CITY OF
COFFS HARBOUR

STANDARD DRAWINGS FOR SEWER WORKS

NOTE: THESE STANDARD DRAWINGS REPLACE ALL PREVIOUS ISSUES

DISCLAIMER The City shall have no liability or responsibility to the user or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused, directly or indirectly, by the adoption and use of these Standard Drawings including, but not limited to, any interruption of service, loss of business or anticipatory profits, or consequential damages resulting from the use of these Standard Drawings. Persons must not rely on these Standard Drawings as the equivalent of, or a substitute for, project-specific design and assessment by an appropriately qualified professional.

DWG No.	DESCRIPTIONS	REVISION
S - 500 - 00	DRAWING INDEX - SEWER	Rev 1 12/2024
S - 500 - 01	STANDARD NOTEDS	Rev 1 12/2024
	MAINTENANCE HOLES	
S - 500 - 02	MAINTENANCE HOLES FOR SEWER - TYPE 1	Rev 1 12/2024
S - 500 - 03	MAINTENANCE HOLES FOR SEWER - TYPE 2	Rev 1 12/2024
S - 500 - 04	MAINTENANCE HOLES FOR SEWER WITH EXTERNAL DROP - TYPE 3	Rev 1 12/2024
S - 500 - 05	MAINTENANCE HOLES PIPE CONNECTION DETAIL	Rev 1 12/2024
S - 500 - 06	MAINTENANCE HOLES TYPICAL MH COVER ARRANGEMENTS & CLASS	Rev 1 12/2024
S - 500 - 07	CAST IN-SITU MAINTENANCE HOLES	Rev 1 12/2024
	PIPE CONNECTIONS	
S - 500 - 08	PIPE CONNECTION DETAILS - PVC SN8 TO D.I.C.L., VIC CLAY & HDPE	Rev 1 12/2024
	PROPERTY CONNECTIONS	
S - 500 - 09	PROPERTY CONNECTION DETAIL	Rev 1 12/2024
S - 500 - 10	SEWER DEAD END DETAIL	Rev 1 12/2024
S - 500 - 11	SOFFIT REQUIREMENTS WSSA & AS3500 REQUIREMENTS	Rev 1 12/2024
	RISING MAIN CONNECTIONS	
S - 500 - 12	SEWER RISING MAIN CONNECTION TO MAINTENANCE HOLE	Rev 1 12/2024
S - 500 - 13	PRIVATE PUMP STATION CONNECTION TO MAINTENANCE HOLE	Rev 1 12/2024
S - 500 - 14	VENTILATION STACK - TYPE 1 - 150Ø D.I.C.L. VENTILATION STACK DETAILS	Rev 1 12/2024
	PRESSURE SEWER AIR VALVES & SCOUR VALVES	
S - 500 - 15	TYPICAL PRESSURE SEWER AIR VALVE	Rev 1 12/2024
S - 500 - 16	PRESSURE SEWER SCOUR VALVES & PIPEWORK	Rev 1 12/2024
S - 500 - 17	TYPICAL SCOUR FOR DN90 & DN75 HDPE SRM	Rev 1 12/2024
	TRADE WASTE	
S - 500 - 18	TYPICAL WASH BAY REQUIREMENTS FOR CONNECTION TO SEWER	Rev 1 12/2024
	TYPICAL PUMP STATION	
S - 500 - 19	SMALL PRE-CAST PUMP STATION WITH INTERNAL ISOLATION VALVE	Rev 1 12/2024
S - 500 - 20	LARGE PRECAST SEWER PUMP STATION WITH INTEGRAL VALVE PIT	Rev 1 12/2024
S - 500 - 21	LARGE PUMP STATION TYPICAL BACKFILL REQUIREMENTS	Rev 1 12/2024

DWG No.	SUPPLEMENTARY PLANS	REVISION
CHCC-SPS-0001-1/8	SEWAGE PUMP STATION ALUMINIUM ACCESS COVER (8 SHEETS)	Rev A 29/02/24
	HDPE MAINTENANCE HOLES	
6035 (IPLEX)	MAINTENANCE HOLE TYPICAL INSTALLATION IN NON TRAFFICALE CONDITIONS	
5757 (IPLEX)	MAINTENANCE HOLE TYPICAL INSTALLATION IN TRAFFICALE CONDITIONS	
5760 (IPLEX)	TYPICAL INSTALLATION WITH SLOPED COVER, GENERALARRANGEMENT	
	PRESSURE SEWER	
PSS-1100	DESIGN LAYOUT TYPICAL LOCALITY AND SITE PLAN	WSAA 2006 V1.0
PSS-1101	ON-PROPERTY LAYOUT TYPICAL ARRANGEMENT & SANITARY DRAINAGE DETAILS	WSAA 2006 V1.0
PSS-1102	PROPERTY BOUNDARY ASSEMBLY TYPICAL INSTALLATION	WSAA 2006 V1.0

WSA - GRAVITY SEWER CODE OF AUSTRALIA PART 1: PLANNING AND DESIGN - Ver. 3.1

LISTED BELOW ARE WATER SERVICES ASSOCIATION OF AUSTRALIA DRAWINGS ACCEPTED OR NOT ACCEPTED BY THE CITY.

SEW-1200	ACCEPTED
SEW-1201	ACCEPTED
SEW-1202	ACCEPTED HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1203	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1204	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1205	NO WSAA DRAWING
SEW-1206	MODIFIED TO CHCC BULKHEAD & TRENCHSTOP DETAIL (SEE T-550-04)
SEW-1207	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1208	NOT ACCEPTED BY CHCC
SEW-1300	MODIFIED TO CHCC MAINTENANCE HOLE DETAILS STD DRG S-500-03 TO 05
SEW-1301	MODIFIED TO CHCC MAINTENANCE HOLE DETAILS STD DRG S-500-03 TO 05
SEW-1302	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1303	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1304	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1305	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1306	NOT ACCEPTED BY CHCC
SEW-1307	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1308	MODIFIED TO CHCC STANDARD DRAWINGS
SEW-1313	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1314	NOT ACCEPTED BY CHCC
SEW-1315	NOT ACCEPTED BY CHCC
SEW-1316	NOT ACCEPTED BY CHCC
SEW-1317	NOT ACCEPTED BY CHCC
SEW-1400	NOT ACCEPTED BY CHCC
SEW-1401	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1402	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1403	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1404	NO WSAA DRAWING
SEW-1405	NO WSAA DRAWING
SEW-1406	ACCEPTED - HOWEVER NOT USED IN CHCC STANDARD DRAWING (DESIGN APPROVAL REQUIRED)
SEW-1407	MODIFIED TO CHCC VENT STACK DETAIL STANDARD DRAWING S-500-16
SEW-1408	MODIFIED TO CHCC VENT STACK DETAIL STANDARD DRAWING S-500-16

SEWER NOTES:

1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH COFFS HARBOUR CITY COUNCIL AND SEWERAGE CODE OF AUSTRALIA STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL WORKS ASSOCIATED WITH LIVE SEWERS OR MANHOLES SHALL BE CARRIED OUT BY COFFS HARBOUR CITY COUNCIL AT THE PRINCIPALS COST (REFER SITE SPECIFICATION).
3. SEWER MANHOLES AND NATURAL SUFRFACE LEVELS MAY BE COMPUTER GENERATED FROM DIGITAL TERRIAN MODEL. ALL LEVELS MUST BE CHECKED IF THEY ARE TO BE USED FOR CONSTRUCTION SET-OUT.
4. ALL SEWERS SHALL BE CLASS SN8 (MINIMUM). ALL PIPEWORK AND FITTINGS SHALL BE IN ACCORDANCE WITH AS4130 AND AS4131 TO AS1260 UNLESS SHOWN OTHERWISE.
5. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION..
6. THE CONTRACTOR MUST LEAVE A CONSTRUCT GAP OF MIN. 600mm BETWEEN EXISTING SEWER AND NEW SEWER MAIN> FINAL CONNECTION TO EXISTING SEWER MAIN IS TO BE MADE BY CONTRACTOR AFTER WORKS AS EXECUTED DRAWINGS HAVE BEEN LODGED WITH CHCC AND ALL TESTS HAVE BEEN CARRIED OUT AND APPROVED. THE FINAL CONNECTION WILL REQUIRE SUPERVISION BY COUNCIL OFFICERS.
7. ANY DISCREPANCIES IN EXISTING SEWER LEVELS SHALL BE REFERRED TO THE SUPERINTENDANT BEFORE CONTINUING WITH THE EFFECTED WORKS.
8. THE CONTRACTOR IS TO LIASE WITH COFFS HARBOUR CITY COUNCIL BEFORE BREAKING INTO AND CONNECTING TO ANY EXISTING LIVE SEWER MAINS AND MANHOLES. THESE WORKS WILL REQUIRE SUPERVISION BY COUNCIL OFFICERS.
9. ALL NEW SEWER LINES ARE TO BE PRESSURE TESTED BY THE CONTACTOR AT THE CONTRACTORS COST.
10. ALL NEW SEWER MANHOLES ARE TO BE VACUUM PRESSURE TESTED BY THE CONTRACTOR AT THE CONTRACTORS COST.
11. ALL NEW SEWER LINES SHALL BE SHALL BE CCTV SURVEYED BY THE CONTRACTOR AT THE CONTRACTORS COST. CCTV SURVEY IS BY CHCC. WAE REQUIRED PRIOR TO CCTV SURVEY.
12. ALL PROPERTY JUNCTIONS AND BOUNDARY RISERS ARE TO BE 150mm AND CONSTRUCTED AS PER CHCC STANDARD DRAWING.
13. HOUSE CONNECTION BRANCHES ARE TO BE MARKED WITH TAPE FROM THE INSPECTION OPENING TO THE FINISHED SURFACE AND SIGHTED BY A COUNCIL OFFICER PRIOR TO BACKFILLING.
14. A 100mm MAKE UP RING IS TO BE INSTALLED ON ALL NEW SEWER MANHOLES AS PER CHCC STANDARD DRAWING.
15. THE CONTRACTOR SHALL COMPLETE MANHOLES AND MAINTENANCE SHAFTS LEVEL ABOVE FINISHED SURFACE AS FOLLOWS: MANHOLE LOCATION HEIGHT ABOVE F.S.L.
    - GRASS VERGE 25mm
    - PRIVATE PROPERTY 75mm
    - OPEN PADDOCK 100mm
    - SURFACE LEVEL WITH ROAD SURFACE, CONCRETE PATH OR DRIVEWAY
16. BITUTHENE TAPE TO BE USED ON ALL EXTERNAL MANHOLE JOINTS.
17. NON CONFORMING MATERIALS ARE TO BE REJECTED BY SUPERINTENDED AND REMOVED FROM SITE. E.G CONCRETE MANHOLE COMPONENTS ETC.
18. DESIGN OMMISSIONS ON APPROVED STAMPED CONSTRUCTION PLANS MUST BE RECTIFIED TO COMPLY WITH COUNCIL'S AUS-SPEC 0076 SEWERAGE SYSTEMS, WSA AND OR AS3500.
19. THE CONTRACTOR SHALL VERIFY FINISHED SURFACE LEVELS ON SITE PRIOR TO CONSTRUCTION OF SEWERS AND HOUSE CONNECTION BRANCHES.
20. WHERE SEWERS HAVE A GRADE OF 1 IN 6 OR STEEPER BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH COFFS HARBOUR CITY COUNCIL REQUIREMENTS.
21. EACH ALLOTMENT SHALL BE SERVICED BY A 150mm HOUSE CONNECTION AND EXTEND INTO THE PROPERTY A MINIMUM OF 600mm
22. INSPECTION SHAFT (IS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHCC STD DRG SEWER WORKS SD-300-10 & 11.
23. APPROVED CBR15 BACKFILL MATERIAL SHALL BE USED IN TRENCHES UNDER ROAD PAVEMENTS.
24. HOUSE CONNECTIONS CROSSING U/G ELECTRICITY ALLOCATION TO HAVE A MINIMUM OF 1.100m COVER.
25. IN ACCORDANCE WITH CHCC WATER/SEWER AGENCY REQUIREMENTS STEP IRONS ARE NOT REQUIRED IN M.H.'S FOR WORK HEALTH & SAFETY REQUIREMENTS FOR CONFINED SPACE ENTRY.

- STEP IRONS CAN CORRODE AND WEAKEN OVER TIME.
- THE CONNECTION BETWEEN THE STEP IRON AND THE MANHOLE CAN DETERIORATE AND WEAKEN OVER TIME.
- STEP IRONS ALLOW POTENTIALLY UNAUTHORISED ACCESS.
- STEP IRONS CAN IMPEDE A PROPER CONFINED SPACES ENTRY PROCESS.
- STEP IRONS ARE NOT NECESSARY IF MODERN DAY CONFINED ENTRY PROCESSES ARE BEING UTILISED.

DEVELOPMENT DESIGN SPECIFICATION

CITY OF COFFS HARBOUR TECHNICAL SPECIFICATION FOR INFRASTRUCTURE DESIGN

REFERENCED DOCUMENTS:

AS 2200	2006	DESIGN CHARTS FOR WATER SUPPLY AND SEWERAGE
POL-110	2018	PRESSURE SEWER SYSTEM POLICY
PRO-088	2018	PRESSURE SEWER SYSTEM PROCEDURE
PRO-089	2018	PRESSURE SEWER SYSTEM – TECHNICAL SPECIFICATION
WSA 02	2014	GRAVITY SEWERAGE CODE OF AUSTRALIA
WSA 06	2008	VACUUM SEWERAGE CODE OF AUSTRALIA
WSA 07	2007	PRESSURE SEWERAGE CODE OF AUSTRALIA

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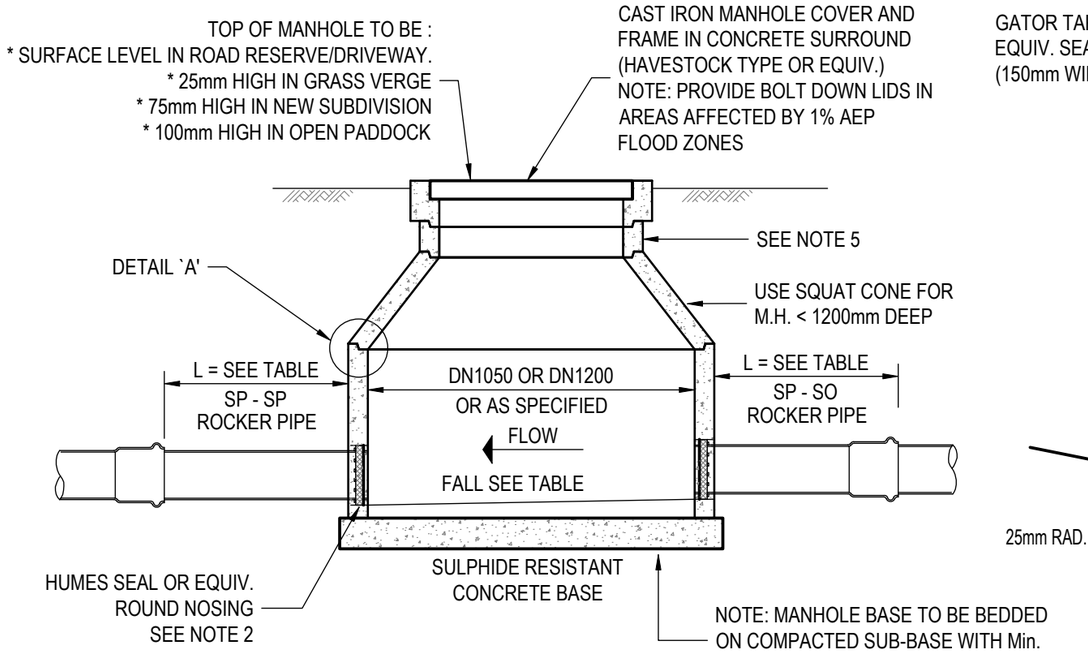
STANDARD DRAWINGS

STANDARD NOTES

Council Plan No. S-500-01

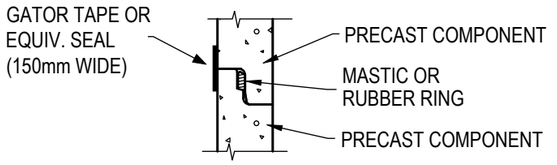
Orig. Size A3

Revision 1

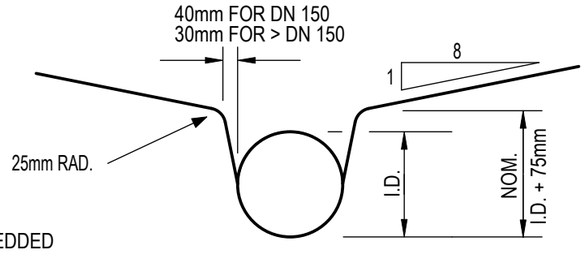


TYPICAL TYPE 1 MANHOLE

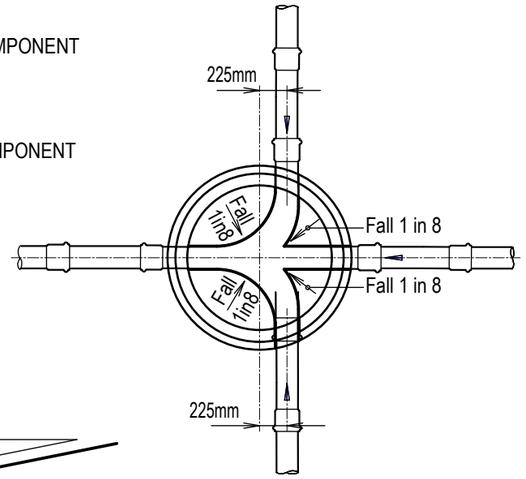
FOR M.H. < 1200 DEEP



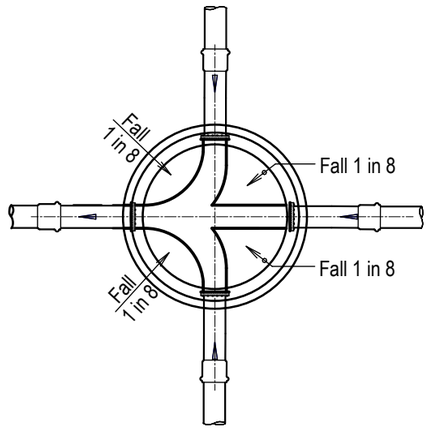
DETAIL `A'



BENCHING DETAIL



CAST IN-SITU



PRE-CAST

TYPICAL LAYOUT OF CHANNELS THROUGH MANHOLES

TABLE 7.3 WSA02-2014 - ROCKER PIPE DIMENSIONS

SEWER SIZE DN	PVC		DI	GRP	
	"L" MIN	"L" MAX	"L"	"L" MIN	"L" MAX
150	300	450	1500	500	1000
225	450	650	1500	500	1000
300	600	900	1500	500	1000
375	750	1125	1500	500	1000

MINIMUM INTERNAL FALL THROUGH AN MH JOINING RETICULATION SEWERS OF SAME DIAMETER

DEFLECTION ANGLE AT MH (DEGREES)	MINIMUM INTERNAL FALL (mm)
0° TO 10°	30
10° TO 60°	50
60° TO 120°	80

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. PROVIDE ROUNDED NOSING ON INLET AND OUTLET PIPE TO PREVENT DAMAGE TO JETTING EQUIPMENT AND CCTV GUIDES AND CABLES.
3. CONSTRUCTION MAY BE A COMBINATION OF PRECAST AND IN-SITU TO SUIT APPLICATION (CITY APPROVAL REQUIRED).
4. LOCATION OF FIRST SHAFT SECTION:
   (a) FIRST SHAFT SECTION TO BE BETWEEN 300-600mm LONG TO ALLOW FORMING OF CHANNEL AND BENCH.
   (b) PRIME COMPONENT 200mm FROM BOTTOM WITH CEMENT SLURRY. EMBED SHAFT SECTION 50mm INTO WET CONCRETE BUILD UP OUTSIDE FILLET TO 150mm.
5. MAKE -UP RINGS:
   (a) USE MINIMUM OF ONE MAKE-UP RING (PREFERABLY 100mm OR 150mm) PER MH DURING CONSTRUCTION TO ALLOW FOR FUTURE SURFACE ADJUSTMENT WITHOUT AFFECTING THE SHAFT SECTIONS.
   (b) SEE STD DRG S-500-06 FOR TAPERED MAKE UP RING ON SLOPING GROUND.
6. BACKFILL AROUND MH.
   (a) THE METHOD OF BACKFILL AND COMPACTION AROUND MH TO BE GENERALLY AS FOR PIPE EMBEDMENT.
   (b) TAKE CARE TO RAISE SELECT FILL EQUALLY ALL AROUND THE MH TO AVOID UNBALANCED LATERAL LOADING.
7. IN ACCORDANCE WITH THE CITY'S REQUIREMENTS STEP IRONS ARE NOT REQUIRED IN M.H.'S FOR WORK HEALTH & SAFETY REQUIREMENTS FOR CONFINED SPACE ENTRY.
8. IN WATER CHARGED GROUND OR WHERE THERE IS SIGNIFICANT RISK OF SURCHARGE USE CAST IN-SITU MH ONLY.
9. FOR PIPE CONNECTIONS TO MH SEE STD DRG S-500-05.
10. WHERE THERE IS SIGNIFICANT RISK OF INFILTRATION OR TREE ROOT INTRUSION APPLY AN EXTERNAL BITUMASTIC SEAL TAPE 150mm WIDE OVER A COAT OF MANUFACTURERS RECOMMENDED PRIME SEAL TO ALL JOINTS.
11. FOR MH COVER CLASS SELECTION AND FINISHED LEVELS SEE STD DRG S-500-06

(ADAPTED FROM C.H.C.C., P.W.D. & W.S.A. DRAWINGS)

