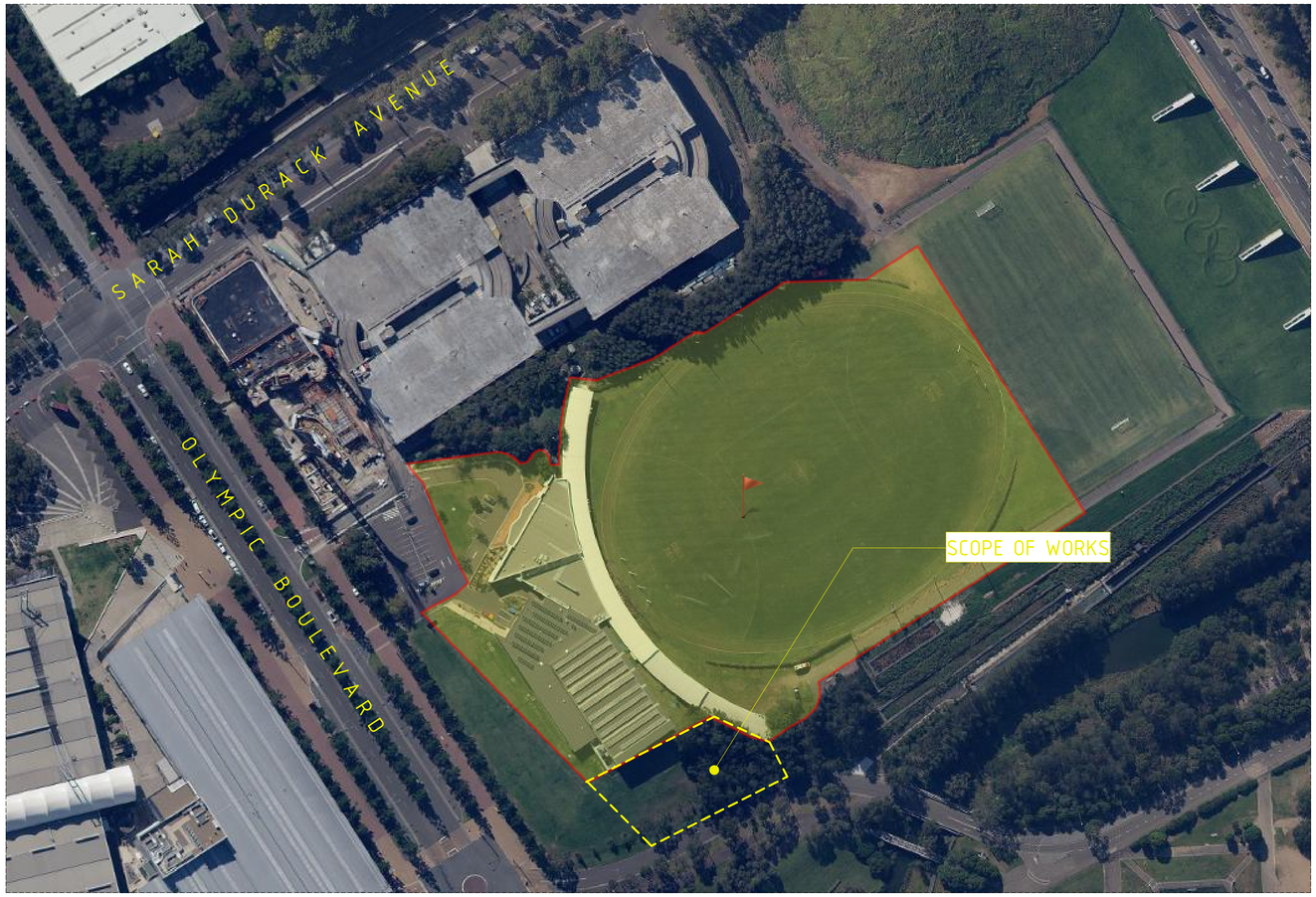
GWS GIANTS CENTRE OF EXCELLENCE
1 OLYMPIC BLVD, SYDNEY OLYMPIC PARK NSW 2127
HYDRAULIC SERVICES



LOCALITY PLAN
NOT TO SCALE - COURTESY OF SIX MAPS

HYDRAULIC DRAWING SCHEDULE	
H1101	COVER PAGE & DRAWING SCHEDULE
H1201	SPECIFICATION SHEET 1
H1202	SPECIFICATION SHEET 2
H1301	ENABLING WORKS
H1401	SITE PLAN
H2101	GRAVITY SERVICES PLAN - GROUND FLOOR
H2103	GRAVITY SERVICES PLAN - ROOF PLAN
H3101	PRESSURE SERVICES PLAN - GROUND FLOOR
H4101	FIRE HYDRANT COVERAGE PLAN - GROUND FLOOR
H4201	FIRE HOSE REEL COVERAGE PLAN - GROUND FLOOR
H5101	DETAILS SHEET

REFER TO OTHERS FOR:

· DRY FIRE
· BULK EARTHWORKS

DEVELOPMENT APPLICATION ISSUE

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
23.09.23	50% ISSUE	MN	1
10.10.23	100% ISSUE	MN	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL
MECHANICAL
ELECTRICAL
CIVIL

CLIENT: GIANTS

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

ARCHITECT: POPULOUS

PROJECT
GWS GIANTS CENTRE OF EXCELLENCE
1 OLYMPIC BOULEVARD, SYDNEY
OLYMPIC PARK, NSW 2127

SPARKS+PARTNERS CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
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https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE
HYDRAULIC SERVICES
COVER PAGE & DRAWING SCHEDULE

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
	A1	2

PROJECT No: 23142
DRAWING No: H1101

LEGEND

DRAWING SYMBOLS

FH	FIRE HYDRANT
	DUAL SUCTION POINTS
DFH	DUAL FIRE HYDRANT
	BOOSTER ASSEMBLY (DCV)
FHR	FIRE HOSE REEL
CO	CLEAROUT
FW	FLOOR WASTE
RWO	RAINWATER OUTLET
ORG	OVERFLOW RELIEF GULLY
BT	BOUNDARY TRAP
	CONNECT INTO EXISTING
GM	GAS METER
WM	WATER METER
	CAPPED SERVICE
	CONTINUED OVER/UNDER
	CONTINUED UNKNOWN
	PIPE RISER
	PIPE DROPPER
	PIPE TEE RISER
	PIPE TEE DROPPER
	PIPE CAST-IN SLAB (CIS)
	PUMP
	BALANCING VALVE
	FLOAT VALVE
	FLOW SWITCH
	FLUSH SENSOR
	GAS ISOLATION VALVE
	GAS MAIN VALVE
	GAS OVER PRESSURE SHUT-OFF
	GAS REGULATOR
	ISOLATION PATH VALVE
	ISOLATION VALVE
	MONITOR VALVE
	NON-RETURN VALVE
	RATIO VALVE
	REFLUX PATH VALVE
	REFLUX VALVE
	RPZD VALVE
	SOLENOID VALVE
	STRAINER
	TEMPERATURE PRV
	STORMWATER PIT (SOLID LID)
	STORMWATER PIT (GRATED LID)
	SEWER MAN HOLE
	RISER
	SERVICE
	SIZE
	DROPPER
	FOR CONTINUATION
	REFER TO DWG No.

ST
100
H1.01

LINETYPES

CW	COLD WATER
FCW	FILTERED COLD WATER
IRR	IRRIGATION
NPCW	NON POTABLE COLD WATER
NPHW	NON POTABLE COLD WATER
CONDUIT	ELECTRICAL CONDUIT
DEX	DIESEL EXHAUST
FD	FIRE DRENCHER
FHR	FIRE HOSE REEL
FH	FIRE HYDRANT
FS	FIRE SPRINKLER
DR	FIRE SPRINKELR DRAIN
GAS	NATURAL GAS
LPG	LIQUEFIED PETROLIUM GAS
HW	HOT WATER
HWR	HOT WATER RETURN
PG	PRESSURE GAUGE
RW	RAINWATER DRAINAGE
RWR	RAINWATER REUSE
RM	SEWER RISING MAIN
SRM	STORMWATER RISING MAIN
SD	SANITARY DRAINAGE (PVC-U)
SD(HDPE)	SANITARY DRAINAGE (HDPE)
SIP	SIPHONIC DRAINAGE
SOF	SIPHONIC OVERFLOW DRAINAGE
SLEEVE	SLEEVE (FUTURE)
SW	STORMWATER
SWOF	STORMWATER DRAINAGE
SSD	SUBSOIL DRAINAGE
SL	SUCTION LINE
TW	TRADEWASTE
CVP	CHAMBER VENT PIPE
GCVP	GREASE CHAMBER VENT PIPE
VP	VENT PIPE
TWVP	TRADEWASTE VENT PIPE
WW	WARM WATER
WWR	WARMWATER RETURN

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
A/C	AIR CONDITIONING UNIT
B	BASIN
BG	BOX GUTTER
BO	BALCONY OUTLET
BT	BOUNDARY TRAP
BTFW	BUCKET TRAP FLOOR WASTE
BTH	BATH
BWU	BOILING WATER UNIT
CI	CAST IRON
CIC	CAST IN COLUMN
CICL	CAST IRON CONCRETE LINED
CIS	CAST IN SLAB
CO	CLEAR OUT
CS	CLEANERS SINK
CT	COOKTOP
CW	COLD WATER
C/W	COMPLETE WITH
CVP	CHAMBER VENT PIPE
DCDV	DOUBLE CHECK DETECTOR VALVE
DF	DRINKING FOUNTAIN
DFH	DOUBLE FIRE HYDRANT
DICL	DUCTILE IRON PIPE
DTU	DRAINAGE TURN UP
DP	DOWNPIPE
DW	DISHWASHER
EA	EACH
EG	EAVES GUTTER
EW	EYE WASH
EX	EXISTING
FC	FIRE COLLAR
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FTW	FOOT WASHER
FW	FLOOR WASTE
GB	GAS BAYONET
GD	GRATED DRAIN
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
H/L	HIGH LEVEL
HH	HEAD HEIGHT
HP	HIGH POINT
HT	HOSE TAP
HW	HOT WATER
HWR	HOT WATER RETURN
HWU	HOT WATER UNIT
IL	INVERT LEVEL
IPMF	INDUCT PIPE MICA FLAP
IRR	IRRIGATION
L	LITRES
L/L	LOW LEVEL
LT	LAUNDRY TUB
KPa	KILOPASCAL
KS	KITCHEN SINK
MDL	METER DATA LOGGER
MIN	MINIMUM
m	METRES
mm	MILLIMETERS
MPa	MEGAPASCAL
No.	NUMBER
O/F	OVERFLOW
ORG	OVERFLOW RELIEF GULLY
OSD	ON SITE DETENTION
PBO	PLANTER BOX OUTLET
PG	PRESSURE GAUGE
PLV	PRESSURE LIMITING VALVE
PRV	PRESSURE RELIEF VALVE
PS	PAN STERILIZER
psi	POUNDS PER SQUARE INCH
RCP	REINFORCED CONCRETE PIPE
REV	REVISION
RH	RAIN HEAD
RHS	RECTANGULAR HOLLOW SECTION
RHT	RECYCLE HOSE TAP
RL	REDUCED LEVEL
RO	REVERSE OSMOSIS
RPZD	REDUCED PRESSURE ZONE DEVICE
RV	RELIEF VENT
RWO	RAINWATER OUTLET
RWR	RAINWATER RE-USE
RWT	RAINWATER TANK
SA	SUDS ARRESTOR
SB	SURGEON BASIN
SD	SANITARY DRAINAGE
SDO	SPOON DRAIN OUTLET
SDP	SIPHONIC DOWNPIPE
SGO	SPOON GUTTER OUTLET
SHR	SHOWER
SK	SINK
S/S	STAINLESS STEEL
SMH	SEWER MANHOLE
SRM	SEWER RISING MAIN
SW	STORMWATER
SWRM	STORMWATER RISING MAIN
SWP	STORMWATER PIT
SWS	STORMWATER SUMP
SYP	SYPHONIC DRAINAGE
ST	SEWER STACK
STW	STORMWATER
SV	STACK VENT
TB	THRUST BLOCK
TBC	TO BE CONFIRMED
TD	TUNDISH
TMV	THERMOSTATIC MIXING VALVE
TR	TROUGH
TTD	TRAPPED TUNDISH
TW	TRADE WASTE
TWV	TRADE WASTE VENT PIPE
U.N.O.	UNLESS NOTED OTHERWISE
uPVC	UNPLASTICISED POLYVINYL CHLORIDE
Ur	URINAL
VP	VENT PIPE
WC	WATER CLOSET
WW	WARM WATER
WWR	WARM WATER RETURN
VB	VACUUM BREAKER
VSD	VARIABLE SPEED DRIVE
VP	VENT PIPE

GENERAL

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH RELEVANT AUTHORITY REQUIREMENTS, COUNCIL REGULATIONS, SUPERINTENDENT'S APPROVAL, THE NCC VOLUME 3, AS.1596, AS.1841, AS.2444, AS.3500, AS.5601 & AS.2419.1 2005.

