

GENERAL NOTES

1. ALL WORK RELATED TO THE PROPOSED STORMWATER PIPES AND PITS SHALL REFER TO WSA02-2002-2.2 SYDNEY WATER EDITION 4 AND SYDNEY WATER TECHNICAL SPECIFICATION- CIVIL VERSION 10 U.N.O..
2. DRAWINGS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AND OTHER SPECIFICATIONS FOR THE WIDENING OF KING GEORGES ROAD (A3) BETWEEN FOREST ROAD AND STONEY CREEK ROAD PROJECT, AND SYDNEY WATER CIVIL TECHNICAL SPECIFICATION (VERSION 10.0) AND DEEMED TO COMPLY STANDARD DRAWINGS.
3. LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
4. COORDINATES ARE TO MAP GRID OF AUSTRALIA 1994 (MGA94) ZONE 56.
5. ALL DIMENSIONS ARE IN MILLIMETRES (UNO). ALL LEVELS, CHAINAGES AND CO-ORDINATES ARE EXPRESSED IN METRES.
6. WHERE REFERENCE IS MADE TO PROPRIETARY COMPONENT NAMES ON THE DRAWINGS THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE PRODUCT PROVIDED THE ALTERNATIVE IS EQUIVALENT AND SATISFIES THE REQUIREMENTS OF THE SPECIFICATION AND IS APPROVED BY THE PRINCIPAL.
7. ACCESS TO PROPERTIES TO BE MADE AVAILABLE BY THE CONTRACTOR AT ALL TIMES DURING CONSTRUCTION UNLESS OTHERWISE AGREED WITH AFFECTED PROPERTY OWNER.
8. ALL CIVIL WORK (PAVEMENT RESTORATION, KERB AND GUTTER, FOOTPATH, DRIVEWAY, LANDSCAPING, LINE MARKING AND SIGNAGES, MEDIAN ETC) TO BE UNDERTAKEN IN ACCORDANCE WITH THE VERSION OF GEORGES RIVER COUNCIL STANDARDS LATEST AT THE TIME OF TENDER UNO.
9. WHERE AREAS ARE SHOWN AS BEING "ON HOLD" ON PLANS, ALL CORRESPONDING LONGITUDINAL SECTIONS, CROSS SECTIONS, DRAINAGE, PAVEMENTS AND OTHER DETAILS RELATING TO THAT AREA SHALL ALSO BE DEEMED TO BE "ON HOLD" UNO.
10. ALL WORKS OUTSIDE THE ROAD CORRIDOR BOUNDARY IS SUBJECT TO AGREEMENT WITH PROPERTY OWNER AND THE PRINCIPAL.
11. DRAWING REFERENCES QUOTED ARE ONLY SHOWING THE LAST SIX DIGITS FOR SIMPLICITY.
12. FOR TNSW AND SYDNEY WATER STANDARD SUPPLEMENTARY DRAWING INDEX REFER SHEET 4.
13. ALL GRADING POINTS ARE RELATED TO FINISHED ROAD LEVEL.
14. ALL LOCATIONS, ORIENTATION AND LEVELS OF EXISTING FEATURES SHALL BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. REFER DISCREPANCIES TO THE PRINCIPAL. DO NOT OBTAIN DIMENSIONS FROM SCALING. EXISTING SURFACE LEVELS ON THE DRAWINGS ARE INDICATIVE ONLY.
15. GEOTECHNICAL INVESTIGATIONS HAVE NOT BEEN UNDERTAKEN WITHIN THE PROPERTY BOUNDARY DUE TO ACCESS RESTRICTIONS. A MAXIMUM BATTER SLOPE OF 2 (H) TO 1 (V) FOR CUT AND 4 (H) TO 1 (V) FOR FILL HAS BEEN ADOPTED.
16. DRIVEWAY CROSSINGS AT ALL PROPERTY ACCESSES ON BASSETT STREET AND SIDE ROAD SHOULD BE CONSTRUCTED AS PER GEORGES RIVER COUNCIL STANDARD DRAWING SD041.
17. ACCESS TO SYDNEY WATER ASSETS TO BE MADE AVAILABLE BY THE CONTRACTOR AT ALL TIMES DURING CONSTRUCTION TO CARRYOUT ANY MAINTENANCE WORK.

SAFETY - IN - DESIGN INFORMATION

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH TNSW STANDARD. THIS DOCUMENT LISTS SOME DESIGN RELATED WORK HEALTH AND SAFETY HAZARDS ASSOCIATED WITH THE PROJECT DESIGN, CONSTRUCTION AND OPERATION. THERE MAY BE OTHER HAZARDS AND RISKS NOT STATED IN THIS DOCUMENT. THIS DOCUMENT DOES NOT RELIEVE THE CONTRACTOR OF ITS OBLIGATIONS UNDER THE CONTRACT AND RELEVANT LEGISLATION.
2. REFER TO SID REPORT AND THE DESIGN REPORT FOR SID INFORMATION.

SIGNAGE AND LINEMARKING

1. TO ELIMINATE EXCESSIVE GLARE FROM THE SURFACE OF A SIGN IT SHALL BE TURNED APPROXIMATELY 5° AWAY FROM THE NORMAL TO THE HEADLIGHT BEAM/LINE OF SIGHT.
2. ALL SIGNAGE TO BE CLEAR OF ALL VEGETATION AND OBSTRUCTIONS.
3. SIGNS TO BE INSTALLED IN ACCORDANCE WITH AS1742.
4. THE LOCATION OF ALL EXISTING SIGNS SHALL BE CONFIRMED PRIOR TO COMMENCING WORK. ENSURE ADOPTED METHOD OF CONSTRUCTION WILL AVOID DAMAGE TO ALL SERVICES.
5. CONDITION ASSESSMENT TO BE UNDERTAKEN ON ALL EXISTING SIGN FACES TO BE RELOCATED PRIOR TO BEING REUSED IN ACCORDANCE WITH RELEVANT SPECIFICATIONS AND STANDARDS AS DIRECTED BY PRINCIPAL.
6. ALL EXISTING LINEMARKING AFFECTED BY THE NEW WORKS AND NOT OTHERWISE CONFLICTING WITH PROPOSED LINEMARKING SHALL BE REINSTATED.
7. ALL LINEMARKING TO BE THERMOPLASTIC IN ACCORDANCE WITH SPECIFICATION R145.
8. FOR MESSAGES ON PAVEMENTS AND REMOVAL OF LINE MARKING REFER TO TNSW SPECIFICATION R145.
9. RAISED PAVEMENT MARKERS SHALL BE PLACED ON ALL LANE, EDGE AND BARRIER LINES. SPACING OF RAISED PAVEMENT MARKERS SHALL BE IN ACCORDANCE WITH TNSW DELINEATION GUIDE AND SPECIFICATION. R142 FOR DETAILS OF RAISED PAVEMENT MARKERS REFER TO TABLE 2 ON SHEET 4.

TNSW STANDARD DRAWINGS

1. TNSW STANDARD DRAWINGS CAN BE FOUND AT THE FOLLOWING LOCATION:
<https://roads-waterways.transport.nsw.gov.au/business-industry/partners-suppliers/document-types/standard-drawings/road/index.html>

TABLE 1. STANDARD DRAWING REFERENCES			
STRUCTURE TYPE (DENOTED ON SCHEDULE)	DRAWING REFERENCE	DRAWING TITLE	LAST AMENDED
R0220		TNSW STORMWATER DRAINAGE SERIES - GULLY PITS	
SA1	R0220-01	GULLY PIT TYPE SA PIPE DIAMETER UP TO 450mm	Jan-17
SA2	R0220-01	GULLY PIT TYPE SA PIPE DIAMETER UP TO 450mm	Jan-17
SA3	R0220-01	GULLY PIT TYPE SA PIPE DIAMETER UP TO 450mm	Jan-17
SF	R0220-09	GULLY PIT TYPE SF	Jan-17
SB2	R0220-51	GULLY PIT TYPE SB	Jan-17
SAS	R0220-01	GULLY PIT TYPE SA PIPE DIAMETER UP TO 450mm	Jan-17
F	R0220-24	GULLY PIT TYPE F - SINGLE GRATE	Jan-17
	R0220-28	GULLY PIT WIDENING FOR PIPES GREATER THAN 450mm DIA	Jan-17
	R0220-35	GULLY PIT INSPECTION PIT WITH SINGLE OR DOUBLE CAST IRON FRAME AND COVER	Jan-17
	R0220-43	PIT TO PIPE CONNECTION	Jan-17
R0240		TNSW STORMWATER DRAINAGE SERIES - PIPES	
	R0240-01	INSTALLATION OF BURIED CONCRETE PIPE TYPE HS3 SUPPORT	Jan-17

TNSW SAFETY BARRIERS AND TERMINALS	
BARRIER/TERMINAL PRODUCT	EZY-GUARD HIGH CONTAINMENT STEEL RAIL SAFETY BARRIER - PERMANENT
	MASH TL-4 SENTRYLINE-M WIRE ROPE SAFETY BARRIER SYSTEM
	ET-SS TERMINAL

GEORGES RIVER COUNCIL STANDARD DRAWINGS		
STANDARD DRAWING NUMBER	TITLE	REVISION
M3181V	STANDARD VEHICULAR CROSSING & KERB AND GUTTERING - SHEET 1	Jul-05
SD041	LAYBACK AND ACCESS DETAILS FOR DRIVEWAY APPLICATIONS	Jul-16
SD042	STANDARD CONCRETE KERB RAMP FOR 150 KERB AND GUTTER	Jul-16
SD044	TYPES OF KERB	Jul-16
SD047	FOOTPATH CONSTRUCTION FOR DRIVEWAY APPLICATIONS	Jul-16

SYDNEY WATER STANDARD DRAWINGS

2. SYDNEY WATER DEEMED TO COMPLY STANDARD DRAWINGS CAN BE FOUND AT THE FOLLOWING LOCATION:
<https://www.sydneywater.com.au/plumbing-building-developing/provider-information/standards-specifications.html>

SYDNEY WATER STANDARD DRAWINGS		
STANDARD DRAWING NUMBER	TITLE	REVISION
DTC 2200	DN1200 MAINTENANCE HOLES CAST IN-SITU REINFORCED CONCRETE	F - May 15
DTC 2201	MAINTENANCE HOLES CAST IN-SITU REINFORCED CONCRETE	E - Mar 15
DTC 2220	MAINTENANCE HOLES DETAILS	F - Mar 15
DTC 2259	MAINTENANCE HOLES PRECAST PIPEWORK PENETRATION DETAILS	A - Jun 15

TABLE 2. DELINEATION DETAILS			
LINE TYPE	COLOUR	RPM TYPE	MATERIAL
BB	WHITE	YY	TP
C1	WHITE	W	TP
C2	YELLOW	NA	TP
C3	YELLOW	NA	TP
C4	WHITE	NA	TP
E1	WHITE	R	TP
E3	WHITE	Y	TP
E4	WHITE	YR	TP
E5	WHITE	YY	TP
E6	WHITE	NA	TP
L1	WHITE	W	TP
L6	WHITE	NA	TP
L7	WHITE	NA	TP
PCW	WHITE	NA	TP
PX	WHITE	NA	TP
S4	WHITE	NA	TP
S5	WHITE	NA	TP
TB	WHITE	NA	TP
TF	WHITE	NA	TP
T1	WHITE	NA	TP
TBB	WHITE	NA	TP

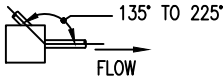
TP = NON PROFILE THERMOPLASTIC PAINT
WB = WATERBOURNE PAINT

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SMC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SMC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SMC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SMC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW SHT 1 OF 18 SHTS.	
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER	.....	SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	

DRAINAGE GENERAL

- 1. THE DOCUMENTED DRAINAGE SYSTEM IS DETAILED ONLY FOR THE PERMANENT ROAD CONFIGURATION UNO. DRAINAGE REQUIREMENTS DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- 2. PIPES THROUGH PITS (EXCEPT AT DROP PITS) ARE TO BE ALIGNED WITH UPSTREAM PIPE CENTRELINE TO OUTLET PIPE CENTRELINE AT DOWNSTREAM PIT FACE AS SHOWN;



- 3. ANY PERMITS FOR DIVERSION WORKS REQUIRED DURING CONSTRUCTION SHALL BE OBTAINED PRIOR TO CONSTRUCTION WORKS BY THE CONTRACTOR FROM THE PRINCIPAL.
- 4. EXISTING STORMWATER DRAINAGE PIPES AND MANHOLES WITHIN THE LIMITS OF WORK SHALL BE REMOVED OR MODIFIED AS SPECIFIED. SYDNEY WATER STORMWATER ASSETS SHALL NOT BE DISTURBED WITHOUT APPROVAL FROM SYDNEY WATER.
- 5. ANY EXPOSED REINFORCEMENT TO BE PROTECTED IN ACCORDANCE WITH REQUIREMENTS FOR NEW CONSTRUCTION (REFER TO NOTE 25 OF DRAINAGE STRUCTURE).
- 6. EXISTING STORMWATER PIPES OR CULVERTS THAT ARE IDENTIFIED TO BE ABANDONED SHALL BE REMOVED WITH APPROPRIATE TREATMENT AND IN ACCORDANCE WITH TNSW STANDARD SPECIFICATIONS UNO.
- 7. DURING CONSTRUCTION ANY EXCAVATIONS SHALL BE SECURELY SHORED OR BENCHED TO PREVENT THE SIDES OF THE EXCAVATION FROM COLLAPSING. ALL TRENCHES SHALL BE SHORED OR BENCHED TO COMPLY WITH THE NSW CONSTRUCTION SAFETY ACT.
- 8. ON COMPLETION OF THE WORKS, A CCTV INSPECTION OF THE COMPLETED PIPELINE MUST BE CARRIED OUT IN ACCORDANCE WITH AND TO THE ACCEPTANCE CRITERIA STIPULATED IN SYDNEY WATER CIVIL TECHNICAL SPECIFICATION (VERSION 10.0) AND WSA 02 (SYDNEY WATER EDITION). NOTE PRESSURE TESTS (SECTION C4.22 OF SYDNEY WATER CIVIL TECHNICAL SPECIFICATION) IS NOT REQUIRED TO BE CARRIED OUT FOR THE COMPLETED STORMWATER WORKS.

LONGITUDINAL PAVEMENT AND TRANSVERSE DRAINAGE

- 1. ALL PIPES ARE TO BE STEEL REINFORCED SPUN CONCRETE UNO. ALL CONCRETE PIPES SHALL HAVE HS3 TYPE INSTALLATION AS PER TNSW R0240-01.
- 2. ALL NEW LONGITUDINAL DRAINAGE TRENCHES SHALL BE BACKFILLED IN THE SIDE, OVERLAY AND BACKFILL ZONES AND SELECT MATERIAL ZONE OF PAVEMENT WITH TYPE SO MATERIAL AS SPECIFIED IN TNSW SPECIFICATION R11. UNO.
- 3. CONCRETE PIPE CLASSES HAVE BEEN DETERMINED BASED ON TYPE HS3 SUPPORT, FINISHED SURFACE LEVEL AND TRENCH OR EMBANKMENT CONDITION INSTALLATION TO AS3725 AND SPECIFICATION UNO. CONCRETE PIPES ARE TO BE RUBBER RING JOINTED SPIGOT AND SOCKET TYPE UNO. THERMAL ENVIRONMENT CONDITION OF TABLE 3.1 OF AS/NZS 4058:2007 APPLIES. MINIMUM COVER FOR REINFORCEMENT IS 10 mm.
- 4. MINIMUM COVER TO ALL NEW PIPES TO BE 300 mm BELOW THE UNDERSIDE OF THE SELECTED MATERIAL ZONE UNO.
- 5. PIPE LENGTHS PROVIDED IN DRAINAGE LONG SECTIONS ARE CALCULATED FROM PIT REFERENCE POINT TO PIT REFERENCE POINT.

EXISTING STORMWATER PIPES

- 1. EXISTING STORMWATER DRAINAGE PIPE AND PIT LAYOUT SHOWN IN THE DRAWINGS ARE INDICATIVE ONLY. ALL LOCATIONS, ORIENTATION AND LEVELS OF EXISTING SHALL BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. REFER DISCREPANCIES OR ISSUES TO THE PRINCIPAL.
- 2. LAYOUTS OF EXISTING STORMWATER DRAINAGE HAVE BEEN PREPARED BASED ON A COMBINATION OF NEW SURVEY DATA OBTAINED DURING CURRENT DESIGN, PREVIOUSLY AVAILABLE SURVEY DATA, AND COUNCIL GIS DATA (WHERE SURVEY IS NOT AVAILABLE).
- 3. WHERE AN EXISTING PIT HAS ONLY ONE PIPE OUTLET, THE SETOUT / REFERENCE POINT OF THE EXISTING PIT IS BASED ON THE SURVEYED PIPE INVERT LEVEL.
- 4. WHERE EXISTING PIT HAS TWO OR MORE CONNECTION PIPES, THE SETOUT / REFERENCE OF THE EXISTING PIT IS BASED ON THE INTERSECTION POINT OF THE CENTERLINE OF EACH PIPE.
- 5. WHERE A CONNECTION IS MADE TO AN EXISTING DRAINAGE PIPE OR PIT, THEN THE LEVEL OF THAT ELEMENT MUST BE SURVEYED AND ANY DISCREPANCIES SUBMITTED TO THE PRINCIPAL PRIOR TO COMMENCEMENT OF CONSTRUCTION.

PROPERTY STORMWATER DRAINAGE DISCHARGE

- 1. SURVEY OF EXISTING PROPERTY STORMWATER DRAINAGE DISCHARGE OUTLET LOCATIONS HAS NOT BEEN UNDERTAKEN AS PART OF THE DESIGN PROCESS. LOCATION LEVEL AND SIZE OF ALL EXISTING PROPERTY STORMWATER DRAINAGE DISCHARGE OUTLETS INTO COUNCIL DRAINAGE SYSTEM OR TO ROAD KERB MUST BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION.
- 2. ALL LEVELS FOR PROPERTY CONNECTIONS MUST BE CHECKED FOR CONFLICT WITH ANY SERVICES AND TO ENSURE THE PROPERTY STORMWATER DRAINAGE CAN RE-CONNECT INTO THE NEW DRAINAGE SYSTEM OR NEW ROAD KERB, CONSISTENT WITH THE EXISTING CONNECTION.
- 3. uPVC PIPE CONNECTING EXISTING PROPERTY STORMWATER TO BE MINIMUM IPLEX 150 DIAMETER CLASS SN 8 OR APPROVED EQUIVALENT (DSME 150 RRJ).
- 4. PIPE BEDDING AND COVER REQUIREMENTS FOR uPVC PIPES SHALL COMPLY WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.

