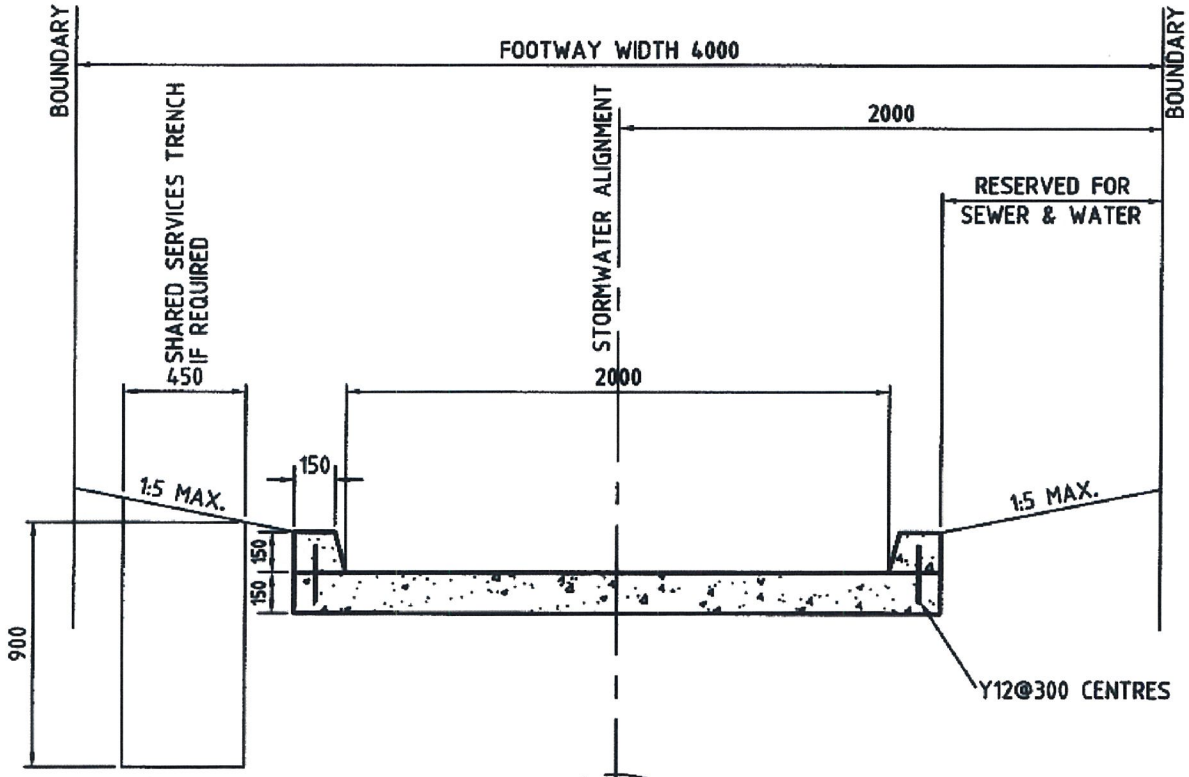
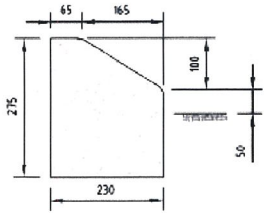


STANDARD FLOODWAY WITHIN PATHWAY ALIGNMENTS

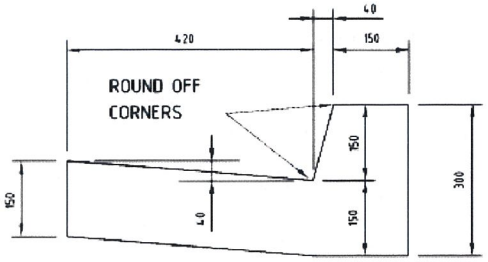
NOTES:

1. ALL DIMENSIONS IN MILLIMETRES
2. ALL CONCRETE TO BE 20MPa

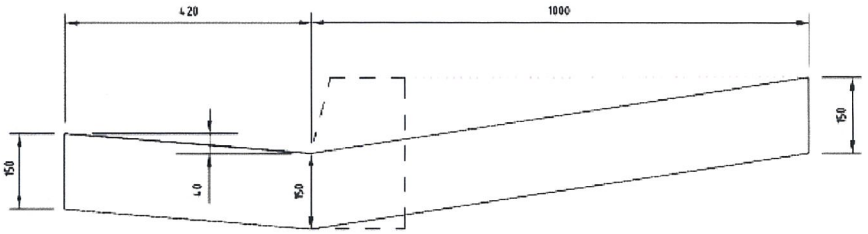
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION FLOODWAY WITHIN PATHWAY ALIGNMENTS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1005 / SHEET No / REV



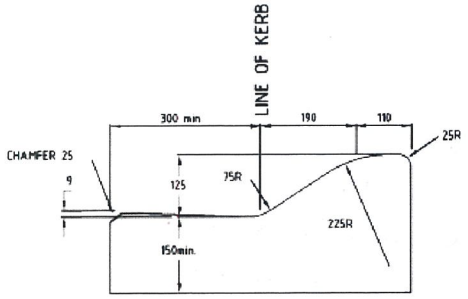
SEMI-MOUNTABLE KERB



SECTION B-B

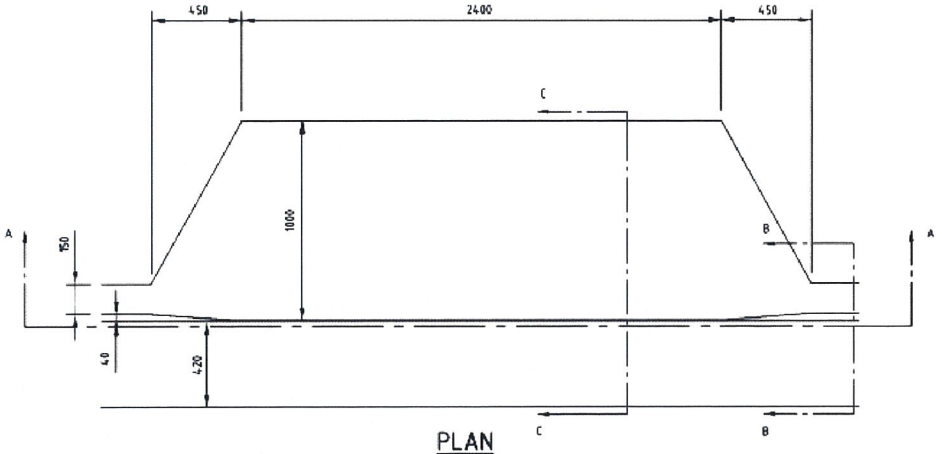


SECTION C-C

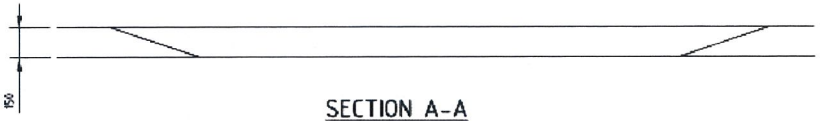


TYPICAL KERB AND GUTTER PROFILE

SEMI MOUNTABLE TYPE



PLAN



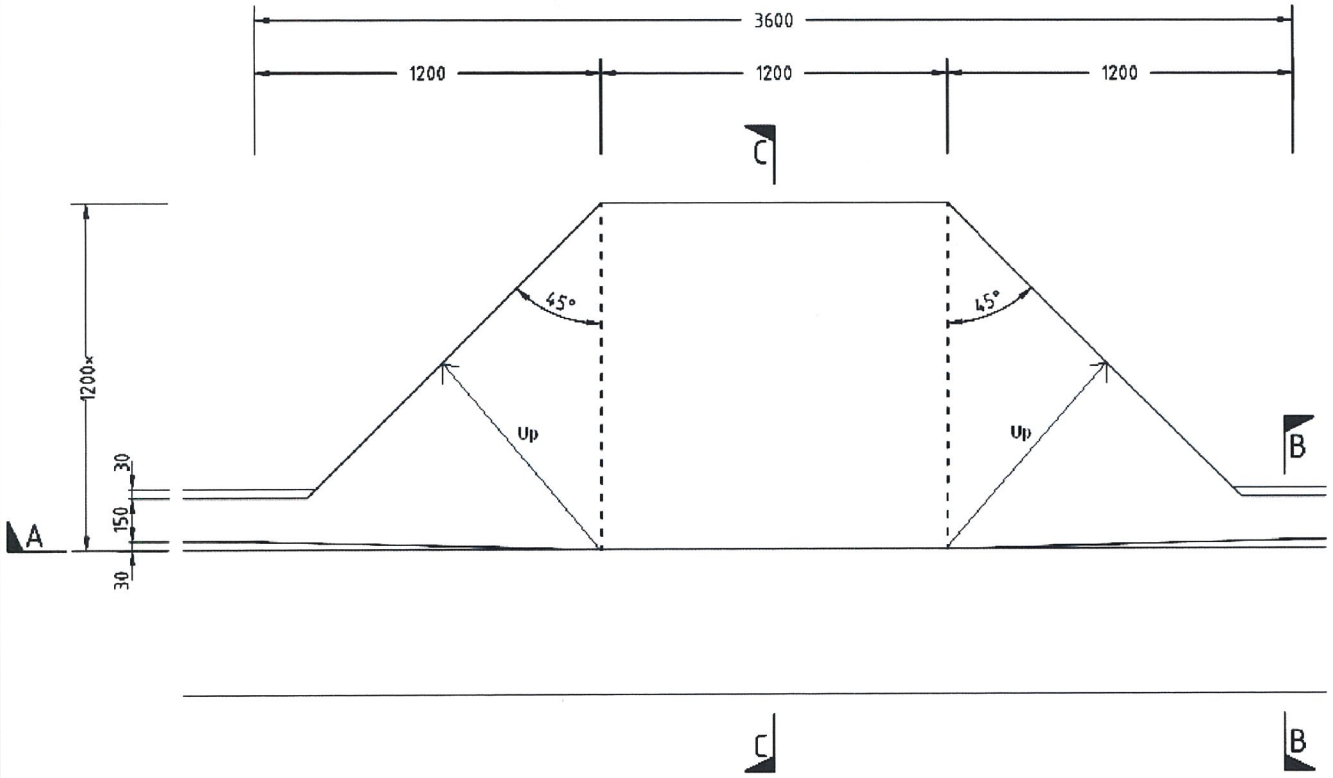
SECTION A-A

UPRIGHT KERB AND GUTTER

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES
2. ALL CONCRETE TO BE CLASS 20
3. FULL HEIGHT LAYBACK TO BE USED IN LOCATIONS WHERE DEPTH OF FLOW IS A CONCERN

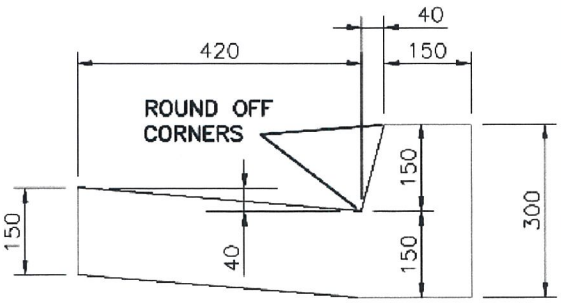
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS		
DATUM AHD		DESCRIPTION KERB AND GUTTER		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1006	SHEET No / REV



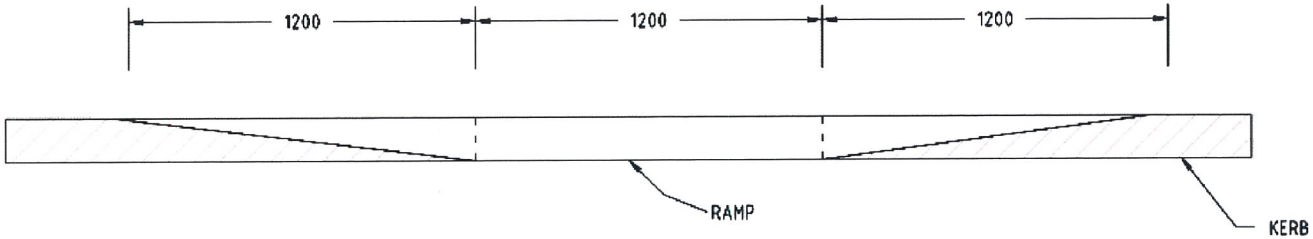
PLAN
SCALE 1 : 20

NOTES:

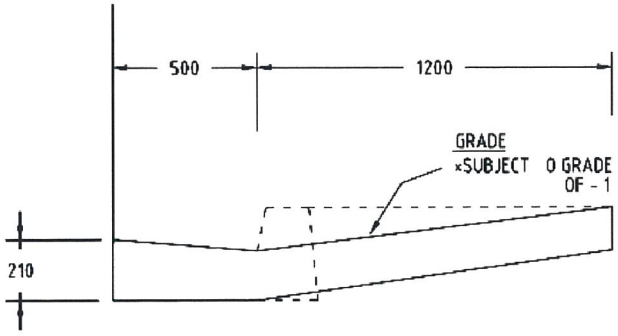
1. KERB RAMP TO COMPLY WITH AS1428.1.
2. REFER AS1428.4 FOR THE INSTALLATION OF TACTILE DEVICES WHERE FOOTPATH IS WIDER THAN 4500mm OR WHERE THE RAMPS ARE INSTALLED MID BLOCK.
3. CONCRETE TO BE 20 Mpa.
4. BROOM FINISH ON RAMP.
5. NO LIP TO BE PLACED AT GUTTER LINE



SECTION B–B

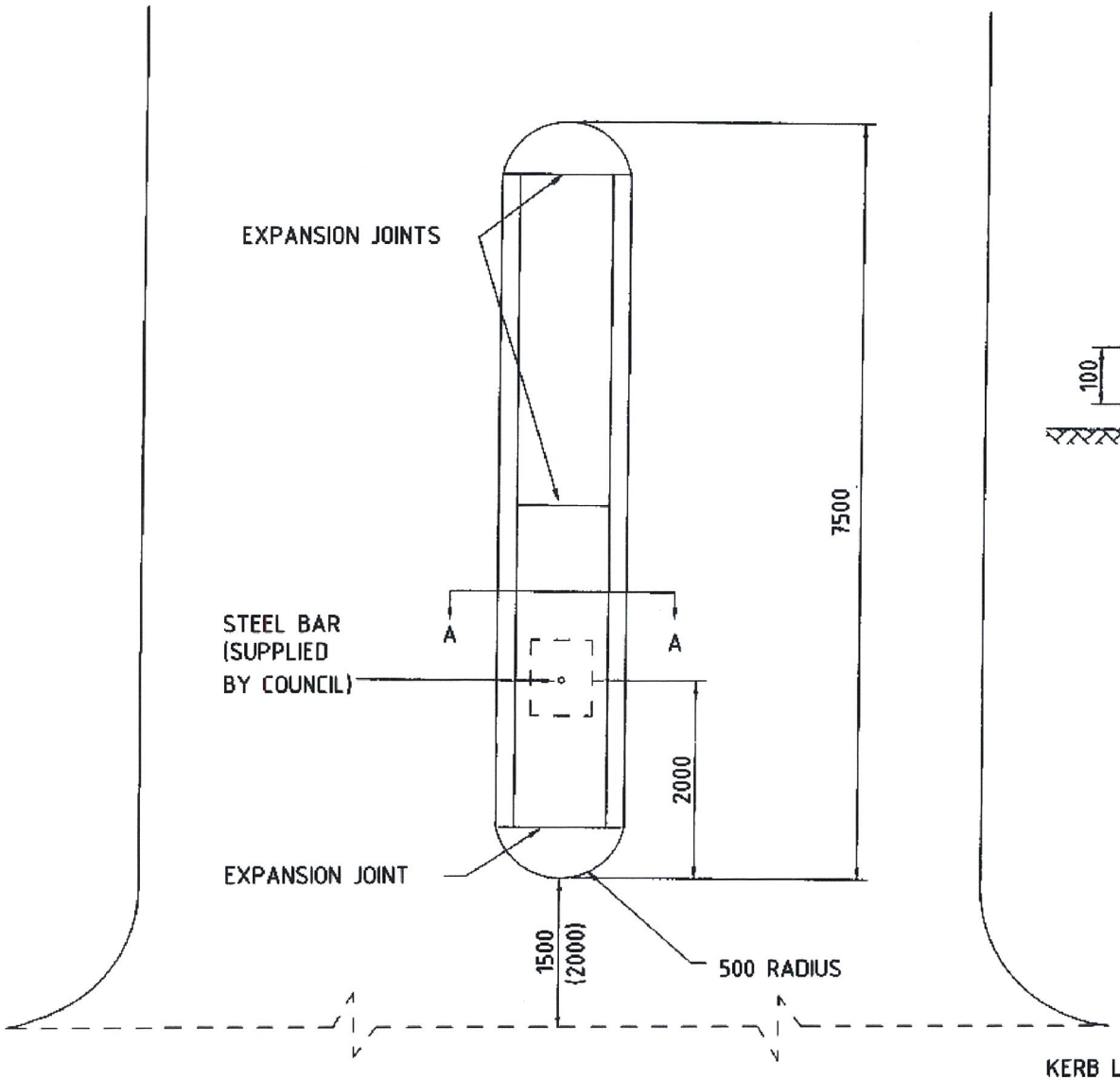


SECTION A-A



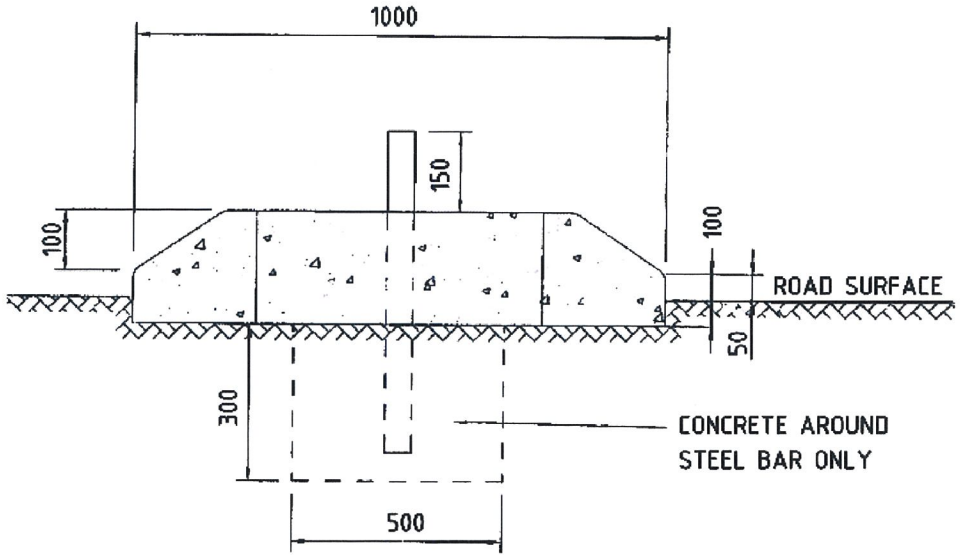
SECTION C-C

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION PERAMBULATOR CROSSING	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1007 / SHEET No / REV



PLAN VIEW

SCALE 1:50



SECTION VIEW A-A

SCALE 1:100

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES
2. ALL CONCRETE TO BE 20MPa

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS		
DATUM AHD		DESCRIPTION STREET INTERSECTION MEDIAN ISLAND		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1008	SHEET No / REV