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Approved	D.S.					
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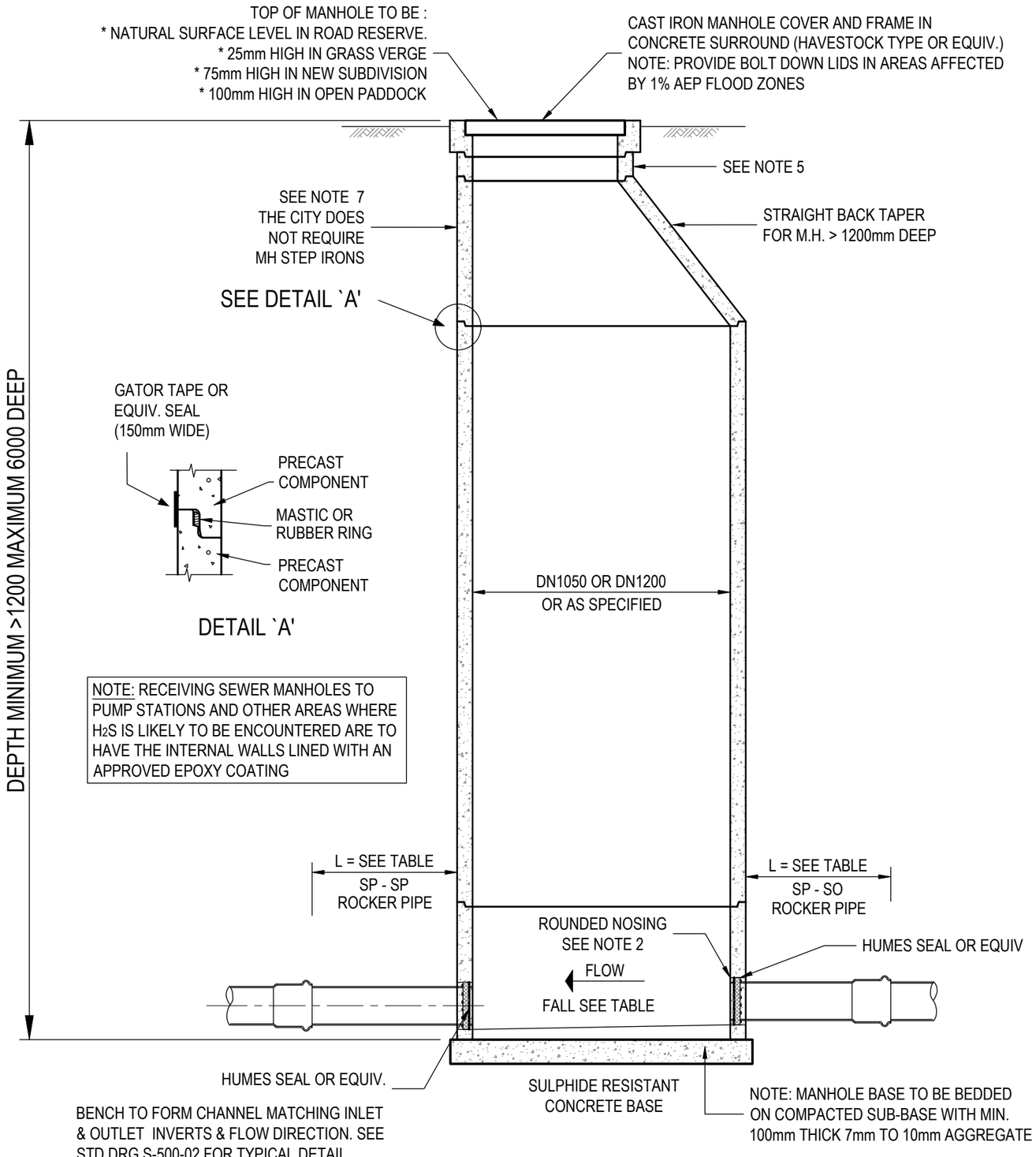
STANDARD DRAWINGS

MAINTENANCE HOLES
SEWERS <=DN 300
PRECAST TYPES 1

Council Plan No. S-500-02

Orig. Size A3

Revision 1



TYPICAL MANHOLE TYPE 2

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. PROVIDE ROUNDED NOSING ON INLET AND OUTLET PIPE TO PREVENT DAMAGE TO JETTING EQUIPMENT AND CCTV GUIDES AND CABLES.
3. CONSTRUCTION MAY BE A COMBINATION OF PRECAST AND IN-SITU TO SUIT APPLICATION (CITY APPROVAL REQUIRED).
4. LOCATION OF FIRST SHAFT SECTION:
   (a) FIRST SHAFT SECTION TO BE BETWEEN 300-600mm LONG TO ALLOW FORMING OF CHANNEL AND BENCH.
   (b) PRIME COMPONENT 200 FROM BOTTOM WITH CEMENT SLURRY. EMBED SHAFT SECTION 50mm INTO WET CONCRETE BUILD UP OUTSIDE FILLET TO 150mm.
5. MAKE -UP RINGS:
   (a) USE MINIMUM OF ONE MAKE-UP RING (PREFERABLY 100mm OR 150mm) PER MH DURING CONSTRUCTION TO ALLOW FOR FUTURE SURFACE ADJUSTMENT WITHOUT AFFECTING THE SHAFT SECTIONS.
   (b) SEE STD DRG S-500-06 FOR TAPERED MAKE UP RING ON SLOPING GROUND.
6. BACKFILL AROUND MH.
   (a) THE METHOD OF BACKFILL AND COMPACTION AROUND MH TO BE GENERALLY AS FOR PIPE EMBEDMENT.
   (b) TAKE CARE TO RAISE SELECT FILL EQUALLY ALL AROUND THE MH TO AVOID UNBALANCED LATERAL LOADING.
7. IN ACCORDANCE WITH THE CITY'S REQUIREMENTS STEP IRONS ARE NOT REQUIRED IN M.H.'S FOR WORK HEALTH & SAFETY REQUIREMENTS FOR CONFINED SPACE ENTRY.
8. IN WATER CHARGED GROUND OR WHERE THERE IS SIGNIFICANT RISK OF SURCHARGE USE ONLY CAST IN-SITU MH.
9. FOR PIPE CONNECTIONS TO MH SEE STD DRG S-500-05.
10. WHERE THERE IS SIGNIFICANT RISK OF INFILTRATION OR TREE ROOT INTRUSION APPLY AN EXTERNAL BITUMASTIC SEAL TAPE 150mm WIDE OVER A COAT OF MANUFACTURERS RECOMMENDED PRIME SEAL TO ALL JOINTS.
11. FOR MH COVER CLASS SELECTION AND FINISHED LEVELS SEE STD DRG S-500-06.

TABLE 7.3 WSA02-2014 - ROCKER PIPE DIMENSIONS

SEWER SIZE DN	PVC		DI	GRP	
	"L" MIN	"L" MAX	"L"	"L" MIN	"L" MAX
150	300	450	1500	500	1000
225	450	650	1500	500	1000
300	600	900	1500	500	1000
375	750	1125	1500	500	1000

MINIMUM INTERNAL FALL THROUGH A MH JOINING RETICULATION SEWERS OF SAME DIAMETER

DEFLECTION ANGLE AT MH (DEGREES)	MINIMUM INTERNAL FALL (mm)
0° TO 10°	30
10° TO 60°	50
60° TO 120°	80

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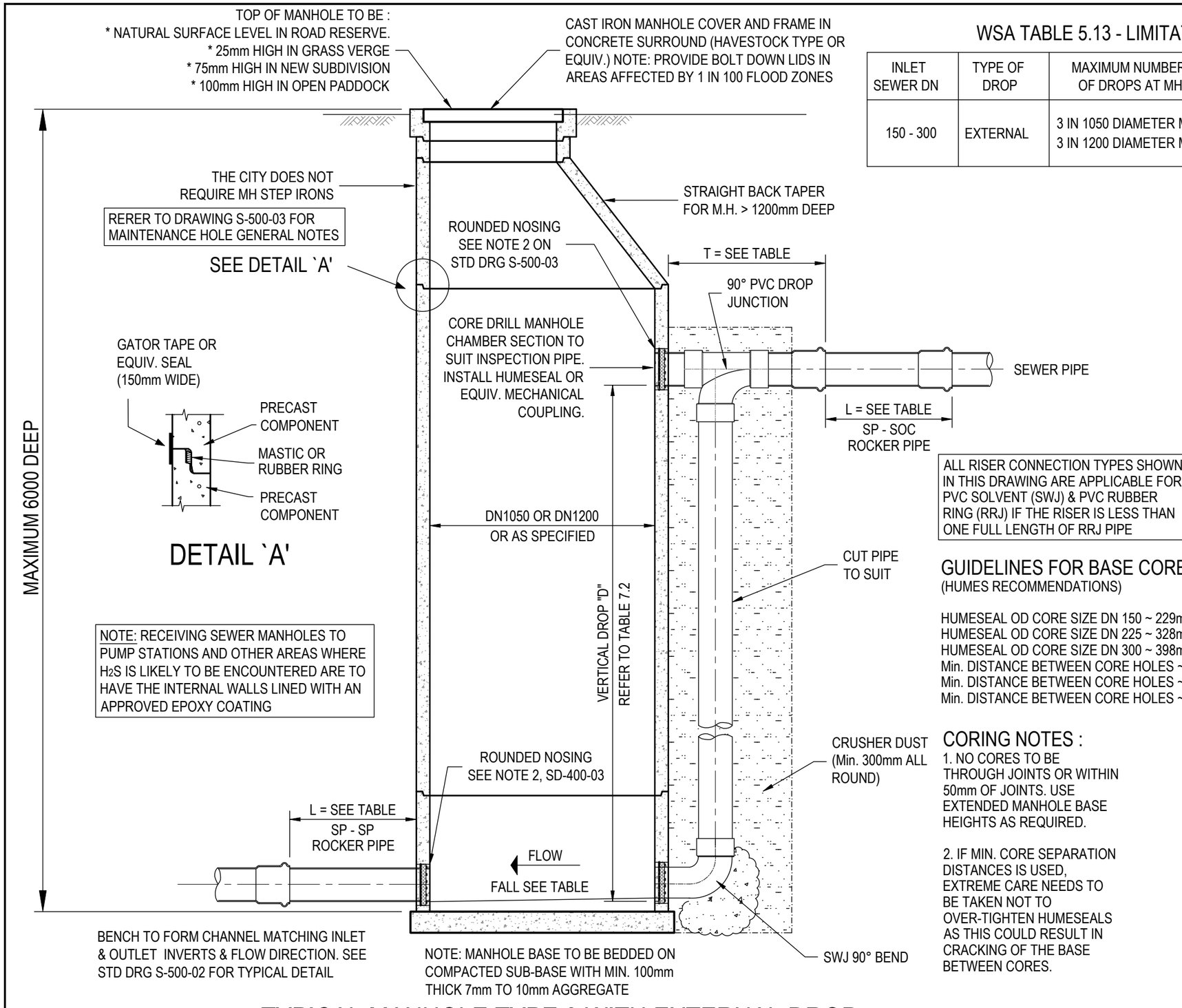
STANDARD DRAWINGS

MAINTENANCE HOLES
SEWERS <=DN 300
PRECAST TYPES 2

Council Plan No. S-500-03

Orig. Size A3

Revision 1



TYPICAL MANHOLE TYPE 3 WITH EXTERNAL DROP

NOT TO SCALE

WSA TABLE 5.13 - LIMITATIONS ON AT MHs USING EXTERNAL DROPS

INLET SEWER DN	TYPE OF DROP	MAXIMUM NUMBER OF DROPS AT MH	MH PIPE DIAMETERS		LIMITATIONS
			INLET PIPE DN	DROP PIPE DN	
150 - 300	EXTERNAL	3 IN 1050 DIAMETER MH 3 IN 1200 DIAMETER MH	150 225 300	150 225 300	DEPENDANT ON OTHER LINES COMING INTO MH - MAXIMUM 3 INLETS INTO MH

WSA TABLE 7.2
MIN. EXTERNAL MH DROP PIPE STRUCTURE

SEWER SIZE DN	"D" MIN VERTICAL	"T" MIN
150	490	600
225	750	900
300	880	1100

TABLE 7.3 WSA02-2014 - ROCKER PIPE DIMENSIONS

SEWER SIZE DN	PVC		DI
	"L" MIN	"L" MAX	"L"
150	300	450	1500
225	450	650	1500
300	600	900	1500

ALL RISER CONNECTION TYPES SHOWN IN THIS DRAWING ARE APPLICABLE FOR PVC SOLVENT (SWJ) & PVC RUBBER RING (RRJ) IF THE RISER IS LESS THAN ONE FULL LENGTH OF RRJ PIPE

GUIDELINES FOR BASE CORES
(HUMES RECOMMENDATIONS)

HUMESEAL OD CORE SIZE DN 150 ~ 229mm
HUMESEAL OD CORE SIZE DN 225 ~ 328mm
HUMESEAL OD CORE SIZE DN 300 ~ 398mm
Min. DISTANCE BETWEEN CORE HOLES ~ 75mm FOR DN150
Min. DISTANCE BETWEEN CORE HOLES ~ 50mm FOR DN225
Min. DISTANCE BETWEEN CORE HOLES ~ 50mm FOR DN300

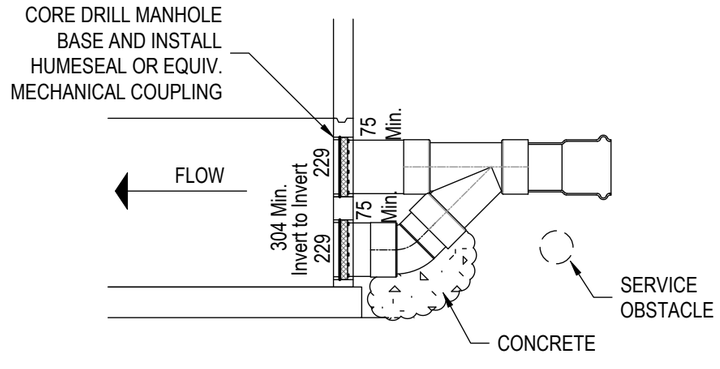
CORING NOTES :

1. NO CORES TO BE THROUGH JOINTS OR WITHIN 50mm OF JOINTS. USE EXTENDED MANHOLE BASE HEIGHTS AS REQUIRED.

2. IF MIN. CORE SEPARATION DISTANCES IS USED, EXTREME CARE NEEDS TO BE TAKEN NOT TO OVER-TIGHTEN HUMESEALS AS THIS COULD RESULT IN CRACKING OF THE BASE BETWEEN CORES.

EXTERNAL DROP MANHOLES CANNOT BE CONSTRUCTED IN THESE DROP RANGES

SEWER SIZE DN	DROP RANGE
150	300mm - 460mm
225	300mm - 540mm
300	300mm - 620mm



SEWER GRAVITY MAIN DROP MANHOLE FOR 150Ø PVC - Min. REQUIREMENTS FOR PASSING OVER OBSTACLES

(FOR SPECIAL SITUATION ONLY, SUBJECT TO APPROVAL)

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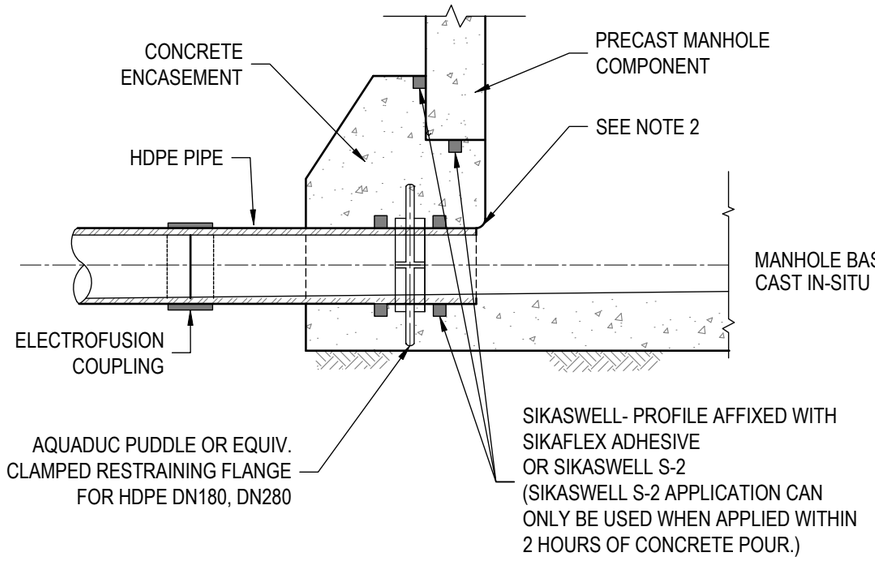
STANDARD DRAWINGS

MAINTENANCE HOLES
SEWERS <=DN 300
PRECAST TYPES 3 - EXTERNAL DROP MANHOLE

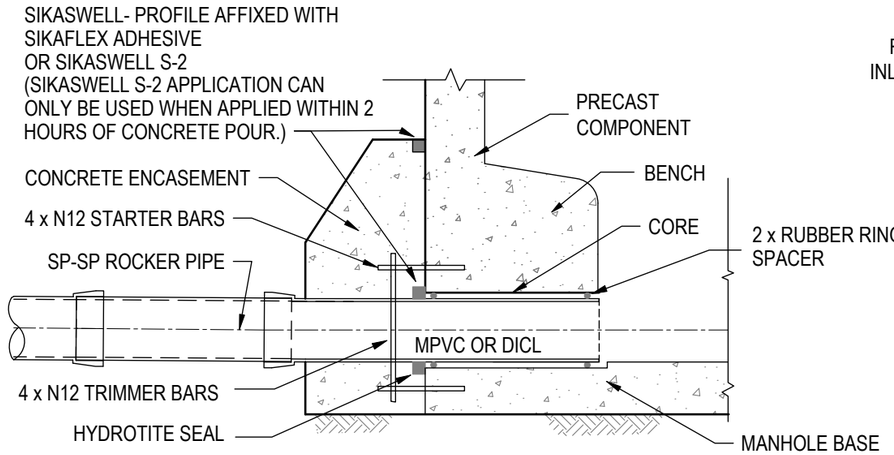
Council Plan No. S-500-04

Orig. Size A3

Revision 1

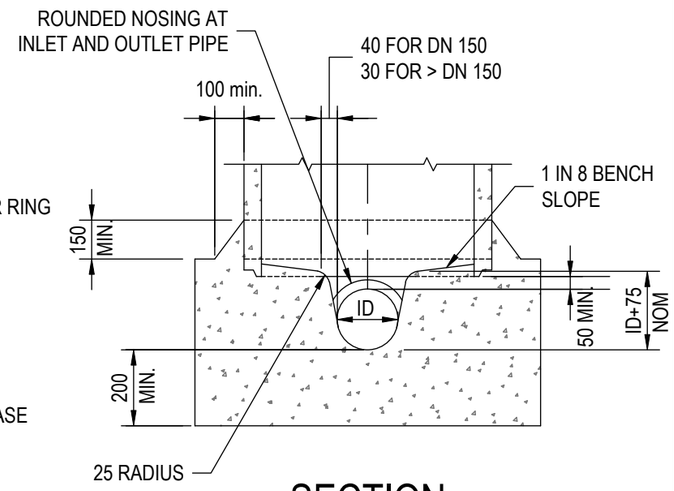


TYPICAL MANHOLE CONNECTION HDPE - HDPE OVER 180Ø AND IN-SITU MANHOLE BASE CONSTRUCTION



TYPICAL MANHOLE CONNECTION DICL / MPVC CORE OF EXISTING MH

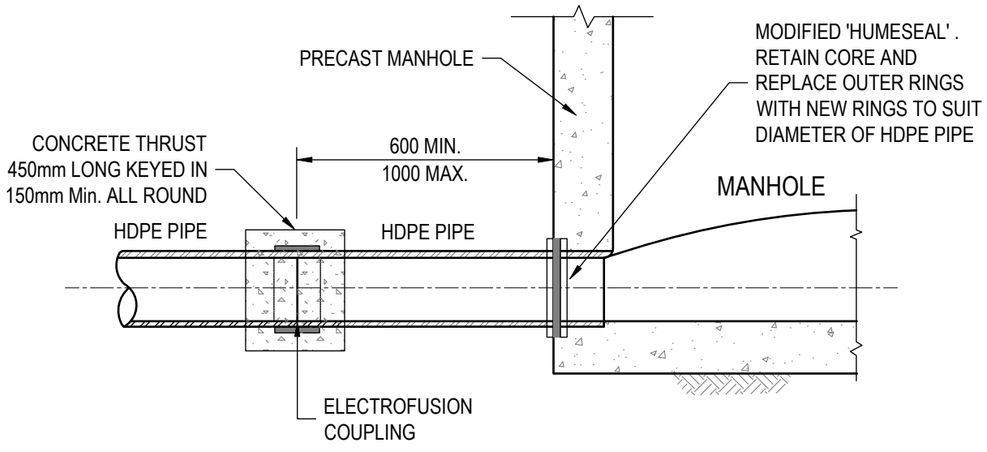
(DICL PIPE TO BE CALCIUM ALUMINATE CEMENT LINED - TYTON EXTREME OR EQUIVALENT)



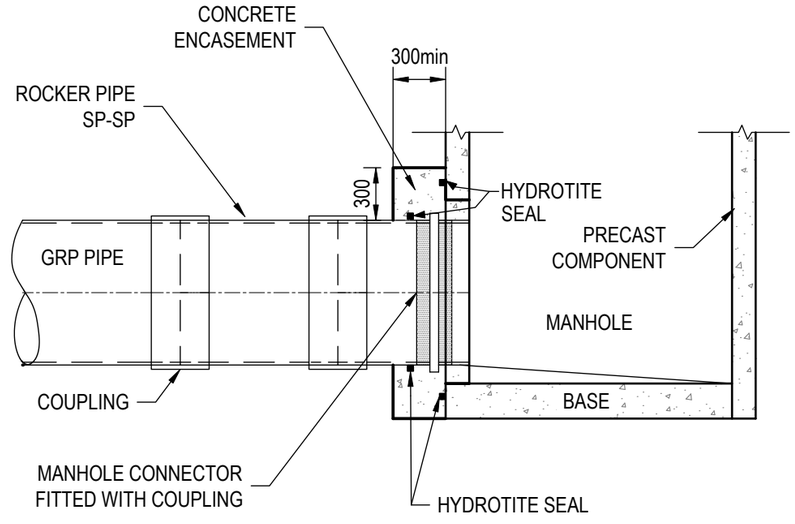
SECTION TYPICAL CAST IN-SITU BASE

NOTES:

1. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CITYS CONSTRUCTION SPECIFICATION AND THE WSA 02 - 2014 SEWERAGE CODE OF AUSTRALIA.
2. APPLY AN EXTERNAL BITUMASTIC SEAL TAPE (BITUTHENE OR EQUIV.) 150mm WIDE OVER A COAT OF MANUFACTURERS RECOMMENDED PRIME SEAL TO ALL JOINTS.
3. FORM R50 ROUNDED NOSING ON INLET & OUTLET PIPES TO PREVENT DAMAGE TO JETTING EQUIPMENT, CCTV GUIDES & CABLES.
4. MAKE-UP RINGS - USE MIN. OF 1 MAKE-UP RING PREFERABLY 100mm TO 150mm (TO Max. 350mm) PER MH DURING CONSTRUCTION TO ALLOW FOR FUTURE SURFACE ADJUSTMENT WITHOUT AFFECTING THE SHAFT SECTIONS. FOR TAPERED MAKE-UP RING ON SLOPING GROUND SEE STD DRG S-500-06.
5. PROVIDE MAINTENANCE HOLE BENCHING AS TYPICALLY SHOWN ON STD DRG S-500-02.