2. THIS PLAN SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND LANDSCAPE PLANS AND SPECIFICATIONS.

3. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA. THE SUPERINTENDENT DOES NOT GUARANTEE THEIR ACCURACY AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT AUTHORITY.

4. THE EXTENT OF THE HYDRAULICS WORK COVERED IN THE DOCUMENTATION AND AS SHOWN ON THE DRAWINGS CONSISTS OF THE FOLLOWING BUT NOT LIMITED TO:
   a. SUB-SOIL DRAINAGE
   b. STORMWATER DRAINAGE
   c. SANITARY PLUMBING
   d. DOMESTIC COLD WATER
   e. DOMESTIC HOT WATER
   f. DOMESTIC WARM WATER
   g. GAS SERVICE
   h. FIRE HYDRANT SERVICE
   i. FIRE HOSE REEL SERVICE
   j. SANITARY FIXTURES AND TAPWARE

5. ALL SERVICES SHALL BE FREE OF EACH OTHER AND EASILY REPLACEABLE FOR THEIR FULL LENGTH. PIPES SHALL BE SO ARRANGED WITH INSPECTION OPENINGS, VALVES, AND SIMILAR ITEMS OF EQUIPMENT PLACED TO BE ACCESSIBLE.

6. WHEREVER POSSIBLE, PIPES SHALL RETICULATE PARALLEL WITH EACH OTHER, MINIMISE CROSSOVERS AND UNSIGHTLY GROUPINGS. ALL PIPES SHALL BE ACCURATELY SET OUT, FULLY DESIGNED AND COORDINATED PRIOR TO COMMENCING FABRICATION AND INSTALLATION.

7. WHERE DIRECTED, SAMPLES OF EACH TYPE OF MATERIAL TO BE USED SHALL BE LABELED AND SUBMITTED FOR APPROVAL DETAILING MANUFACTURE AND SOURCE OF SUPPLY. AFTER APPROVAL THE MATERIALS DELIVERED TO THE WORKS SHALL BE IN ACCORDANCE WITH THE APPROVED SAMPLES.

8. IN THE EVENT OF THE SYSTEM INSTALLED BEING OF A MIXED MATERIAL AND QUALITY, THE SUPERINTENDENT SHALL HAVE JURISDICTION TO ORDER TO HAVE THOSE PORTIONS OF THE MATERIALS WHICH ARE SUITABLE FOR THE WORKS, PICKED OUT, MARKED AND STACKED WHERE DIRECTED AND ALL DEFECTIVE OR UNSUITABLE MATERIALS REMOVED FROM THE SITE.

9. SITE MODIFICATIONS, DIVERSIONS AND/OR DISCONNECTIONS AFFECTING SUPPLY SHALL BE REPORTED IMMEDIATELY. PROVIDE ALL NECESSARY ASSISTANCE FOR REINSTATEMENT OF SERVICE IN CONJUNCTION WITH THE SUPERINTENDENT AND THE AUTHORITIES.

10. DURING CONSTRUCTION, LEAVE ALL UNFINISHED WORK IN A SAFE CONDITION, PROTECTING THE WORKS AGAINST DAMAGE, SEAL OFF OPEN ENDS OF PIPES IN SUCH A MANNER AS TO PREVENT THE ENTRY OF FOREIGN MATTER INTO THE LINES, UNTIL THE WORKS HAVE BEEN HANDED OVER ON COMPLETION.

11. THE CONTRACTOR SHALL ALLOW TO PAY ALL NECESSARY FEES AND CHARGES AND OBTAIN APPROVAL CERTIFICATES ASSOCIATED WITH THE DESIGN DOCUMENTATION AND INSTALLATION OF HYDRAULIC SERVICES WORKS FROM THE RELEVANT AUTHORITY. SUBMIT ALL APPROVAL CERTIFICATES TO THE SUPERINTENDENT.

12. TENDERERS ARE REQUIRED TO VISIT AND INSPECT PRIOR TO TENDERING TO FAMILIARISE THEMSELVES WITH ITS CONDITION, MEANS OF ACCESS, WORKING SPACE. LEVELS AND ALLOW FOR IN THE TENDER ALL NECESSARY ITEMS WHICH ARE IMPLIED BUT WHICH MAY NOT BE STATED. THE TENDERER ACKNOWLEDGES THAT BEFORE TENDERING THEY HAVE INSPECTED THE SITE AND HAS BECOME CONVERSANT WITH ALL VISIBLE EXISTING CONDITIONS OF ACCESS TO THE SITE AND HAS ALLOWED FOR ALL SUCH FACTORS IN THEIR TENDER. NO CLAIMS ARISING FROM THE NEGLECT OF THE FOREGOING ON THE GROUNDS OF IGNORANCE OF THE AMOUNT AND KIND OF WORK INVOLVED AND THE CONDITIONS UNDER WHICH THE WORKS WILL BE EXECUTED, WILL BE APPROVED.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RECTIFICATION OF ALL DEFECTS IN THE WORK DUE TO FAULTY MATERIALS AND/OR WORKMANSHIP FOR THE DURATION OF THE TWELVE (12) MONTHS, THE DEFECTS LIABILITY PERIOD COMMENCING FROM THE DATE OF PRACTICAL COMPLETION OR AS AGREED WITH SUPERINTENDENT. SUCH DEFECTS SHALL BE MADE GOOD IMMEDIATELY ON RECEIPT BY THE CONTRACTOR ON ADVICE FROM THE SUPERINTENDENT. ANY DEFECTS DISCOVERED DURING THE DEFECTS LIABILITY PERIOD WHICH ARE DUE TO DEFAULT OR NEGLIGENCE BY THE CONTRACTOR IN THE PERFORMANCE OR OBSERVANCE OF ANY OF HIS OBLIGATIONS, SHALL EXTEND THE PERIOD TO ENABLE SUCH DEFECTS TO BE MADE GOOD BY THE CONTRACTOR AND TO ALLOW THE WHOLE WORK AFTER BEING MADE GOOD IN EVERY WAY, TO BE PROVED SATISFACTORY.

14. WHEN IN THE OPINION OF THE SUPERINTENDENT, THE BUILDING AND THE WORKS ARE PRACTICALLY COMPLETED, A NOTICE OF PRACTICAL COMPLETION WILL BE ISSUED, STATING THE DATE UPON WHICH THE WORKS WERE PRACTICALLY COMPLETED. THIS DATE SHALL BE THE DATE FROM WHICH THE GUARANTEE, WARRANTY AND DEFECTS LIABILITY PERIODS SHALL OPERATE. THIS NOTICE WILL NOT BE ISSUED UNTIL THE SYSTEMS HAVE BEEN PROPERLY COMMISSIONED AND UNTIL THE CONTRACTOR HAS SUPPLIED OPERATING AND MAINTENANCE INSTRUCTIONS.

15. ON PRACTICAL COMPLETION THE CONTRACTOR IS TO PRODUCE CERTIFICATION FOR ALL HYDRAULIC SERVICES INSTALLED BY THE CONTRACTOR AS REQUIRED BY THE BCA, LOCAL COUNCIL, AUSTRALIAN STANDARDS & PROJECT REQUIREMENTS.

16. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE DRAWINGS, CHECK ALL INDICATED DIMENSIONS IMMEDIATELY DURING THE CONTRACT AND OBTAIN SUCH INFORMATION AND MEASUREMENTS AS MAY BE REQUIRED TO CARRY OUT THE WORK. ALLOW TO NOTIFY ANY DISCREPANCIES AND HAVE THEM VERIFIED BY THE SUPERINTENDENT. CAREFULLY SUPERVISE, LAYOUT, CHECK AND DO ALL LEVELING AND MEASURING NECESSARY TO PROPERLY PLACE WORK. UNDER NO CIRCUMSTANCES SHALL PAYMENT BE MADE FOR REINSTALLATION OR ALTERATION OR WORK INCORRECTLY PLACED DUE TO INSUFFICIENT SUPERVISION AND INSTALLATION PRIOR TO ONSITE VERIFICATION.

17. THE CONTRACTOR SHALL ALLOW TO DELIVER TO THE PROJECT MANAGER BEFORE APPLICATION FOR NOTICE OF PRACTICAL COMPLETION FOR CHECKING ONE COPY OF THE WORK AS EXECUTED DRAWINGS, ACCURATELY INDICATING THE INVERT DEPTHS AND INSTALLED POSITION OF ALL SERVICES, FIXTURES, FITTINGS, VALVES, INCLUDING DIAGRAMMATIC, DETAILS, DRAWINGS AND MAINTENANCE MANUALS. ANY NECESSARY CORRECTIONS WILL BE MADE AND A FURTHER COPY OF THE WORK AS EXECUTED DRAWINGS SUBMITTED TO THE PROJECT MANAGER/ SUPERINTENDENT FOR CHECKING.

18. GUARANTEE THE PERFORMANCE OF THE INSTALLATIONS UNDER NORMAL WORKING CONDITIONS FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF PRACTICAL COMPLETION OF THE WORKS. SHOULD THE INSTALLATION OF ANY PART FAIL TO FULFIL THE REQUIREMENTS OF THIS SPECIFICATION, PERFORMANCE OF THE RELEVANT EQUIPMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE OR THE EQUIPMENT WILL BE LIABLE TO REJECTION. BE RESPONSIBLE FOR THE REPLACEMENT OF ANY PORTION OF THE INSTALLATIONS SO REJECTED AND FOR ALL COSTS INCURRED THEREBY, INCLUDING THE COSTS OF ANY ASSOCIATED WORKS OR OTHER TRADES. THE GUARANTEE PERIOD FOR THE REPLACED PORTION SHALL THEN BE EXTENDED TO COVER TWENTY-FOUR (24) MONTHS TROUBLE-FREE PERFORMANCE.

19. SUBMIT WORKSHOP DRAWINGS AND DETAILED CALCULATIONS FOR APPROVAL PRIOR TO THE INSTALLATION SHOWING DETAILS OF THE FABRICATION AND INSTALLATION OF ALL HYDRAULIC SERVICES AND EQUIPMENT, INCLUDING RELATIONSHIP TO BUILDING STRUCTURE AND SERVICES, SERVICE TYPE AND SIZE, AND MARKING DETAILS. CO-ORDINATE WORKS SHOWN DIAGRAMMATICALLY IN THE CONTRACT DOCUMENTS AND SUBMIT DIMENSIONED SETOUT DRAWINGS.

20. PENETRATIONS REQUIRED THROUGH THE STRUCTURE; SUCH DRAWINGS SHALL BE DIMENSIONED AND SHALL BE SUBMITTED AND APPROVED PRIOR TO THE PENETRATIONS BEING MADE EITHER BY CAST IN FORMS OR DRILLING. DRAWINGS SUBMITTED BY THE SUB-CONTRACTOR SHALL HAVE A MINIMUM SCALE OF 1:100 AND SHALL BE OF THE SAME DOCUMENTATION STANDARD, SCALE AND FORMAT AS THE OTHER TRADE WORKSHOP DRAWINGS FOR CO-ORDINATION PURPOSES.

21. SUBMIT WORKSHOP DRAWINGS FOR APPROVAL 14 DAYS PRIOR TO REQUIRED APPROVAL. APPROVAL OF WORKSHOP DRAWINGS WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES FOR ERRORS AND INCORRECT SETTING OUT. APPROVAL OF DRAWINGS IS NOT INTENDED TO SERVE AS A CHECK AND DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING MATERIALS AND PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATION. OBTAIN FROM SITE ALL NECESSARY DIMENSIONS TO ENABLE WORK TO PROCEED.

22. NON METALLIC PIPELINES IN GROUND SHALL HAVE A COPPER TRACE FIXED FOR ENTIRE LENGTH.

23. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.

EXISTING SERVICES

1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.

2. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION SHALL BE UNDERTAKEN WITHIN 1m OF COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.