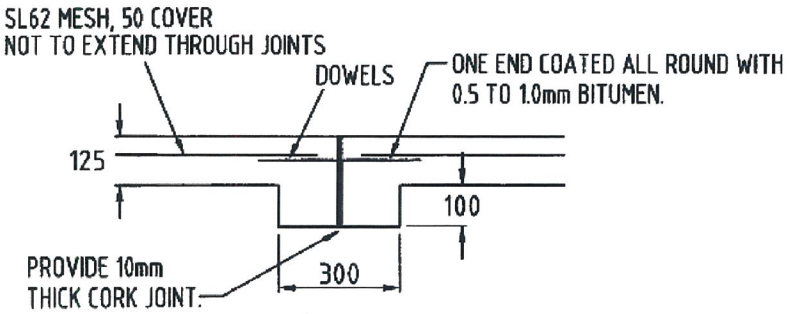
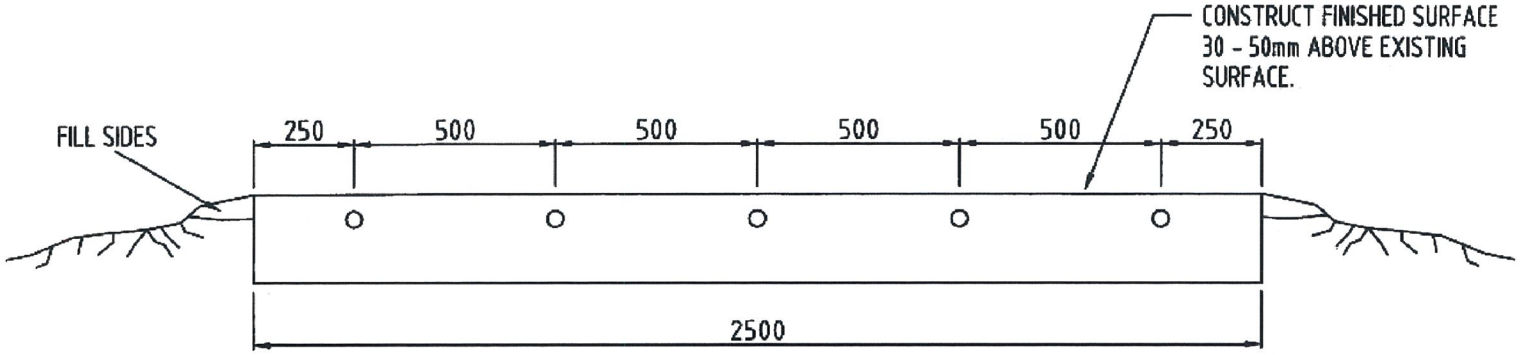


DIAGRAM A

ELEVATION

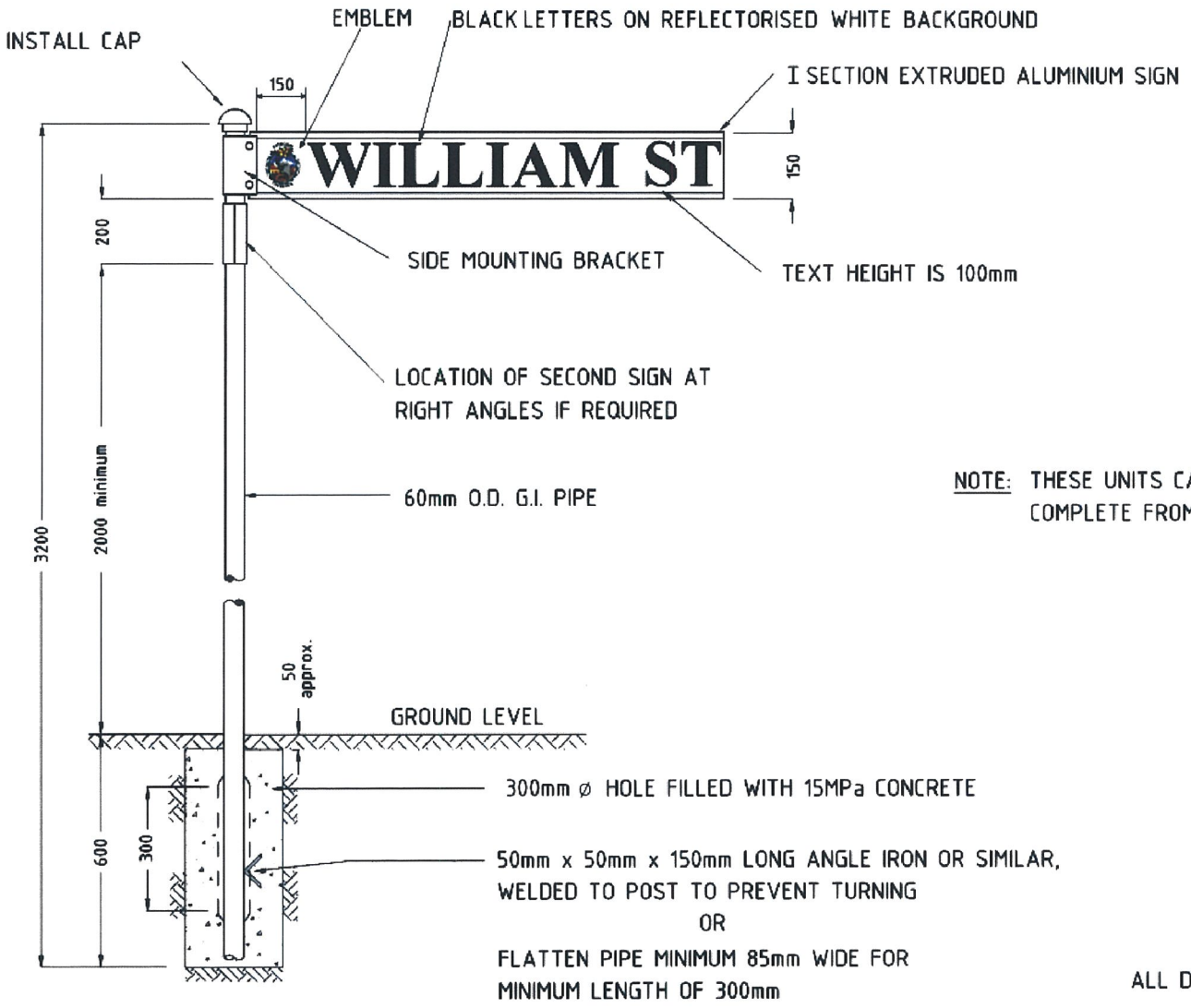


X-SECTION

NOTES:

DOWELS:	400mm LONG. R20 @ 500 c/c
CONCRETE:	20MPa AFTER 28 DAYS BROOM FINISH SURFACE
JOINTS:	ALL JOINTS ARE SMOOTH &/OR AT SAME LEVEL
REINFORCING:	SL62 MESH, 50 CLEAR COVER

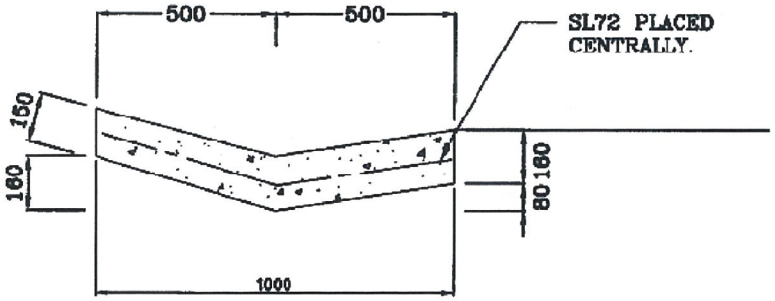
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION CONCRETE CYCLEWAY/ FOOTPATH DETAILS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1008 / SHEET No / REV



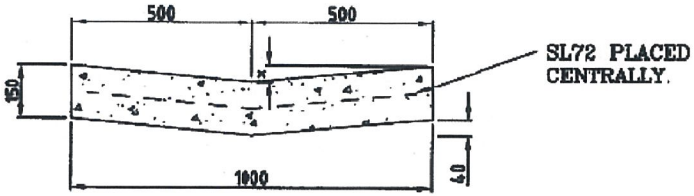
NOTE: THESE UNITS CAN BE PURCHASED COMPLETE FROM COUNCILS SUPPLIERS

ALL DIMENSIONS IN mm

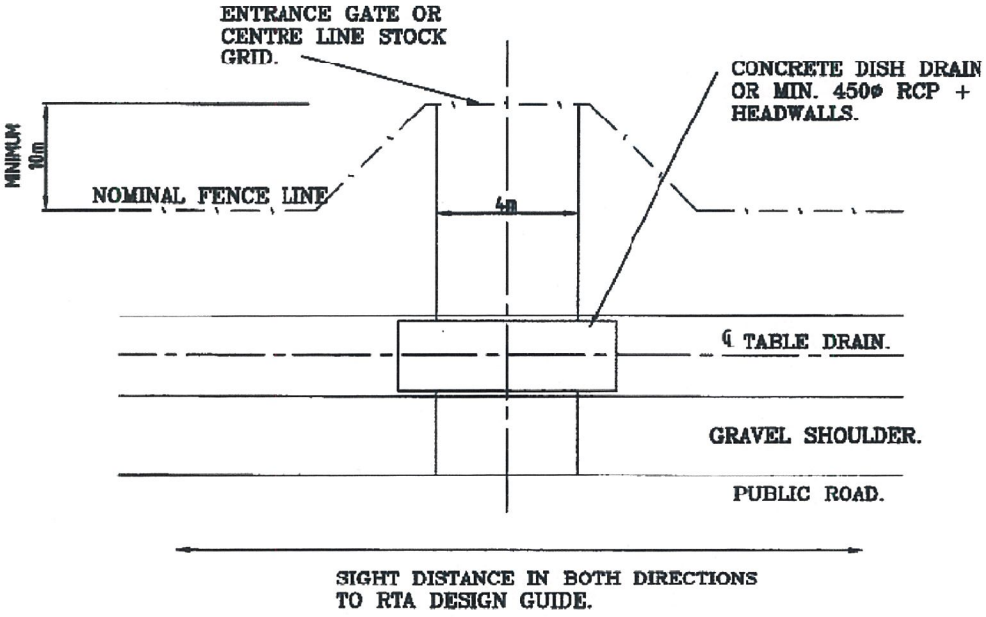
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS
DATUM AHD		DESCRIPTION STREET SIGNS
GROUP MANAGER OPERATIONS		JOB No / DWG No EN 1010 / SHEET No / REV



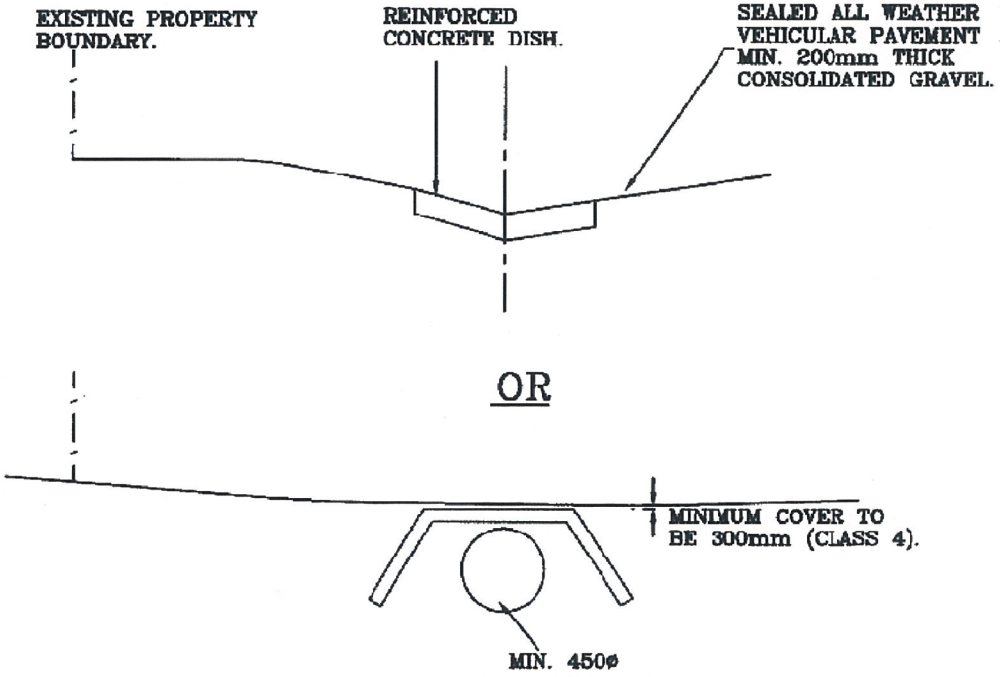
RURAL LINED TABLE DRAIN



DISH CROSSING – URBAN (* 40mm)
– RURAL (* 80mm)



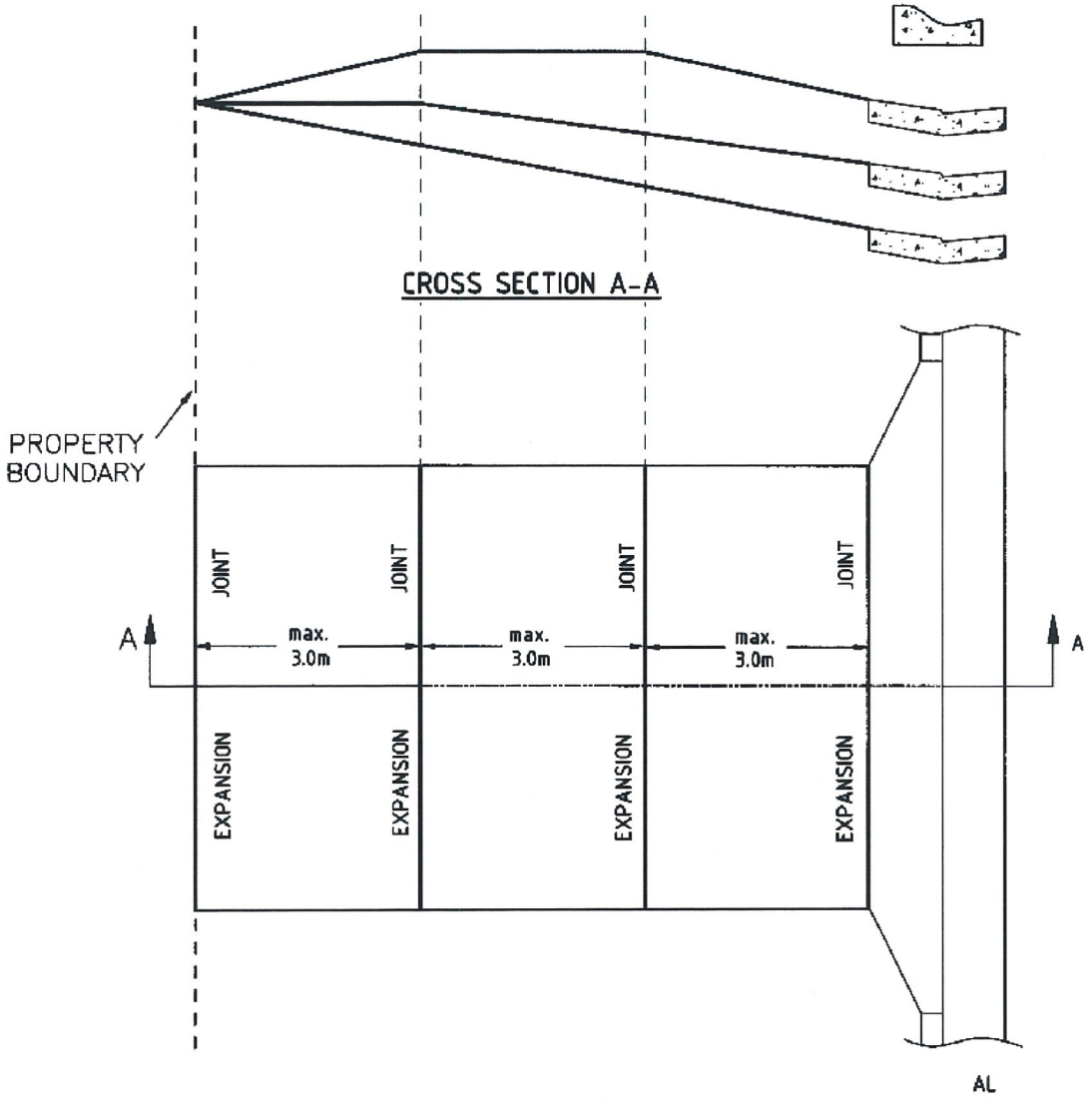
PLAN



ELEVATIONS

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS		
DATUM AHD		DESCRIPTION VEHICULAR ACCESS - RURAL AREAS		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1011	SHEET No / REV

N.B: FOOTPATH ALIGNMENT TO BE FLEXIBLE, DEPENDING ON SITE CONDITIONS



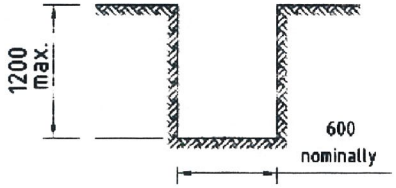
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION VEHICULAR ACCESS - URBAN AREAS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1012 / SHEET No / REV

NOTE: GUIDELINE ONLY

WHERE ANY BENCHING TO TAKE PLACE, WORK COVER SPECIFICATIONS TO BE CONSULTED PRIOR TO COMMENCEMENT OF ANY WORK

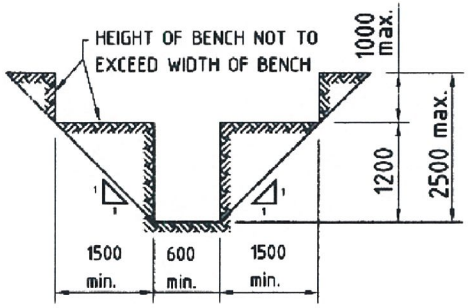
1. TRENCH DEPTH UP TO 1200mm

SHIELD NOT NORMALLY REQUIRED UNLESS GROUND UNSTABLE



2. TRENCH DEPTH 1200mm TO 2500mm

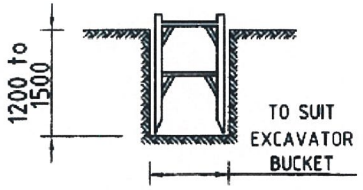
STABLE GROUND (EG GRANITE) BENCH BOTH SIDES OF TRENCH. UP TO A DEPTH OF 1000mm. (SEE NOTE.) THE DEEPER THE TRENCH THE WIDER THE BENCH.

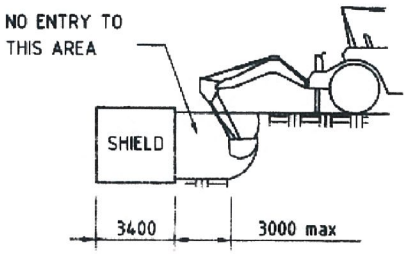


3. TRENCH DEPTH 2200mm TO 2500mm AND 1200mm TO 2500mm UNSTABLE GROUND

UNSTABLE GROUND (EG CLAY) OR TRENCHES 2200-2500mm DEEP, TRENCH SHIELD TO BE USED.

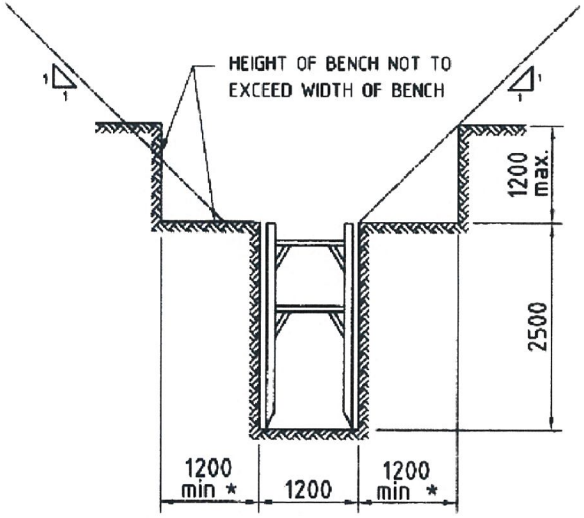
NOTE:- WIDTH CAN BE REDUCED TO 1m (MINIMUM SIZE), AN ORDINARY BACKHOE USED FOR EXCAVATION AND THE SHIELD INSTALLED AND MOVED WITH A CRANE.