DRAINAGE STRUCTURES

- 1. DRAINAGE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH AS5100.
- 2. TNSW STANDARD DETAILS ONLY TO BE ADOPTED WHERE REFERENCED.
- 3. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS (SM 1600 WHERE UNDER OR ADJACENT TO ROADWAYS) ACTING ON COMPLETED STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND PROVISION OF ANY TEMPORARY BRACING, PROPPING, ETC. REQUIRED DURING CONSTRUCTION. STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.
- 4. ALL CONCRETE SHALL BE IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL UNLESS NOTED OTHERWISE. EXPOSURE CLASSIFICATION IS B2.
- 5. ALL DRAINAGE STRUCTURES (EXCEPT PIPES) SHALL BE PLACED ON MINIMUM 50 mm THICK MASS CONCRETE SLAB WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 20 MPa.
- 6. UNSUITABLE FOUNDATION MATERIAL FOR PIPES AND STRUCTURES SHALL BE REMOVED OR IMPROVED IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
- 7. THE CONTRACTOR'S ATTENTION IS PARTICULARLY DRAWN TO POTENTIAL HAZARDS PRESENTED BY THE PRESENCE OF BURIED, CONCEALED AND/OR OVERHEAD SERVICES IN THE AREA OF CONSTRUCTION ACTIVITY.
- 8. CONTRACTOR SHALL PERFORM SERVICES SEARCH TO CONFIRM LOCATION OF SERVICES PRIOR TO INSTALLATION OF THE STRUCTURE.
- 9. CAST IN-SITU CONCRETE EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS NOTED OTHERWISE.
- 10. MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH AND MINIMUM COVER TO REINFORCEMENT (U.N.O)
 - CAST IN-SITU OR PRECAST S40/60mm
- 11. CONCRETE SHALL BE CURED IN ACCORDANCE WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION
- 12. FILL SHALL BE PLACED UP TO CULVERT OVERT LEVEL ADJACENT TO THE CULVERT AS CLOSE AS PRACTICABLE PRIOR TO CASTING THE BASE SLAB AND EITHER INSTALLING THE CULVERT UNITS OR CASTING THE SIDE WALLS AND TOP SLAB. SUBSEQUENT FILLING SHALL THEN BE PLACED UNIFORMLY ADJACENT TO AND ON TOP OF THE CULVERT.
- 13. THE SURFACES OF PREVIOUSLY PLACED CONCRETE AT CONSTRUCTION JOINTS SHALL BE ROUGHENED BY REMOVING ALL LAITANCE AND SUFFICIENT MORTAR TO EXPOSE AGGREGATES TO A DEPTH OF 3 mm IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
- 14. PRIOR TO THE APPLICATION OF PRIMER OR SEALANT, ALL JOINT GROVES SHALL BE CLEANED FOR THE FULL DEPTH TO ENSURE THE GROOVE FACES ARE FREE OF ANY LOOSE PARTICLES OR OTHER DEFECTS THAT WOULD IMPAIR BOND WITH THE SEALANT. ANY EXCESS MORTAR OR CONCRETE SHALL BE REMOVED FROM THE JOINT AND ANY DEFECTS REPAIRED, PRIOR TO THE APPLICATION OF THE SEALANT.
- 15. ALL PITS DEEPER THAN 600 TO BE FITTED WITH STEP IRONS IN ACCORDANCE WITH SYDNEY WATER DRAWING (SEW-1307-V) U.N.O.
- 16. STEEL GRATES AND FRAMES ARE TO BE FABRICATED FROM MILD STEEL WITH HOT DIP GALVANIZED. ALL GRATES ARE TO BE CLASS D U.N.O. GRATES AND FRAMES WITHIN THE PAVEMENT SURFACE (INCLUDES ADJOINING 500 GUTTER) ARE TO BE BICYCLE SAFE IN ACCORDANCE WITH AS 3996 U.N.O.
- 17. ALL WELDS TO COMPLY WITH AUSTRALIAN STANDARD AS 1554.1. FILLET WELDS TO BE NOT LESS THAN 6 mm U.N.O.
- 18. ALL GALVANIZING TO BE IN ACCORDANCE WITH AS/NZS 2312 AND AS/NZS 4680. MINIMUM GALVANIZING 600 g/sqm OTHER THAN ON FASTENERS.
- 19. GRATE SUPPORT TO BE CONSTRUCTED LEVEL TO ENSURE THAT THE GRATE DOES NOT ROCK AFTER INSTALLATION.
- 20. FOR LOCATION AND LEVEL OF PITS AND HEADWALLS REFER TO DRAINAGE DRAWING LONG SECTIONS AND SCHEDULE.
- 21. GALVANIZE THREADED FASTENERS TO AS 1214.
- 22. ALL PIT GRATES AND FRAMES TO BE "MEDIUM / HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES AND FRAMES TO AS 3996.
- 23. EXPOSED SAWCUT REINFORCEMENT BARS TO BE TREATED WITH CORROSION INHIBITING COATING.
- 24. DESIGN LIFE FOR NEW CONCRETE DRAINAGE PIPES AND STRUCTURES IS 100 YEARS.
- 25. PIT BASE TO BE CLEANED SCABBLED AND ROUGHENED IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL PRIOR TO PLACING MASS CONCRETE BENCHING. NO PONDING ALLOWED INSIDE THE PIT.
- 26. FOUNDATION SUPPORT FOR DRAINAGE STRUCTURES TO BE PROVIDED IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
- 27. COMPACTION TO BE COMPLETED IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
- 28. PROPRIETARY LIFT SYSTEM TO BE DESIGNED BY THIRD PARTY CHOSEN BY PRECAST MANUFACTURER IN ACCORDANCE TO AS3850.1.
- 29. REO WELDING TO BE IN ACCORDANCE WITH AS/NZS 1554.3.
- 30. ALL CONSTRUCTION JOINTS TO BE SCABBLED AND CLEANED.

UTILITIES

- 1. FOR UTILITIES THAT HAVE BEEN RELOCATED OR REQUIRE ADJUSTMENT FOR THE WORKS, REFER TO INDIVIDUAL UTILITY DIVERSION DRAWINGS AND DETAILS FROM THE RELEVANT UTILITY AUTHORITY.
- 2. IN ORDER TO AVOID DAMAGE TO THE UTILITIES THE CONTRACTOR SHALL BE RESPONSIBLE FOR CO-ORDINATING THE WORKS ADJACENT TO ANY UTILITY WITH THE RELEVANT UTILITY AUTHORITY IN ACCORDANCE WITH THE AUTHORITY REQUIREMENTS.
- 3. THE CONTRACTOR SHALL CO-ORDINATE WITH THE RELEVANT UTILITY AUTHORITIES AND THE PRINCIPAL WITH RESPECT TO ANY TEMPORARY DIVERSIONS NECESSARY FOR CONSTRUCTION STAGING WORKS.
- 4. FOR UTILITY INFORMATION REFER TO UT SERIES DRAWINGS.
- 5. POTHOLING OF ALL SERVICES SHOWN ON DRAWINGS HAS NOT BEEN UNDERTAKEN AS PART OF THE DESIGN PROCESS.
- 6. LOCATION AND LEVEL OF ALL SERVICES CROSSING NEW DRAINAGE MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL LEVELS MUST BE CHECKED FOR CONFLICT WITH ANY SERVICES, AND ANY CONFLICTS TO BE RESOLVED WITH THE PRINCIPAL.
- 7. THE LOCATION OF EXISTING PROPERTY CONNECTIONS TO UTILITIES LOCATED WITHIN THE ROAD RESERVE HAVE NOT BEEN LOCATED AND SURVEYED. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO LOCATE EACH PROPERTY CONNECTION AND ARRANGE ANY REQUIREMENT FOR RECONNECTION TO NEW LINES. THE CONTRACTOR SHALL ALSO PROTECT ALL PROPERTY CONNECTIONS DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL MANAGE ANY DISRUPTION TO SUPPLY TO PRIVATE PROPERTY AND ENSURE THAT SUPPLY IS AVAILABLE AT THE END OF EACH DAY'S ACTIVITIES.
- 8. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. THE QUALITY OF THE SERVICES ARE QL-A AT THE POTHOLE LOCATIONS AND QL-B AND QL-C IN BETWEEN UNO. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM LOCATION OF ALL SERVICES PRIOR TO COMMENCING WORK. CONTRACTOR TO ENSURE ADOPTED METHOD OF CONSTRUCTION WILL AVOID DAMAGE TO ALL SERVICES.
- 9. SERVICE AUTHORITIES ARE TO BE CONTACTED PRIOR TO THE COMMENCEMENT OF WORKS FOR ARRANGEMENTS TO BE MADE REGARDING THE PROTECTION, ADJUSTMENT OR RELOCATION OF SERVICES IF NECESSARY. INFORMATION PROVIDED ON THE DRAWINGS WITH RESPECT TO SERVICES IS FOR GUIDANCE ONLY.
- 10. PRIOR TO THE START OF EXCAVATION, ALL NEW TEMPORARY EXCAVATIONS FOR UTILITIES NEAR CUT OR FILL BATTERS ARE TO BE ASSESSED ON SITE BY THE CONTRACTOR'S EXPERIENCED GEOTECHNICAL ENGINEER FOR THEIR POTENTIAL IMPACT ON BATTER STABILITY DURING CONSTRUCTION.
- 11. THE CONTRACTOR MUST CHECK THAT ANY CLEARANCES TO UTILITY SERVICES SPECIFIED ON THE DRAWINGS ARE ACHIEVED ON SITE.
- 12. ALL EXCAVATIONS MUST BE CARRIED OUT FOLLOWING THE REGULATIONS SET BY EACH INDIVIDUAL UTILITY SERVICE AUTHORITY.
- 13. THE CONTRACTOR MUST MAKE THEMSELVES AWARE OF AND COMPLY WITH ALL UTILITY SERVICE AUTHORITY REGULATIONS AND STANDARDS IN RELATION TO THE USE OF MACHINERY AND EQUIPMENT IN THE VICINITY OF UTILITY SERVICES.

PROPERTY WORKS CONSTRUCTION

- 1. THE CONTRACTOR IS TO MAKE GOOD ANY DISTURBANCE TO EXISTING LAWNS AND TOP SOIL. TURF AND RESHAPE ALL DISTURBED AREAS INCLUDING REPLACEMENT OF EXISTING SHRUBS, HEDGES ETC. AS SHOWN ON DRAWINGS AND AGREED WITH THE PROPERTY OWNER AND THE PRINCIPAL.
- 2. THE CONTRACTOR IS TO CLEAN UP AND REMOVE WASTE FROM THE SITE CAUSED DURING THE ADJUSTMENT WORKS.
- 3. RELOCATE / REMOVE AND REPLACE EXISTING FENCES, GATES, LETTERBOX AS SHOWN ON THE DRAWING. PRINCIPAL TO CONFIRM EXACT INSTRUCTION WITH PROPERTY OWNER.
- 4. EXISTING PRIVATE PROPERTY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE DRAWINGS. THESE NEED TO BE LOCATED AND ADJUSTED AS REQUIRED. MAINTAIN EXISTING ALIGNMENT WHERE POSSIBLE.
- 5. ACCESS TO PROPERTIES TO BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES DURING CONSTRUCTION, OR AS OTHERWISE AGREED WITH THE PROPERTY OWNER AND THE PRINCIPAL.
- 6. ALL REDUNDANT FENCING TO BE REMOVED AND RECYCLED WHERE POSSIBLE.
- 7. THE CADASTRAL BOUNDARY IS SUBJECT TO CONFIRMATION ON SITE BY THE CONTRACTOR USING A REGISTERED LAND SURVEYOR.
- 8. SIGNIFICANT TREES HAVE BEEN IDENTIFIED ON THE DRAWINGS FOR REMOVAL WHERE REQUIRED, WHERE REMOVAL OF ADDITIONAL UNIDENTIFIED TREES IS REQUIRED TO CONSTRUCT THE PROPERTY WORKS, OBTAIN APPROVAL FROM THE PRINCIPAL BEFORE REMOVING ADDITIONAL TREES.
- 9. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH TNSW SPECIFICATION R204.
- 10. CONTRACTOR TO ENGAGE ASP LEVEL 2 FOR ALL ELECTRICAL SERVICE CONNECTIONS, INCLUDING ASSESSMENT OF ANY UPGRADE REQUIREMENTS INCLUDING AGREEMENT OF METHOD OF SUPPLY.
- 11. PROPERTY CONNECTIONS FOR JEMENA GAS NETWORK ASSETS ARE TO BE COMPLETED BY JEMENA GAS NETWORK.
- 12. PROPERTY CONNECTIONS FOR SYDNEY WATER ASSETS TO BE COMPLETED BY CONTRACTOR.

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SMC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SMC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SMC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SMC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....		Case No. 197068SW SHT 2 OF 18 SHTS.
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER	.....	SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	

KERBS AND CHANNELS

- 1. ALL KERBS TO CONFORM TO SPECIFICATION R15 AND TNSW STANDARD DRAWING SERIES R0300, UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 2. ALL KERB RAMPS ARE TO BE IN ACCORDANCE WITH TNSW STANDARD DRAWING R0300-11 UNLESS NOTED OTHERWISE.

CIVIL EARTHWORKS

- 1. EARTHWORKS ASSOCIATED WITH SYDNEY WATER ASSETS SHALL BE CONSTRUCTED AS PER SYDNEY WATER TECHNICAL SPECIFICATION – CIVIL. ALL OTHER EARTHWORKS SHALL BE CONSTRUCTED IN WITH TNSW QA SPECIFICATION R44 UNLESS NOTED OTHERWISE.
- 2. CLEARING AND DISTURBING OF VEGETATION SHALL BE KEPT TO A MINIMUM AND SHALL BE LIMITED TO AREAS REQUIRING EXCAVATION FOR CONSTRUCTION.
- 3. WHERE EXCAVATION IS REQUIRED ADJACENT TO EXISTING STRUCTURES, PROVIDE TEMPORARY SUPPORT AND SELECT APPROPRIATE EQUIPMENT TO ENSURE THAT NO DAMAGE OCCURS TO THE EXISTING STRUCTURE.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS NECESSARY TO ACHIEVE THE FINAL CONFIGURATION OF THE EARTHWORKS. ALL EXCAVATION SHALL BE MADE SECURE AGAINST MOVEMENT BY MEANS OF STABLE BATTERS, SHEET PILING OR PROTECTIVE SHIELDS.
- 5. FOUNDATION TREATMENT FOR EARTHWORKS ASSOCIATED WITH SYDNEY WATER ASSETS SHALL BE CONSTRUCTED AS PER SYDNEY WATER TECHNICAL SPECIFICATION – CIVIL. FOUNDATION TREATMENT FOR ALL OTHER EARTHWORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TNSW QA SPECIFICATION R44 UNLESS NOTED OTHERWISE.
- 6. REMOVAL OF UNSUITABLE MATERIAL ASSOCIATED WITH FOUNDATION TREATMENT FOR ANY SETTLEMENT AND STABILITY CONTROL SHALL BE BASED ON SITE INSPECTION AS DIRECTED BY THE PRINCIPAL.

GEOTECHNICAL

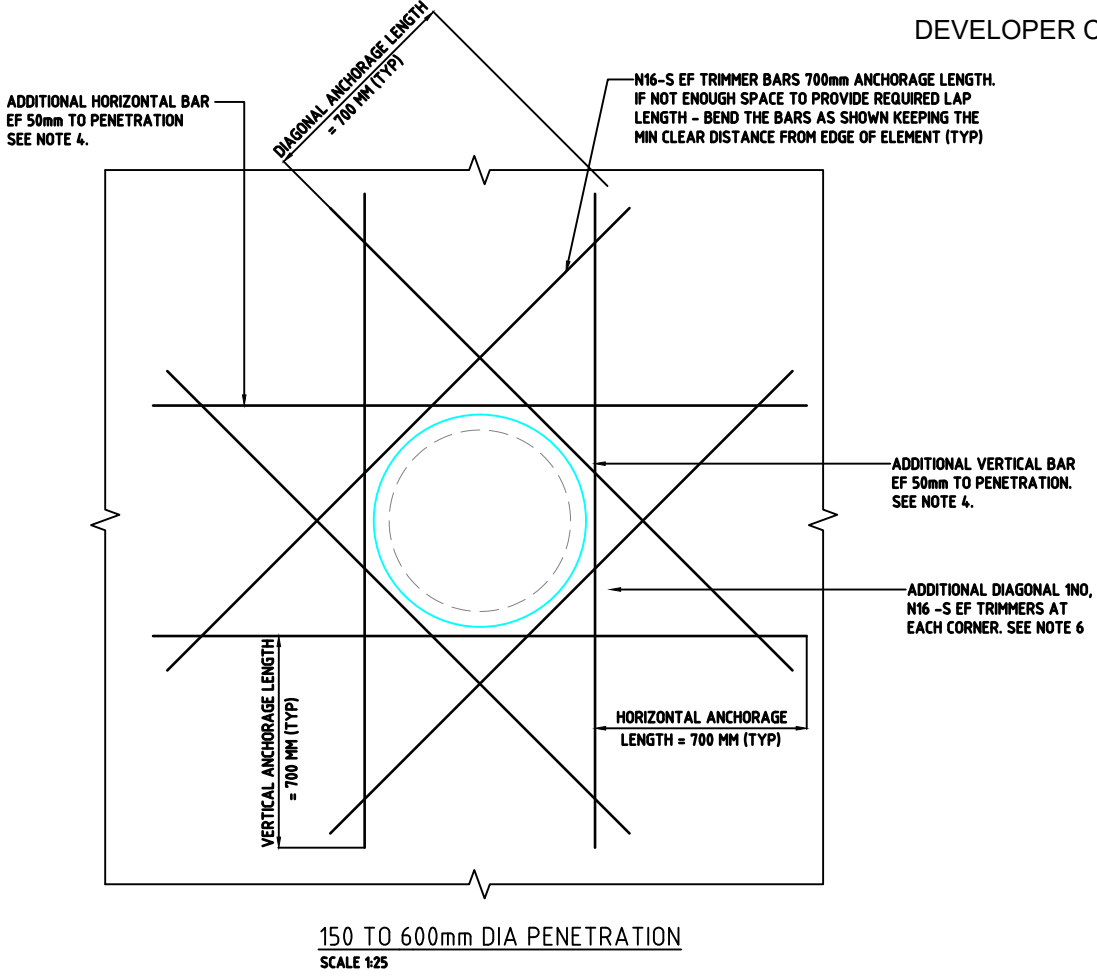
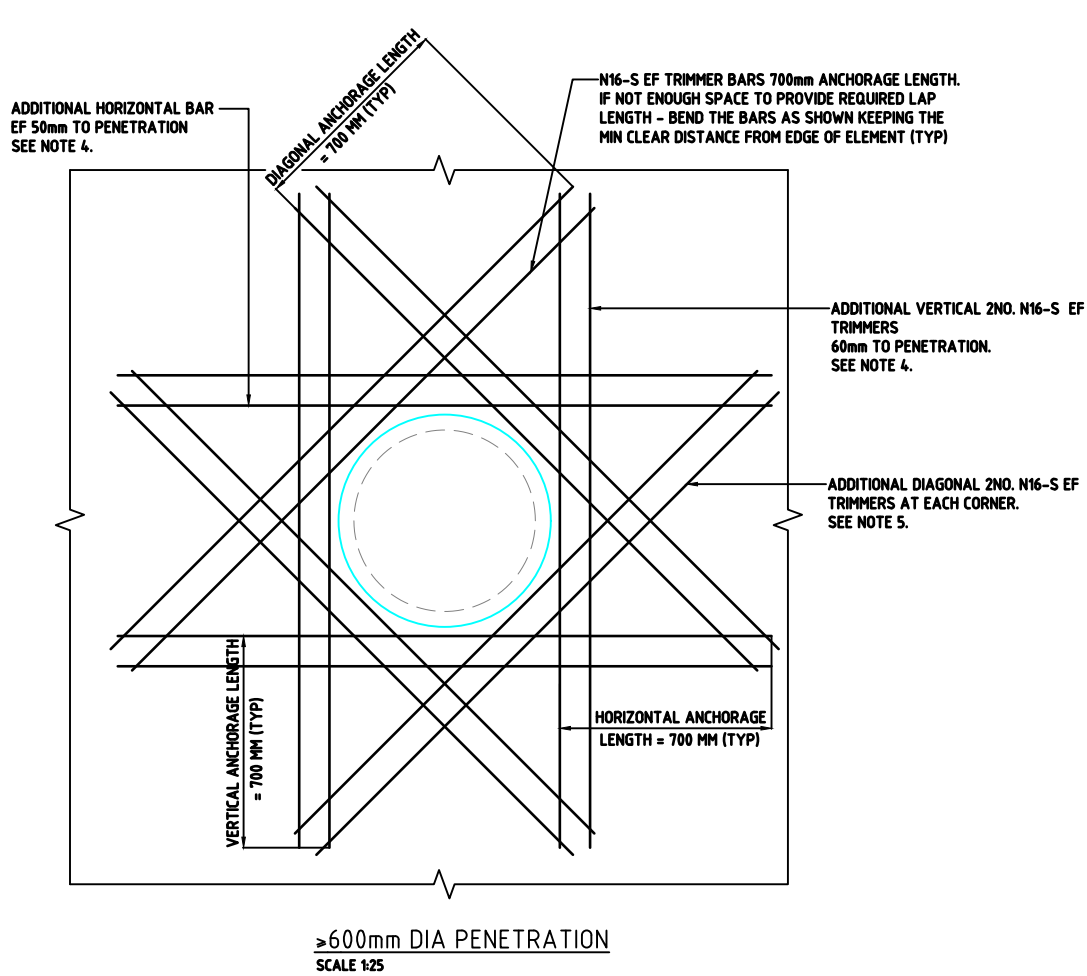
- 1. TOPSOIL SHALL BE REMOVED FROM THE FOOTING FOUNDATION LEVEL. THE REMOVED TOPSOIL SHALL BE TREATED AS PER SYDNEY WATER TECHNICAL SPECIFICATION – CIVIL.
- 2. IMPROVEMENT OF THE FOUNDATION AS DETERMINED BY THE CONTRACTOR’S GEOTECHNICAL ENGINEER WILL BE REQUIRED IF CONSISTENCY IS LESS THAN THOSE SPECIFIED ON THE DRAWINGS.
- 3. ALL FOUNDATION TREATMENT SHALL BE VERIFIED BY THE CONTRACTOR’S GEOTECHNICAL ENGINEER.
- 4. WHEN THERE IS A CHANGE IN FOUNDATION CONDITIONS AFTER INSPECTION BY THE CONTRACTOR’S GEOTECHNICAL ENGINEER, THE FOUNDATION EXCAVATION SHALL BE CLEANED AND REINSPECTED.
- 5. IF SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE DRAWINGS, THE PRINCIPAL IS TO BE ADVISED PRIOR TO WORKS PROCEEDING.