TYPICAL MANHOLE CONNECTION 180Ø HDPE - HDPE



TYPICAL MANHOLE CONNECTION G.R.P. PIPE

Drawn	B.P.S					
Checked	C.B					
Approved	D.S.					
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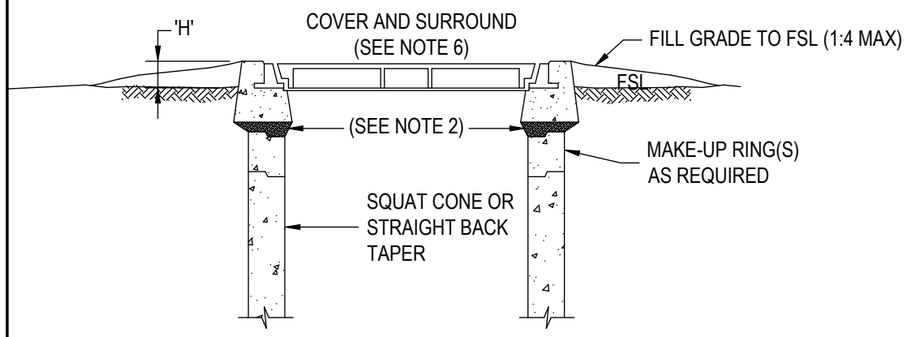
STANDARD DRAWINGS

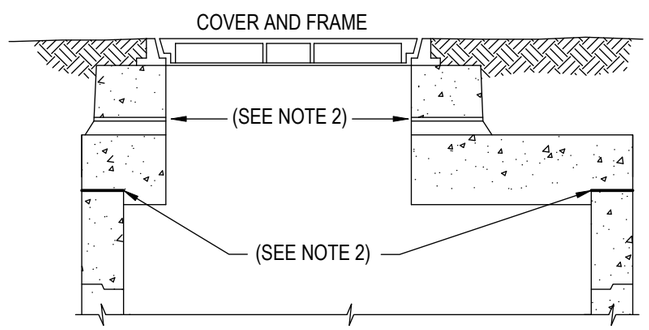
MAINTENANCE HOLES
TYPICAL CONNECTION DETAIL

Council Plan No. S-500-05

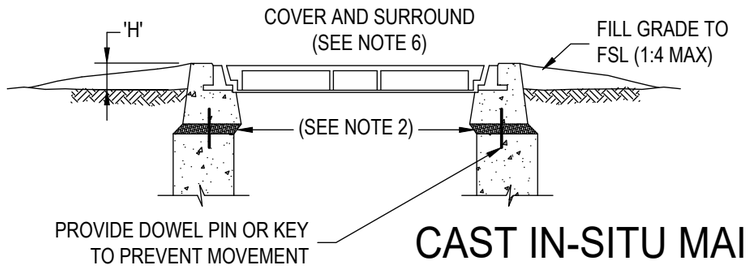
Orig. Size A3

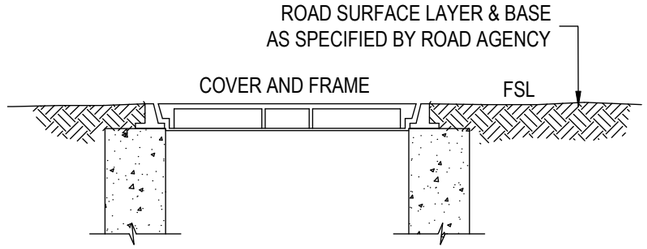
Revision 1



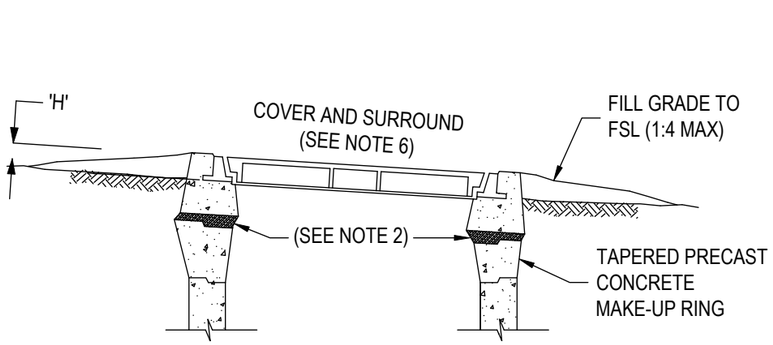


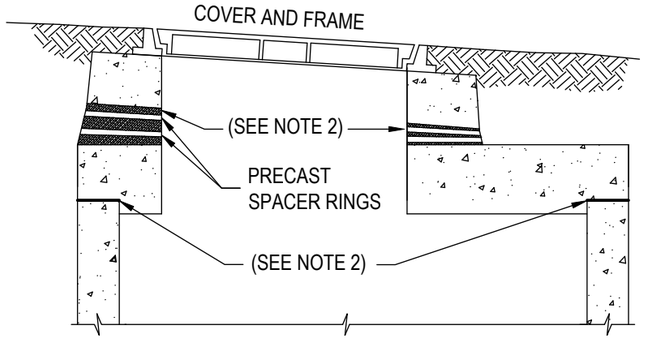
PRE-CAST MAINTENANCE HOLES





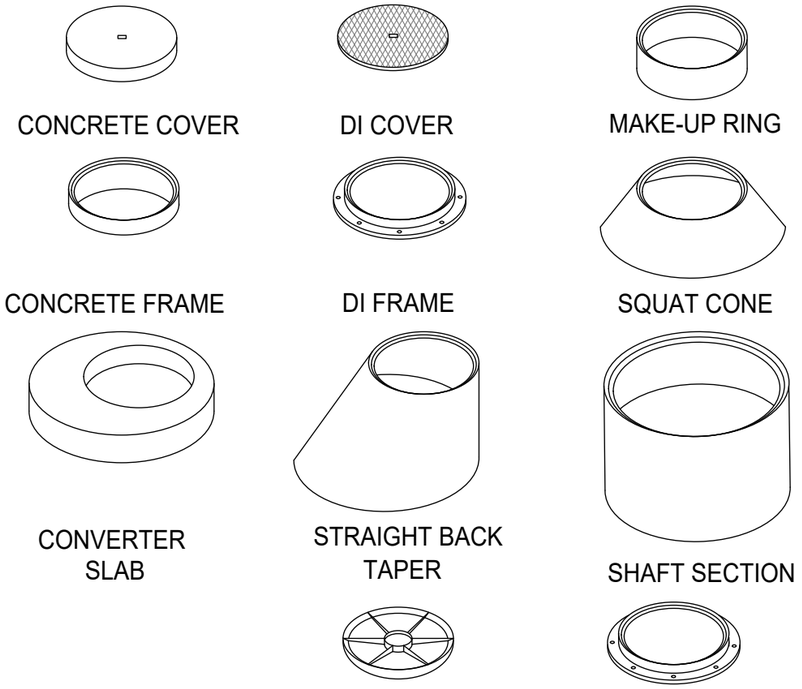
CAST IN-SITU MAINTENANCE HOLES





SLOPING GROUND

(SEE NOTE 5)



INFILL TYPE ROUND COVER & FRAME

COVER FINISHED SURFACE LEVEL

FINISHED LEVELS OF MH COVERS	
LOCATION	H
UNDEVELOPED AREAS	100
NEW SUBDIVISIONS	75
ROADS, LANE WAYS, FOOTWAYS & DRIVEWAYS	FLUSH
EXISTING BUILT UP AREAS	25
OTHER AS SPECIFIED (EG ABOVE FLOOD LEVEL)	

COVER CLASS

SELECTION OF MH COVERS	
ALL COVERS TO BE WATER TIGHT (SEE NOTE 7)	
LOCATION	CLASS
RESERVES	B - NON-TRAFFICABLE
ROADWAYS, DRIVEWAYS	D - TRAFFICABLE
LOCATIONS SUBJECT TO FLOODING etc.	D - TRAFFICABLE WITH BOLT-DOWN (SEE NOTE 3)

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. SEALING METHODS
(a) MAKE JOINTS BETWEEN SHAFT TOP/MAKE-UP RING AND COVER SUPPORT RING USING BUTYL-MASTIC, ORMORTAR MADE FROM 3 PARTS SAND TO 1 PART CEMENT.
(b) APPLY BUTYL-MASTIC IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION.
(c) THICKNESS OF CEMENT MORTAR AT ANY JOINT TO BE NO GREATER THAN 50mm.
(d) SCABBLE AND CLEAN JOINT SURFACES SO THAT ALL LOOSE OR SOFT MATERIAL IS REMOVED.
(e) JOINT SURFACES TO BE BRUSHED CLEAN, SPONGED WET AND PRIMED WITH A CEMENT/WATER SLURRY PRIOR TO PLACING THE CEMENT MORTAR.
3. IN AREAS SUBJECT TO SURCHARGE, USE CAST IN-SITU MH WITH BOLTED MH COVER SO THAT SEPARATION DURING SURCHARGE IS PREVENTED. SEE STD DRG S-500-07.
4. WHERE SPECIFIED JOIN METAL FRAME TO CAST IN-SITU MH RISER AS FOLLOWS:
(a) MAKE JOINTS BETWEEN SHAFT TOP AND METAL FRAME USING BUTYL -MASTIC AND LOCKING DOWN BOLTS, EQUALLY PLACED AROUND THE CIRCUMFERENCE.
(b) USE 12 DIAMETER GALVANISED OR STAINLESS STEEL BOLTS EXTENDING 75 MIN INTO CONCRETE.
(e) FOR NON-TRAFFICABLE LOCATIONS USE A MINIMUM OF TWO BOLTS.
(d) FOR TRAFFICABLE LOCATIONS USE A MINIMUM OF FOUR BOLTS.
5. MAXIMUM PERMISSIBLE SLOPE OF COVERS:
CLASS "B" 1 IN 4
CLASS "D" 1 IN 1 0
6. COVERS AS AUTHORISED BY THE CITY.
7. WHERE SPECIFIED USE GAS TIGHT COVERS.

PLOT DATE: 19-Dec-24

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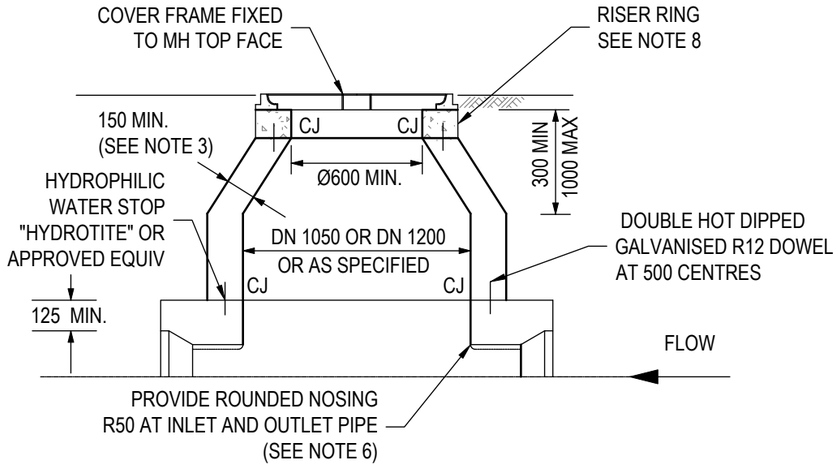
STANDARD DRAWINGS

MAINTENACE HOLES
TYPICAL MH COVER ARRANGEMENTS

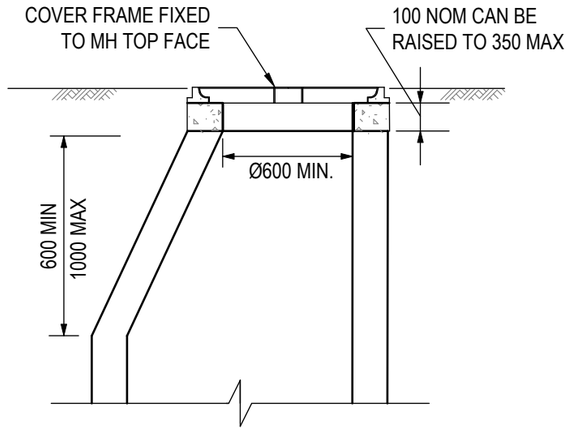
Council Plan No. S-500-06

Orig. Size A3 | Revision 1



MAINTENANCE HOLE TYPE C1

FOR MH <= 1200 DEEP

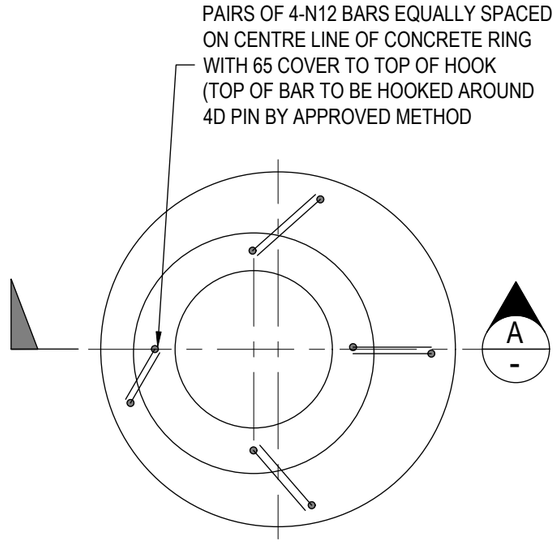


STRAIGHT BACK TAPER DETAIL

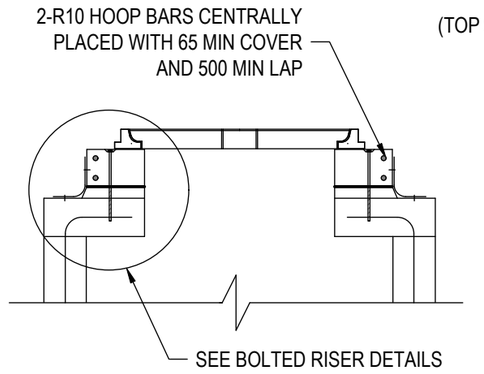
(ADAPTED FROM C.H.C.C., P.W.D. & W.S.A. DRAWINGS)

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. ALL CONCRETE TO BE SPECIAL CLASS
3. WALL THICKNESS TO BE 150 MIN. IN AGGRESIVE SOILS, HIGH WATER TABLE AND SALINE ENVIRONMENTS, THE WALL THICKNESS SHALL BE INCREASED TO 225 MIN.
4. MH TYPE C1 MAY BE OF FULL OR PARTIAL CONICAL CONSTRUCTION IF ACCEPTABLE TO THE CITY.
5. FOR PIPE CONNECTION DETAILS INTO MANHOLE SEE STD DRG S-500-05
6. PROVIDE ROUNDED NOSING ON INLET AND OUTLET PIPE TO PREVENT DAMAGE TO JETTING EQUIPMENT AND CCTV GUIDES AND CABLES.
7. FIX TOP SECTIONS OF MH, COVER SURROUND AND COVER TO PREVENT SEPARATION WHERE SEWER IS SUBJECT TO SURCHARING.
8. RISER RING OF 100-150mm NOMINAL HEIGHT TO BE INSTALLED TO ALLOW ADJUSTMENT WITHOUT AFFECTING THE CHAMBER STRUCTURE



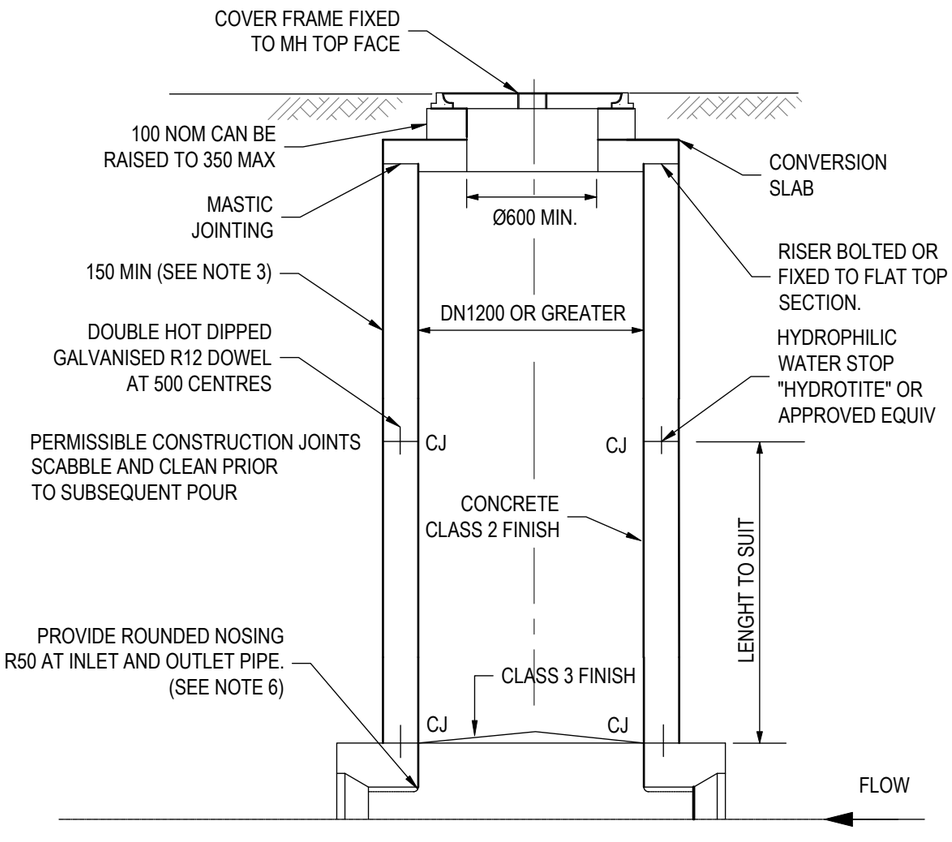
TOP VIEW



SECTION A-A

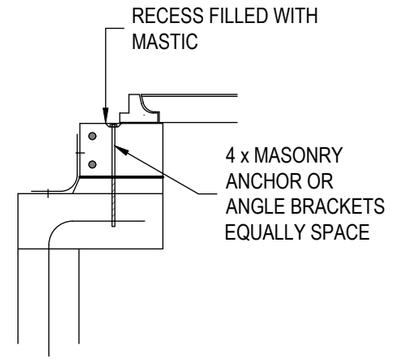
FIXING ARRANGEMENT FOR SURCHARGE CONDITIONS

(SEE NOTE 7)



MAINTENANCE HOLE TYPE C2

FOR MH > 1200 DEEP TO =<6000 DEPTH
(TOP SECTION MAY BE AS SHOWN OR STRAIGHT BACK TAPER)



BOLTED RISER DETAIL

Drawn	B.P.S					
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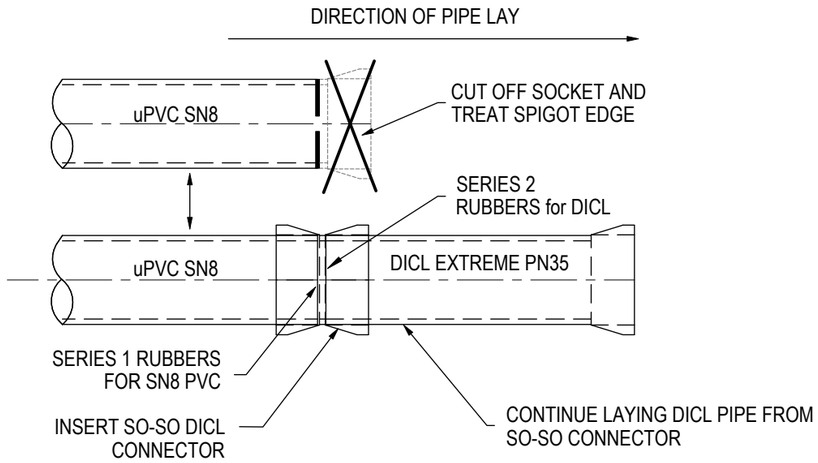
STANDARD DRAWINGS

MAINTENACE HOLES
STANDARD DRAWINGS=< DN300
CAST IN-SITU TYPES C1 &C2

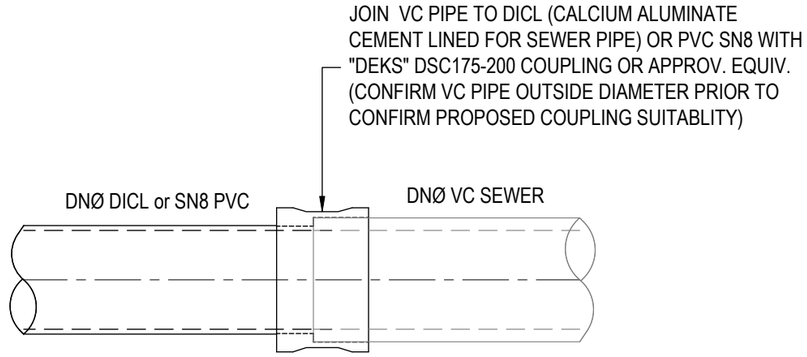
Council Plan No. S-500-07

Orig. Size A3 | Revision 1

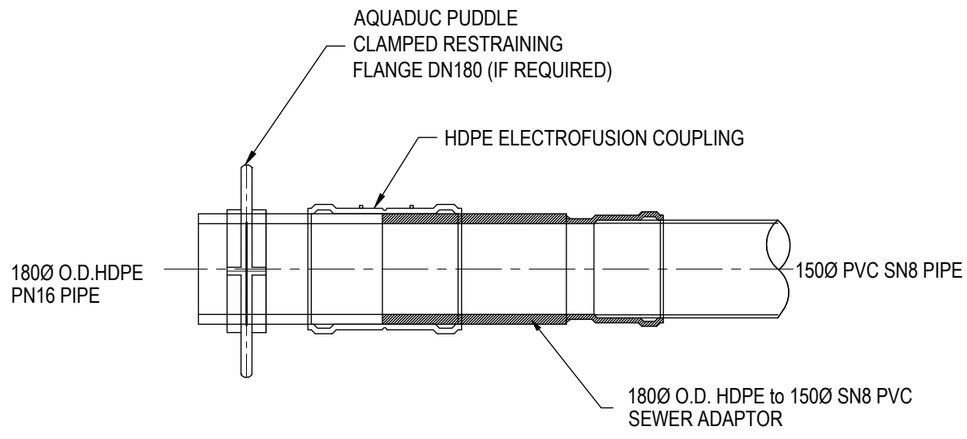
PLOT DATE: 19-Dec-24



TYPICAL CONNECTION OF DICL PIPE TO PVC DETAIL



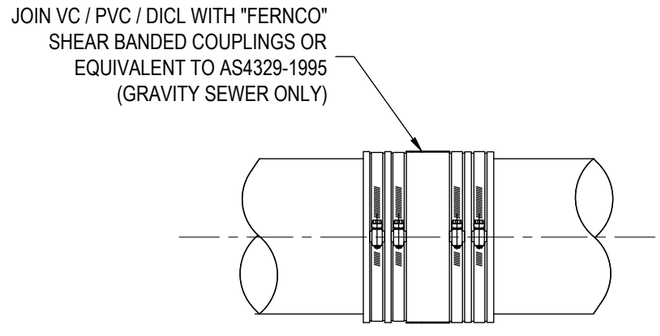
TYPICAL SHEAR COULPING CONNECTION OF VC PIPE TO PVC OR DICL DETAIL



CONNECTION DETAIL DN180 PN16 HDPE TO PVC SN8 SEWER

NON STANDARD

CITY APPROVAL REQUIRED



SHEAR BANDED COUPLING (VC/PVC/DICL)

