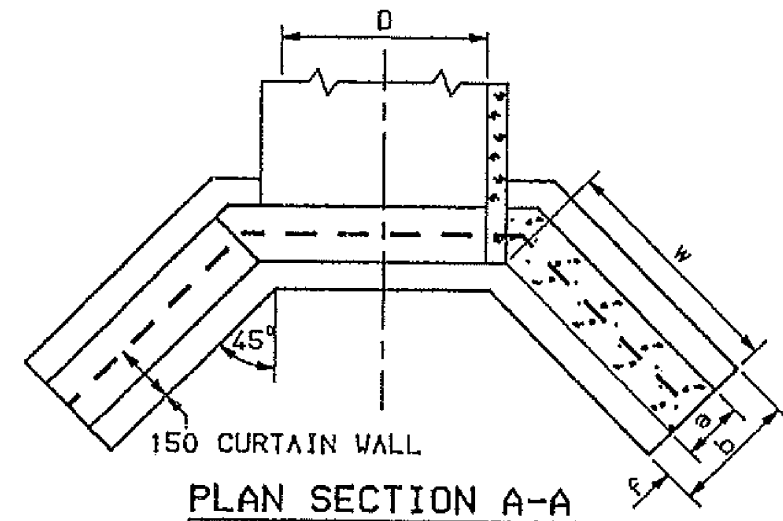


ELEVATION

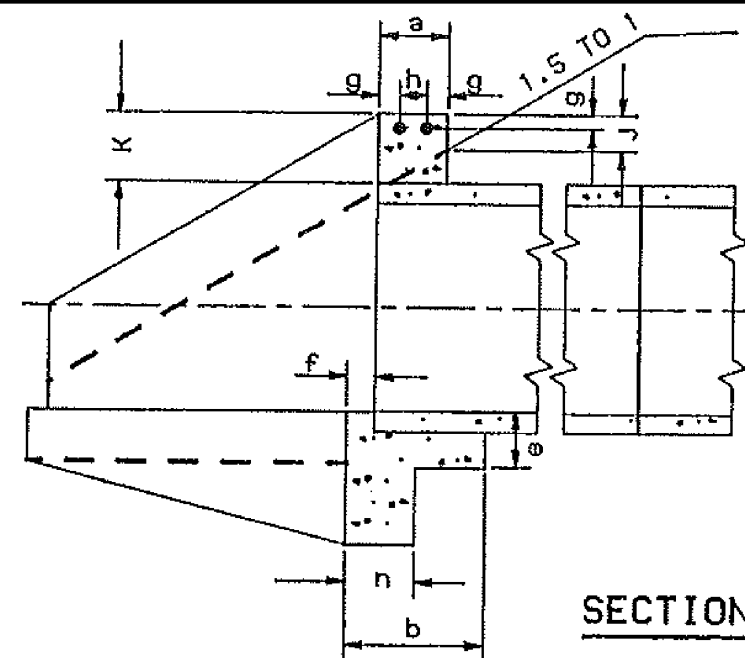


PLAN SECTION A-A

C10 OR C12 BARS  
2 REQUIRED EACH HEADWALL

NOTES:

1. ALL EXPOSED SURFACES TO HAVE 25 CHAMFER.
2. REINFORCING BARS TO BE COLD WORKED DEFORMED.
3. CONCRETE COMPRESSIVE STRENGTH (F'c) 20 MPa AT 28 DAYS.
4. PRECAST CONCRETE HEADWALLS OF SIZES 375 TO 750 (INCL.) MAY BE SUBSTITUTED FOR THE EQUIVALENT SIZE IN-SITU HEADWALL.