4. TRENCH DEPTH 2500mm - 3700mm

COMBINATION OF TRENCH SHIELD AND BENCHING TO BE USED AS SHOWN

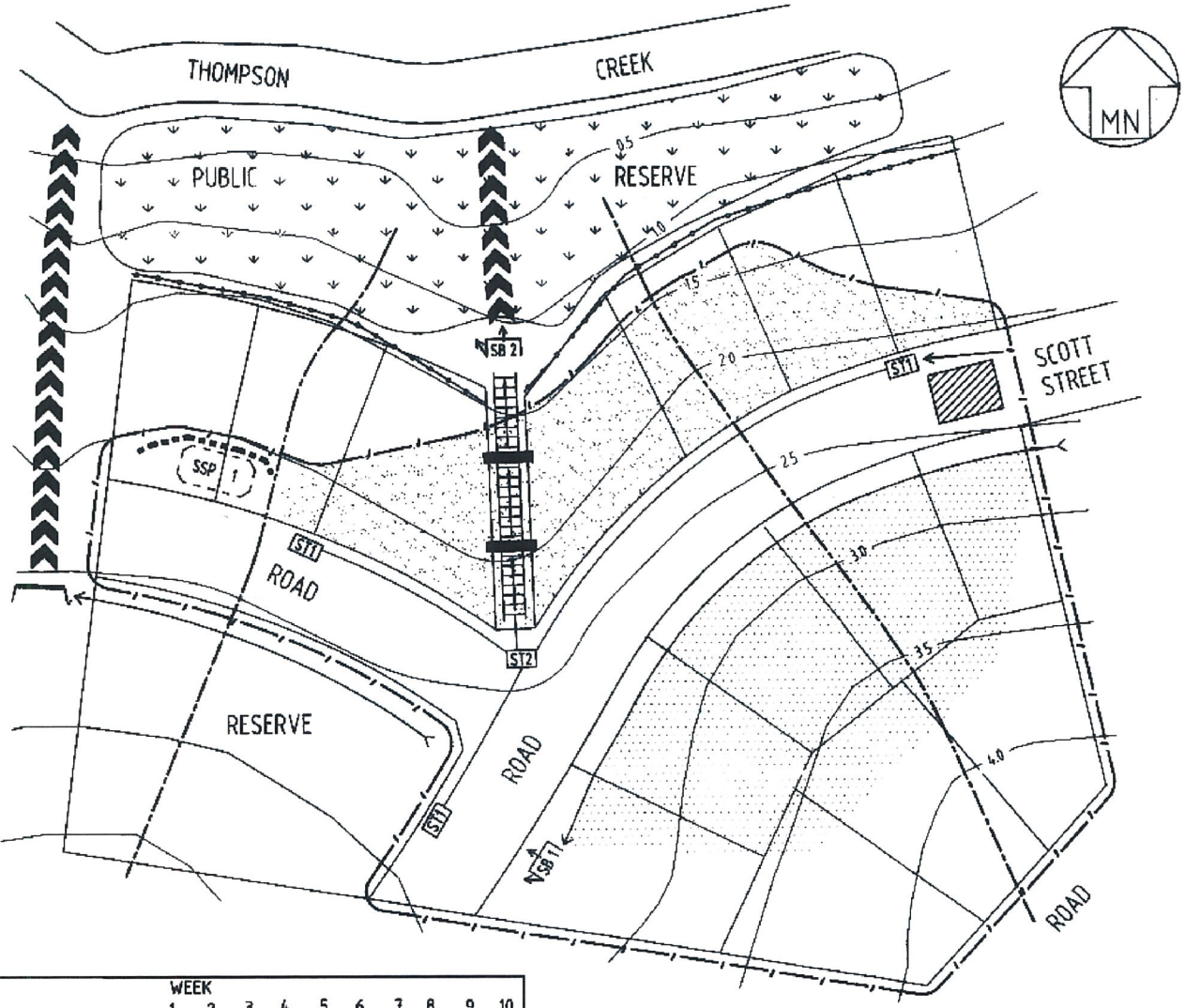


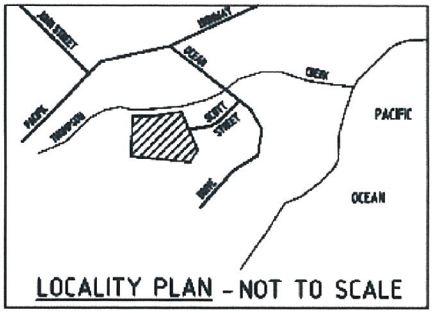
* TO SUIT EXCAVATOR BUCKET.

5. TRENCH DEPTH GREATER THAN 3700mm

ADDITIONAL SHIELDING MAY BE HIRED, OR INCREASED BENCHING AUTHORISED BY WORKCOVER SPECIFICATIONS, DEPENDING ON THE GROUND CONDITIONS.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION TRENCH SHIELDING REQUIREMENTS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1013 / SHEET No / REV





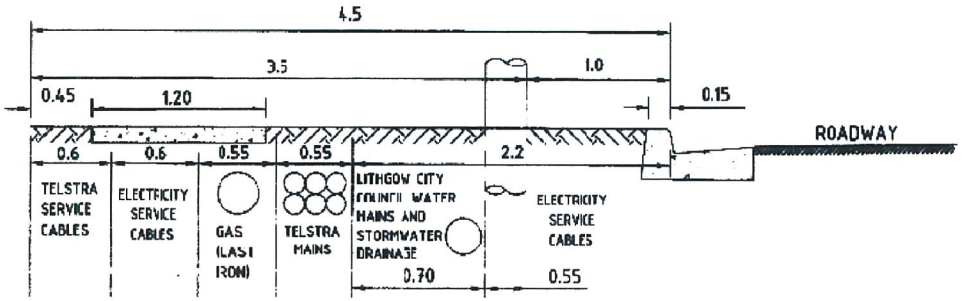
LOCALITY PLAN - NOT TO SCALE

LEGEND

- PERIMETER BANK
- DIVERSION BANK
- LEVEL SPREADER
- WATERWAY - NATURAL GRASSED
- WATERWAY - CONSTRUCTED GRASS
- WATERWAY - CONSTRUCTED GRASS WITH CHECK DAM
- SEDIMENT BASIN (SB1)
- SEDIMENT TRAP (ST1)
- SEDIMENT FENCE
- STRAW BALE SEDIMENT FILTER
- CATCHMENT BOUNDARY
- VEGETATIVE FILTER STRIP
- CUT AREA
- FILL AREA
- SOIL STOCK PILE (SSP 1)
- TEMPORARY CONSTRUCTION EXIT
- LIMIT OF CLEARING AND GRADING

ACTIVITY SCHEDULE	WEEK 1	2	3	4	5	6	7	8	9	10
SEDIMENT BASIN	—									
TEMPORARY CONSTRUCTION EXIT	-									
DIVERSION BANK	—									
SEDIMENT FENCE	—									
TOPSOIL STOCKPILING	—	—								
DRAINAGE WORKS		—	—	—	—	—	—			
CUT AND FILL EARTHWORKS		—	—	—	—	—	—			
CHECK DAMS			—	—						
ROAD CONSTRUCTION					—	—	—	—	—	—
REVEGETATION		—			—			—	—	—
MAINTENANCE OF WORK	- →									

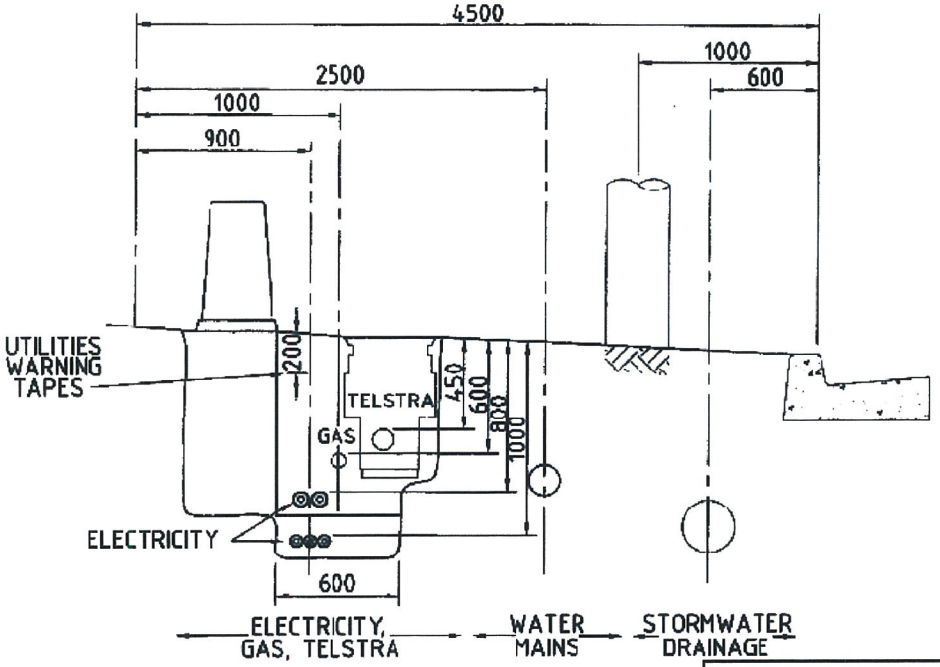
DATE 2010	LITHGOW CITY COUNCIL	PROJECT SAMPLE EROSION AND SEDIMENT CONTROL PLAN	
DATUM AHD		DESCRIPTION	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1014 / SHEET No / REV



4.5 METRE FOOTPATH

NOTE

* THIS ALLOCATION IS ONLY AVAILABLE
WHEN a) APPROVED BY COUNCIL
b) THE PROPOSED CABLES DO NOT CONFLICT WITH ANY EXISTING OR PROPOSED COUNCIL UTILITIES

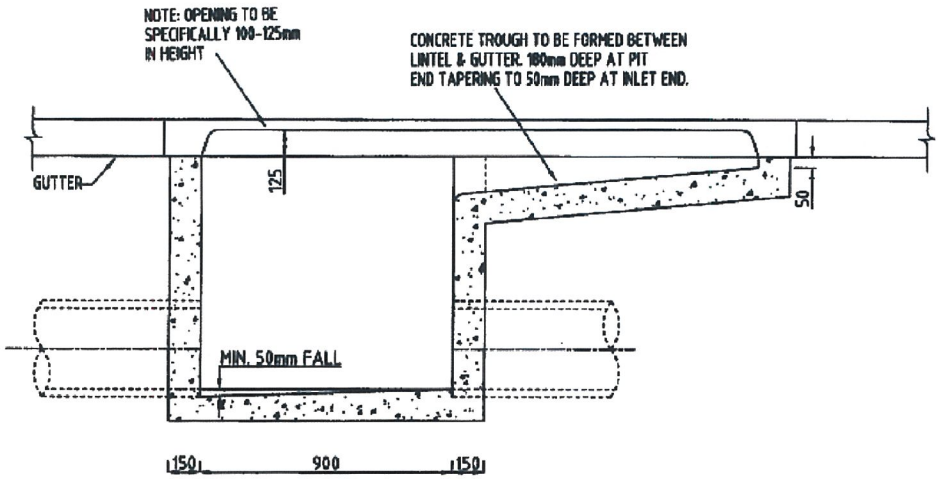


HEIGHT OF TOP OF MANHOLE COVERS, LIDS, VALVE COVERS ETC. ABOVE TOP OF KERB.				
PUBLIC UTILITY	WIDTH OF FOOTPATH			
	3.75m	4.5m	6.0m	7.5m
FENCE LINE LEVEL	0.150m	0.180m	0.240m	.300m
TELSTRA JOINT PITS (SERVICE CABLES)	0.138m	0.168m	0.228m	0.288m
ELECTRICITY CABLES	0.114m	0.144m	0.204m	0.264m
GAS SIPHON COVERS	0.091m	0.121m	0.181m	0.241m
TELSTRA MANHOLES (MAINS)	0.069m	0.099m	0.159m	0.219m
FOOTPATH LEVEL AT POWER POLES	0.016m	0.046m	0.106m	0.166m
REAR EDGE OF DRAINAGE PIT COVERS (1.09M BEHIND FACE OF KERB)	0.044m	0.044m	0.044m	0.044m

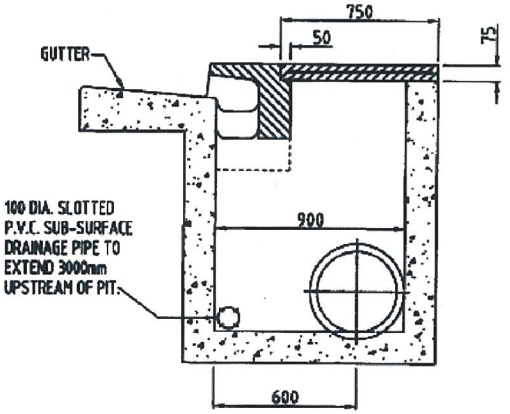
NOTES

1. MAY INCREASE DISTANCE TO 1.2m OR 1.8m IF NECESSARY TO CLEAR POWER POLES.
2. PIPES OF DIAMETER 750mm OR LARGER SHOULD BE LOCATED IN THE CENTRE OF THE CARRIAGEWAY OR MEDIAN STRIP

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION FOOTPATH ALLOCATIONS FOR PUBLIC UTILITY SERVICES	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1015 / SHEET No / REV



SECTION Z-Z

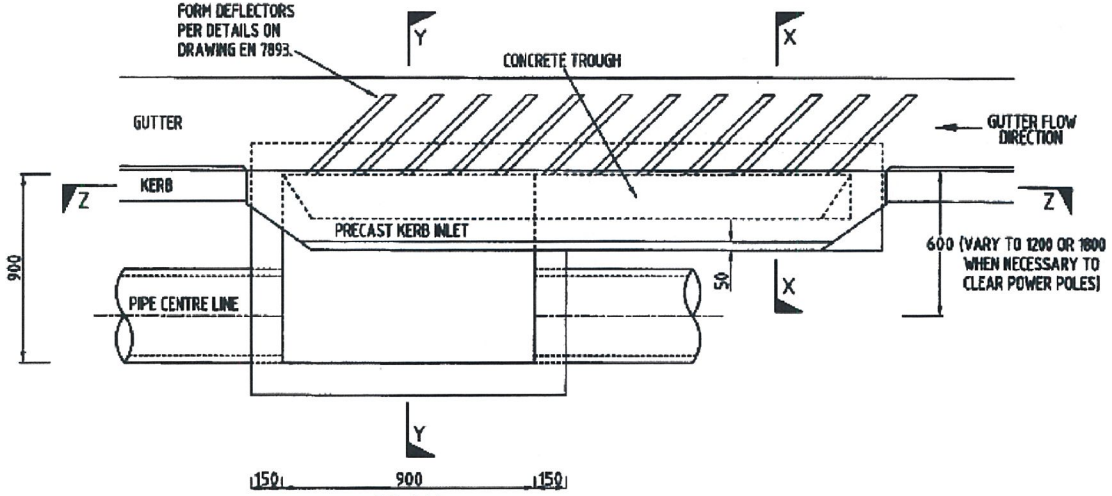


SECTION Y-Y

PIT COVERS

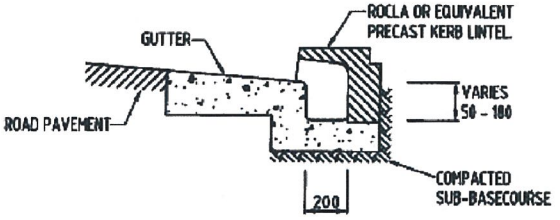
1. STANDARD SLABS ARE TO BE 700mm x 750mm x 75mm.
2. ARROW ON SLAB SHOWS DIRECTION OF KERB INLET.
3. SLABS ARE DESIGNED TO SPAN IN EITHER DIRECTION.
4. SLABS TO BE USED AS PER TABLE BELOW.
5. F718 REINFORCEMENT PLACED CENTRALLY IN SLAB.
6. 750mm WIDTH SLABS FOR 1800, 2500 & 3000 KERB INLETS.
7. PROVIDE AN APPROVED LIFTING EYE IN EACH SLAB.

NOM. SIZE OF KERB INLET	L	No. SLABS USED
1800	1850	3 @ 700mm
2500	2500	4 @ 700mm
3000	3050	5 @ 700mm



PLAN

(WITH COVER SLABS REMOVED)

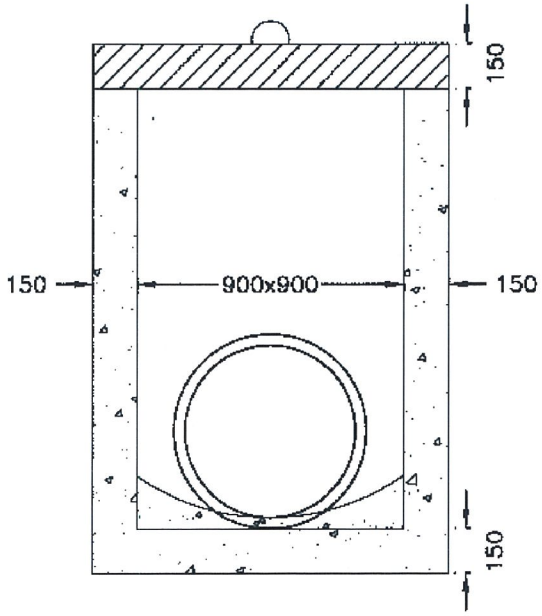


SECTION X-X

NOTES:

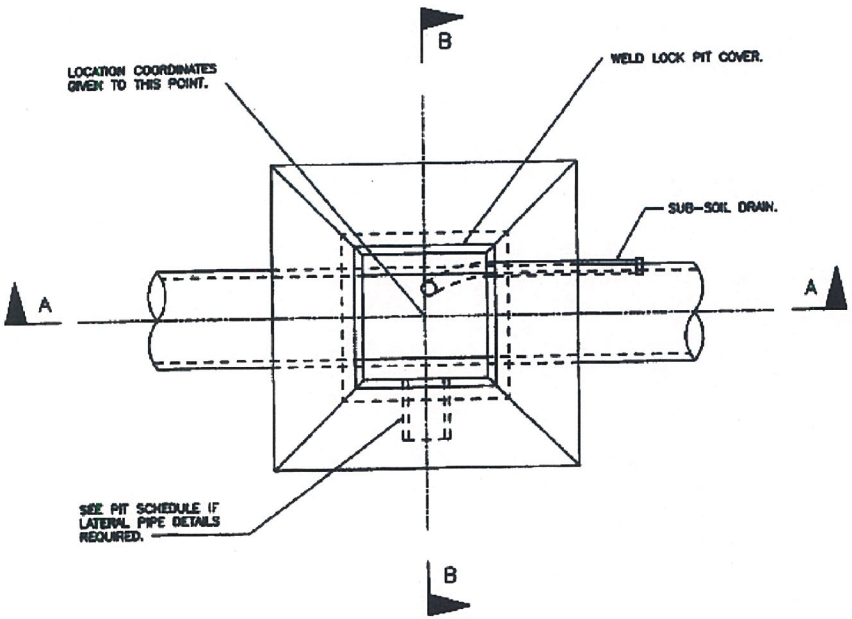
1. ALL MEASURMENTS IN MILLIMETRES
2. CONCRETE TO BE 20MPa
3. REINFORCE SIDE WALLS WITH F72 MESH WHEN DEPTH IS GREATER THAN 1500mm
4. LOCATE STORM WATER PIPES OF DIAMETER GREATER THAN 900mm IN CENTRE OF CARRIAGEWAY OR MEDIAN STRIPS

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION DRAINAGE PITS FOR USE WITH PRECAST KERB INLETS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1016 / SHEET No / REV

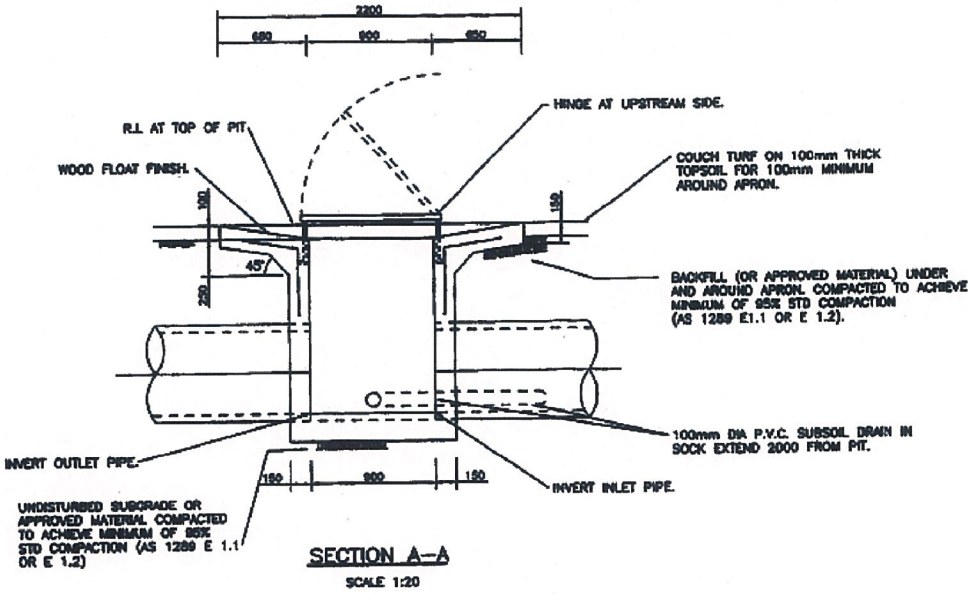


STANDARD JUNCTION PITS

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS		
DATUM AHD		DESCRIPTION JUNCTION PITS AND CATCH DRAINS		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1017	SHEET No / REV



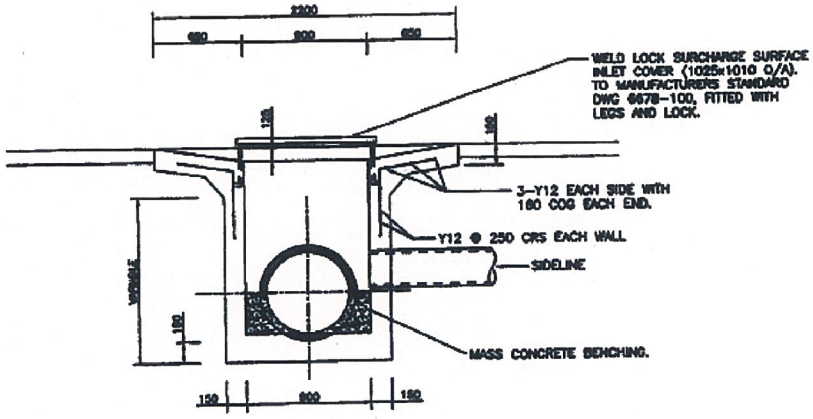
PLAN
SCALE 1:20



SECTION A–A
SCALE 1:20

PIT No.	PIPE CHAINAGE	CENTRE COORDINATES E.	CENTRE COORDINATES N.	OUTLET PIPE DIA.	OUTLET PIPE I.L.	INLET PIPE DIA.	INLET PIPE I.L.	DEFLECTION ANGLE θ

NOTE: θ TO BE READ CLOCKWISE FROM THE OUTLET PIPE CENTRE LINE ABOUT THE PIT CENTRE.

