RIVERSIDE ESTATE STAGE 1A AND 1B

SEWAGE PUMP STATION

BLOCK 1 SECTION 3

RIVERSIDE

DRAWING LIST	
DRG No.	TITLE
SD-4100	STANDARD DRAWING SEWAGE PUMP STATIONS COVER SHEET AND DRAWING LIST
SD-4101	STANDARD DRAWING SEWAGE PUMP STATIONS LOCALITY PLAN
SD-4102	STANDARD DRAWING SEWAGE PUMP STATIONS GENERAL NOTES
SD-4103	STANDARD DRAWING SEWAGE PUMP STATIONS TYPICAL HYDRAULIC PROFILE
SD-4104	STANDARD DRAWING SEWAGE PUMP STATIONS TYPICAL PUMP & PRESSURE MAIN CURVES
SD-1200	STANDARD DRAWING SEWAGE PUMP STATIONS TYPICAL PIPING AND INSTRUMENTATION DIAGRAM
SD-4106	STANDARD DRAWING SEWAGE PUMP STATIONS VALVE PIT AND FLOWMETER PIT PIPE AND VALVE SUPPORT DETAILS
SD-4107	STANDARD DRAWING SEWAGE PUMP STATIONS GRAVITY AND NON-THRUST PIPELINES PIPE PENETRATION DETAILS
SD-4108	STANDARD DRAWING SEWAGE PUMP STATIONS PRESSURE AND THRUST RESTRAINED PIPELINES PIPE PENETRATION DETAILS
SD-4110	STANDARD DRAWING SEWAGE PUMP STATIONS MECHANICAL ITEMS LIST
SD-4120	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 1 SITE PLAN
SD-4121	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 1 GENERAL ARRANGEMENT PLAN
SD-4122	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 2 SITE PLAN
SD-4123	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 2 GENERAL ARRANGEMENT PLAN
SD-4124	STANDARD DRAWING SEWAGE PUMP STATIONS GENERAL ARRANGEMENT SITE SECTIONS
SD-4125	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 1 VEHICLE MOVEMENT PLAN
SD-4126	STANDARD DRAWING SEWAGE PUMP STATIONS EXAMPLE SITE 2 VEHICLE MOVEMENT PLAN
SD-4130	STANDARD DRAWING SEWAGE PUMP STATIONS INLET MAINTENANCE HOLE
SD-4131	STANDARD DRAWING SEWAGE PUMP STATIONS INLET MAINTENANCE HOLE CONCRETE DETAILS
SD-4140	STANDARD DRAWING SEWAGE PUMP STATIONS WET WELL PLAN
SD-4141	STANDARD DRAWING SEWAGE PUMP STATIONS WET WELL MECHANICAL DETAILS
SD-4142	STANDARD DRAWING SEWAGE PUMP STATIONS WET WELL TOP SLAB DETAILS

DRG. No.	TITLE
SD-4143	STANDARD DRAWING SEWAGE PUMP STATIONS WET WELL CONCRETE DETAILS
SD-4150	STANDARD DRAWING SEWAGE PUMP STATIONS VALVE PIT PLAN
SD-4151	STANDARD DRAWING SEWAGE PUMP STATIONS VALVE PIT SECTIONS
SD-4152	STANDARD DRAWING SEWAGE PUMP STATIONS VALVE PIT CONCRETE DETAILS
SD-4160	STANDARD DRAWING SEWAGE PUMP STATIONS FLOW METER PIT PLAN AND SECTION
SD-4161	STANDARD DRAWING SEWAGE PUMP STATIONS FLOW METER PIT CONCRETE DETAILS
SD-4170	STANDARD DRAWING SEWAGE PUMP STATIONS EMERGENCY STORAGE TANK PLAN AND SECTIONS
SD-4171	STANDARD DRAWING SEWAGE PUMP STATIONS EMERGENCY RELIEF STRUCTURES GAS CHECK MAINTENANCE HOLE AND OUTLET STRUCTURE PLAN AND SECTIONS
SD-4172	STANDARD DRAWING SEWAGE PUMP STATIONS EMERGENCY RELIEF STRUCTURES GAS CHECK MAINTENANCE HOLE CONCRETE DETAILS
SD-4173	STANDARD DRAWING SEWAGE PUMP STATIONS EMERGENCY RELIEF STRUCTURES OVERFLOW PIPE PLAN AND LONG SECTION
SD-4180	STANDARD DRAWING SEWAGE PUMP STATIONS VENTILATION SYSTEM GENERAL ARRANGEMENTS
SD-4181	STANDARD DRAWING SEWAGE PUMP STATIONS VENTILATION SYSTEM DETAILS
SD-4190	STANDARD DRAWING SEWAGE PUMP STATIONS BYPASS PUMP CONNECTION POINT GENERAL ARRANGEMENT AND CONCRETE DETAILS
SD-4300	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS MISCELLANEOUS DETAILS
SD-4301	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS SAFETY SIGNAGE
SD-4305	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS STANCHION STYLE HATCH STAY DETAILS
SD-4330	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS INLET MH, GAS CHECK MH AND EMERGENCY STORAGE TANK ACCESS HATCH DETAILS
SD-4340	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS WET WELL ACCESS FRAME DETAILS
SD-4341	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS WET WELL ACCESS FRAME SECTIONS AND DETAILS SHEET 1
SD-4342	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS, WET WELL ACCESS FRAME SECTIONS AND DETAILS SHEET 2
SD-4343	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS, WET WELL ACCESS HATCH AND SAFETY GRATE DETAILS
SD-4350	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS, VALVE PIT AND FLOW METER PIT, HOT DIP GALVANISED STEEL DROP IN COVER FRAME DETAILS
SD-4351	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS, VALVE PIT AND FLOW METER PIT, HOT DIP GALVANISED STEEL HINGED FOR INCLINED RUNG LADDERS DETAILS HINGED ACCESS HATCH DETAILS
SD-4370	STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS, EMERGENCY STORAGE TANK INSTRUMENTATION HATCH, FRAME, HATCH AND SAFETY GRATE DETAILS

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

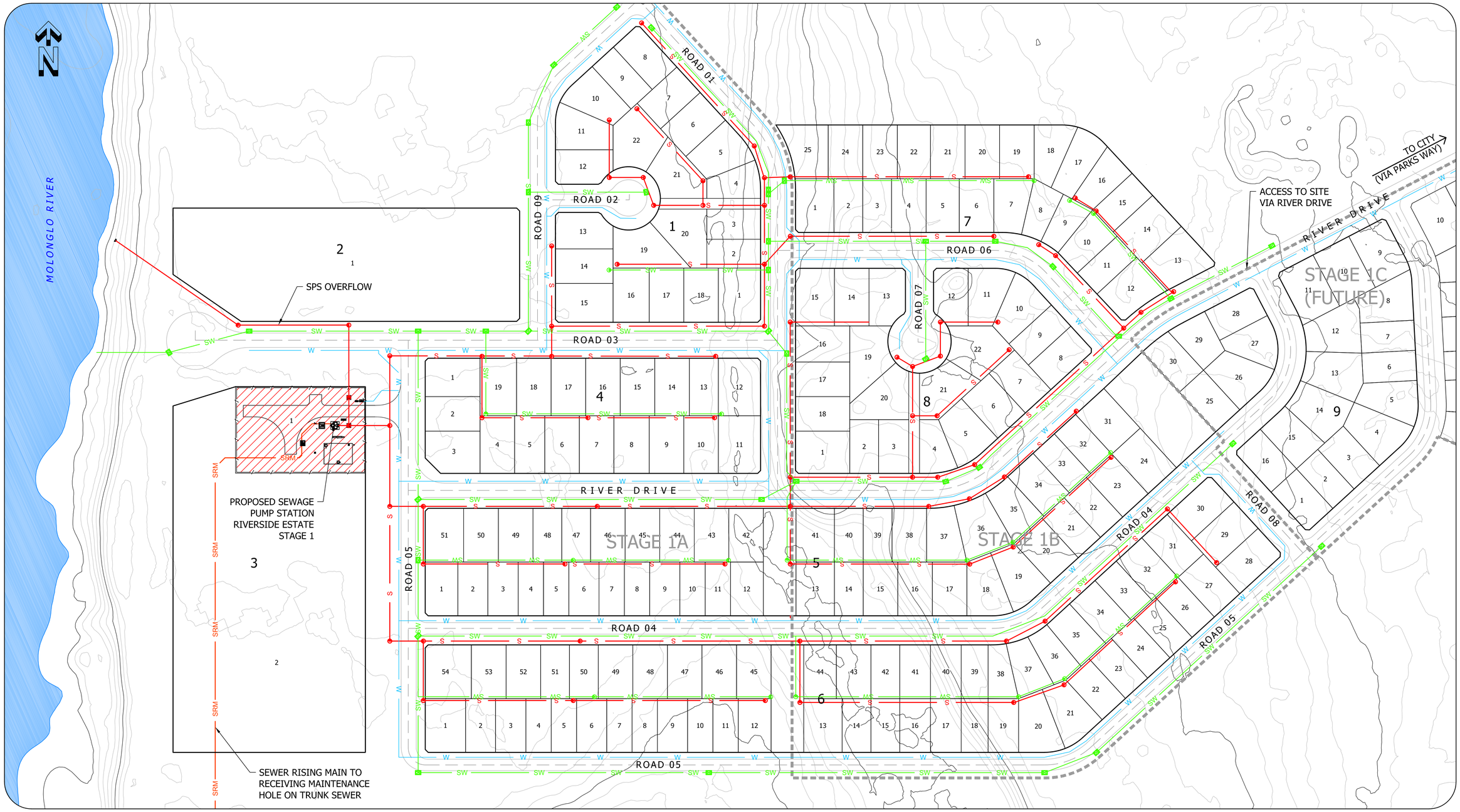
STANDARD DRAWING
SEWAGE PUMP STATIONS
COVER SHEET AND DRAWING LIST

DRAWING STATUS
Current

SD-4100-C

A1

ISSUE A



0 20 40 60 80 100m

SCALE 1:1000

LOCATION PLAN - RIVERSIDE ESTATE STAGE 1A AND 1B SEWAGE PUMP STATION

SCALE 1:1000

LEGEND

- S — PROPOSED SEWER
- SRM — PROPOSED SEWER RISING MAIN
- W — PROPOSED WATER
- SW — PROPOSED STORMWATER
- RIVER/STREAM - 1% AEP LEVEL
- LOCATION OF WORKS