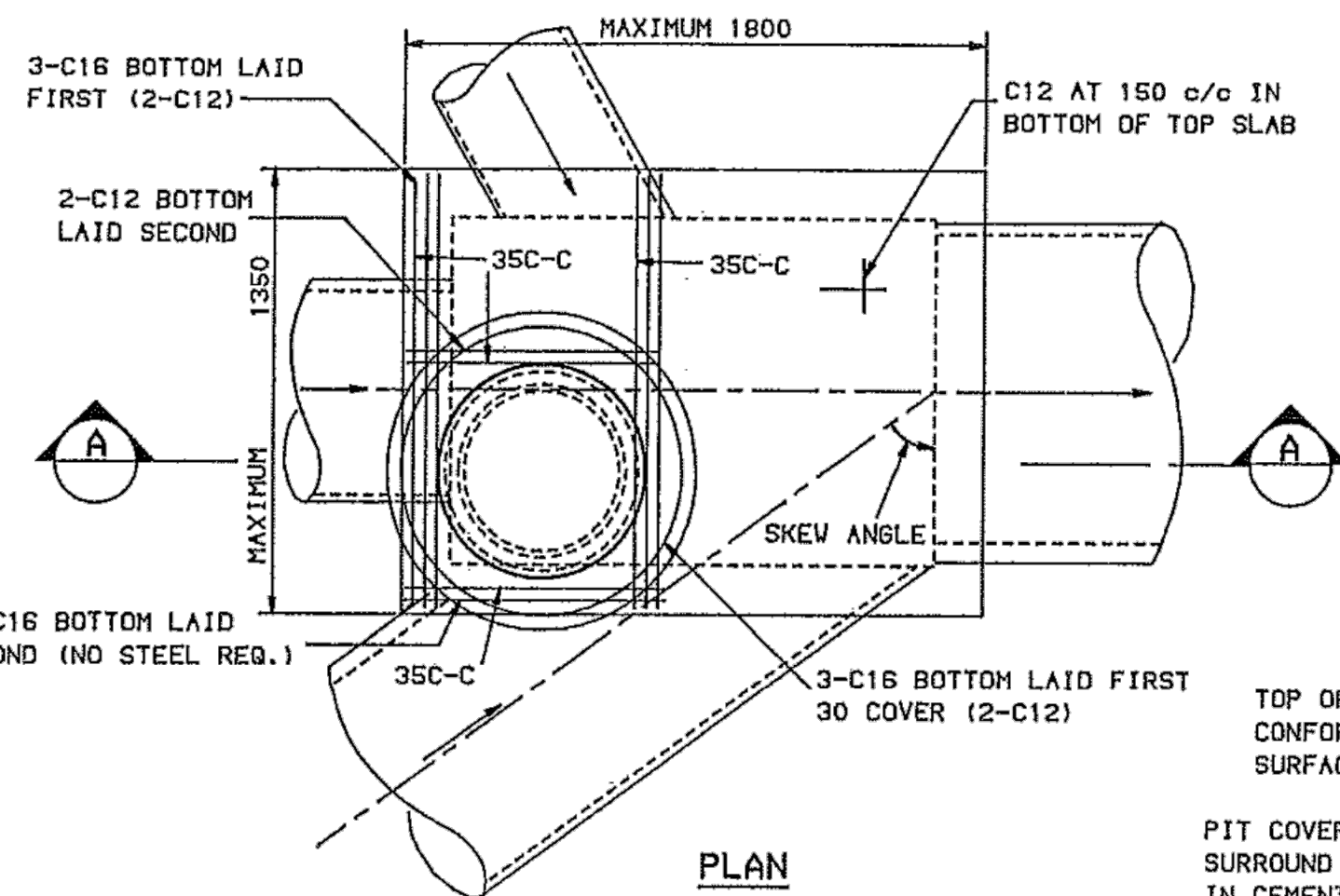


SECTIONAL ELEVATION

PIPE DIAMETER D	300	375	450	525	600	675	750	825	900
a	150	150	150	150	180	180	205	205	230
b	300	300	300	300	450	450	450	450	450
c	300	300	300	300	380	380	380	380	380
d	380	380	380	380	530	530	530	530	530
e	150	150	150	150	180	180	205	205	230
f	75	75	75	75	100	100	100	100	100
g	40	40	40	40	50	50	50	50	50
h	70	70	70	70	80	80	105	105	130
j	100	100	100	100	100	100	100	100	100
k	200	200	200	200	250	250	250	250	250
n	150	150	150	150	150	150	150	150	150
w	690	690	840	990	1120	1300	1450	1600	1790
L	800	840	915	990	1100	1200	1250	1350	1400
REINF. DIA.	10	10	10	10	12	12	12	12	12
REINF. LENGTH	1600	1680	1830	1980	2200	2400	2500	2700	2800
REINF. kg MASS	0.986	1.035	1.127	1.220	1.954	2.131	2.220	2.398	2.486
CONC. VOLUME m	0.25	0.27	0.33	0.38	0.67	0.85	1.02	1.22	1.40

