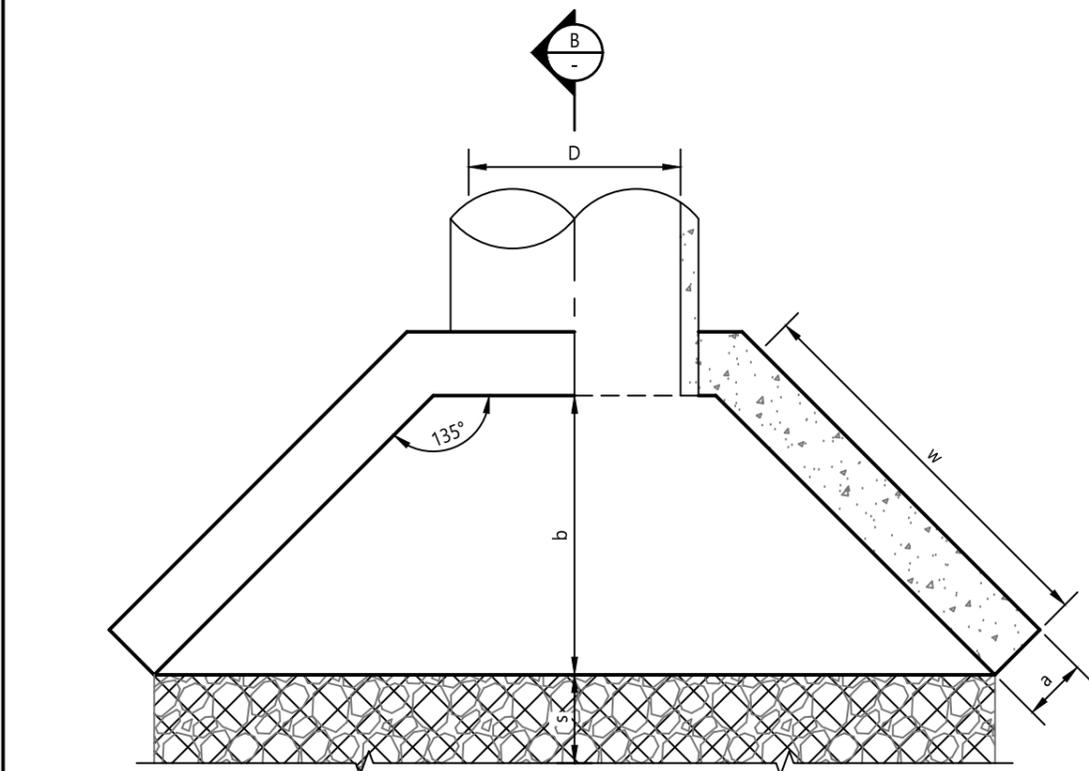
ISOLATION JOINT (IJ) NOTE:

1. ISOLATION JOINTS SHALL BE PROVIDED AT ALL LINTEL AND KERB AND CHANNEL INTERFACES AND BETWEEN ALL LINTELS AND FOOTPATH/SHARED PATH SLABS.

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING	
					0 100 200 300 400 500 1:10	CHECKED	M BAMBER				DRAWING NUMBER
					0 200 400 600 800 1000 1:20	DATE	28/4/20			DRAWING NUMBER	REV
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	UNIT MANAGER APPROVAL				SHEET 3 OF 3	A3
						ASSETS PLANNING AND DESIGN				STORMWATER DRAINAGE SERIES PRECAST CONCRETE LINTELS	
						ROADS TRANSPORT DRAINAGE AND WASTE				© Central Coast Council 2020	



ELEVATION
SCALE 1:20

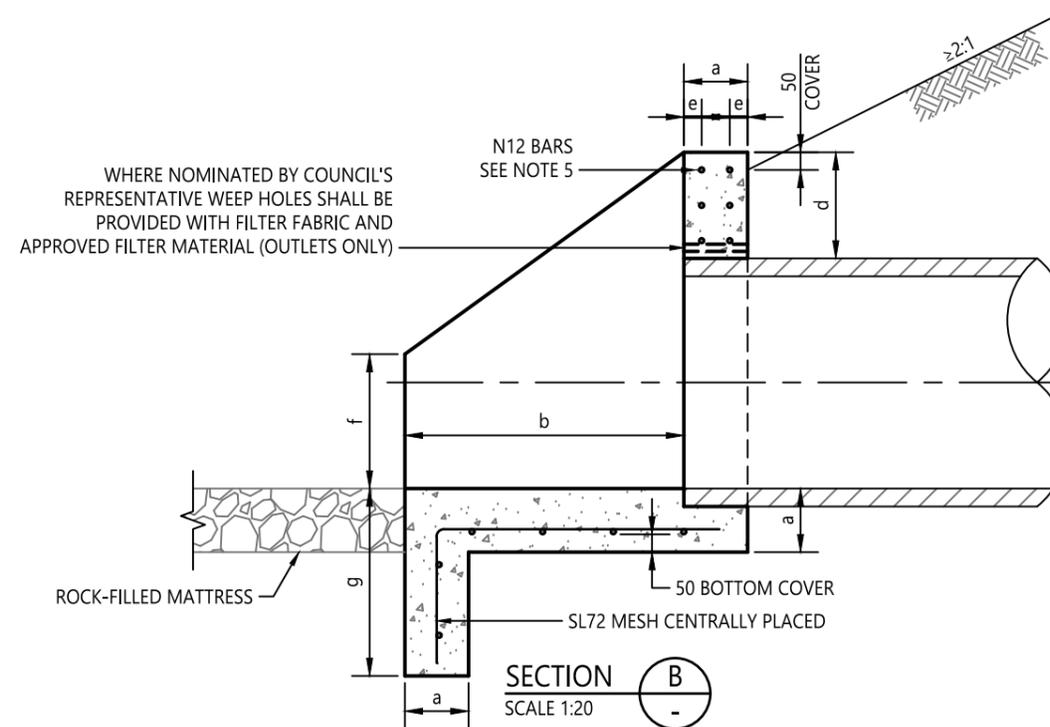


PLAN/SECTION
SCALE 1:20

NOTES:

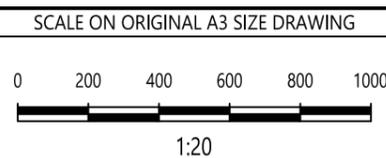
1. USE OF PRECAST HEADWALL PREFERRED.
2. PROVIDE 25mm CHAMFER ON ALL EXPOSED SURFACES.
3. CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM - REFER TO SD0402, SHEET 3, FOR SPECIFIC NOTES ON CONCRETE REINFORCEMENT.
4. HEADWALL WITH INTEGRAL ENERGY DISSIPATORS IN LIEU OF STANDARD HEADWALL SHALL BE PROVIDED WHERE CALCULATED VELOCITY EXCEEDS 2.0m/s.
5. WHERE ADDITIONAL HEIGHT TO RETAIN FILL IS REQUIRED KERB HEIGHT 'd', WINGWALL HEIGHT 'f' AND KERB WIDTH 'a' SHALL BE ADJUSTED WITH THE PROVISION OF ADDITIONAL REINFORCING.
6. WHERE NOMINATED BY COUNCIL'S REPRESENTATIVE OR SHOWN ON THE APPROVED PLANS, THE MATTRESS LENGTH SHALL BE ADJUSTED.
7. SAFETY FENCING SHALL BE PROVIDED AROUND THE HEADWALL WHERE DETERMINED BY COUNCIL'S REPRESENTATIVE.
8. REFER TO TfNSW STANDARD DRAWINGS FOR PIPE SIZES LARGER THAN 900Ø.
9. REFER TO TfNSW STANDARD DRAWINGS FOR LARGER PIPE DIAMETERS, MULTIPLE PIPES AND BOX CULVERTS.

D	Nominal pipe diameter	375	450	525	600	675	750	900
a	Apron, cut-off wall, kerb and wingwall	150	150	150	180	190	205	230
b	Apron length	490	590	700	790	910	1025	1260
c	Face of headwall width	600	700	750	800	850	900	1050
d	Kerb height	230	230	230	300	300	300	300
e	Kerb reinforcement cover	40	40	40	50	50	50	50
f	Wingwall height	300	300	300	380	380	380	380
g	Cut-off wall depth	450	450	450	530	530	600	600
W	Wingwall	690	840	990	1120	1290	1450	1780
S	Mattress length (See note 6)	1800	2000	2000	2400	2400	3000	3000
E1		840	915	990	1100	1175	1250	1400
		200	200	200	600	600	600	600
	Reinforcement diameter	12	12	12	12	12	12	12



SECTION
SCALE 1:20

REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN



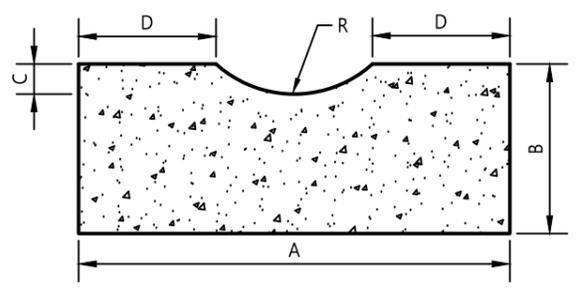
DRAWN C SHEPPEARD
 CHECKED M BAMBER
 DATE 28/4/20
 UNIT MANAGER APPROVAL
 ASSETS PLANNING AND DESIGN