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW	X		
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
LOCALITY PLAN

DRAWING STATUS: Current

SD-4101-C

A1

ISSUE: A

Date Plotted: 10/02/2026 Plot Style: Water.ctb Plotted by: Matusiak, Matthew
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GENERAL

1. ALL MATERIALS, INSTALLATION AND WORKMANSHIP SHALL COMPLY WITH ICON WATER STANDARDS AND THE RELEVANT AUSTRALIAN STANDARDS.
2. UNLESS NOTED OTHERWISE, ALL:
   - DIMENSIONS ARE STATED IN MILLIMETERS.
   - REDUCED LEVELS ARE STATED IN METERS REFERENCING AUSTRALIAN HEIGHT DATUM (AHD).
   - COORDINATES ARE STATED IN METERS, REFER STD-SPE-G-004 FOR COORDINATE SYSTEM DETAILS.
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING DRAWINGS.
4. ALL RELEVANT DIMENSIONS SHALL BE CHECKED BY THE CONSTRUCTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
5. MEMBER OR COMPONENT SIZES SHALL NOT BE OBTAINED BY SCALING DRAWINGS. ALL RELEVANT DIMENSIONS SHALL BE CHECKED BY THE FABRICATOR AND/OR CONSTRUCTOR PRIOR TO THE COMMENCEMENT OF FABRICATION AND CONSTRUCTION ACTIVITIES.

PIPEWORK

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ICON WATER APPROVED PRODUCTS LIST AND ALL ICON WATER "SD SERIES" DRAWINGS THAT RELATE TO THE MANUFACTURE, FABRICATION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF PIPEWORK.
2. PIPEWORK SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
   - FOR GRAVITY SEWERAGE NETWORK, IT SHALL COMPLY WITH THE REQUIREMENTS OF WSA 02 AS AMENDED/SUPPLEMENTED BY ICON WATER SPECIFICATION STD-SPE-G-011.
   - FOR THE PIPEWORK WITHIN THE SEWAGE PUMPING STATION OR RISING MAIN, IT SHALL COMPLY WITH THE REQUIREMENTS OF WSA 04 AS AMENDED / SUPPLEMENTED BY ICON WATER SPECIFICATION STD-SPE-G-010.
3. ONLY PRODUCTS AND MATERIALS LISTED IN THE ICON WATER APPROVED PRODUCTS LIST AND/OR SPECIFICALLY DETAILED ON THE PROJECT SPECIFIC DRAWINGS SHALL BE INSTALLED. NO OTHER PRODUCTS AND MATERIALS SHALL BE USED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ICON WATER REPRESENTATIVE.
4. UNLESS NOTED OTHERWISE IN PROJECT SPECIFIC CONSTRUCTION DOCUMENTATION, ALL WELDS AT PIPE JOINTS SHALL BE FULL PENETRATION WELDS AND DETAILED WELDING PROCEDURES SHALL BE SUBMITTED TO THE ICON WATER REPRESENTATIVE FOR APPROVAL PRIOR TO THE COMMENCEMENT OF FABRICATION ACTIVITIES. NO WELDING SHALL OCCUR WITHOUT THE WRITTEN APPROVAL OF THE SUBMITTED WELDING PROCEDURES BY THE ICON WATER REPRESENTATIVE.
5. PROVIDE 3mm THICK FULL FACED EPDM GASKETS IN BETWEEN ALL FLANGES AS PER WSA-109:2021. JOINTING OF FLANGES TO BE CARRIED OUT IN ACCORDANCE WITH THE SUPPLIERS' INSTRUCTIONS.
6. WHERE DISSIMILAR METALS WOULD OTHERWISE BE IN CONTACT, INSULATING WASHERS AND SLEEVES DETAILED IN STD-SPE-G-006 APPROVED PRODUCTS LIST SHALL BE SPECIFIED FOR ALL CONNECTIONS.
7. REFER TO DRAWING SD-5010-D FOR FLANGED JOINTS CORROSION PROTECTION AND BOLTING REQUIREMENTS.
8. DUCTILE IRON PIPES AND FITTINGS SHALL COMPLY WITH REQUIREMENTS OF AS/NZS 2280. SP AND SO DI PIPEWORK SHALL BE CLASS PN35. FLANGED DUCTILE IRON PIPEWORK SHALL BE FLANGE CLASS. BURIED DI PIPEWORK SHALL BE PROTECTED BY POLYETHYLENE SLEEVING IN ACCORDANCE WITH AS 3680.

FOUNDATIONS

1. ALL TOPSOIL AND VEGETATION TO BE REMOVED BEFORE EXCAVATION.
2. AS SOON AS PRACTICABLE, THE EXPOSED FOUNDING LEVEL OF THE COMPACTED FOUNDATION TO BE SEALED WITH A 50MM THICK LAYER OF BLINDING CONCRETE.
3. A HEAVY DUTY POLYETHYLENE WATERPROOF MEMBRANE, TAPED, SEALED AND LOCATED AS SHOWN ON THE DRAWINGS, IS TO BE PLACED OVER BLINDING CONCRETE LAYERS, PRIOR TO POURING CONCRETE.
4. GROUND CONDITIONS CONSIDERED IN DESIGN SHALL BE VERIFIED ON SITE DURING CONSTRUCTION IN ACCORDANCE WITH PROJECT REQUIREMENTS.

CONCRETE

1. UNLESS NOTED OTHERWISE, THE CONCRETE DIMENSIONS SHOWN DO NOT INCLUDE THE THICKNESS OF ANY APPLIED SURFACE COATINGS / FINISHES.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS 1379, AS 1478, AS 2159, AS 3582, AS 3600, AS 3610, AS 3972, AS 3735, AS 5100.5 AND ICON WATER SPECIFICATION STD-SPE-C-001.
3. CONSTRUCTION TOLERANCES AND SURFACE FINISHES SHALL BE IN ACCORDANCE WITH AS 3610 AND ICON WATER SPECIFICATION STD-SPE-C-001.
4. NO ADMIXTURES ARE TO BE USED UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ICON WATER REPRESENTATIVE.
5. UNLESS NOTED OTHERWISE, ALL EXPOSED EDGES AND CORNERS SHALL BE PROVIDED WITH 25mm FILLETS OR CHAMFERS (EXCEPT AT ACCESS COVERS).
6. NO HOLES, CHASES, EMBEDMENT OF PIPES OR CONDUITS OTHER THAN THOSE SHOWN ON EITHER THE ICON WATER "SPS SD SERIES" DRAWINGS OR PROJECT SPECIFIC DRAWINGS ARE ALLOWED IN CONCRETE MEMBERS OR STRUCTURES WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ICON WATER REPRESENTATIVE.
7. CONSTRUCTION JOINTS SHALL ONLY BE FORMED WHERE SPECIFICALLY SHOWN ON THE ICON WATER "SPS SD SERIES" DRAWINGS OR PROJECT SPECIFIC DRAWINGS.
8. ANY HARDENED CONCRETE SURFACE AGAINST WHICH FRESH CONCRETE IS TO BE PLACED SHALL BE CLEAN, FREE FROM LAITANCE AND ROUGHENED TO EXPOSE AGGREGATE TO A DEPTH OF 5mm. COAT THE EXISTING CONCRETE SURFACE WITH NEAT CEMENT SLURRY PRIOR TO PLACING NEW CONCRETE CEMENT SLURRY. THE NEAT CEMENT SLURRY COATING SHALL BE APPLIED NO MORE THAN 15 MINUTES PRIOR TO PLACING THE NEW (FRESH) CONCRETE.
9. FINISHED CONCRETE SHALL BE A DENSE, HOMOGENEOUS MASS WHICH SHALL COMPLETELY FILL THE FORMWORK, THOROUGHLY EMBED THE REINFORCEMENT AND BE FREE OF STONE POCKETS.
10. MECHANICAL COMPACTORS SHALL ONLY BE USED FOR COMPACTION PURPOSES AND NOT FOR THE SPREADING OF CONCRETE.
11. CURING OF ALL CONCRETE SHALL BE ACHIEVED BY KEEPING ALL SURFACES THOROUGHLY WET FOR A PERIOD OF 7 DAYS. CURING COMPOUNDS MAY BE USED WHERE NO FLOOR FINISH IS PROPOSED IF PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ICON WATER REPRESENTATIVE. POLYETHYLENE SHEETING OR WET HESSIAN MAY BE USED ON THE CONDITION THAT IT IS PROTECTED FROM WIND AND TRAFFIC.
12. THE DESIGN, CONSTRUCTION AND PERFORMANCE OF ALL FORMWORK AND FALSEWORK SHALL BE CERTIFIED BY A SUITABLY QUALIFIED AND COMPETENT STRUCTURAL ENGINEER.
13. CONSTRUCTION SUPPORT PROPPING SHALL BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE AND UNDUE EARLY AGE CONCRETE DEFLECTION DUE TO CONSTRUCTION LOADING.
14. CONCRETE QUALITY CONTROL TESTING SHALL BE IN ACCORDANCE WITH ICON WATER SPECIFICATION STD-SPE-C-001 AND THE PROJECT SPECIFIC DOCUMENTATION.
15. NO CONCRETE, MORTAR OR GROUT SHALL BE SUPPLIED/DELIVERED BEFORE THE CONFORMANCE OF ALL CONSTITUENT MATERIALS IS VERIFIED BY TEST CERTIFICATES FROM A NATA REGISTERED LABORATORY AND THE ICON WATER REPRESENTATIVE HAS PROVIDED APPROVAL.
16. ALL WATER USED FOR MIXING CONCRETE, GROUT AND MORTAR SHALL MEET THE REQUIREMENTS OF AS 1379 SECTION 2.4.
17. CONCRETE ENCASEMENT OF A MINIMUM OF 100 MM COVER SHALL BE PROVIDED ON BOTH SIDES OF PUDDLE/THRUST FLANGES WHEN PIPEWORK IS EMBEDDED THROUGH CONCRETE STRUCTURES UNLESS NOTED OTHERWISE ON THE PROJECT SPECIFIC DRAWINGS.
18. STRUCTURAL CONCRETE TO BE MIN GRADE 40MPa MEETING REQUIREMENTS OF WATER SERVICES ASSOCIATION WSA114, EXCEPT AS MODIFIED BELOW:
    a. MINIMUM CEMENT CONTENT OF 450kg/m3
    b. TOTAL AMOUNT OF SUPPLEMENTARY CEMENTITIOUS MATERIAL SHALL NOT BE MORE THAN 60% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.
    c. TOTAL SLAG CONTENT SHALL NOT BE MORE THAN 50% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.
    d. TOTAL FLY ASH CONTENT SHALL NOT BE MORE THAN 2% BY WEIGHT OF THE TOTAL CEMENT MATERIAL.
    e. DRYING SHRINKAGE STRAIN AT 56 DAYS SHALL NOT BE MORE THAN 600 X 10-6.
19. BLINDING CONCRETE QUALITY (TO AS 3972)
    a. CLASS: GRADE 15
    b. CEMENT: AS 3972 TYPE GP (GENERAL PURPOSE)
    c. CHARACTERISTIC COMPRESSIVE STRENGTH AT 28 DAYS F'C: 15MPa
    d. MAX AGGREGATE SIZE: 20mm
20. GRADE S50 CONCRETE FOR PRECAST ELEMENTS. GRADE S40 CONCRETE FOR CAST IN-SITU ELEMENTS.