PLOT DATE: 19-Dec-24

Drawn	B.P.S					
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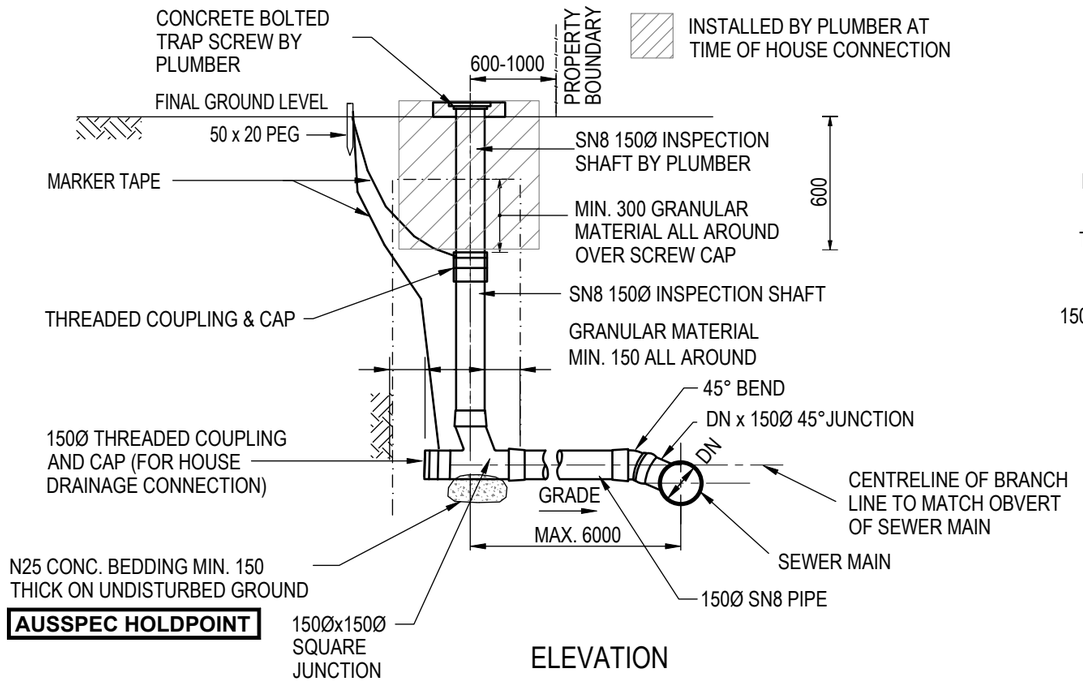
STANDARD DRAWINGS

PIPE JOINTING DETAILS
PVC SN8 TO DICL, VC CLAY & HDPE

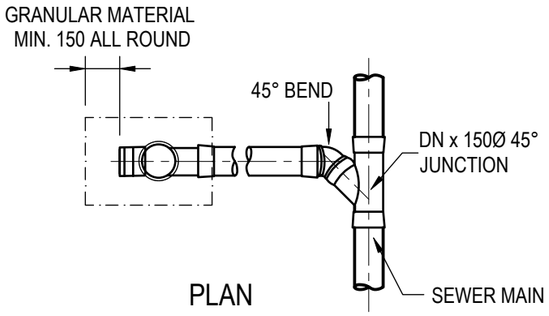
Council Plan No. S-500-08

Orig. Size A3

Revision 1



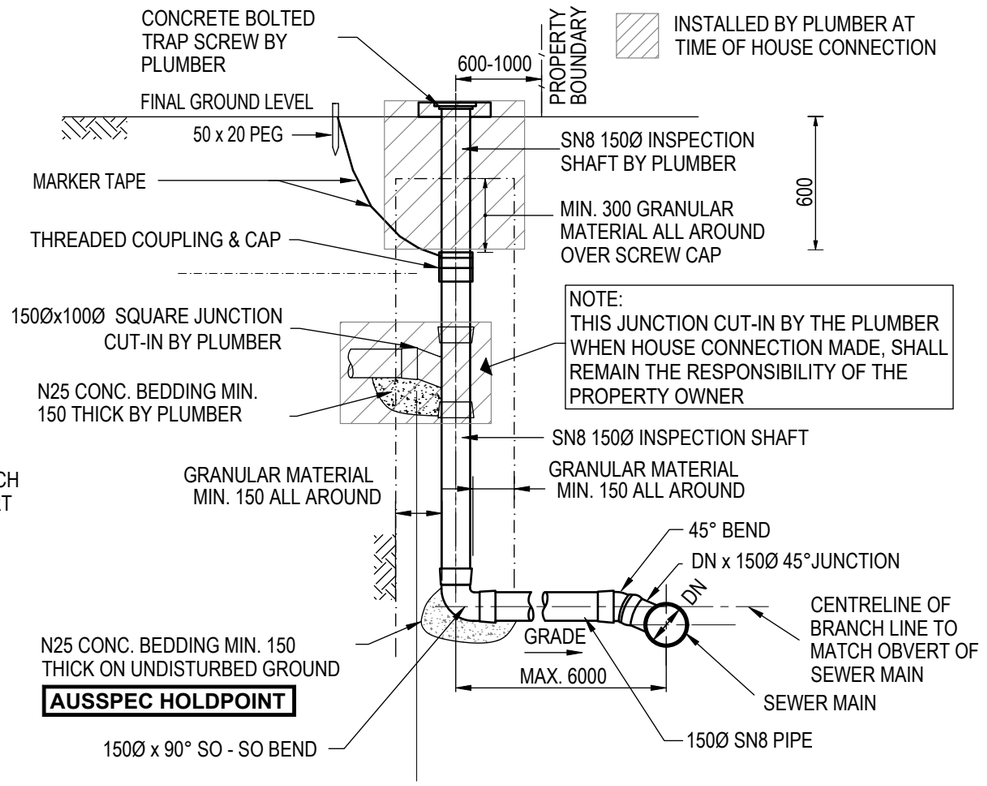
ELEVATION



PLAN

SHALLOW SEWER JUNCTION (< 1200mm)

MARK AS "H" ON W.A.E



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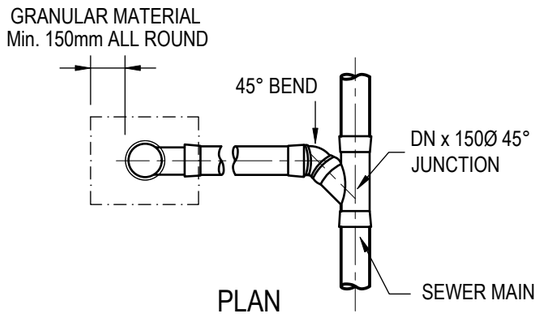

PLAN

DEEP SEWER JUNCTION (> 1200mm)

MARK AS "V" ON W.A.E

NOTE:

THE CITY IS RESPONSIBLE FOR ALL MAINTENANCE AND REPAIRS TO THE INSPECTION SHAFT. EXCEPT IN THE INSTANCE OF THE 150mm x 100mm VERTICAL JUNCTION, INSTALLED BY THE PLUMBER IN SHAFTS GREATER THAN 1200mm DEEP. THIS JUNCTION REMAINS PART OF THE HOUSE DRAINAGE AND IS THE OWNER'S MAINTENANCE RESPONSIBILITY.

FOR PROPERTIES WHERE THERE IS ONLY A 150mm SCREW CAP CONNECTION POINT, THE PLUMBER IS TO CONSTRUCT THE INSPECTION SHAFT IN 150mm PVC AS PER CONSTRUCTION SPECIFICATION.

HOUSE BRANCH AND INSPECTION SHAFT CONSTRUCTION:

TO BE CONSTRUCTED AS PART OF INITIAL PROPERTY DEVELOPMENT BY DEVELOPER OR
TO BE CONSTRUCTED AS CUT-IN TO EXISTING MAIN BY PROPERTY DEVELOPER OR
TO BE CONSTRUCTED AS PART OF CUT-IN FROM EXISTING PROPERTY TO EXISTING MAIN BY QUALIFIED PLUMBER.
AT COMPLETION OF WORKS THE HOUSE BRANCH AND INSPECTION SHAFT WILL BECOME THE RESPONSIBILTY OF THE CITY.
WHEN HOUSE CONNECTION IS MADE BY PUMBER, THE I.O.CONNECTIONS WILL BECOME THE RESPONSIBILTY OF THE CITY.
150Øx100Ø SQUARE JUNCTION CUT-IN TO INSPECTION SHAFT (FOR DEEP CONNECTIONS) BY PLUMBER SHALL REMAIN THE RESPONSIBILITY OF THE PROPERTY OWNER.

NOTE: ALL PIPEWORK AND FITTINGS TO BE SN8. HOUSE BRANCH AND INSPECTION SHAFT TO COMPLY WITH THE NATIONAL PLUMBING AND DRAINAGE CODE AS 3500 PART 2 SECTION 4, EXCEPT WHERE SHOWN OTHERWISE ON THIS DRAWING.

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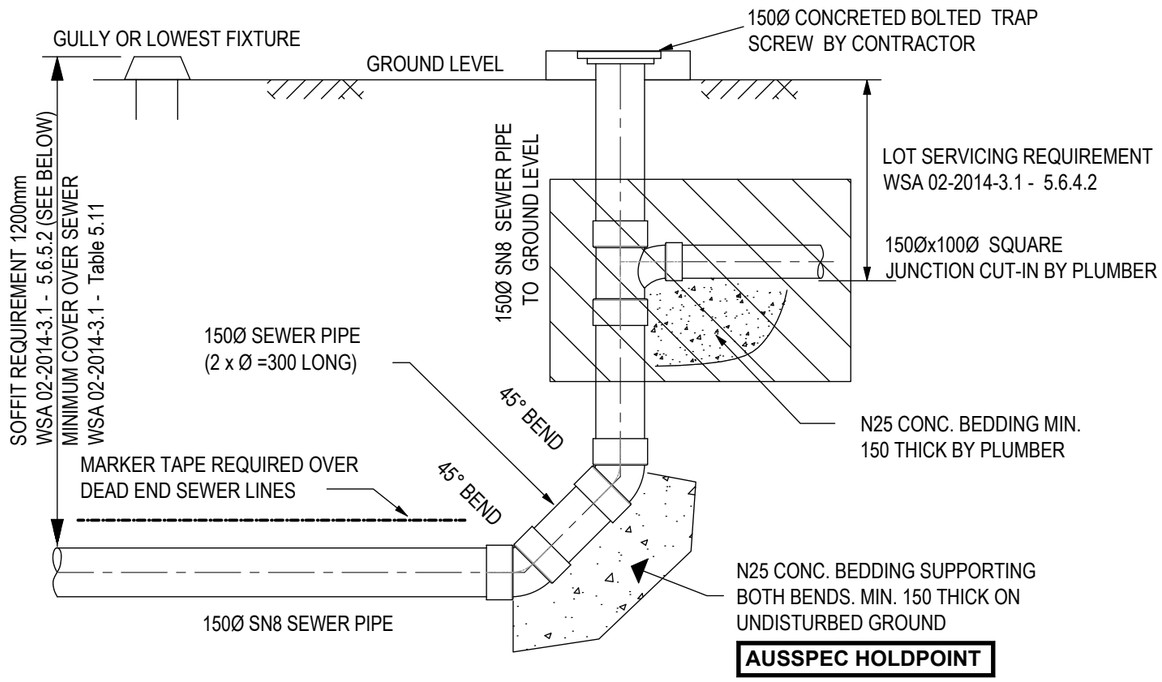
STANDARD DRAWINGS

PROPERTY CONNECTION DETAIL

Council Plan No. S-500-09

Orig. Size A3

Revision 1



DEEP SEWER DEAD END <30m DETAIL

NOT TO SCALE

TERMINATING BOUNDARY SHAFT GREATER THAN 1200 DEEP

SOFFIT REQUIREMENT

THE SOFFIT REQUIREMENT IS THE DEPTH FROM THE CONTROLLING SURFACE LEVEL ON THE PROPERTY (USUALLY THE OVERFLOW RELIEF GULLY) TO THE SOFFIT OF THE SEWER CONNECTION POINT. THE SOFFIT REQUIREMENT IS BASED ON PROVIDING ASSURANCE THAT A RETICULATION SEWER, FLOWING AT FULL CAPACITY, WILL NOT SURCHARGE VIA THE CUSTOMER SANITARY DRAIN

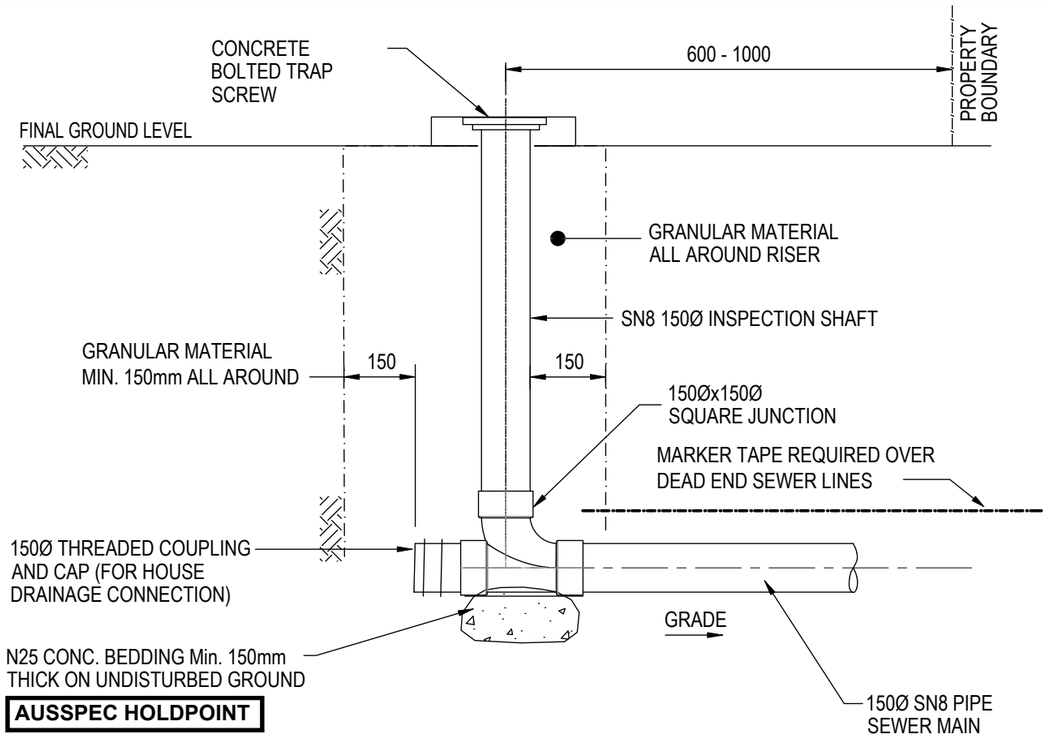
5.6.5.2 SOFFIT REQUIREMENT (WSA 02-2014-3.1)

THE SOFFIT REQUIREMENT APPLIES TO ALL SEWERED LOTS AND SHALL BE 1200. WITH THE CITY THE SOFFIT REQUIREMENTS MAY BE REDUCED TO 900mm WHERE:

(a) THE NUMBER OF LOTS CONNECTED UPSTREAM OF THE SUBJECT LOT DOES NOT EXCEED 10 OR THE EQUIVALENT LOADING; OR

(b) THE GRADE OF THE SEWER DOWNSTREAM OF THE PROPERTY CONNECTION IS STEEPER THAN 3%.

WHERE THE MINIMUM SOFFIT REQUIREMENT CANNOT BE MET FOR AN EXISTING LOT, ALTERNATIVE MEANS OF SAFEGUARDING AGAINST OVERFLOW SHALL BE DETERMINED, E.G. PUMPING SYSTEM, INSTALLATION OF REFLUX VALVE. SUCH MEASURES SHALL COMPLY WITH AS/NZS 3500.2.



SHALLOW SEWER DEAD END <30m DETAIL

NOT TO SCALE

TERMINATING BOUNDARY SHAFT LESS THAN 1200 DEEP

7.8.5.2 PERMANENT ENDS OF PIPE (WSA 02-2014-3.1)

RETICULATION SEWERS THAT ARE NOT TO BE EXTENDED DO NOT NEED TO BE TERMINATED AT A SMH IF ALL THE FOLLOWING REQUIREMENTS ARE MET:

(a) IF THE LENGTH OF SEWER FROM THE DOWNSTREAM MAINTENANCE STRUCTURE IS LESS THAN 30m. THEN ONLY A MAXIMUM OF 2 LOTS CAN BE CONNECTED TO THE SEWER.
(c) THE GRADE IS 1 IN 60 OR STEEPER. (1.67%) (SMH REQUIRED FOR GRADES BELOW 1.67%.)
(d) MINIMUM SOFFIT HEIGHT IN ACHIEVED (1200mm)
(e) 100% OF THE LOT IS SERVICEABLE INTO THE VERTICAL RISER

RETICULATION SEWERS THAT COMPLY WITH THE ABOVE REQUIREMENTS MAY BE TERMINATED WITH A VERTICAL BOUNDARY RISER TO FGL.

NOTE: MAINTENANCE CHAMBERS, MAINTENANCE SHAFTS, TERMINATING MAINTENANCE SHAFTS NOT APPROVED FOR USE BY THE CITY.

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STANDARD DRAWINGS

STANDARD DRAWINGS DEAD DETAIL
PROPERTY CONNECTION

Council Plan No.
S-500-10

Orig. Size
A3

Revision
1

5.6.5.2 SOFFIT REQUIREMENT (WSA 02-2014-3.1)
THE SOFFIT REQUIREMENT APPLIES TO ALL SEWERED LOTS AND SHALL BE 1200mm WITH THE APPROVAL OF THE CITY, THE SOFFIT REQUIREMENTS MAY BE REDUCED TO 900mm WHERE:
(A) THE NUMBER OF LOTS CONNECTED UPSTREAM OF THE SUBJECT LOT DOES NOT EXCEED 10 OR THE EQUIVALENT LOADING; OR
(B) THE GRADE OF THE SEWER DOWNSTREAM OF THE PROPERTY CONNECTION IS STEEPER THAN 3%.

WHERE THE MINIMUM SOFFIT REQUIREMENT CANNOT BE MET FOR AN EXISTING LOT, ALTERNATIVE MEANS OF SAFEGUARDING AGAINST OVERFLOW SHALL BE DETERMINED, E.G. PUMPING SYSTEM, INSTALLATION OF REFLUX VALVE. SUCH MEASURES SHALL COMPLY WITH AS/NZS 3500.2.

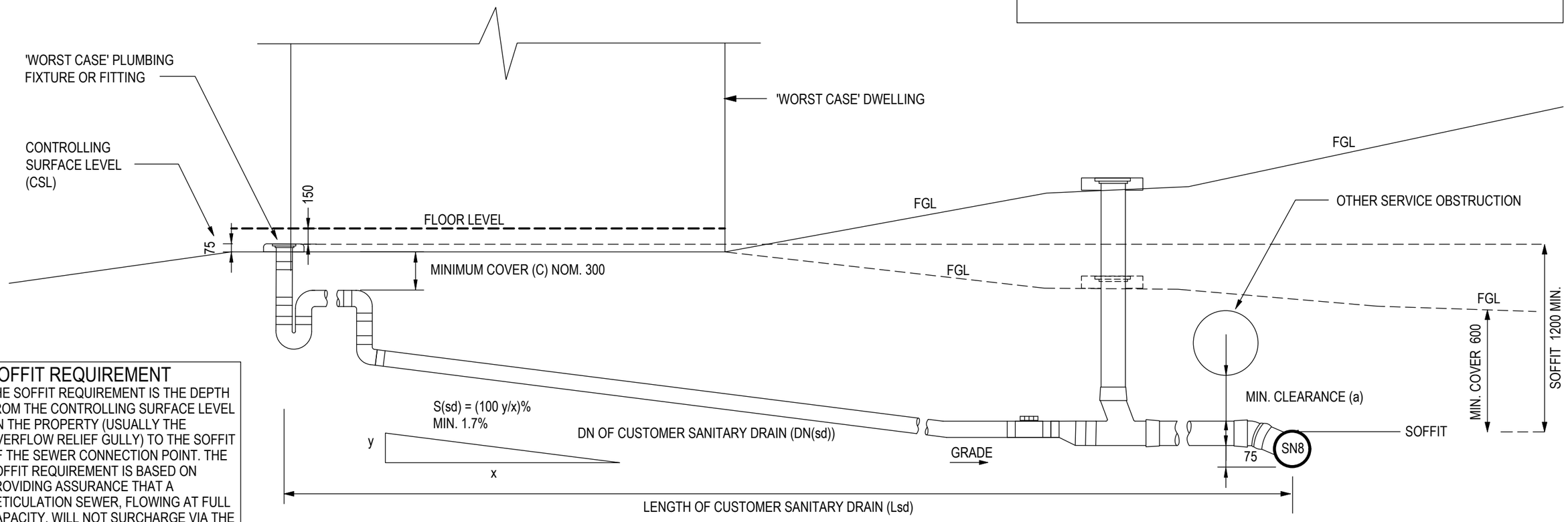
5.6.4 LOT SERVICING REQUIREMENTS
5.6.4.1 GENERAL
THE VERTICAL ALIGNMENT OF THE RETICULATION SEWER MAY BE CONTROLLED BY THE DEPTH OF THE PROPERTY CONNECTION POINT (REFER TO CLAUSE 6.3.5). THIS CONTROLLING DEPTH IS THE HIGHEST LEVEL OF THE SEWER AT WHICH FULL DRAINAGE OF THE REQUIRED SERVICE AREA OF A LOT IS PROVIDED BY GRAVITY VIA THE CUSTOMER SANITARY DRAIN LAID IN ACCORDANCE WITH AS/NZS 3500.2.

THE SEWER SHALL SERVICE THE WHOLE LOT SUBJECT TO THE QUALIFICATIONS OUTLINED IN CLAUSES 5.6.4.2 TO 5.6.4.6. THE SEWER AND CONNECTION POINT SHALL BE DEEP ENOUGH TO ENABLE A 'WORST CASE" PLUMBING FIXTURE IN A SERVICED LOT TO BE CONNECTED USING PERMISSIBLE GRADES AND DEPTHS. THE 'WORST CASE" PLUMBING FIXTURE IN A SERVICED LOT MAY BE AT THE LOWEST POINT ON THE LOT, THE POINT FURTHEST FROM THE PROPERTY CONNECTION, OR A COMBINATION OF BOTH, BUT DOES NOT NORMALLY INCLUDE BASEMENTS OF BUILDINGS (REFER TO CLAUSE 5.6.4.5).

DIAGONAL ALIGNMENTS SHALL NOT BE USED TO DETERMINE LOT CONTROL.

TABLE 5.11 - MINIMUM COVER OVER SEWERS

LOCATION	MINIMUM COVER TO TOP OF SEWER (mm)
PUBLIC AND PRIVATE LOTS NOT SUBJECT TO VEHICULAR LOADING	600 - NEW DEVELOPMENTS 450 - EXISTING DEVELOPMENTS
PRIVATE LOTS ZONED RESIDENTIAL SUBJECT TO VEHICULAR LOADING	750
FOOTWAYS, NATURE STRIPS, INDUSTRIAL AND COMMERCIAL LOTS, SEALED ROAD PAVEMENTS OTHER THAN MAJOR ROADS SUBJECT TO VEHICULAR LOADING	900
UNSEALED ROAD CARRIAGEWAYS	1200
MAJOR ROAD CARRIAGEWAYS	1200
FUTURE ROAD, RAIL AND TRAM PAVEMENTS	1200



SOFFIT REQUIREMENT
THE SOFFIT REQUIREMENT IS THE DEPTH FROM THE CONTROLLING SURFACE LEVEL ON THE PROPERTY (USUALLY THE OVERFLOW RELIEF GULLY) TO THE SOFFIT OF THE SEWER CONNECTION POINT. THE SOFFIT REQUIREMENT IS BASED ON PROVIDING ASSURANCE THAT A RETICULATION SEWER, FLOWING AT FULL CAPACITY, WILL NOT SURCHARGE VIA THE CUSTOMER SANITARY DRAIN.