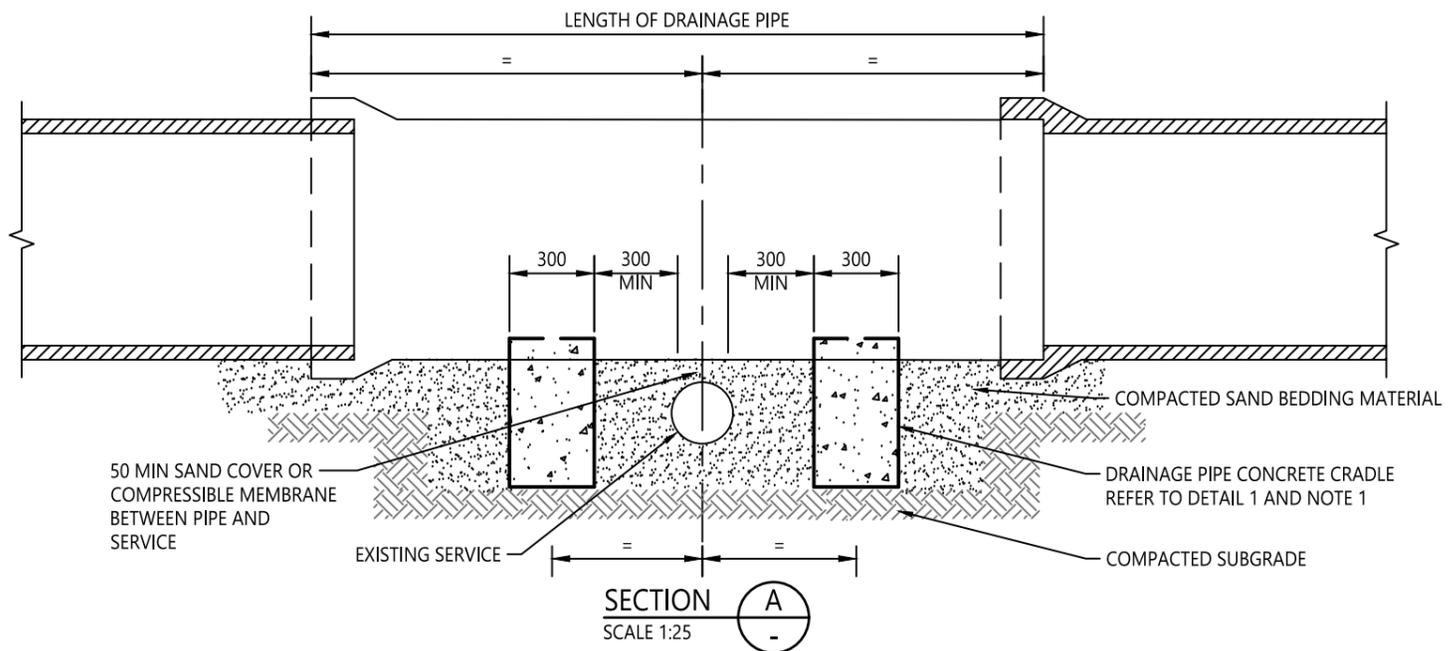
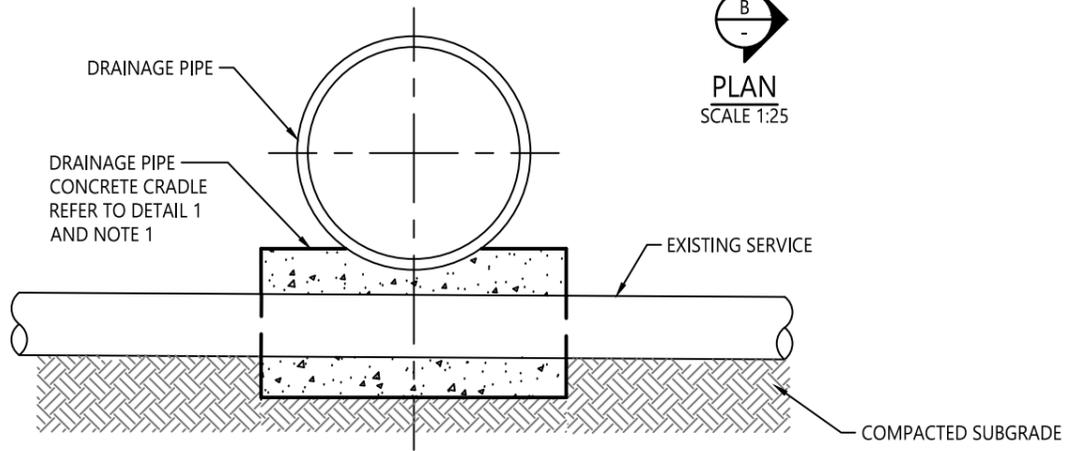
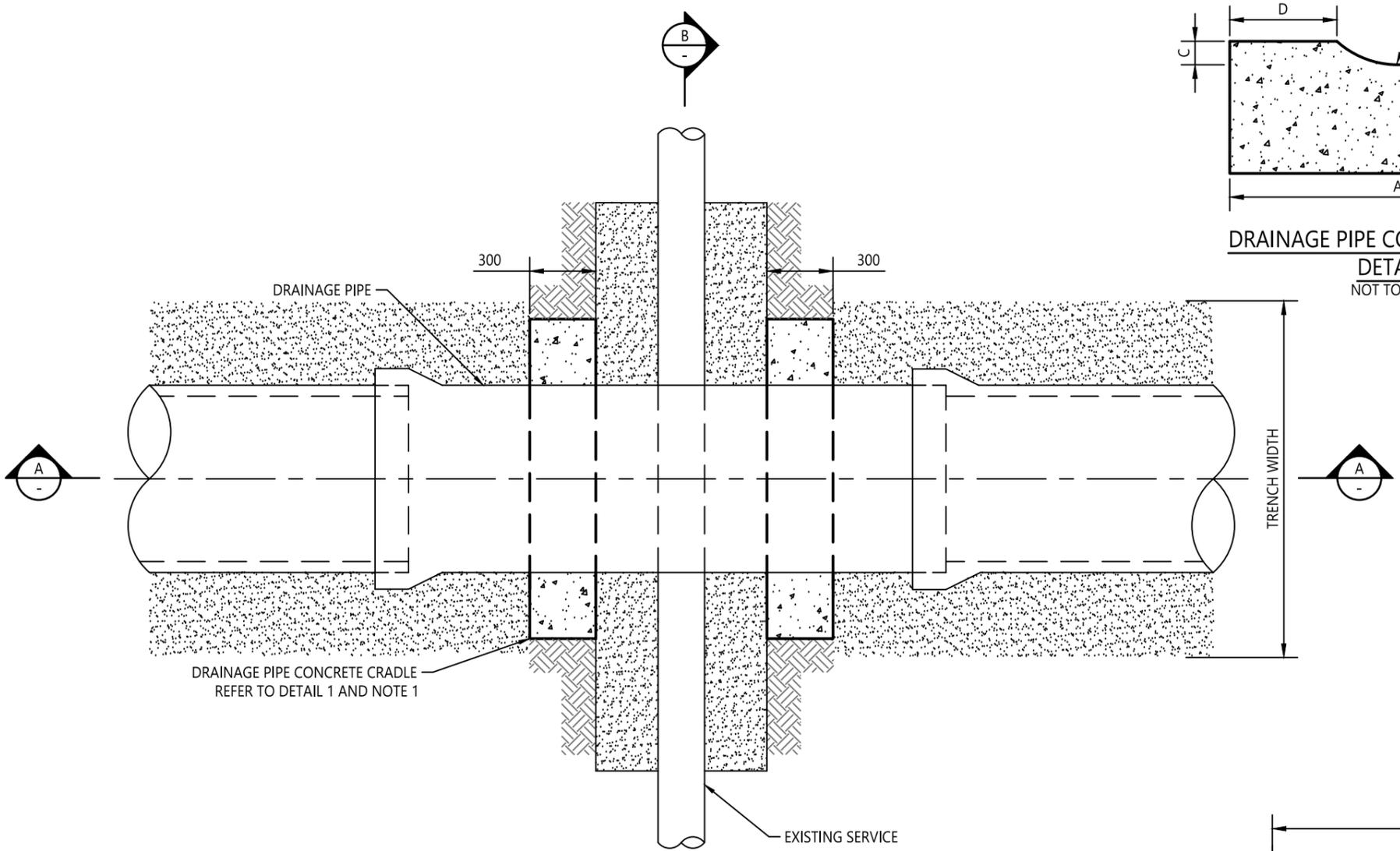
Central Coast Council
 STORMWATER DRAINAGE SERIES
 CONCRETE HEADWALL 375Ø TO 900Ø PIPES

STANDARD DRAWING	
DRAWING NUMBER	REV
SD0411	-
SHEET 1 OF 1	A3

- NOTES:**
1. CONCRETE STRENGTH GRADE SHALL BE N25 UNLESS OTHERWISE SPECIFIED.
 2. CONSULT WITH UTILITY ASSET OWNER ON REQUIRED SERVICE SUPPORT AND CLEARANCE REQUIREMENTS.
 3. ENSURE A FULL LENGTH OF DRAINAGE PIPE IS SUSPENDED ON DRAINAGE PIPE CONCRETE SUPPORT CRADLES.



DRAINAGE PIPE CONCRETE CRADLE DIMENSIONS																					
PIPE DIAMETER	A	B	C	D	R (RADIUS)																
225	880	450 MIN	75	300	140																
300	962	450 MIN	75	300	181																
375	1045	450 MIN	75	300	223																
450	1135	450 MIN	75	300	267																
525	1215	450 MIN	75	300	308																
600	1300	450 MIN	75	300	349																
750	1465	450 MIN	75	300	432																
825	1545	450 MIN	75 </tr <tr> <td>900</td> <td>1630</td> <td>450 MIN</td> <td>75</td> <td>300</td> <td>515</td> </tr> <tr> <td>1050</td> <td>1795</td> <td>450 MIN</td> <td>75</td> <td>300</td> <td>597</td> </tr> <tr> <td>1200</td> <td>1960</td> <td>450 MIN</td> <td>75</td> <td>300</td> <td>680</td> </tr>	900	1630	450 MIN	75	300	515	1050	1795	450 MIN	75	300	597	1200	1960	450 MIN	75	300	680
900	1630	450 MIN	75	300	515																
1050	1795	450 MIN	75	300	597																
1200	1960	450 MIN	75	300	680																



REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN
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SCALE ON ORIGINAL A3 SIZE DRAWING
0 250 500 750 1000 1250
1:25

DRAWN C SHEPPEARD
CHECKED M BAMBER
DATE 28/4/20
UNIT MANAGER APPROVAL
ASSETS PLANNING AND DESIGN



Central Coast Council

STORMWATER DRAINAGE SERIES
CONCRETE SUPPORT CRADLE

STANDARD DRAWING	
DRAWING NUMBER	REV
SD0412	-
SHEET 1 OF 1	A3

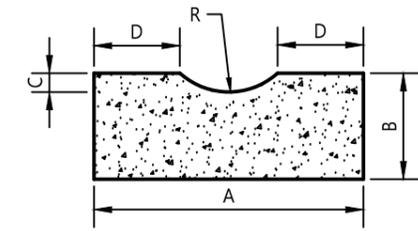
INDEX:

SHEET 1: CONCRETE CRADLE SUPPORTING DRAINAGE PIPE WHERE GRAVITY SEWER MAIN IS LOCATED BELOW DRAINAGE LINE.

SHEET 2: CONCRETE CRADLE SUPPORTING GRAVITY SEWER MAIN WHERE DRAINAGE PIPE IS LOCATED BELOW THE GRAVITY SEWER MAIN.

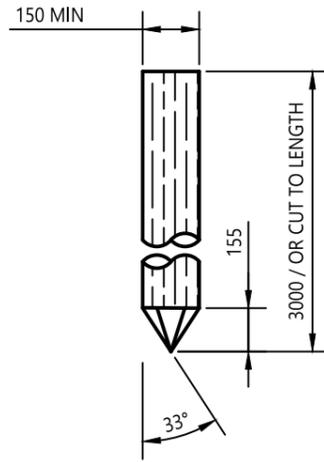
NOTES:

1. PRIOR TO COMMENCEMENT OF WORKS ALL AFFECTED GRAVITY SEWER MAINS SHALL BE RELINED USING NON-DESTRUCTIVE TRENCHLESS RE-LINING TECHNOLOGY.
2. ENSURE A FULL LENGTH OF DRAINAGE PIPE IS SUSPENDED ON DRAINAGE PIPE CRADLES.
3. ARRANGE A QUALIFIED GEOTECHNICAL INVESTIGATOR TO DETERMINE THE SOIL'S BEARING PROPERTIES. WHERE POOR SOIL BEARING CAPACITY HAS BEEN IDENTIFIED, TREATED PINE LOGS ARE TO BE USED. PINE LOGS ARE TO BE 150mm STRUCTURAL CLASS H5. PILES ARE TO BE DRIVEN UNTIL REFUSAL OR UNTIL SIGNIFICANT RESISTANCE IS MET. PILE TO BE CUT ONCE LENGTH HAS BEEN ACHIEVED.
4. CONCRETE STRENGTH GRADE SHALL BE N25 UNLESS OTHERWISE SPECIFIED.
5. ALL SERVICES TO BE EXPOSED IN THE AFFECTED AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION.