REINFORCEMENT

1. ALL REINFORCEMENT SHALL BE SECURED IN POSITION TO PREVENT DISPLACEMENT DURING POURING AND OTHER CONSTRUCTION ACTIVITIES, AND IT SHALL BE PLACED SUCH THAT THE PROJECT SPECIFIC CONCRETE COVER REQUIREMENT IS MET. APPROVED CHAIRS, SPACERS, LIGATURES AND TIES SHALL BE USED TO ACHIEVE THIS.
2. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY IN THE DRAWINGS AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.
3. ALL COG LENGTHS AND HOOK DIAMETERS SHALL BE IN ACCORDANCE WITH AS 3600 UNLESS NOTED OTHERWISE.
4. ALL REINFORCEMENT SHALL BE INSPECTED AND APPROVED BY THE ICON WATER REPRESENTATIVE PRIOR TO PLACING CONCRETE.
5. SPLICE REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE PROJECT SPECIFIC DRAWINGS OR AS APPROVED BY THE ICON WATER REPRESENTATIVE. STAGGER LAPS WHERE POSSIBLE. LAP SPLICE LENGTHS SHALL COMPLY WITH AS 3600. THE CLEAR SPACING BETWEEN LAPPED BARS SHALL BE LESS THAN 3 x BAR DIAMETER.
6. JOGGLE TO BARS TO BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS UNLESS NOTED OTHERWISE.
7. WELDING OF REINFORCEMENT IS ONLY PERMITTED WHERE SHOWN ON THE PROJECT SPECIFIC DRAWINGS OR OTHERWISE AS APPROVED BY THE ICON WATER REPRESENTATIVE. WHERE WELDING OF REINFORCEMENT IS APPROVED, IT SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1554 PART 3.
8. REFER TO THE PROJECT SPECIFIC DRAWINGS FOR ELECTRICAL BONDING REQUIREMENTS.
9. THE USE OF PROPRIETARY REBAR COUPLERS IS ONLY PERMITTED UPON APPROVAL OF ICON REPRESENTATIVE.
10. ALL STEEL REINFORCING MATERIALS (INCLUDING FABRIC) SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 4671.
    - REINFORCEMENT SYMBOLS:
      N - DENOTES GRADE 500N DEFORMED BARS.
      R - DENOTES GRADE 250N ROUND BARS.
      SL - DENOTES GRADE 500L DEFORMED SQUARE FABRIC.
      RL - DENOTES GRADE 500L DEFORMED RECTANGULAR FABRIC
11. CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE SHOWN:
    a. EXTERNAL FORMED SURFACES: 50mm
    b. INTERNAL FORMED SURFACES: 75mm
    c. UNFORMED SURFACES: 50mm
    d. CAST AGAINST GROUND: 60mm WITH PROTECTIVE MEMBRANE.
12. MINIMUM LAP LENGTHS FOR MESH TO BE TWO CROSS WIRES PLUS 25mm.

STEELWORKS

1. SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING DRAWINGS. SETTING-OUT DIMENSIONS AND ALL RELEVANT SITE DIMENSIONS SHALL BE CHECKED BY THE CONSTRUCTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL MATERIALS, FABRICATION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS/NZS 1554, AS 4100, ICON WATER SPECIFICATION STD-SPE-C-001 AND THE ICON WATER APPROVED PRODUCTS LIST.
3. SHOP DRAWINGS SHALL BE PREPARED BY THE CONSTRUCTOR FOR ALL STRUCTURAL STEELWORK AND SHALL BE SUBMITTED TO THE ICON WATER REPRESENTATIVE AT LEAST TEN (10) WORKING DAYS PRIOR TO FABRICATION FOR A GENERAL REVIEW. SUCH A GENERAL REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS.
4. ALL SHOP DRAWINGS SHALL SPECIFICALLY STATE:
   - THE GRADE OF SANDBLASTING
   - PAINT BRAND, TYPE AND FILM THICKNESS
   - WELD CATEGORY
5. ALL CONNECTION AND STIFFENER PLATES SHALL BE 10mm THICK UNLESS NOTED OTHERWISE.
6. THE CONSTRUCTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL ELEMENTS, WHETHER OR NOT THESE ARE DETAILED ON THE DRAWINGS.
7. ALL SURFACES SHALL BE FREE OF BURRS AND SHARP EDGES. ALL CUT EDGES SHALL BE ROUNDED TO A 2mm RADIUS.
8. DURING TRANSPORT, OFF-LOADING, STORAGE AND ERECTION, ALL COATINGS SHALL BE PROTECTED FROM DAMAGE AND DETERIORATION.
9. DURING CONSTRUCTION, ALL STRUCTURES SHALL BE MAINTAINED IN A SAFE AND STABLE CONDITION AND NO PART SHALL BE OVER-STRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONSTRUCTOR AS REQUIRED TO KEEP THE WORKS STABLE AT ALL TIMES. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY TEMPORARY WORKS.
10. THE FABRICATION AND ERECTION OF ALL STRUCTURAL STEELWORK SHALL BE SUPERVISED BY AN ENGINEER EXPERIENCED IN SUCH SUPERVISION TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET.
11. ALL STEELWORK RELATING TO FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS SHALL BE IN ACCORDANCE WITH AS 1657 AS AMENDED/SUPPLEMENTED BY ICON WATER SPECIFICATIONS STD-SPE-G-008 AND 009.
12. ALL HANDRAILS SHALL BE FULLY WELDED "MONOWILLS" TUBULAR HANDRAIL AND STANCHION SYSTEMS OR APPROVED EQUIVALENT. THE INSTALLATION OF ON-SITE CLAMP OR BOLT-TOGETHER HANDRAIL SYSTEMS IS PROHIBITED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ICON WATER REPRESENTATIVE OR SUCH SYSTEMS ARE CURRENTLY LISTED IN THE ICON WATER APPROVED PRODUCTS LIST.
13. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL GRATING SHALL BE WEBFORGE PATTERN C, BANDED ALL-ROUND.
14. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL PLATE, BAR, ROD AND SECTIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS:
    - PLATE: GRADE 250 TO AS 3678
    - HOT ROLLED SECTIONS: 300 PLUS TO AS 3679
    - FLAT BARS AND RODS: GRADE 300 TO AS 3679 44.
15. STAINLESS STEEL GRADE 316L TO ASTM: A480/M, A167, A176 ABD A666 PLATE, HOT ROLLED SECTIONS, FLAT BAR AND ROD SHALL BE USED FOR ENVIRONMENTS DEEMED TO BE "HIGH", "IMMERSION" OR "EXTREME" IN ACCORDANCE WITH TABLE 2.1 OF WSA 201. DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH AS/NZS 4673 AND EUROCODE3: EN1993-1-4.

WELDING

1. UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE CATEGORY SP TO AS/NZS 1554 WITH 100% OF ALL WELDS REQUIRING A VISUAL INSPECTION AND 10% OF ALL WELDS REQUIRING ULTRASONIC TESTING.
2. ALL FILLET WELDS SHALL BE 6mm CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE.
3. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS.
4. WELDING ELECTRODES SHALL BE E48XX/W50X TO AS/NZS 1553 UNLESS NOTED OTHERWISE.
5. ALL STAINLESS STEEL WELDS SHALL BE PICKLED AND PASSIVATED IN ACCORDANCE WITH ASTM A380 AFTER FABRICATION AND PRIOR TO INSTALLATION.