TRENCHLESS CROSSINGS / MICROTUNNELING / PIPE JACKING

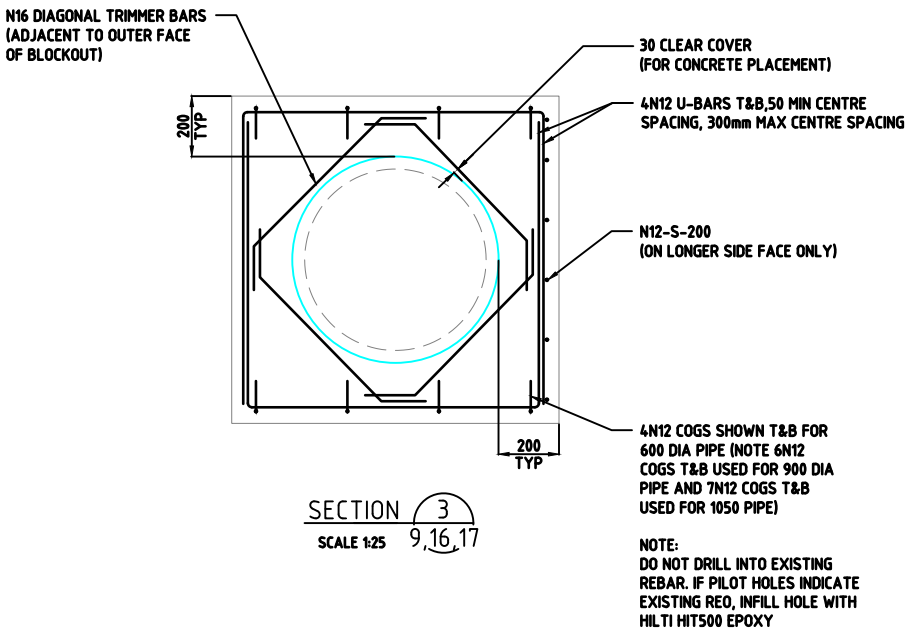
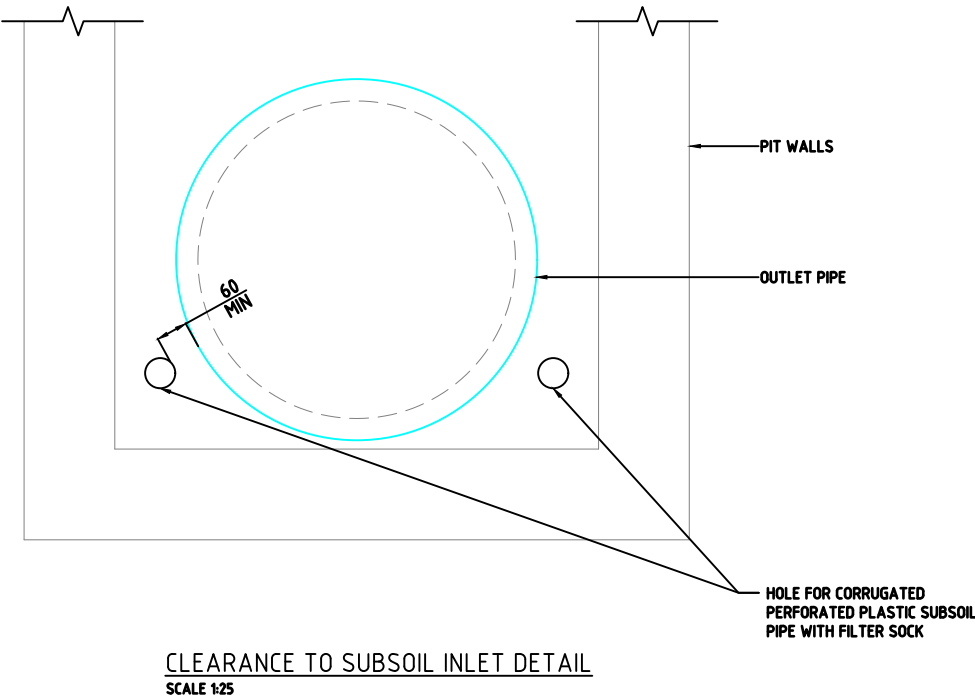
- 1. THE INFERRED GROUND CONDITIONS ARE AS DESCRIBED IN THE DOCUMENT G2S – PINCH POINTS: A3 KING GEORGES ROAD – GEOTECHNICAL INTERPRETATIVE REPORT, MARCH 2021 – 04-012-P0034139-REP-GT-001.
- 2. THE IMPACT ASSESSMENT OF THE TRENCHLESS CROSSING WORKS ON THE SYDNEY WATER ASSETS IS DOCUMENTED IN THE SPECIALIST ENGINEERING ASSESSMENT REPORTS: 04-013-P0034139-REP-GT-000 AND 04-014-P0034139-REP-GT-000.
- 3. AT THE LOCATIONS OF THE SYDNEY WATER ASSETS APPROVED PERMIT TO WORK SHALL BE OBTAINED FROM THE ASSET OWNER PRIOR TO THE START OF ANY WORKS RELATED TO THE TRENCHLESS CROSSINGS.
- 4. THE WORKS SHALL BE CONDUCTED IN ACCORDANCE WITH THE TNSW SPECIFICATION RS12 ‘UNDERBORED PIPELINE’.
- 5. THE CONTRACTOR SHALL SUBMIT A DETAILED METHOD OF WORKS STATEMENT ON THE TRENCHLESS CROSSINGS WORKS TO TNSW FOR REVIEW NO LATER THAN 20 BUSINESS DAYS BEFORE THE COMMENCEMENT OF THE WORKS.
- 6. THE METHOD OF WORKS STATEMENT ON THE TRENCHLESS CROSSINGS WORKS SHALL INCLUDE INFORMATION ON THE DRILLING EQUIPMENT AND SEQUENCING TO BE ADOPTED DURING CONSTRUCTION AS WELL AS MONITORING ACTIVITIES TO MITIGATE RISKS ASSOCIATED WITH GROUND MOVEMENTS.
- 7. THE CONTRACTOR SHALL SELECT THE EQUIPMENT FOR THE TRENCHLESS CROSSINGS TO PRODUCE ONLY OVERCUT BETWEEN THE DIAMETER OF THE BORE AND THE DIAMETER OF THE CASING PIPES THAT IS AS SMALL AS PRACTICABLE AND NOT LARGER THAN 2% OF THE PIPE DIAMETER.
- 8. THE CONTRACTOR SHALL GROUT THE ANNULUS BETWEEN THE JACKING PIPE AND THE CUT GROUND. THE GROUTING WORKS SHALL BE UNDERTAKEN AS SOON AS PRACTICABLE AND SHALL BE CONDUCTED IN AGREEMENT WITH THE PROJECT SPECIFIC TNSW SPECIFICATION RS12 ‘UNDERBORED PIPELINE’.
- 9. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT AN APPROVED GROUND MOVEMENT MONITORING PROGRAM AT THE LOCATION OF THE TRENCHLESS CROSSINGS IN ACCORDANCE WITH THE INDICATIVE SCHEMES INCLUDED WITHIN THE SPECIALIST ENGINEERING ASSESSMENT REPORTS CONTRACTOR TO SUBMIT GROUND MOVEMENT MONITORING PROGRAM TO TNSW FOR APPROVAL.
- 10. AFTER THE COMPLETION OF THE WORKS AT THE TRENCHLESS CROSSINGS THE CONTRACTOR SHALL UNDERTAKE CONDITION SURVEYS VIA CCTV FOR THE EXISTING SYDNEY WATER STORMWATER PIPES CROSSING BASSETT STREET AT LOCATIONS BETWEEN EX ST007472A AND EX ST007472B PITS AND BETWEEN EX ST007445 AND EX ST007446 PITS, AND ALSO FOR THE ADJACENT EXISTING AND NEW SEWERS CROSSINGS AT THESE LOCATIONS (REFER TO SHEETS 19, 20 & 21 AND UTILITIES PLANS).
- 11. THE J-SERIES JACKING PIPE SHOULD BE SUPPLIED WITH GRADE 316 STAINLESS STEEL COLLAR BANDS WITH INTERNAL JOINT GAP SEALANTS.

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SMC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SMC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SMC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SMC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		 SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW SHT 3 OF 18 SHTS.	
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER	.....		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		SYDNEY WATER CORPORATION	
		FOR DETAILS OF SERVICES SEE SHEET 1	



TYPICAL TRIMMER BAR ARRANGEMENT FOR PIPE PENETRATION INTO DRAINAGE PIT
SCALE 1:25



- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - COG ADDITIONAL BARS AND TRIMMER BARS INTO WALLS OR BASE SLAB AS REQUIRED.
 - THE MINIMUM EDGE DISTANCE SHOWN APPLIES TO ALL PITS WITH SUBSOIL INLETS IN THIS DRAWING SET.
 - ADDITIONAL REINFORCEMENT ADJACENT TO THE PENETRATION IN EACH DIRECTION MUST BE PROVIDED WITHIN HALF THE SIZE OF THE PENETRATION ON ALL FOUR SIDES. THE AMOUNT OF REINFORCEMENT PROVIDED ON EACH SIDE MUST BE AT LEAST EQUAL TO ONE BAR MORE THAN THE HALF THE NUMBER OF BARS TRUNCATED BY THE PENETRATION. THE COMPENSATING BARS MUST EXTEND PAST THE OTHER COMPENSATING BARS IN THE ORTHOGONAL DIRECTION BY AMOUNT AT LEAST EQUAL TO THE ANCHORAGE LENGTH.
 - ADDITIONAL ANCHORAGE TRIMMER BARS AT EACH CORNER MUST BE SPACED AT NO MORE THAN 100 MM CENTRES. IF THERE IS NOT ENOUGH SPACE TO PROVIDE THE REQUIRED LAP LENGTH - BEND THE BARS AS SHOWN KEEPING THE MIN CLEAR DISTANCE FROM EDGE OF ELEMENT (TYP).
 - IF THERE IS NOT ENOUGH SPACE TO PROVIDE THE REQUIRED LAP LENGTH - BEND THE BARS AS SHOWN KEEPING THE MIN CLEAR DISTANCE FROM EDGE OF ELEMENT (TYP).

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		Sydney WATER SYDNEY WATER CORPORATION	
DEVELOPER: Engineering, Building & Infrastructure PTY LTD.		Case No. 197068SW SHT 4 OF 18 SHTS.	
W.S.C.			
CONSTRUCTOR			
COMPLETED			
W.A.C. PREPARED			
DESIGNER		SYDNEY WATER CORPORATION	
Ahmad Samadi - Multi-Discipline Engineer - Structural		FOR DETAILS OF SERVICES SEE SHEET 1	

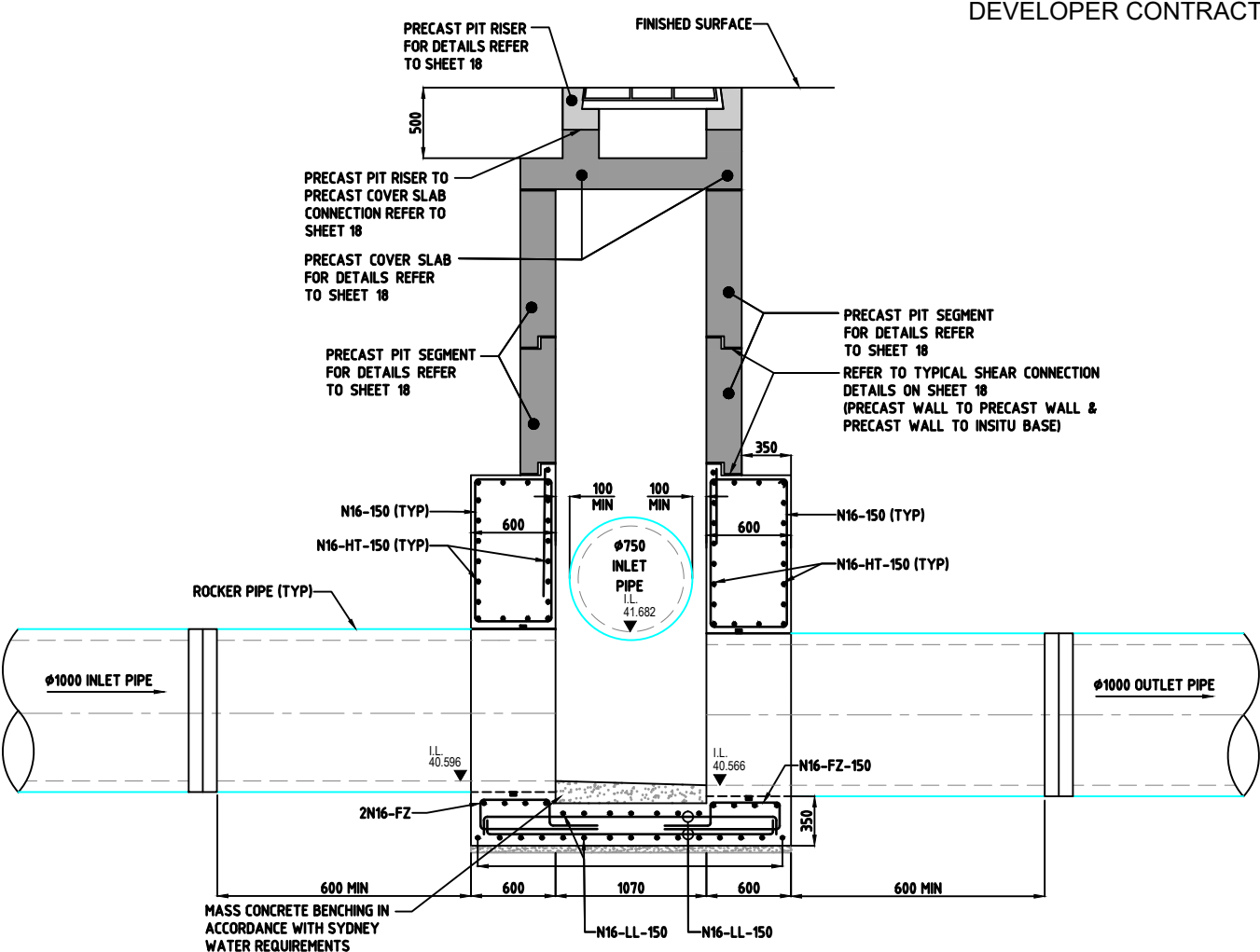
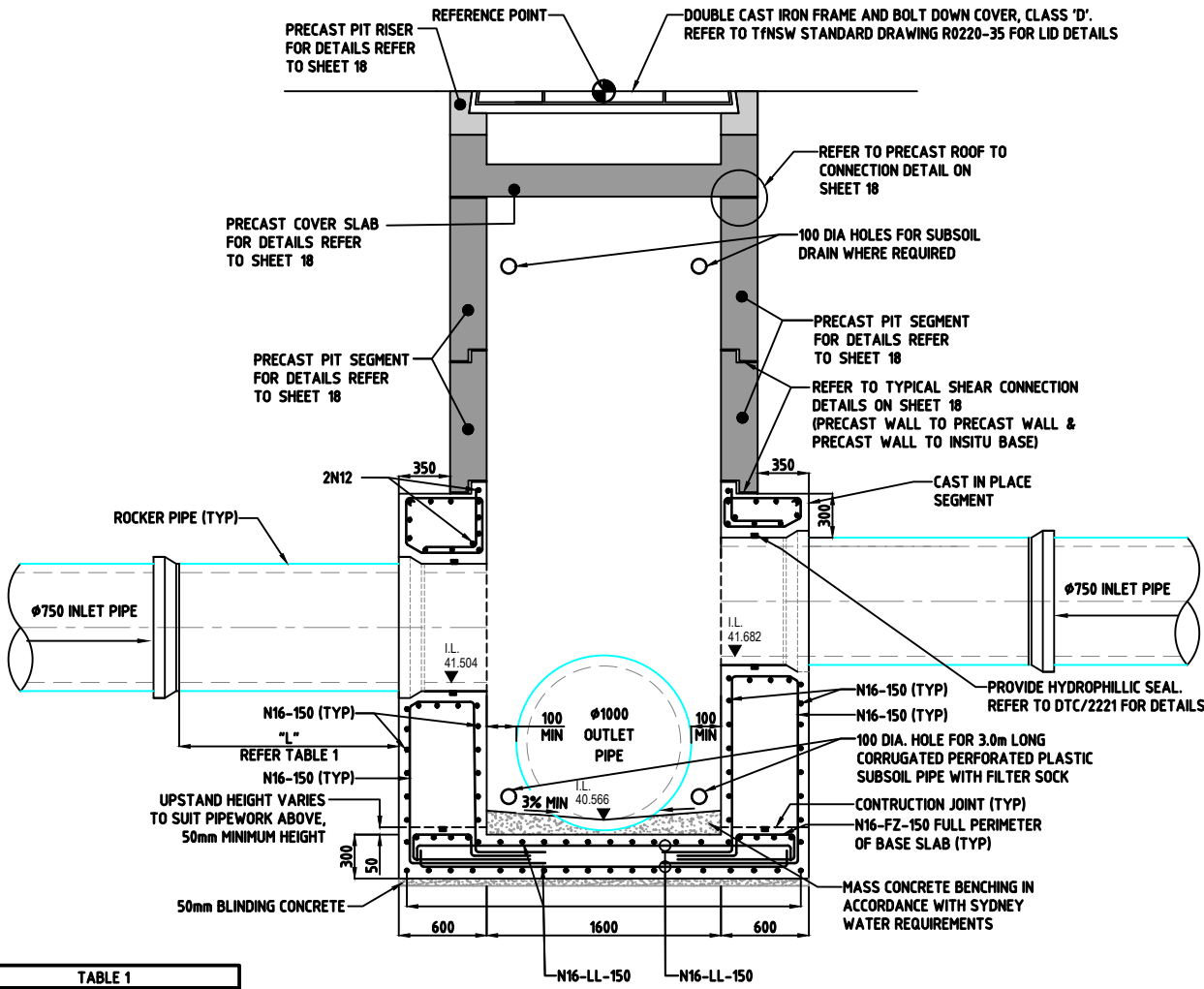
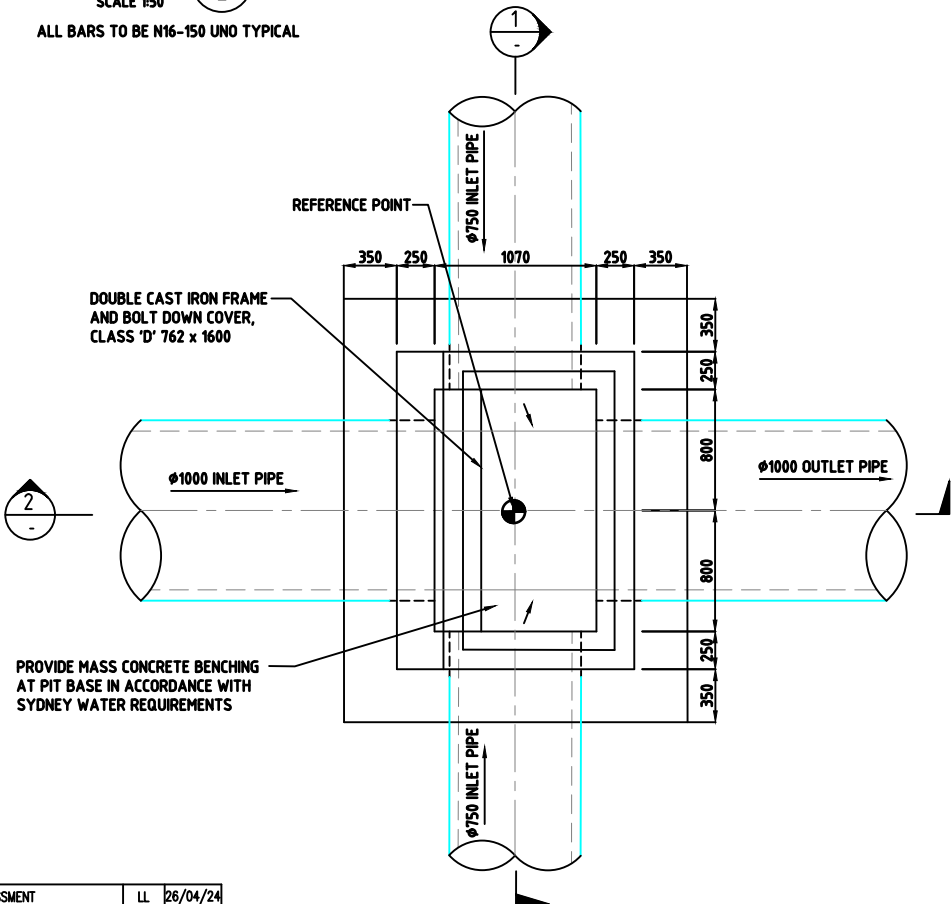


TABLE 1		
ROCKER PIPE DIMENSIONS		
SIZE (DN)	"L" MIN	"L" MAX
375	750	1125
450	900	1350
525	1050	1575
600	1200	1800
750	1500	2250
825	1650	2400
1000	1800	2400

SECTION 1
SCALE 1:50
ALL BARS TO BE N16-150 UNO TYPICAL

SECTION 2
SCALE 1:50
ALL BARS TO BE N16-150 UNO TYPICAL



NOTES:

- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
- ALL EXPOSED EDGES TO BE CHAMFERED WITH 20mm.
- LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT: 1
- FOR DETAILS OF FRAME AND GRATE SEE TNSW STANDARD DRAWING R0220-35.
- EXPOSURE CLASSIFICATION IS B2.
- MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST-IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
- CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL
- FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
- NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
- ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.

- UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

BAR DEVELOPMENT LENGTHS

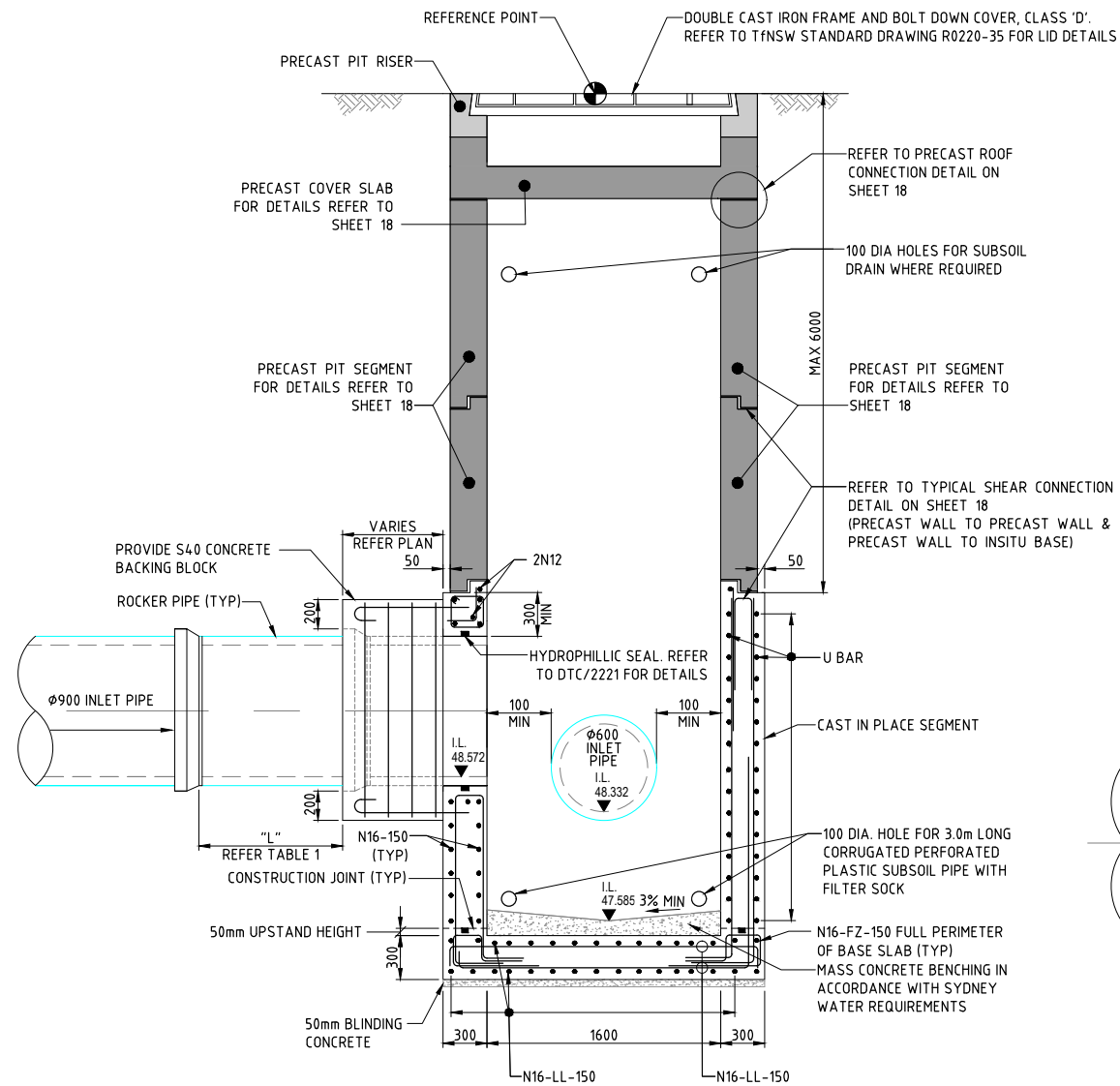
CONCRETE GRADE 40MPa					
BAR SIZE:	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
b) OTHER BARS	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
- PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.

No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE
4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23

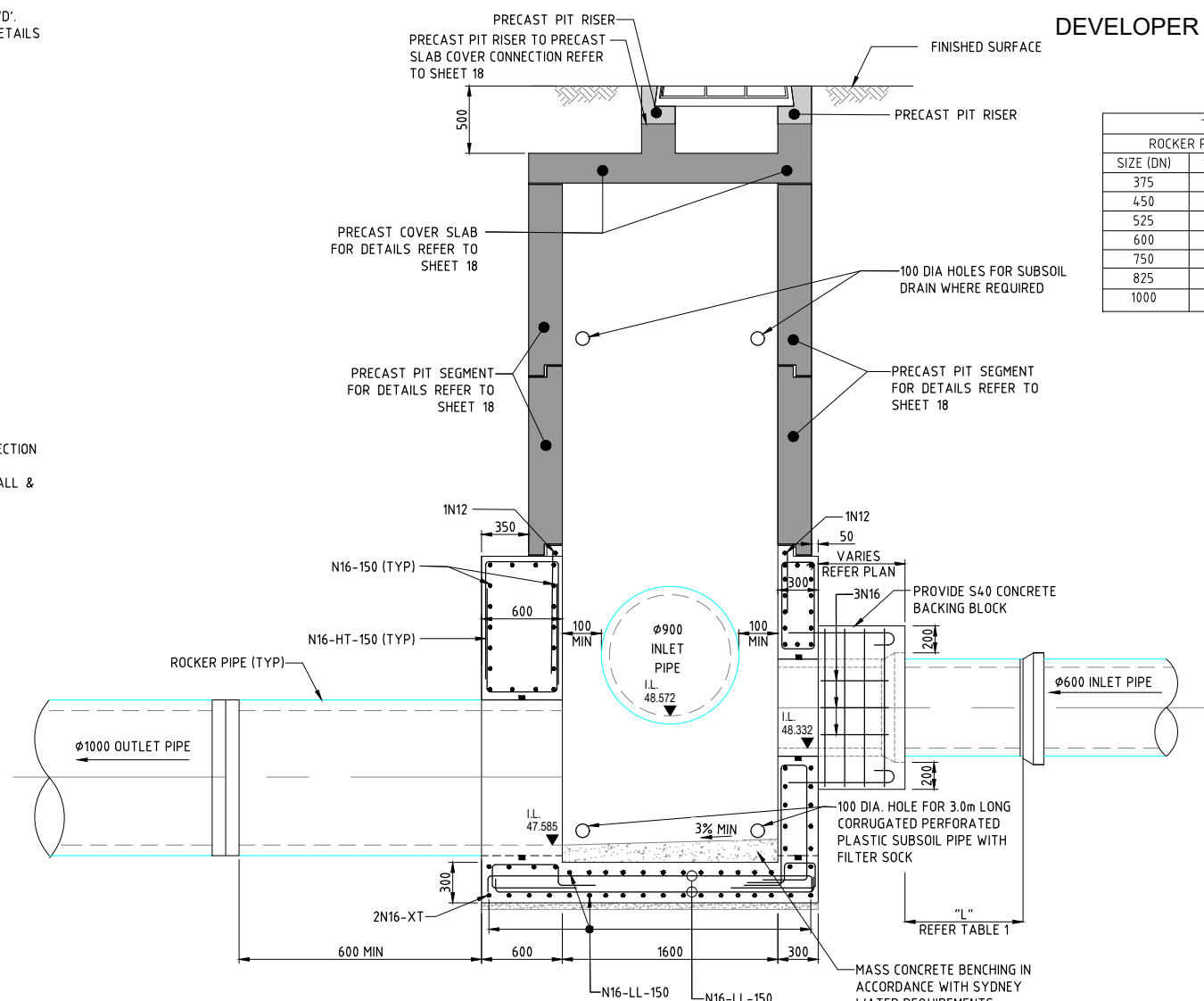
PLAN FOR DRAINAGE PIT FOR IP-SP PIT Q01/05
SCALE 1:50

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW	SHT 5 OF 18 SHTS.
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER	.....		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	



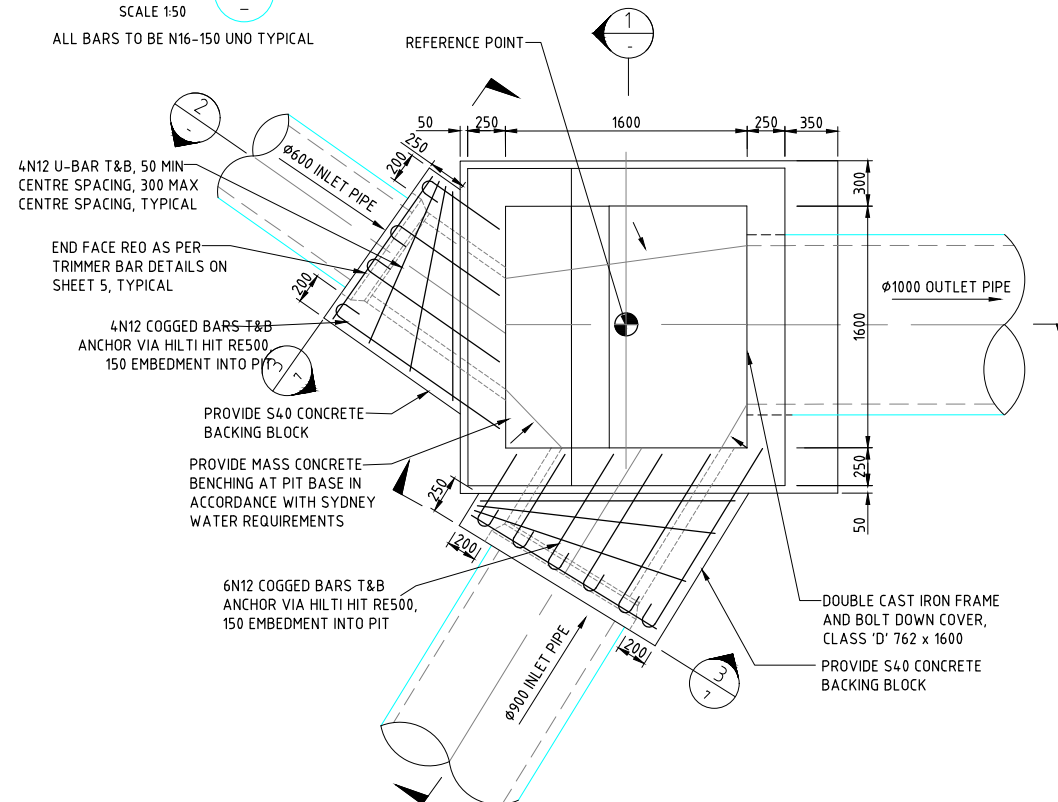
SECTION 1
SCALE 1:50

ALL BARS TO BE N16-150 UNO TYPICAL



SECTION 2
SCALE 1:50

ALL BARS TO BE N16-150 UNO TYPICAL



PLAN FOR DRAINAGE PIT FOR IP-SP PIT Q01/07
SCALE 1:50

- NOTES:

1. REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
2. ALL EXPOSED EDGES TO BE CHAMFERED WITH 20mm.
3. LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT: 
4. FOR DETAILS OF FRAME AND GRATE SEE TfNSW STANDARD DRAWING R0220-35.
5. EXPOSURE CLASSIFICATION IS B2.
6. MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:

- CAST IN-SITU ELEMENTS	S40
- BLINDING CONCRETE	N20
- PRECAST	S40
- MASS CONCRETE	N25
7. CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
8. FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
9. NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
10. ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.

11. UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

BAR DEVELOPMENT LENGTHS

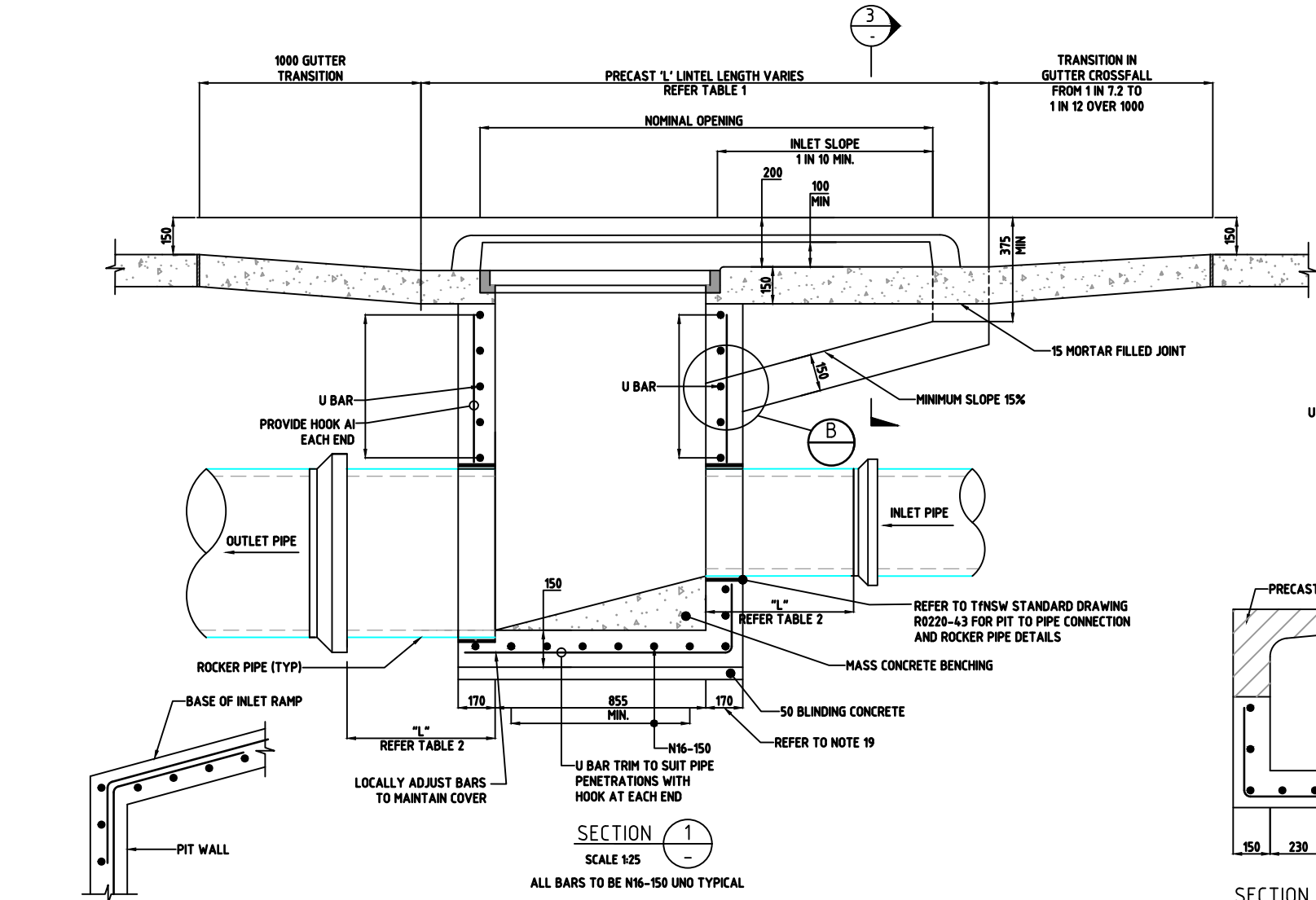
CONCRETE GRADE 40MPa					
BAR SIZE:	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >>300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
b) OTHER BARS	350	550	750	1000	-

12. PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
13. CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DCT 2200, DCT 2201 AND DCT 2259.
14. PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
15. PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
16. PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
17. RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
18. METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.

[illegible]

WORK AS CONSTRUCTED CERTIFICATION	 SYDNEY WATER CORPORATION	
DEVELOPER	Case No. 197068SW SHT 6 OF 18 SHTS.	
W.S.C.		
CONSTRUCTOR		
COMPLETED		
W.A.C. PREPARED	SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	
DESIGNER		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		

- NOTES:
- 1. REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - 2. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
 - 3. LOCATION AND LEVEL OF PIT SHOWN IN DRAWINGS REFER TO THIS POINT.
 - 4. FOR PIPE DIAMETERS GREATER THAN 450 OR MULTIPLE PIPES REFER TO TNSW DRAWING R0220-28 OR OTHER SPECIFIED HAUNCH DETAIL.
 - 5. PITS DEEPER THAN 600 TO BE FITTED WITH STEP IRONS IN ACCORDANCE WITH SYDNEY WATER DRAWING (SEW-1307-V).
 - 6. MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
 - 7. NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO. CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
 - 8. EDGES SHALL BE CHAMFERED 20 x 20.
 - 9. ALL REINFORCEMENT BARS SHALL BE IN ACCORDANCE WITH AS/NZS 4671.
 - 10. ALL BARS SHALL BE GRADE D500N DEFORMED RIBBED BAR U.N.O.
 - 11. ALL EXPOSED STEEL TO BE GALVANISED IN ACCORDANCE WITH AS1214 AND TO BE 375 g/m².
 - 12. LAPS NOT SHOWN ON THE DRAWINGS SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF BARS ARE LAPPED IN ANY CROSS SECTION.
 - 13. ALL LAPPED PORTIONS OF BARS SHALL BE IN CONTACT REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
 - 14. ALL PIT GRATES AND FRAMES TO BE "MEDIUM / HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES AND FRAMES TO AS3996.
 - 15. DESIGN LOADS TO AS5100.2 AND PITS DESIGNED TO AS5100.
 - 16. FOR DETAILS OF TRIMMER BAR ARRANGEMENT FOR PIPE PENETRATION INTO DRAINAGE PIT REFER TO SHEET 7.
 - 17. PRECAST PIT STRUCTURES COMPLYING WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION VER 10 CAN BE USED WHERE POSSIBLE.
 - 18. FOR PITS 3.5M OR DEEPER, INCREASE WALL AND SLAB THICKNESS TO 250mm. PROVIDE N16-150 REQ TO EACH FACE (AND EACH DIRECTION).