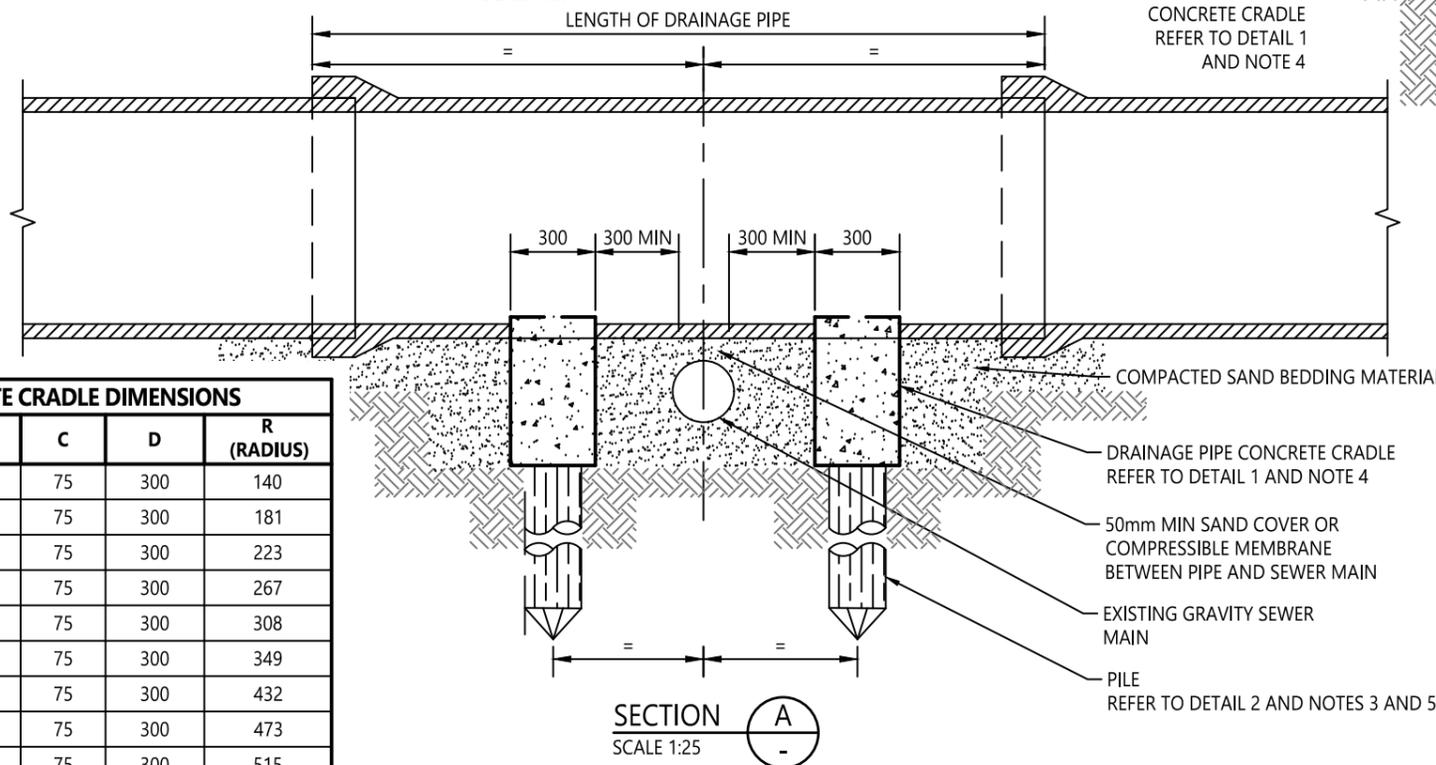
DRAINAGE PIPE CONCRETE CRADLE

DETAIL 1
NOT TO SCALE

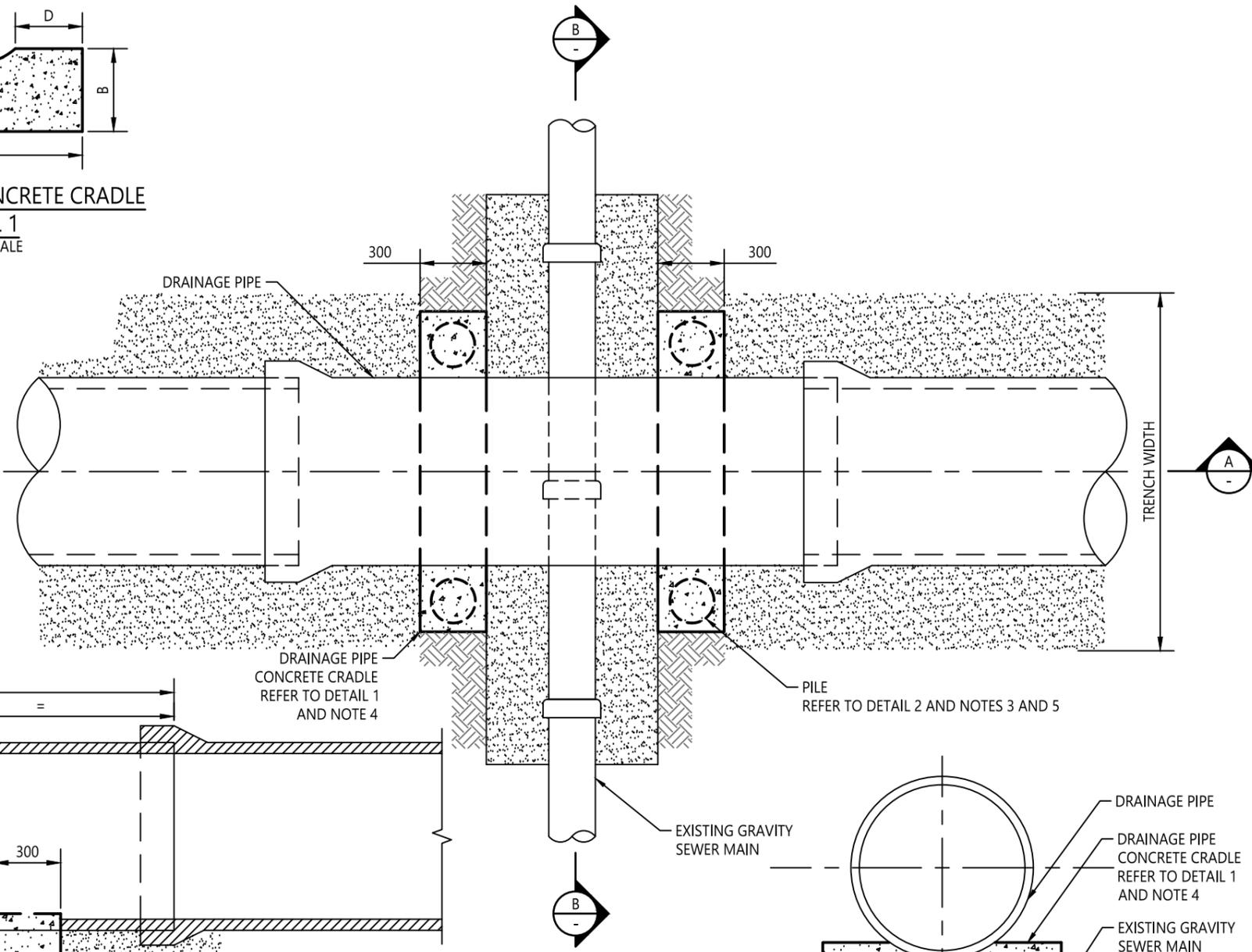


PILE - TREATED PINE LOG

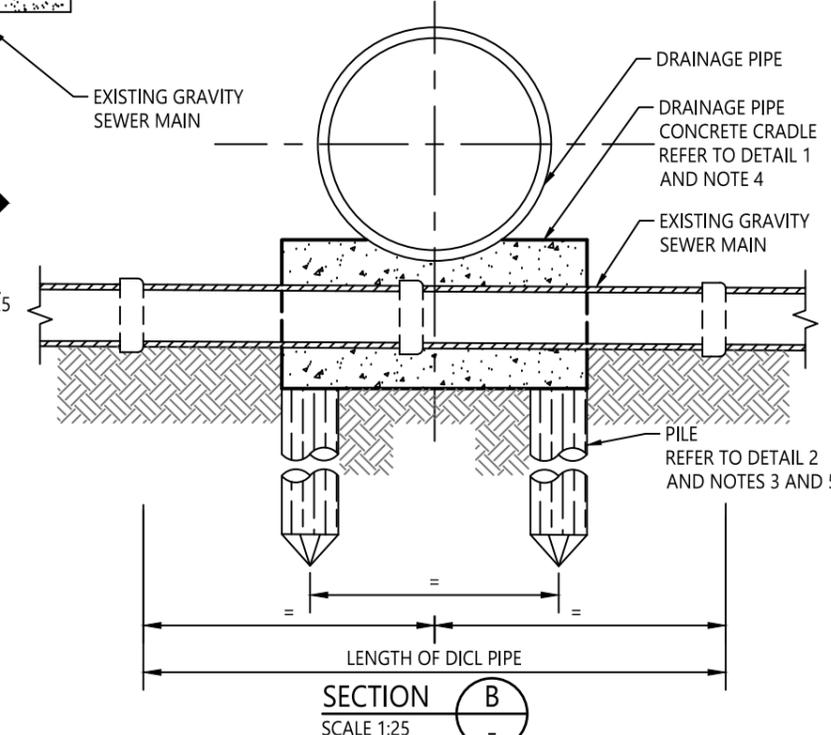
DETAIL 2
SCALE 1:20



SECTION A
SCALE 1:25



PLAN
SCALE 1:25



SECTION B
SCALE 1:25

DRAINAGE PIPE CONCRETE CRADLE DIMENSIONS					
PIPE DIAMETER	A	B	C	D	R (RADIUS)
225	880	450 MIN	75	300	140
300	962	450 MIN	75	300	181
375	1045	450 MIN	75	300	223
450	1135	450 MIN	75	300	267
525	1215	450 MIN	75	300	308
600	1300	450 MIN	75	300	349
750	1465	450 MIN	75	300	432
825	1545	450 MIN	75	300	473
900	1630	450 MIN	75	300	515
1050	1795	450 MIN	75	300	597
1200	1960	450 MIN	75	300	680

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STORMWATER DRAINAGE SERIES GRAVITY SEWER MAIN PROTECTION	STANDARD DRAWING	
					0 200 400 600 800 1000 1:20 0 250 500 750 1000 1:25	CHECKED	M BAMBER				DRAWING NUMBER	REV
						DATE	28/4/20				SD0413	-
						UNIT MANAGER APPROVAL					SHEET 1 OF 2	A3
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN		ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE				

INDEX:

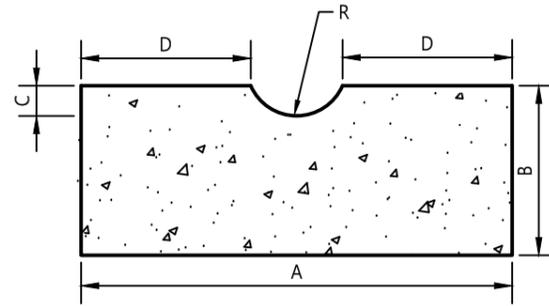
SHEET 1: CONCRETE CRADLE SUPPORTING DRAINAGE PIPE WHERE GRAVITY SEWER MAIN IS LOCATED BELOW DRAINAGE LINE.

SHEET 2: CONCRETE CRADLE SUPPORTING GRAVITY SEWER MAIN WHERE DRAINAGE PIPE IS LOCATED BELOW THE GRAVITY SEWER MAIN.

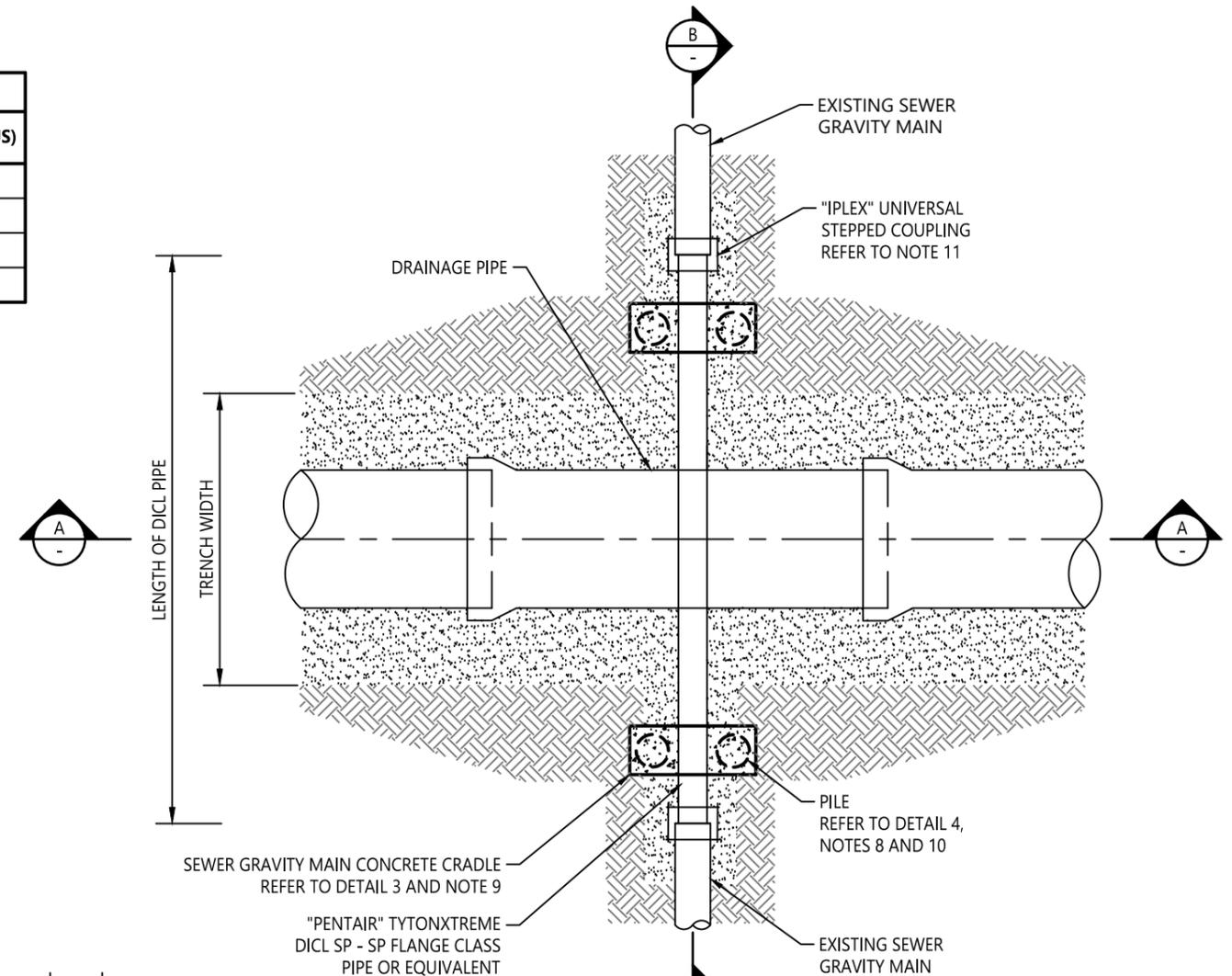
NOTES:

1. ALL DICL PIPES TO CONFORM TO AS/NZS 2280.
2. ALL DICL PIPE TO BE "PENTAIR" TYTONXTREME SP - SP FLANGE CLASS OR EQUIVALENT.
3. THERE ARE TO BE NO DEFLECTIONS AT PIPE JOINTS.
4. THERE ARE TO BE NO DEFLECTIONS AT FITTINGS.
5. ALL FITTINGS ARE TO BE FBE - (FUSION BONDED EPOXY) COATED OR STAINLESS STEEL CONSTRUCTION.
6. ENSURE A FULL LENGTH OF DICL PIPE IS SUSPENDED ON PILES.
7. ONCE GRAVITY SEWER MAIN HAS BEEN REINSTATED ALL AFFECTED SEWER GRAVITY MAINS SHALL BE RELINED USING NON-DESTRUCTIVE TRENCHLESS RELINING TECHNOLOGY.
8. TO ENSURE SETTLING OF THE DRAINAGE EXCAVATION DOES NOT AFFECT SEWER GRAVITY MAINS, 150mm CLASS H5 TREATED PINE PILES ARE TO BE DRIVEN UNTIL REFUSAL, UNTIL PILES ARE BELOW INVERT LEVEL OF DRAINAGE EXCAVATION, OR SIGNIFICANT RESISTANCE IS MET. PILES TO BE CUT TO LENGTH ONCE THIS HAS BEEN ACHIEVED.
9. CONCRETE STRENGTH GRADE SHALL BE N25 UNLESS OTHERWISE SPECIFIED.
10. CAUTION: ALL SERVICES TO BE EXPOSED IN THE AFFECTED AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. WHEN USING IPLEX UNIVERSAL STEPPED COUPLING, REFER TO MANUFACTURER'S HANDBOOK FOR SIZING AND PRODUCT CODES.