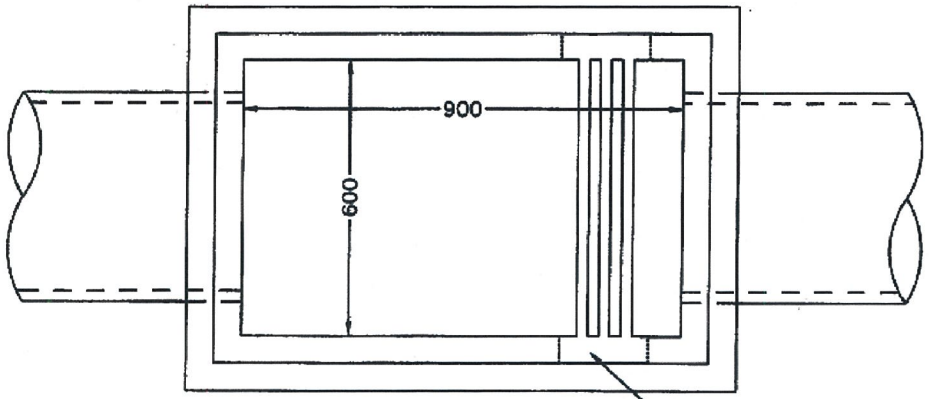


SECTION B–B
SCALE 1:20

NOTES:

1. CONCRETE TO HAVE A MINIMUM CRUSHING STRENGTH OF 20MPa AFTER 28 DAYS A.S 3600
2. PROVIDE CORROSION RESISTANT STEP IRONS SPACED AT 300mm CENTRES FOR PITS DEEPER THAN 1.2m
3. ALL SURFACE INLETPITS/SURCHARGE PITS TO BE APPROVED WITH LOCKING CLIP
4. PITS GREATER THAN 1.8m DEEP TO HAVE WALLS AND BASE 200mm THICK, REINFORCEMENT TO BE F18 OR Y12 AT 200mm CENTRES
5. Y12 BARS TO HAVE 300mm MINIMUM LAP AT ALL JOINS (INCLUDING CORNERS)

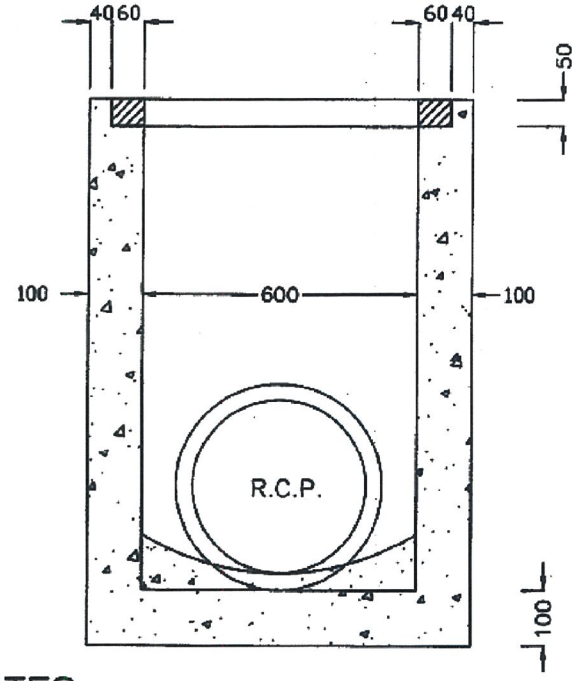
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS		
DATUM AHD		DESCRIPTION SURFACE INLET / SURCHARGE PIT		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1018	SHEET No / REV



PLAN

NOT TO SCALE

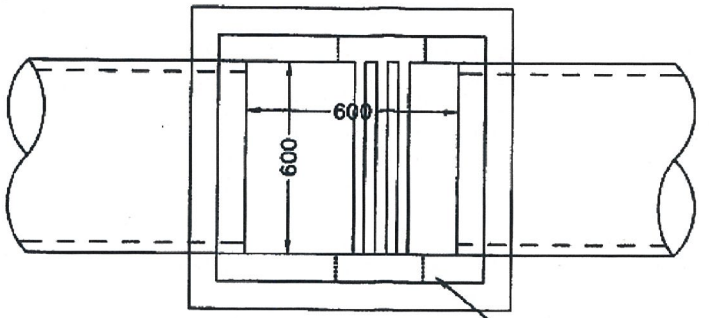
PROVIDE STANDARD GRATE (HOT DIPPED GALVANISED WELDLOCK OR SIMILAR STANDARD. TO BE LOCKED DOWN)



SECTION

NOT TO SCALE

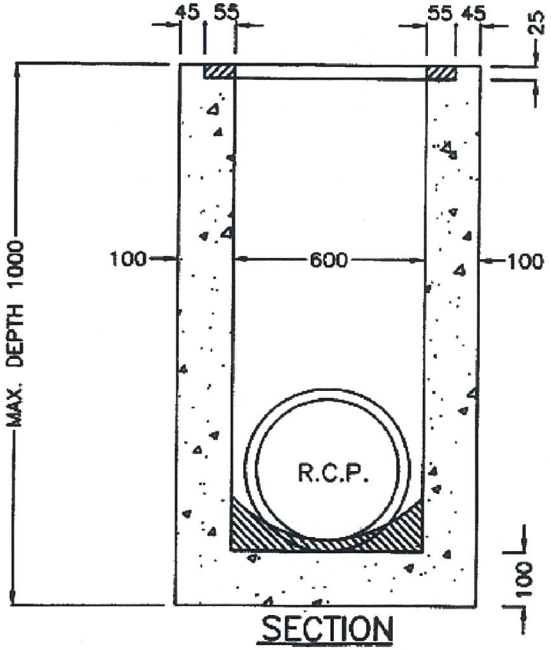
FIELD INLET PITS



PLAN

NOT TO SCALE

PROVIDE STANDARD GRATE



SECTION

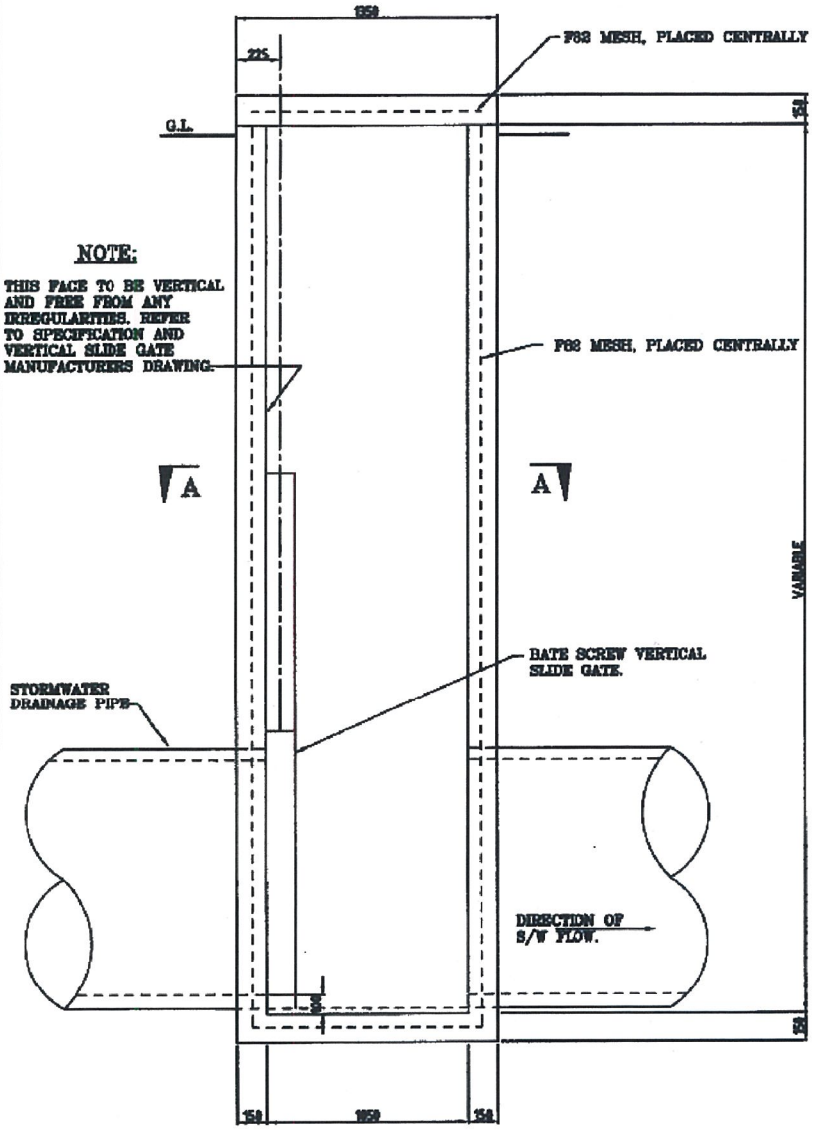
NOT TO SCALE

INTERALLOTMENT PITS

NOTES

1. REVISE BASED ON 600x600 PITS AS USED IN SUBDIVISIONS.
2. PIPES MAY BE U.P.V.C, F.R.C, OR R.C.
3. MINIMUM PIPEø 150mm TO SERVE ONE RESIDENTIAL DWELLING.
4. LOCATE GENERALLY 1m FROM SIDE AND REAR OF PROPERTY BOUNDARIES.
5. THESE PIT DIMENSIONS ARE MINIMUM ONLY. LARGER PITS ARE TO BE USED WHERE HYDRAULIC CONDITIONS DICTATE.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION FIELD INLETS / INTERALLOTMENT PITS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1019 / SHEET No / REV

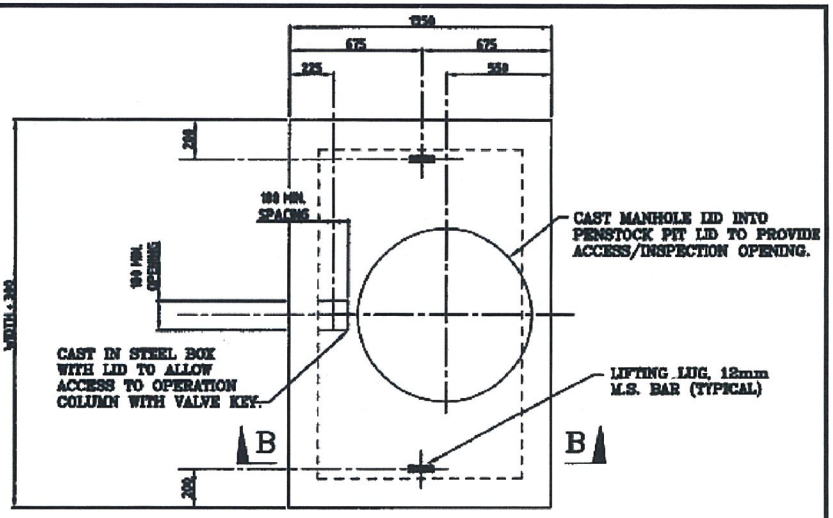


SECTION B–B

SCALE 1:20

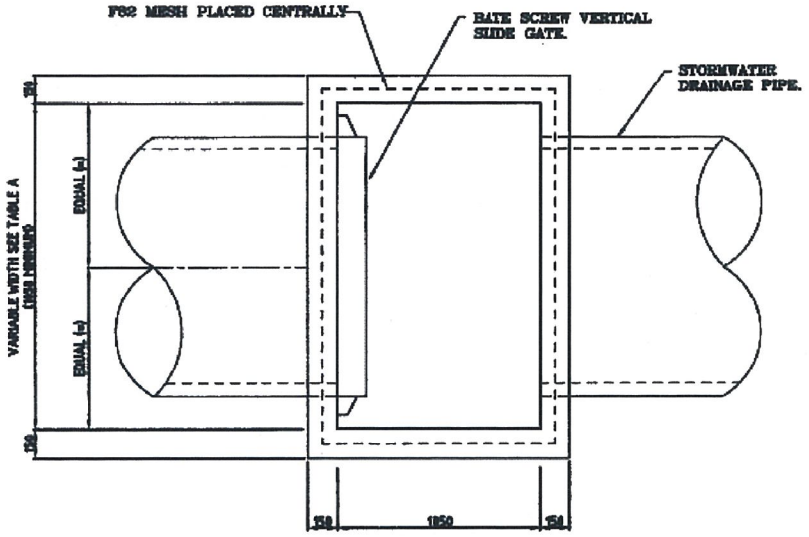
TABLE A

DIAMETER OF STORMWATER PIPE	WIDTH OF PIT
UP TO 600	1050
675	1120
750	1190
900	1370
1050	1550
1200	1700
1500	2050



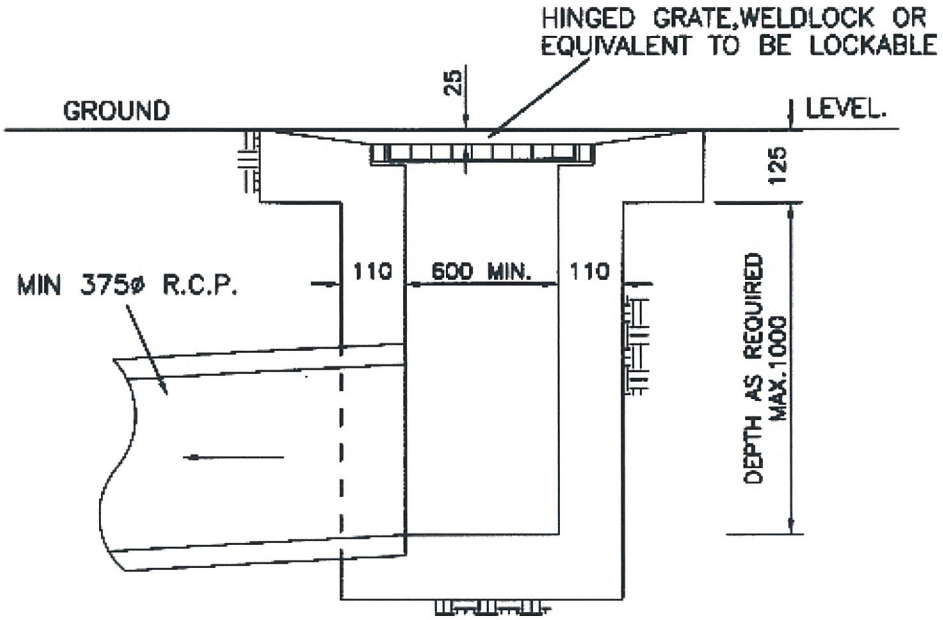
PLAN OF PENSTOCK (LID)

SCALE 1:20

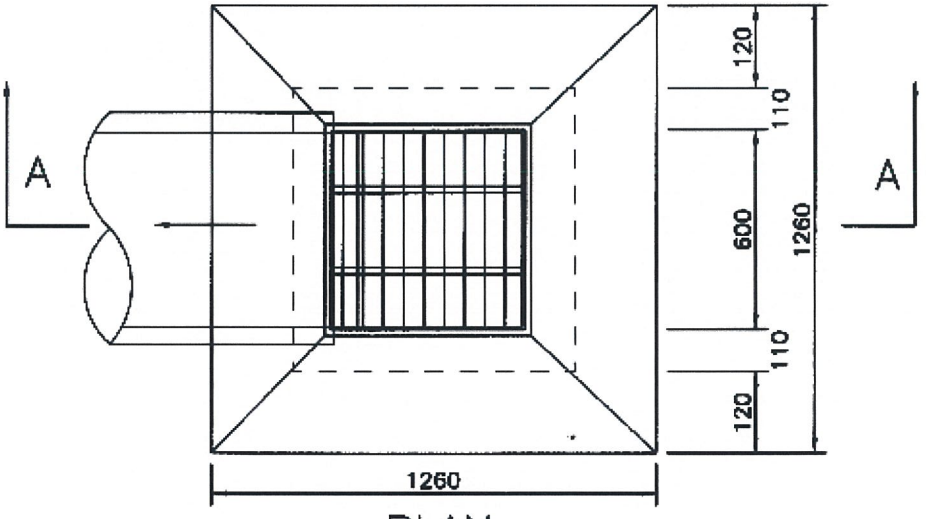


SECTION A–A

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	SCALE 1:20
DATUM AHD		DESCRIPTION PENSTOCK PIT	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1020 / SHEET No / REV



SECTION A–A



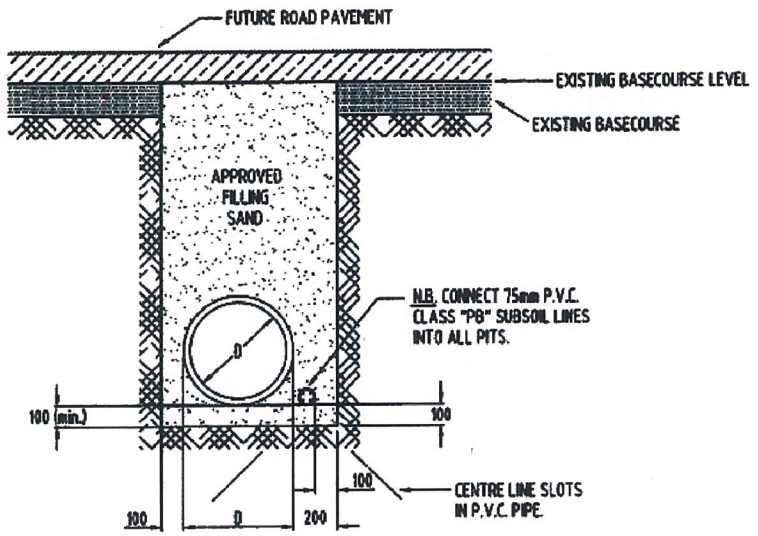
PLAN

NOTE:

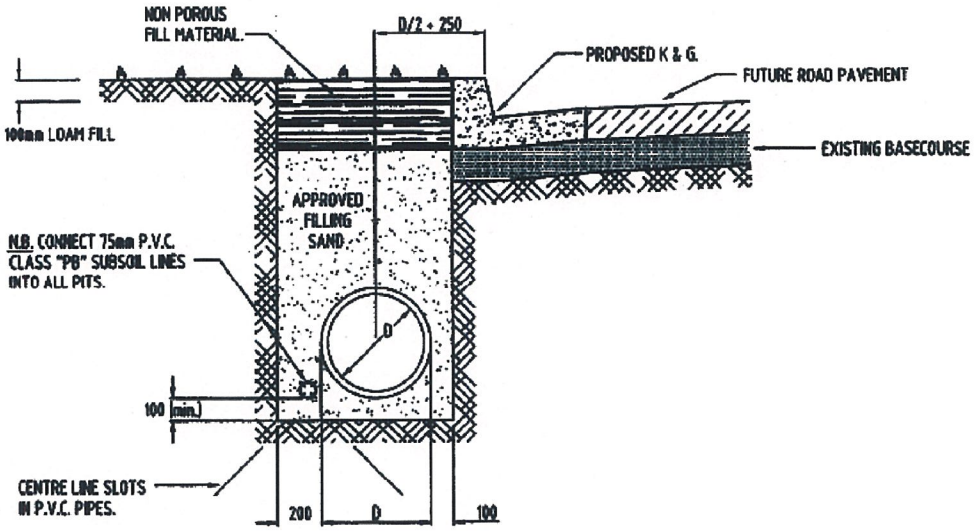
1. CONCRETE TO BE 20MPa

DATE: 2010	LITHGOW CITY COUNCIL	PROJECT: STANDARD DETAILS		
DATUM: AHD		DESCRIPTION: FOOTPATH SURFACE INLET PIT WITH GRATE		
APPROVED BY:		JOB No	DWG No EN1021	SHEET No / REV

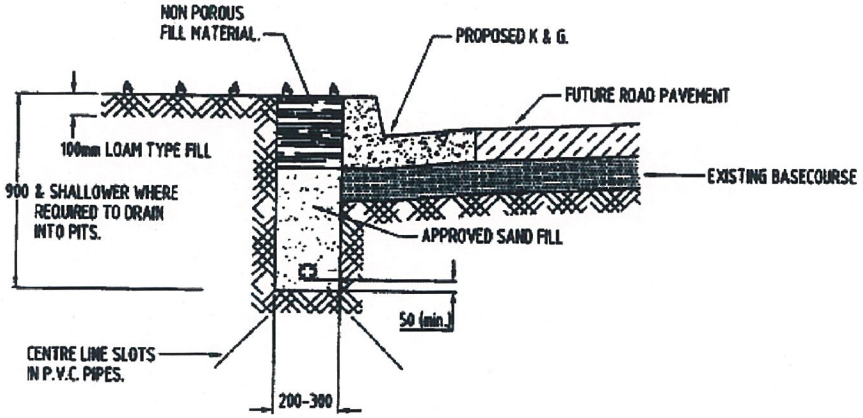
CASE No.1. PIPES IN ROADWAY.