CORROSION PROTECTION AND COATINGS

1. WHERE CARBON STEEL ITEMS HAVE BEEN INDICATED AS "GALVANISED", "GALV", "HDG" OR HOT DIP GALVANISED", SUCH ITEMS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680 AFTER FABRICATION. THE USE OF "COLD GALVANISING" IS PROHIBITED UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ICON WATER REPRESENTATIVE.
2. HOT DIP GALVANISED STRUCTURES SHALL BE FREE OF EXCESSIVE BUILD-UP OF GALVANISING AND SHALL BE FREE OF SHARP FORMATIONS. THE GALVANISING THICKNESS SHALL BE UNIFORM. STEELWORK TO BE GALVANISED SHALL HAVE DRAIN HOLES AND BREATHER HOLES TO ALLOW ACCESS AND EGRESS OF MOLTEN ZINC ALLOY AND AIR. ALL HOLES SHALL BE HERMETICALLY SEALED BY RUBBER STOPPER.
3. ALL STEELWORK COATINGS, INCLUDING REPAIR OR TOUCH-UP COATINGS, SHALL BE IN ACCORDANCE WITH WSA 201 AS AMENDED BY ICON WATER SPECIFICATION STD-SPE-G-005.
4. STAINLESS STEEL ITEM FINISH SHALL BE SUCH THAT FORMS GRAIN MARKS IN THE DIRECTION OF FALL/SLOPE.
5. INSULATING MATERIAL SHALL BE PLACED BETWEEN ALL DISSIMILAR METALS (INCLUDING BOLTED JOINTS). FOR EXAMPLE, NEOPRENE RUBBER STRIPS, NON-FIBRE TYPE INSULATING WASHERS, SLEEVES AND FERRULES, "DENSO" TAPE ETC.
6. ALL UNPAINTED METALWORK, WITH THE EXCEPTION OF ALUMINIUM AND STAINLESS STEEL, SHALL BE PAINTED IN ACCORDANCE WITH AS 2700. PAINTING TO WSA 201 AND ICON WATER SUPPLEMENT STD-SPE-G-005.
7. POLYETHYLENE SLEEVING COMPLYING WITH THE REQUIREMENTS OF AS 3680 SHALL BE APPLIED IN ACCORDANCE WITH AS 3681 EXTERNALLY FOR ALL DUCTILE IRON PIPES AND FITTINGS DN225 AND LARGER WHEN INSTALLED IN BURIED APPLICATIONS UNLESS:
   a. THE MANUFACTURER WARRANTS THAT SLEEVING IS NOT REQUIRED BASED ON SOIL RESISTIVITY TESTING EITHER THEY OR THEIR NOMINATED REPRESENTATIVE HAVE CONDUCTED ALONG THE PIPE ROUTE, OR
   b. WHEN SPECIFICALLY NOTED BY ICON WATER IN THE PROJECT DOCUMENTATION PACKAGE.
8. BURIED STEEL PIPES SHALL BE EITHER CONCRETE ENCASED, FUSION BONDED PE COATED, OR WRAPPED BY AN APPROVED CORROSION TAPING SYSTEM.

BOLTING, BASE PLATES AND CHEMICAL ANCHORS

1. GRADE 316 STAINLESS STEEL BOLTS, STUDS AND ANCHORS SHALL BE USED FOR THE WET WELL, INLET MAINTENANCE HOLE, EMERGENCY RELIEF SYSTEM AND EMERGENCY STORAGE STRUCTURE. ALL STAINLESS-STEEL THREADED FASTENERS SHALL BE COATED WITH AN APPROVED NICKEL-BASED ANTI SEIZE COMPOUND PRIOR TO ASSEMBLY (TO PREVENT GALLING). ALTERNATIVELY, MOLYBDENUM COATED BOLTS AND NUTS MAY BE USED.
2. ALL BOLTS, WASHERS AND NUTS SHALL BE ISO METRIC COARSE PITCH SERIES STRUCTURAL GRADE: A4-70 FOR 316 STAINLESS STEEL; PROPERTY CLASS 8.8 (WITH CLASS 8 NUTS) FOR HOT DIP GALVANISED STEEL (TO AS/NZS 1214 AND AS/NZS 1252) UNLESS OTHERWISE NOTED.
3. A HARDENED AND TEMPERED STRUCTURAL WASHER (TO AS/NZS 1252) SHALL BE PROVIDED UNDER EVERY NUT. A WASHER SHALL ALSO BE PROVIDED UNDER EACH BOLT HEAD WHEN A PROTECTIVE SURFACE COATING (OTHER THAN GALVANISING) HAS BEEN PROVIDED ON THE BOLTED MEMBER OR BOLTED COMPONENT.
4. THE BOLTING CATEGORY SHALL BE 8.8/S (SNUG TIGHT) AS PER AS 4100 UNLESS NOTED OTHERWISE.
5. EACH CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
6. COMMERCIAL GRADE BOLTS AND NUTS CONFORMING TO AS 1110, AS 1111 AND AS 1112 SHALL NOT BE USED FOR STRUCTURAL STEEL BOLTING.
7. GRADE 8.8 BOLTS SHALL NOT BE WELDED UNDER ANY CIRCUMSTANCES.
8. CLEARANCE HOLES FOR STRUCTURAL BOLTING PURPOSES SHALL HAVE A 2mm DIAMETRAL CLEARANCE WITH THE EXCEPTION OF HOLDING DOWN AND ANCHOR BOLTS WHICH SHALL HAVE A 4mm DIAMETRAL CLEARANCE. BOLTS LARGER THAN 24mm TO HAVE 3mm DIAMETRAL CLEARANCE.
9. HOLD DOWN ANCHOR BOLT HOLES MUST BE LESS THAN 6mm GREATER THAN BOLT SIZE. 4mm PLATE WASHER IS TO BE INSTALLED UNDER ALL ANCHOR BOLTS.
10. UNLESS NOTED OTHERWISE (E.G. DAVIT BASE HOLD DOWN BOLTS) ALL BOLTS SHALL EXTEND A MINIMUM OF TWO THREADS PAST THE NUT BUT NO MORE THAN FIVE FULL THREADS PAST THE NUT.
11. ALL BASE PLATES SHALL HAVE A MINIMUM OF 20mm AND MAXIMUM 50mm OF HIGH STRENGTH NON-SHRINK GROUT PROVIDED BETWEEN THE UNDERSIDE OF THE BASE PLATE AND THE CONCRETE. THE GROUT SHALL BE INSTALLED SO THAT AIR POCKETS AND VOIDS DO NOT OCCUR. SURFACE PREPARATION AND GROUT APPLICATION TO BE DONE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
12. ALL STRUCTURAL BOLTS, NUTS AND WASHERS MUST BE ACCOMPANIED WITH COMPLIANCE CERTIFICATES TO SHOW THAT THEY ARE IN ACCORDANCE WITH AS/NZS 1252 AND AS/NZS 4291. SUCH CERTIFICATES SHALL BE ISSUED BY A NATA CERTIFIED TESTING AGENCY.
13. IF NOT SPECIFICALLY STATED ON THE DRAWINGS, REFER TO THE ICON WATER APPROVED PRODUCTS LIST FOR ACCEPTABLE CHEMICAL ANCHOR MAKES AND PART NUMBERS. ALL CHEMICAL ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WELDING AND HOT WORK ON INSTALLED CHEMICAL ANCHORS ARE NOT ALLOWED.

ALUMINIUM WORK

1. ALL MATERIALS, FABRICATION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS/NZS 1665, ICON WATER SPECIFICATION STD-SPE-S-001, THE ICON WATER APPROVED PRODUCTS LIST AND EITHER AS/NZS 1664.1 OR AS/NZS 1664.2.
2. ALL SURFACES SHALL BE FREE OF BURRS AND SHARP EDGES. ALL CUT EDGES SHALL BE ROUNDED TO A 2mm RADIUS.
3. WHEN TREADPLATE (AKA "CHEQUER PLATE") IS SPECIFIED FOR ACCESS HATCHES, ALL TREADS UNDER THE HATCH COVER HINGES, FIXING PLATES AND THE LIKE SHALL BE GROUND FLUSH. INSULATING MATERIAL SHALL BE INSTALLED BETWEEN ANY ALUMINIUM AND STEEL COMPONENT.
4. ALL WELDS SHALL BE IN ACCORDANCE WITH AS/NZS 1665.
5. ALUMINIUM COMPONENTS AND FABRICATIONS SHALL NOT BE PAINTED UNLESS NOTED OTHERWISE ON THE PROJECT SPECIFIC DESIGN DRAWINGS.
6. GRADE 316 STAINLESS STEEL (I.E. A4-70) BOLTS, NUTS, STUDS AND ANCHORS SHALL BE USED FOR ALL APPLICATIONS. ALL BOLTS AND NUTS SHALL BE ISO METRIC COARSE PITCH SERIES.
7. ALL ALUMINIUM WORK RELATING TO FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS SHALL BE IN ACCORDANCE WITH AS 1657 AS AMENDED/SUPPLEMENTED BY ICON WATER SPECIFICATIONS STD-SPE-G-008 AND 009.
8. UNLESS NOTED OTHERWISE, ALUMINIUM GRATING SHALL BE WEBFORGE PATTERN C, BANDED ALL-ROUND.
9. UNLESS NOTED OTHERWISE, ALUMINIUM PLATE, BAR, ROD, GRATING AND SECTIONS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND SHALL BE OF THE FOLLOWING GRADES:
   - FLAT PLATES (MILL FINISH): ALUMINIUM ALLOY 5083-H116.
   - FLAT BAR (MILL FINISH): ALUMINIUM ALLOY 6060-T5 AND 6063-T6.
   - TREADPLATE (5 BAR PATTERN): ALUMINIUM ALLOY 5052-H114.
   - EXTRUDED SECTIONS (MILL FINISH): ALUMINIUM ALLOY 6060-T5, 6063-T6 OR 6082-T5.
   - GRATING: ALUMINIUM ALLOY 6063-T6.