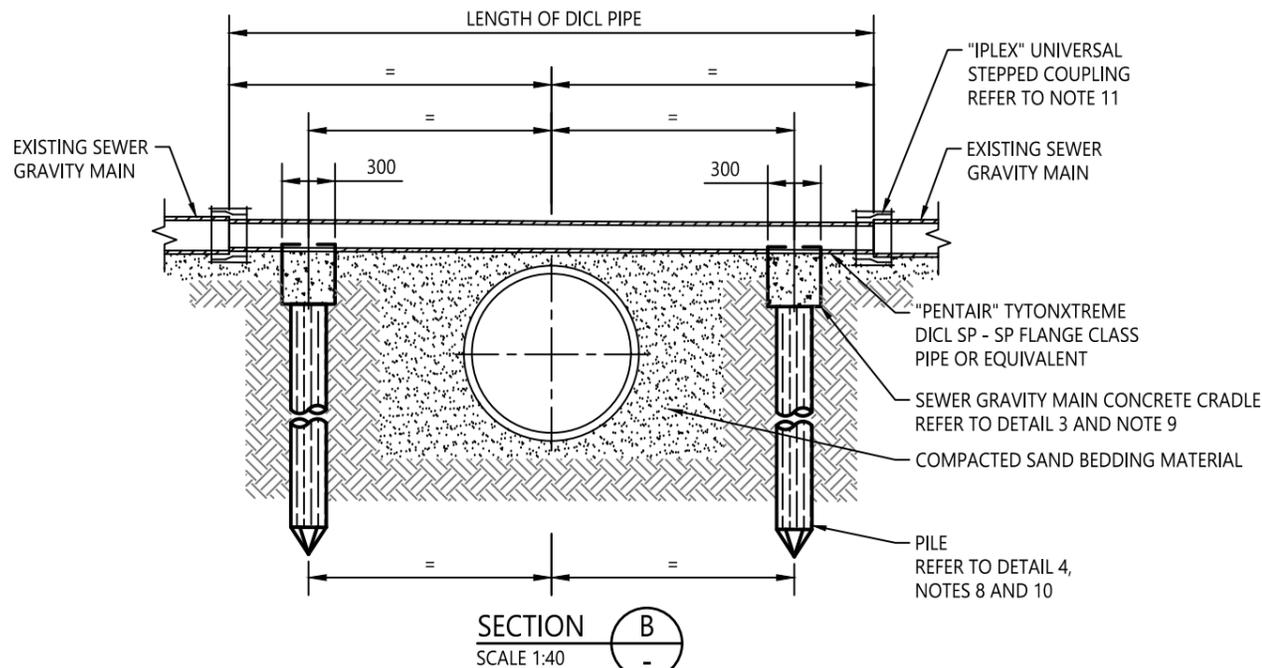
SEWER GRAVITY MAIN CONCRETE CRADLE DIMENSIONS					
PIPE DIAMETER	A	B	C	D	R (RADIUS)
100	715	300	35	300	61
150	765	300	75	300	88
225	840	450 MIN	75	300	130
300	915	450 MIN	75	300	172



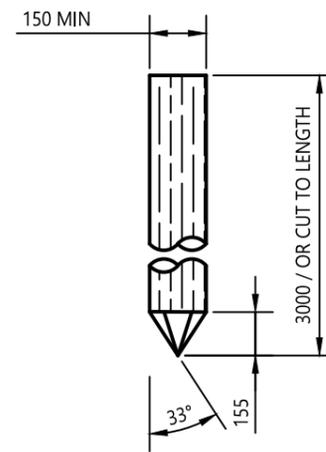
SEWER GRAVITY MAIN CONCRETE CRADLE
DETAIL 3
NOT TO SCALE



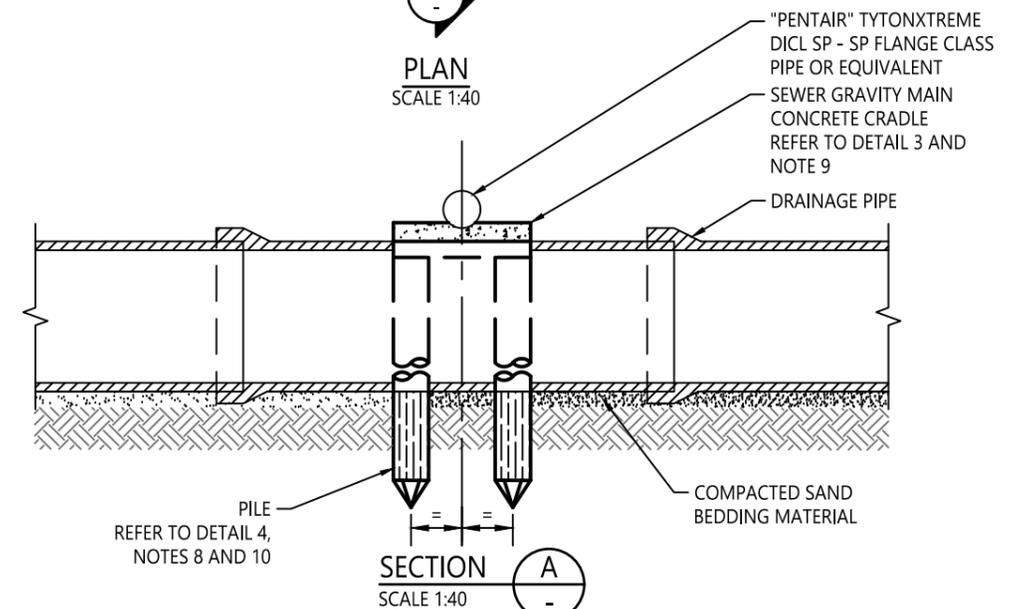
PLAN
SCALE 1:40



SECTION B
SCALE 1:40

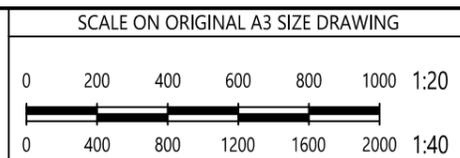


PILE TREATED PINE LOG
SCALE 1:20



SECTION A
SCALE 1:40

REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN



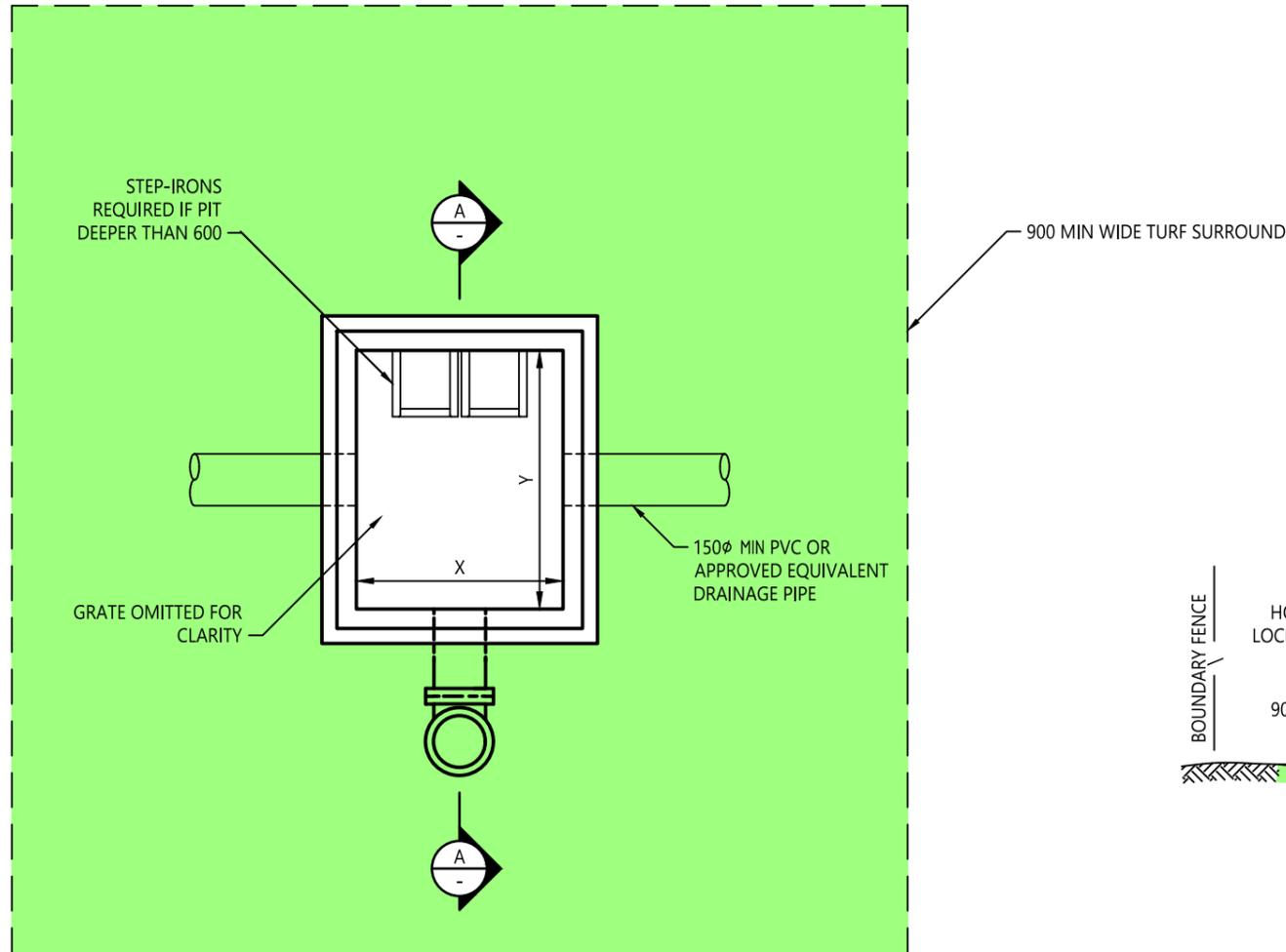
DRAWN	C SHEPPEARD
CHECKED	M BAMBER
DATE	28/4/20
UNIT MANAGER APPROVAL	
<i>[Signature]</i>	
ASSETS PLANNING AND DESIGN	