SOFFIT DESIGN REQUIREMENTS

PLOT DATE: 19-Dec-24

Drawn	B.P.S					
Checked	C.B					
Approved	D.S.					
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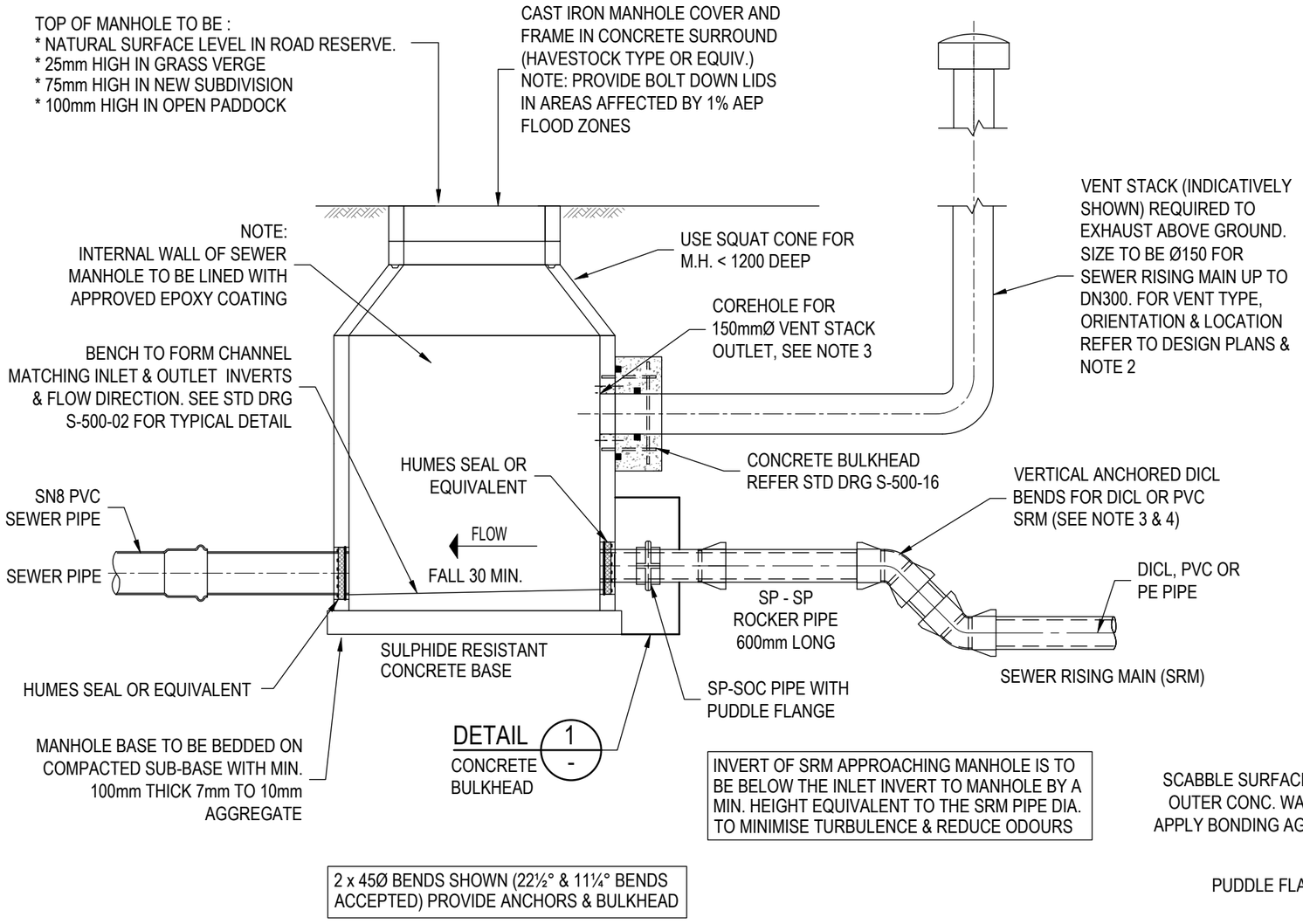
STANDARD DRAWINGS

SOFFIT DESIGN
WSSA & AS3500 REQUIREMENTS
(ADAPTED FROM C.H.C.C., P.W.D. & W.S.A. DRAWINGS)

Council Plan No. S-500-11
Orig. Size A3
Revision 1

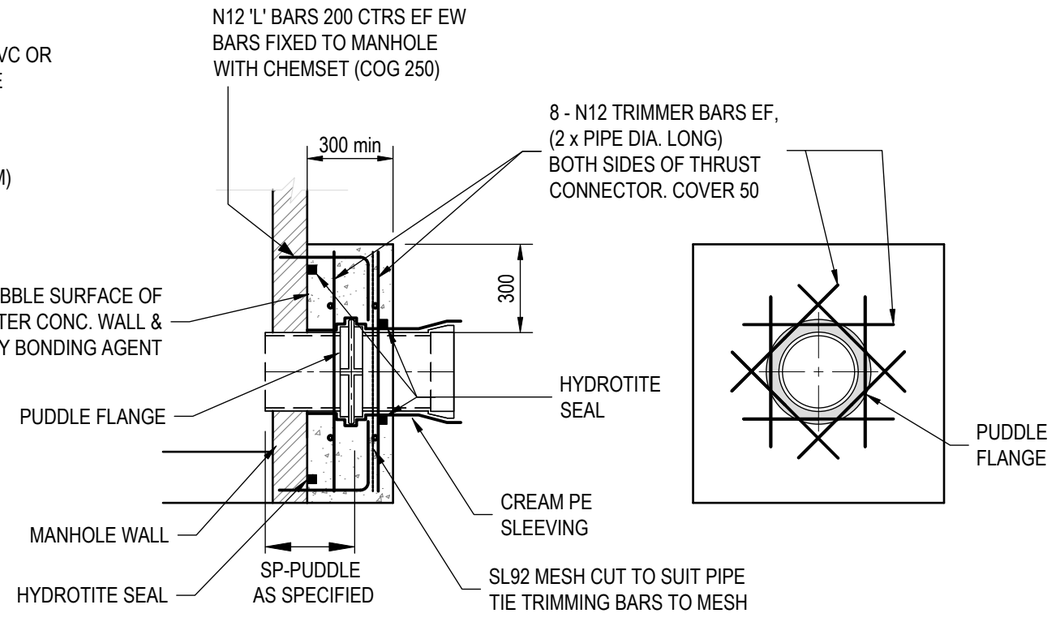


(SRM INLET 180° TO OUTLET SHOWN)

TYPICAL PRESSURE SEWER RISING MAIN DISCHARGE TO MANHOLE

NOTES:

1. PLAN SHOW TYPICAL FOR SEWER RISING MAINS CONNECTING TO MANHOLES WHERE THE RISING MAIN GRADE INTO THE MANHOLE IS RISING TOWARDS THE MANHOLE. INSTALL VERTICAL BENDS SO AS INVERT OF SRM APPROACHING MANHOLE BELOW THE INLET INVERT TO MANHOLE BY A MIN. HEIGHT EQUIVALENT TO THE SRM PIPE DIA..
2. DESIGN DRAWINGS TO SPECIFY VENT STACK TYPE AND LOCATION. VENT STACK TO SUIT SITE, TYPE 1, AS SHOWN ON STANDARD DRAWING S-500-14 OR Mc BERNS POWDER COATED GALV. STEEL POLE WITH SUBSEQUENT FOOTING CAGE.
3. DICL OR PVC PIPEWORK SHOWN ON PLAN, HPDE SRM SIMILAR WITH BENDS JOINED WITH ELECTROFUSION COUPLINGS OR BUTT WELDED WITH THRUST PUDDLE FLANGE FITTED AT MANHOLE BULKHEAD.
4. REFER TO S-550-20 FOR THRUST ANCHOR BLOCK DETAILS FOR VERTICAL BENDS AT 800kPa TEST PRESSURE.



TYPICAL BULKHEAD FOR DN100 TO DN300 DICL (PRESSURE PIPELINE)

DETAIL 1 / - N.T.S.

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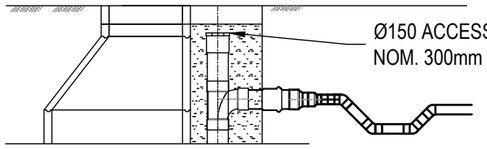
STANDARD DRAWINGS

SEWER RISING MAIN
CONNECTION TO MAINTENANCE HOLE

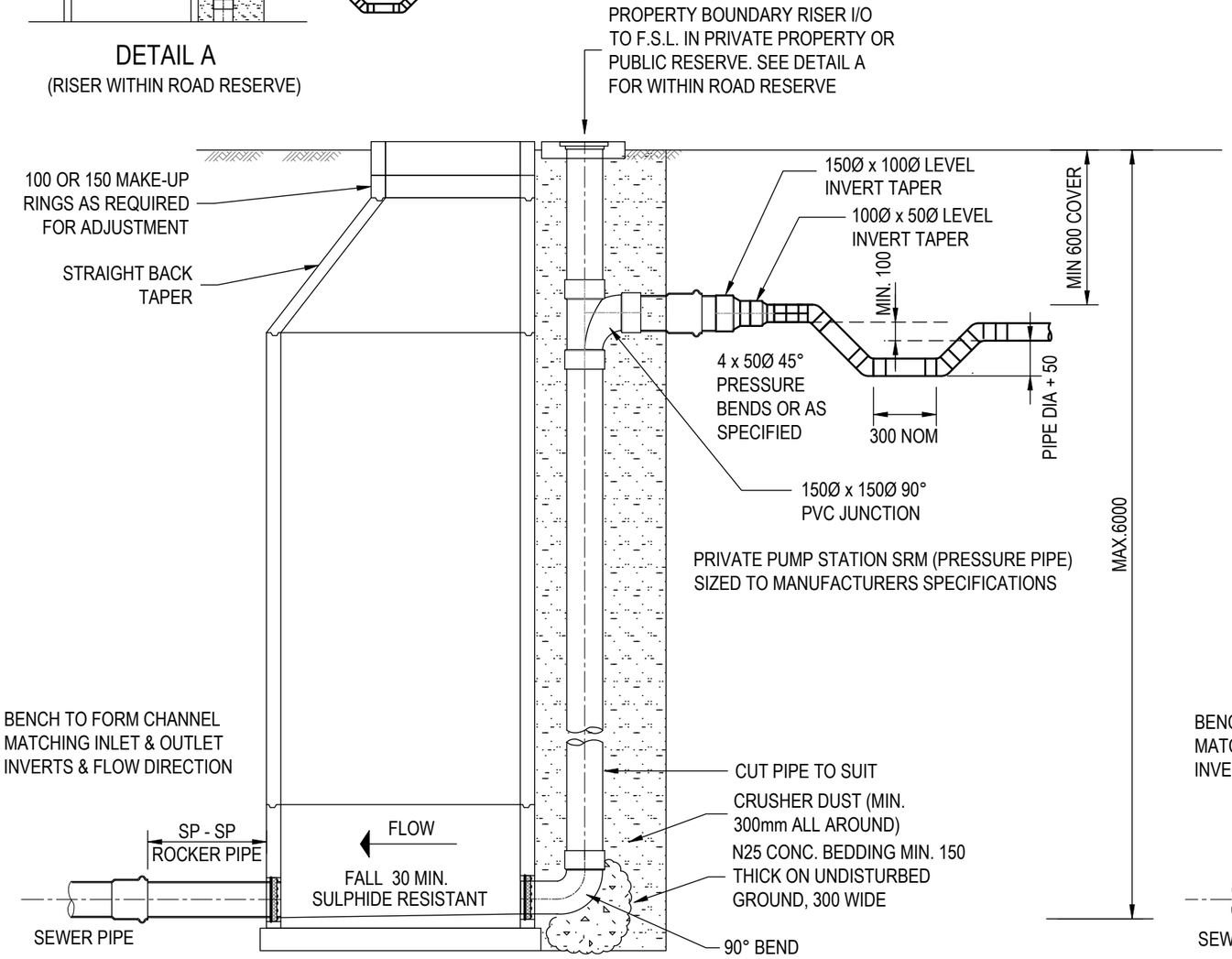
Council Plan No. S-500-12

Orig. Size A3

Revision 1



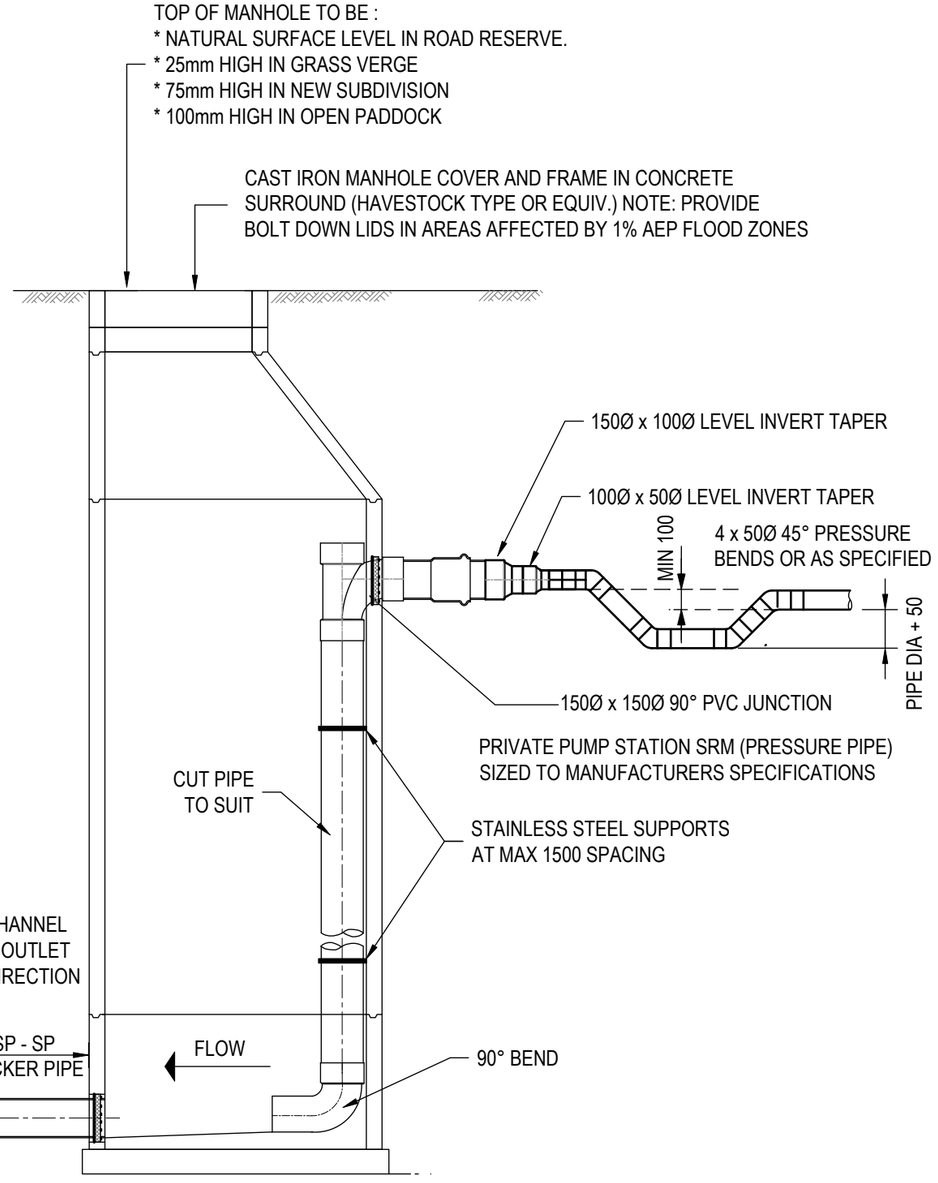
DETAIL A
(RISER WITHIN ROAD RESERVE)



NOTE: MANHOLE BASE TO BE BEDDED ON COMPACTED SUB-BASE WITH MIN. 100mm THICK 7mm TO 10mm AGGREGATE

NOTE: RECEIVING SEWER MANHOLES TO PUMP STATIONS AND OTHER AREAS WHERE H_2S IS LIKELY TO BE ENCOUNTERED ARE TO HAVE THE INTERNAL WALLS LINED WITH AN APPROVED EPOXY COATING

PRIVATE PUMP STATION
CONNECTION TO SMH WITHIN PRIVATE PROPERTY



NOTE: MANHOLE BASE TO BE BEDDED ON COMPACTED SUB-BASE WITH MIN. 100mm THICK 7mm TO 10mm AGGREGATE

PRIVATE PUMP STATION
INTERNAL DROP CONNECTION TO SMH
(CITY APPROVAL REQUIRED)

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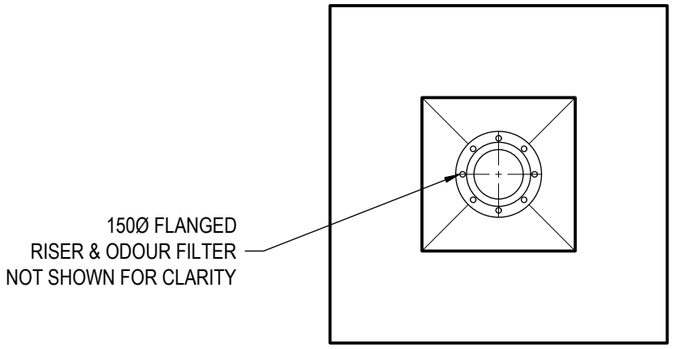
STANDARD DRAWINGS

PRIVATE PUMP STATION
CONNECTION TO MAINTENANCE HOLE

Council Plan No. S-500-13

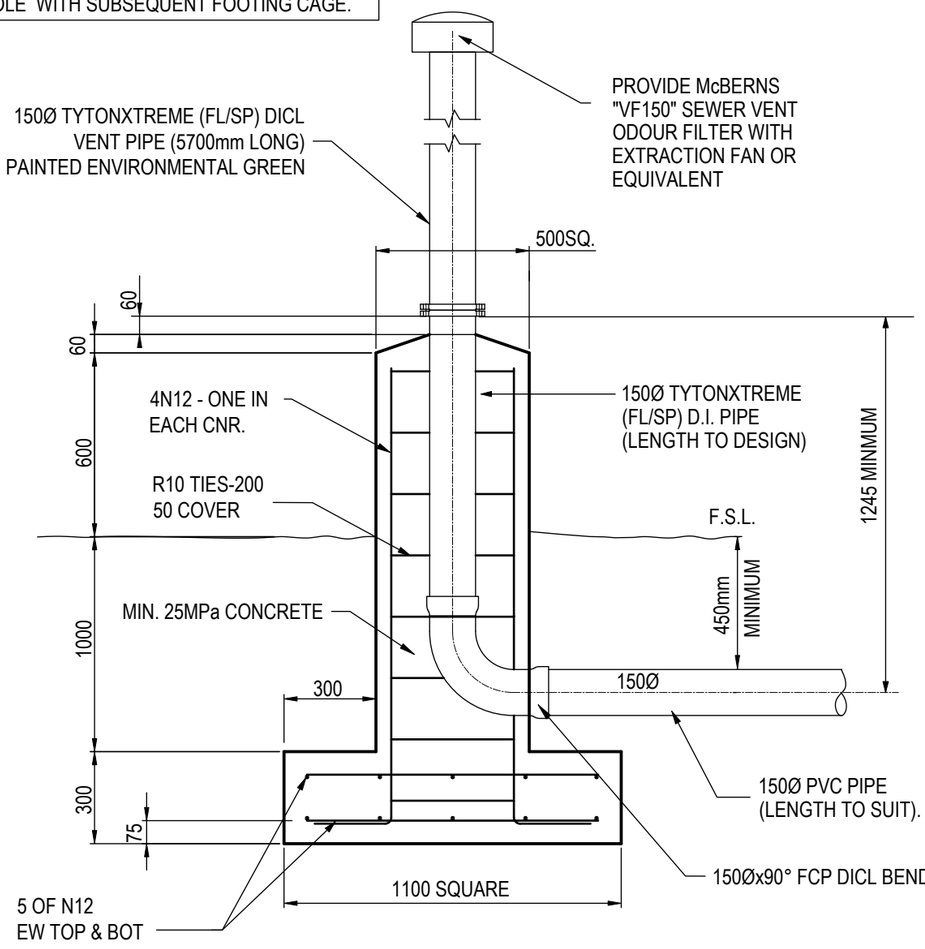
Orig. Size A3 | Revision 1



DESIGN PLANS TO SPECIFY VENT STACK LOCATION & ORIENTATION. ACCEPTABLE ALTERNATIVE VENT IS PROPRIERTARY ITEM 'Mc BERNS' POWDER COATED GALV. STEEL POLE WITH SUBSEQUENT FOOTING CAGE.

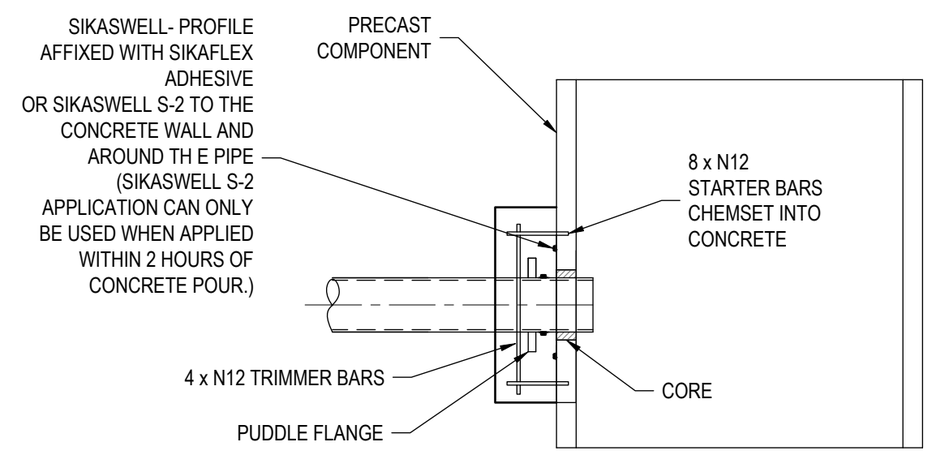
PLAN

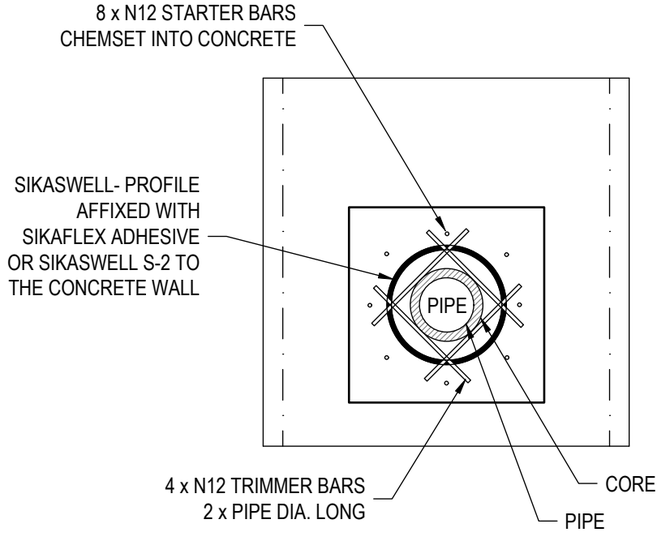
SCALE 1:50



TYPE 1 VENT STACK - ELEVATION

SCALE 1:50





CONCRETE BULKHEAD DETAILS

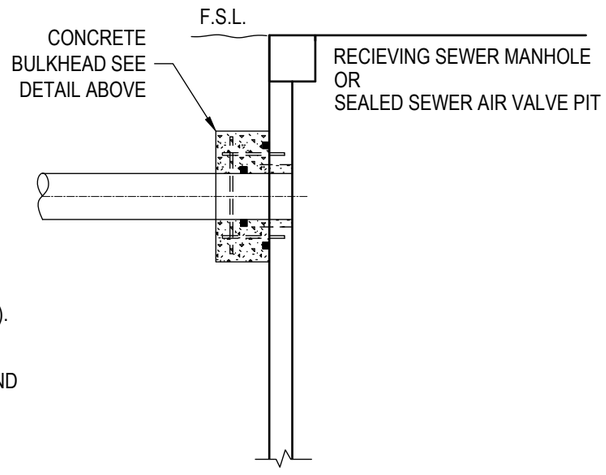
(FOR NON PRESSURISED PIPEWORK)

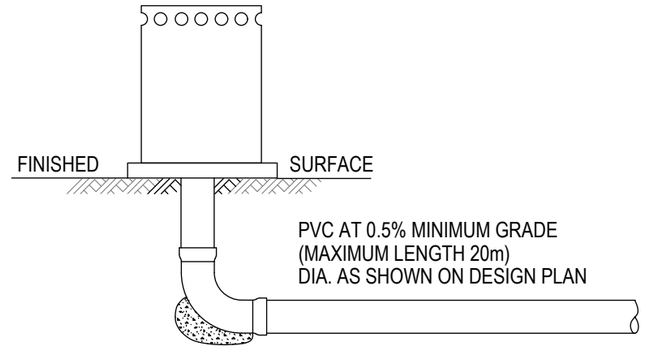
DETAIL 1 / -

SCALE 1:20

NOTE:

1. PLANS SHOWS TYPE 1 TYPICAL 150Ø VENT STACK & CONCRETE FOOTING FOR USE ON RECEIVING MANHOLES FOR SEWER RISING MAINS, RECEIVING MANHOLES FOR PUMP STATIONS AND FOR SEWER AIR VALVE VENTING FOR SEALED PITS IN RESIDENTIAL AREAS AS SPECIFIED BY DESIGN PLANS.
2. FOR AREAS NOMINATED IN DESIGN PLANS FOR GROUND LEVEL VENT PROVIDE 'McBERN' GROUND MOUNTED ODOUR FILTER OR EQUIVALENT.