3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF THE PROPOSED WORKS. ANY AND ALL DAMAGE TO THESE SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.

4. THE CONTRACTOR SHALL ALLOW FOR THE ADJUSTMENT/RELOCATION (IF NECESSARY) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS.

5. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN AREA AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.

6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SUPPLIES TO ALL BUILDINGS ARE NOT AFFECTED AND OR DISRUPTED BY THE PROPOSED WORKS.

7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY.

8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

9. INTERRUPTION TO EXISTING SUPPLIES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. THE CONTRACTOR IS TO OBTAIN APPROVAL OF THE SUPERINTENDENT FOR THE TIME OF INTERRUPTION.

10. EXISTING BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.

DEMOLITION NOTES

1. UNLESS NOTED OTHERWISE IN THESE HYDRAULIC DRAWINGS, REFER TO ARCHITECT'S DRAWINGS, EXISTING CONDITIONS DRAWINGS AND DEMOLITION DRAWINGS FOR EXTENT OF DEMOLITION WORKS ASSOCIATED WITH THESE WORKS.

2. DISCONNECT AND REMOVE EXISTING SERVICES TO AND FROM EXISTING FIXTURES AND PLANT AREAS AFFECTED BY THE PROPOSED WORKS.

3. THE CONTRACTOR IS TO UNDERTAKE AN INDEPENDENT SURVEY OF ALL AREAS TO DETERMINE THE EXTENT OF EXISTING SERVICES THAT ARE TO BE DISCONNECTED AND DEMOLISHED.

4. EXISTING SERVICES REQUIRED FOR THE OPERATION OF OTHER FIXTURES ARE TO BE DIVERTED/EXTENDED AS REQUIRED.

SITE WORKS

1. ALL WORKS TO BE IN ACCORDANCE WITH LOCAL RELEVANT COUNCIL REQUIREMENTS, SPECIFICATIONS, AUSTRALIAN STANDARDS. CONFLICTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.

2. THIS SPECIFICATION IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.

3. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH RTA AND LOCAL COUNCIL REGULATIONS AND REQUIREMENTS.

4. THE CONTRACTOR IS OBLIGATED TO INSPECT THE SITE AND SATISFY THEMSELVES AS TO THE CONDITIONS UNDER WHICH HIS WORK WILL BE CARRIED OUT.

5. REINSTATE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION ON COMPLETION OF WORKS. WHERE PLANTING OF NEW GRASS IS NECESSARY REFER TO LANDSCAPE ARCHITECT DOCUMENTATION.

6. ON COMPLETION OF ANY TRENCHING WORKS ALL DISTURBED AREAS SHALL BE REINSTATED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS, AND ROAD PAVEMENTS.

7. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.

8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.

9. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE ARBORIST REPORT/REQUIREMENTS.

10. IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

11. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.

12. THESE PLANS SHALL BE READ IN CONJUNCTION WITH ALL APPROVED DRAWINGS AND SPECIFICATIONS PREPARED BY OTHER PROJECT CONSULTANTS.

STANDARDS

1. ENSURE ALL HYDRAULIC SERVICES, MATERIALS AND WORKMANSHIP COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS AND CODES.

2. THE STANDARDS AND CODES ARE AS FOLLOWS:
   a. AS 1596
   b. AS 1841
   c. AS 2419
   d. AS 2941
   e. AS 2441
   f. AS 2444
   g. AS 3500
   h. AS 5601
   i. AS 4645
   j. LOCAL COUNCIL REQUIREMENT
   k. GOVERNING AUTHORITIES AND UTILITIES REQUIREMENTS
   l. SYDNEY WATER
   m. GAS AUTHORITY
   n. WORK COVER AUTHORITY

BCA SECTION J COMPLIANCE

1. PIPING SHALL BE THERMALLY INSULATED TO ACHIEVE A MINIMUM R-VALUE AS LISTED IN AS3500.4. INSULATION AS FOLLOWS:

   a. THE COLD WATER SUPPLY PIPE BETWEEN THE STORAGE WATER HEATER AND THE CLOSEST VALVE.

   b. THE OUTLET PIPE FROM A STORAGE WATER HEATER EXCLUDING VALVES, FOR AT LEAST THE FIRST 500mm OR, WHERE AN EXTERNAL HEAT TRAP IS FITTED, TO A POINT 150mm DOWN THE FIRST VERTICAL LEG OF THE HEAT TRAP

   c. THE PRIMARY FLOW AND RETURN PIPES BETWEEN AS AUXILIARY HEATER AND A STORAGE WATER HEATER.

   d. ALL VENT PIPES TO 300mm ABOVE THE OPERATING WATER LEVEL OF THE HEATED WATER SYSTEM.

   e. ON MULTIPLE INSTALLATIONS, THE WHOLE HEATED WATER MAINFOLD TO A POINT AT LEAST 500mm PAST THE HEATER WATER OUTLET BRANCH FROM THE LAST WATER HEATER.

2. HEAT TRAPS ARE REQUIRED IN NEW AND REPLACEMENT INSTALLATION AS FOLLOWS IN ACCORDANCE WITH AS 3500.4 SECTION 8;

   a. ALL STORAGE WATER HEATERS SHALL HAVE A HEAT TRAP WITHIN 1m FROM THE OUTLET OF THE WATER HEATER AND BEFORE THE FIRST BRANCH.

   b. THE HEAT TRAP SHALL HAVE A VERTICAL DROP OF 250mm FROM THE OUTLET LEVEL OF THE STORAGE WATER HEATER IF THE HEAT TRAP IS NOT AN INTEGRAL PART OF THE WATER HEATER.

   c. AN EXTERNAL HEAT TRAP IS NOT REQUIRED WHERE A HEAT TRAP IS INTEGRAL WITH THE STORAGE WATER HEATER.

TESTING AND INSPECTION

1. THE CONTRACTOR SHALL PAY ALL COST FOR THE TESTING OF THE INSTALLATION AND COSTS FOR INSPECTION BY LOCAL AUTHORITY, UNO.

2. THE CONTRACTOR SHALL UNDERTAKE ALL OF THE TESTING REQUIREMENTS OF THESE DRAWINGS, THE CONTRACT DOCUMENTS, RELEVANT CODES, STANDARDS AND LEGISLATION, UNO.

INSPECTION HOLD POINTS

1. TO ALLOW FOR FINAL CERTIFICATION OF WORKS THE CONTRACTOR IS TO ENSURE ALL INSPECTIONS ARE UNDERTAKEN AS NOTED IN THE INSPECTION SCHEDULE BY THE ENGINEER. SHOULD INSPECTIONS NOT BE CARRIED OUT, CERTIFICATION OF THE WORKS MAY NOT BE ABLE TO BE PROVIDED.

2. CONTRACTOR TO PROVIDE MINIMUM 48HRS NOTICE OF WHEN AN INSPECTION IS REQUIRED TO THE ENGINEER.

INSPECTION SCHEDULE

ITEM No.	ITEM	TYPE	COMMENTS
Inground			
1	INGROUND PIPE INSTALLATION – BEDDING, LAYING PIPE, BACKFILL	WITNESS/PHOTO	
2	INGROUND PRESSURE / FIRE SERVICES	WITNESS/PHOTO	
As Required			
3	ROUGH IN INSPECTIONS & ABOVE GROUND WORK	HOLD POINT	
4	PIPEWORK CAST-IN CONCRETE	WITNESS/PHOTO	
Final Inspection			
5	ROOF DRAINAGE, OVERFLOW AND DP LOCATIONS	INSPECTION	
6	FIRE HYDRANT & FIRE HOSEREEL LOCATION	INSPECTION	
7	FIT OFF	INSPECTION	
Post Construction			
8	APPROVALS AND CERTIFICATES (GAS,WATER,SEWER,SECTION 73	REVIEW	
9	FIRE TESTING AND COMMISSIONING	REVIEW	
10	FIRE HYDRAI		
11	MANUALS, A		

DEVELOPMENT APPLICATION ISSUE

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REFERENCES

DATE	AMENDMENT	INIT	REV
10.10.23	100% ISSUE	MN	1

STRUCTURAL
MECHANICAL
ELECTRICAL
CIVIL

CLIENT: GIANTS

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT: GWS GIANTS CENTRE OF EXCELLENCE
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ARCHITECT: POPULOUS

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DRAWING TITLE: HYDRAULIC SERVICES SPECIFICATION SHEET 1

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
	A1	1

PROJECT No: 23142
DRAWING No: H1201

SUBSOIL DRAINAGE

1. SUB-SOIL DRAINAGE LINES WITH NON-WOVEN GEOTEXTILE SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT min. 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATIONS:

   a. THE HIGH SIDE OF PROPOSED TRAFFICKED AND CARPARK PAVEMENT AREAS.

   b. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS

   c. BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS)

   d. ALL OTHER AREAS SHOWN ON THE DRAWINGS.

2. THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS, AT MAXIMUM 30m CENTERS AND AT ALL UPSTREAM ENDPOINTS.

3. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS SEALED uPVC SEWER GRADE PIPE SHALL BE USED:

   a. THE HIGH SIDE OF PROPOSED TRAFFICKED AND CARPARK PAVEMENT AREAS.

   b. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS.

   c. BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS).

   d. ALL OTHER AREAS SHOWN ON THE DRAWINGS.

4. THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS, AT MAXIMUM 30m CENTERS AND AT ALL UPSTREAM ENDPOINTS.

5. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS SEALED uPVC SEWER GRADE PIPE SHALL BE USED.

6. PROVIDE 3.0m LENGTH OF 100Φ SUBSOIL DRAINAGE PIPE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC, TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO THE DRAINAGE PIT.

FIRE RATED PENETRATIONS

1. PROVIDE FIRE RATED PENETRATIONS FOR SERVICES PASSING THROUGH EACH FIRE RATED ELEMENT. FIRE RATED PENETRATIONS SHALL ACHIEVE THE SAME RATING AS THE BUILDING ELEMENT PENETRATED SEAL PENETRATIONS WITH A SYSTEM CONFORMING TO AS 4072.1

2. THE METHOD AND MATERIAL USED SHALL BE IDENTICAL WITH A PROTOTYPE ASSEMBLY FOR THE SERVICE AND BUILDING ELEMENT WHICH HAS BEEN TESTED IN ACCORDANCE WITH AS 4072.1-1992 AND AS 1530.4-1997 AND HAS ACHIEVED THE REQUIRED FRL OR RESISTANCE TO THE INCIPIENT SPREAD OF FIRE OR COMPLY WITH OTHER RELEVANT PROVISIONS OF PART 3.7.1 FIRE SEPARATION OF THE BUILDING CODE OF AUSTRALIA VOLUME 2. ANY PENETRATIONS CREATED OR TREATED SHALL BE PROVIDED WITH A SERVICE LABEL COMPLYING WITH AS1851-2005 CLAUSE 17.2.4.2. PROVIDE SCHEDULE OF ALL PENETRATIONS EITHER CREATED OR TREATED. THE SCHEDULE SHALL BE SET OUT IN ACCORDANCE WITH AS-4072.1-2005. FIGURE B1 – AND SHALL BE SUITABLE FOR SUBSEQUENT USE BY THE BUILDING OWNER AS REQUIRED BY AS 1851-2005 CLAUSE 17.4.

3. WHEREVER OR WHENEVER THE PROPOSED WORK REQUIRE THE PENETRATION OF AN ELEMENT HAVING A FIRE RESISTANCE RATING. THE CONTRACTOR SHALL ENSURE THAT ANY PERSON RESPONSIBLE FOR THE INSTALLATION OF ANY SYSTEM USED TO PROTECT REINSTATE THE FRL OF THE PENETRATION:
   A. HOLDS AN APPROPRIATE LICENSE
   B. PROVIDES AN INSTALLATION STATEMENT IN THE FORMAT PRESCRIBED BY APPENDIX B OF AS 4072.1 TO DESCRIBE THE PENETRATION ITS LOCATION AND METHOD OF TREATMENT; AND
   C. THE CONTRACTOR SHALL FURNISH A COPY OF THE INSTALLATION STATEMENT AS PROVIDED IN (B) ABOVE THE INSPECTING OFFICER PRIOR TO REQUESTING AN INSPECTION FOR 'SUBSTANTIAL COMPLETION'

4. PROVIDE ACCESS TO PASSIVE FIRE PROTECTION DEVICES FOR INSPECTION IN ACCORDANCE WITH AS 1851:2005.

STORMWATER DRAINAGE

1. ALL PIPES LESS THAN OR EQUAL TO Φ225mm ARE TO BE SOLVENT WELD-JOINTED SEWER GRADE uPVC CLASS SH, OR (min) CLASS 2 RUBBER-RING JOINTED RCP (UNO).