SHOALHAVEN COUNCIL DETAIL-  
STANDARD CONCRETE HEADWALLS FOR 300 TO 900 DIA PIPES

NTS

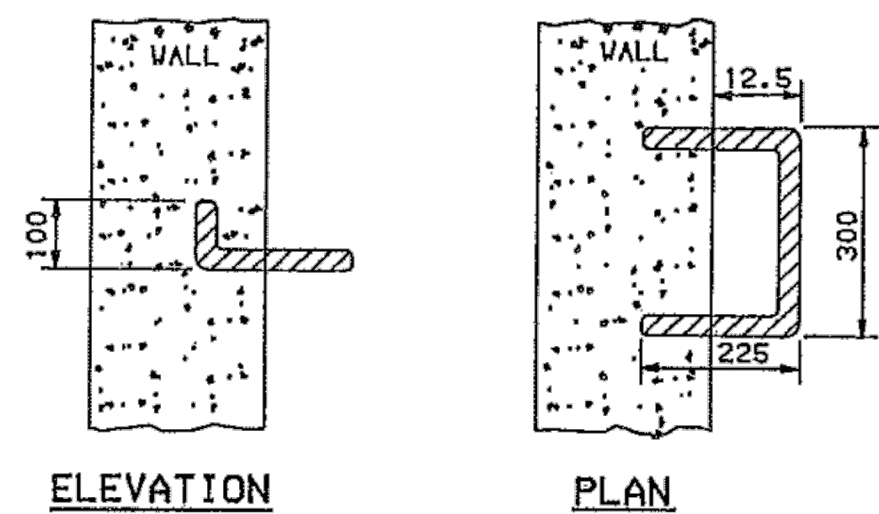


NOTES:

1. MAXIMUM OUTLET PIPE DN STRAIGHT 900 DIAMETRE.
2. MAXIMUM OUTLET PIPE DN SKEW 825 DIAMETRE.
3. MAXIMUM SIDE ENTRY PIPE 825 DIAMETRE AT APPROX. 40° SKEW
4. MINIMUM INTERNAL DIMENSIONS: LENGTH 900  
WIDTH 700  
HEIGHT 1000
5. CONCRETE TO BE OF 20 MPa COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.
6. PIPE TRENCHES BACKFILLED WITH SAND SHALL HAVE 3 m OF SUBSOIL DRAIN PIPE IN THE BOTTOM OF THE TRENCH AND DRAINING INTO THE PIT.
7. FOURTY EIGHT (48) HOURS NOTICE IS TO BE GIVEN PRIOR TO THE PLACING OF CONCRETE TO ALLOW FOR INSPECTION BY COUNCIL'S OFFICER.
8. FOR STANDARD PITS IN LOCATIONS OTHER THAN CARRIAGEWAYS DIMENSIONS AND REINFORCING SHOWN IN BRACKETS APPLY.