MCBERNS OR EQUIVILENT
RESIDENTAL AREAS

TYPE 2 - TYPICAL GROUND MOUNTED ODOUR FILTER

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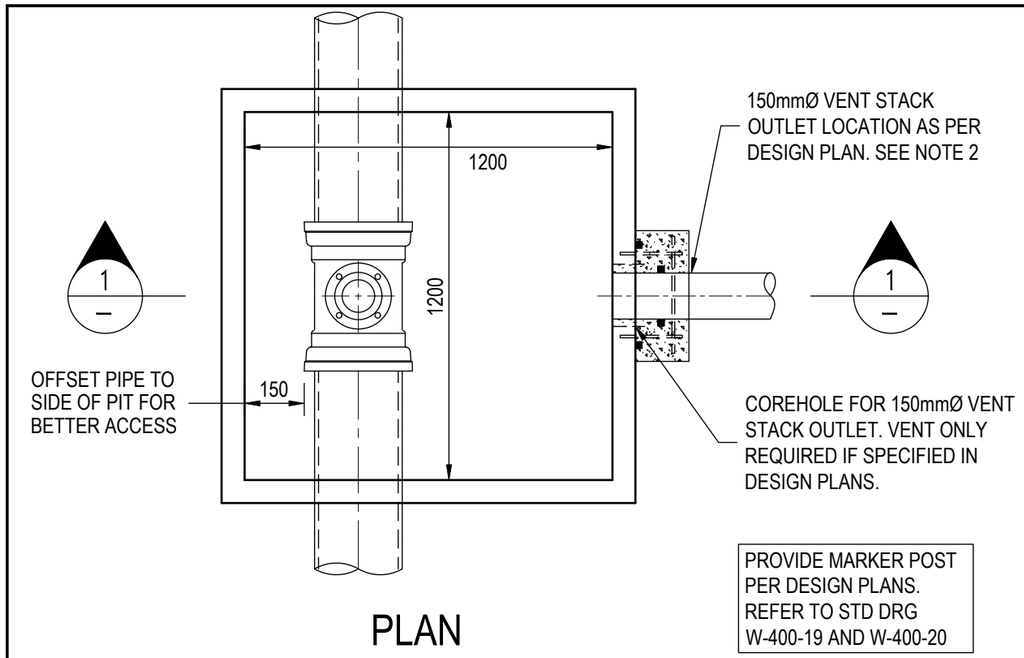
STANDARD DRAWINGS

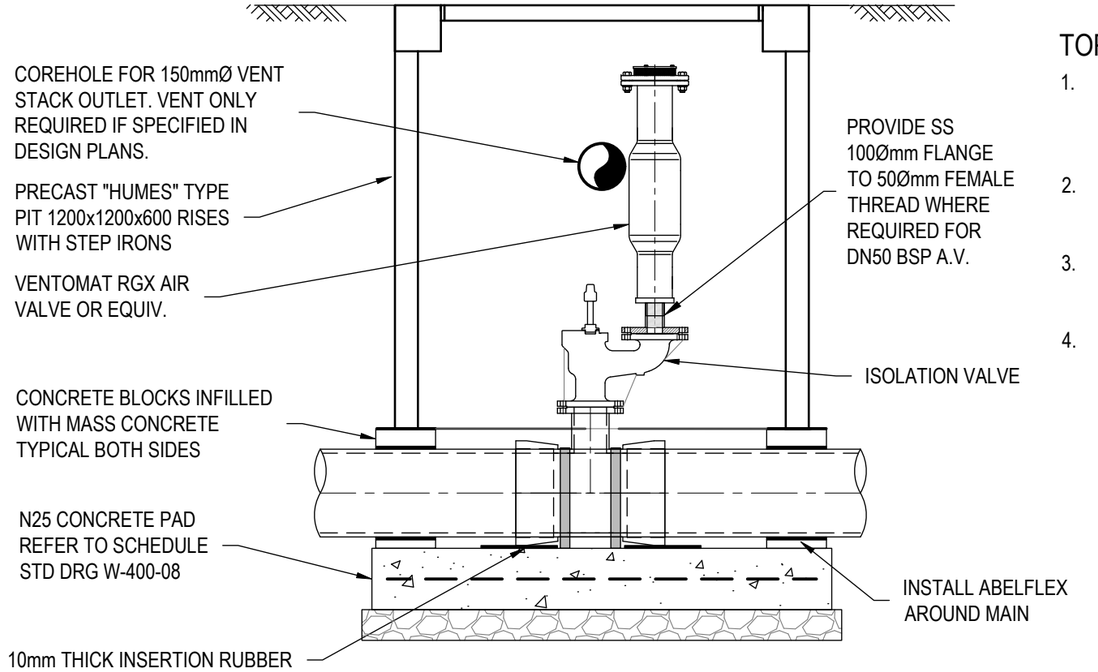
VENTILATION STACK - TYPE 1
150Ø DICL VENTILATION STACK DETAILS

Council Plan No. S-500-14

Orig. Size A3 | Revision 1



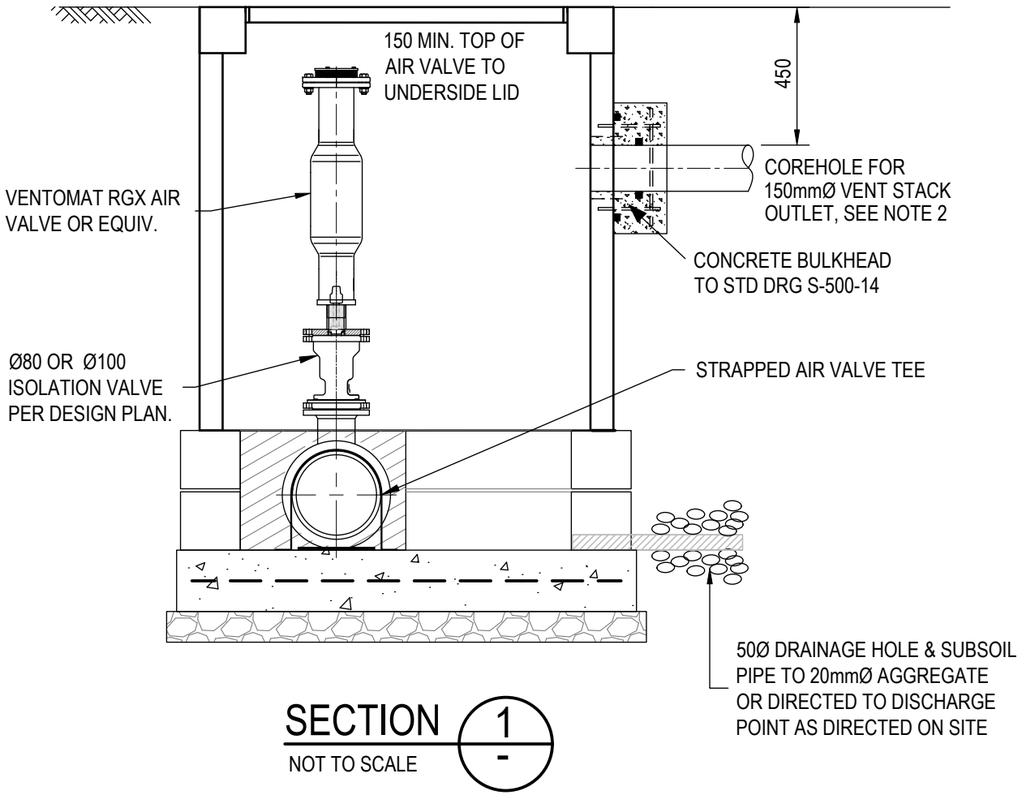
PLAN



SIDE ELEVATION

TOP OF PIT LEVEL

1. TOP OF AIR VAVLE PIT TO BE DESIGNED 500mm ABOVE THE 1% AEP YEAR FLOOD HEIGHT.
2. SET CHAMBER TO BE 300mm ABOVE NATURAL SURFACE IN NON TRAFFICABLE AREAS.
3. SET CHAMBER TO BE 50mm ABOVE FINISHED SURFACE IN TRAFFICABLE AREAS.
4. SET CHAMBER TO BE FLUSH WITH EXISTING BITUMEN/CONCRETE IN ROADWAY AND FOOTPATHS.



SECTION 1 / - NOT TO SCALE

TABLE 1. - PIPE & NOMINAL SEWER AIR VALVE SIZES

TEE FL-FL ADAPTOR SEE NOTE 5

PIPE A.V. TEE NOM.Ø	ISOLATION VALVE	SEWER AIR VALVE TYPE	COMMENT
DN150-DN100 TEE	DN100 FL HYDRANT VALVE	DN100 FL - BSP DN50 THREAD FEMALE ADAPTOR WITH DN50 SCREWED VENTOMAT "RGX 16Y1" OR EQUIV.	NOMINAL AIR VALVE SIZES FOR MAINS IN TABLE ARE A GUIDE SUBJECT TO DETAILED DESIGN ANALYSIS. SIZES SHOWN ARE BASED ON NOMINAL MAXIMUM PIPELINE VELOCITY OF 2m/s FOR VENTOMAT "RGX", "RGXii" & "RGXiif" AIR VALVES. AIR VALVE SIZING FOR OTHER MANUFACTURES TO BE CHECKED.
DN200-DN100 TEE			
DN225-DN100 TEE			
DN250-DN100 TEE			
DN300-DN150 TEE			
DN375-DN200 TEE			
DN450-DN250 TEE	DN80 FL HYDRANT VALVE	DN80 FL WITH STUDS VENTOMAT "RGX 16Y1" OR EQUIV.	
DN500-DN250 TEE			
DN600-DN300 TEE	DN100 FL HYDRANT VALVE	DN100 FL WITH STUDS VENTOMAT "RGX 16Y1" OR EQUIV.	

1. PLANS SHOW VENTOMAT "RGX" AIR VALVE OR APPROVED EQUIVALANT FOR SEWER RISING MAINS. VENTOMAT RGXii & RGXiif MODELS ARE ACCEPTABLE TO MINIMISE ASSEMBLY HEIGHT WHEN REQUIRED.
2. IN RESIDENTIAL AREAS WHERE ODOUR VENTING IS REQURED IN ACCORDANCE WITH DESIGN PLANS, A VENT STACK IS TO BE PROVIDED WITH A SEALED GATIC LID. OMIT VENT AND SEALED LID IF NOT REQUIRED.
3. DESIGN DRAWINGS TO SPECIFY VENT STACK. TYPE 1 VENT STACK AS SHOWN ON STD DRG S-500-14 OR Mc BERNS POWDER COATED GALV. STEEL POLE WITH SUBSEQUENT FOOTING CAGE.
4. FOR WATER / REUSE MAIN AIR VALVE REFER TO STD DRG W-400-07.
5. PROVIDE SOC-SOC-FL TEE FOR AIR VALVE WITH TEE EQUIVALENT TO HALF THE TRUNK MAIN DIAMETER FOR DN600-DN300 MAINS. PROVIDE SUBSEQENT FL-FL ADAPTOR TO SUIT BRANCH TEE DIAMETER & DN100 OR DN80 CONTROL VALVE AS SHOWN IN TABLE. FOR TYPICAL AIR VALVE ADAPTORS REFER TO DRAWING STD DRG W-400-09
6. PROVIDE Ø80 OR Ø100 HYDRANT CONTROL VALVE / AIR VALVE ISOLATOR FOR AIR VALVES AS TABLED.
7. MANHOLE CHAMBER TO BE OFFSET 150mm FROM OUTSIDE OF MAIN FOR MAINTENCE ACCESS WITH PIT RISERS PLACED ON CONCRETE BLOCK WALL WITH MASS CONCRETE INFILL.

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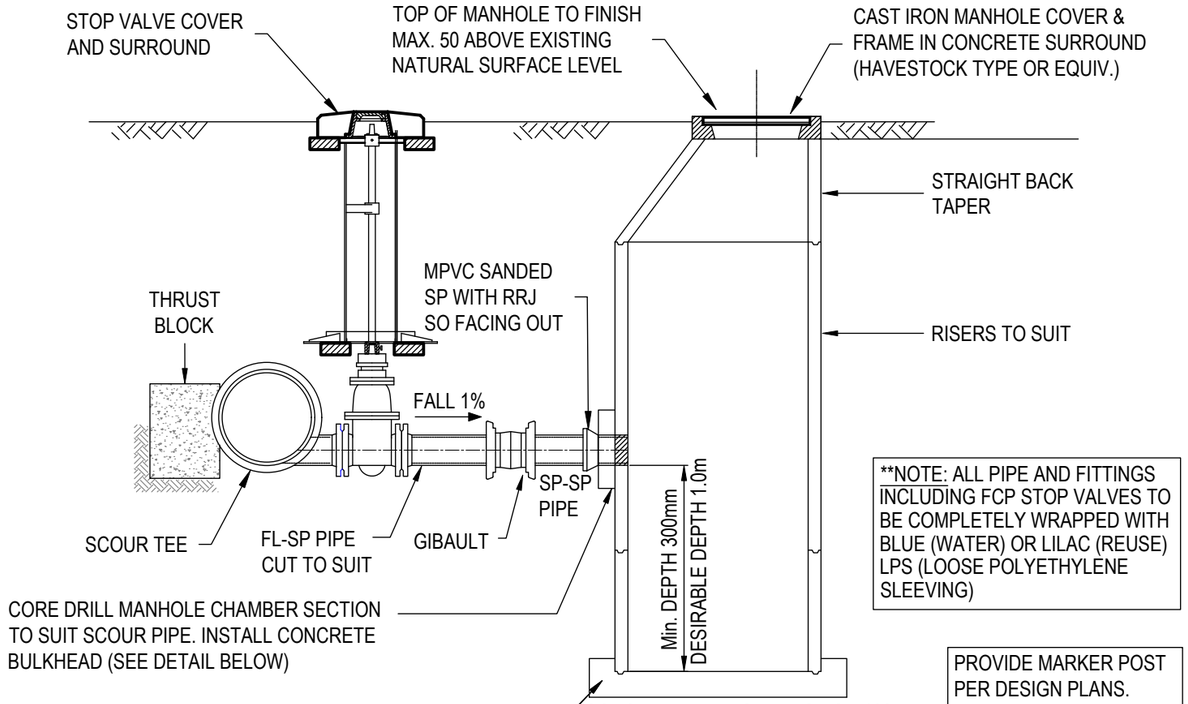
STANDARD DRAWINGS

TYPICAL PRESSURE SEWER AIR VALVES

Council Plan No. S-500-15

Orig. Size A3

Revision 1



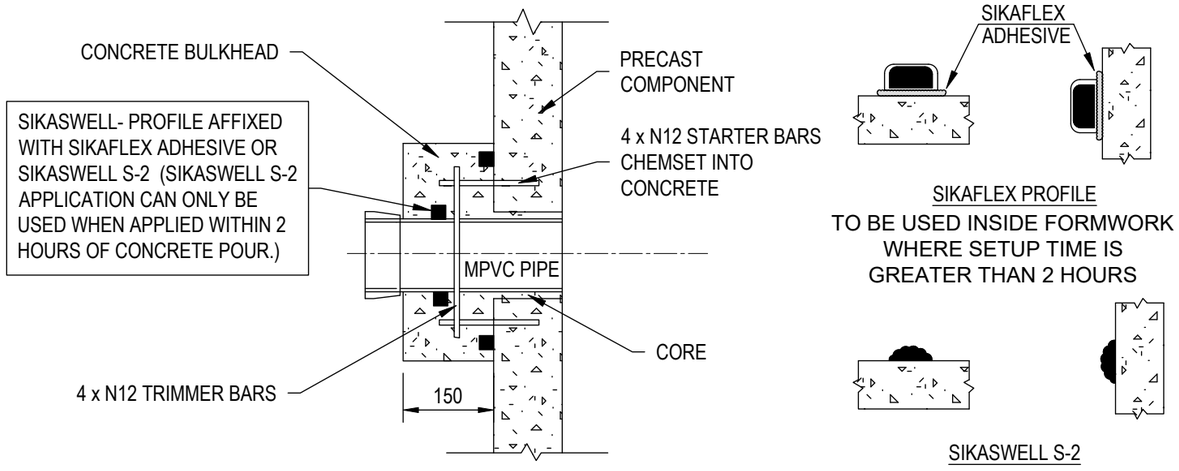
**NOTE: ALL PIPE AND FITTINGS INCLUDING FCP STOP VALVES TO BE COMPLETELY WRAPPED WITH BLUE (WATER) OR LILAC (REUSE) LPS (LOOSE POLYETHYLENE SLEEVING)

PROVIDE MARKER POST PER DESIGN PLANS. REFER TO SD-400-19 & 20

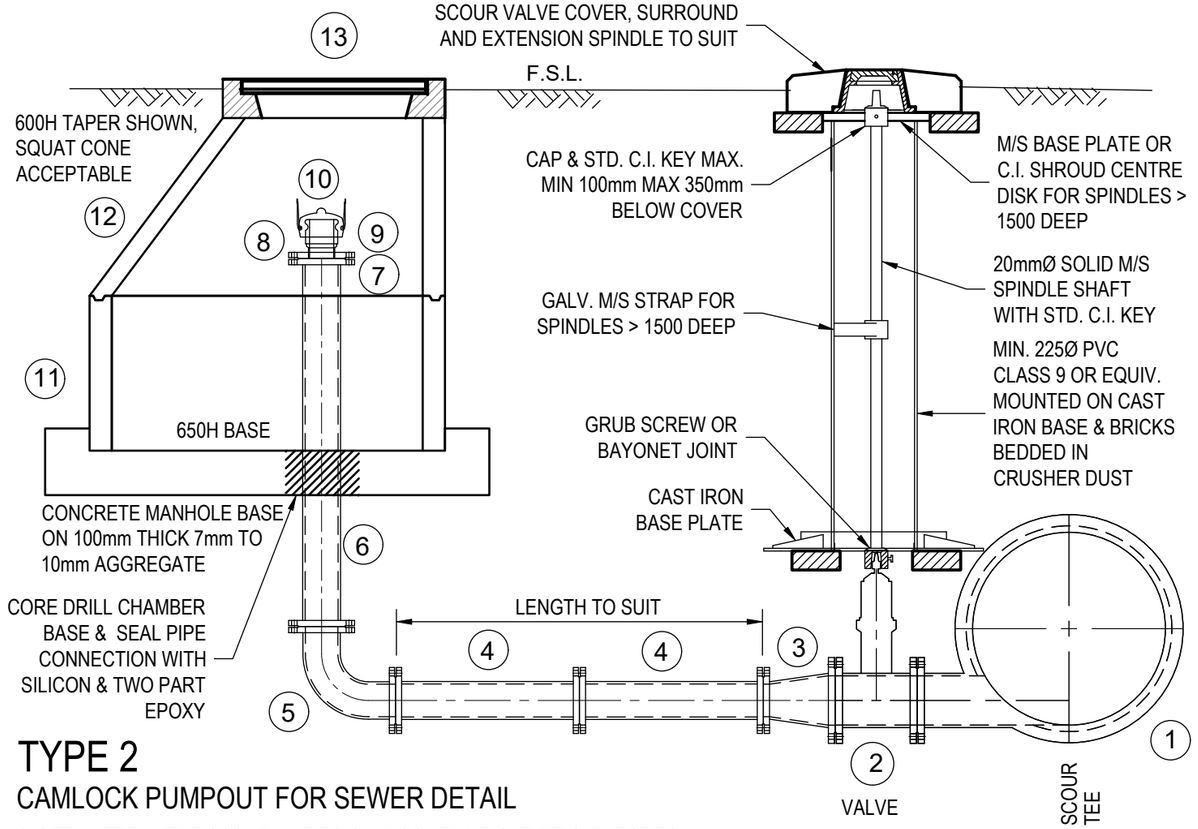
SECTION

TYPE 1

TYPICAL SCOUR FOR SEWER RISING MAIN PUMPOUT PIT DETAILS FOR MAINS >= 100 DIA.