2. WHERE uPVC STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.

3. PIPES GREATER THAN OR EQUAL TO Φ300mm ARE TO BE (min) CLASS 2 RUBBER-RING JOINTED RCP (UNO) OR FRC.

4. FRC PIPES EQUIVALENT TO THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED – OBTAIN SUPERINTENDENTS APPROVAL.

5. ALL PIPES ARE TO BE LAID AT (min) 1.0% GRADE (UNO).

6. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION BETWEEN SPARKS AND PARTNERS ENGINEERS AND THE CONTRACTOR REGARDING QUALITY CONTROL, AND CERTIFICATION OF FINISHES.

7. COVERS:

   a. USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT AUSTRALIAN AND COUNCIL STANDARDS

   b. ALL COVERS AND GRATES TO BE POSITIONED IN A FRAME AND MANUFACTURES AS A UNIT

   c. ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS

   d. OBTAIN SUPERINTENDENT'S APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.

   e. UNLESS DETAILED OR SPECIFIED OTHERWISE COVERS AND GRATES TO BE MINIMUM CLASS "C" IN VEHICULAR PAVEMENTS AND CLASS "B" ELSEWHERE (UNO).

8. ALL PIPE BENDS, JUNCTIONS, ETC. ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.

9. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT PIPE PENETRATIONS SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH AND BASE OF PIT BENCHED.

10. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTERS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.

11. U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.

12. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 100mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.

13. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 100mm THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200mm ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS, BACKFILL REMAINDER OF TRENCH WITH APPROVED GRANULAR MATERIAL TO SUBGRADE LEVEL IN 150mm LAYERS COMPACTED TO 100% STANDARD MAXIMUM DRY DENSITY. A MINIMUM PAVEMENT OF 125 THICK DGB20 BASE AND 25 THICK AC10 WEARING COARSE SHALL BE PROVIDED (UNLESS SHOWN OTHERWISE ON THE CIVIL ENGINEERS DRAWINGS).

14. BEDDING SHALL BE (UNO) TYPE HS2 UNDER ROADS; H2 GENERAL AREAS, IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.

15. THE SUB-CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE SUB-CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.

16. ALL RECTANGULAR HOLLOW SECTIONS (RHS) SPECIFIED AS STORMWATER CONDUITS TO BE HOT DIPPED GALVANISED AND HAVE (MINIMUM) 5mm WALL THICKNESS.

STORMWATER DRAINAGE Cont.

17. NOTE THAT THE PIT COVER LEVEL NOMINATED IN KERB'S ARE TO THE INVERT BASE OF THE KERB WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER.

SEWER DRAINAGE

1. THE CONTRACTOR SHALL SUPPLY, INSTALL, TEST AND COMMISSION ALL SEWER DRAINAGE FROM SOIL AND WASTE FIXTURES TO THE EXISTING SEWER LINES. PROVIDE ALL NECESSARY PIPES, JUNCTIONS, BENDS, PITS, FLOOR WASTES, EXCAVATION, SUPPORTS, AND BACKFILLING, TESTING AND SUNDRY EQUIPMENT REQUIRED FOR THE INSTALLATION. PIPELINE POSITIONS SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH ALL OTHER DISCIPLINES TO ENSURE ADEQUATE COORDINATION OF ALL SERVICES AND ELEMENTS. COORDINATION SHALL BE CARRIED OUT PRIOR TO ANY SETTING OUT, EXCAVATION AND PIPE INSTALLATION TAKING PLACE.

2. ALL SANITARY DRAINAGE PIPEWORK SHALL BE uPVC UNLESS NOTED OTHERWISE. DEEP EXCAVATION OVER 3.0m SHALL BE SN8 GRADE WITH RUBBER RING JOINTS.

3. THE CONTRACTOR SHALL ALLOW FOR ADDITIONAL EXCAVATION (INCLUDING ROCK) AND BACKFILL OF PIPES. FITTINGS AND ALL JUMP-UPS TO THE LOCAL AUTHORITY REQUIREMENTS, INCLUDING THOSE TO BRANCH DRAINS.

4. ALL BRANCH LINES SHALL BE GRADED AND/OR LOWERED TO AVOID PENETRATING FOOTING BEAMS UNLESS SHOWN OTHERWISE. THE CONTRACTOR SHALL ALLOW FOR ADDITIONAL PIPE LENGTHS AND WORK INCLUDING CONSTRUCTION OF ADDITIONAL INSPECTION OPENINGS AS DIRECTED BY THE LOCAL AUTHORITY AND THE PROJECT REQUIREMENTS.

5. CO-ORDINATE WITH STRUCTURAL DRAWINGS. NO STEEL REINFORCING BARS TO BE CUT WITHOUT PRIOR WRITTEN APPROVAL FROM STRUCTURAL ENGINEER.

6. APPROVED GRANULAR MATERIAL SHALL BE USED FOR ALL BACKFILL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS. 1289. E1.1.

7. ON COMPLETION OF PIPE INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.

8. SAW CUT TO THE FULL DEPTH OF CONCRETE AND A MIN. OF 100mm IN BITUMINOUS PAVING. REINSTATE TO EQUIVALENT OF ORIGINAL ROAD AND CONCRETE AREA. ALLOW TO PAY ALL FEES AND CHARGES.

9. WHERE NEW WORK ABUTS EXISTING, THE CONTRACTOR SHALL ENSURE THAT A SMOOTH, EVEN PROFILE, FREE FROM ABRUPT CHANGES, IS OBTAINED.

10. THE CONTRACTOR SHALL ALLOW FOR ALL TIMBERING, SHORING AND SHUTTERING AS NECESSARY TO CONSTRUCT PIPEWORK AND INCLUDE THE REMOVAL OF SAME UPON COMPLETION OF PIPEWORK.

11. PROVIDE 80mm COMPRESSIBLE MATERIAL OVER PIPEWORK WHERE CLEARANCE TO UNDERSIDE OF FOOTING IS LESS THAN 150mm (U.N.O.).

12. ALL uPVC PIPE EXPOSED TO SUNLIGHT SHALL BE DWV.

13. TRENCHES THROUGH TREE PROTECTION ZONE OR WITHIN TREE ROOT ZONES MUST BE EXCAVATED BY HAND.

14. CONTRACTOR SHALL ALLOW TO FLUSH AND OBTAIN A CCTV REPORT ON THE EXISTING PIPEWORK WHERE RE-USE OF THE EXISTING SYSTEM IS MAINTAINED.

SANITARY PLUMBING

1. ALL ROOF PENETRATIONS TO DETAIL AND PAINTED COLOUR TO BE ADVISED. ALL VENTS SHALL BE OFFSET IN ROOF SPACE MINIMUM 600mm FROM EAVES AND AS SHOWN ON ARCHITECTURAL DRAWINGS. ALL VENTS TO TERMINATE 150mm ABOVE ROOF LEVEL.

2. ALL PIPEWORK LOCATED WITHIN AREAS DEEMED NOISE SENSITIVE SHALL BE ACOUSTICALLY TREATED IN ACCORDANCE WITH THE PROJECT REQUIREMENTS.

3. EXPOSED INTERNAL PIPEWORK SHALL BE CHROME-PLATED.

4. ALL ROOF PENETRATIONS SHALL BE FLASHED WITH "DEKTITE" FLASHING. COLOUR TO MATCH ROOF.

ROOF NOTES

1. CONTRACTOR SHALL ALLOW FOR ALL FLASHING AND WATERPROOFING IN ACCORDANCE WITH THE AUSTRALIAN STANDARD. HB39 AND AS REQUIRES TO PERMIT IN A "WATERTIGHT" JOINT.

2. CONTRACTOR SHALL ALLOW TO INSTALL 100% EMERGENCY OVERFLOW MEASURES TO ATMOSPHERE IN ACCORDANCE WITH AS3500.

3. CONTRACTOR SHALL ALLOW FOR ADEQUATE FALL AT A MINIMUM OF 1 : 200 TO ALLOW COMPLIANT FALL TO THE SUMP/ DOWNPIPE.

4. CONTRACTOR SHALL ALLOW FOR ALL REQUIRED EXPANSION JOINTS AND ADJUSTMENTS FOR THERMAL VARIATION ALL EXPANSION SPACE SHALL BE A MINIMUM OF 50MM.

5. CONTRACTOR SHALL ALLOW TO INSTALL GUTTER GUARDS AND MESH SCREENS ON ALL GUTTERS, DOWNPIPES AND SUMPS.

6. CONTRACTOR TO PROVIDE A MAINTENANCE SCHEDULE FOR REGULAR CLEANING AND HOSE FLUSHING OF ALL DOWN PIPES AND GUTTERS.

7. CONTRACTOR TO PROVIDE A WATER TEST FOR ALL INTERNAL DOWNPIPES FOR 10 MINUTES AT 100MM OF HEAD WATER/ OR AIR TEST PRESSURE OF NOT LESS THAN 30 kPa FOR A MINIMUM OF 3 MINUTES ALL IN ACCORDANCE WITH AS3500.

WATER SERVICE

1. SUPPLY, INSTALL, TEST AND COMMISSION ALL BACK-FLOW/RPZD DOMESTIC COLD WATER PIPES FROM THE AUTHORITY'S MAIN TO ALL FIXTURES, FITTINGS AND TAPS REQUIRING DOMESTIC COLD WATER. INCLUDE FOR ALL PIPEWORK, BENDS, OFFSETS, BRACKETS, PUMPS, TAPS AND FAUCETS AND SUNDRY EQUIPMENT REQUIRED FOR THE INSTALLATION.

2. ALL EXPOSED HOT, WARM AND COLD WATER PIPEWORK SHALL BE INSULATED IN ACCORDANCE WITH AS. 3500.

3. COPPER PIPES TO BE IN ACCORDANCE WITH AS. 1432-1990 TABLE 2 TYPE "B" TUBES.

4. ALL PIPES SIZES SHALL BE INTERNAL BORE UNLESS NOTED OTHERWISE.

5. ALL WATER CONNECTIONS TO INDIVIDUAL FIXTURES SHALL BE 15mmΦ UP TO A MAXIMUM LENGTH OF 3 METERS.

6. ALL HOSE TAPS TO BE INSTALLED WITH A VACUUM BREAKER AND ISOLATION VALVE.

7. THE CONTRACTOR SHALL INSTALL ISOLATING VALVES TO ALL HOT AND COLD WATER FIXTURES.

8. ALL BENDS, T JOINTS etc. SHALL BE COPPER FITTINGS AND SHALL BE SILVER-BRAZED JOINTED AND COMPLY WITH AS 1589.

9. SUPPLY AND INSTALL THERMOSTATIC MIXING VALVES TO ALL ACCESSIBLE TOILETS AND ADAPTABLE UNITS, AS INDICATED ON THE DRAWINGS, USED FOR PERSONAL HYGIENE STRICTLY TO MANUFACTURERS REQUIREMENTS AND BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES REQUIREMENTS.

10. INSTALL ALL NECESSARY INSULATION TO HOT WATER PIPING TO PREVENT HEAT LOSS. INSULATION SHALL NOT BE INSTALLED UNTIL ALL RELEVANT TESTS AND INSPECTIONS HAVE BEEN CARRIED OUT.

11. SUPPLY AND INSTALL AN APPROVED BACKFLOW PREVENTION DEVICE IN THE DOMESTIC COLD WATER SUPPLY AND IRRIGATION SYSTEM AS REQUIRED BY THE WATER AUTHORITY.

12. THE CONTRACTOR IS TO MAINTAIN THE DEVICE FOR A PERIOD OF 12 MONTHS AND WILL INCLUDE MAINTENANCE INSTRUCTIONS IN AS-BUILT MANUALS TO BE SUPPLIED AT END OF PROJECT ESTABLISHING AN AUTHORISED MAINTENANCE PROGRAM INCLUDING REGISTRATION AND CERTIFICATION OF THE DEVICE.