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Applicable Revision:

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

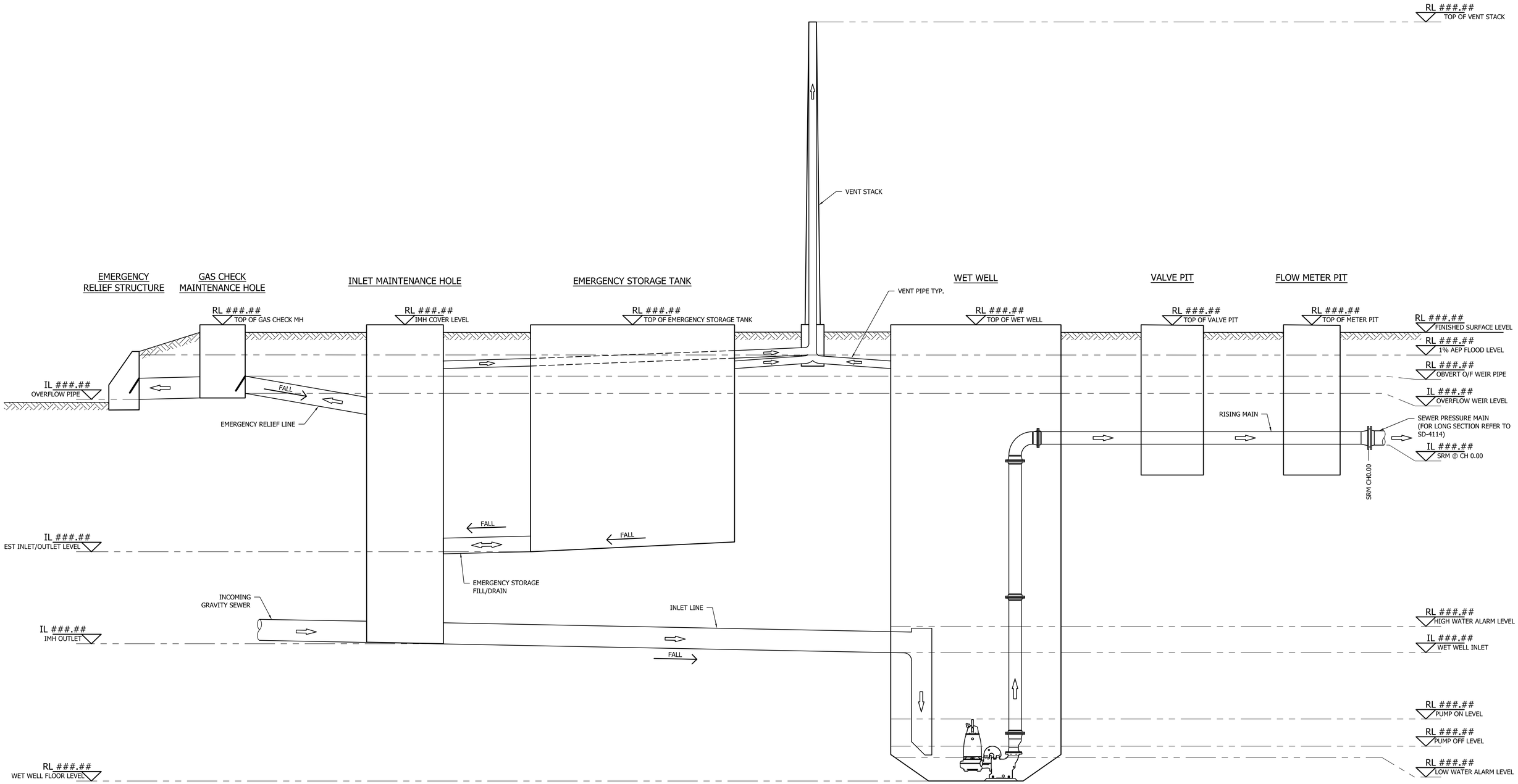
STANDARD DRAWING
SEWAGE PUMP STATIONS
GENERAL NOTES

DRAWING STATUS: Current

SD-4102-C

A1

ISSUE: A



INLET MAINTENANCE HOLE THROUGH TO SEWER RISING MAIN

SCALE: N.T.S.

NOTES:

1. LEVELS SHOWN AS ###.## TO BE PROVIDED AS PER THE SITE SPECIFIC REQUIREMENTS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matuszak	V. Meredith	S. Asadollahi

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BWS		WAT			STP			
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
TYPICAL HYDRAULIC PROFILE

DRAWING STATUS
Current

SD-4103-C

A1

ISSUE A

PUMP STATION & PRESSURE MAIN PERFORMANCE/SYSTEM CURVES

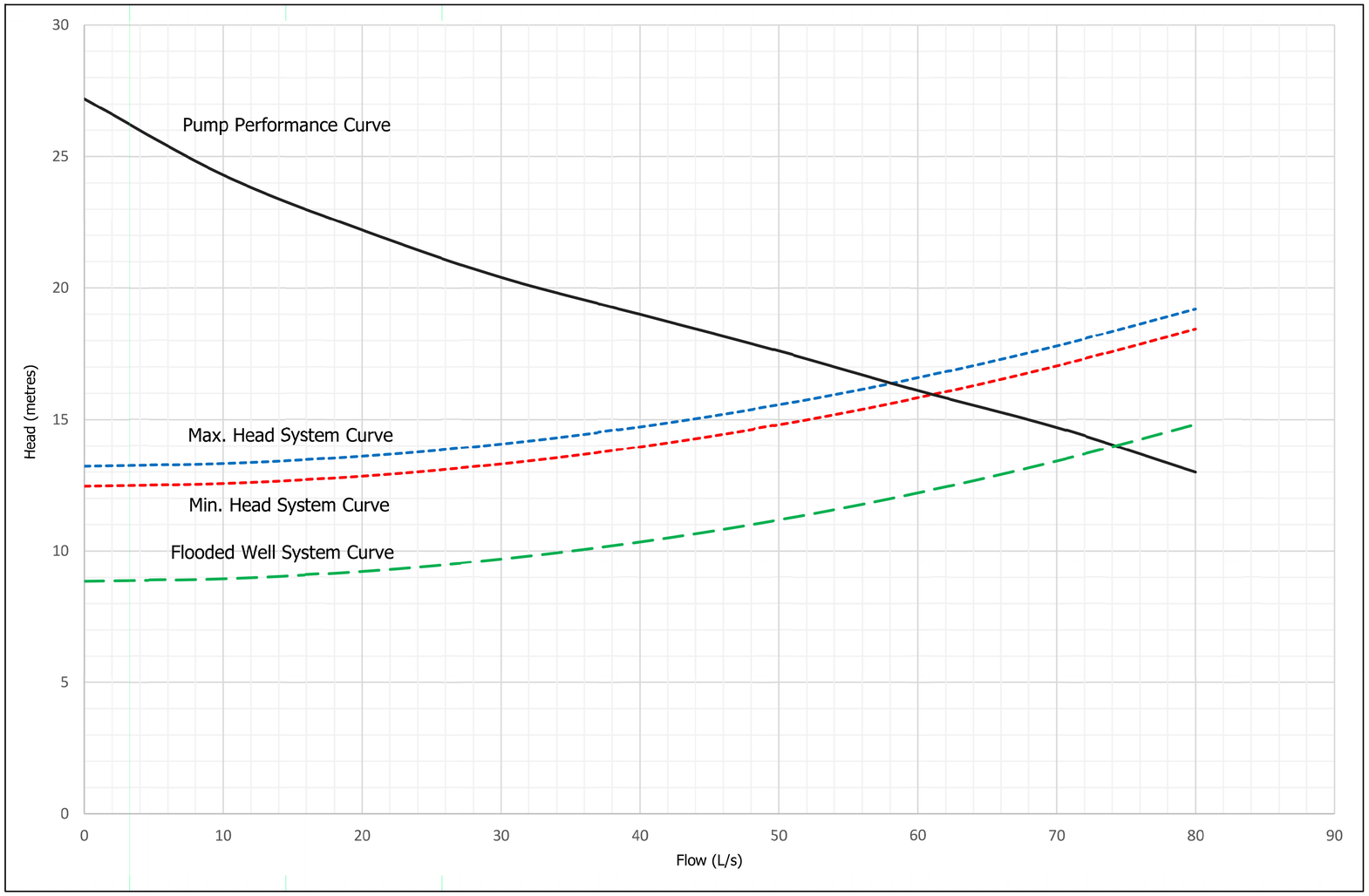

TABLE 1 - DESIGN DATA

FLOW ESTIMATION	
ADWF:	5.2 L/s
PDWF:	14.0 L/s
PWWF:	52.6 L/s
WET WELL	
PUMP ARRANGEMENT:	DUTY/STANDBY
PUMP MAKE:	ACME BRAND X
PUMP MODEL:	ABC1234
PUMP IMPELLER:	DIA. 261 mm
RATED POWER:	12.5 kW
OPERATING POINT - NORMAL OPERATION:	59.5 L/s @ 16.5 m
OPERATING POINT - WET WELL FLOODED:	74.2 L/s @ 14.0 m
WET WELL CONTROL VOLUME:	7.33 m^3
MAX. PUMP STARTS PER HOUR:	7.4
CUT-IN/CUT-OUT TIME AT ADWF:	134 s
CUT-IN/CUT-OUT TIME AT PDWF:	159 s
VALVE CHAMBER	
PIPING:	DN200 PN35 DICL
PIPE INTERNAL DIAMETER:	216 mm
DESIGN SPECIFIC ROUGHNESS:	0.30 mm
VELOCITY (NORMAL OPERATION):	1.55 m/s @ 60 L/s
VELOCITY (FLOODED OPERATION):	1.92 m/s @ 74.2 L/s
CONFIGURATION:	REF: DRAWING LMXXX-9999
PRESSURE MAIN	
PIPE:	DN315 PN16 SDR11 PE100
PIPE INTERNAL DIAMETER:	256 mm
LENGTH TO DISCHARGE MAINTENANCE HOLE:	490 m
DESIGN SPECIFIC ROUGHNESS:	0.60 mm
VELOCITY (NORMAL OPERATION):	1.17 m/s @ 60 L/s
VELOCITY (FLOODED OPERATION):	1.44 m/s @ 74.2 L/s
CONFIGURATION:	REF: DRAWING LMXXX-9999

NOTES

1. DESIGN SPECIFIC ROUGHNESS VALUES BASED ON "WALLINGFORD & BARR".
2. SYSTEM CURVES BASED ON COLEBROOK-WHITE AND DARCY-WEISBACH EQUATIONS.