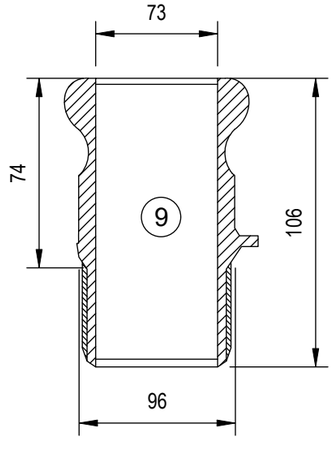
CONCRETE BULKHEAD DETAILS



TYPE 2

CAMLOCK PUMPOUT FOR SEWER DETAIL

(NOTE: ALTERNATIVE SCOUR LINE TO CAMLOCK PUMP OUT PIT SUBJECT TO APPROVAL BY THE CITY. FOR SCOUR USING VACUUM TRUCK)



TYPE F 80mm CAMLOCK

NOTE: FOR CAMLOCK FITTINGS REFER AAP INDUSTIES, MATTHEW DAVIS AUSTRALIA OR LIKE INDUSTRIES

ITEM	MATERIALS LIST - NOMINAL TYPICAL SEWER SCOUR LINE	QTY
1	NOM. 375Ø x 150Ø FL. SCOUR VALVE	1
2	150Ø R.S. FL. STOP VALVE	1
3	150Ø x 100Ø FL. REDUCER	1
4	100Ø F.L HYDRANT RISER (NUMBER AND LENGTH AS REQUIRED)	-
5	100Ø 90° FL. BEND	1
6	100Ø FL. PIPE (CUT TO SUIT)	1
7	100Ø UNIFLANGE	1
8	GAL. OR STAINLESS STEEL ADAPTOR 100Ø FL TO 100Ø FEMALE BSP	1
9	TYPE F 80Ø CAMLOCK - MALE CAMLOCK / MALE BSP (100mm)	1
10	TYPE DC 80mm DUST CAP (FOR CAMLOCK)	1
11	650mm HIGH MANHOLE BASE	1
12	600mm HIGH STRAIGHT BACK RISER	1
13	190mm HIGH MANHOLE SURROUNDS AND HEAVY DUTY LID	1
14	STOP VALVE SURFACE BOX	1
15	CONCRETE MARKER POST ScV (SEWER)	1

NOMINAL TYPICAL SEWER RISING MAIN SCOUR LINE STANDARD DRAWING SHOWN INDICATIVELY WITH 375Ø MAIN WITH 150Ø SCOUR TEE 150Ø-100Ø REDUCER TO 100Ø SCOUR LINE. ITEMS 2 & 3 TO BE ADJUSTED ACCORDINGLY FOR SCOUR TEE DIAMETER

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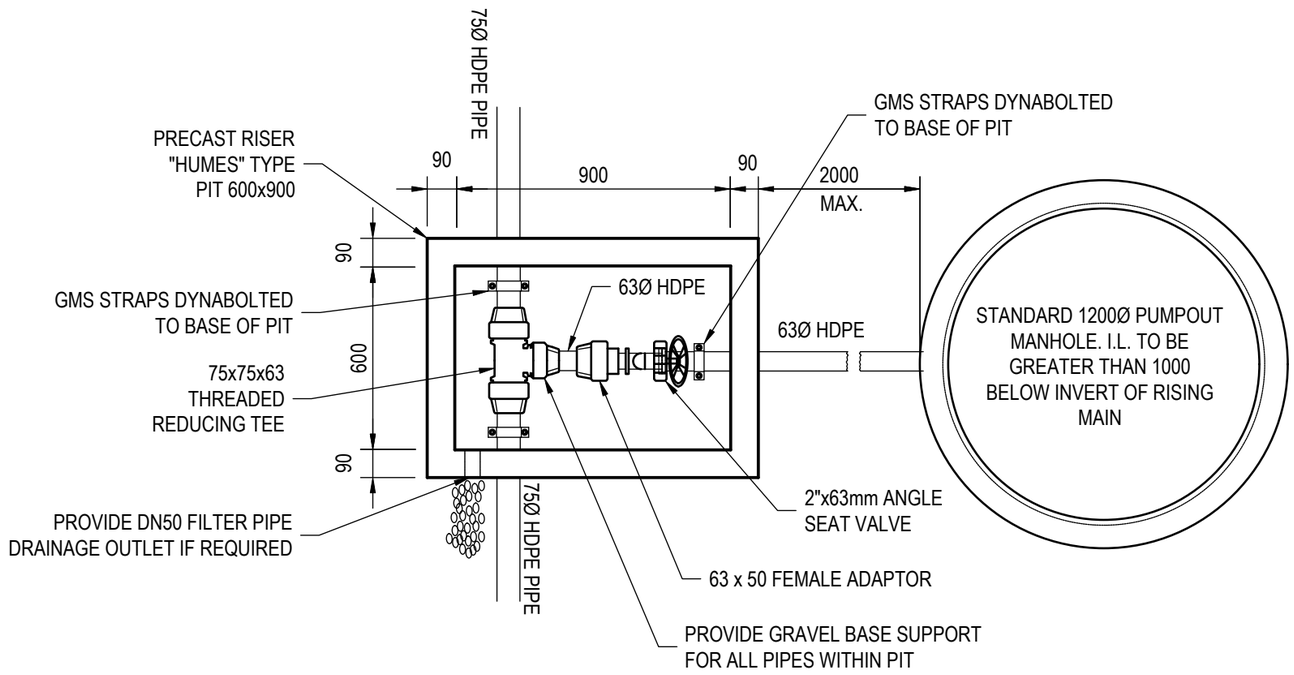
STANDARD DRAWINGS

PRESSURE SEWER SCOUR VALVES & PIPEWORK
TYPICAL DETAIL

Council Plan No. S-500-16

Orig. Size A3

Revision 1

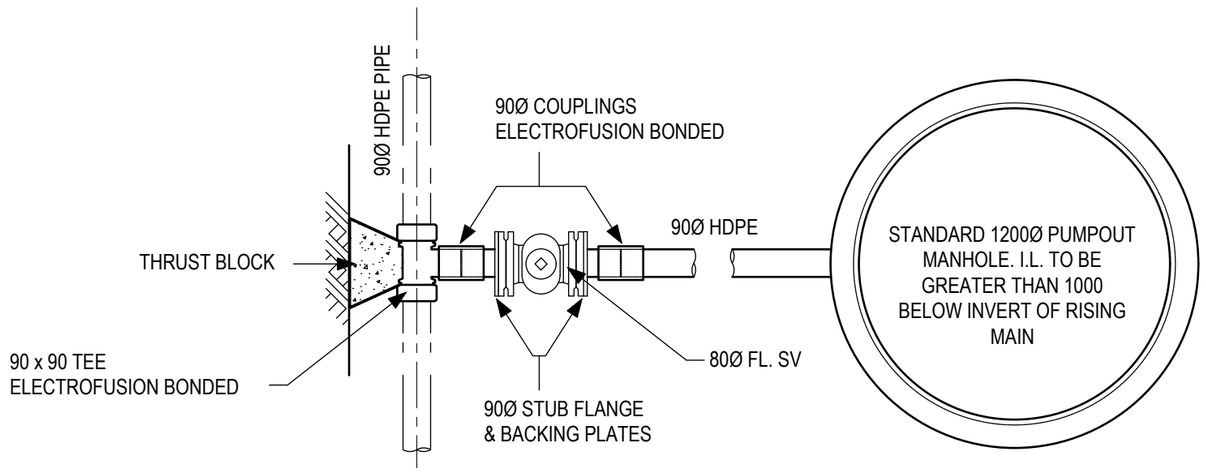


PROVIDE MARKER POST
PER DESIGN PLANS.
REFER TO STD DRG
W-400-19 & 20

PLAN

SCOUR VALVE DETAIL - DN75 HDPE

NOT TO SCALE



PLAN

SCOUR VALVE DETAIL - DN90 HDPE

NOT TO SCALE

NOTES:

1. PLANS SHOW TYPICAL DETAILS FOR SMALL DIAMETER DN75 & DN90 HDPE SCOUR LINES FOR SEWER RISING MAINS WHERE NOMINATED BY DESIGN PLANS.
2. REFER TO STD DRG S-500-16 FOR MANHOLE PUMP OUT PIT DETAILS

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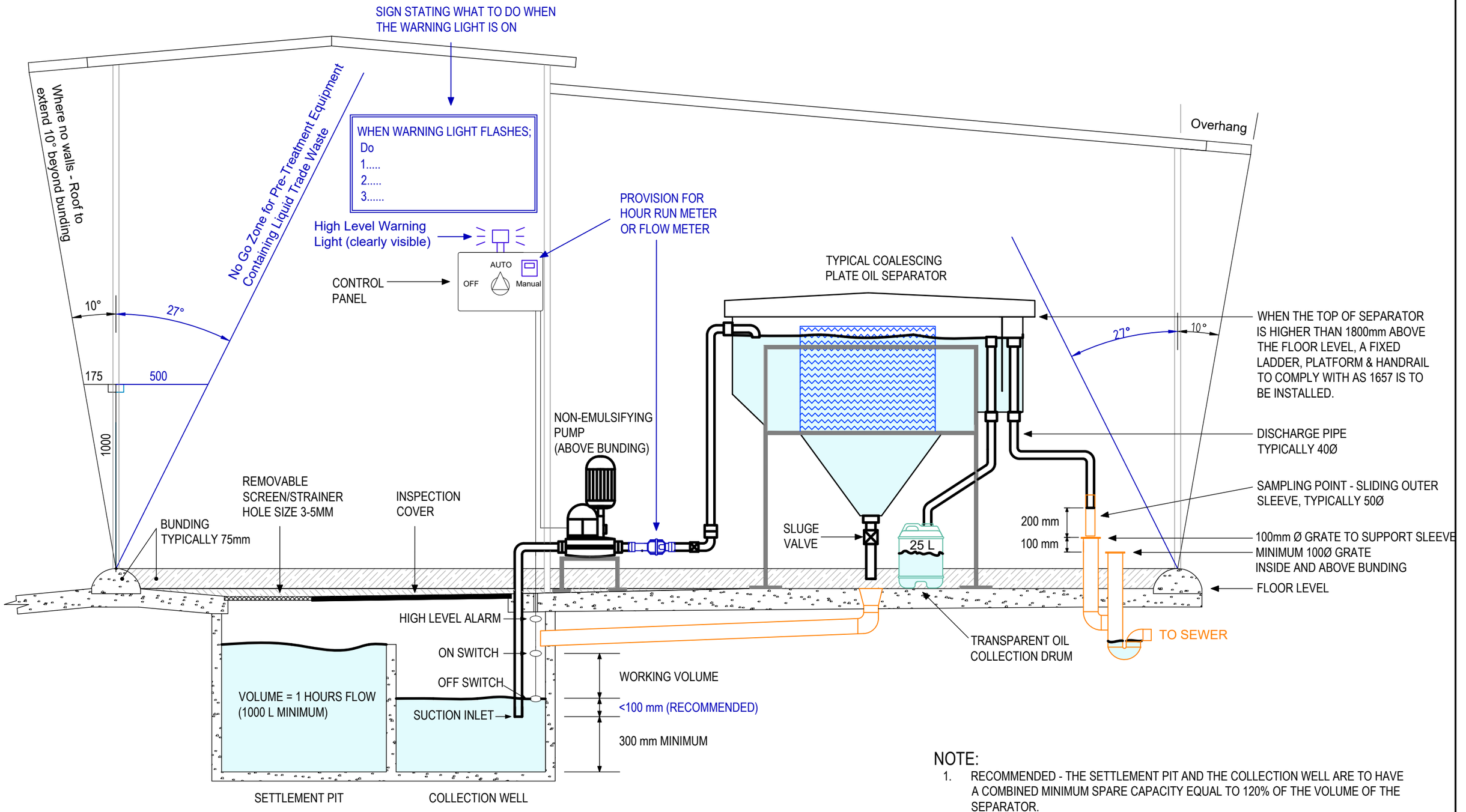
STANDARD DRAWINGS

SEWER RISING MAINS SCOUR VALVE
TYPICAL SCOUR FOR DN90 & DN75 HDPE SRM

Council Plan No. S-500-17

Orig. Size A3

Revision 1



NOTE:

1. RECOMMENDED - THE SETTLEMENT PIT AND THE COLLECTION WELL ARE TO HAVE A COMBINED MINIMUM SPARE CAPACITY EQUAL TO 120% OF THE VOLUME OF THE SEPARATOR.
2. RECOMMENDED - THE SETTLEMENT PIT HAS A MINIMUM LENGTH TO WIDTH RATIO OF 3:1 ALONG THE FLOW.
3. IF INSTALLATION IS TO VARY FROM WHAT IS RECOMMENDED, CONTACT CITY'S TRADE WASTE OFFICER BEFORE PROCEEDING.

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STANDARD DRAWINGS

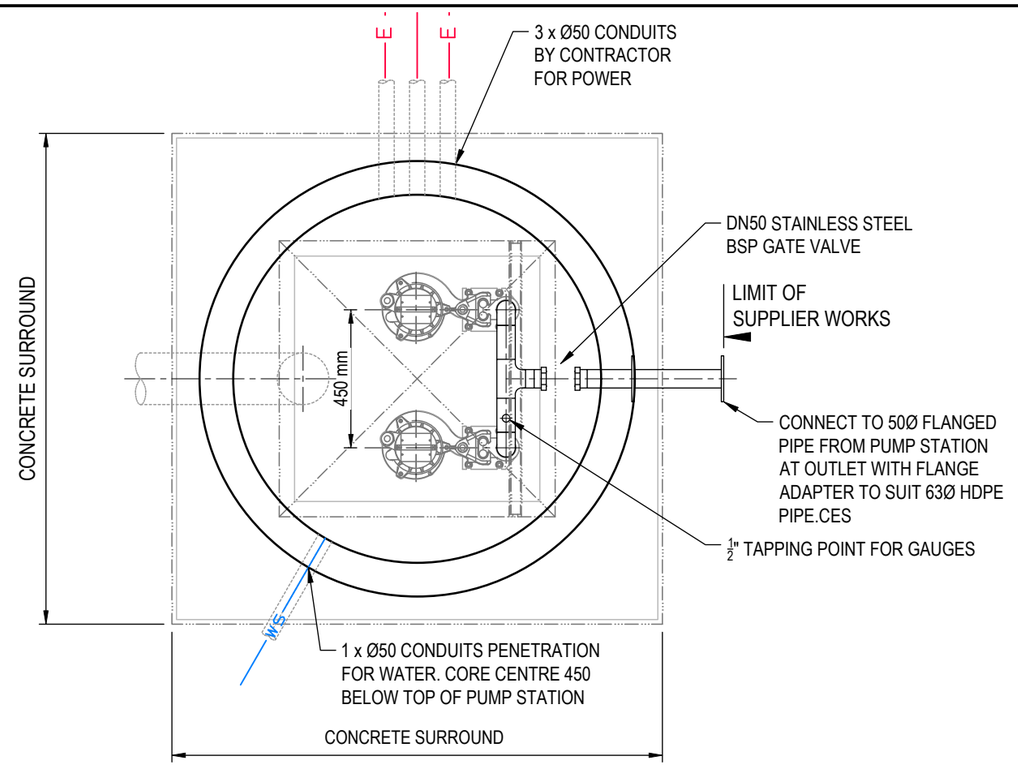
SCHEMATIC DRAWING

TYPICAL WASH BAY REQUIREMENT FOR CONNECTION TO SEWER

Council Plan No. S-500-18

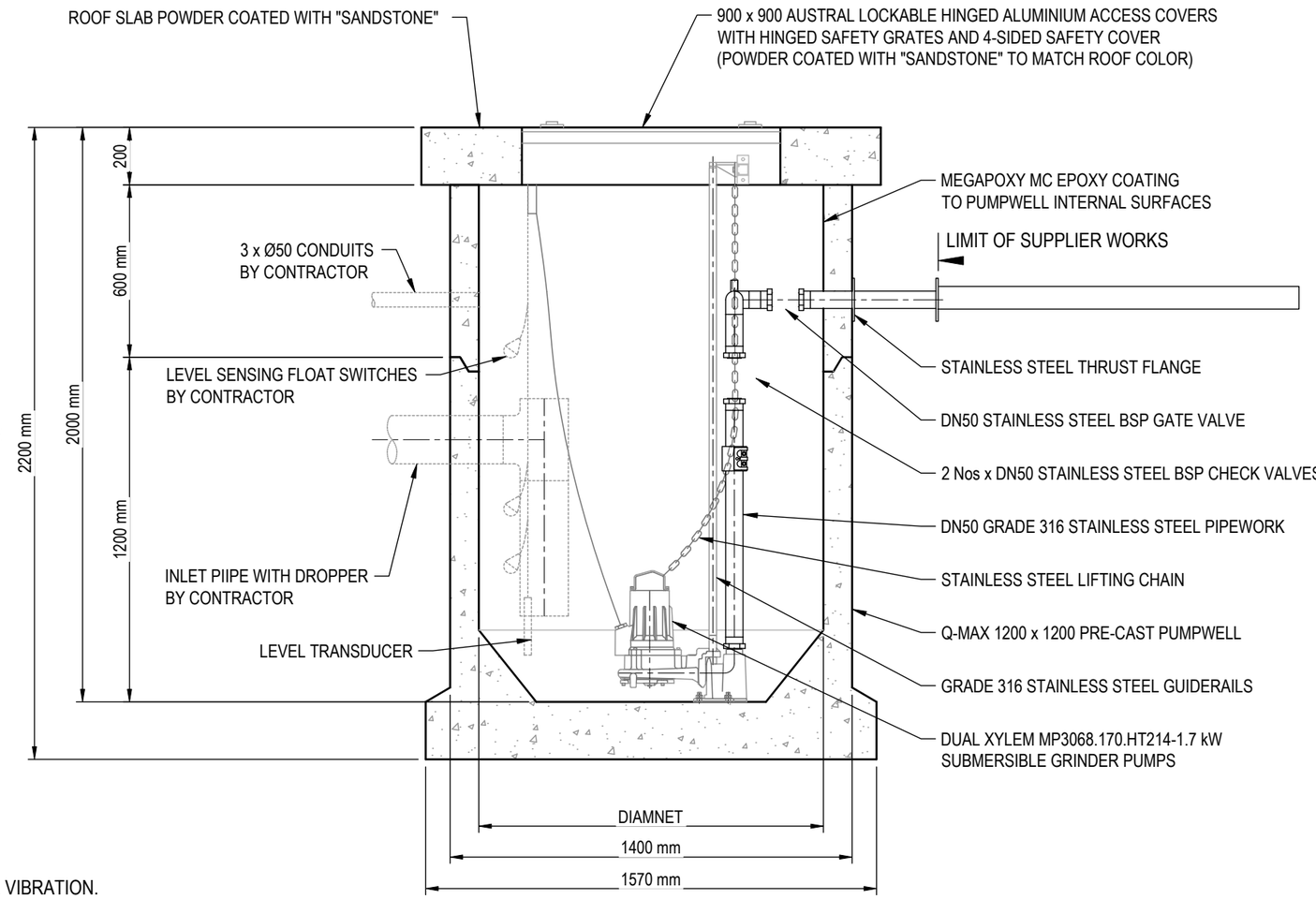
Orig. Size A3

Revision 1



SECTIONAL PLAN VIEW

SCALE: 1:25 @ A3



SECTIONAL ELEVATION

SCALE: 1:25 @ A3

SPECIFICATIONS:

1. INTERNAL SIZE - AS REQUIRED
2. METHOD OF MANUFACTURE - STEEL MOULD FORMED WITH INTENSE MECHANICAL VIBRATION.
3. CONCRETE TYPE - SULFATE RESISTANT USING CALCAREOUS AGGREGATE.
4. STRENGTH - 50MPa AT 28 DAYS. INTERNAL FINISH TO MEET AS1510 CLASS 2.
5. WALL THICKNESS - 100mm WITH 50mm INTERNAL COVER TO REINFORCEMENT. DESIGN CONFORMS TO AS 3735.
6. REINFORCEMENT - COMPLIES WITH AS1302 AND AS1304.
7. VALVES - DN50 SS BSP VALVES.
8. PIPEWORK - DN50 GRADE 316 SCH10 STAINLESS STEEL PIPEWORK.
9. PUMPS - 2 X XYLEM MP3068.170.HT214-1.7KW SUBMERSIBLE PUMPS - GUIDERAIL MOUNTED.
10. ACCESS COVERS - AUSTRAL LOCKABLE HINGED ALUMINIUM ACCESS COVERS WITH HINGED SAFETY GRATE AND 4-SIDED PROTECTION.
11. LEVEL CONTROLS - BY THE CITY.
12. PUMP CONTROLLER - BY THE CITY.
13. VENT - VENTILATION EXCLUDED
14. LIFTING DETAILS - 4 X 5.0T 'SWIFT-LIFTS IN BASE, COVERSLAB & INCREMENT.