CASE No.2. PIPES IN FOOTPATHS.



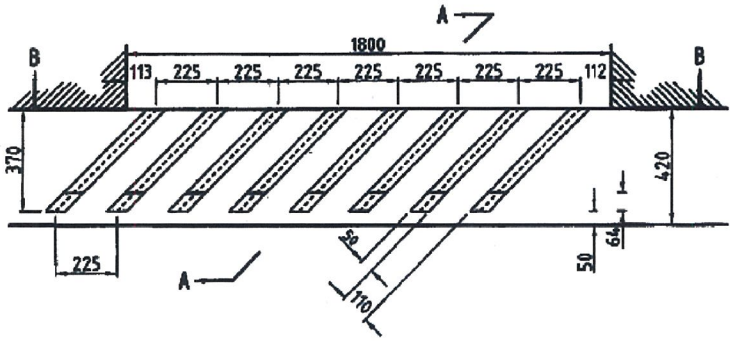
CASE No.3. SUBSOIL LINES IN FOOTPATHS.



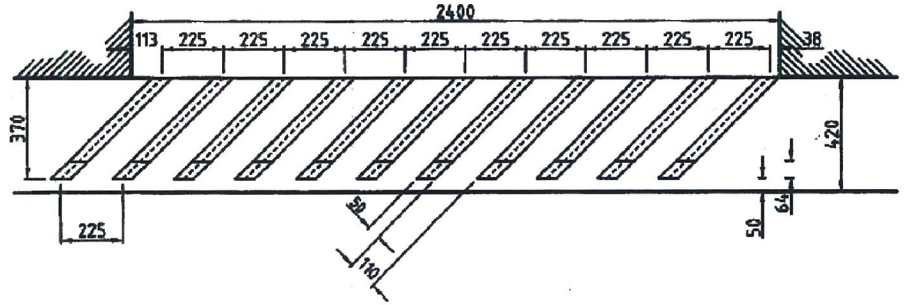
NOTES:

1. COMPACT TRENCHES IN LAYERS NOT MORE THAN 250mm THICK TO A MINIMUM 95% OF THE STANDARD DRY DENSITY OF THE MATERIAL (100% COMPACTION UNDER ROADWAYS)
2. ALL MEASUREMENTS ARE IN MILLIMETRES
3. USE COMPACTED 27:1 (SAND:CEMENT) BACKFILL AS APPROVED SAND FILLING WHEN CROSSING EXISTING ROADS
4. MINIMUM TRENCH WIDTH TO BE 800mm

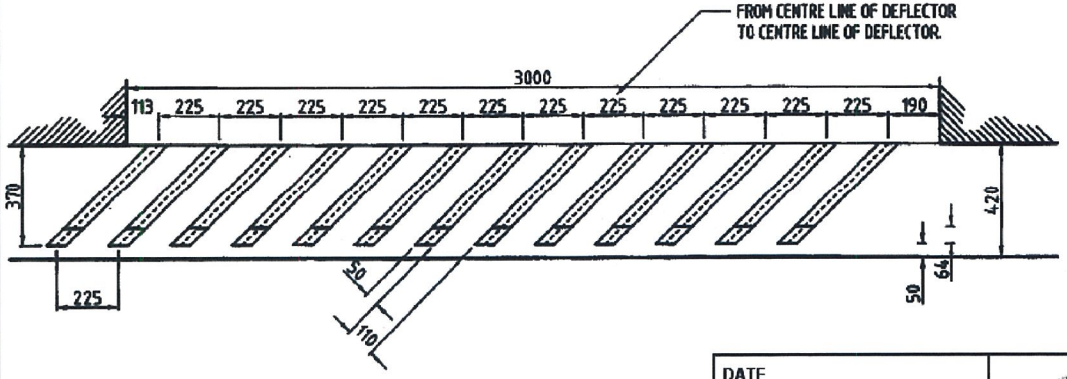
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION STORMWATER DRAINAGE PIPE BEDDING DETAILS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1022 / SHEET No / REV



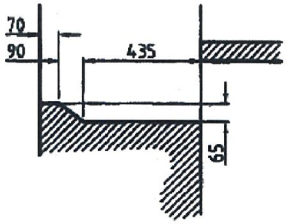
PLAN No.1 - 1800mm INLET
(8 DEFLECTORS)



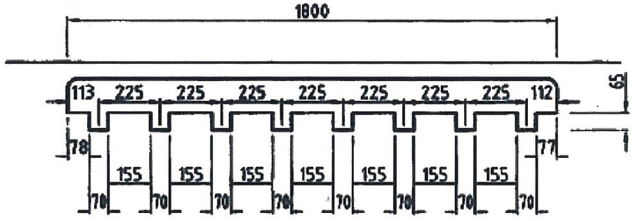
PLAN No.2 - 2400mm INLET
(11 DEFLECTORS)



PLAN No.3 - 3000mm INLET
(13 DEFLECTORS)

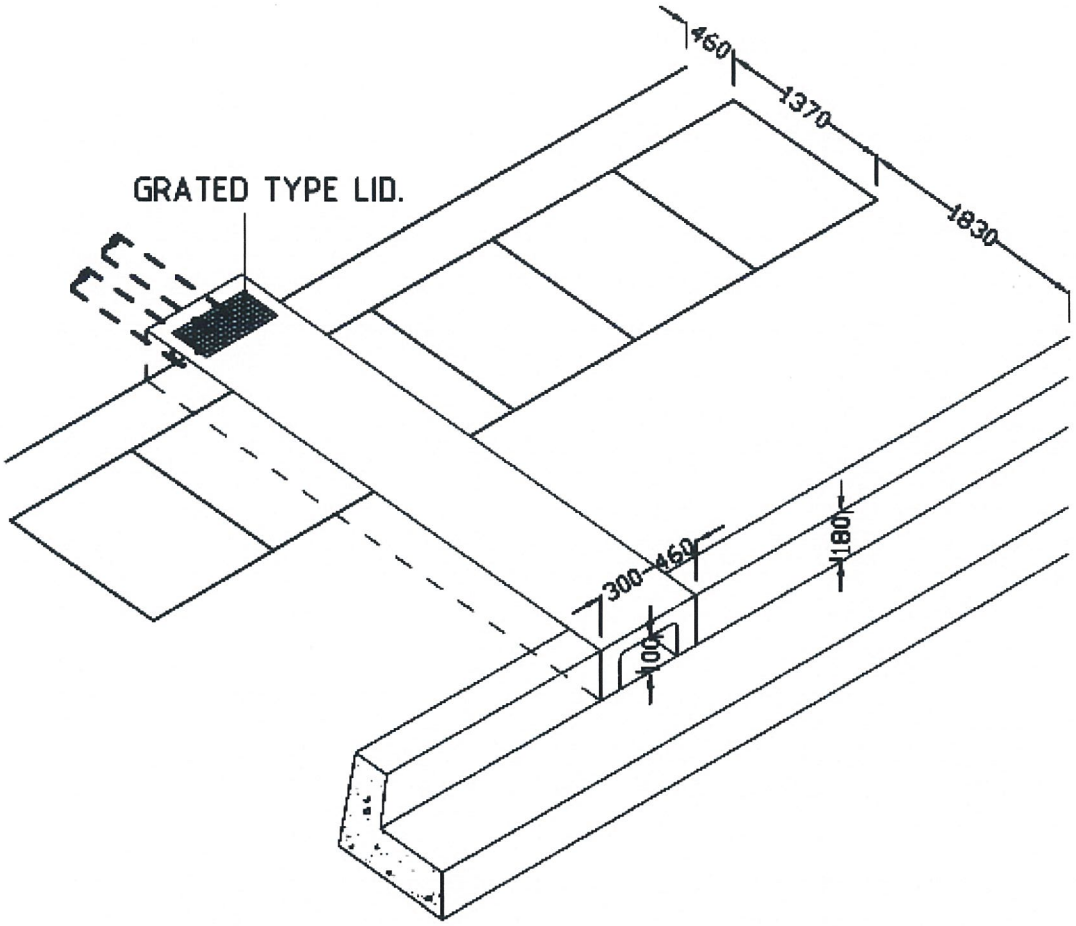


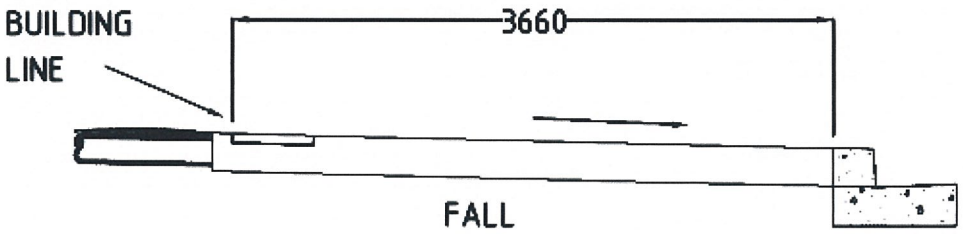
SECTION A-A
(APPLIES TO PLAN 1-3)



SECTION B-B
(APPLIES TO PLAN No.1)

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION DEFLECTOR INLET DESIGN	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1023 / SHEET No / REV



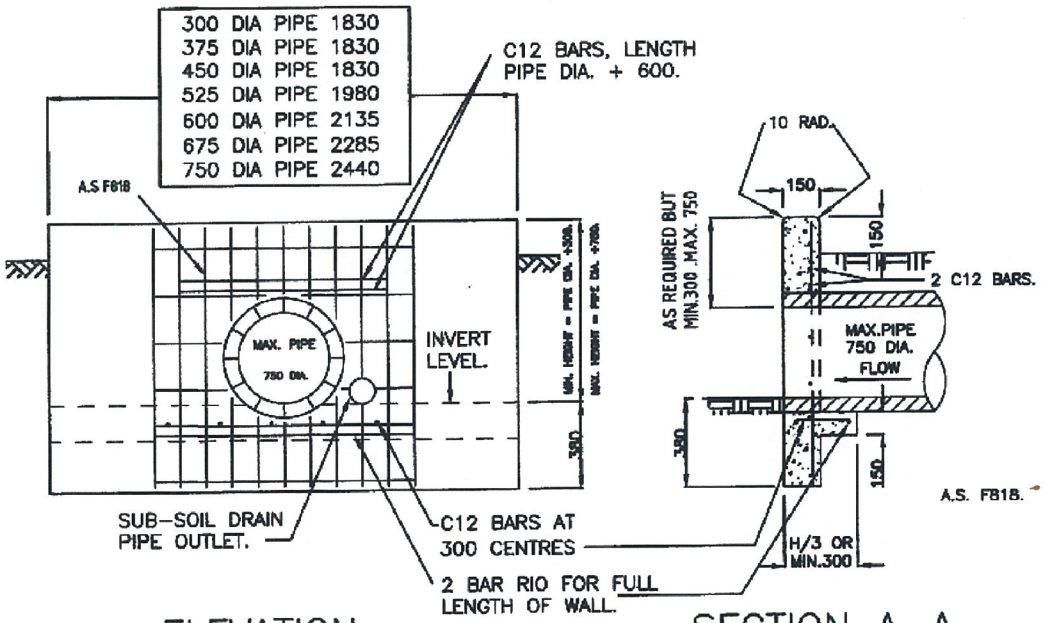


DATE: 2010	LITHGOW CITY COUNCIL	PROJECT: STANDARD DETAILS		
DATUM: AHD		DESCRIPTION: FOOTPATH CONVERTER FOR HOUSE STORMWATER LINE		
APPROVED BY:		JOB No	DWG No EN 1024	SHEET No / REV

STRAIGHT CONCRETE HEADWALL

300–750 DIA. PIPES

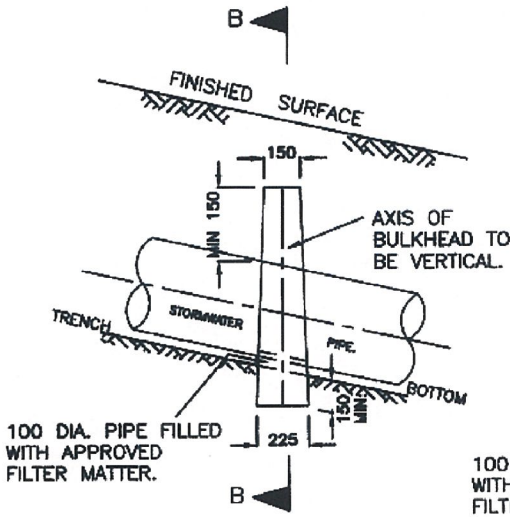
300 DIA PIPE	1830
375 DIA PIPE	1830
450 DIA PIPE	1830
525 DIA PIPE	1980
600 DIA PIPE	2135
675 DIA PIPE	2285
750 DIA PIPE	2440



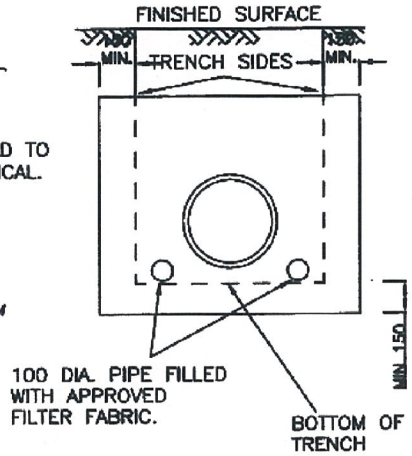
ELEVATION

SECTION A–A

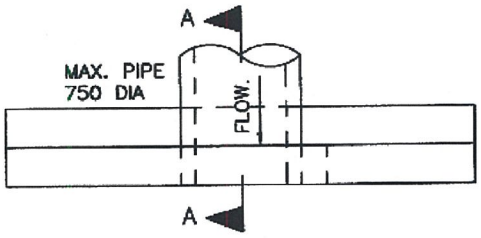
CONCRETE BULKHEAD



ELEVATION



SECTION B–B



PLAN

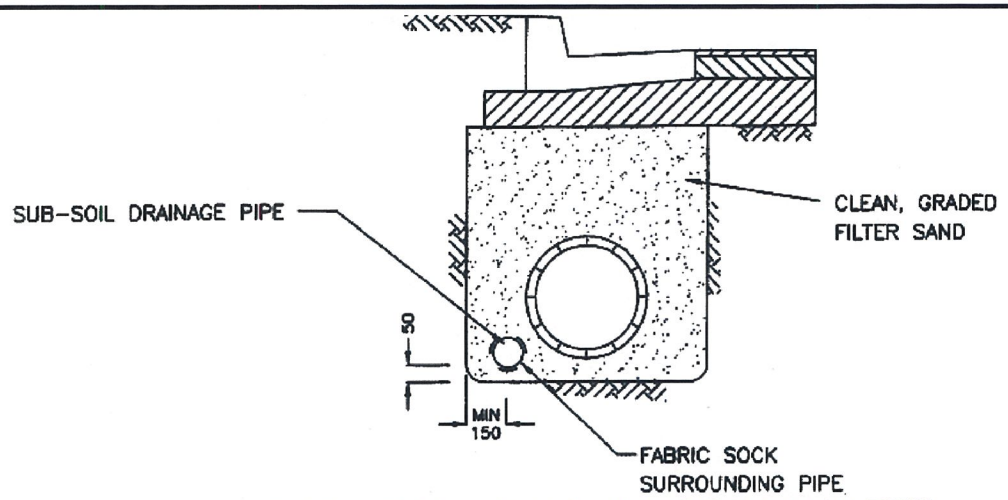
NOTES FOR CONCRETE HEADWALL

1. MINIMUM COVER OF CONCRETE OVER REINFORCEMENT TO BE 40mm.
2. COMPRESSIVE STRENGTH OF CONCRETE (f'c) AT 28 DAYS TO BE MINIMUM OF 20 MPa.
3. 100 DIA. SUB–SOIL DRAIN PIPE 3000mm LONG TO BE PROVIDED IN PIPE TRENCH AT PIPE INVERT LEVEL.

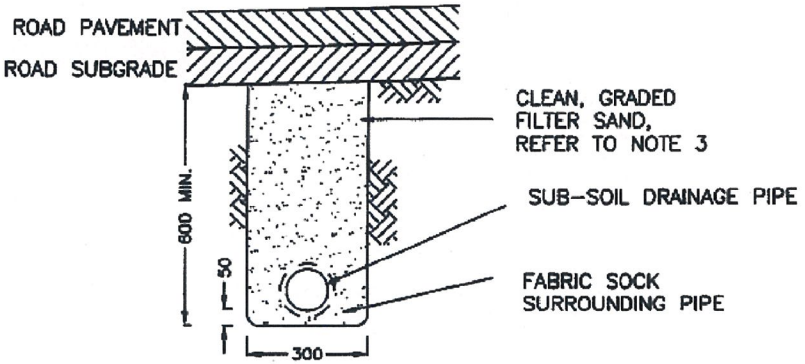
NOTES FOR BULKHEAD

1. COMPRESSIVE STRENGTH OF CONCRETE (F'c) AT 28 DAYS TO BE 20 MPa.
2. WHERE GRADE EXCEEDS 16%

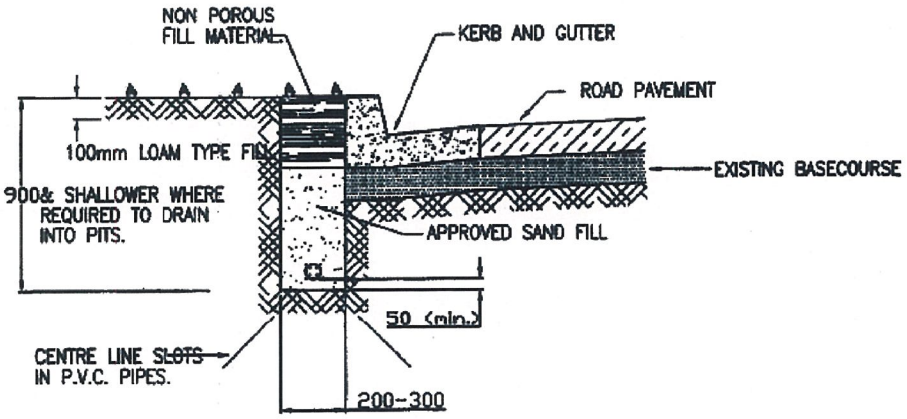
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION STRAIGHT HEADWALL AND CONCRETE BULKHEAD	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1025 / SHEET No / REV



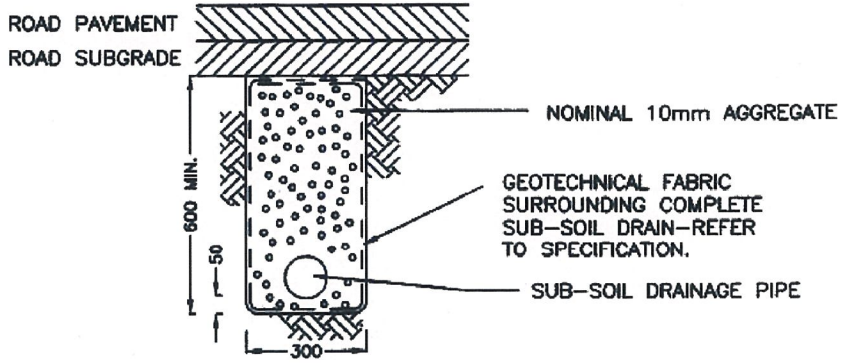
SUB-SOIL PIPE IN STORMWATER DRAINAGE TRENCH