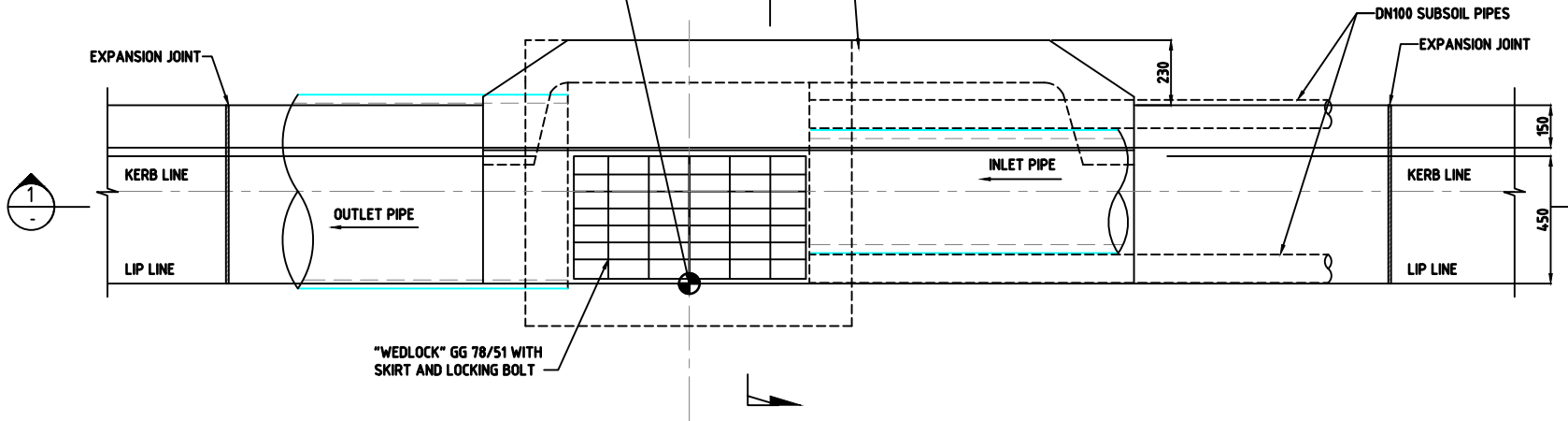
SECTION 1
SCALE 1:25

ALL BARS TO BE N16-150 UNO TYPICAL

PRECAST LINTEL LENGTH AS SPECIFIED
REFER TO SHEET 12 FOR DETAILS OF LINTEL

DETAIL B
SCALE 1:25

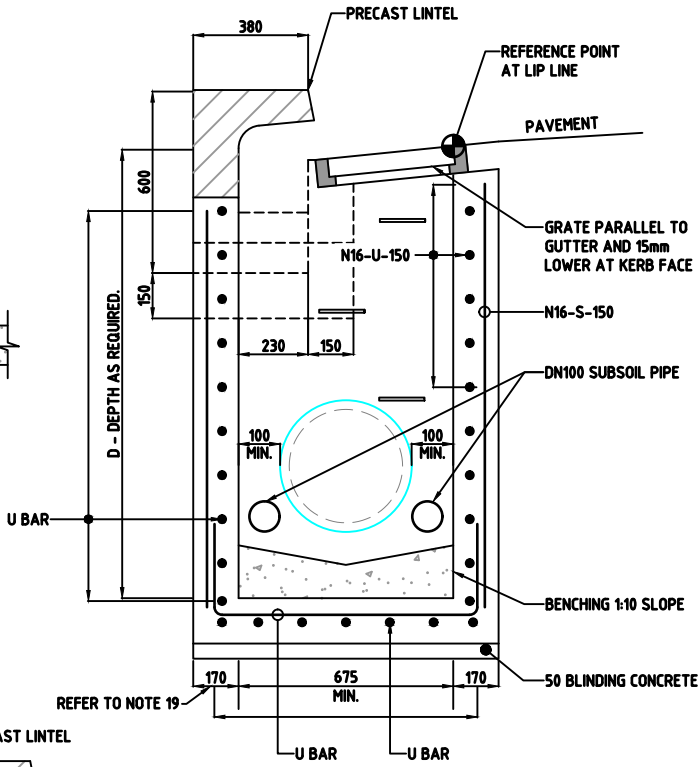
CONNECTION OF INLET RAMP TO PIT WALL FOR
REINFORCEMENT DETAILS REFER TO SECTION 2 AND 3



TYPE SA PIT TO SUIT COUNCIL GUTTER (ON GRADE) - PLAN
SCALE 1:25

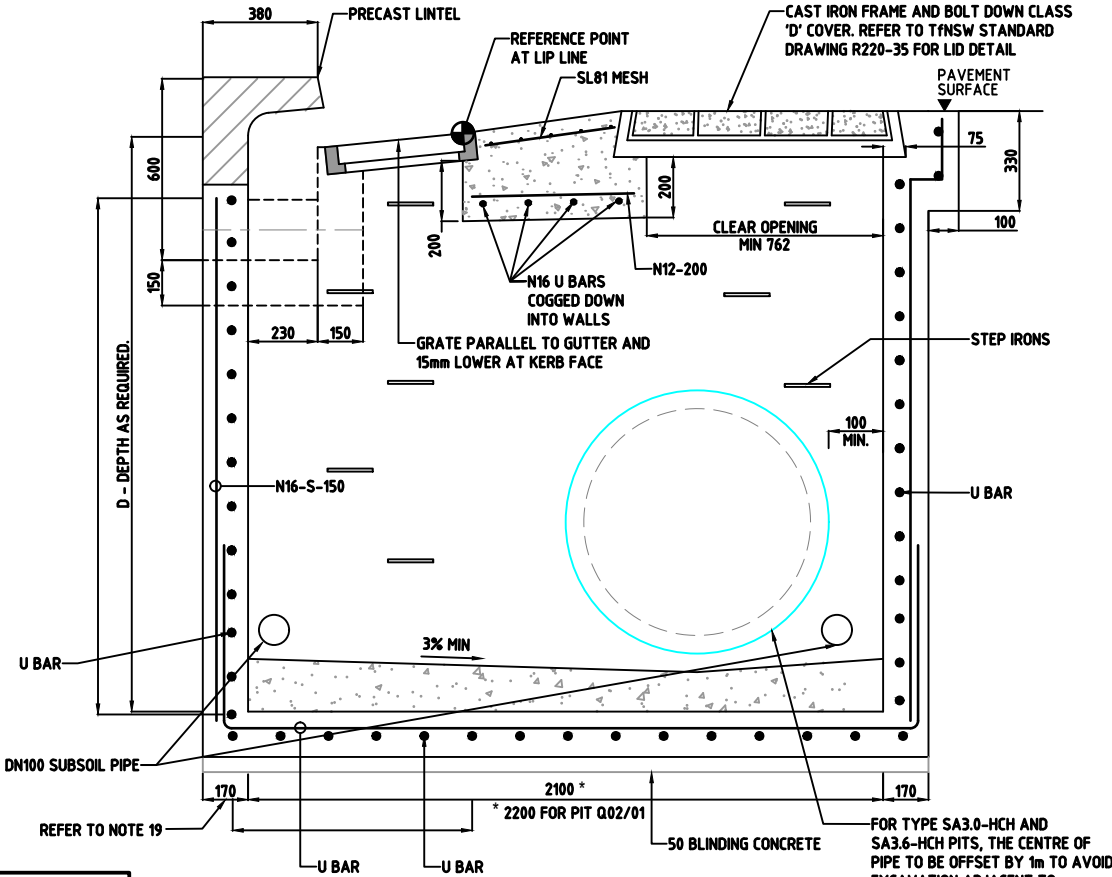
TABLE 2 ROCKER PIPE DIMENSIONS	
SIZE (DN)	"L" (mm)
375	600
450	600
525	1200
600	1200
750	1200
825	1200
900	1200

TABLE 1 PRECAST LINTEL SIZES	
NOMINAL OPENING SIZE (m)	OVERALL LENGTH 'L' (mm)
0.6	900
0.9	1200
1.8	2400
2.4	3000
3.0	3600
3.6	4200
4.2	4800



SECTION 2
SCALE 1:25

ALL BARS TO BE N16-150 UNO TYPICAL



SECTION 2 HAUNCH PIT DETAILS
SCALE 1:25
TYPE SA3.0-HCH AND SA3.6-HCH

ALL BARS TO BE N16-150 UNO TYPICAL

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	W.S.C.	Case No. 197068SW	SHT 7 OF 18 SHTS.
CONSTRUCTOR	COMPLETED		
W.A.C. PREPARED			
DESIGNER			
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	

No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE
4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23

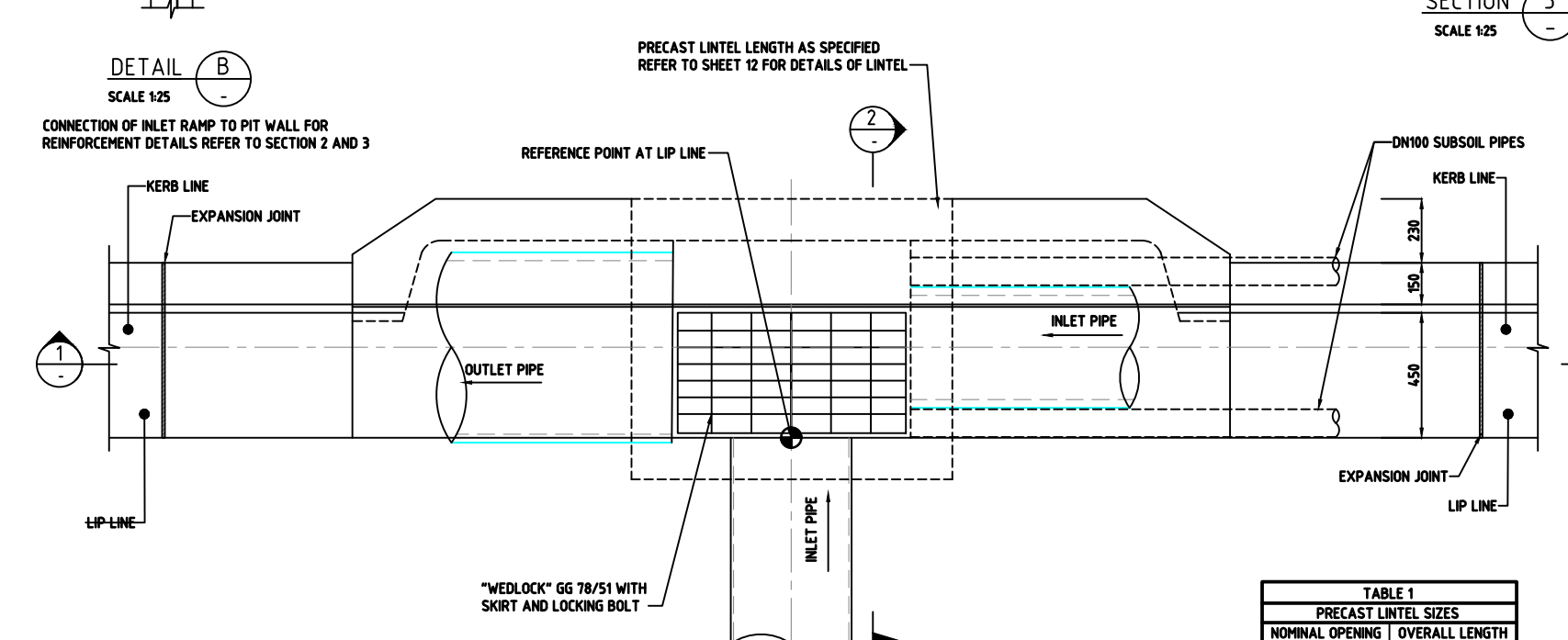
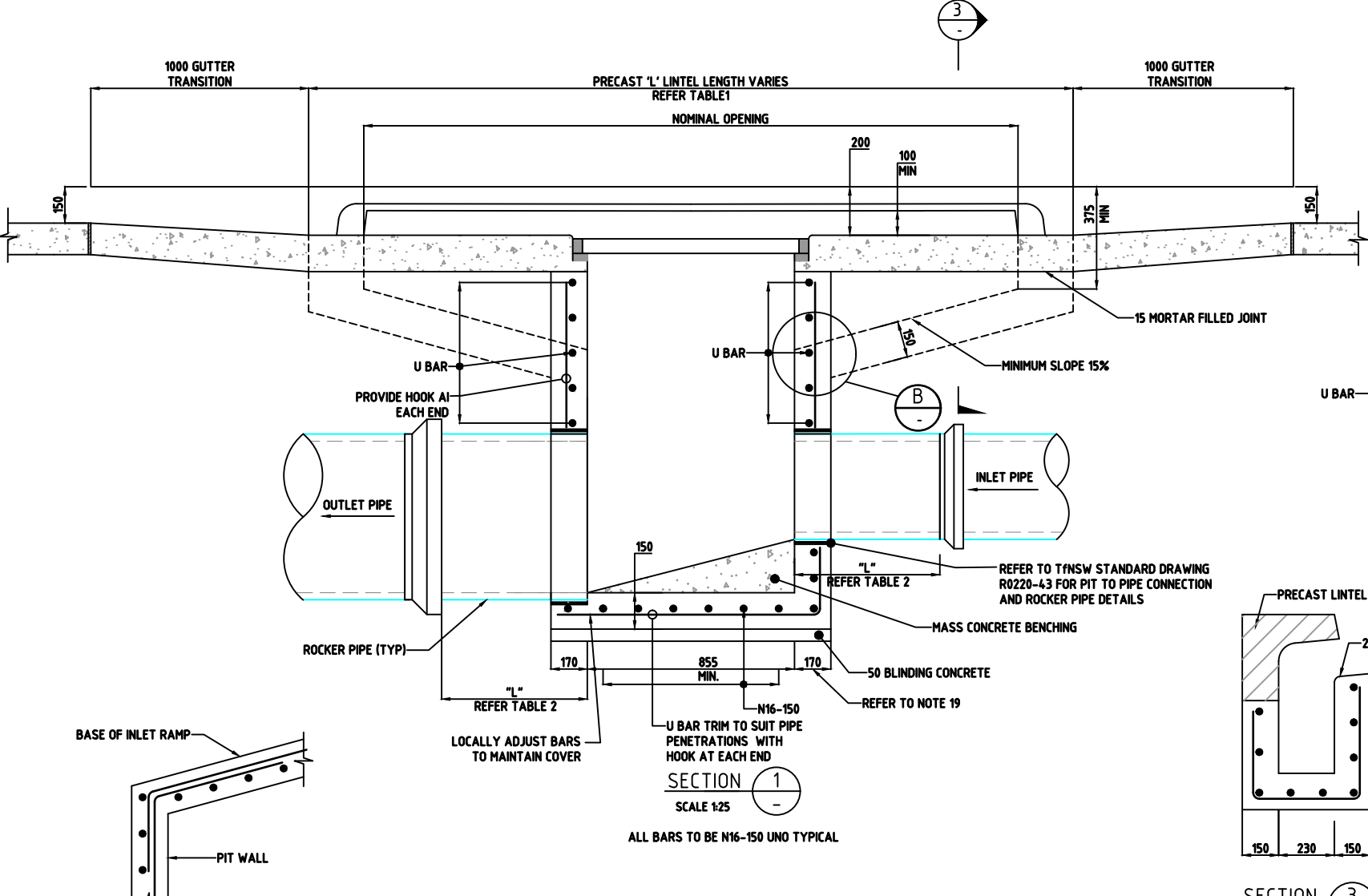


TABLE 1		PRECAST LINTEL SIZES	
NOMINAL OPENING SIZE (m)	OVERALL LENGTH 'L' (mm)	NOMINAL OPENING SIZE (m)	OVERALL LENGTH 'L' (mm)
3.0	3600	3.6	4200
3.6	4200	4.2	4800

TABLE 2		ROCKER PIPE DIMENSIONS	
SIZE (DN)	'L' MIN	'L' MAX	
375	750	1125	
450	900	1350	
525	1050	1575	
600	1200	1800	
750	1500	2250	
825	1650	2400	
1000	1800	2400	

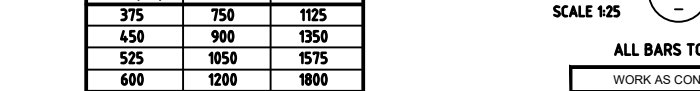
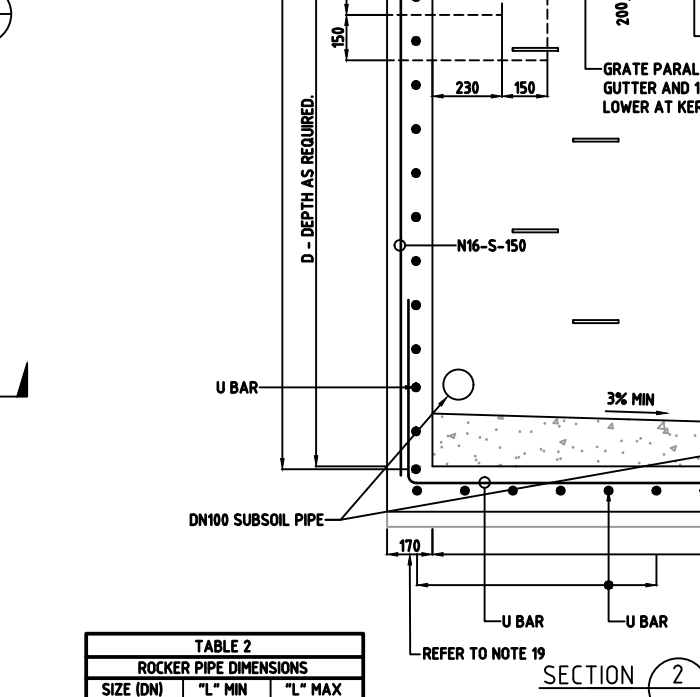
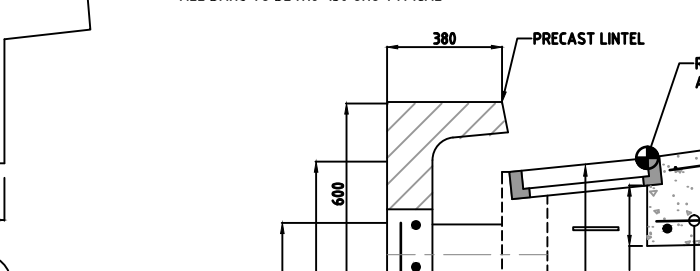
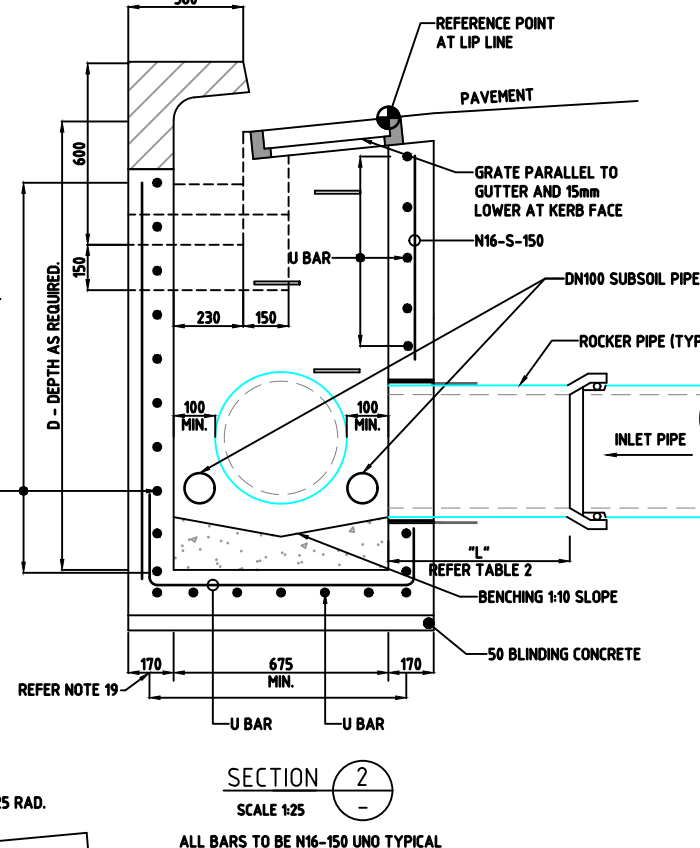
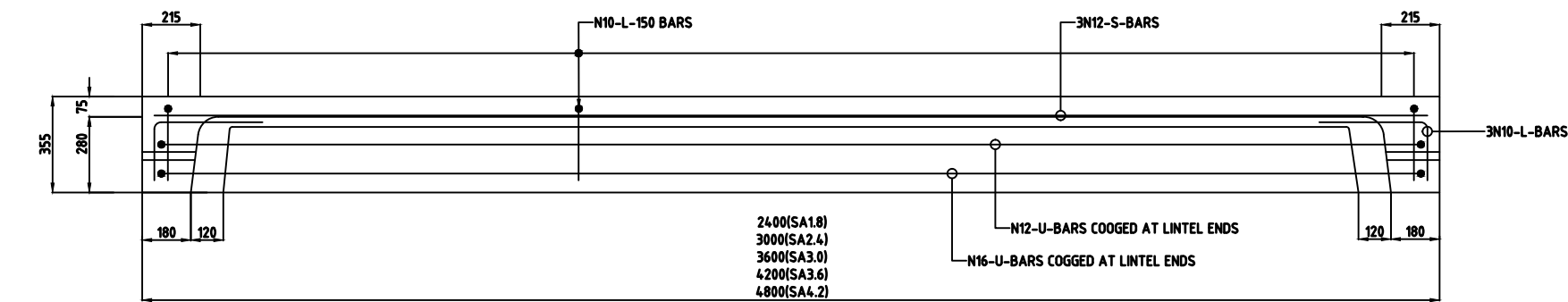