NOTES:

1. EXAMPLE DATA AND NOTES PROVIDED. DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.
2. MULTI-STAGE DEVELOPMENTS WILL REQUIRE MULTIPLE PERFORMANCE CURVES AND DESIGN DATA SETS.

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BWS		WAT		STP			
WTP		SEW	X				
WPS		REC					

ASSET AREA APPLICABILITY

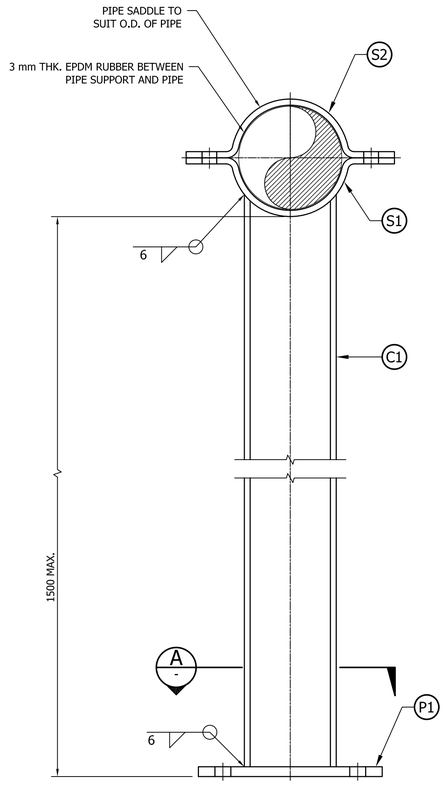
STANDARD DRAWING
SEWAGE PUMP STATIONS
TYPICAL PUMP & PRESSURE MAIN CURVES

DRAWING STATUS: Current

SD-4104-C

A1

ISSUE: A

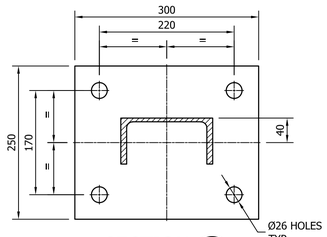


ELEVATION
VERTICAL PIPE SUPPORT - GALV. MILD STEEL
FOR PIPES ≤ DN300 ONLY

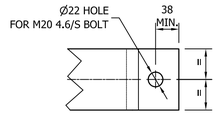
SCALE: 1 : 5

MATERIAL: CARBON STEEL
COATING: HOT DIP GALVANISED
FINISH COLOUR: N/A
MASS: APPROX. 45 kg @ 1500 HIGH

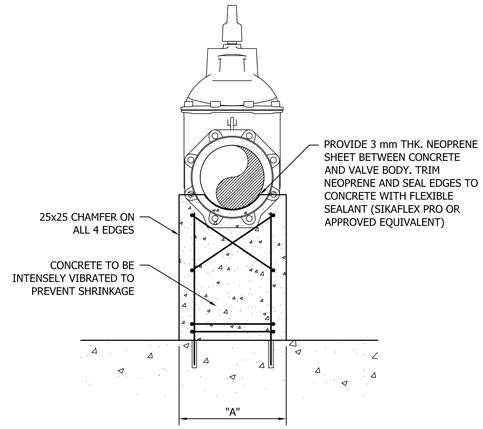
MEMBER SIZES		
MARK	DESCRIPTION	SIZE
C1	PIPE SUPPORT COLUMN	150 PFC
P1	BASE PLATE	16PL
S1	PIPE SADDLE BASE	100 x 10 FL
S2	PIPE SADDLE TOP	100 x 10 FL



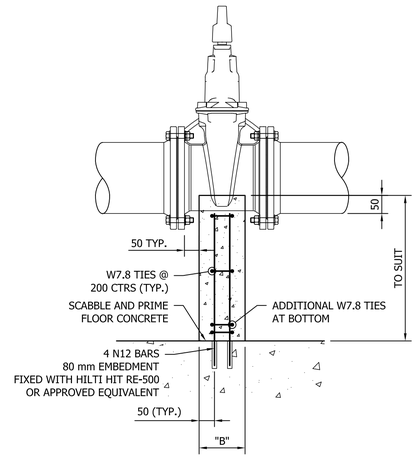
SECTION A
SCALE 1:2



ITEM S1, S2
DRILLING DETAILS
SCALE: 1 : 2



FRONT VIEW
SCALE N.T.S.



SIDE VIEW
VALVE SUPPORT - CONCRETE
SCALE N.T.S.

VALVE SUPPORT DIMENSIONS		
SIZE	"A"	"B"
GATE VALVES		
DN100	250	100
DN150	300	150
DN225	375	160
DN300	450	200
NON-RETURN VALVES		
DN100	250	150
DN150	300	250
DN225	300	250
DN300	450	250

NOTES:

1. REFER DRAWING SD-4102 FOR STEELWORK NOTES.
2. SUPPORT DESIGNED FOR VERTICAL LOADS ONLY.
3. PIPE SUPPORTS APPLICABLE TO FLANGED OR WELDED PIPES ONLY.
4. DESIGN LOAD CAPACITY (WORKING LOAD):
   - ≤ DN300 - 50 kN
5. OVERSIZE HOLD DOWN BOLT HOLES REQUIRE 4 mm PLATE WASHER INSTALLED UNDER BOTH NUT HEADS.
6. HOLD DOWN ANCHOR BOLTS TO BE M20 SS316 CHEMICAL ANCHORS.
7. 20 mm NON-SHRINK GROUT TO BE INSTALLED UNDER ALL PIPE SUPPORTS.
8. METAL PIPE SUPPORT IS PREFERRED. CONCRETE VALVE SUPPORT MAY BE USED WITH PRIOR APPROVAL BY ICON WATER.
9. PIPE SUPPORT TO BE INSTALLED IN ACCORDANCE WITH STD-SPE-C-001.

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DAM		RES			SPS		X
BWS		WAT			STP		
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

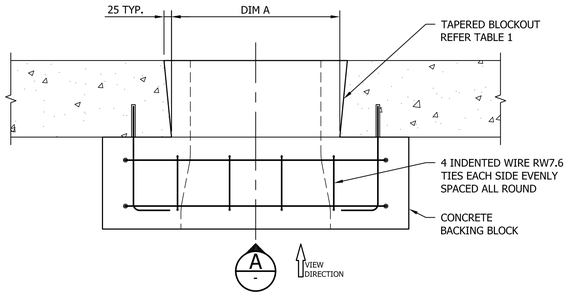
STANDARD DRAWING
SEWAGE PUMP STATIONS
VALVE PIT AND FLOWMETER PIT
PIPE AND VALVE SUPPORT
DETAILS

DRAWING STATUS: Current

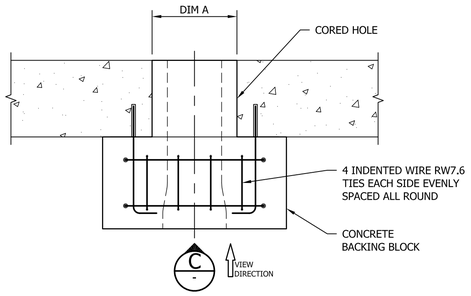
SD-4106-C

A1

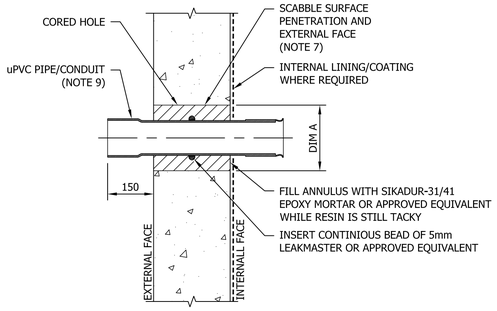
ISSUE: A



PLAN VIEW
SCALE N.T.S.



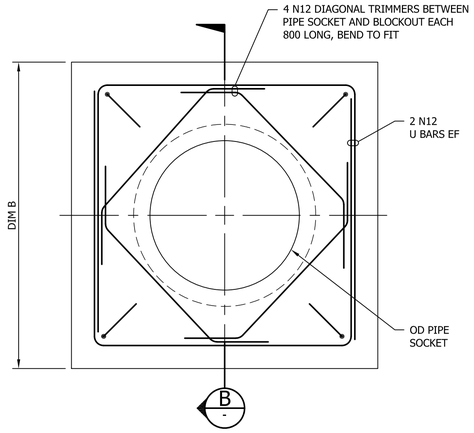
PLAN VIEW
SCALE N.T.S.



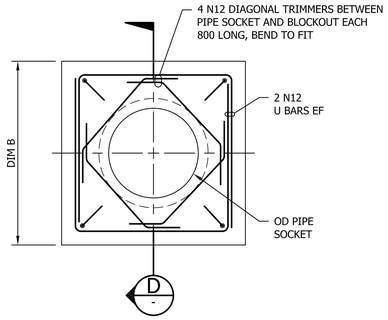
PENETRATION 3 - DN63 - DN300 uPVC PIPES/CONDUITS (NON-THRUST)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS SHOWN ARE BASED ON A SECTION THRU. THE CENTRE OF THE PIPE.
3. REFER DRAWING SD-4102 FOR CONCRETE AND REINFORCEMENT NOTES.
4. CORED HOLES LARGER THAN Ø300 NOT PERMITTED.
5. ALL PENETRATIONS SHALL BE AT RIGHT ANGLES TO THE WALL.
6. THE LOCATION OF THE PIPE PENETRATION SHALL BE DRY DURING INSTALLATION.
7. SCABBLE THE JOINT TO EXPOSE AGGREGATE TO A DEPTH OF 5mm AND WIRE BRUSH CLEAN AS A HOLD POINT, SATURATE JOINT WITH WATER AND REMOVE EXCESS IMMEDIATELY PRIOR TO PLACING GROUT, COAT SURFACE WITH SIKADUR-32 EPOXY OR APPROVED EQUIVALENT PRIOR TO POURING CONCRETE BACKING BLOCK. CONCRETE TO BE POURED WHILE EPOXY IS STILL TACKY.
8. DOWELS FIXED INTO WALL WITH HILTI HIT-RE500/RAMSET CHEMSET REO 502 INJECTION OR APPROVED EQUIVALENT, MIN 75 EDGE DISTANCE.
9. A LAYER OF SAND SHALL BE BONDED TO THE uPVC PIPE/CONDUIT WITH SOLVENT CEMENT OVER THE FULL LENGTH OF THE PENETRATION AFTER CLEANING WITH PRIMING FLUID. SAND COATING SHALL NOT BE APPLIED AT LOCATION OF HYDROPHILIC SEAL.
10. DETAIL OF PIPE PENETRATION THROUGH LINER INCLUDING STILLING AND TREATMENT MUST BE PROVIDED IN THE DESIGN IN CONSULTATION WITH LINER MANUFACTURER.