APPENDIX D
CONDUCT OF INSPECTIONS BY THE USE OF CLOSED CIRCUIT TELEVISION (CCTV)

D1 GENERAL

CCTV INSPECTIONS ARE EFFECTIVE WAYS TO IDENTIFY THE STRUCTURAL CONDITION OF SANITARY PLUMBING AND DRAINAGE INSTALLATIONS AND TO IDENTIFY AND REPORT ON ANY SPECIFIC DEFECTS OR FEATURES.
INSPECTIONS SHOULD BE CONDUCTED UNDER NO-FLOW CONDITIONS THAT IS THE SANITARY PLUMBING SYSTEM IS NOT BEING USED SO THAT THE FLOW (WATER) LEVEL MAY BE MEASURED AND REPORTED.
TYPICAL APPLICATIONS FOR CCTV SURVEYS INCLUDE:
a. INSPECTION OF DRAINS, SEWERS AND PIPELINES;
b. INSPECTION OF DEEP SHAFTS;
c. INSPECTION OF DUCTS;
d. MONITORING SPECIALIST REPAIR WORKS IN SEWERS; AND
e. SURVEYS OF INDUSTRIAL PROCESS PIPELINES.
f. WHERE REQUIRED, SPECIALIZED INSTRUMENTS, APPARATUS AND/OR SOFTWARE SHOULD BE USED TO FACILITATE THE SURVEY. HARDWARE AND SOFTWARE USED IN MEASURING THE PARAMETER HAVE TO BE CORRECTLY CALIBRATED FOR EACH APPLICATION USING THE MANUFACTURER'S RECOMMENDED METHODS.

D2 OPERATOR'S REPORT

THE OPERATOR SHOULD PROVIDE A WRITTEN REPORT.
THE REPORT SHOULD CONTAIN, BUT NOT BE LIMITED TO, THE FOLLOWING:
a. LOCATION OF THE SANITARY PLUMBING AND DRAINAGE INSTALLATION.
b. THE DATE(S) OF INSPECTIONS.
c. DETAILS AS REQUIRED, TO IDENTIFY THE DRAIN(S) INSPECTED.
d. SIZE AND TYPE OF MATERIAL INSTALLED.
e. CONDITION OF THE SANITARY PLUMBING AND DRAINAGE INSTALLATION INCLUDING THE LOCATION AND CHARACTERISTICS OF REPORTABLE FEATURES SUCH AS DEFECTS.
f. WHERE REQUIRED, A DETERMINATION FOR ACCEPTANCE.

WATER SERVICE

1. SUPPLY, INSTALL, TEST AND COMMISSION ALL BACK-FLOW/RPZD DOMESTIC COLD WATER PIPES FROM THE AUTHORITY'S MAIN TO ALL FIXTURES, FITTINGS AND TAPS REQUIRING DOMESTIC COLD WATER. INCLUDE FOR ALL PIPEWORK, BENDS, OFFSETS, BRACKETS, PUMPS, TAPS AND FAUCETS AND SUNDRY EQUIPMENT REQUIRED FOR THE INSTALLATION.

2. ALL EXPOSED HOT, WARM AND COLD WATER PIPEWORK SHALL BE INSULATED IN ACCORDANCE WITH AS. 3500.

3. COPPER PIPES TO BE IN ACCORDANCE WITH AS. 1432-1990 TABLE 2 TYPE "B" TUBES.

4. ALL PIPES SIZES SHALL BE INTERNAL BORE UNLESS NOTED OTHERWISE.

5. ALL WATER CONNECTIONS TO INDIVIDUAL FIXTURES SHALL BE 15mmΦ UP TO A MAXIMUM LENGTH OF 3 METERS.

6. ALL HOSE TAPS TO BE INSTALLED WITH A VACUUM BREAKER AND ISOLATION VALVE.

7. THE CONTRACTOR SHALL INSTALL ISOLATING VALVES TO ALL HOT AND COLD WATER FIXTURES.

8. ALL BENDS, T JOINTS etc. SHALL BE COPPER FITTINGS AND SHALL BE SILVER-BRAZED JOINTED AND COMPLY WITH AS 1589.

9. SUPPLY AND INSTALL THERMOSTATIC MIXING VALVES TO ALL ACCESSIBLE TOILETS AND ADAPTABLE UNITS, AS INDICATED ON THE DRAWINGS, USED FOR PERSONAL HYGIENE STRICTLY TO MANUFACTURERS REQUIREMENTS AND BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES REQUIREMENTS.

10. INSTALL ALL NECESSARY INSULATION TO HOT WATER PIPING TO PREVENT HEAT LOSS. INSULATION SHALL NOT BE INSTALLED UNTIL ALL RELEVANT TESTS AND INSPECTIONS HAVE BEEN CARRIED OUT.

11. SUPPLY AND INSTALL AN APPROVED BACKFLOW PREVENTION DEVICE IN THE DOMESTIC COLD WATER SUPPLY AND IRRIGATION SYSTEM AS REQUIRED BY THE WATER AUTHORITY.

12. THE CONTRACTOR IS TO MAINTAIN THE DEVICE FOR A PERIOD OF 12 MONTHS AND WILL INCLUDE MAINTENANCE INSTRUCTIONS IN AS-BUILT MANUALS TO BE SUPPLIED AT END OF PROJECT ESTABLISHING AN AUTHORISED MAINTENANCE PROGRAM INCLUDING REGISTRATION AND CERTIFICATION OF THE DEVICE.

FIRE HYDRANT SERVICES

1. SUPPLY, INSTALL, TEST AND COMMISSION THE FIRE HYDRANT SERVICE FROM THE INCOMING WATER MAIN TO ALL FIRE HYDRANTS REQUIRED.

2. INCLUDE FOR ALL PIPING, FITTINGS, VALVES, HYDRANT VALVES, PUMPS, CONTROL EQUIPMENT ELECTRICAL WIRING AND OTHER SUNDRY ITEMS OF EQUIPMENT AS REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA PART E1.3 AND AS 2419. PROVIDE A FLOW TEST TO COMPLY TO AS 2419.1 TABLE E2.

3. AFTER COMMISSIONING OF THE INSTALLATION SUBMIT A CERTIFICATE CERTIFYING THE INSTALLATION AS REQUIRED BY THE LOCAL GOVERNMENT (APPROVALS) REGULATION.

4. PROVIDE A FLOW TEST CERTIFICATE TO COMPLY TO AS 2419.1 TABLE E2.

5. WHERE LOCATED IN AN ABOVE GROUND SITUATION, THE SERVICE SHALL BE CONSTRUCTED OF MEDIUM GRADE GALVANISED MILD STEEL PIPING JOINTED BY APPROVED PATENTED ROLLED GROOVED PIPE AND FITTINGS EQUAL IN ALL RESPECTS TO VICTAULIC PATTERN.

6. INTERNAL HYDRANTS

   a. SUPPLY GENERALLY THE EXISTING INTERNAL HYDRANTS ARE TO BE RETAINED.

   b. SUPPLY AND INSTALL INTERNAL LANDING VALVE HYDRANTS IN THE APPROVED LOCATIONS SHOWN WITH THE CENTRE OF THE VALVE 750mm ABOVE FLOOR AND HAVING AT LEAST 100mm CLEARANCE AND ANGLED 35° DOWN FROM THE HORIZONTAL PLANE. INSTALL HYDRANTS CLEAR OF FIRE EGRESS PATH.

7. BLOCK PLAN

   A3 MINIMUM SIZE, SHALL BE FIXED WITHIN THE BOOSTER CABINET, ENCLOSURE, RECESS,FIRE CONTROL ROOM AND PUMP ROOM WHERE IT CAN BE READILY SEEN THE BLOCK PLAN PROVIDED AT EACH BOOSTER LOCATION IS TO ENSURE THAT FIREFIGHTERS USING THE BOOSTER ASSEMBLY ARE AWARE OF THE SYSTEM IN TERMS OF ITS DESIGNED CAPACITY, EXTENT AND CONFIGURATION. THIS INFORMATION TOGETHER WITH OTHER NOTICES OF TEST AND WORKING PRESSURES SHOULD PROVIDE FIREFIGHTERS WITH SUFFICIENT DETAIL TO SAFELY BOOST THE SYSTEM.

FIRE HOSE REEL

1. HOSE REELS SHALL BE WALL MOUNTED CONTAINING 36M OF 20MM INTERNAL DIAMETER FABRIC REINFORCED NON-KINKING RUBBER HOSE WITH ADJUSTABLE NOZZLE. THE REELS SHALL BE FITTED WITH A GUNMETAL HUB, RED BAKED ENAMEL MILD STEEL SIDE PLATES AND STAINLESS STEEL SPACING RODS AND SHALL BE IN ACCORDANCE WITH AS 1221 AND APPROVED BY THE INSURANCE COUNCIL OF AUSTRALIA.

2. THE HOSE SHALL BE SUPPLIED WITH WATER FROM THE WATER SERVICE THROUGH A 25MM SCREWED VALVE FITTED WITH A UNION BETWEEN VALVE AND REEL FOR MAINTENANCE PURPOSES. THE NOZZLE SHALL BE ATTACHED TO THE VALVE BY A DEVICE SO THAT IT CANNOT BE REMOVED UNTIL WATER SUPPLY IS TURNED ON.

3. THE HOSE SHALL OPERATE WITH A MINIMUM FLOW RATE OF 0.33 LITRES PER SECOND AND A RUNNING PRESSURE OF 210 kPa AT THE OUTLET OF THE NOZZLE WHEN THE HOSE IS FULLY EXTENDED.

4. FIRE HOSE REELS SHALL BE PROVIDED IN ACCORDANCE WITH THE BCA REQUIREMENTS. THE SYSTEM SHALL ALSO BE APPROVED FOR USE BY THE LOCAL WATER AUTHORITY.

5. ALL FIRE HOSE REELS UNLESS NOTED OTHERWISE SHALL BE LOCATED WITHIN 4M OF A FIRE EGRESS EXIT.

6. FREE STANDING SUPPORT BRACKET SHALL BE GMS SECURED WITH A MINIMUM OF 3x10mm GMS APPROVED FIXINGS.

HEATED WATER SERVICE

1. THE WORK IN THIS SECTION COMPRISES THE SUPPLY AND INSTALLATION OF THE POTABLE HEATED WATER SYSTEM INCLUDING ALL NECESSARY FIXTURES AND FITTINGS, PLANT AND EQUIPMENT, ACCESSORIES, TESTING AND COMMISSIONING REQUIRED TO COMPLETE THE INSTALLATION.

2. THE POTABLE HEATED WATER SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND REQUIRE COORDINATION AS PART OF WORKSHOP DRAWINGS TO DETERMINE THE EXACT LOCATION ON SITE.

3. UNDER NO CIRCUMSTANCES WILL A COMPRESSION FITTING OR BACKNUT AND RUBBER RING BRASS OR COPPER CONE TYPE FITTINGS BE PERMITTED TO BE USED ON THE INSTALLATION.

4. INTERNAL PIPEWORK SHALL BE SIZED AS INDICATED ON THE PLANS.

5. ALL CHASED PIPEWORK SHALL BE LAGGED.

6. ALL HEATED WATER FIXTURES WITH AN OUTLET TEMPERATURE EXCEEDING 50.0ºC SHALL HAVE A SIGN, USING SYMBOL AND RED WRITING ON A WHITE BACKGROUND IN APPROPRIATE LANGUAGES, DISPLAYED ADJACENT TO THE FIXTURE WHICH STATES, "WARNING – THIS FIXTURE MAY DELIVER HOT WATER WHICH WILL SCALD."

7. SUPPLY, INSTALL AND CERTIFY ENWARE OR EQUAL TEMPERING MIXING VALVE WITH SETTING NO GREATER THAN 50°C IN ACCORDANCE WITH AS 3500.

HOT WATER CIRCULATING PUMPS

1. SUPPLY AND INSTALL BRONZE GRUNDFOS MODEL UPS 20-60B INLINE CIRCULATING PUMP. THE PUMP SHALL BE SUPPLIED WITH AND WIRED TO TEMPERATURE SENSING DEVICE.

HOT WATER UNITS

1. SUPPLY AND INSTALL MAINS PRESSURE HOT WATER UNITS COMPLETE WITH ALL STOP, CHECK, DRAIN VALVES AND PRESSURE RELIEF VALVES NECESSARY TO COMPLETE THE INSTALLATION. THE UNITS SHALL BE OF THE CAPACITY AND SIZE AS INDICATED ON THE DRAWINGS AND SHALL BE EQUAL TO RHEEM AUSTRALIA RHEEMGLASS.