SHOALHAVEN COUNCIL DETAIL-  
STANDARD JUNCTION PIT

NTS

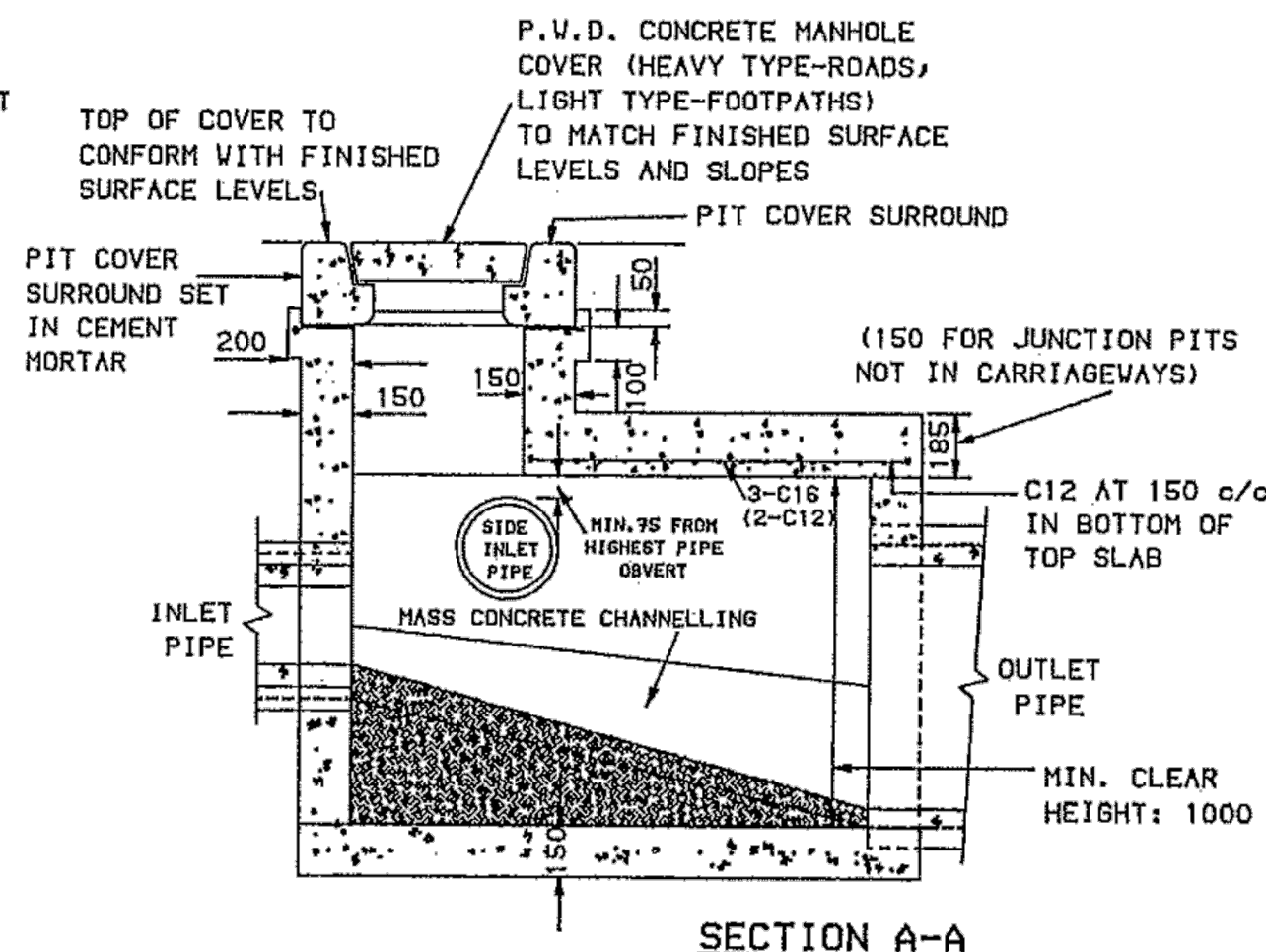


ELEVATION

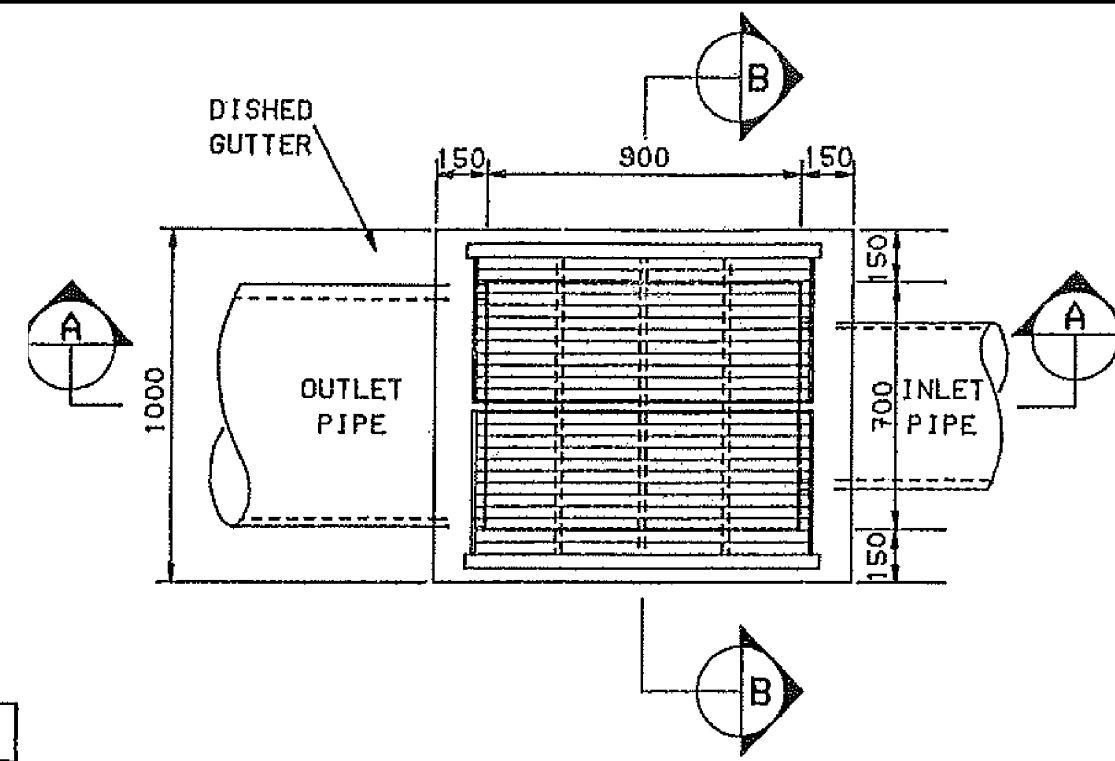
PLAN

DETAIL OF CLIMB IRON