SUBSOIL DRAIN TYPE 1



SUB-SOIL DRAIN TYPE 3

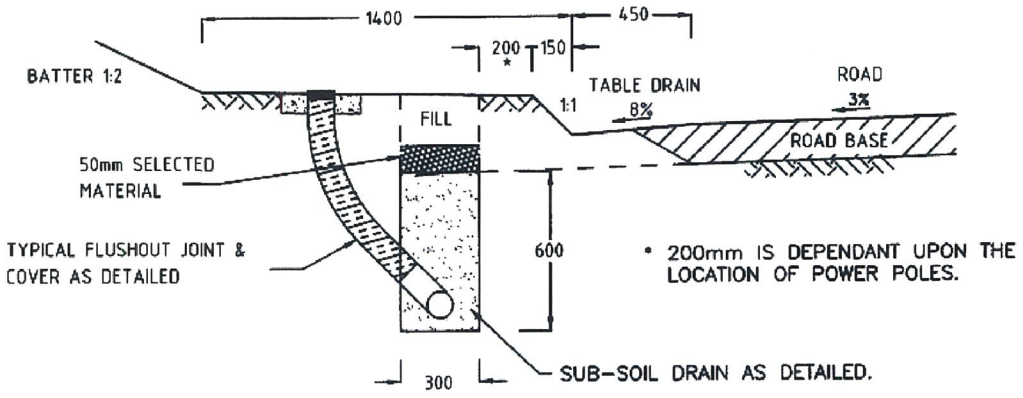


SUBSOIL DRAIN TYPE 2

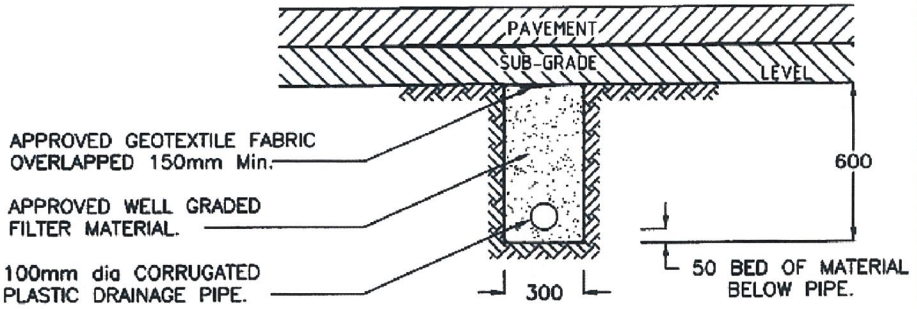
NOTES:

1. SUB-SOIL DRAINAGE DESIGN SHALL BE BASED ON THE DESIGN METHOD APPENDED TO A R.R.P PUBLICATION TITLED SUBSURFACE DRAINAGE PROGRESS REPORT SEPTEMBER 1979.
2. TYPE 1 DRAIN IS COMPATIBLE WITH MOST INSITU MATERIALS WITH THE EXCEPTION OF CLAYS WHERE MORE THAN 40% BY WEIGHT PASSES THE 13.5 MICRON SIEVE. TYPE 2 DRAINS SHALL BE CONSTRUCTED IN THIS CASE.
3. A NOMINAL SIZE AGGREGATE (10mm MAXIMUM) MAY BE SUBSTITUTED FOR THE FILTER SAND IN THE TYPE 1 DRAIN WHEN THE ABOVE DESIGN METHOD SHOWS THAT THE AGGREGATE IS COMPATIBLE WITH THE INSITU MATERIAL. THE FABRIC SOCK CAN BE OMITTED UNDER THESE CIRCUMSTANCES.

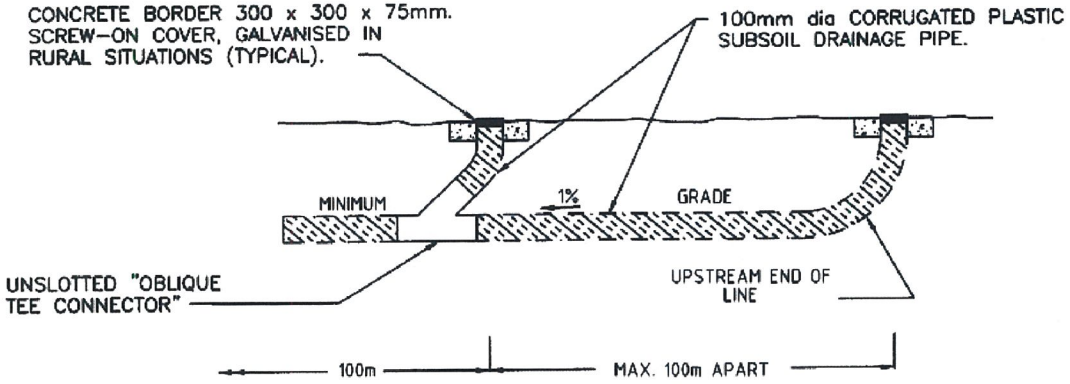
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION SUB-SOIL DRAINAGE LINES	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1026 / SHEET No / REV



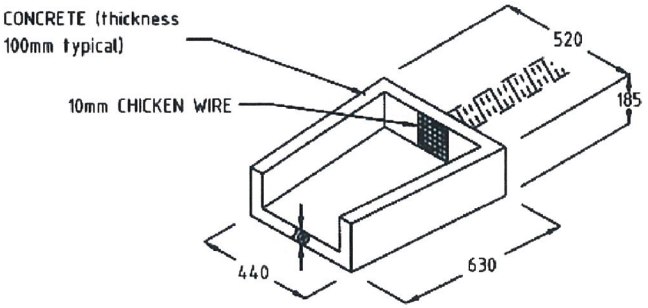
TYPICAL SECTION AT FLUSHOUT POINT



CROSS SECTION OF SUB-SOIL DRAIN



TYPICAL FLUSHOUT POINT



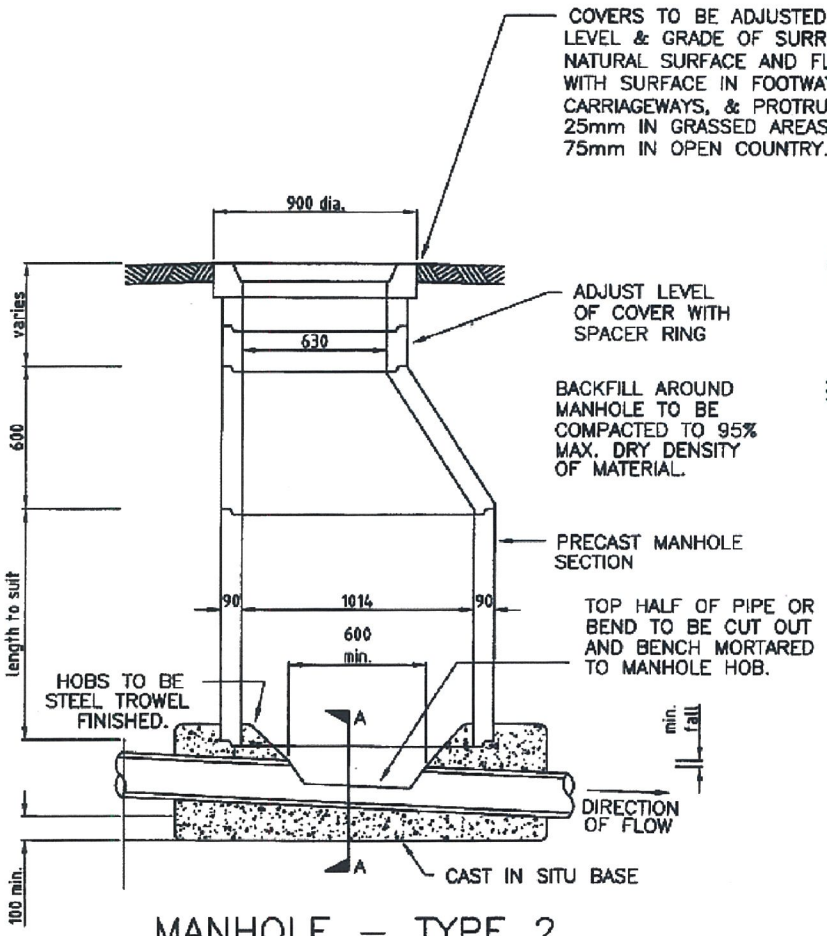
CONCRETE OUTLET STRUCTURE

FOR BATTER CONDITIONS.

NOTES:

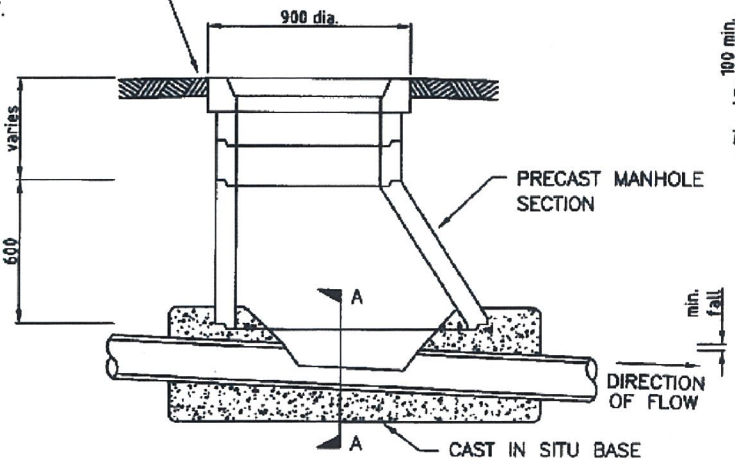
1. FILTER MATERIAL TO BE A WELL GRADED AGGREGATE WITH 95% PASSING A 20mm SIEVE AND AT LEAST 95% BEING RETAINED ON A 5mm SIEVE
2. FLUSHOUT POINTS SHALL BE A MAXIMUM OF 100mm APART AND WILL ALSO BE INSTALLED AT THE UPSTREAM END OF THE LINE

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION SUB-SOIL DRAIN FLUSHOUT POINT AND OUTLET STRUCTURES	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1027 / SHEET No / REV



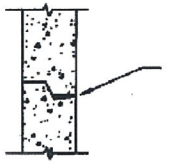
MANHOLE – TYPE 2

(>1m DEEP, & NOT A DROP MANHOLE)

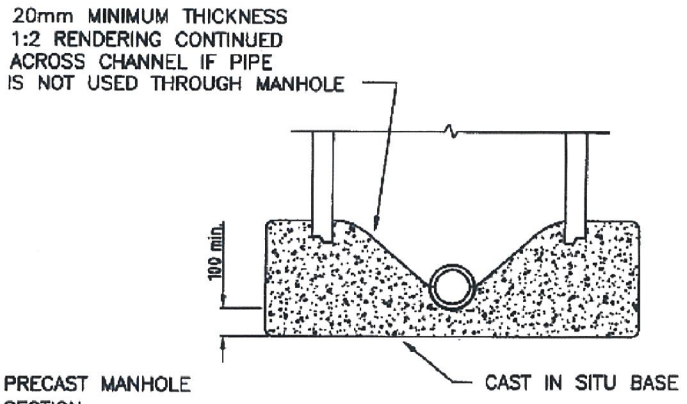


MANHOLE – TYPE 1

(FOR MH < 1M DEEP)



APPROVED WATERTIGHT JOINTING MATERIAL

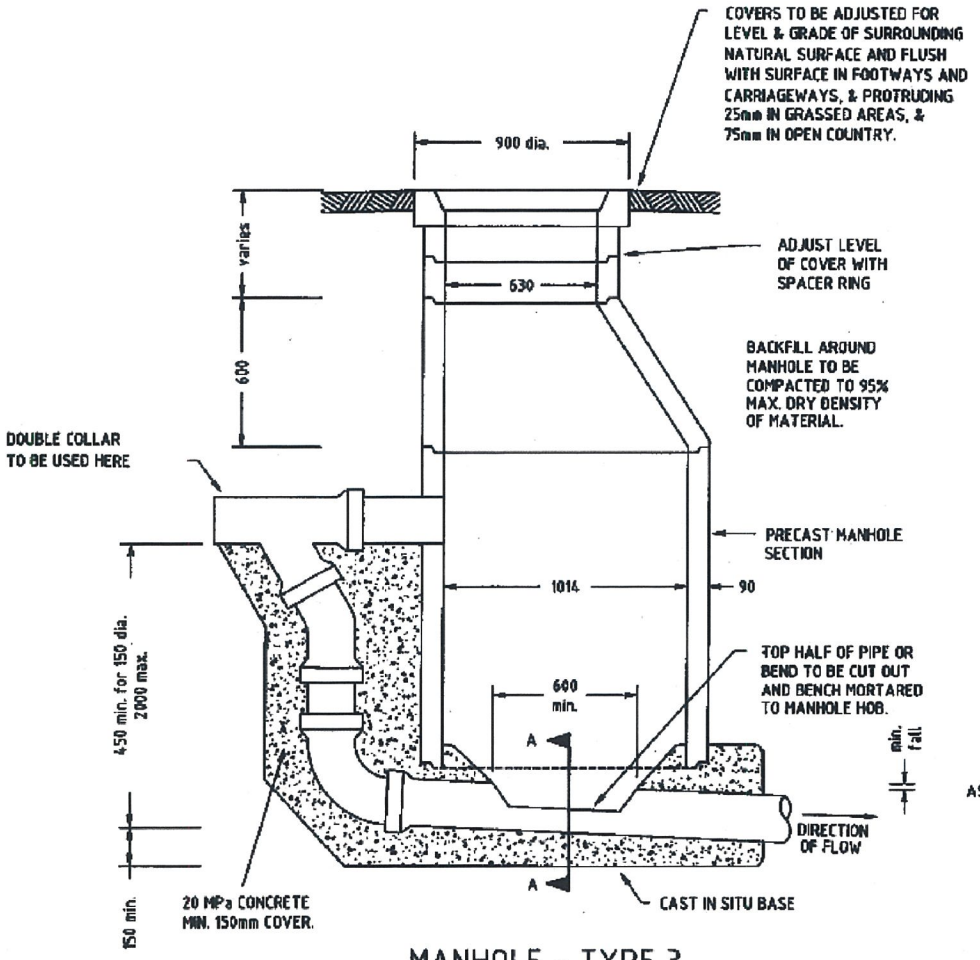


SECTION A–A

NOTES

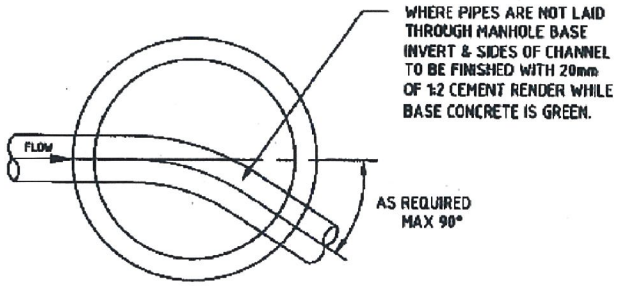
- MANHOLES, MAXIMUM DISTANCE APART = 90 METRES.
- PRECAST CONCRETE MANHOLE SECTIONS TO CONFORM TO N.S.W GOVERNMENT STANDARDS.
- MANHOLE COVERS TO BE SUPPLIED WITH 'GATIC' FITTINGS, WHERE SHOWN ON PLANS.
- HEAVY DUTY COVERS AND SURROUNDS TO BE USED IN ROADWAYS.
- MANHOLE COVERS TO HAVE TWO LIFTING STAPLES
- THE SUBSOIL DRAINAGE EFFECT OF SAND BEDDING OF PIPES TO BE RELIEVED AT LOCATIONS WHEREVER POSSIBLE.
- ALL STRAIGHT THROUGH MANHOLES TO HAVE A MINIMUM FALL OF 50mm THROUGH MANHOLE.
- THE MINIMUM DROP IN A MANHOLE FOR STRAIGHT THROUGH AND FOR ANGLES LESS THAN 45° CHANGE IN DIRECTION IS 30mm.
- FOR ANGLES GREATER THAN 45° & LESS THAN 90° THE MINIMUM DROP THROUGH THE MANHOLE IS 50mm.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS
DATUM AHD		DESCRIPTION MANHOLE CONSTRUCTION
GROUP MANAGER OPERATIONS		JOB No / DWG No EN 1028 / SHEET No / REV

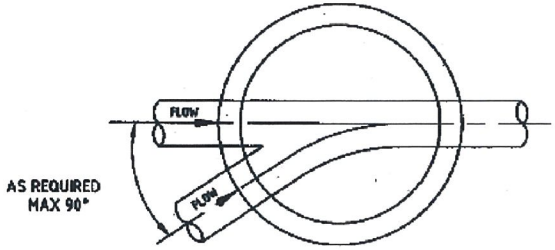


MANHOLE - TYPE 3

(DROP MANHOLE)



PLAN - ANGLES

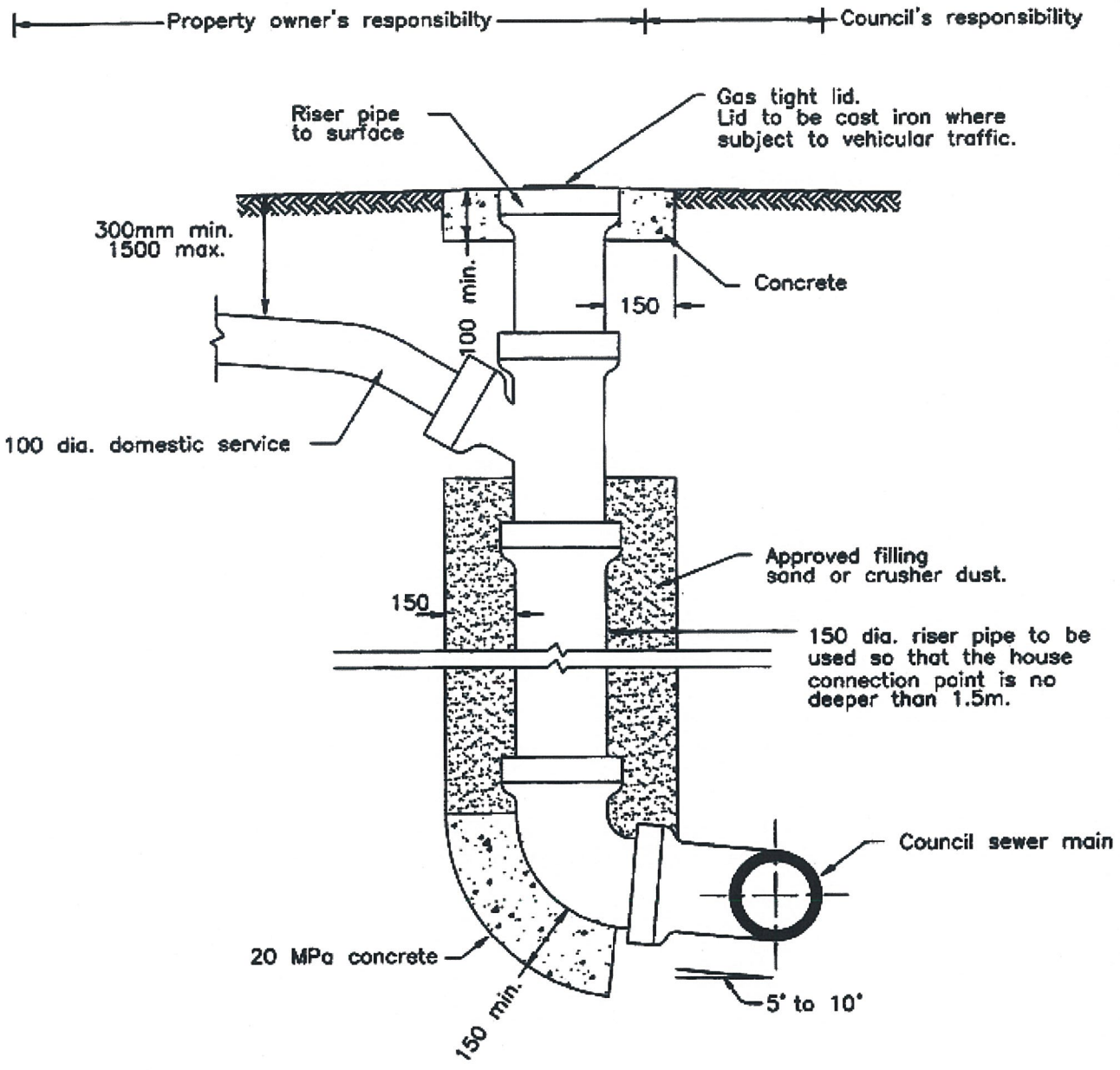


PLAN - JUNCTION

NOTES

- THE MIN. DROP IN A MANHOLE FOR STRAIGHT THROUGH AND FOR ANGLES LESS THAN 45° CHANGE IN DIRECTION IS 30mm.
- FOR ANGLES GREATER THAN 45° & LESS THAN 90°, THE MINIMUM DROP THROUGH THE MANHOLE IS 50mm.
- FOR SECTION A-A SEE DRAWING No EN 7899
- THE SUBSOIL DRAINAGE EFFECT OF SAND BEDDING OF PIPES TO BE RELIEVED AT LOCATIONS WHEREVER POSSIBLE.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION DROP MANHOLE CONSTRUCTION	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1029 / SHEET No / REV