TABLE 1		PRECAST LINTEL SIZES	
NOMINAL OPENING SIZE (m)	OVERALL LENGTH 'L' (mm)	NOMINAL OPENING SIZE (m)	OVERALL LENGTH 'L' (mm)
3.0	3600	3.6	4200
3.6	4200	4.2	4800

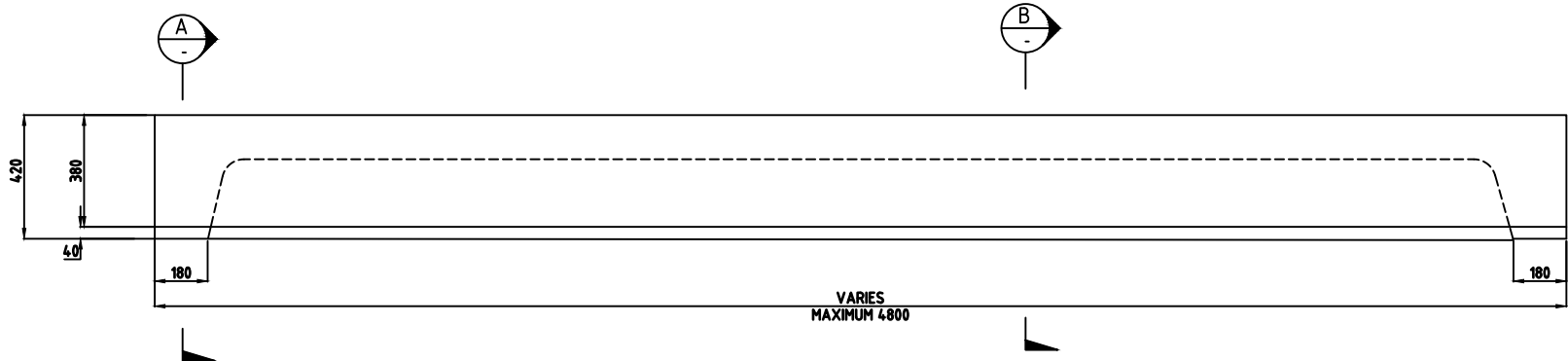
TABLE 2		ROCKER PIPE DIMENSIONS	
SIZE (DN)	'L' MIN	'L' MAX	
375	750	1125	
450	900	1350	
525	1050	1575	
600	1200	1800	
750	1500	2250	
825	1650	2400	
1000	1800	2400	

NOTES:

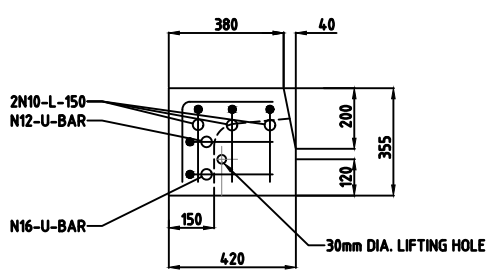
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
- ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
- LOCATION AND LEVEL OF PIT SHOWN IN DRAWINGS REFER TO THIS POINT.
- FOR PIPE DIAMETERS GREATER THAN 450 OR MULTIPLE PIPES REFER TO TNSW DRAWING R0220-28 OR OTHER SPECIFIED HAUNCH DETAIL.
- PITS DEEPER THAN 600 TO BE FITTED WITH STEP IRONS IN ACCORDANCE WITH SYDNEY WATER DRAWING (SEW-1307-V).
- MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
- NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO. CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATER TECHNICAL SPECIFICATION - CIVIL.
- EDGES SHALL BE CHAMFERED 20 x 20.
- ALL REINFORCEMENT BARS SHALL BE IN ACCORDANCE WITH AS/NZS 4671.
- ALL BARS SHALL BE GRADE D500N DEFORMED RIBBED BAR U.N.O.
- ALL EXPOSED STEEL TO BE GALVANISED IN ACCORDANCE WITH AS1214 AND TO BE 375 g/m².
- LAPS NOT SHOWN ON THE DRAWINGS SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF BARS ARE LAPPED IN ANY CROSS SECTION.
- ALL LAPPED PORTIONS OF BARS SHALL BE IN CONTACT REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- ALL PIT GRATES AND FRAMES TO BE "MEDIUM / HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES AND FRAMES TO AS3996.
- DESIGN LOADS TO AS5100.2 AND PITS DESIGNED TO AS5100.
- FOR DETAILS OF TRIMMER BAR ARRANGEMENT FOR PIPE PENETRATION INTO DRAINAGE PIT REFER TO SHEET 7.
- PRECAST PIT STRUCTURES COMPLYING WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION VER 10 CAN BE USED WHERE POSSIBLE.
- FOR PITS 3.5M OR DEEPER, INCREASE WALL AND SLAB THICKNESS TO 250mm. PROVIDE N16-150 REO TO EACH FACE (AND EACH DIRECTION).



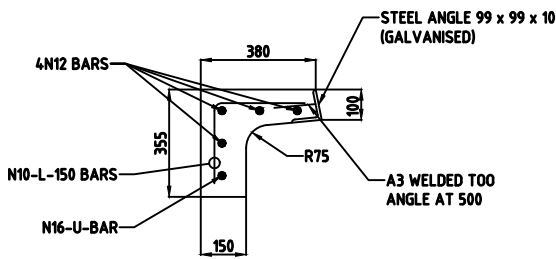
ELEVATION
SCALE 1:25



CONCRETE LINTEL TYPE SA PIT TO SUIT COUNCIL GUTTER (SAG) - PLAN
SCALE 1:25



SECTION A
SCALE 1:25

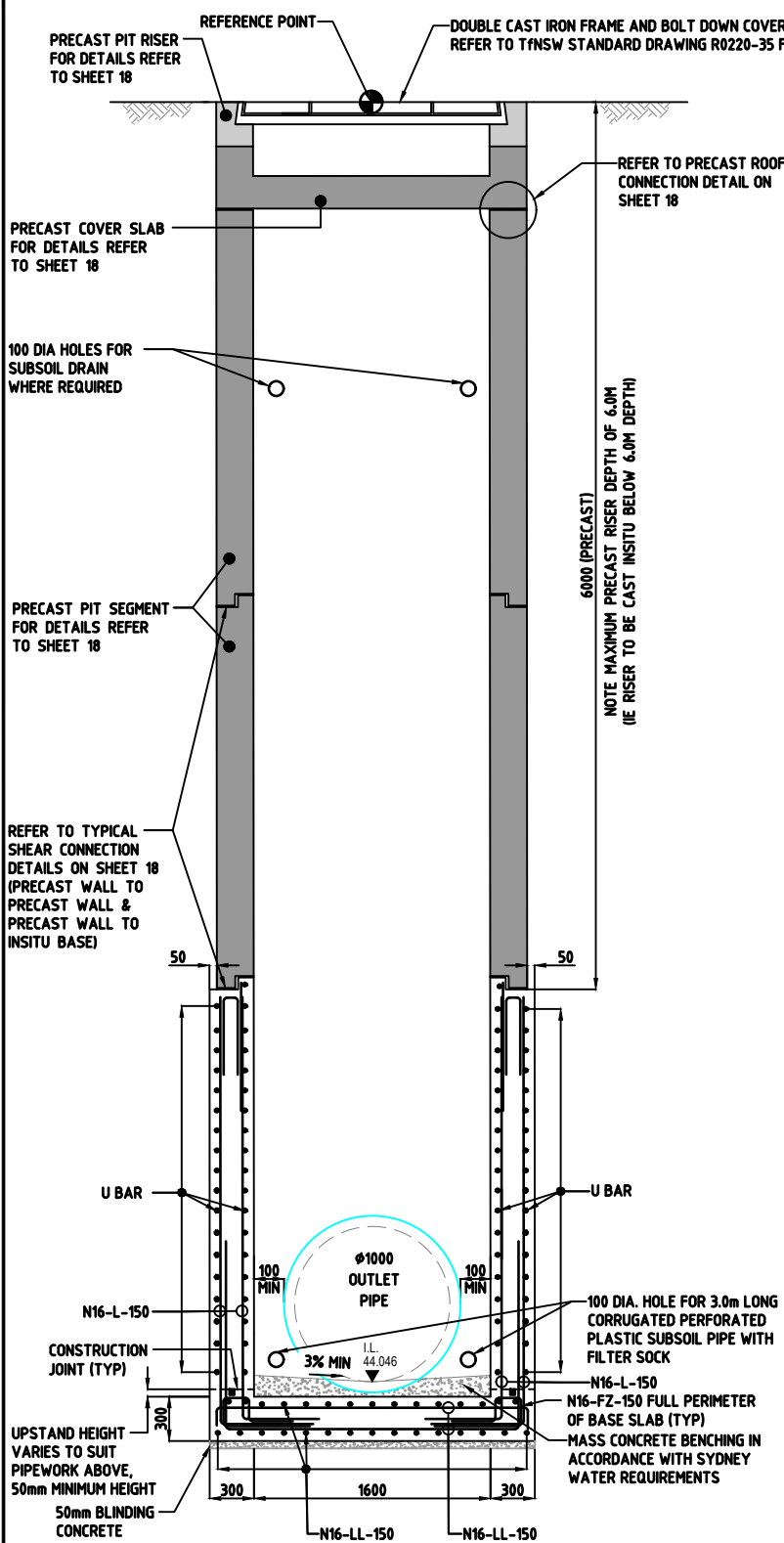


SECTION B
SCALE 1:25

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

FILE: P.0067224 BASSETT STREET, HURSTVILLE DESIGNED: W.N. DRAFTED: L.N. VERIFIED: R.K. REVIEWED: L.L. ISSUED: 26/04/2024

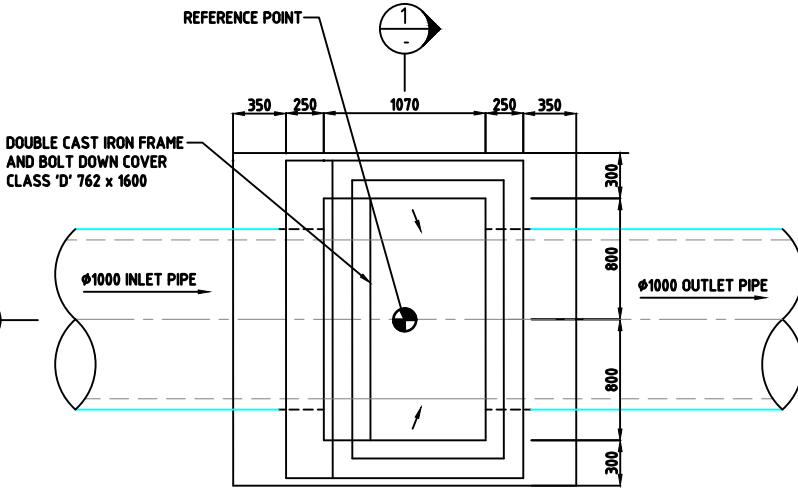
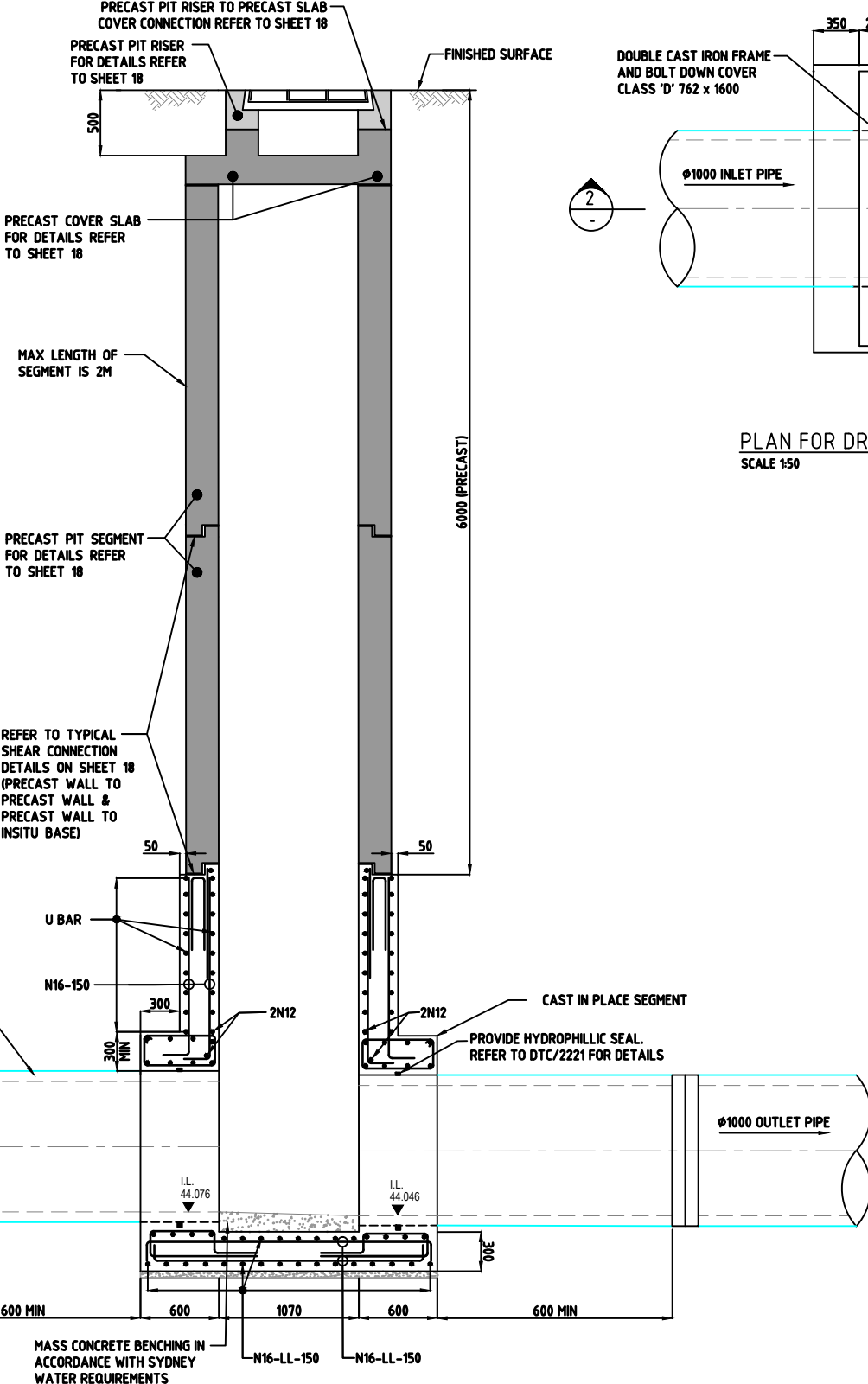
WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION		
DEVELOPER	.....		Case No. 197068SW SHT 9 OF 18 SHTS.	
W.S.C.	.....			
CONSTRUCTOR	.....			
COMPLETED	.....			
W.A.C. PREPARED	.....	SYDNEY WATER CORPORATION		
DESIGNER	.....			
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1		



- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - ALL EXPOSED EDGES TO BE CHAMFERED WITH 20mm.
 - LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT: 1
 - FOR DETAILS OF FRAME AND GRATE SEE TfNSW STANDARD DRAWING R0220-35.
 - EXPOSURE CLASSIFICATION IS B2.
 - MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
 - CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
 - FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
 - NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
 - ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.
 - UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

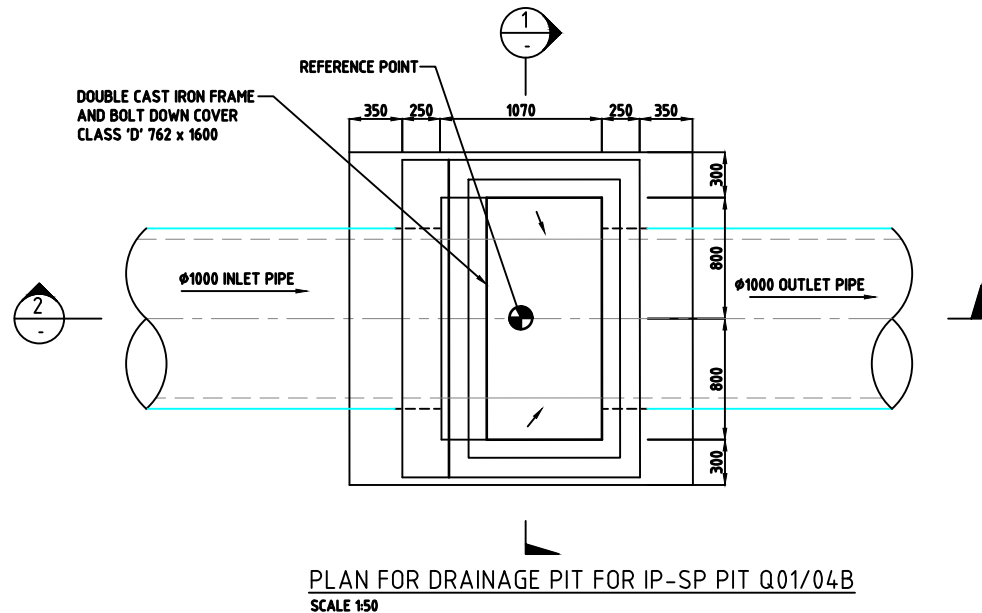
CONCRETE GRADE 40MPa					
BAR SIZE:	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
b) OTHER BARS	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
- PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL.3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.