SEISMIC ENGINEERING SERVICES DESIGN

REVIEW THE HYDRAULIC SERVICES DESIGN TO DETERMINE WHICH SERVICES DO AND DO NOT REQUIRE SEISMIC RESTRAINT. IN ACCORDANCE WITH AS1170.4 – 2007 THE FOLLOWING SERVICES ALWAYS NEED TO BE PROVIDED WITH SEISMIC RESTRAINTS:

- FIRE AND SMOKE DETECTION SYSTEMS.
- FIRE SUPPRESSION SYSTEMS (INCLUDING SPRINKLERS).
- BOILERS, FURNACES, INCINERATORS, WATER HEATERS, AND OTHER EQUIPMENT USING COMBUSTIBLE ENERGY SOURCES OR HIGH ENERGY SOURCES, CHIMNEYS, FLUES, SMOKESTACKS, VENTS AND PRESSURE VESSELS.
- UTILITY AND SERVICES INTERFACES DUCTS AND PIPING DISTRIBUTION SYSTEMS ALSO NEED TO BE PROVIDED WITH RESTRAINTS/BRACING TO RESIST SEISMIC LOADS EXCEPT WHERE THEY ARE BELOW THE THRESHOLDS SET IN AS1170.4. THE THRESHOLDS BELOW WHICH DUCT AND PIPING DISTRIBUTION DO NOT NEED TO BE SEISMICALLY RESTRAINED ARE:
- GAS PIPING LESS THAN 25mm INSIDE DIAMETER.
- PIPING IN BOILER AND MECHANICAL ROOMS LESS THAN 32mm INSIDE DIAMETER
- ALL OTHER PIPING LESS THAN 64mm INSIDE DIAMETER.
- ALL DUCTS AND PIPING SUSPENDED BY INDIVIDUAL HANGERS 300mm OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE SUPPORT FOR THE HANGER. NOTE THAT IF A STRAIGHT RUN OF DUCT STARTS AT 0.2m² AT ONE END AND GROWS TO GREATER THAN 0.4m² AT THE OTHER END THEN THE WHOLE RUN SHOULD BE BRACED, NOT JUST THE SECTION OVER 0.4m² . THE SAME APPLIES WHERE THE HANGING DISTANCE VARIES FROM LESS THAN 300mm TO MORE THAN 300mm IN A STRAIGHT.

DEVELOPMENT APPLICATION ISSUE

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STRUCTURAL
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CIVIL

CLIENT: GIANTS

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT: GWS GIANTS CENTRE OF EXCELLENCE
1 OLYMPIC BOULEVARD, SYDNEY
OLYMPIC PARK, NSW 2127

ARCHITECT: POPULOUS

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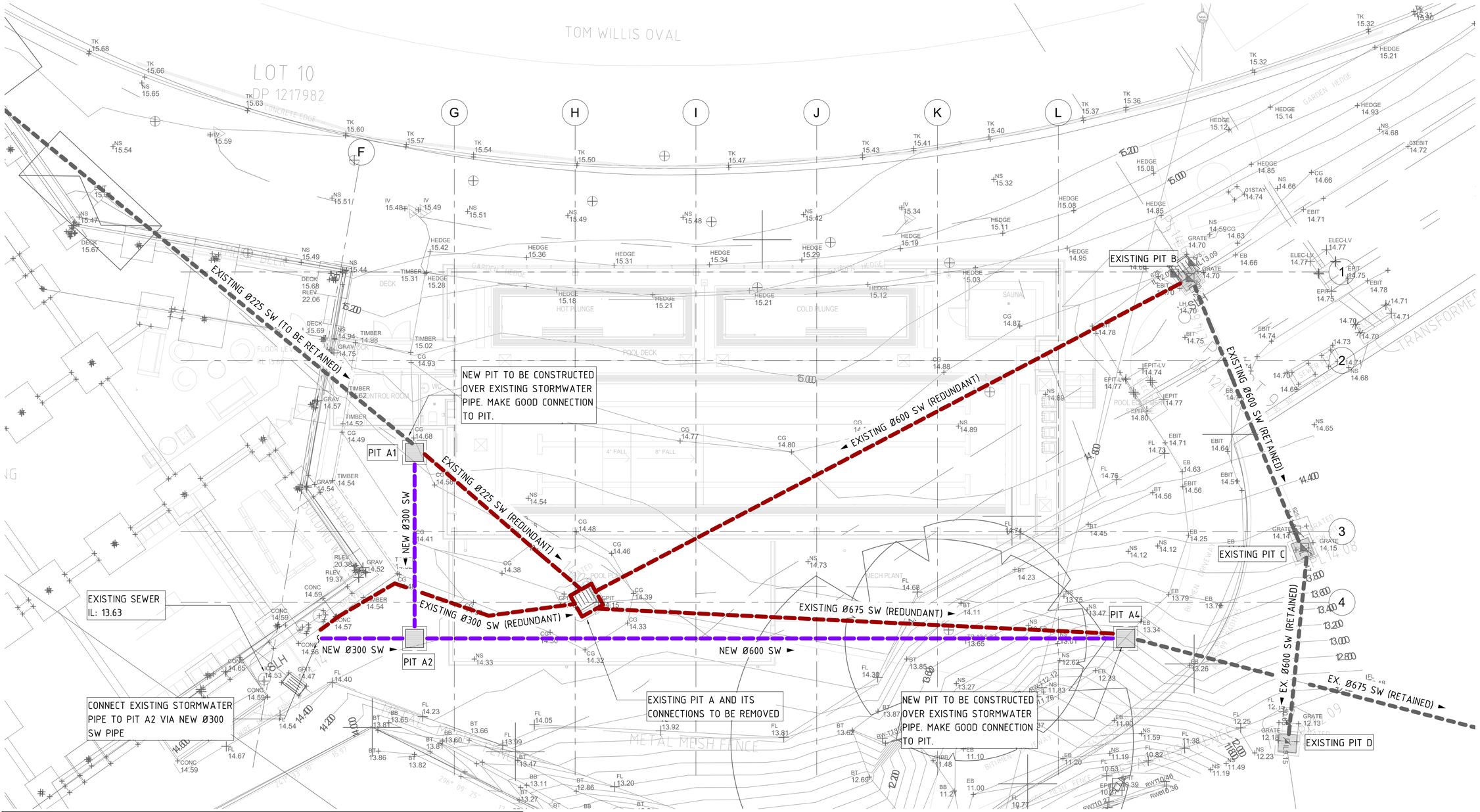
DRAWING TITLE: HYDRAULIC SERVICES SPECIFICATION SHEET 2

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
N.T.S.	A1	1

PROJECT No: 23142
DRAWING No: H1202



PIT SCHEDULE

PIT NO.	PIT TYPE	CHAMBER SIZE	COVER TYPE	COVER RL	BASE RL	DEPTH (m)
PIT A1	INLET PIT	900 x 900	900 x 900 CLASS 'C'	14.60	13.28	1.32
PIT A2	INLET PIT	900 x 900	900 x 900 CLASS 'C'	14.40	13.20	1.20
PIT A4	INLET PIT	900 x 900	900 x 900 CLASS 'D'	13.00	11.20	1.80

0 2 5 10m

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CIVIL

CLIENT: GIANTS

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT: GWS GIANTS CENTRE OF EXCELLENCE
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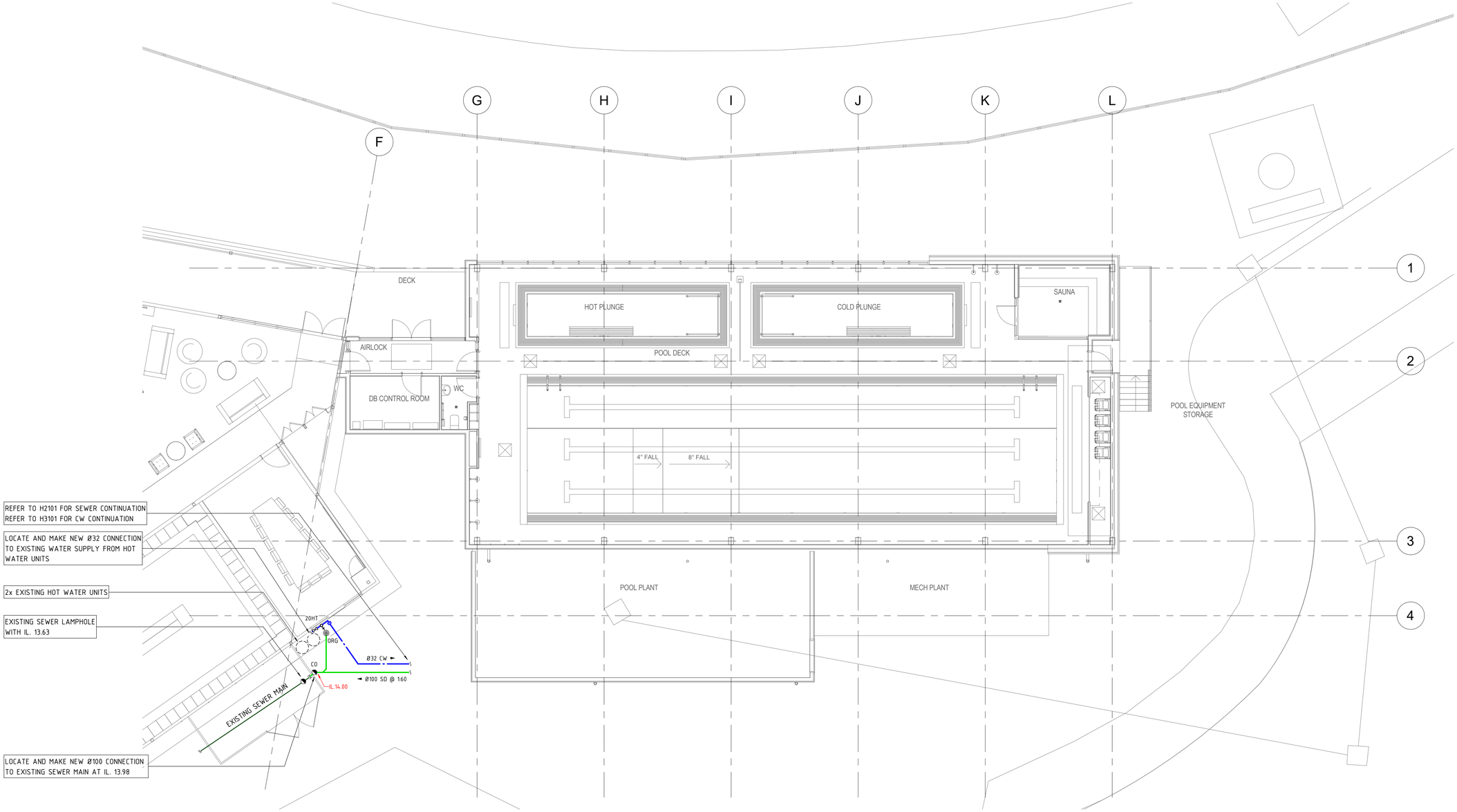
DRAWING TITLE: HYDRAULIC SERVICES
ENABLING WORKS