TYPICAL CAPPED RISER PIPE

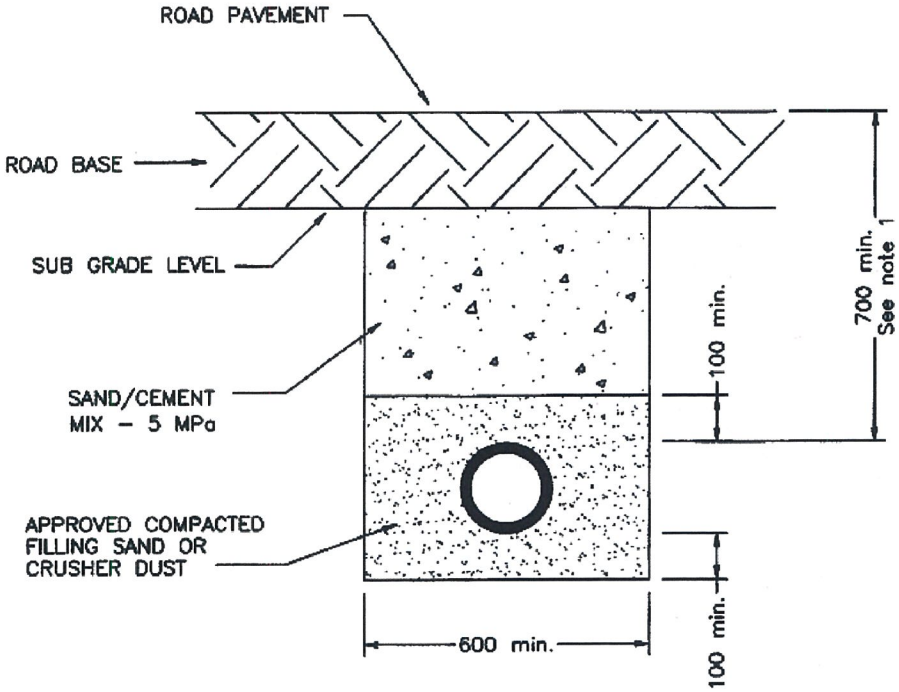
(JUNCTION FOR DEPTH GREATER THAN 1500mm)

NOTES

WHERE SEWER MAIN IS LESS THAN 1500mm DEEP A CAPPED SLOPE JUNCTION SHALL BE PROVIDED.

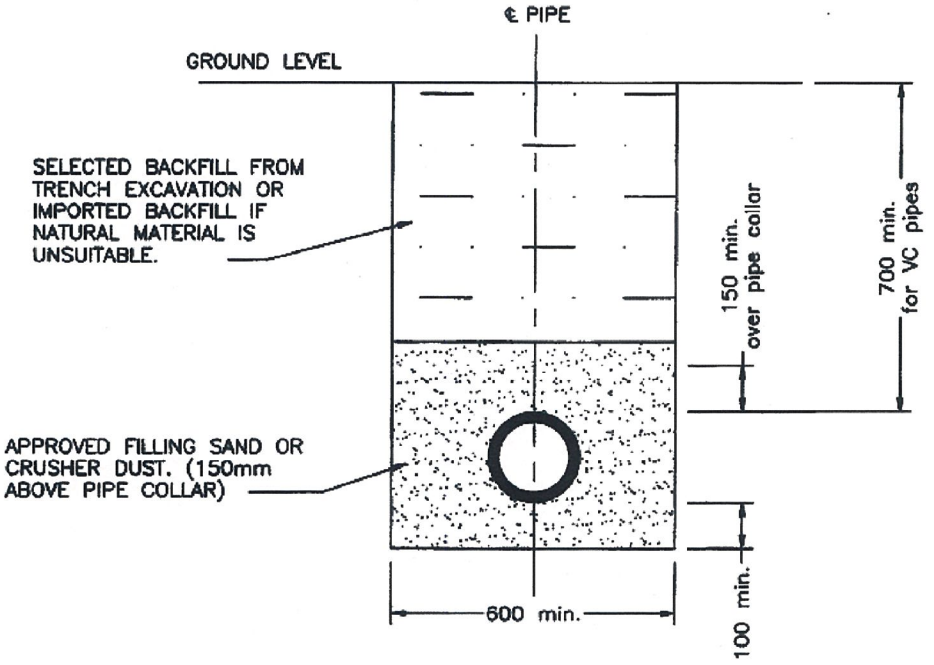
DATE: 2010	LITHGOW CITY COUNCIL	PROJECT: STANDARD DETAILS			
DATUM: AHD		DESCRIPTION: SEWER CAPPED RISER CONSTRUCTION			
APPROVED BY:		JOB No	DWG No EN 1030	SHEET No	REV

SEWER RETICULATION
DETAILS OF PIPE BEDDING



CASE No. 1 – ROAD CROSSINGS

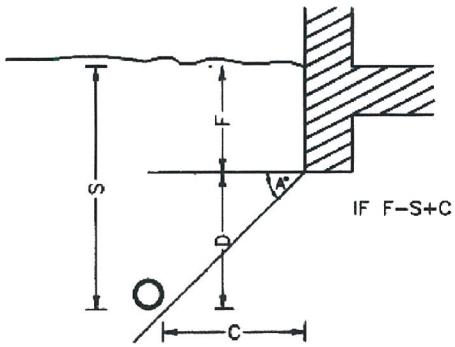
ie: UNDER ROAD PAVEMENT & FOR 1 METRE EACH SIDE OF ROADWAY IMMEDIATELY BEHIND KERB LINE. (EXISTING ROADS ONLY)



CASE No. 2 – ALL OTHER CONDITIONS

NOTE 1
Min. COVER FOR V.C. PIPES
150 dia. = 700mm
225 dia. = 900mm
300 dia. = 1200mm

DATE 2010	LITHGOW CITY COUNCIL	PROJECT SEWER RETICULATION	
DATUM AHD		DESCRIPTION PIPE BEDDING	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1031 / SHEET No / REV



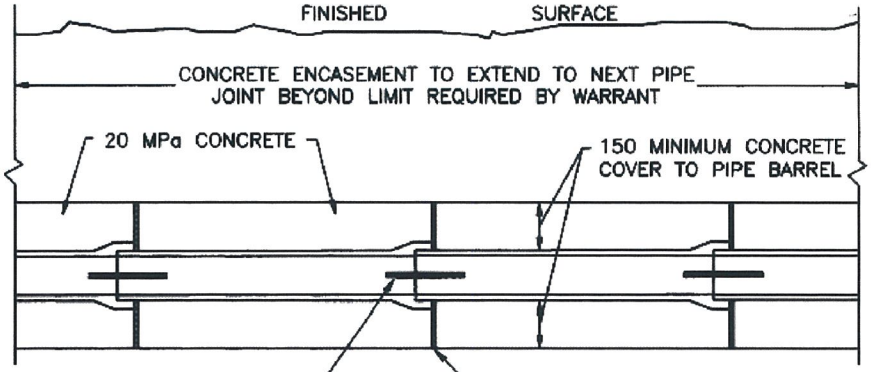
WARRANT FOR CONCRETE ENCASEMENT OF SEWER

NOT TO SCALE

A=40° FOR COHESIVE SOILS
=30° FOR SAND OR GRAVEL

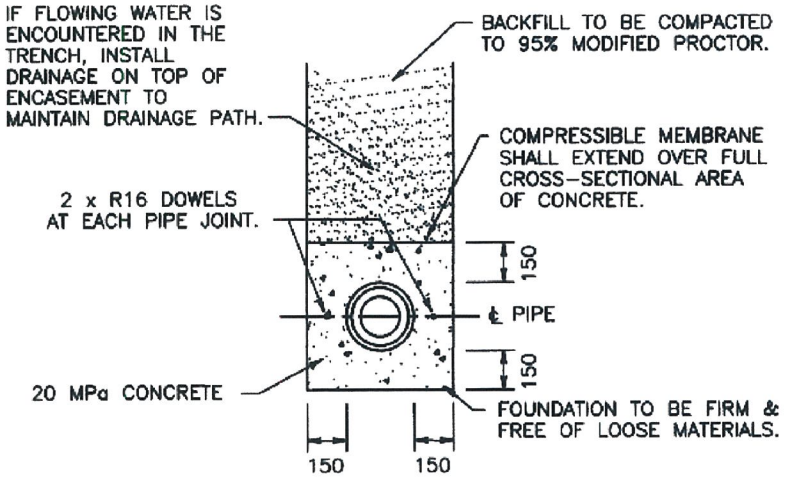
IF F−S+C tan A > 0 THEN OK
< 0 THEN CONCRETE ENCASEMENT IS REQUIRED.

TO AVOID CONCRETE ENCASEMENT
- INCREASE FOOTINGS DEPTH (F) AND/OR
- INCREASE CLEARANCE (C)



V.C. PIPE

NOT TO SCALE



TYPICAL CROSS SECTION

NOT TO SCALE

SUGGESTED PROCEDURE

1). EXCAVATE TO WITHIN 150mm OF PIPES BY MACHINE OR BY HAND.
2). EXPOSE ALTERNATE PIPE LENGTHS BY HAND, ENSURING 150 MIN CLEARANCE ALL AROUND PIPE BARREL
3). PLACE FORMS, DOWELS & MEMBRANES AT COLLAR FACES ENSURING MEMBRANE IS SNUG AROUND SPIGOT BARREL WHERE IT ENTERS THE COLLAR AND PERPENDICULAR TO THE PIPELINE.
4). PLACE CONCRETE ENCASEMENT AROUND EXPOSED PIPES (DO NOT CHUTE CONCRETE DIRECTLY ONTO UNSUPPORTED PIPES).
5). WHEN CONCRETE HAS SET HARD, EXPOSE REMAINING PIPES BY HAND.
6). REMOVE END FORMS & ENCASE REMAINING PIPES, ENSURE THAT MEMBRANES ARE NOT DISPLACED OR DAMAGED.
7). INSTALL TRENCH DRAINAGE IF REQUIRED, OVER CONCRETE ENCASEMENT.
8). BACKFILL TRENCH TO 95% MODIFIED PROCTOR.

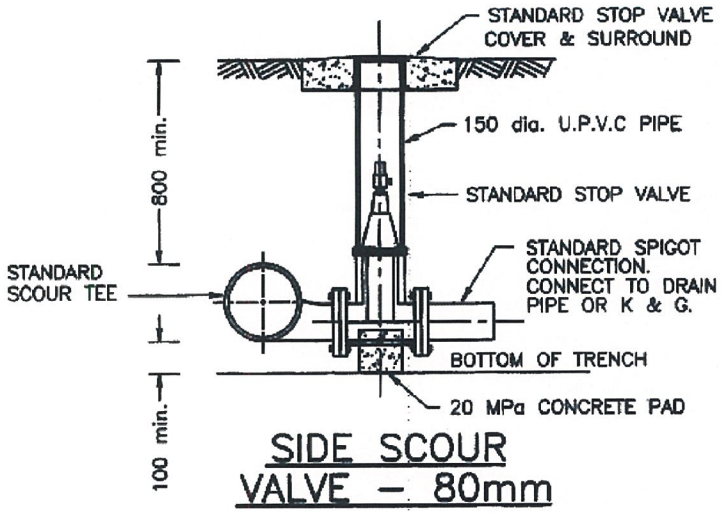
INSPECTIONS

1). THE PLUMBER IS TO OBTAIN APPROVAL FROM AN AUTHORISED COUNCIL OFFICER PRIOR TO PLACING ANY CONCRETE ENCASEMENT.
2). INSPECTIONS REQUIRED PRIOR TO AND DURING ENCASEMENT, WITH A MINIMUM 24 HOURS NOTICE.

SPECIAL CONDITIONS

WHERE
1). FOOTINGS ARE TO BE CONSTRUCTED SUCH THAT HEAVY CONCENTRATED LOADS MAY BE TRANSMITTED TO THE ENCASED PIPELINE, OR
2). THE FOUNDATION BELOW THE SEWER IS OF A SOFT, YIELDING NATURE HAVING A SAFE BEARING CAPACITY LESS THAN 100 KPa.
−THEN THE CONCRETE ENCASEMENT WILL NEED TO BE STRUCTURALLY DESIGNED TO WITHSTAND THE STRESSES & DEFORMATIONS LIKELY UNDER SUCH CONDITIONS.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION SEWER MAIN CONCRETE ENCASEMENT	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1032 / SHEET No / REV

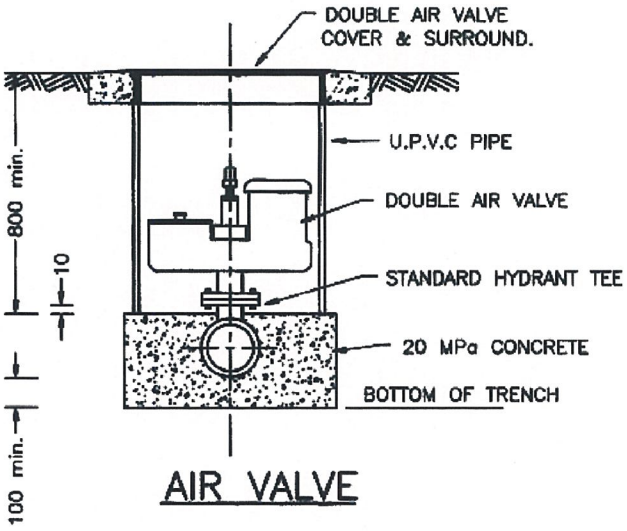


SIDE SCOUR VALVE – 80mm

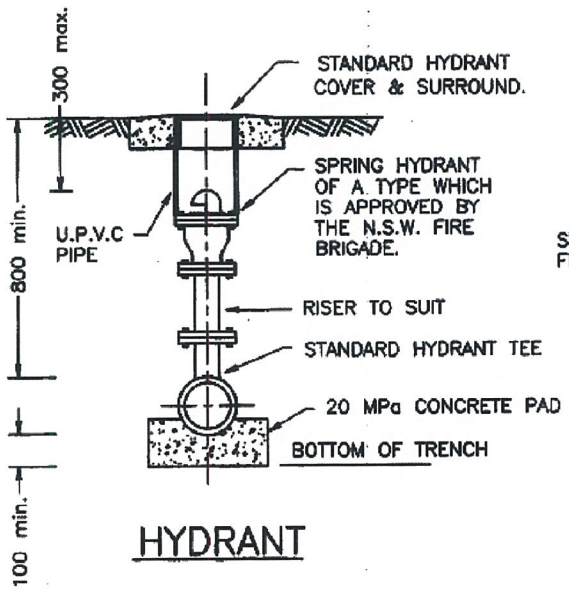
NOTE

* ALL VALVES ANTI–CLOCKWISE CLOSING.
* CONCRETE TO BE KEPT CLEAR OF COUPLING AND NUTS ON FITTINGS.

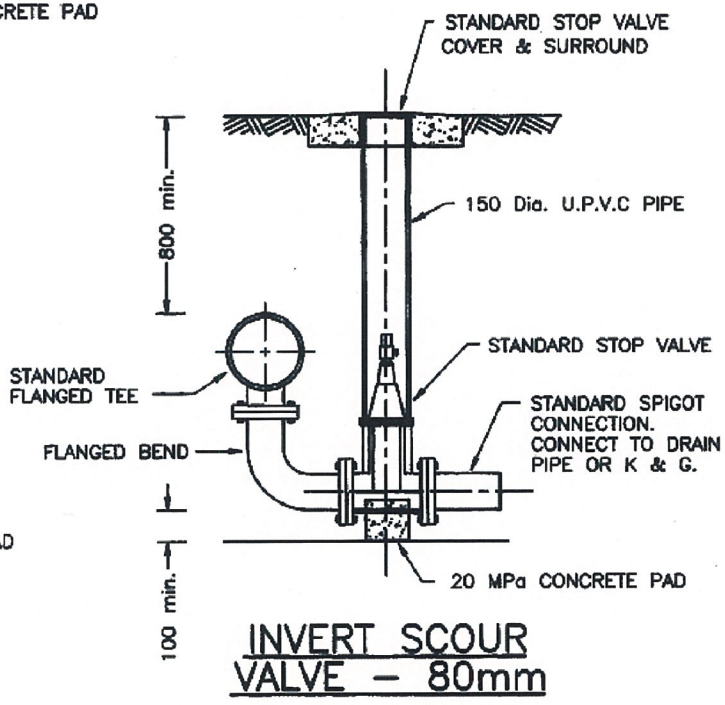
- VALVES TO BE TESTED TO 2.4 MPa
- FLANGES DRILLED TO TABLE 'C'
- VALVES TO HAVE PROTECTIVE POWDER COATING.



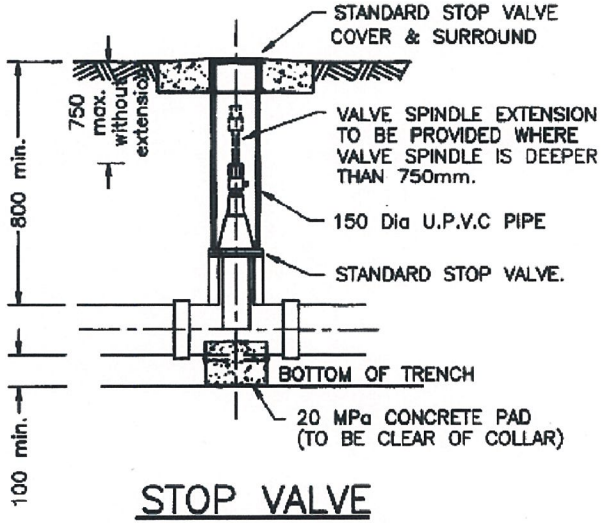
AIR VALVE



HYDRANT



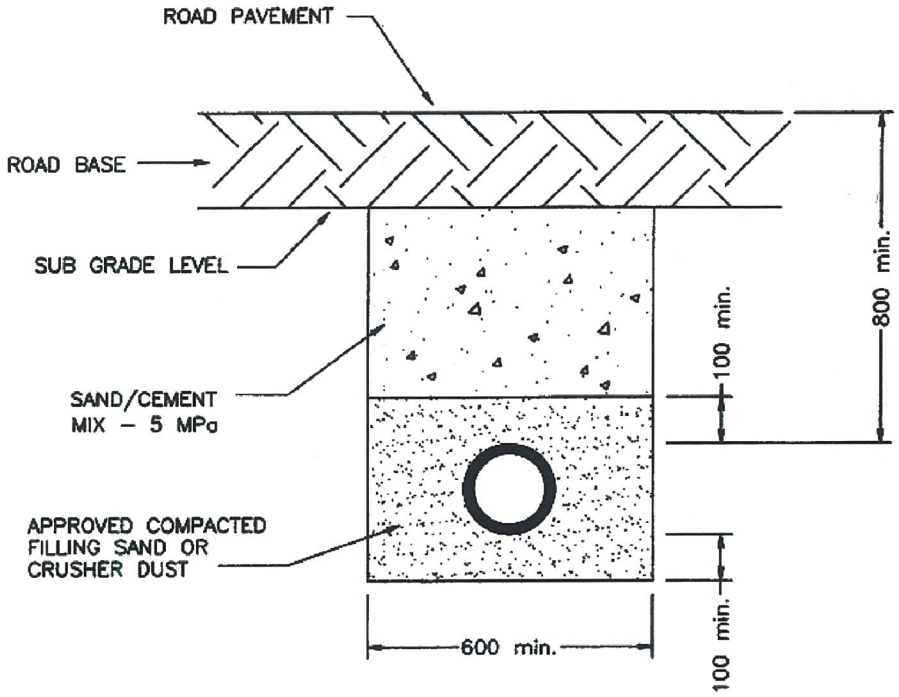
INVERT SCOUR VALVE – 80mm



STOP VALVE

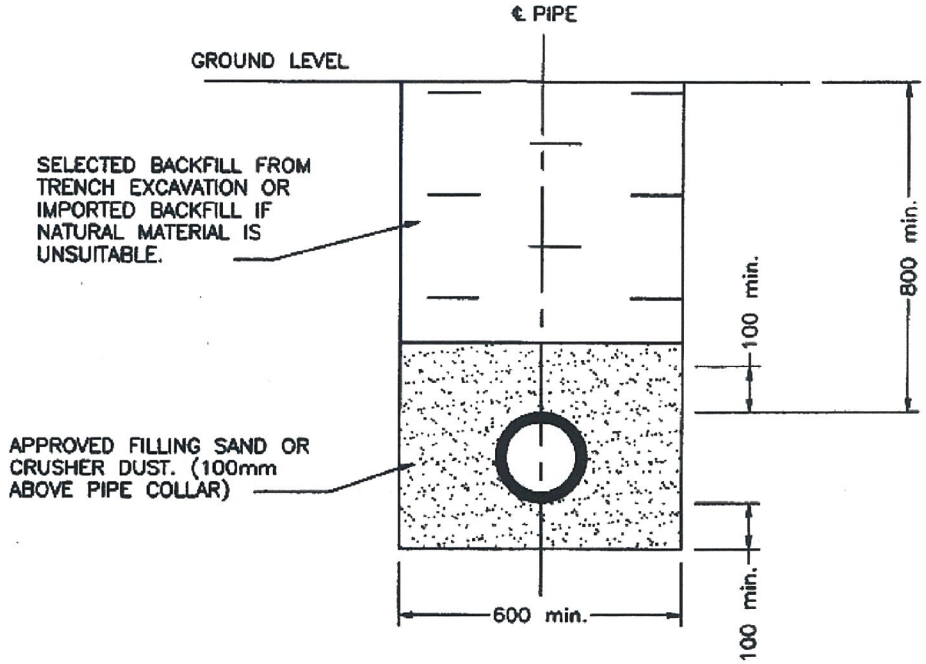
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION WATER HYDRANT AND VALVES	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1033 / SHEET No / REV