4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

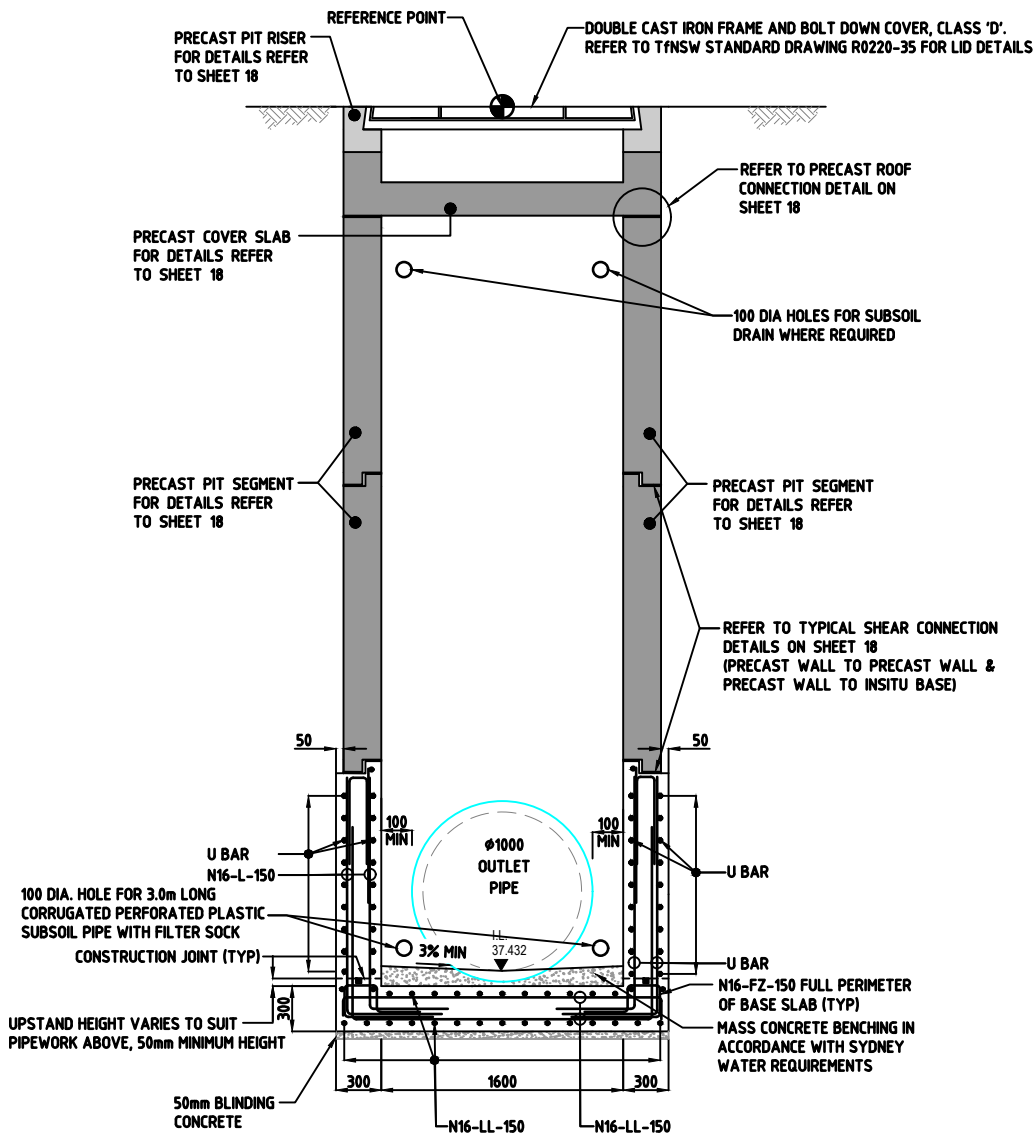
WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW	SHT 10 OF 18 SHTS.
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....	SYDNEY WATER CORPORATION	
DESIGNER	.....		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	



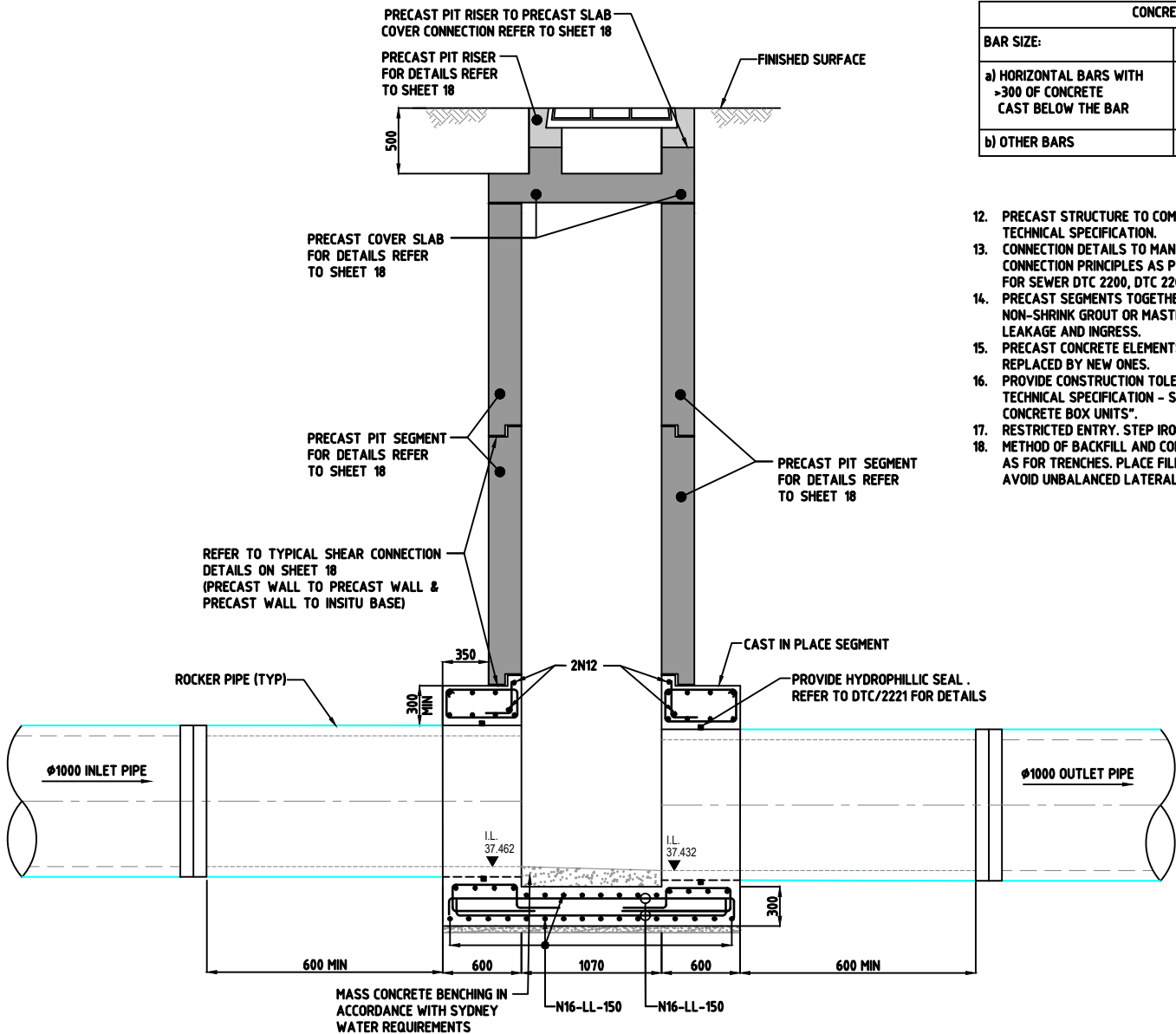
- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - ALL EXPOSED EDGES TO BE CHAMFERED WITH 20mm.
 - LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT: 1
 - FOR DETAILS OF FRAME AND GRATE SEE TNSW STANDARD DRAWING R0220-35.
 - EXPOSURE CLASSIFICATION IS B2.
 - MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
 - CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
 - FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
 - NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
 - ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.
 - UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

CONCRETE GRADE 40MPa					
BAR SIZE:	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
b) OTHER BARS	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
- PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.



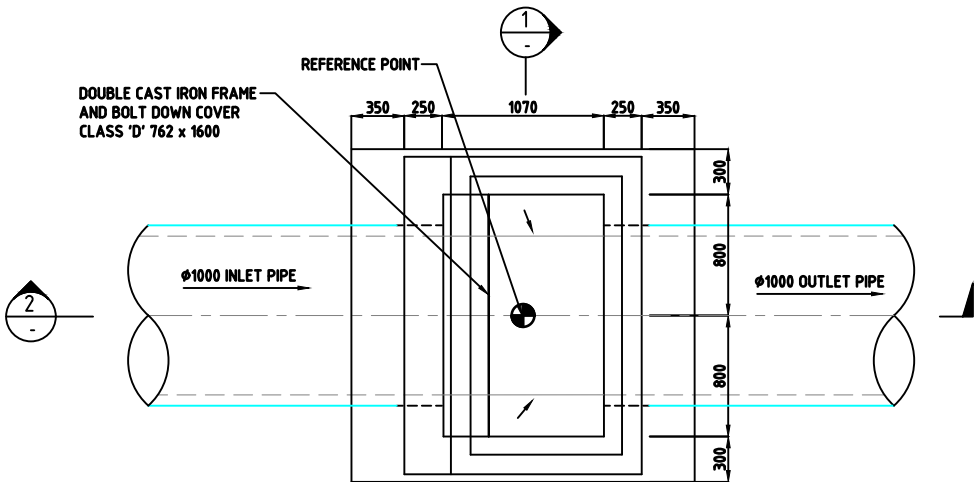
SECTION 1
SCALE 1:50



SECTION 2
SCALE 1:50

ALL BARS TO BE N16-150 UNO TYPICAL									
4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24		
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24		
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24		
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23		
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE		

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....		Case No. 197068SW
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....	SHT 12 OF 18 SHTS.	
DESIGNER	.....	SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	

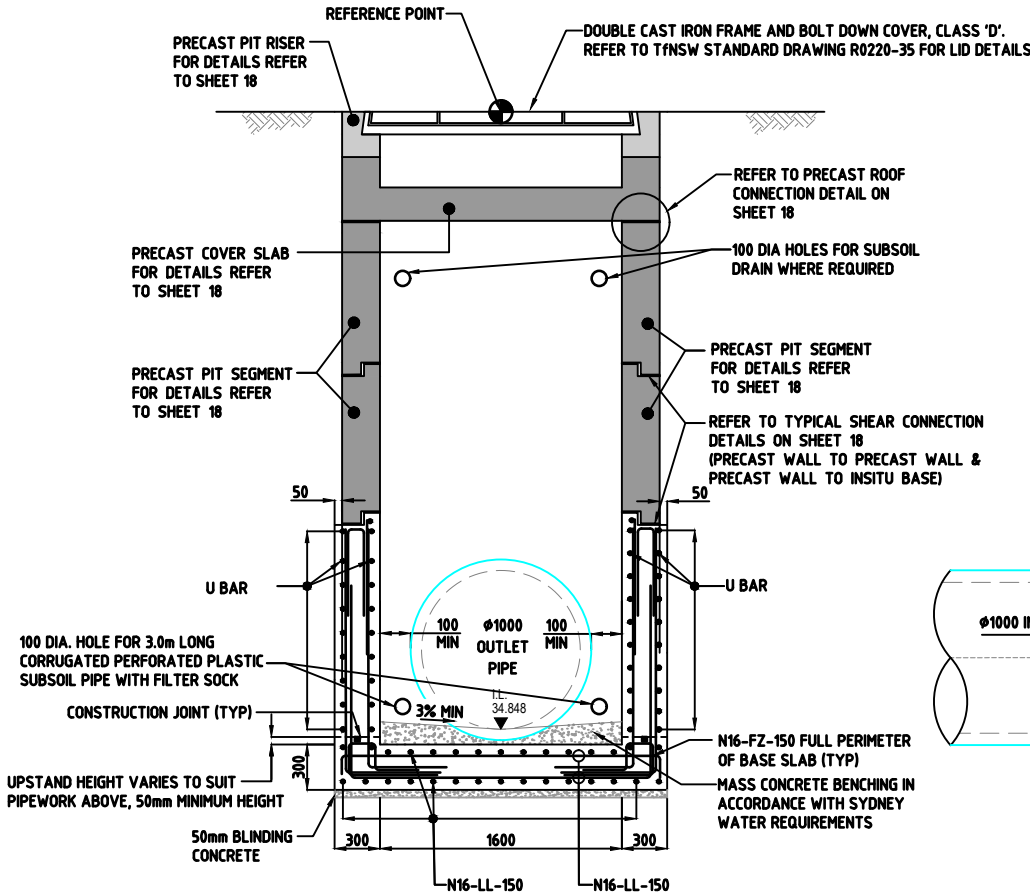


PLAN FOR DRAINAGE PIT FOR IP-SP PIT Q01/04A
SCALE 1:50

- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - ALL EXPOSED EDGES TO BE CHAMFERED WITH 20mm.
 - LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT: 1
 - FOR DETAILS OF FRAME AND GRATE SEE TfNSW STANDARD DRAWING R0220-35.
 - EXPOSURE CLASSIFICATION IS B2.
 - MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:
 - CAST IN-SITU ELEMENTS S40
 - BLINDING CONCRETE N20
 - PRECAST S40
 - MASS CONCRETE N25
 - CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
 - FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
 - NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
 - ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.
 - UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

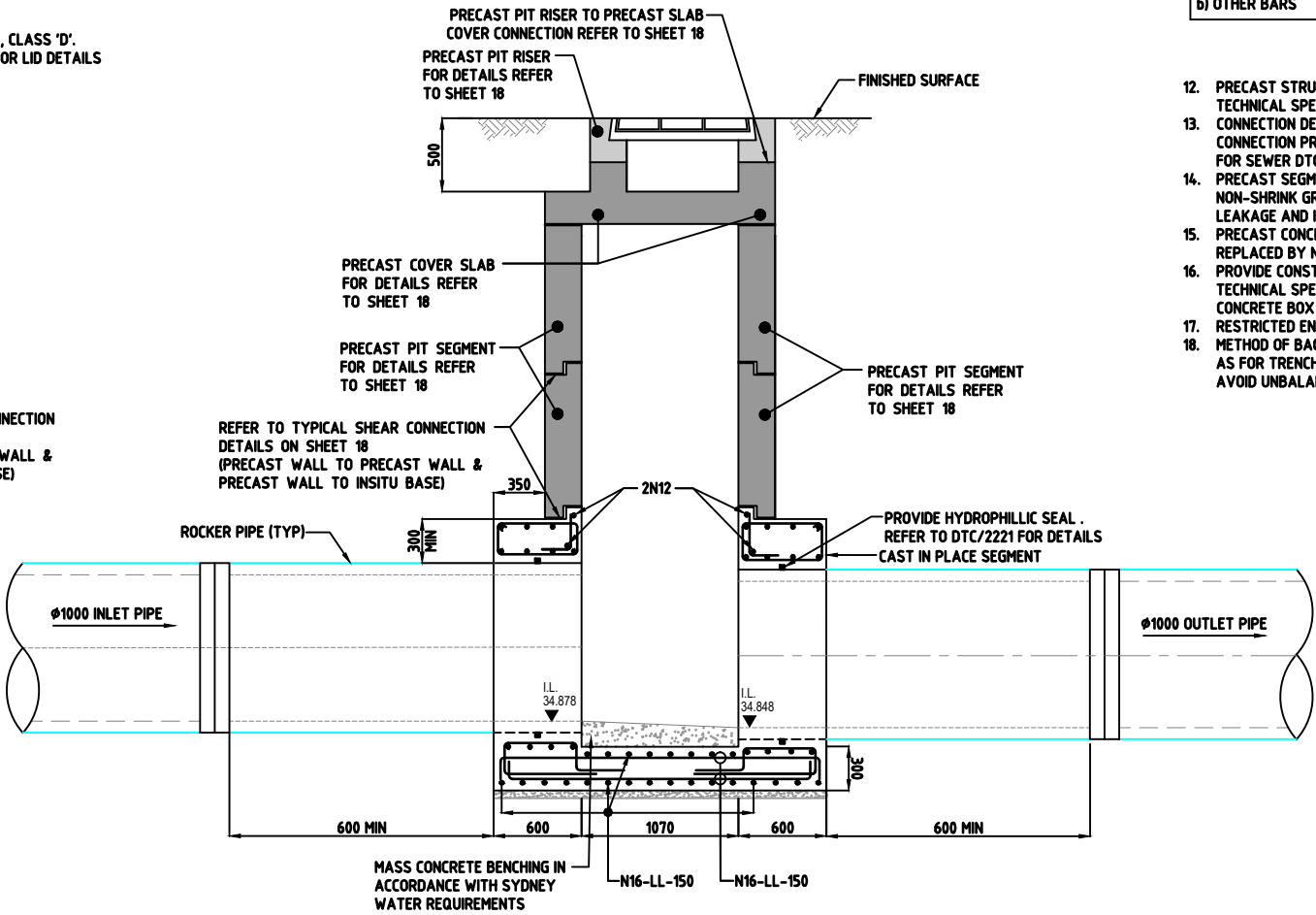
CONCRETE GRADE 40MPa					
BAR SIZE:	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
b) OTHER BARS	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
- PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.



SECTION 1
SCALE 1:50

ALL BARS TO BE N16-150 UNO TYPICAL



SECTION 2
SCALE 1:50

ALL BARS TO BE N16-150 UNO TYPICAL

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW SHT 12 OF 18 SHTS.	
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....	SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	
DESIGNER	.....		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS			



PRECAST PIT RISER TO PRECAST SLAB COVER CONNECTION REFER TO SHEET 18

PRECAST PIT RISER FOR DETAILS REFER TO SHEET 18

PRECAST COVER SLAB FOR DETAILS REFER TO SHEET 18

CAST IN PLACE SEGMENT

PROVIDE S40 CONCRETE BACKING BLOCK

PROVIDE HYDROPHILIC SEAL . REFER TO DTC/2221 FOR DETAILS

U BAR

40 CONCRETE BACKING BLOCK

LL 31.791

LL 31.786

N16-LL-150

N16-LL-150

3N16

300

1070

300

057

3N16

1200

500

200

50

MM

"L"

REFER TABLE 1

CONCRETE BENCHING IN ACCORDANCE WITH SYDNEY WATER REQUIREMENTS

Ø1050 OUTLET PIPE

17. RESTRICTED ENTRY STEP

18. METHOD OF BACKFILL AND TRENCHES. PLACE FILL EVEN LATERAL LOADING.

SECTION 2 FOR SPECIAL INSPECTION PIT Q01/02
SCALE 1:50 - ALL BARS TO BE N16-150 UNO TYPICAL

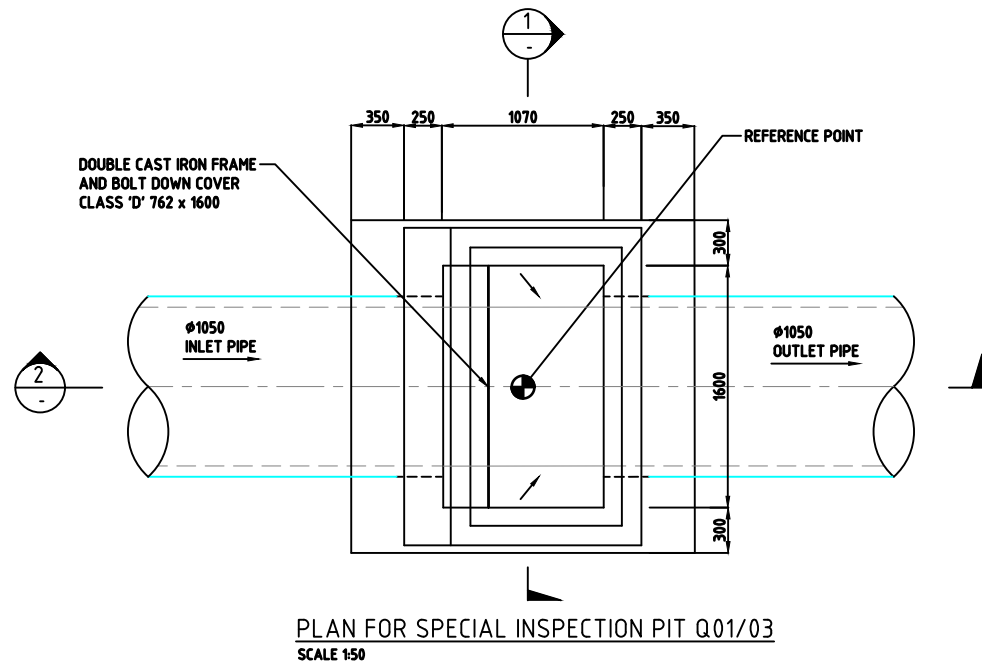
1. REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
2. ALL EXPOSED EDGES TO BE ROUNDED WITH 20 RADIUS.
3. LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS
REFER TO THIS POINT: 
4. FOR DETAILS OF FRAME AND GRATE SEE TfNSW STANDARD DRAWING R0220-35.
5. EXPOSURE CLASSIFICATION IS B2.
6. MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS
CONCRETE
COMPONENTS ARE AS FOLLOWS:

- CAST IN-SITU ELEMENTS	S40
- BLINDING CONCRETE	20MPa
- PRECAST	S40
- MASS CONCRETE	N25
7. CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
8. FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
9. NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
10. ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.
11. UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

CONCRETE GRADE 40MPa					
	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >>300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
	350	550	750	1000	-

12. PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
13. CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
14. PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
15. PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
16. PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
17. RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
18. METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW	SHT 14 OF 18 SHTS.
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER		SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORKS AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	



- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - ALL EXPOSED EDGES TO BE ROUNDED WITH 20 RADIUS.
 - LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS REFER TO THIS POINT:
 - FOR DETAILS OF FRAME AND GRATE SEE TNSW STANDARD DRAWING R0220-35.
 - EXPOSURE CLASSIFICATION IS B2.
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- CAST IN-SITU ELEMENTS	S40
- BLINDING CONCRETE	20MPa
- PRECAST	S40
- MASS CONCRETE	N25
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CONCRETE GRADE 40MPa					
	N12	N16	N20	N24	N28
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	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
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- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.