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No: 23142
DRAWING No: H1301



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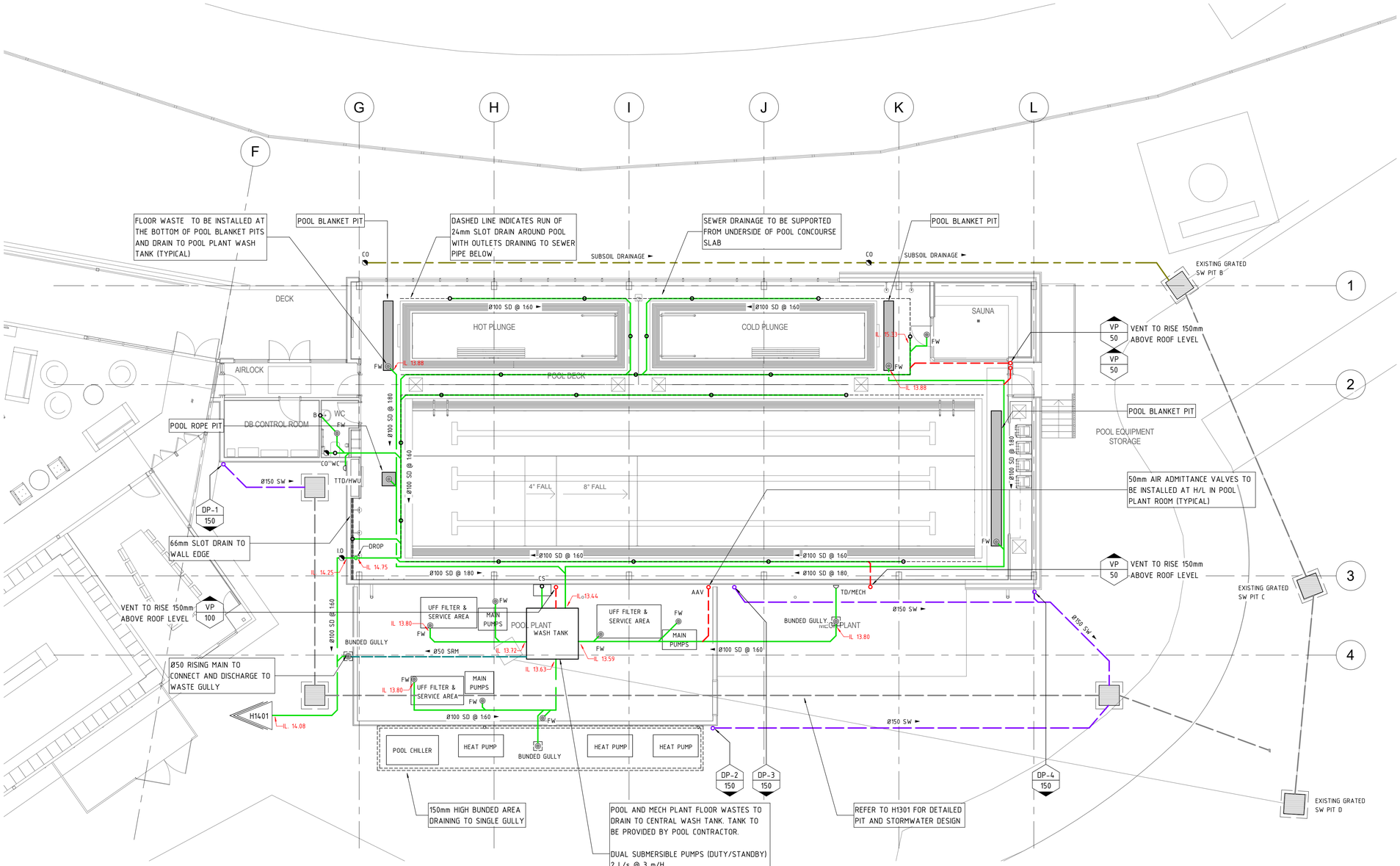
DRAWING TITLE
HYDRAULIC SERVICES
SITE PLAN

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No 23142
DRAWING No H1401

NOTE:
· PLUMBER TO ONLY COMPLETE WORKS SHOWN ON DRAWINGS.
· POOL SYSTEM INCLUDING TANK AND GRATES TO BE INSTALLED BY POOL CONTRACTOR



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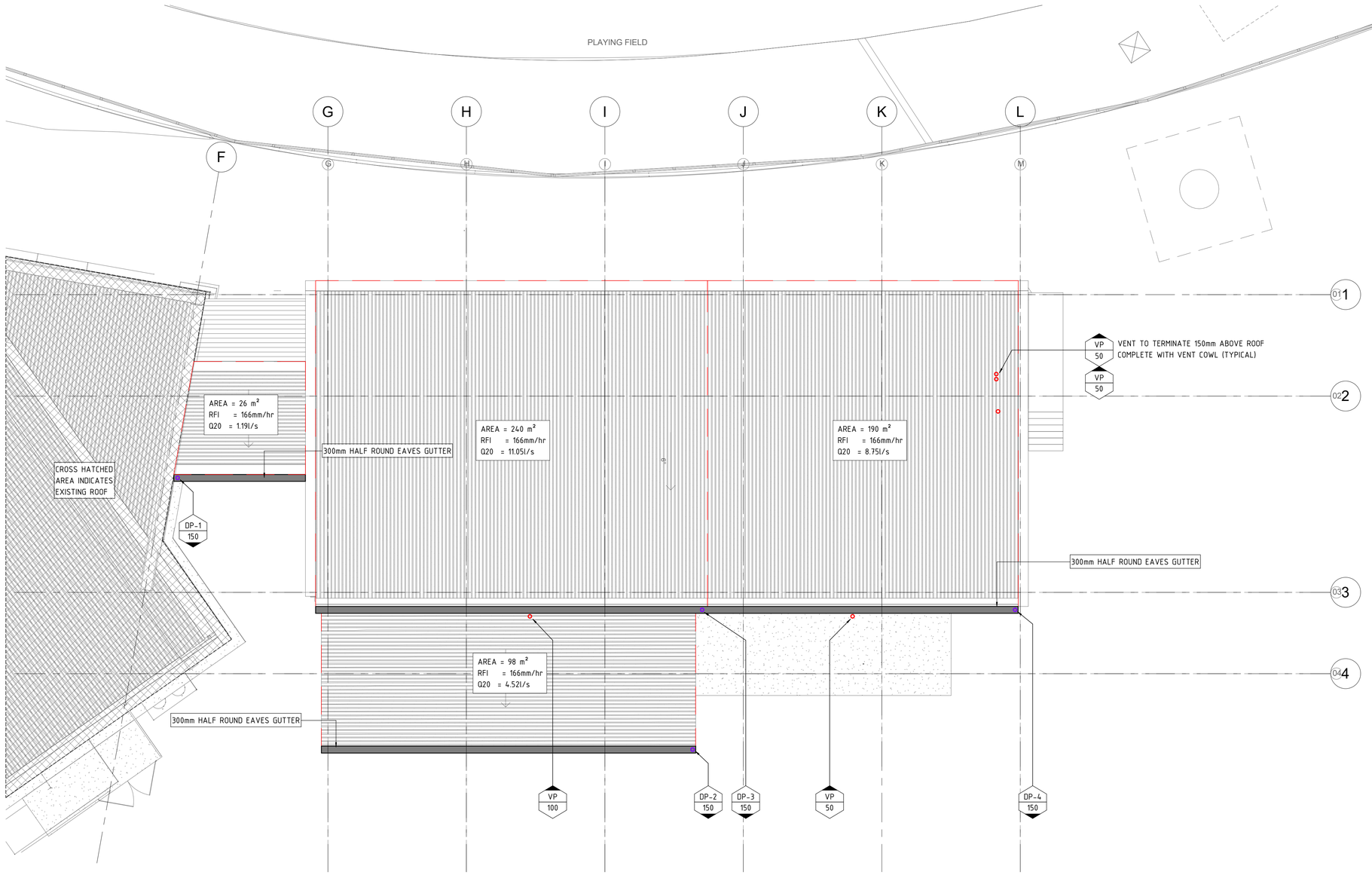
DRAWING TITLE
HYDRAULIC SERVICES
GRAVITY SERVICES PLAN - GROUND FLOOR

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No 23142
DRAWING No H2101



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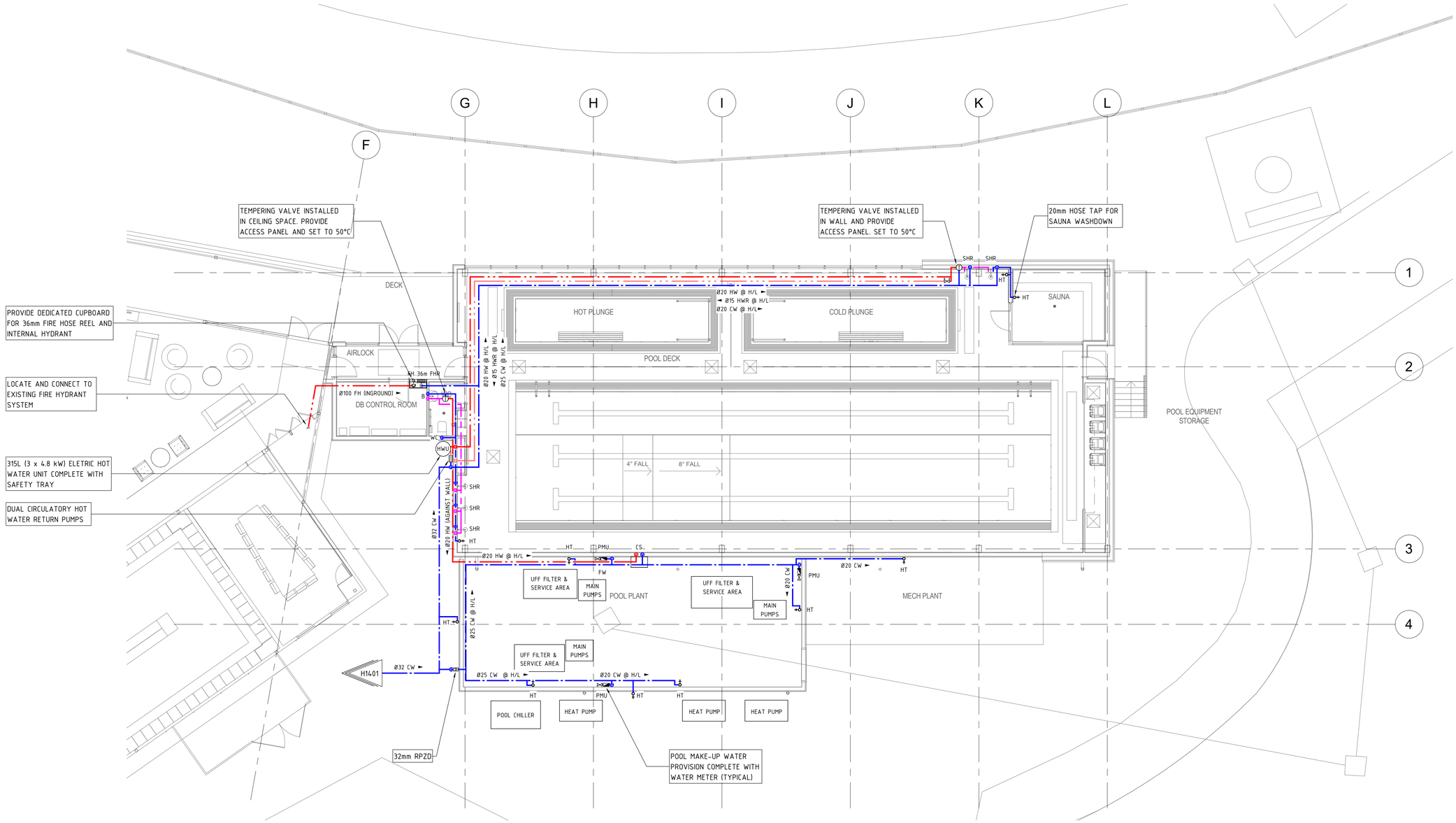
DRAWING TITLE
HYDRAULIC SERVICES
GRAVITY SERVICES PLAN - ROOF PLAN

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No	DRAWING No
23142	H2103



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CIVIL

CLIENT: GIANTS

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT: GWS GIANTS CENTRE OF EXCELLENCE
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OLYMPIC PARK, NSW 2127

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DRAWING TITLE: HYDRAULIC SERVICES
PRESSURE SERVICES PLAN - GROUND FLOOR