Central Coast Council

STORMWATER DRAINAGE SERIES
GRAVITY SEWER MAIN PROTECTION

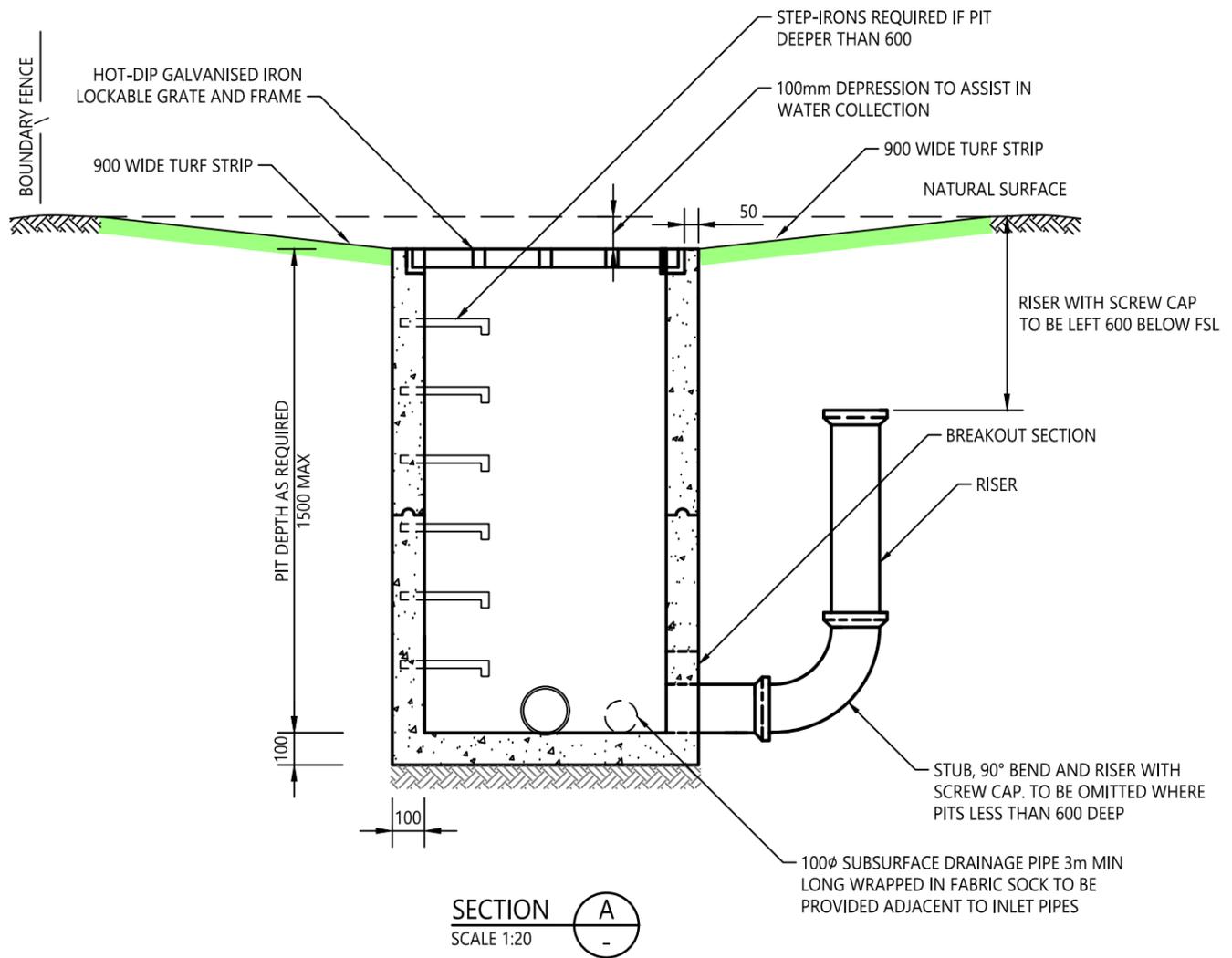
STANDARD DRAWING	
DRAWING NUMBER	REV
SD0413	-
SHEET 2 OF 2	A3

- NOTES:**
1. THIS STANDARD DRAWING TO BE READ IN CONJUNCTION WITH COUNCIL'S CIVIL WORKS SPECIFICATION.
 2. PRECAST PITS SHALL BE USED RATHER THAN CAST IN-SITU WHERE PRACTICABLE.
 3. GRATE AND FRAME SHALL BE HOT-DIP GALVANISED.
 4. DEPTH OF PIT SHALL NOT EXCEED 1.5m.
 5. PROVIDE STEP-IRONS FOR PITS DEEPER THAN 600mm.
 6. CONCRETE STRENGTH GRADE SHALL BE N32 MINIMUM UNLESS OTHERWISE SPECIFIED.
 7. ALL EXPOSED EDGES SHALL BE ROUNDED WITH 20mm RADIUS.
 8. NO RENDERING PERMITTED IN STRUCTURAL COMPONENTS.
 9. ALL PITS SHALL BE STREAMLINED AND BENCHED WHERE REQUIRED.
 10. 100Ø SUBSURFACE DRAINAGE PIPE 3m MIN LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES.



PLAN
SCALE 1:20

MINIMUM PIT DIMENSIONS				
		RESIDENTIAL PIT DEPTH		INDUSTRIAL PIT DEPTH
		450 - 1200	1200 - 1500	450-1500
PIT SIZE	X	450	600	750
	Y	450	750	750



SECTION A
SCALE 1:20

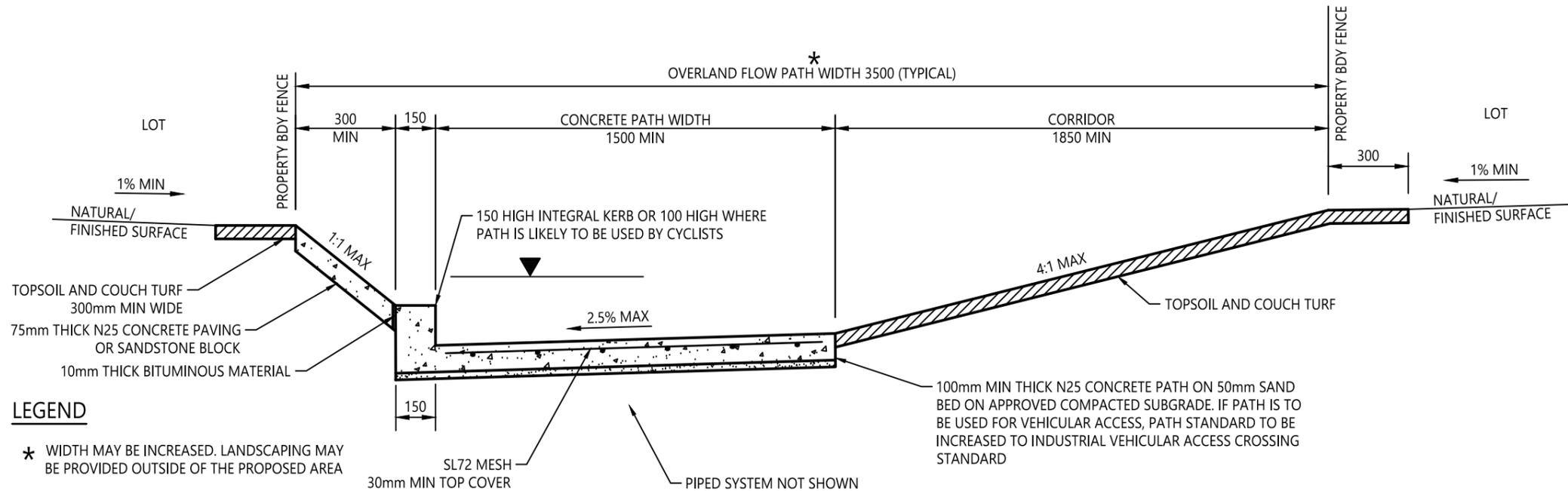
REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING 0 200 400 600 800 1000 1:20
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN

DRAWN C SHEPPEARD
CHECKED M BAMBER
DATE 28/4/20
UNIT MANAGER APPROVAL
ASSETS PLANNING AND DESIGN



Central Coast Council
STORMWATER DRAINAGE SERIES
INTERALLOTMENT DRAINAGE PIT

STANDARD DRAWING	
DRAWING NUMBER	REV
SD0414	-
SHEET 1 OF 1	A3



PEDESTRIAN PATH OVERLAND FLOW PATH TYPE 1
SCALE 1:20

LEGEND

★ WIDTH MAY BE INCREASED. LANDSCAPING MAY BE PROVIDED OUTSIDE OF THE PROPOSED AREA

▼ DENOTES REQUIRED CAPACITY OF OVERLAND FLOW PATH TO BE SHOWN ON DETAILED DESIGN SUPPORTED BY ALL RELEVANT CALCULATIONS. IF CAPACITY INSUFFICIENT, OVERALL WIDTH TO BE INCREASED OR PROVIDE PEDESTRIAN PATH OVERLAND FLOW PATH TYPE 2

INDEX:

SHEET 1: PEDESTRIAN PATH OVERLAND FLOW PATH TYPE 1 AND 2.

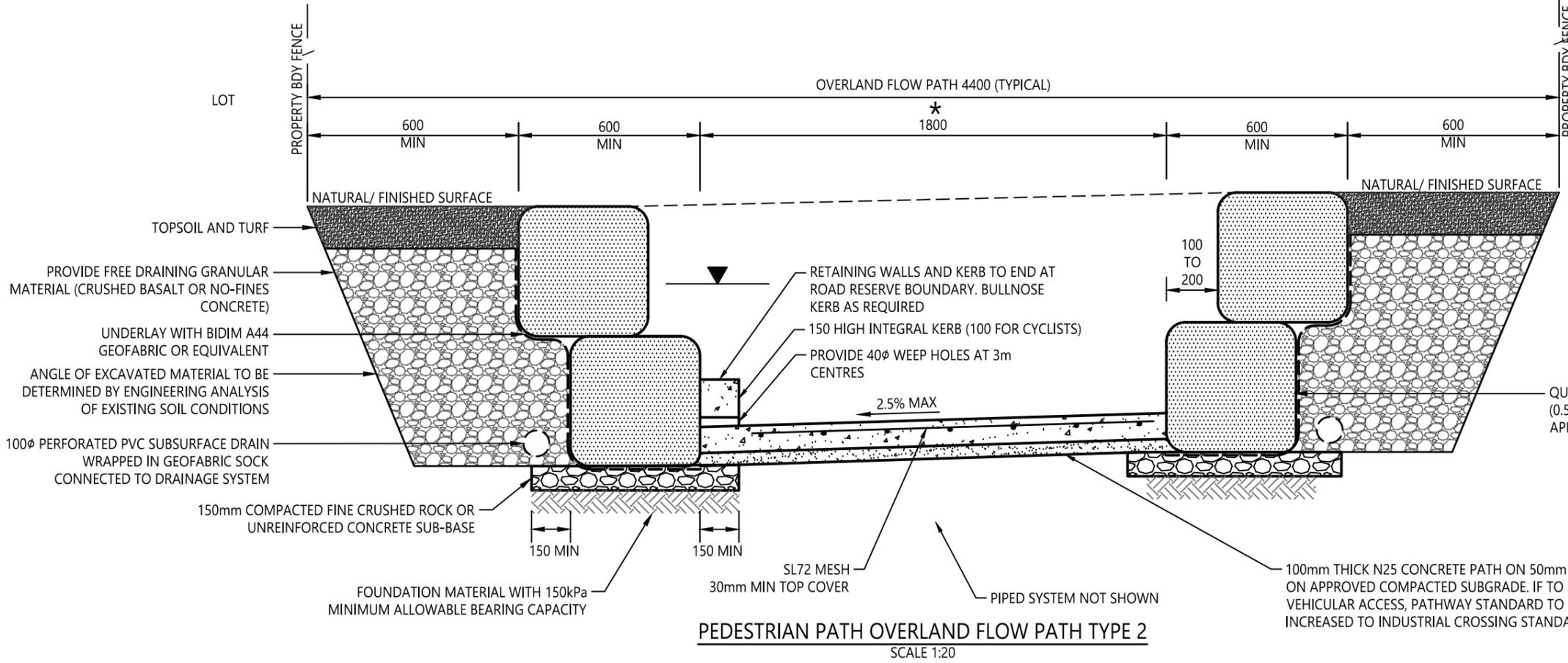
SHEET 2: NON-PEDESTRIAN OVERLAND FLOW PATH TYPE 1 AND 2.

NOTES:

- DESIGN OF OVERLAND FLOW PATHS SHALL ADDRESS APPROPRIATE SAFETY CRITERIA FOR PEOPLE AND VEHICLES IN ACCORDANCE WITH CURRENT AUSTRALIAN RAINFALL AND RUNOFF GUIDELINES.
- DEPTHS OF FLOW GENERALLY SHOULD NOT EXCEED 0.5m AND THE PRODUCT OF VELOCITIES AND DEPTHS IN MAJOR OVERLAND FLOW PATHS GENERALLY SHOULD NOT EXCEED 0.4m²/s FOR MAJOR DESIGN STORM FLOWS.
- ADJACENT STREET LIGHTING TO BE LOCATED TO PROVIDE ADEQUATE LIGHTING FOR PEDESTRIANS BUT NOT TO HINDER ADJACENT PROPERTY OWNERS.
- IF PATHS ARE LONG ENOUGH TO WARRANT ADDITIONAL LIGHTING, CONSULT ASSET OWNER REGARDING LOCATION AND TYPE OF LIGHTING.
- GENERALLY, A 300mm FREEBOARD TO FLOOR LEVEL WILL BE REQUIRED.