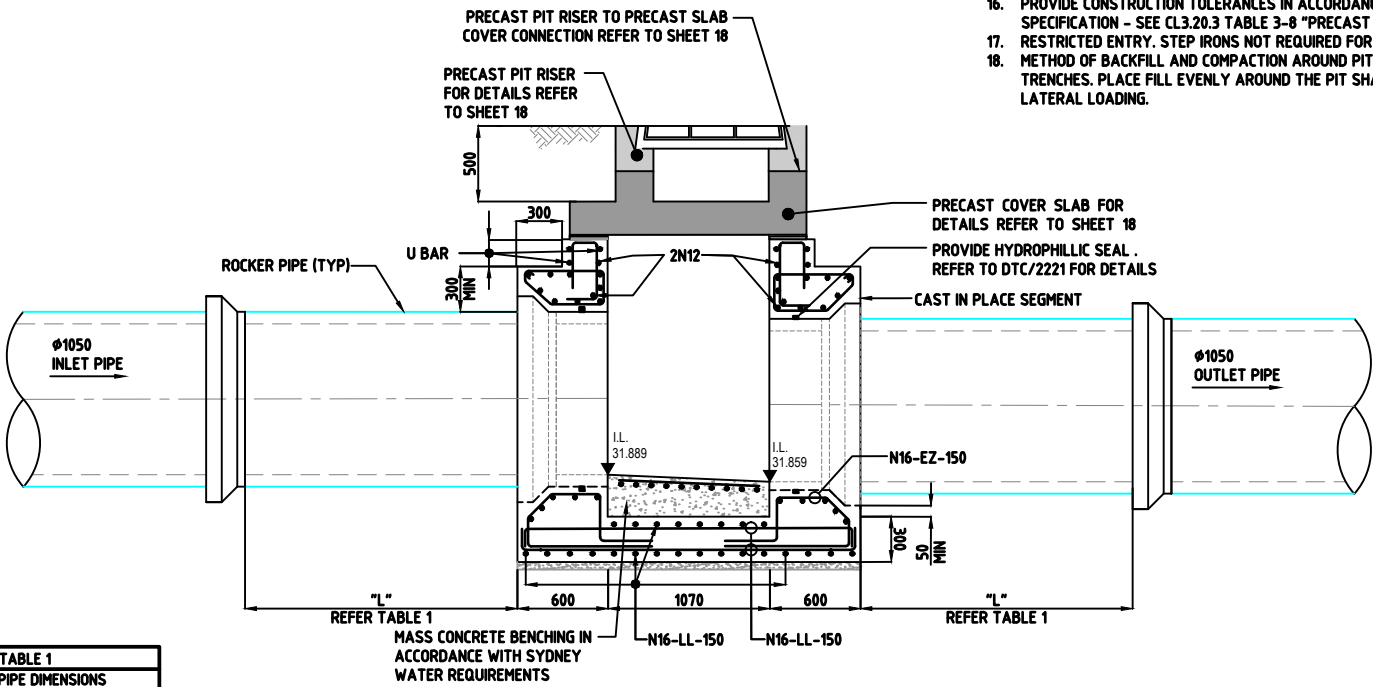
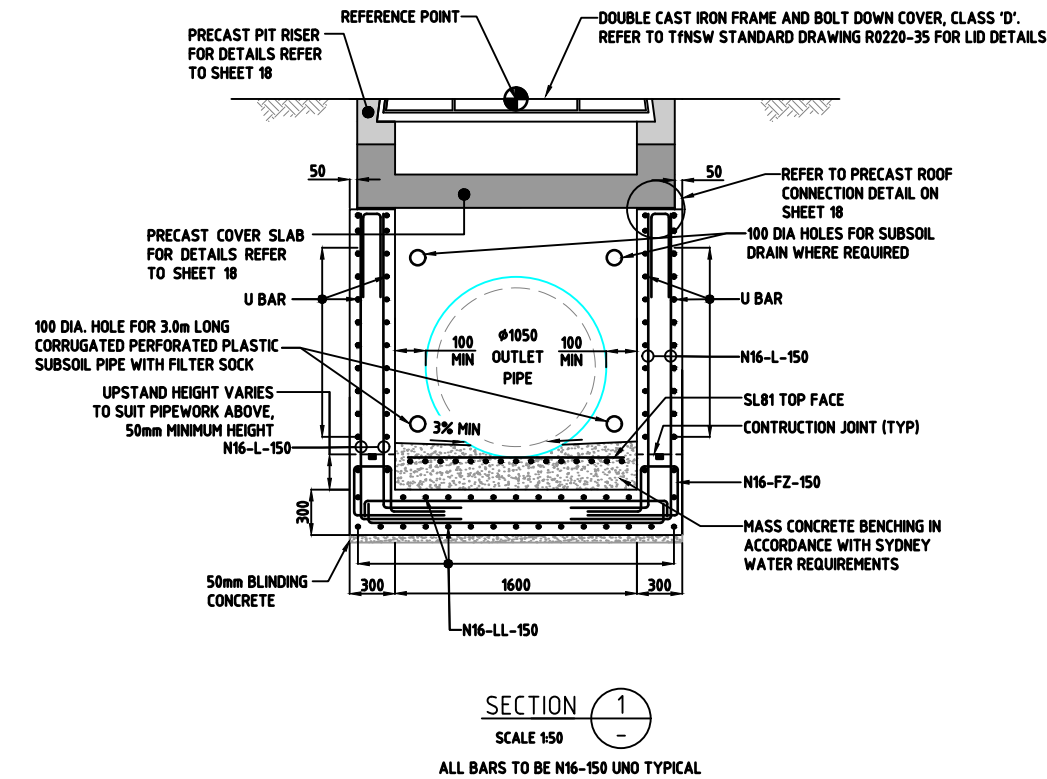
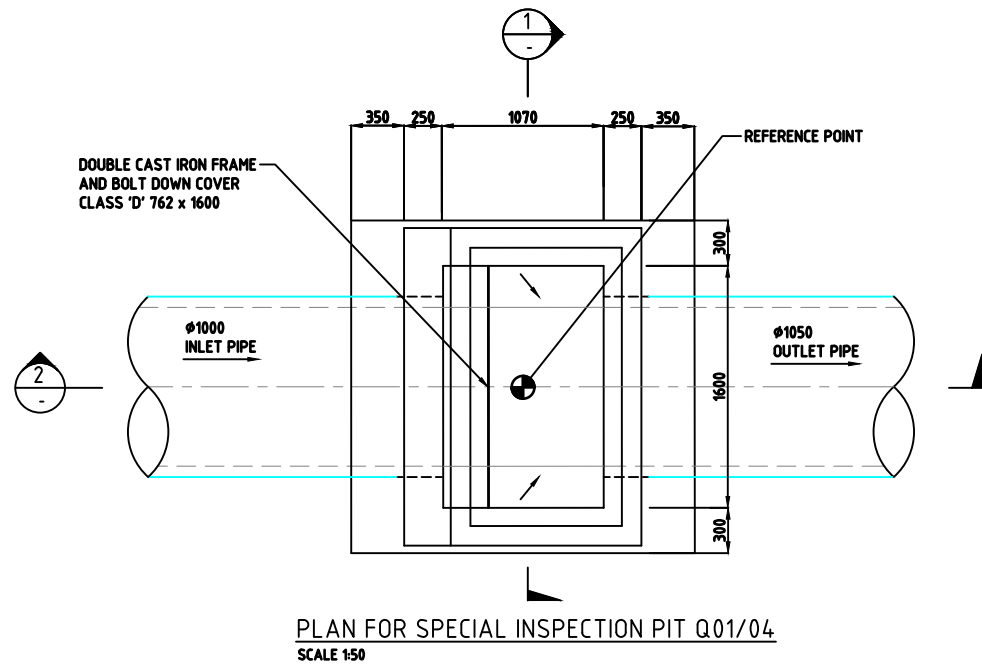


TABLE 1 ROCKER PIPE DIMENSIONS		
SIZE (DN)	"L" MIN	"L" MAX
375	750	1125
450	900	1350
525	1050	1575
600	1200	1800
750	1500	2250
825	1650	2400
1000/1050	1800	2400

4	DESIGN PITS TYPE UPDATED	CW	10/05/23	8	UPDATED AS PER SEA ASSESSMENT	LL	26/04/24
3	UPDATED AS PER SWC COMMENTS DATED 19/07	CS	28/07/22	7	UPDATED AS PER SWC COMMENTS DATED 08/02	CW	16/02/24
2	ISSUE FOR COMMENT	LN	30/05/22	6	UPDATED AS PER SWC COMMENTS DATED 13/10	CW	02/02/24
1	ISSUE FOR COMMENT	LN	28/02/22	5	UPDATED AS PER SWC COMMENTS DATED 28/06	CW	22/09/23
No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW SHT 16 OF 18 SHTS.	
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....		
DESIGNER	.....	SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	



- NOTES:
- REFER TO SHEET 4 TO SHEET 6 FOR GENERAL NOTES.
 - ALL EXPOSED EDGES TO BE ROUNDED WITH 20 RADIUS.
 - LOCATION AND LEVEL OF GULLY PIT SHOWN IN THE DRAWINGS
REFER TO THIS POINT:
 - FOR DETAILS OF FRAME AND GRATE SEE TNSW STANDARD DRAWING R0220-35.
 - EXPOSURE CLASSIFICATION IS B2.
 - MINIMUM 28 DAYS COMPRESSIVE STRENGTH FOR VARIOUS CONCRETE COMPONENTS ARE AS FOLLOWS:

- CAST IN-SITU ELEMENTS	S40
- BLINDING CONCRETE	20MPa
- PRECAST	S40
- MASS CONCRETE	N25
 - CONCRETE MIX TO BE IN ACCORDANCE WITH SYDNEY WATERS TECHNICAL SPECIFICATION - CIVIL.
 - FOR ALL TRIMMER BAR DETAILS, REFER TO DRAWING No. SHEET 7.
 - NOMINAL CONCRETE COVER TO REINFORCEMENT SHALL BE 60mm UNO.
 - ALL STEEL REINFORCEMENT TO BE GRADE D500N TO AS/NZS 4671.
 - UNLESS OTHERWISE SPECIFIED THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS SHALL BE AS FOLLOWS:

CONCRETE GRADE 40MPa					
	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300 OF CONCRETE CAST BELOW THE BAR	500	700	1000	1300	-
	350	550	750	1000	-

- PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
- CONNECTION DETAILS TO MANHOLES / PITS ARE TO BE COMPLIED WITH CONNECTION PRINCIPLES AS PER THE DEEMED TO COMPLY DRAWINGS FOR SEWER DTC 2200, DTC 2201 AND DTC 2259.
- PRECAST SEGMENTS TOGETHER TO BE SEALED WITH APPROVED NON-SHRINK GROUT OR MASTIC TYPE PRODUCT TO PREVENT WATER LEAKAGE AND INGRESS.
- PRECAST CONCRETE ELEMENTS DAMAGED DURING CONSTRUCTION TO BE REPLACED BY NEW ONES.
- PROVIDE CONSTRUCTION TOLERANCES IN ACCORDANCE WITH SW TECHNICAL SPECIFICATION - SEE CL3.20.3 TABLE 3-8 "PRECAST CONCRETE BOX UNITS".
- RESTRICTED ENTRY. STEP IRONS NOT REQUIRED FOR THIS DEEP PIT.
- METHOD OF BACKFILL AND COMPACTION AROUND PIT TO BE GENERALLY AS FOR TRENCHES. PLACE FILL EVENLY AROUND THE PIT SHAFT TO AVOID UNBALANCED LATERAL LOADING.

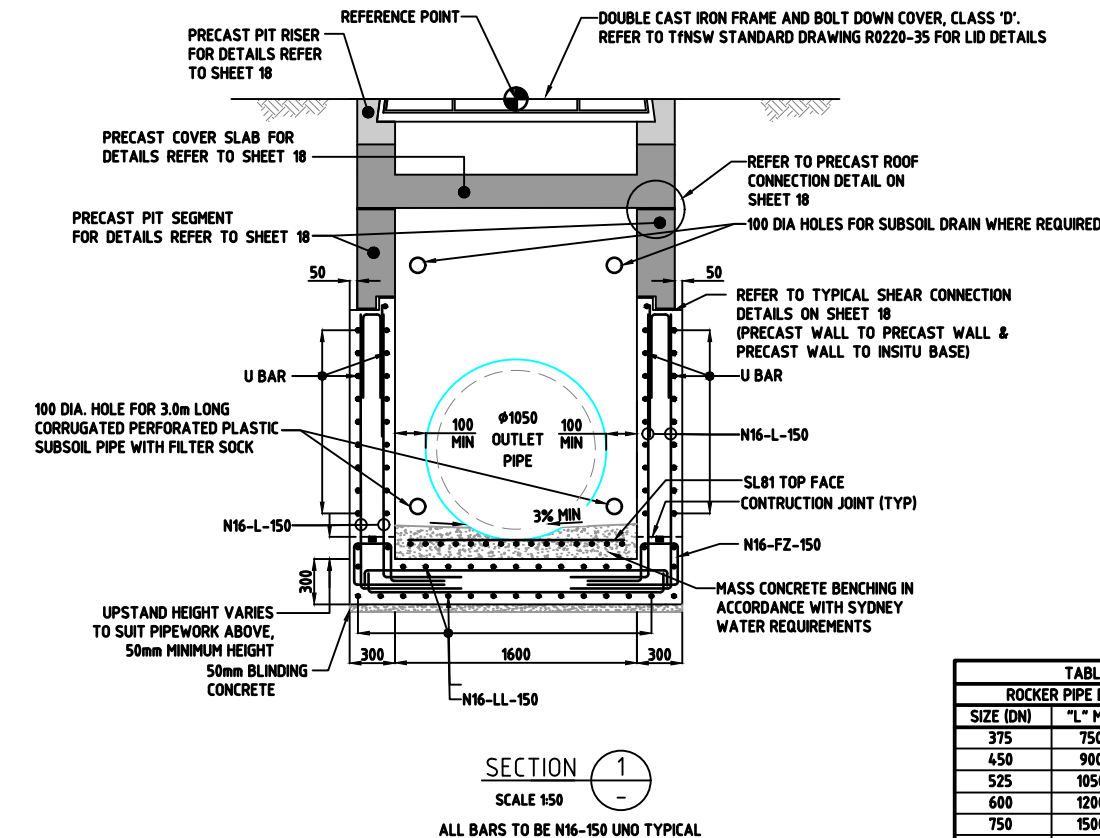
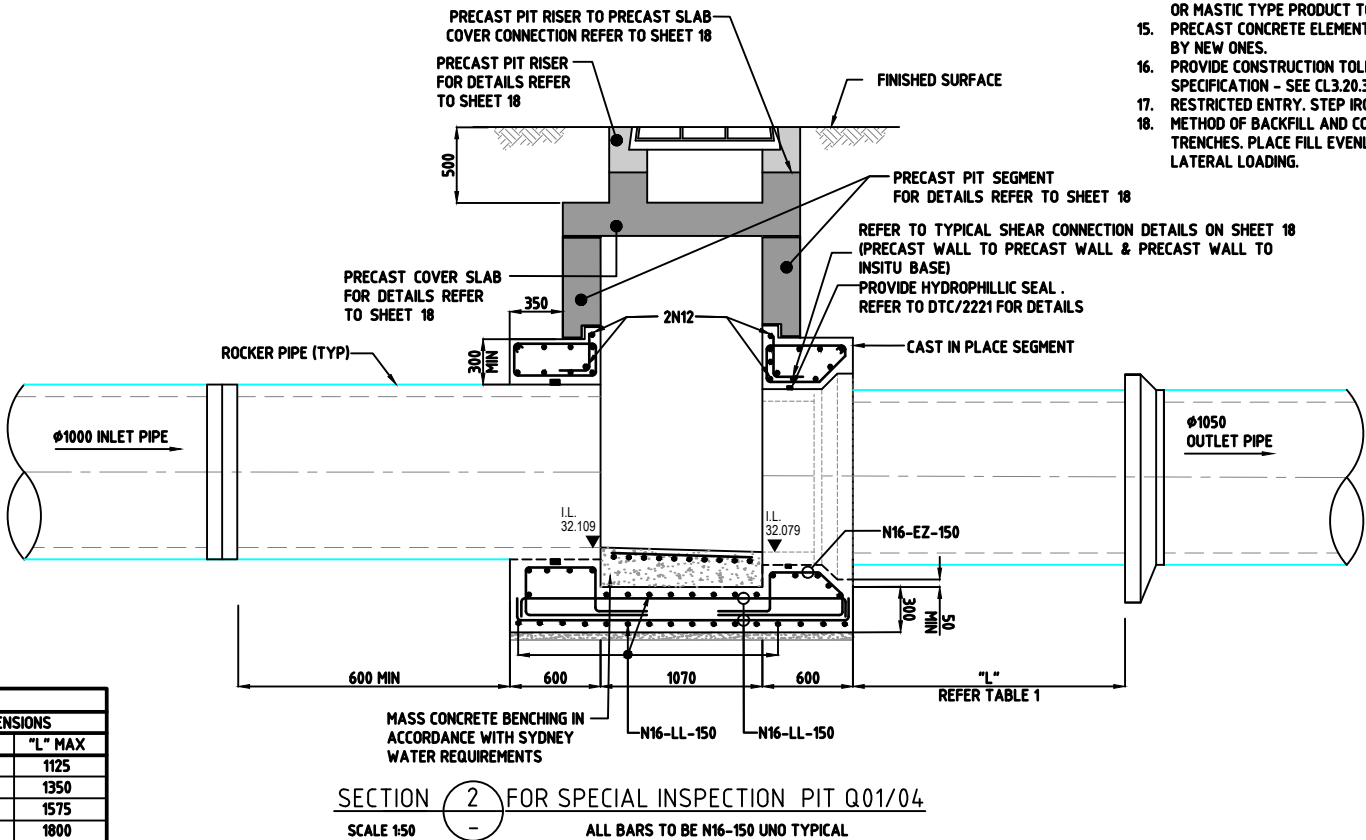


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No.	AMENDMENT DESCRIPTION	BY	DATE	No.	AMENDMENT DESCRIPTION	BY	DATE

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	.....	Case No. 197068SW SHT 17 OF 18 SHTS.	
W.S.C.	.....		
CONSTRUCTOR	.....		
COMPLETED	.....		
W.A.C. PREPARED	.....	SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	
DESIGNER	.....		
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS			



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	N12	N16	N20	N24	N28
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	350	550	750	1000	-

12. PRECAST STRUCTURE TO COMPLY WITH SYDNEY WATER CIVIL TECHNICAL SPECIFICATION.
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750	1500	2250
825	1650	2400
1000/1050	1800	2600



WORK AS CONSTRUCTED CERTIFICATION		Sydney WATER SYDNEY WATER CORPORATION	
DEVELOPER		Case No. 197068SW	SHT 18 OF 18 SHTS
W.S.C.			
CONSTRUCTOR			
COMPLETED			
W.A.C. PREPARED			
DESIGNER		SYDNEY WATER CORPORATION	
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		FOR DETAILS OF SERVICES SEE SHEET 1	