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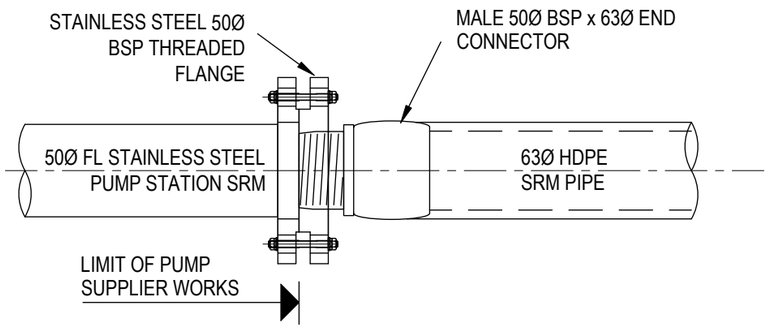

HDPE CONNECTION TO SS FLANGE DETAIL AT PUMP STATION

N.T.S

Drawn	B.P.S					
Checked	C.B					
Approved	D.S.					
Date	DEC 2024	1	ISSUED FOR USE	B.P.S	D.S.	12/2024
Issue	FIRST ISSUE	Rev.	Amendments	Drawn	Apprd.	Date

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STANDARD DRAWINGS

SMALL PRE-CAST PUMP STATION WITH INTERNAL ISOLATION VALVE
FOR OUTLET RISING MAIN DIA LESS OR EQUAL 50Ø
TYPICAL GENERAL ARRANEMENT

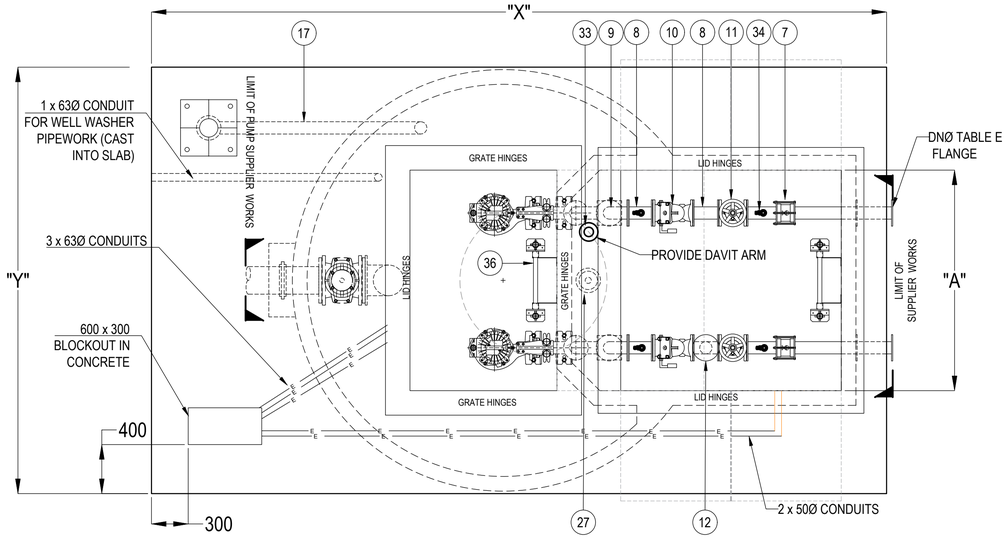
Council Plan No. S-500-19

Orig. Size A3

Revision 1

L:\STANDARD DRAWINGS\CHCC STANDARD DRAWINGS 2024\500 SEWER\STANDARD DRAWING SMALL QMAX SEWER PUMP STATION WITH 50DIA SRM.DWG

PLOT DATE: 19-Dec-24



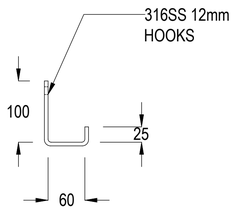
GENERAL ARRANGEMENT
(COVERS & HANDRAILS REMOVED FOR CLARITY)
1:25 @ A1

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

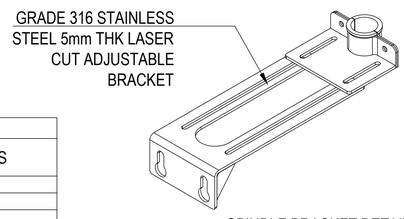
MATERIALS SCHEDULE				
ITEM NUMBER	DESCRIPTION	QUANTITY	MATERIAL	REMARKS
1	SUBMERSIBLE PUMP FLYGT N3127 SH 7.4kW	2	CAST IRON	SUPPLIED BY CHCC
2	DN80 DISCONNECTION BEND	2	CAST IRON	SUPPLIED BY CHCC
3	DN80 - DN100 ECCENTRIC REDUCER	2	316 SS	
4	DN100 45° BEND	4	316 SS	
5	DN100 SP-SP PIPEWORK	4	316 SS	LENGTHS. TO SUIT
6	DN100 FL-SP PIPEWORK	6	316 SS	LENGTHS. TO SUIT
7	DN100 STRAIGHT COUPLING	4	316 SS	NORMA
8	DN100 FL-FL PIPEWORK	3	316 SS	LENGTHS. TO SUIT
9	DN100 FL-FL 90° DISMANTLING BEND	2	316 SS	
10	DN100 SWING CHECK VALVE (CW LEVER & WEIGHT AND LIMIT SWITCH)	2	CAST IRON	AVK SERIES 41 (TABLE D)
11	DN100 RESILIENT SEATED GATE VALVE FLANGED CW HANDWHEEL (CLOCK CLOSE)	2	CAST IRON	FBE RESIN COATED
12	DN100 FL-FL-FL 90° TEE (CW BLANK FLANGE ON TOP FOR PUMP OUTS)	1	316 SS	
13	VERTICAL PIPE BRACKETS (@ MAX 2000 SPACING)	4	316 SS	
14	HORIZONTAL PIPE BRACKETS	2	316 SS	
15	GUIDERAIL ANTI SPREAD BRACKETS	4	316 SS	
16	DN150 x 6m HIGH VENT MAST (POWDER COATED TO WILDERNESS GREEN)	1	STAINLESS STEEL	
17	DN100 VENT PIPEWORK	1	DWV PVC	
18	DN150 VENT FILTER PIPEWORK	1	PVC	IN SLAB
19	2" GUIDE RAILS	4	316 SS	TO SUIT
20	DN225 RESILIENT SEATED GATE VALVE (CLOCK CLOSE)	1	CAST IRON	
21	DN225 800mm INLET STUB FL-SP	1	DIEL	FBE FINISH
22	EXTENSION SPINDLE	1	316 SS	LENGTHS. TO SUIT
23	EXTENSION SPINDLE BRACKET	1	316 SS	
24	PUMP CABLE	2		
25	LIFTING CHAINS	2	316 SS	TO SUIT PUMPS
26	DN250 DROP PIPE (CW BLANK POLY FLANGE ON TOP)	1	PE100	
27	DN50 DRAIN CW ONE WAY DUCK BILL DRAIN VALVE	1	PVC	
28	FLOAT SWITCH FOR BACK UP	1		
29	LEVEL TRANSMITTER	1	316 SS	VEGAWELL 52
30	TWO PART ACCESS HATCH WITH HINGED SAFETY GRATES	1	McBERNS	1800x1200 CLEAR OPENING
31	FOUR PART ACCESS HATCH	1	McBERNS	1800x1800 CLEAR OPENING
32	FLOAT / CHAIN HOOKS	4	316 SS	TWO SPARE HOOKS INCLUDED
33	DAVIT BASE	1	CAST ALUMINIUM	SUPPLIED BY CHCC
34	½" BSP TAPPINGS & BALL VALVES	4	316 SS	
35	DN100 THRUST FLANGE TO SUIT PIPEWORK OD (BOLTED TO WALL)	4	316 SS	200x200 SQAURE 8mm THICK
36	LADDERS WITH 316 SS RETRACTABLE HANDRAILS	2	FRP	NEXTEP
37	DN150 PUDDLE FLANGE	1	CAST IRON	BY SUPPLIER

GENERAL NOTES:

1. PUMP STATION TO BE PRECAST MODEL WITH INTEGRAL VALVE PIT AS SUPPLIED BY MANUFACTURERS "AQUATEC" OR "QMAX" OR APPROVED EQUIVALANT.
2. CONCRETE TYPE - SULPHATE RESISTANT (USE CALCAROUS AGGREGATE FOR SEWAGE OR EFFLUENT
3. CONCRETE STRENGTH - 50MPa
4. INTERNAL FINISH SMOOTH TO MEET AS1510 CLASS 2
5. WALL THICKNESS - "T"mm WITH __mm INTERNAL COVER TO REINFORCEMENT
6. REINFORCEMENT TO COMPLY WITH AS 1302 & AS 1304
7. ALL HOLES TO BE PRE-CORED
8. INTERNAL WALLS OF WET WELL & INTEGRAL VALVE CHAMBER TO BE COATED WITH MEGAPOXY MC (WHITE)
9. ALL BOLTS & FIXINGS TO BE GRADE 316 STAINLESS STEEL
10. SUPPLIER HAS FULL RESPONSIBILITY FOR THE DESIGN, SIZING, SECTION & INSTALLATION OF ALL BOLTS & FIXINGS IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS



CHAIN HOOK DETAIL
N.T.S.



SPINDLE BRACKET DETAIL
N.T.S.

PUMPING STATION DETAILS:

FINISHED SURFACE LEVEL RL: ___m
GROUND LEVEL RL: ___m
DISCHARGE PIPE IL: ___m
SEWER INLET PIPE DIAMETER: Ø*inlet* mm
SEWER RISING MAIN DIAMETER: Ø*outlet* mm
WET WELL FLOOR RL: ___m

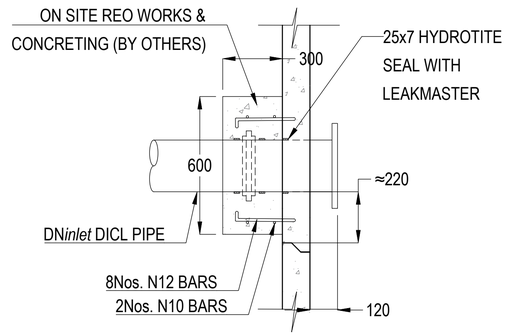
PUMP OPERATING LEVELS:

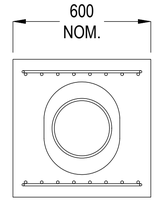
BACKUP (FLOAT) RL: ___m
STANDBY START RL: ___m
DUTY START RL: ___m
DUTY/STAND BY STOP RL: ___m

PUMP DETAILS:

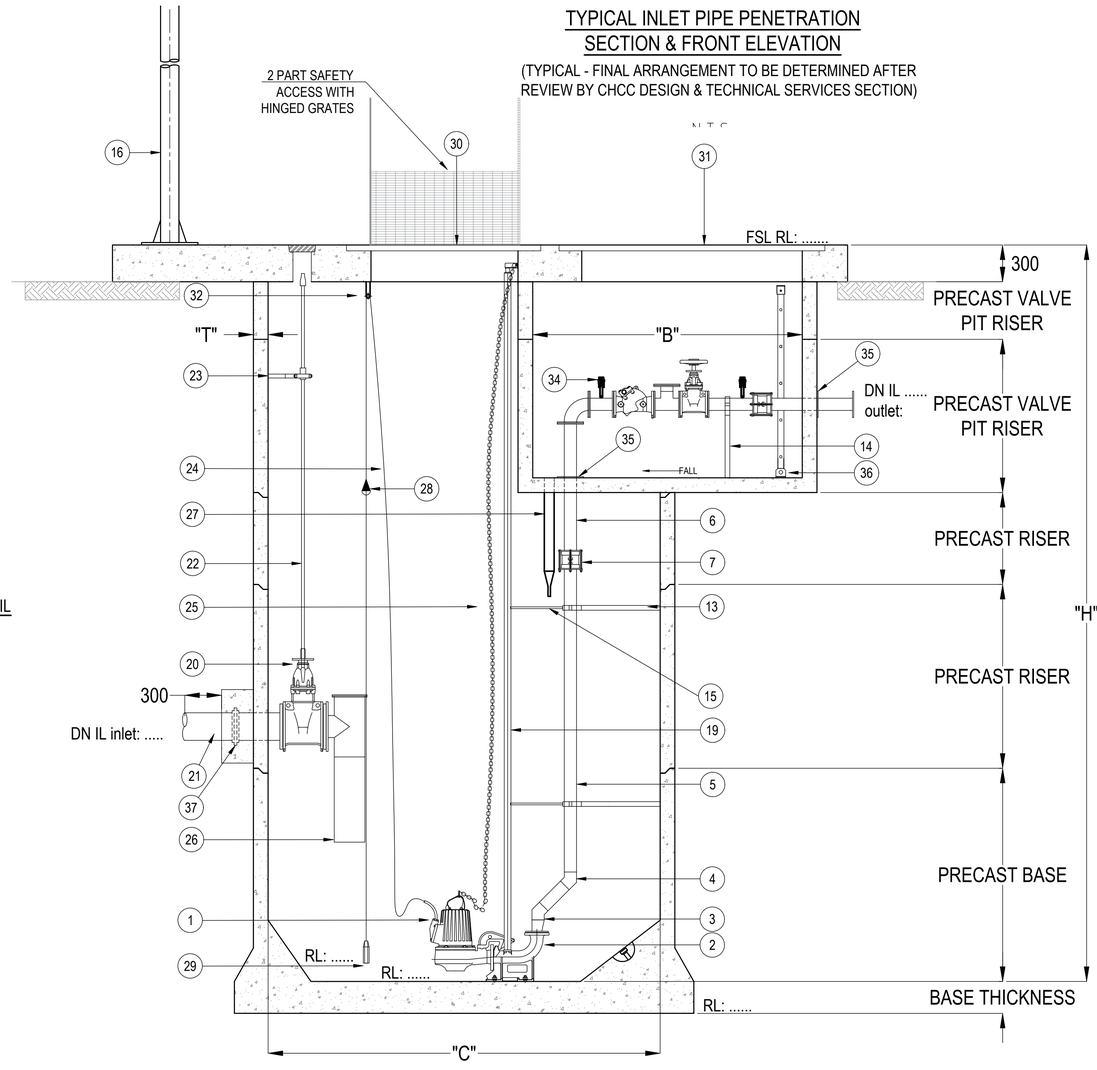
PUMP: TO BE DETERMINED
VARIABLE SPEED PUMP
IMPELLOR SIZE: TO BE DETERMINED
MOTOR: TO BE DETERMINED

"A" - INTERNAL VALVE PIT
"B" - INTERNAL VALVE PIT
"C" - INTERNAL PUMP WET WELL DIAMETER
"H" - WET WELL DEPTH
"T" - WET WELL WALL THICKNESS
"X" - CONCRETE SURROUND
"Y" - CONCRETE SURROUND





TYPICAL INLET PIPE PENETRATION
SECTION & FRONT ELEVATION
(TYPICAL - FINAL ARRANGEMENT TO BE DETERMINED AFTER REVIEW BY CHCC DESIGN & TECHNICAL SERVICES SECTION)
N.T.S.



SECTION
(WETWELL LADDER REMOVED FOR CLARITY)
1:25 @ A1

Datum:
Grid : GDA94(MGA)
Origin : SSM
Reference Plans:
-
-
-
-

Rev.	Amendments	Apprd.	Date
1	ISSUED FOR USE	D.S.	12/2024

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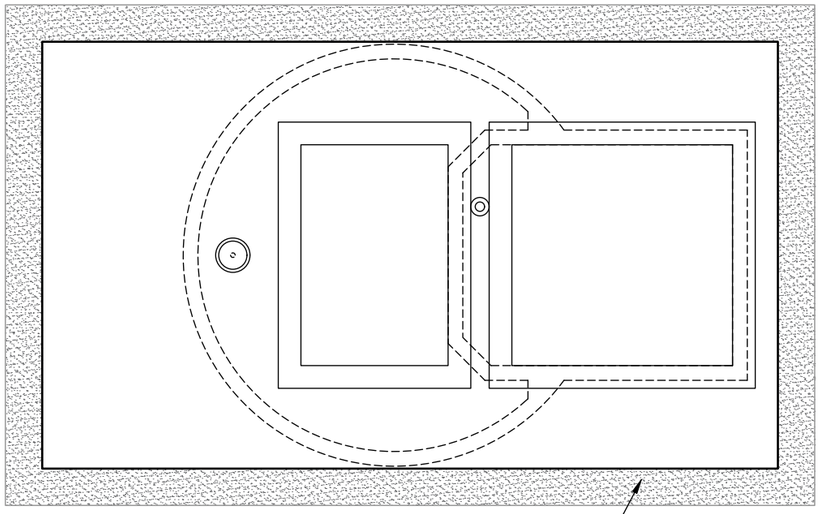
STANDARD DRAWING

PRECAST SEWER PUMP STATION WITH INTEGRAL VALVE PIT
GENERAL ARRANGEMENT

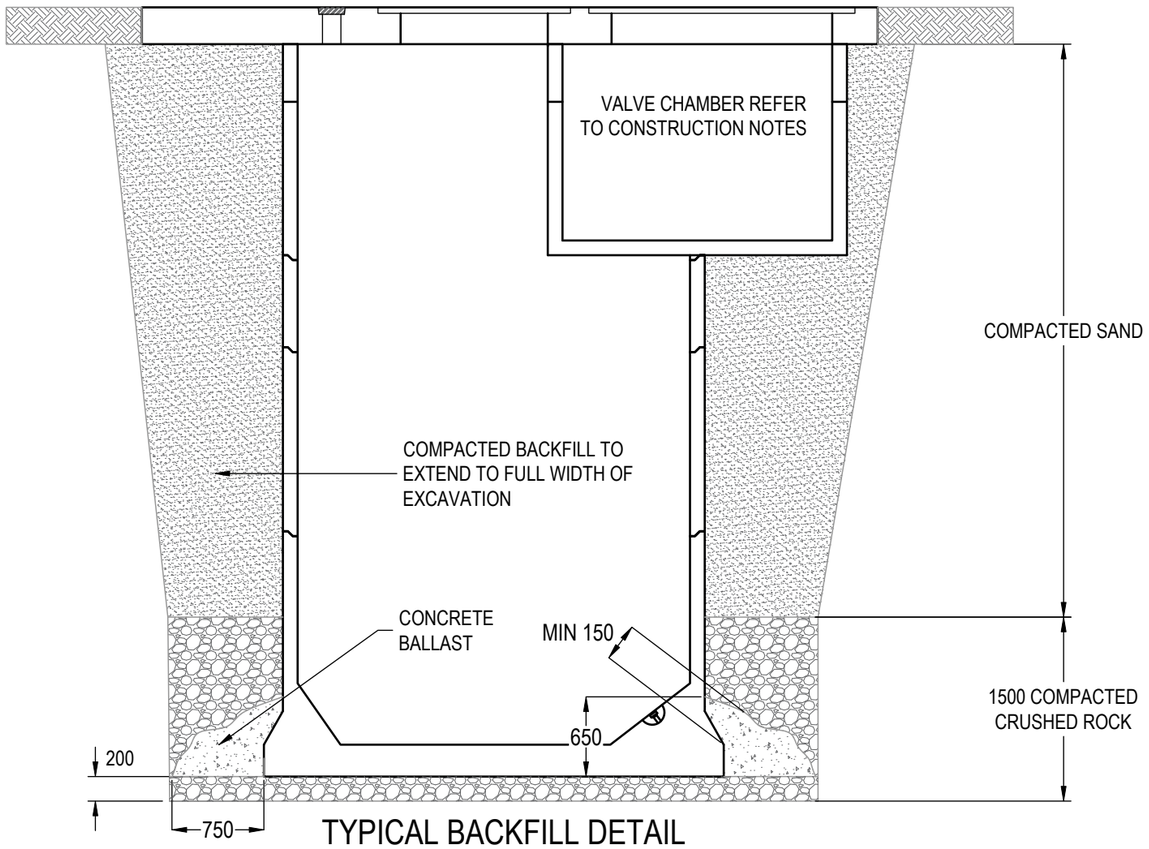
Council Plan No.
S-500-20
Sheet 1 of 2
Original Size A1
Revision 1



COMPACTED SAND TO FULL WIDTH OF EXCAVATION
AROUND THE COVERSLAB PERIMETER

TOP SLAB BACK FILL REQUIREMENTS:

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION



TYPICAL BACKFILL DETAIL

CONSTRUCTION NOTES AND BACKFILLING REQUIREMENTS

1. OCCUPATIONAL HEALTH AND SAFETY: THE CONTRACTOR IS RESPONSIBLE TO BE KNOWLEDGEABLE OF AND IS BOUND BY THE OH&S STATUTORY REQUIREMENTS PERTAINING TO WORK IN DEEP TRENCHES AND SHAFTES.
2. THE WATER AUTHORITY: THE SPECIFICATIONS OF THE CITY OF COFFS HARBOUR FOR THE INSTALLATION OF PRECAST UNITS AND WELL CONSTRUCTION ARE TO BE ADHERED TO IN ADDITION TO THESE CONSTRUCTION RECOMENDATIONS.
3. SITE INVESTIGATION: IT IS RECOMMENDED THE CONSULTING ENGINEER CONDUCTS AT A SITE INVESTIGATION TO ESTABLISH INDCATIVE SUBSURFACE CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE FOLLOWING CONSTRUCTION NOTES ARE BASED ON NORMAL SITE CONDITIONS WHICH ARE FREE OF GROUNDWATER AND APPLY TO INSTALLATIONS IN COHESIVE AND NON-COHESIVE SOILS.
4. FOUNDATION: EXCAVATION DEPTH IS TO BE A MINIMUM OF 200mm BELOW BASE OF CASTING AND MAY BE DEEPER AS REQUIREDTO ACHIEVE A MINIMUM FOUNDATION BEARING CAPACITY OF 100kPa. REMOVE OR STOCKPILE SPOIL AS REQUIRED. PREPARE A 200mm SUB-BASE OF APPROVED SIZE 20mm CRUSHED ROCK QUARRY PRODUCT ROAD BASE MATERIAL. COMPACT TO 95% OF MODIFIED DENSITY AS WITHIN 85%-110% OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED COMPACTION TEST OF AS1289. USE A VIBRATING FLATE PLATE OR SMOOTH DRUM ROLLER TO CAPACT IN MAXIMUM LIFTS OF 150mm. ALTERNATIVELY, 15MPa CONCRETE MAYBE CAST AS A SUBBASE. SCREED AND COMPACT A 50mm LAYER OF SAND BEDDING TO ACHIEVE THE FINISHED PREPARED BASE LEVEL.

MATERIALS SPECIFICATION:

* SAND SPECIFICATION: SAND IS TO BE OF HARD DURABLE PARTICLES FREE OF MICA, CLAY LUMPS AND ORGANIC MATTER. IT IS TO BE EVENLY GRADED AND SHALL FULLY COMPLY TO AS/NZS 2566.2 AND WSAA PRODUCT SPEC FOR SAND GRADINGS.

GENERAL PROPERTIES OF EMBEDMENT/CONCRETE SAND

PROPERTY	PROPERTY VALUE
PARTICLE DENSITY	(MIN) 2100KG/CUB M
WATER ABSORPTION	(MAX) 3%
MATERIAL FINER THAN 0.075 NUN	(MAX) 10%
MATERIAL FINER THAN 0.002	(MAX) 1%
FRIABLE/WEAK/LIGHT PARTICLES	(MAX) 1%

EMBEDMENT/CONCRETE SAND GRADING

SIEVE SIZE	MASS OF SAMPLE PASSING
9.5mm	100%
4.75mm	90-100%
2.36mm	60-100%
1.18mm	30-100%
0.6mm	15-100%
0.3mm	5-50%
0.15mm	0-15%
0.075mm	0-5%

* CRUSHED ROCK QUARRY PRODUCT SPECIFICATION: SUBBASE MATERIAL SHALL BE 20mm CLASS 2 CRUSHED ROCK IN ACCORDANCE WITH THE FOLLOWING.

- CONSULTING ENGINEERS SITE INVESTIGATION
- WSAA PRODUCT SPECIFICATION & AS/NZS 2566.2

5. BACKFILLING OF SEGMENTS: THE INITIAL 1500mm OF BACKFILL AROUND THE BASE SEGMENT IS TO BE OF CRUSHED ROCK WHICH IS TO BE TAMPED/COMPACTED INTO PLACE IN MINIMUM LIFT OF 150mm. LIGHT RATHER THAN EXCESSIVE COMPACTION IS REQUIRED. ABOVE 1500mm AND AROUND ALL SUBSEQUENT SEGMENTS IS TO BE OF COMPACTED SAND - ALSO TAMPED INTO PLACE IN 150mm LIFTS. SLUICING OR FLOODING THE SAND INTO PLACE IS NOT TO BE USED. REF MRWA BACKFILL SPEC NO-04-03-1 FOR BACKFILL REQUIREMENTS.
6. VALVE CHAMBER: THE VALVE CHAMBER IS FULLY SELF SUPPORTING. TO SAFE GUARD AGAINST CAVITIES BENEATH THE UNDERSIDE OF THE VALVE CHAMBER SEGMENT BACK FILL AS FOLLOWS.
7. AFTER THE FINAL RING SECTION IS IN POSITION, PREPARE THE COMPACTED SAND BACKFILL TO WITHIN 20mm OF THE TOP OUTER SEALING EDGE. AQUATEC AND THE INSTALLATION CONTRACTOR TO CONFIRM THIS PRIOR TO LOWERING THE VALVE CHAMBER INTO POSITION,TO ENSURE AN EVENLY SEATED SEAL TO BELOW RING SECTION AND AVOID CAVITIES BENEATH THE VALVE CHAMBER AFTER POSITIONING.
8. COVER SLAB: OVERHANG MUST BEAR ON BACKFILLED GROUND WHEN INSTALLING ONTO FINAL RING SEGMENT.
9. PERIMETER: AFTER PLACING THE SLAB, PLACE COMPACTED SAND UP TO FINISHED NATURAL SURFACE LEVEL AROUND ITS PERIMETER. MAKE GOOD THE TRANSITION BETWEEN ORIGINAL SURFACES AND THE NEW.

Drawn	B.P.S					
Checked	C.B					
Approved	D.S.					
Date	DEC 2024	1	ISSUED FOR USE	B.P.S	D.S.	12/2024
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SEWER STANDARD DRAWING

PRECAST SEWER PUMP STATION WITH INTEGRAL VALVE PIT
TYPICAL BACKFILL REQUIREMENTS

Council Plan No.
S-500-21

Orig. Size: A3
Revision: 1