- CONTROL JOINT (CJ) NOTES:**
- SAW CUT DEPTH OF THE WEAKENED PLANE JOINT SHALL BE 0.25 TIMES THICKNESS OF SLAB.
 - CONTROL JOINT SPACING SHALL BE 4.5m MAXIMUM IN FOOTPATH SLABS; AND 3m MAXIMUM IN KERB AND CHANNEL.
 - MAXIMUM CONTROL JOINT SPACING SHOULD BE NO GREATER THAN 1.5 TIMES THE WIDTH OF THE SLAB PANEL.

- EXPANSION JOINT (EJ) NOTES:**
- EXPANSION JOINT SPACING SHALL BE 12m MAXIMUM IN FOOTPATH SLABS; AND WHERE KERB AND CHANNEL ABUTS A STRUCTURAL ELEMENT.
 - A SYSTEM TO CORRECTLY ALIGN DOWELS SHALL BE PROVIDED.
 - BOND-BREAKING COMPOUND AND END CAP MAY BE REPLACED WITH A PURPOSE-MADE DOWEL SLEEVE.



PEDESTRIAN PATH OVERLAND FLOW PATH TYPE 2
SCALE 1:20

SCALE ON ORIGINAL A3 SIZE DRAWING		DRAWN C SHEPPEARD		Central Coast Council		Central Coast Council		STANDARD DRAWING	
0 200 400 600 800 1000		CHECKED M BAMBER						DRAWING NUMBER	
1:20		DATE 28/4/20		ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE		SD0415	
UNIT MANAGER APPROVAL		[Signature]						SHEET 1 OF 2	
REV	AMENDMENT	DATE	DRAWN	APRVD	STORMWATER DRAINAGE SERIES OVERLAND FLOW PATH				

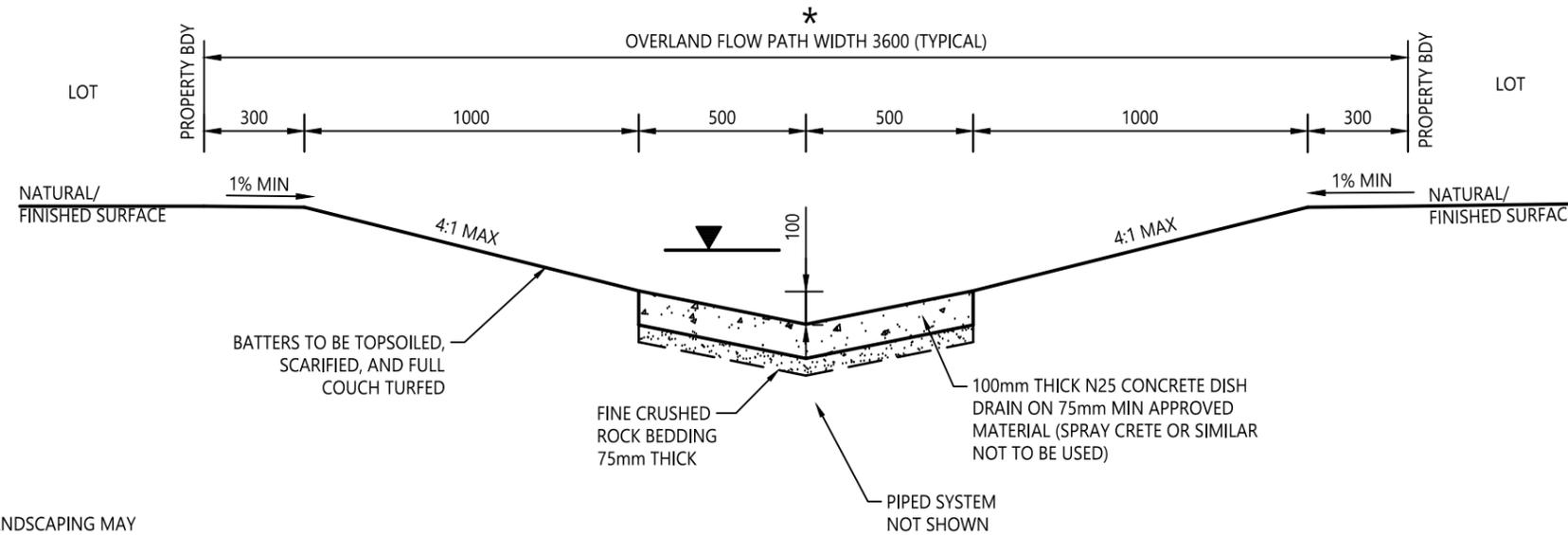
INDEX:

SHEET 1: PEDESTRIAN PATH OVERLAND FLOW PATH TYPE 1 AND 2.

SHEET 2: NON-PEDESTRIAN OVERLAND FLOW PATH TYPE 1 AND 2.

NOTES:

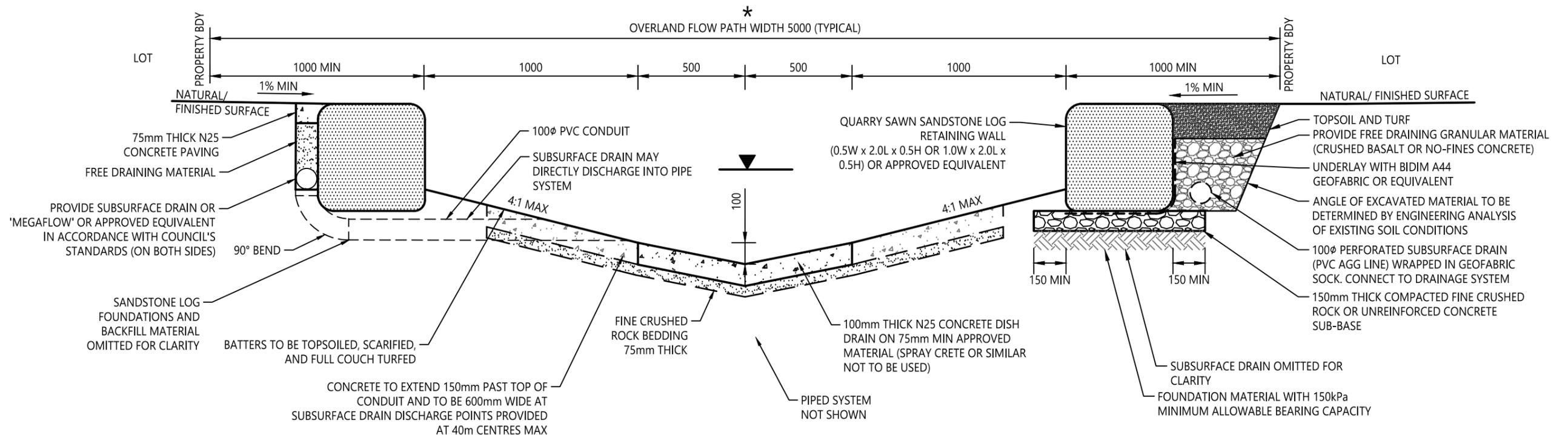
- DESIGN OF OVERLAND FLOW PATHS SHALL ADDRESS APPROPRIATE SAFETY CRITERIA FOR PEOPLE AND VEHICLES IN ACCORDANCE WITH CURRENT AUSTRALIAN RAINFALL AND RUNOFF GUIDELINES.
- DEPTHS OF FLOW GENERALLY SHOULD NOT EXCEED 0.5m AND THE PRODUCT OF VELOCITIES AND DEPTHS IN MAJOR OVERLAND FLOW PATHS GENERALLY SHOULD NOT EXCEED 0.4m²/s FOR MAJOR DESIGN STORM FLOWS.
- INSTALL COUNCIL'S STANDARD FLOOD WARNING SIGNS WHERE DIRECTED.
- DRAINAGE RESERVE/OVERLAND FLOW PATH SHALL BE ADEQUATELY FENCED.
- ACCESS FOR MAINTENANCE SHALL BE PROVIDED.
- CONTROL JOINTS IN DISH DRAIN TO BE 25mm DEEP AND PLACED AT NO MORE THAN 5m INTERVALS. EXPANSION JOINTS TO BE PLACED AT NO MORE THAN 12m INTERVALS. JOINTING MATERIAL TO BE APPROVED 10mm THICK BITUMINOUS MATERIAL TO THE FULL DEPTH OF THE CONCRETE OR AS DIRECTED BY COUNCIL'S REPRESENTATIVE.
- GENERALLY A 300mm FREEBOARD TO FLOOR LEVEL WILL BE REQUIRED.



NON-PEDESTRIAN OVERLAND FLOW PATH TYPE 1
SCALE 1:20

LEGEND

- * WIDTH MAY BE INCREASED. LANDSCAPING MAY BE PROVIDED OUTSIDE OF THE PROPOSED AREA
- ▼ DENOTES REQUIRED CAPACITY OF OVERLAND FLOW PATH TO BE SHOWN ON DETAILED DESIGN SUPPORTED BY ALL RELEVANT CALCULATIONS. IF CAPACITY INSUFFICIENT, OVERALL WIDTH TO BE INCREASED OR PROVIDE OVERLAND FLOW PATH TYPE 2