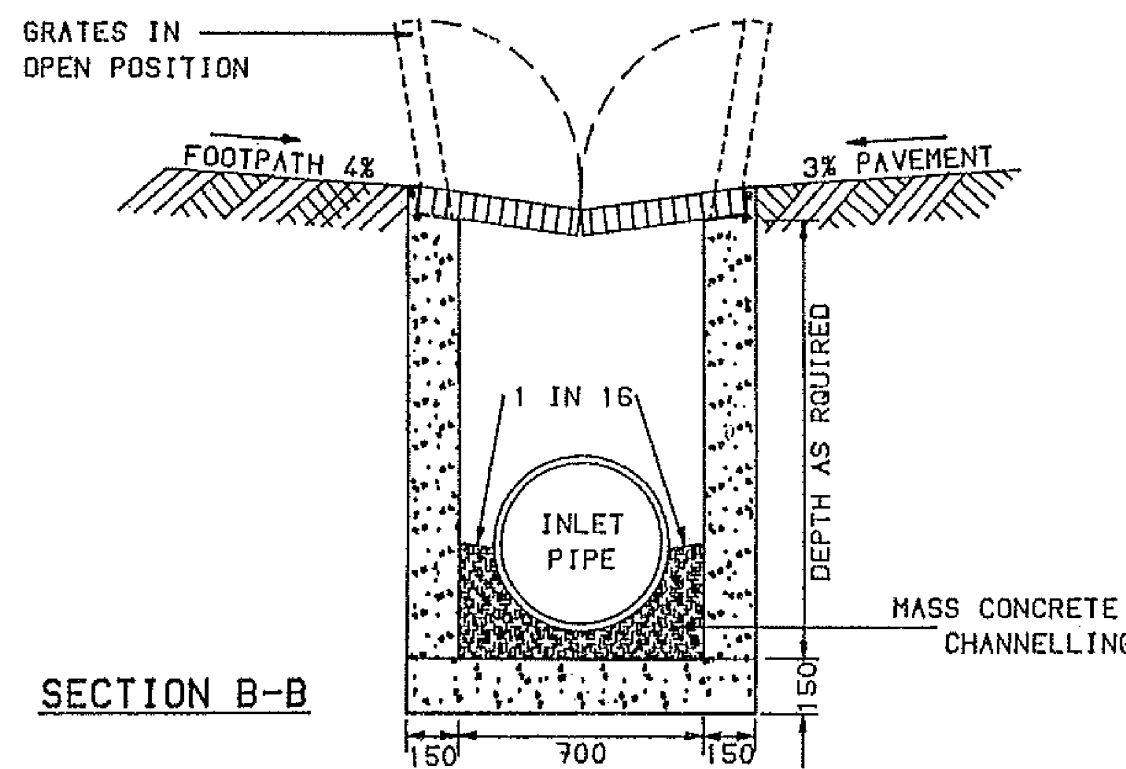
CLIMB IRON OF 20 GALVANISED STEEL MADE TO ABOVE SHAPE AND DIMENSIONS SHALL BE PROVIDED AT 950 c/c UNDER LID WHERE PIT IS DEEPER THAN 1200.