DATE	DRAWN	DESIGNED	CHECKED
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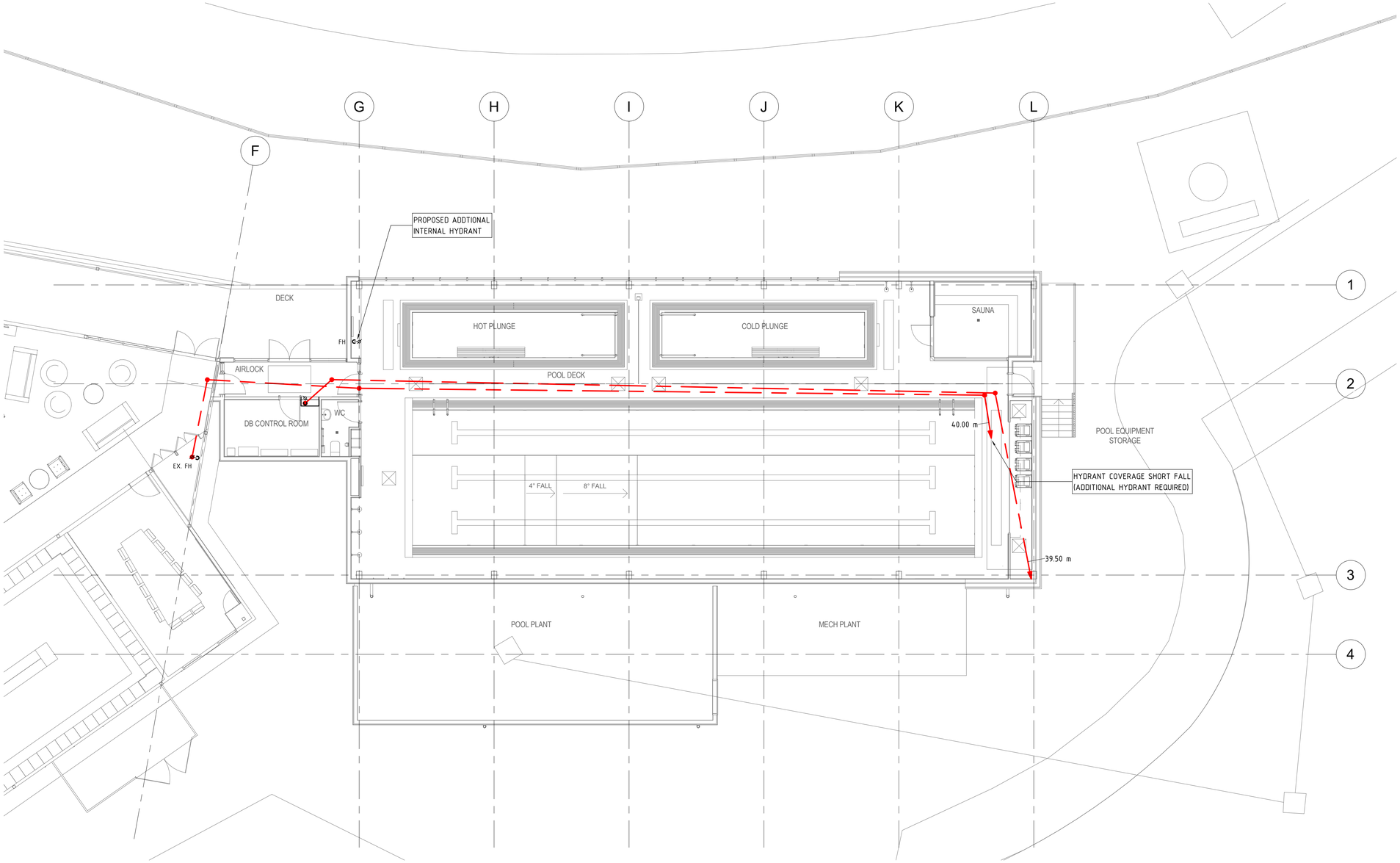
1 : 100	A1	2

PROJECT No: 23142
DRAWING No: H3101



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BUILDER
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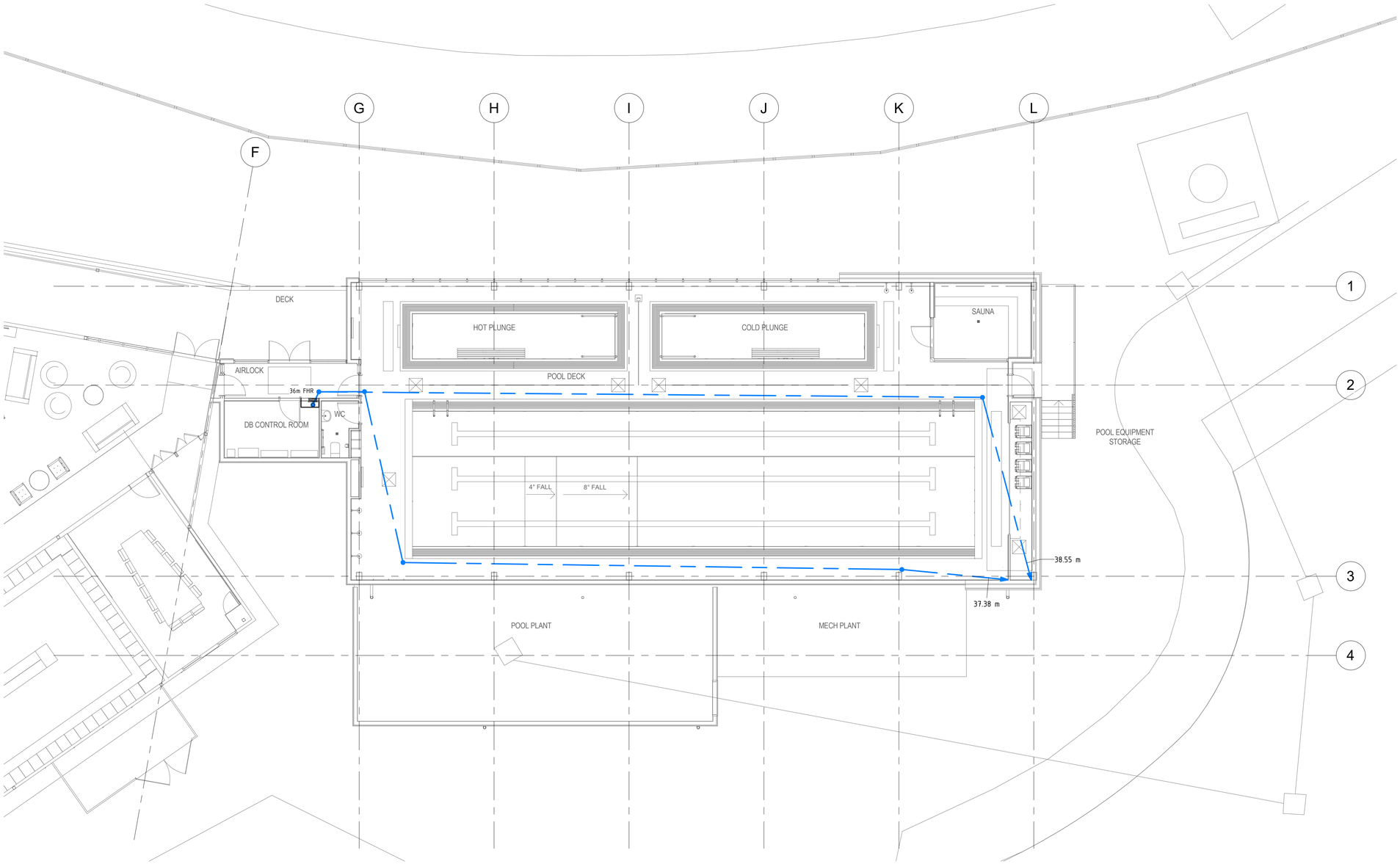
DRAWING TITLE
HYDRAULIC SERVICES
FIRE HYDRANT COVERAGE PLAN - GROUND FLOOR

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No 23142
DRAWING No H4101



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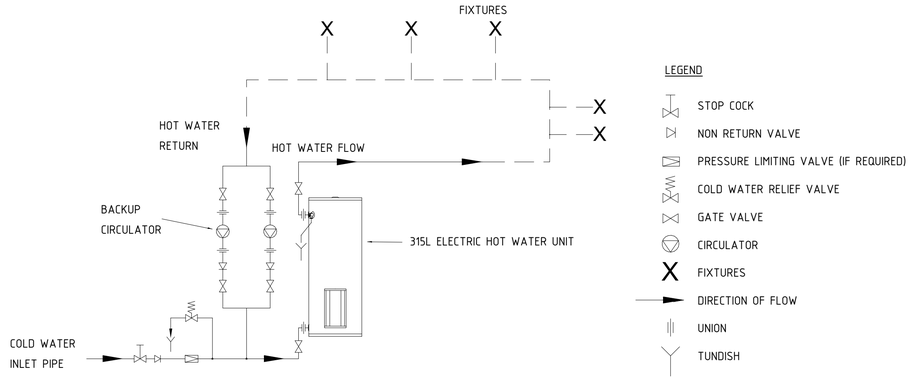
DRAWING TITLE
HYDRAULIC SERVICES
FIRE HOSE REEL COVERAGE PLAN - GROUND FLOOR

DATE	DRAWN	DESIGNED	CHECKED
SEP 2023	MN	MN	LD

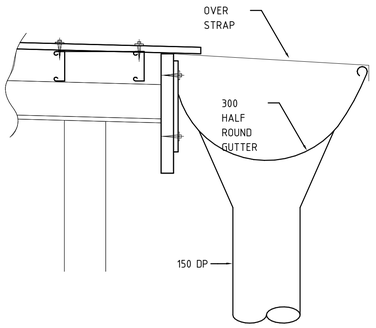
SCALE	SIZE	REVISION
1 : 100	A1	2

PROJECT No 23142
DRAWING No H4201



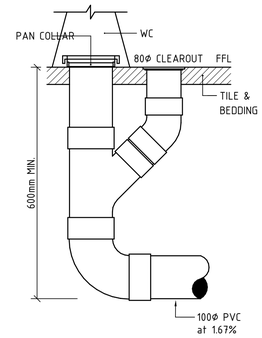
RHEEM 315 (3x4.8 kW) ELECTRIC HOT WATER SYSTEM SCHEMATIC

NOT TO SCALE



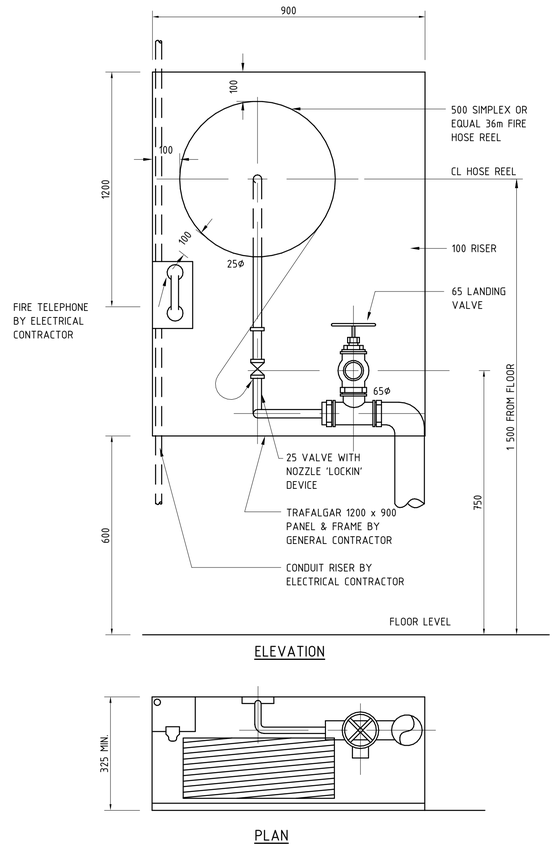
300 HALF ROUND GUTTER

NOT TO SCALE



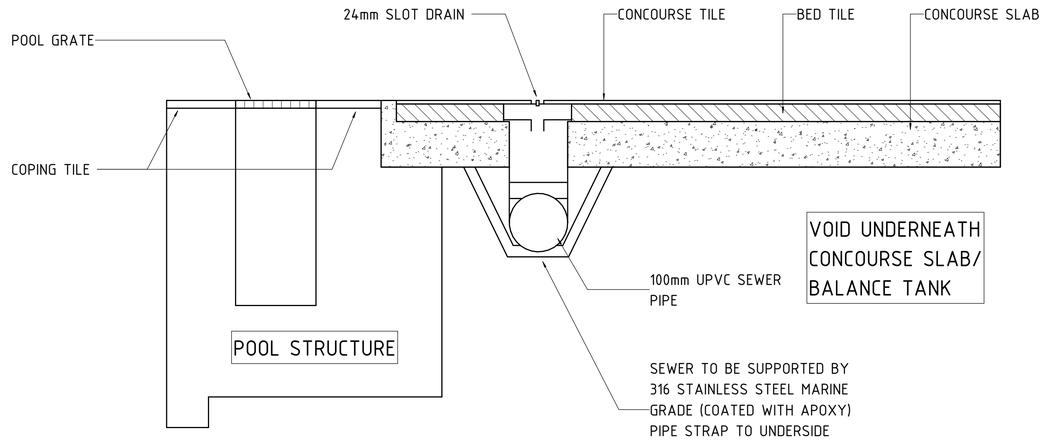
WC CLEAROUT DETAIL

NOT TO SCALE



HYDRANT/HOSE REEL ARRANGEMENT WITH FIRE TELEPHONE

NOT TO SCALE



POOL CONCOURSE DRAINAGE CROSS-SECTION

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DRAWING TITLE: HYDRAULIC SERVICES DETAILS SHEET

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SCALE	SIZE	REVISION
	A1	1

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23142	H5101