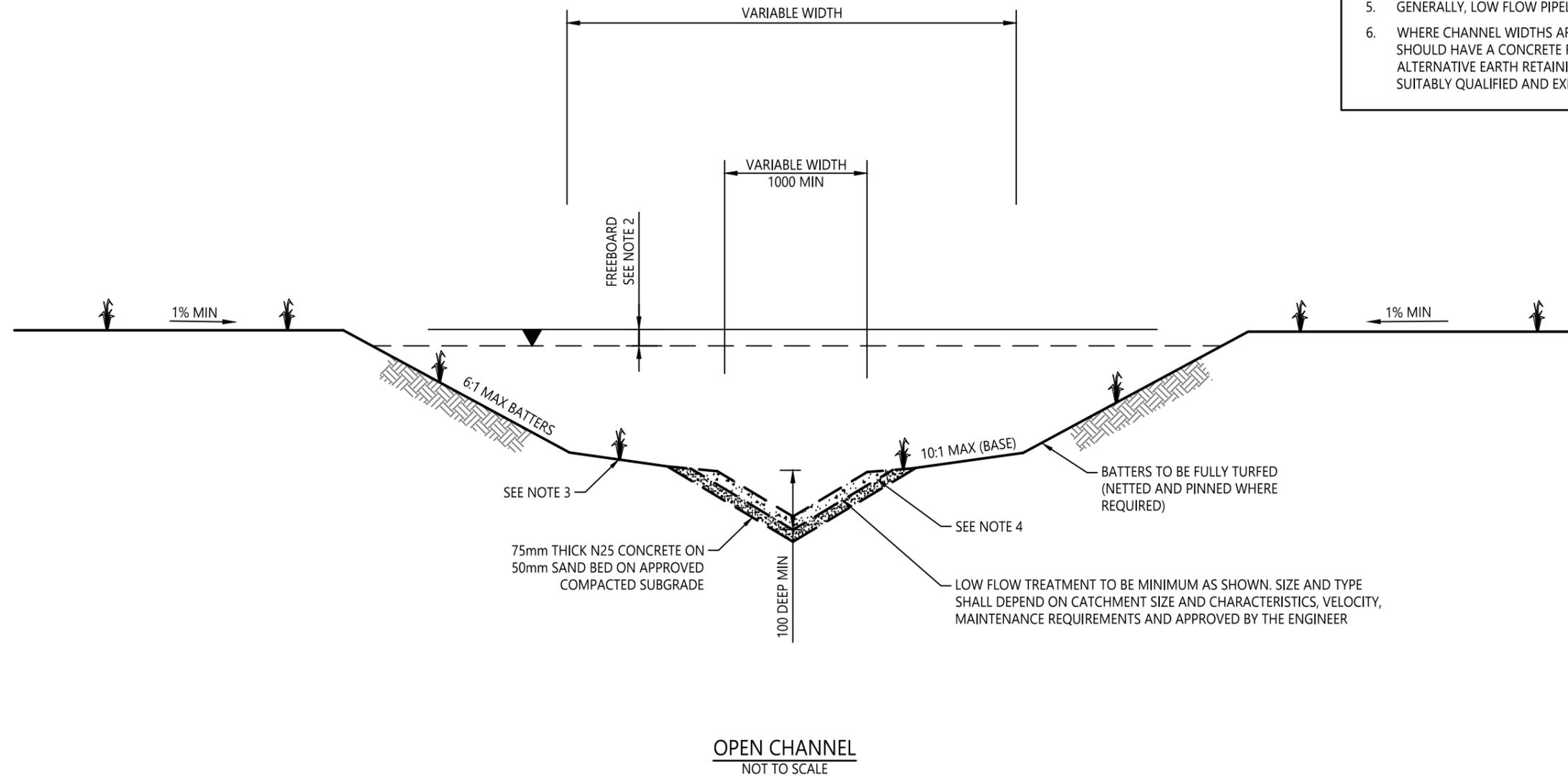


NON-PEDESTRIAN OVERLAND FLOW PATH TYPE 2
SCALE 1:20

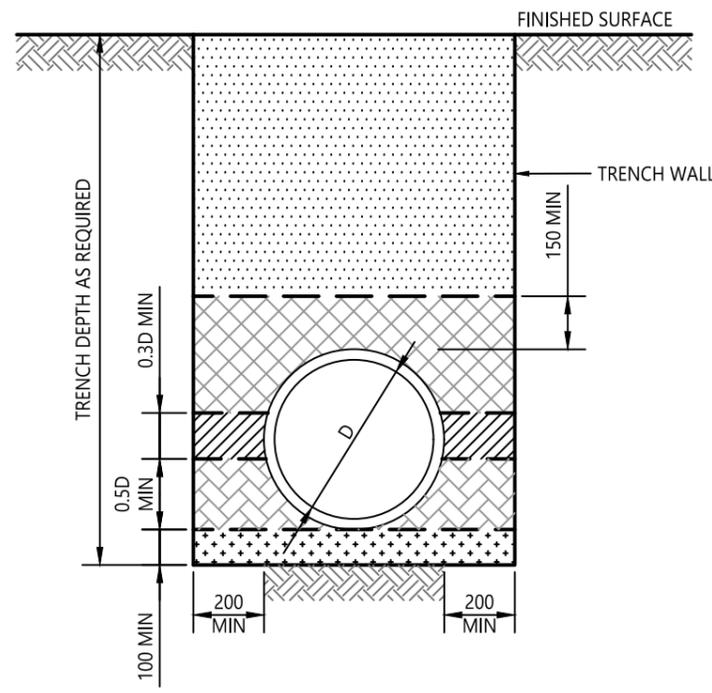
REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	CHECKED	M BAMBER			
					0 200 400 600 800 1000	DATE	28/4/20	ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE	SD0415
					1:20	UNIT MANAGER APPROVAL				
										© Central Coast Council 2020

NOTES:

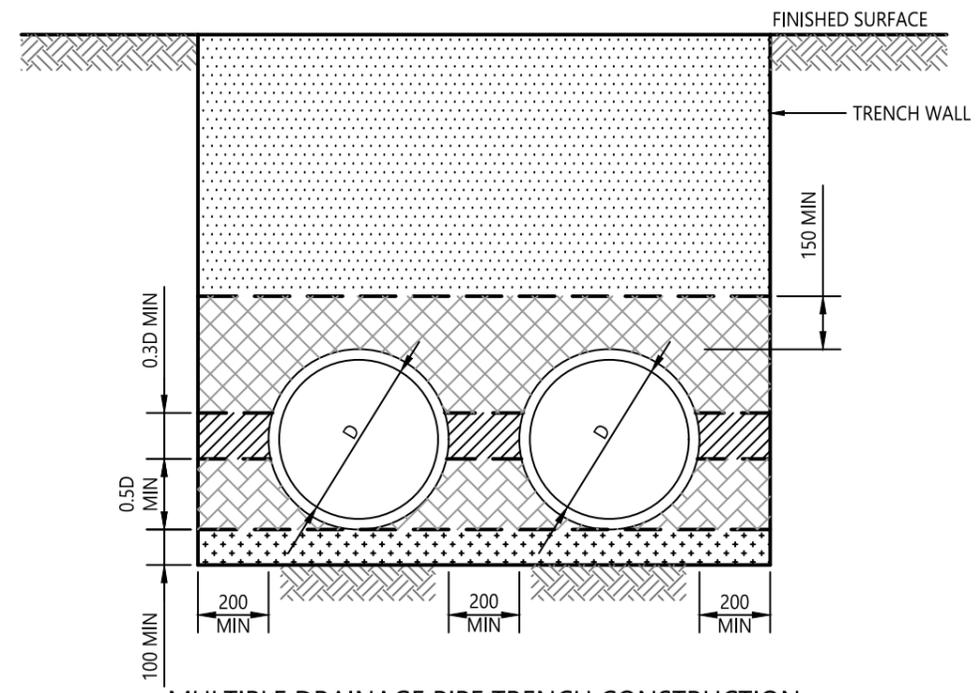
1. THIS STANDARD DRAWING IS TO BE USED AS A GUIDE ONLY FOR THE PREPARATION OF OTHER DESIGNS.
2. FREEBOARD REQUIREMENTS VARY DEPENDING ON SITE LOCATION. REFER TO COUNCIL'S CIVIL WORKS DESIGN GUIDELINES AND CONSTRUCTION SPECIFICATION.
3. PROVIDE ADEQUATE SCOUR PROTECTION/VEGETATION STABILISING TREATMENT ADJACENT TO CONCRETE LOW FLOW TREATMENT.
4. SUBSURFACE DRAINAGE FOR CHANNEL BASE AND ADJACENT TO DROP STRUCTURES MAY BE REQUIRED.
5. GENERALLY, LOW FLOW PIPELINES WILL NOT BE PERMITTED.
6. WHERE CHANNEL WIDTHS ARE CONSTRAINED, THE CHANNEL SHOULD HAVE A CONCRETE FLOOR AND VERTICAL WALLS, OR ALTERNATIVE EARTH RETAINING STRUCTURE, DESIGNED BY A SUITABLY QUALIFIED AND EXPERIENCED ENGINEER.



					SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD		<h2 style="margin: 0;">Central Coast Council</h2> <p style="margin: 0;">STORMWATER DRAINAGE SERIES OPEN CHANNEL</p>	STANDARD DRAWING	
					NOT TO SCALE	CHECKED	M BAMBER		DRAWING NUMBER	REV	
						DATE	28/4/20		SD0416	-	
						UNIT MANAGER APPROVAL			SHEET 1 OF 1	A3	
REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	 ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE			

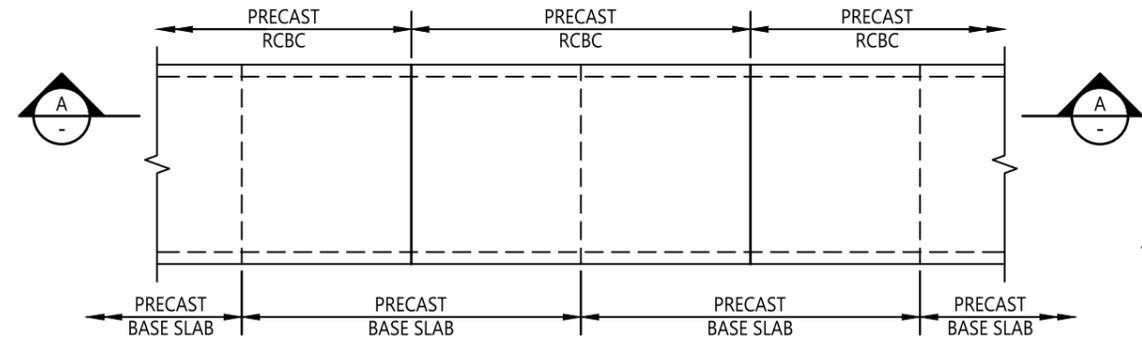


DRAINAGE PIPE TRENCH CONSTRUCTION
SCALE 1:20

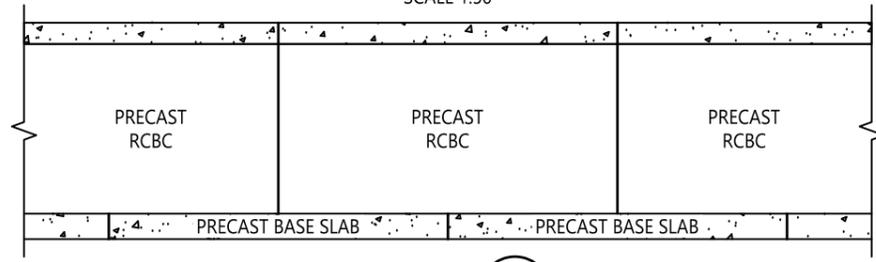


MULTIPLE DRAINAGE PIPE TRENCH CONSTRUCTION
SCALE 1:20

- NOTES:**
1. THIS DRAWING IS PARTLY BASED ON DETAILS IN TfNSW STANDARD DRAWING R0240-01 AND AS/NZS 3725.
 2. BEDDING AND BACKFILLING OF REINFORCED CONCRETE PIPES AND FIBRE-REINFORCED CEMENT PIPES SHALL BE IN ACCORDANCE WITH AS/NZS 3725 TYPE HS SUPPORT.
 3. REINFORCED CONCRETE PIPES SHALL BE MANUFACTURED IN ACCORDANCE WITH AS 4058; AND FIBRE REINFORCED CEMENT PIPES SHALL BE MANUFACTURED IN ACCORDANCE WITH AS 4139.
 4. WHERE MINIMUM DISTANCES CANNOT BE ACHIEVED, A CONTROLLED LOW STRENGTH MATERIAL MAY BE USED.
 5. WHERE PRACTICABLE, MINIMUM PIPE COVER SHALL BE PROVIDED TO THE PIPE MANUFACTURER'S SPECIFICATION, OR BY THE USE OF A PIPE CLASS PROGRAM.
 6. TRENCH EXCAVATIONS AT LEAST 1.5m DEEP SHALL REQUIRE BENCHING, SHORING OR BATTERING TO SUPPORT ALL SIDES OF THE TRENCH, TO COMPLY WITH WORK HEALTH AND SAFETY LEGISLATION.

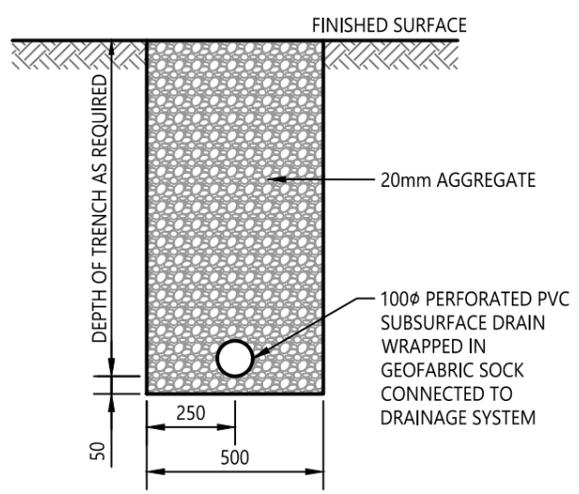


PLAN
SCALE 1:50



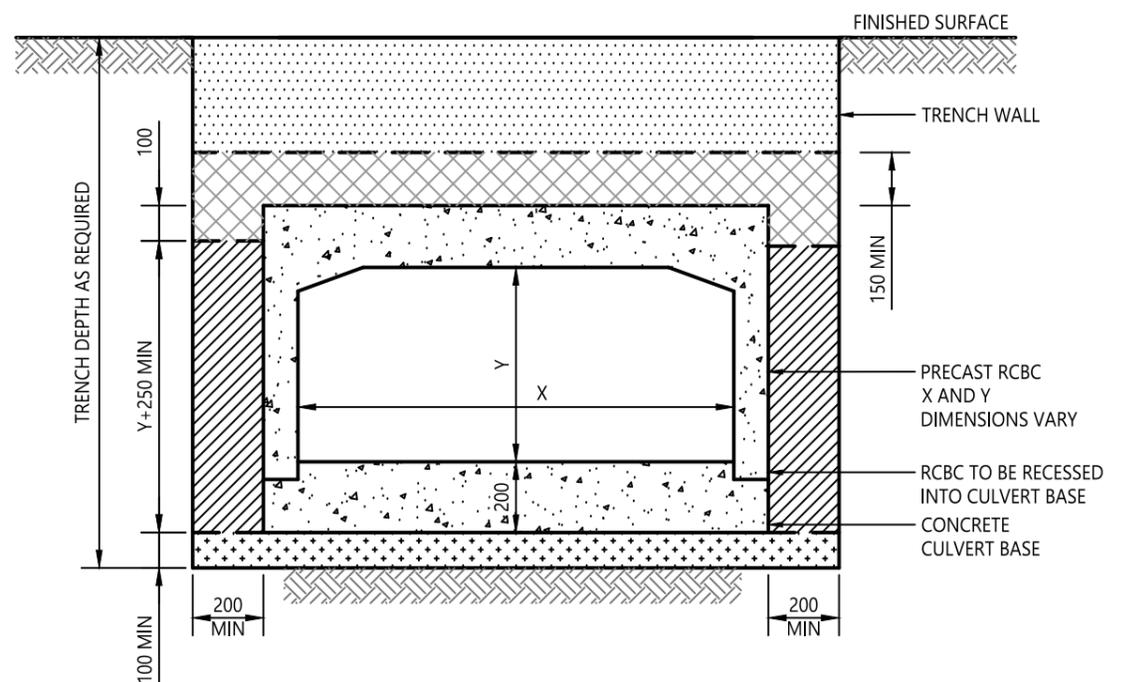
SECTION A
SCALE 1:50

BOX CULVERT PLACEMENT



NOTE: PROVIDE FLUSHING POINTS AT 30m INTERVALS.