WATER RETICULATION
DETAILS OF PIPE BEDDING



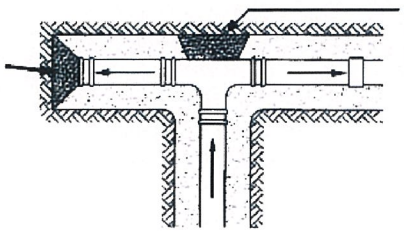
CASE No. 1 – ROAD CROSSINGS

ie: UNDER ROAD PAVEMENT & FOR 1 METRE EACH SIDE OF ROADWAY IMMEDIATELY BEHIND KERB LINE. (EXISTING ROADS ONLY)

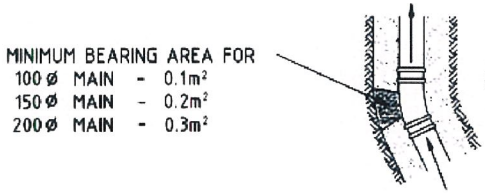


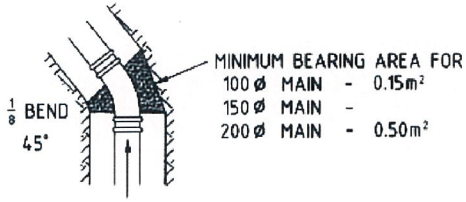
CASE No. 2 – ALL OTHER CONDITIONS

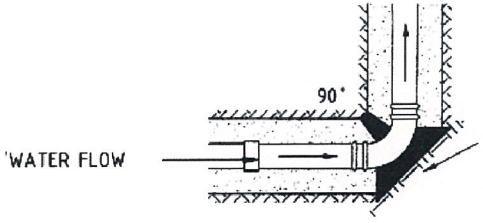
DATE 2010	LITHGOW CITY COUNCIL	PROJECT WATER RETICULATION		
DATUM AHD		DESCRIPTION PIPE BEDDING		
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1034	SHEET No / REV



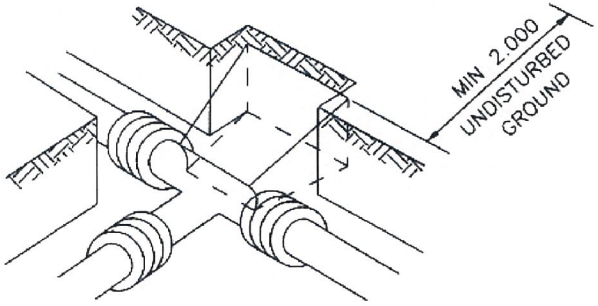
MINIMUM BEARING AREA FOR
100 ø MAIN - 0.2m²
150 ø MAIN - 0.4m²
200 ø MAIN - 0.6m²



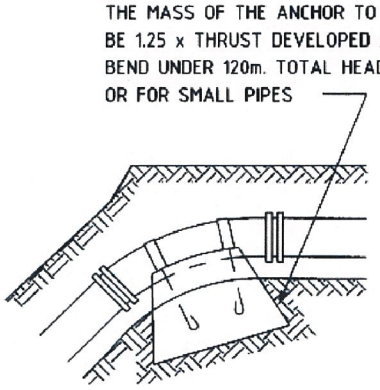




TYPICAL LOCATION OF A THRUST BLOCK



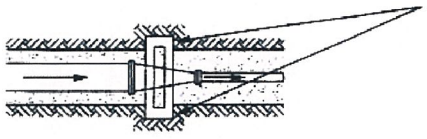
TYPICAL THRUST BLOCK BEHIND A TEE PIPE



- 100 ø, 45° - 0.7m
  22 1/2° - 0.4m
  11 1/4° - 0.3m
- 150 ø, 45° - 0.9m
  22 1/2° - 0.7m
  11 1/4° - 0.7m
- 200 ø, 45° - 2.3m
  22 1/2° - 1.2m
  11 1/4° - 0.7m

TYPICAL ANCHORAGE OF BEND IN VERTICAL PLANE

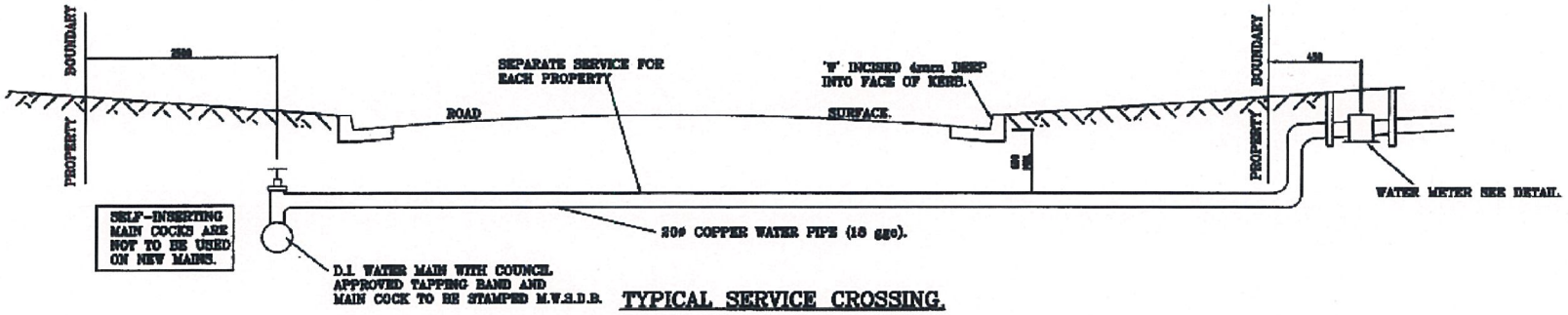
NOTES: 90° VERTICAL BENDS SHALL NOT BE USED WITHOUT COUNCILS AUTHORISATION. AND FLANGED FITTING WILL BE PERMITTED



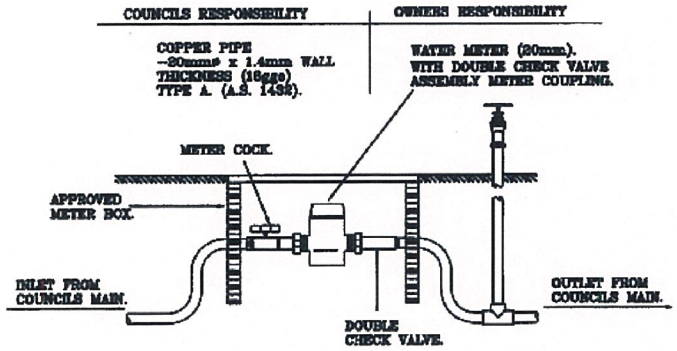
MINIMUM BEARING AREA FOR:
150 TO 100 - 0.15m²
200 TO 100 - 0.30m²
250 TO 100 - 0.65m²
250 TO 150 - 0.50m²
250 TO 200 - 0.30m²

TYPICAL ANCHORAGE OF TAPER PIPE

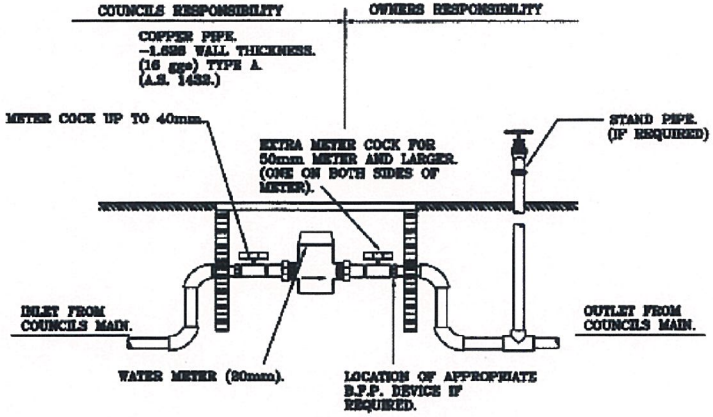
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION THRUST BLOCK AND ANCHORAGE TYPICAL POSITIONS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1035 / SHEET No / REV



TYPICAL SERVICE CROSSING.



20mm WATER METER.



25mm TO 50mm WATER METER.

NOTES.

WHERE MAINS SHUTDOWN IS CONVENIENT, A HYDRANT TEE WITH DRILLED BLANK FLANGE ON 100mm AND 150mm MAINS IS TO BE CONSIDERED IN LIEU OF MAIN TAPPING FOR 40mm AND 50mm SERVICES.

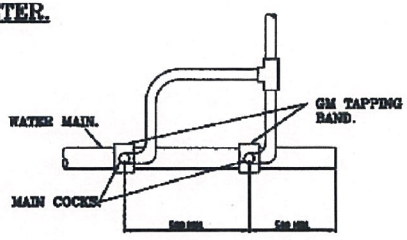
METERS ARE GENERALLY TO BE LOCATED 450mm FROM PROPERTY SIDE AND FRONT BOUNDARIES EXCEPT FOR HOUSING COMMISSION WHICH ARE USUALLY SITED IN THE CENTRE OF THE ALLOTMENT.

SILVER SOLDERING OR BRAZING IS NOT TO BE USED ON COUNCILS SIDE OF WATER METER.

ALL WORK AND MATERIALS TO BE TO THE REQUIREMENTS OF A.S 3500 AND THE N.S.W. CODE OF PRACTICES.

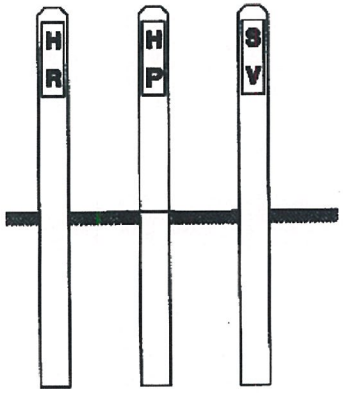
STANDARD SIZE OF TAPPING'S

FOR 20mmø SERVICES—ONE 25mm TAPPING
FOR 25mmø SERVICES—ONE 25mm TAPPING
FOR 32mmø SERVICES—ONE 25mm TAPPING
FOR 40mmø SERVICES—TWO 25mm TAPPING
FOR 50mmø SERVICES—THREE 25mm TAPPING



TYPICAL MAIN TAPPING MAIN DETAIL.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION WATER METER CONNECTION DETAILS 20mm TO 50mm	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN1036 / SHEET No / REV



INDICATOR POSTS

FOR USE IN
RURAL RESIDENTIAL AREAS
WITHOUT KERB & GUTTER.

HP HR SV

MARKER PLATES

FOR USE IN
URBAN AREAS

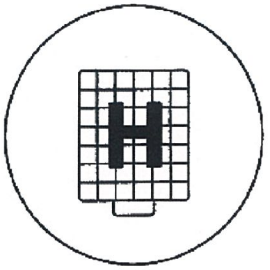
W

MARKER PLATES

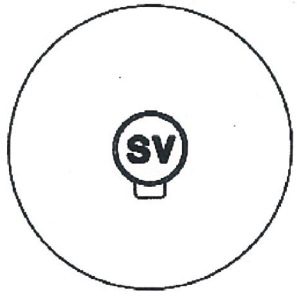
TO BE FIXED TO BOTH SIDES
OF KERB FOR WATER MAIN
ROAD CROSSINGS.

BLUE CATS EYES

FOR USE ON
SEALED ROADS
OPPOSITE HYDRANTS.



HYDRANT COVER

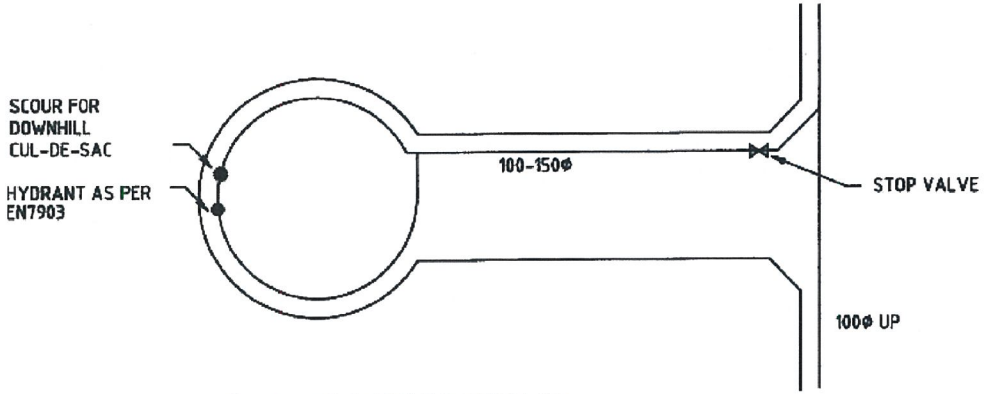


STOP VALVE COVER

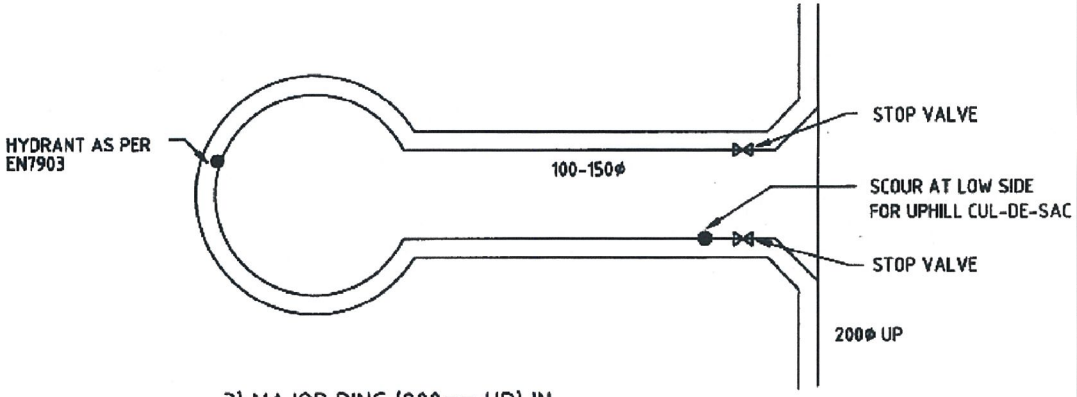
NOTES

- INDICATOR POSTS TO BE USED IN RURAL RESIDENTIAL AREAS WITHOUT KERB & GUTTER, POSTS SHALL BE LOCATED AT THE PROPERTY ALIGNMENT OPPOSITE THE VALVE OR HYDRANT.
- MARKER PLATES TO BE USED IN ALL URBAN AREAS, PLATES ARE TO BE FIXED TO THE KERB ON THE SAME SIDE OF THE ROAD AS THE VALVE OR HYDRANT.
- MARKER POST & PLATE ABBREVIATIONS ARE EXPANDED BELOW.
  * HP, HYDRANT PATH.
  * HR, HYDRANT ROAD.
  * SV, STOP VALVE.
- BLUE CATS EYES TO BE FIXED IN THE CENTRE OF THE ROADWAY OPPOSITE HYDRANTS, THE ARROW ON THE CATS EYES SHOULD BE POINTING IN THE DIRECTION OF THE HYDRANT. CATS EYES ARE TO HAVE REFLECTORS ON BOTH SIDES AS SHOWN.
- HYDRANT COVERS MUST BE PAINTED WHITE & STOP VALVE COVERS PAINTED YELLOW.
- FACE LID HINGES TOWARD TRAFFIC FLOW.

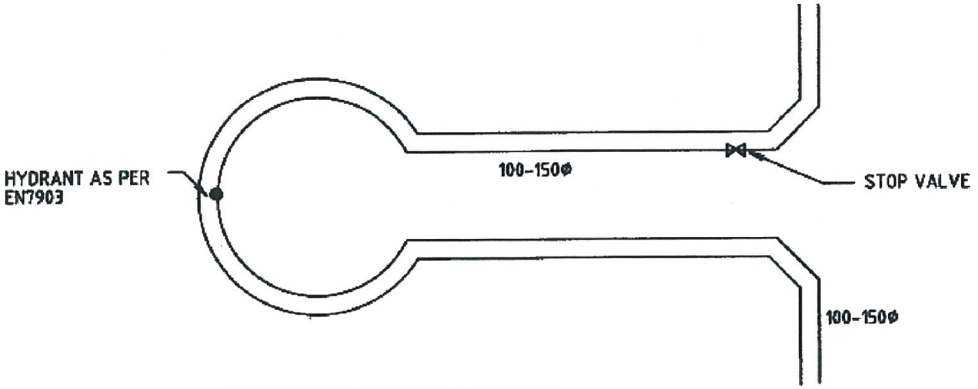
DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION WATERMAIN COVERS, INDICATOR POSTS AND MARKERS	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1037 / SHEET No / REV



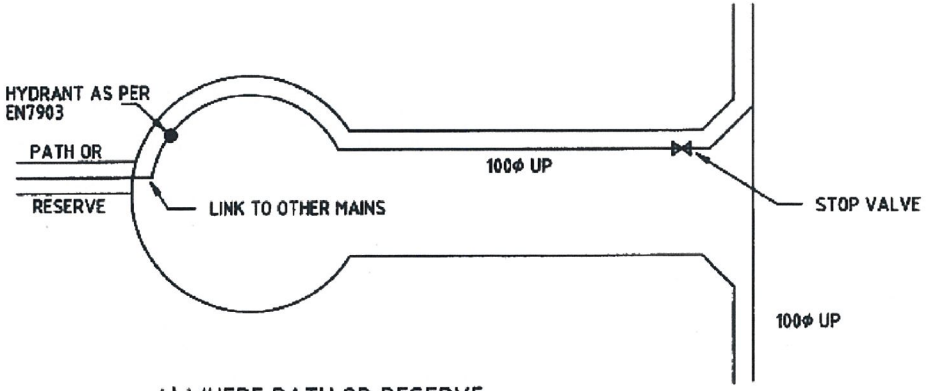
1) DOMESTIC RETICULATION OR MAJOR RING MAIN (200mm UP) IN STREET TO WHICH A DOWNHILL CUL-DE-SAC IS CONNECTED.



3) MAJOR RING (200mm UP) IN STREET TO WHICH AN UPHILL CUL-DE-SAC IS CONNECTED.



2) DOMESTIC RETICULATION IN STREET TO WHICH AN UPHILL CUL-DE-SAC IS CONNECTED.



4) WHERE PATH OR RESERVE ALLOWS LINK TO OTHER MAINS.

DATE 2010	LITHGOW CITY COUNCIL	PROJECT STANDARD DETAILS	
DATUM AHD		DESCRIPTION WATER MAIN LAYOUT FOR CUL-DE-SAC	
GROUP MANAGER OPERATIONS		JOB No	DWG No EN 1038 / SHEET No / REV