SECTION A-A



PLAN



SECTION B-B

SHOALHAVEN COUNCIL DETAIL-  
STANDARD DISH GUTTER INLET PIT

NTS

NOTES:

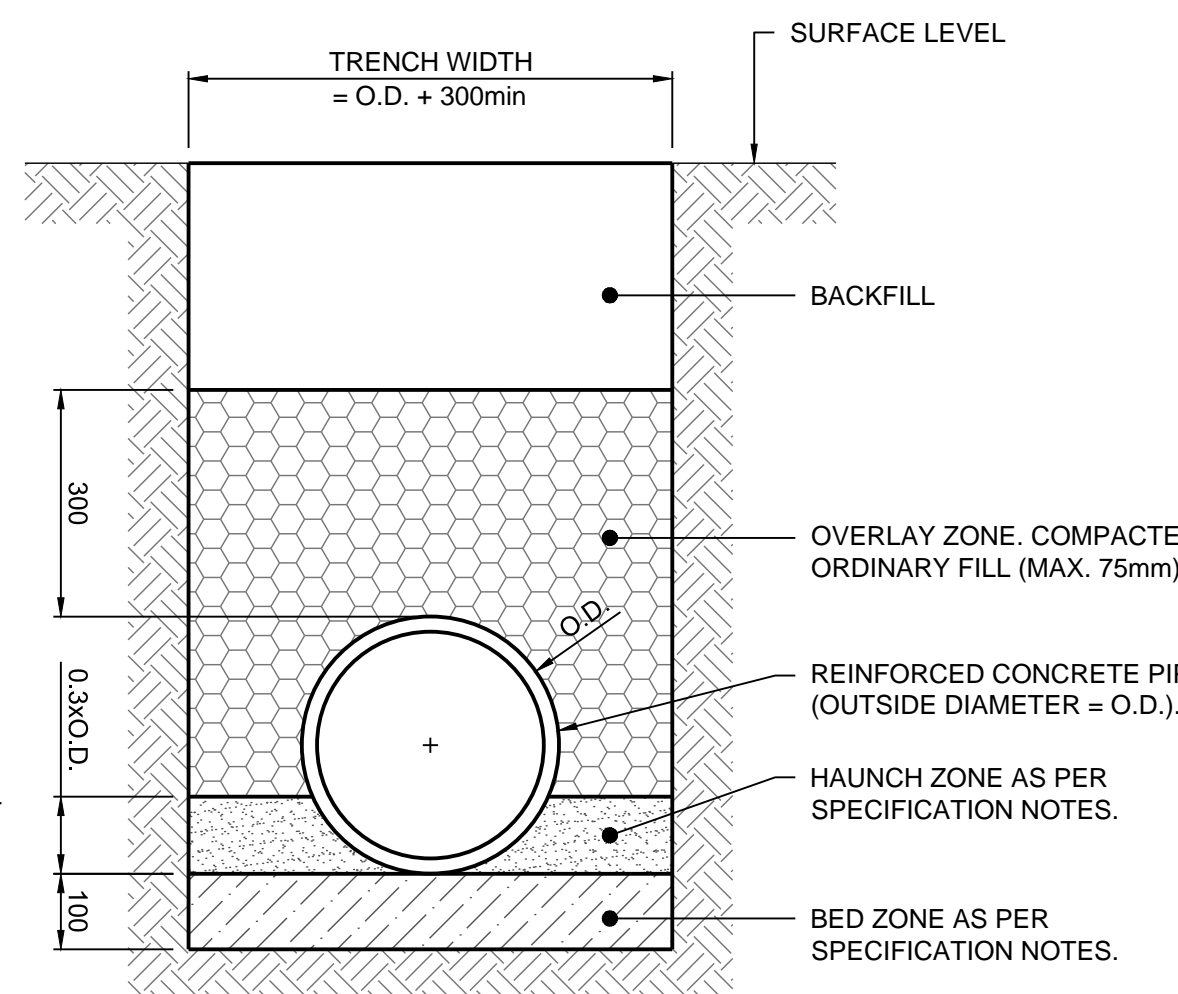
1. FOURTY EIGHT (48) HOURS NOTICE IS TO BE GIVEN PRIOR TO THE PLACING OF CONCRETE TO ALLOW FOR INSPECTION BY COUNCIL'S OFFICER.
2. CONCRETE TO BE OF 20 MPa COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.
3. GRATES TO BE HINGED 'WELOCK' DISHED CROSSING G.G.7862 SET PARALLEL TO EDGE OF GUTTER.
4. PIPE TRENCHES BACKFILLED WITH SAND SHALL HAVE 3 m OF SUBSOIL DRAIN PIPE IN THE BOTTOM OF THE TRENCH AND DRAINING INTO THE PIT.