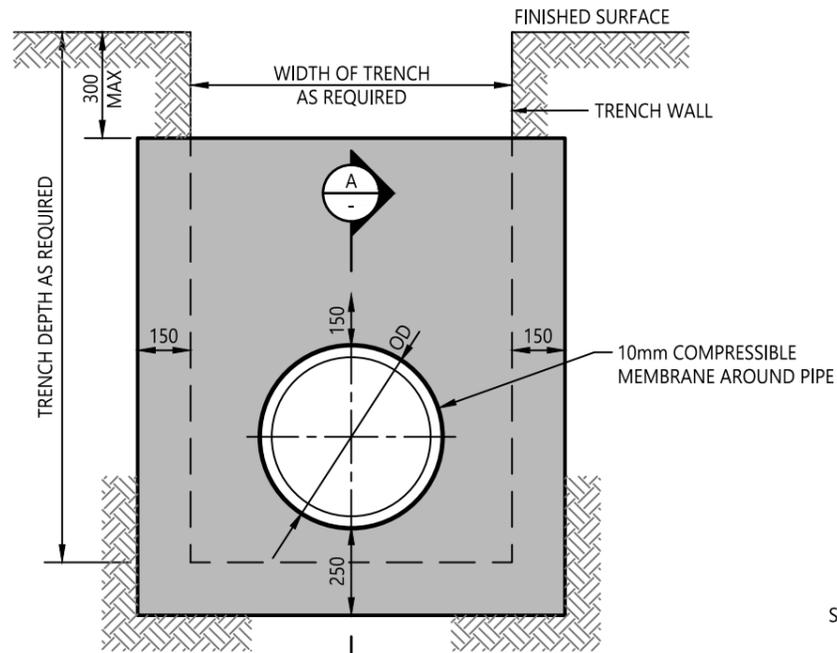
TRENCH DRAIN
SCALE 1:20



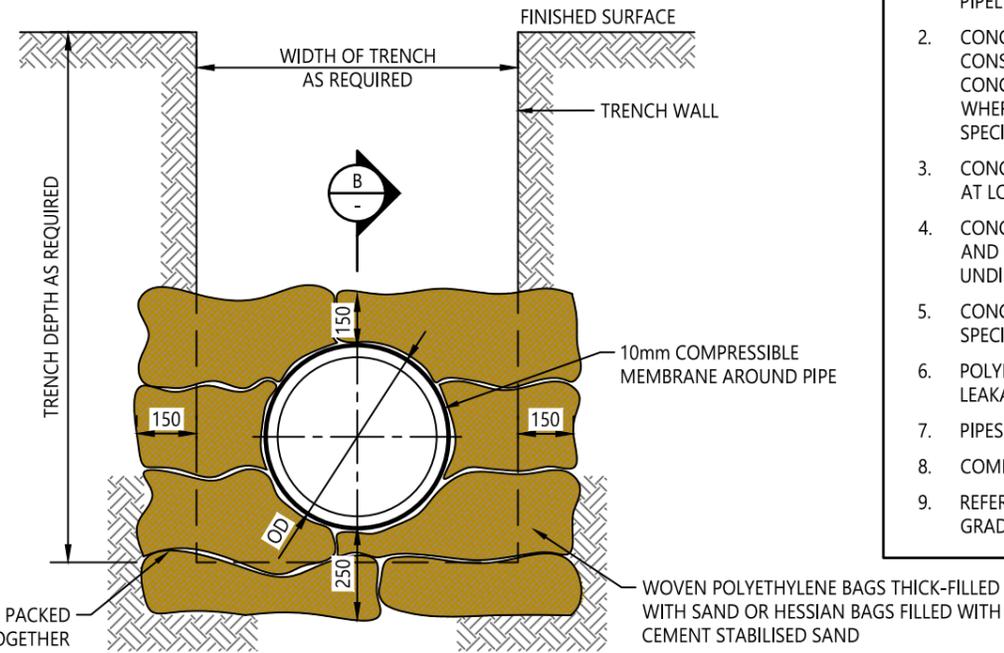
BOX CULVERT TRENCH CONSTRUCTION
SCALE 1:20

- BOX CULVERT PLACEMENT NOTES:**
1. FULL LENGTH CULVERTS AND BASE SLABS SHALL BE STAGGERED TO ENSURE CULVERT JOINTS ARE LOCATED AT BASE SLAB MIDPOINTS.
 2. SPLAY UNITS SHALL ALIGN WITH THEIR CORRESPONDING BASE SLAB.

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	C SHEPPEARD	Central Coast Council	Central Coast Council	STANDARD DRAWING	
					0 200 400 600 800 1000 1:20	CHECKED	M BAMBER				STORMWATER DRAINAGE SERIES
					0 500 1000 1500 2000 2500 1:50	DATE	28/4/20			SD0417	-
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	UNIT MANAGER APPROVAL				SHEET 1 OF 1	A3
						ASSETS PLANNING AND DESIGN				ROADS TRANSPORT DRAINAGE AND WASTE	
										© Central Coast Council 2020	



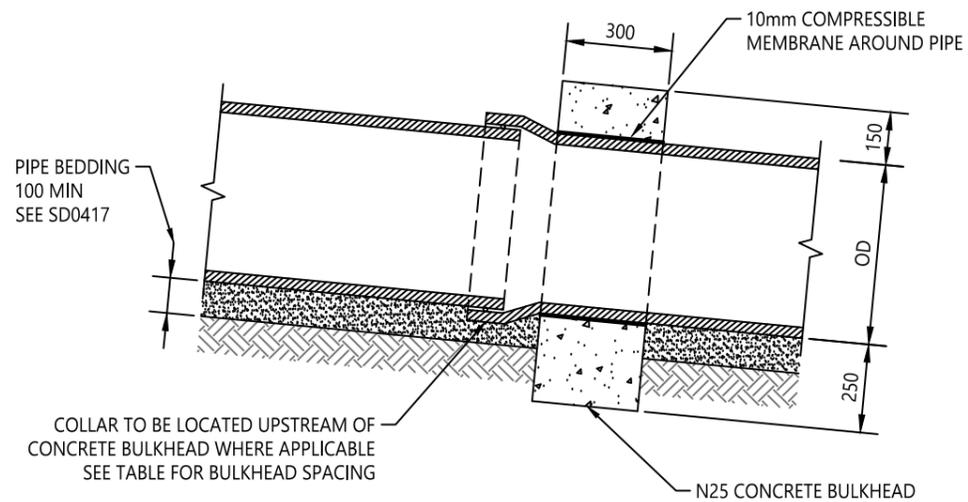
**CONCRETE BULKHEAD
ELEVATION**
SCALE 1:20



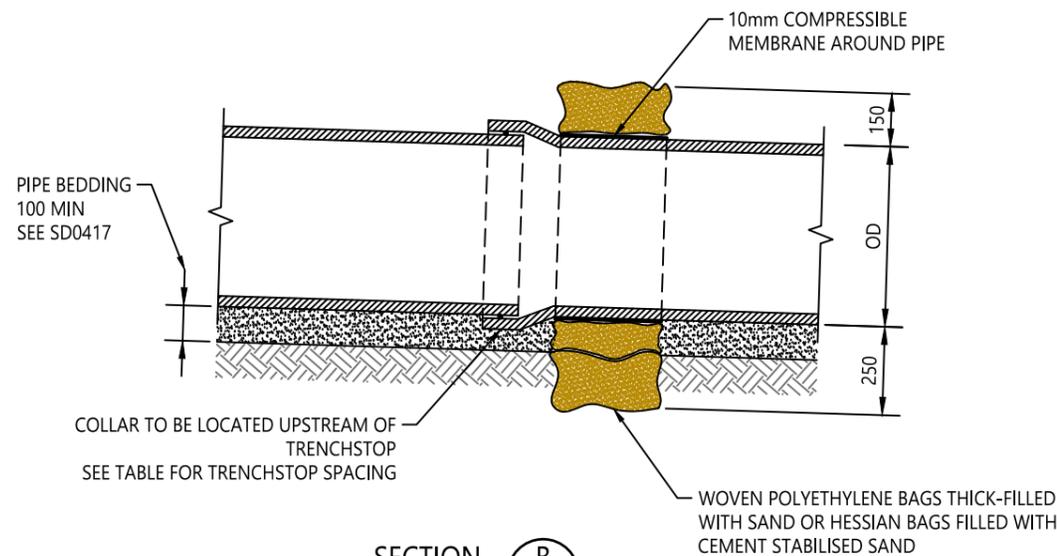
**TRENCHSTOP
ELEVATION**
SCALE 1:20

NOTES:

1. CONCRETE BULKHEADS AND TRENCHSTOPS FOR FLEXIBLE BURIED PIPELINES SHALL COMPLY WITH AS/NZS 2566.2.
2. CONCRETE BULKHEADS AND TRENCHSTOPS ALSO MAY BE CONSTRUCTED FOR FIBRE-REINFORCED CEMENT OR REINFORCED CONCRETE STORMWATER DRAINAGE PIPELINES ON STEEP SLOPES WHERE DETERMINED BY COUNCIL'S REPRESENTATIVE TO BE A SITE SPECIFIC REQUIREMENT.
3. CONCRETE BULKHEADS AND TRENCHSTOPS ARE TO BE CONSTRUCTED AT LOCATIONS AS SPECIFIED ON DESIGN DRAWINGS.
4. CONCRETE BULKHEADS AND TRENCHSTOPS TO BE KEYED INTO SIDES AND BOTTOM OF TRENCH AGAINST A BEARING SURFACE OF UNDISTURBED SOIL.
5. CONCRETE STRENGTH GRADE SHALL BE N25 UNLESS OTHERWISE SPECIFIED.
6. POLYETHYLENE OR HESSIAN BAGS SHALL BE SEALED TO PREVENT LEAKAGE OF CONTAINED MATERIAL.
7. PIPES ARE NOT TO BE DEFORMED DURING PLACEMENT OF CONCRETE.
8. COMPRESSIBLE MEMBRANE AROUND PIPE TO BE 10mm POLYSTYRENE.
9. REFER TO TABLE BELOW FOR APPROPRIATE TREATMENT BASED ON GRADE OF PIPELINE.



SECTION A
SCALE 1:20

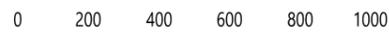


SECTION B
SCALE 1:20

REQUIREMENT FOR BULKHEADS AND TRENCHSTOPS		
GRADE	REQUIREMENT	SPACING (S)
%		m
5 - 14	TRENCHSTOP	$S = 100/\text{GRADE}\%$
15 - 29	CONCRETE BULKHEAD	$S = L/\text{GRADE}\%$ (450m MAX) WHERE $L = 80 \times \text{PIPE LENGTH}^*$ (m) WHERE $L > 100\text{m}$ USE INTERMEDIATE TRENCHSTOPS AT SPACING $< 100/\text{GRADE}$
30 - 50	CONCRETE ENCASEMENT AND CONCRETE BULKHEADS	$S = 100/\text{GRADE}\%$
>50	SPECIAL DESIGN	

SOURCE: AS/NZS 2566.2
* PIPE LENGTH IS THE STANDARD PIPE LENGTH INSTALLED

SCALE ON ORIGINAL A3 SIZE DRAWING



1:20

DRAWN C SHEPPEARD
 CHECKED M BAMBER
 DATE 28/4/20
 UNIT MANAGER APPROVAL
 ASSETS PLANNING AND DESIGN



Central Coast Council
 STORMWATER DRAINAGE SERIES
 CONCRETE BULKHEAD AND TRENCHSTOP DETAILS

STANDARD DRAWING
 DRAWING NUMBER SD0418
 REV -
 SHEET 1 OF 1
 A3

REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN

ROADS TRANSPORT DRAINAGE AND WASTE