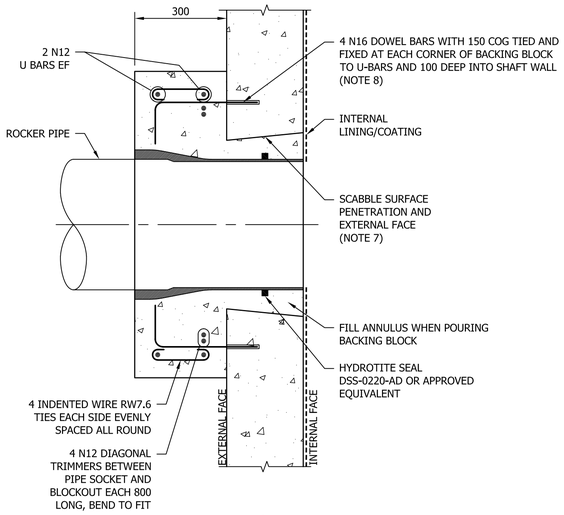
ELEVATION B
SCALE N.T.S.
(TIES NOT SHOWN FOR CLARITY)



ELEVATION D
SCALE N.T.S.
(TIES NOT SHOWN FOR CLARITY)

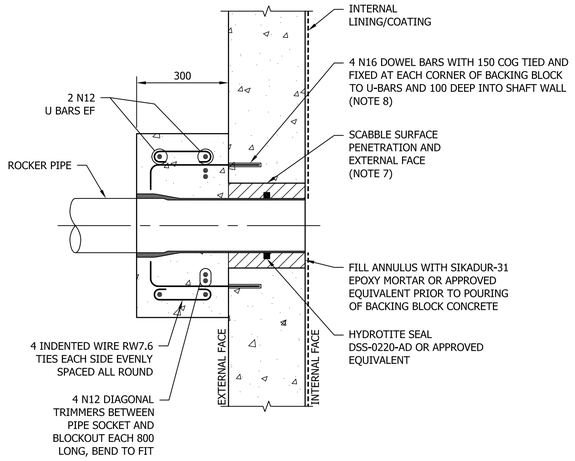
TABLE 1 - NON-THRUST PENETRATION DETAILS				
PIPE DN	DIM A CORE HOLE / TAPERED BLOCK OUT SIZE (EXT. Ø - INT. Ø)	DIM B BACKING BLOCK SIZE (SQ)	ROCKER PIPE LENGTH	
			L. MIN.	L. MAX.
<100	150*	N/A	160	240
100	200*	600x600	200	300
150	250*	600x600	300	450
225	300*	750x750	450	675
300	400-450	750x750	600	900
375	500-550	1000x1000	750	1125
450	550-600	1000x1000	900	1350
500	600-650	1000x1000	1000	1500
525	650-700	1000x1000	1050	1575

* DENOTES CORED HOLE



SECTION B
SCALE N.T.S.

PENETRATION 1 - DN300 - DN525 GRAVITY (NON-THRUST) PIPES



SECTION D
SCALE N.T.S.

PENETRATION 2 - DN100 - DN225 GRAVITY (NON-THRUST) PIPES

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
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REGISTERED ENGINEER
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Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

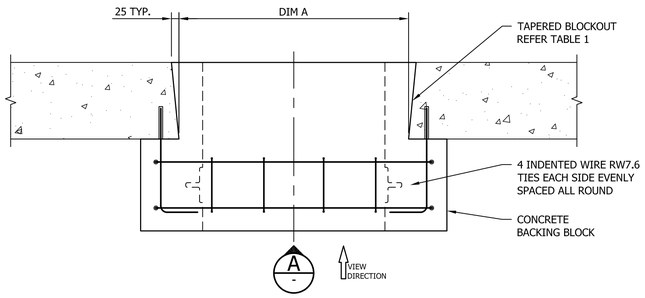
STANDARD DRAWING
SEWAGE PUMP STATIONS
GRAVITY AND NON-THRUST PIPELINES
PIPE PENETRATION DETAILS

DRAWING STATUS: Current

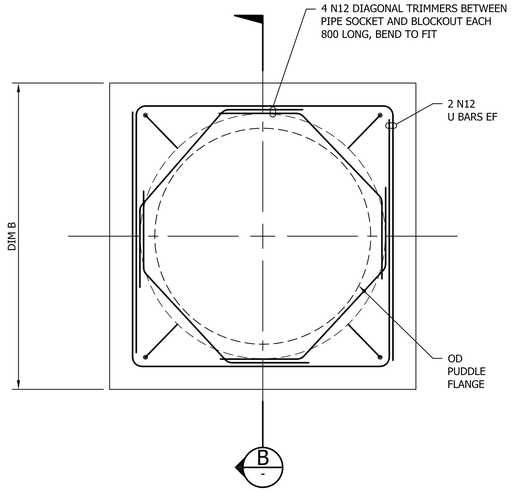
SD-4107-D

A1

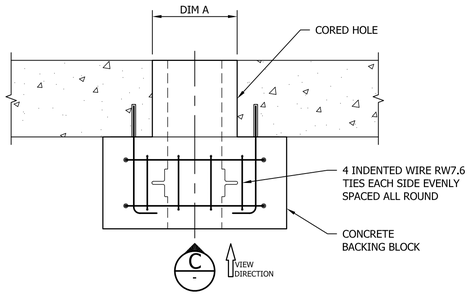
ISSUE: A



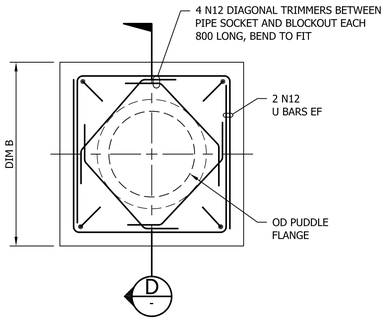
PLAN VIEW
SCALE N.T.S.



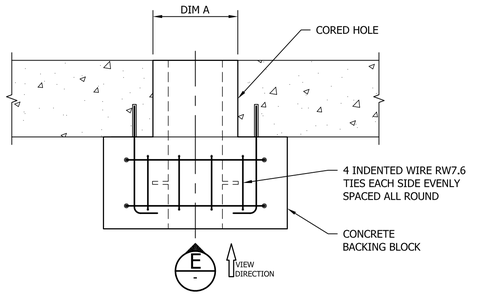
ELEVATION A
SCALE N.T.S.
(TIES NOT SHOWN FOR CLARITY)



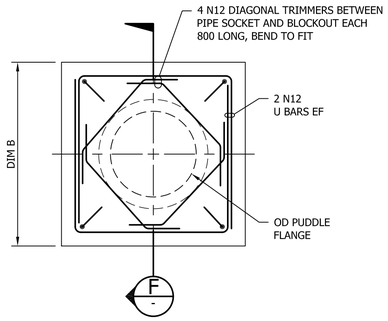
PLAN VIEW
SCALE N.T.S.



ELEVATION C
SCALE N.T.S.
(TIES NOT SHOWN FOR CLARITY)



PLAN VIEW
SCALE N.T.S.



ELEVATION E
SCALE N.T.S.
(TIES NOT SHOWN FOR CLARITY)

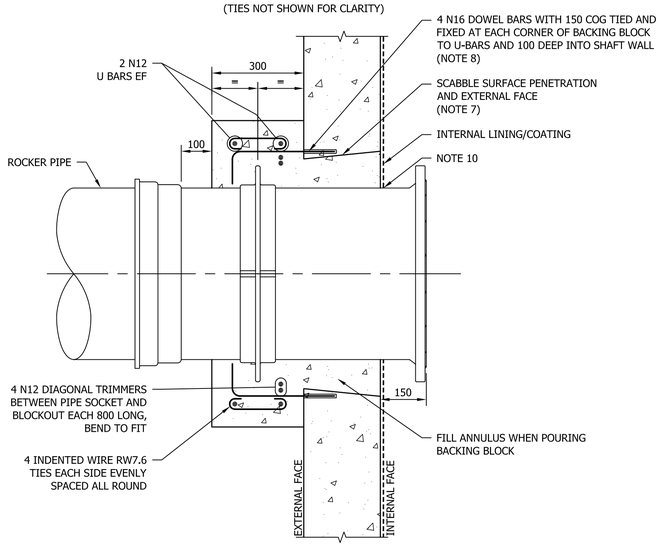
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS SHOWN ARE BASED ON A SECTION THRU. THE CENTRE OF THE PIPE.
3. REFER DRAWING SD-4102 FOR CONCRETE AND REINFORCEMENT NOTES.
4. CORED HOLES LARGER THAN Ø300 NOT PERMITTED.
5. ALL PENETRATIONS SHALL BE AT RIGHT ANGLES TO THE WALL.
6. THE LOCATION OF THE PIPE PENETRATION SHALL BE DRY DURING INSTALLATION.
7. SCABBLE THE JOINT TO EXPOSE AGGREGATE TO A DEPTH OF 5mm AND WIRE BRUSH CLEAN AS A HOLD POINT, SATURATE JOINT WITH WATER AND REMOVE EXCESS IMMEDIATELY PRIOR TO PLACING GROUT, COAT SURFACE WITH SIKADUR-32 EPOXY OR APPROVED EQUIVALENT PRIOR TO POURING CONCRETE BACKING BLOCK. CONCRETE TO BE POURED WHILE EPOXY IS STILL TACKY.
8. DOWELS FIXED INTO WALL WITH HILTI HIT-RE500/RAMSET CHEMSET REO 502 INJECTION OR APPROVED EQUIVALENT, MIN 75 EDGE DISTANCE.
9. WELD DIMENSIONS AND FLANGE THICKNESS TO BE DETERMINED DURING DESIGN.
10. DETAIL OF PIPE PENETRATION THROUGH LINER, INCLUDING STILLING AND TREATMENT, MUST BE PROVIDED IN THE DESIGN IN CONSULTATION WITH THE LINER MANUFACTURER.