NOTES:

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER IS AS FOLLOWS UNO:
  - a. NOT UNDER ROADS = 300mm
  - b. UNDER ROADS, NO CARRIAGEWAY = 450mm
  - c. UNDER ROADS, SEALED CARRIAGEWAY = 600mm
  - d. UNDER ROADS, UNSEALED CARRIAGEWAY = 750mm
  - e. IN EMBANKMENTS OR SUBJECT TO CONSTRUCTION VEHICLE LOADING = 750mm
3. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. PREFERRED BEDDING MATERIALS ARE AS FOLLOWS:
  - a. SUITABLE SAND, FREE FROM ROCK OR OTHER HARD OR SHARP OBJECTS THAT WOULD BE RETAINED ON A 13.2 MM SIEVE.
  - b. CRUSHED ROCK OR GRAVEL OF APPROVED GRADING UP TO A MAXIMUM SIZE OF 14 MM.
  - c. THE EXCAVATED MATERIAL MAY PROVIDE A SUITABLE PIPE UNDERLAY IF IT IS FREE FROM ROCK OR HARD MATTER AND BROKEN UP SO THAT IT CONTAINS NO SOIL LUMPS HAVING ANY DIMENSION GREATER THAN 75 MM WHICH WOULD PREVENT ADEQUATE COMPACTION OF THE BEDDING.
  - d. CONTROLLED LOW STRENGTH MATERIALS (CLSM)
5. PIPE SIDE SUPPORT AND OVERLAY IS TO BE THE SAME AS THE BEDDING MATERIAL UNO. SIDE SUPPORT TO BE TAMPED IN LAYERS OF 100mm MAX.
6. GRADING LIMITS FOR SELECT FILL IN BED AND HAUNCH ZONES AREA AS FOLLOWS:

SIEVE SIZE (mm)	WEIGHT PASSING %
19.0	100
2.36	100-50
0.60	90-20
0.30	60-10
0.15	25-0
0.075	10-0

7. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS:
  - a. TRENCHES UNDER PAVED AREAS & BUILDINGS - 100% SMDD.
  - b. TRENCHES NOT UNDER PAVEMENTS - 90% SMDD.



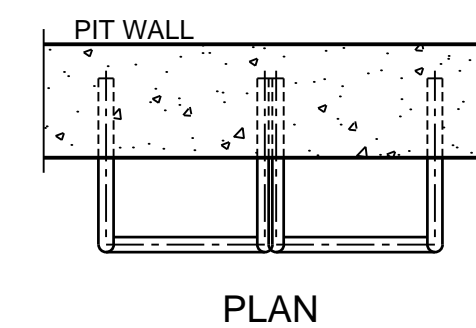
GENERAL AREAS

TYPICAL PIPE TRENCH

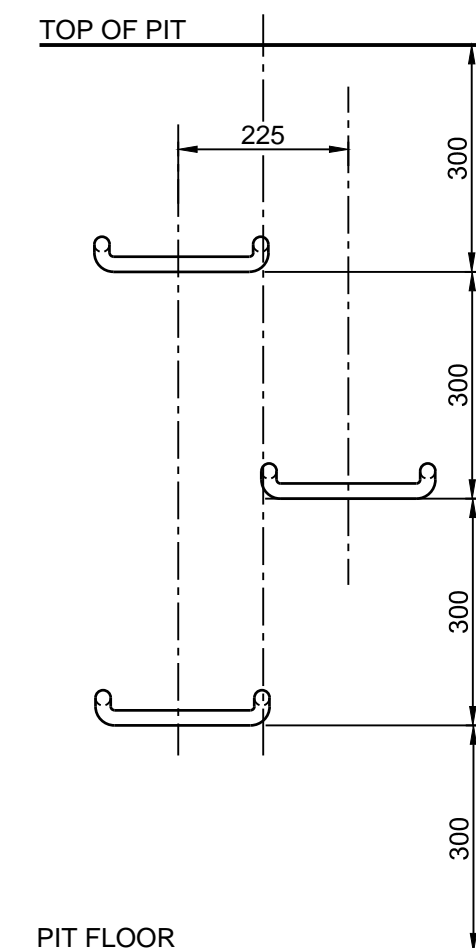
NOT TO SCALE

NOTES:

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER NOT UNDER ROADS = 300mm UNO.
3. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS:
  - A) TRENCHES UNDER PAVED AREAS & BUILDINGS - 100% SMDD.
  - B) TRENCHES NOT UNDER PAVEMENTS - 90% SMDD.



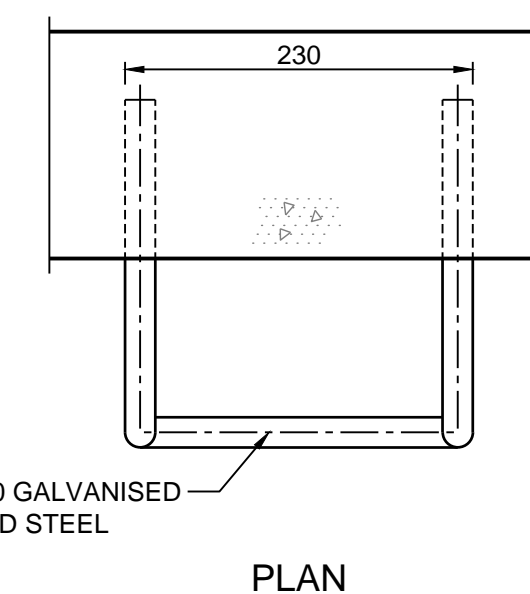
PLAN



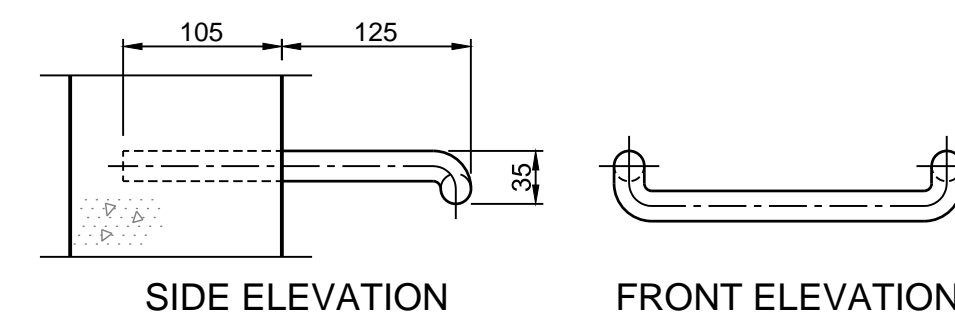
ELEVATION

STEP IRON  
PLACEMENT TO PIT WALL

SCALE NTS



PLAN



SIDE ELEVATION

FRONT ELEVATION

STEP IRON DETAIL

SCALE 1:5

PRELIMINARY - NOT FOR CONSTRUCTION

DO NOT SCALE FROM DRAWINGS, CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

THIS DRAWING IS NOT TO BE COPIED IN PART OR WHOLE WITHOUT WRITTEN PERMISSION FROM WARREN SMITH CONSULTING ENGINEERS.

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

50 0 50 100 150 200mm

PLAN SCALE 1:5 A1 SHEET

200 0 200 400 600 800 1000mm

PLAN SCALE 1:20 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	14/07/23			

CLIENT

Shoalhaven City Council

PROJECT

RESOURCE RECOVERY LEARNING CENTRE - WEST NOWRA

PREPARED BY

WSce Pty Ltd

ACN 468 655 141

ABN 75 668 655 141

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wsce.com.au

WSce

Driven by excellence, built on experience.

TITLE

STORMWATER DRAINAGE DETAILS-SHEET 1

SCALE	AS SHOWN	DRAWN	I.K.	DESIGNED	R.X.	CHECKED	J.G.	APPROVED	
JOB No.	7672000	DRAWING No.	C6.51	ISSUE	1				
DATE	JULY 2023	STATUS	DEVELOPMENT APPLICATION						

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SHEET SIZE: A1