TABLE 1 - THRUST PENETRATION DETAILS

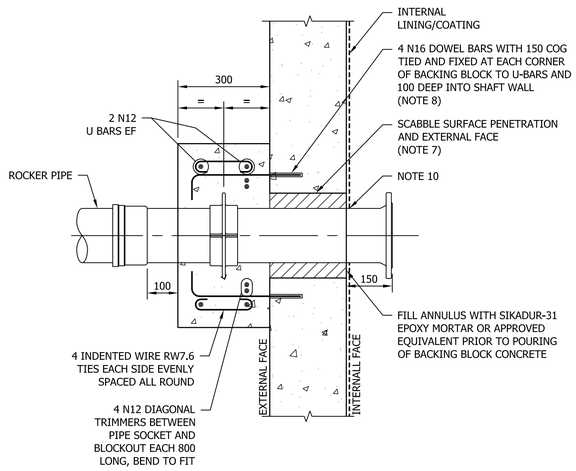
PIPE DN	DIM A CORE HOLE / TAPERED BLOCK OUT SIZE (EXT. Ø - INT. Ø)	DIM B BACKING BLOCK SIZE (SQ)	ROCKER PIPE LENGTH	
			L. MIM.	L. MAX.
100	200*	600x600	200	300
150	250*	600x600	300	450
225	300*	750x750	450	675
300	400-450	750x750	600	900
375	500-550	1000x1000	750	1125
450	550-600	1000x1000	900	1350
500	600-650	1000x1000	1000	1500

* DENOTES CORED HOLE



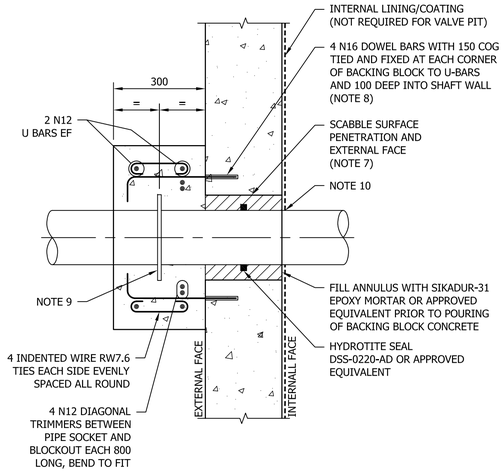
SECTION B
SCALE N.T.S.

PENETRATION 4 - DN300 - DN525 DICL PRESSURE PIPES



SECTION D
SCALE N.T.S.

PENETRATION 5 - DN100 - DN225 DICL PRESSURE PIPES



SECTION F
SCALE N.T.S.

PENETRATION 6 - DN100 - DN250 SS PRESSURE PIPES

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
PRESSURE AND THRUST RESTRAINED PIPELINES
PIPE PENETRATION DETAILS

DRAWING STATUS: Current

SD-4108-D

A1

ISSUE: A

ITEM	SIZE	MATERIAL	RATING	DESCRIPTION	QTY	FLANGE DIMENSION
1	DN375 (1)	GRP	SN10000	SP-SP RRJ PIPE		-
2	DN375 (1)	GRP	PN6	RRJ COUPLING		-
3	DN450 (1)	GRP	SN10000	SP-SP RRJ PIPE		-
4	DN450 (1)	GRP	PN6	RRJ COUPLING		-
5	DN225	PVC-U	SN8	PIPE - SCJ (LENGTH TO SUIT)		-
6	DN225	PVC-U	SN8	SCJ 45º ELBOW		-
7	-	-	-	-		-
8	-	-	-	-		-
9	DN150	DICL	PN35	FL-SP MANHOLE CONNECTOR C/W PUDDLE FLANGE	1	AS 4087
10	DN150	DICL	PN16	SO-FL CONNECTOR	2	AS 4087
11	DN150	DICL	PN35	SP-SP PIPE (LENGTH TO SUIT)		-
12	DN150	DICL	PN35	SO-SP PIPE (LENGTH TO SUIT)		-
13	DN150	DICL	PN16	SO-SO 45º BEND	1	-
14	DN150	DICL	PN16	SO-SO 22.5º BEND	1	-
15	DN150	DICL	PN16	SO-SO 90º BEND		-
16	DN150	DI	PN16	FL-FL GATE VALVE – RESILIENT SEATED	2	AS 4087
17	DN225-150	DICL	PN16	FL-FL CONCENTRIC REDUCER	1	AS 4087
18	DN225	DICL	PN16	FL - EQUAL TEE	2	AS 4087
19	DN225	DICL	PN35	FL-FL PIPE (LENGTH TO SUIT)		AS 4087
20	DN225	DI	PN16	FL-FL GATE VALVE – RESILIENT SEATED	3	AS 4087
21	DN225	DI	PN16	FL-FL DISMANTLING JOINT – THRUST TYPE	3	AS 4087
22	DN225-150	DICL	PN16	FL REDUCING TEE	1	AS 4087
23	DN225	DICL	PN16	SO-FL CONNECTOR	1	AS 4087
24	DN225	DICL	PN35	SO-SP PIPE (LENGTH TO SUIT)		-
25	DN225	DICL	PN35	SP-SP ROCKER PIPE (4)		-
26	DN375 (1)	DICL (2)	PN35	SO-SP ROCKER PIPE (4)	2	-
27	DN375 (1)	DICL (2)	PN35	MANHOLE CONNECTOR	2	-
28	DN375 (1)	DICL	PN35	SO-SP PIPE (LENGTH TO SUIT)		-
29	DN375 (1)	DICL	PN35	SP-SP PIPE (LENGTH TO SUIT)		-
30	DN375 (1)	DICL	PN16	FL-SP MANHOLE CONNECTOR C/W PUDDLE FLANGE	1	AS 4087
31	DN375 (1)	DI	PN16	FL-FL GATE VALVE – RESILIENT SEATED WITH 316SS EXTENSION SPINDLE	1	AS 4087
32	DN375 (1)	SS	SCH10	INLET SEWER DROPPER PIPE - FABRICATED	1	AS 4087
33	-	SS	-	SPINDLE EXTENSION BRACKET		-
34	-	SS	-	VALVE SPINDLE EXTENSION		-
35		SS		PIPE SUPPORT		-
36	DN225	PVC-U	SN8	SCJ 90º BEND		-
37	-	-	-	SUBMERSIBLE PUMP, INCLUDING FLUSHING VALVE FOR 1 PUMP (REFER TO APL)	2	AS 4087
38	DN225 (3)	SS	SCH40	FL-FL ECCENTRIC REDUCER	2	AS 4087
39	DN225	SS	SCH40	FL-FL PIPE (LENGTH TO SUIT)		AS 4087
40	DN225	SS	SCH40	FL-FL 90º BEND		AS 4087
41	DN225	DICL	PN35	FL-SP MANHOLE CONNECTOR C/W PUDDLE FLANGE	2	AS 4087
42	DN225	DICL	PN35	FL-S0 MANHOLE CONNECTOR C/W PUDDLE FLANGE	6	AS 4087
43	DN225	DICL	PN35	SO-SP ROCKER PIPE (4)	6	-
44	DN225	DICL	PN35	SO-SP PIPE (LENGTH TO SUIT)		-
45	DN225	DICL	PN35	FL-FL PIPE (LENGTH TO SUIT)		AS 4087
46	DN225	DI	PN16	FL-FL NON-RETURN VALVE C/W COUNTERWEIGHT AND SAFETY GUARD	2	AS 4087
47	-	HDG	-	PIPE SUPPORT TYPE 2 (SD-5302)	5	-
48	DN100	PVC-U	SN8	DVW PIPE (LENGTH TO SUIT)		-
49	DN100	PVC-U	SN8	KERB ADAPTER	2	-
50	DN100	PVC-U	SN8	DVW FLAP VALVE	2	-
51	DN100	PVC-U	SN8	45° BEND	-	-
52	DN100	PVC-U	SN8	45° JUNCTION	1	-
53	DN225	DI	PN16	FL-FL FLOWMETER	1	AS 4087
54	-	-	-	FLOAT SWITCH	4	-
55	DN100	PVC-U	HD	ELECTRICAL CONDUIT (LENGTH TO SUIT)	-	-
56	DN100	PVC-U	HD	ELECTRICAL CONDUIT BELL MOUTH	4	-
57	-	-	-	RADAR LEVEL SENSOR	2	-
58	DN225	DI	PN16	TAPPING BAND WITH DN20 (BSP) OFFTAKE	6	AS 4793
59	DN20xDN15	SS	-	BSP THREADED REDUCING BUSH	4	-
60	DN20	SS	-	BSP THREADED NIPPLE	18	-
61	DN20	SS	-	BSP THREADED EQUAL TEE F	6	-
62	DN20	SS	-	BSP TREADED BALL VALVE F-F	12	-
63	DN20	SS	-	BSP THREADED HEX PLUG	6	-
64	Ø100	SS	-	PRESSURE GUAGE	4	-
65	DN450	FRP	-	FLAP VALVE	2	-

ITEM	SIZE	MATERIAL	RATING	DESCRIPTION	QTY	FLANGE DIMENSION
66	DN150	DICL	PN16	FL-FL 90° BEND	2	AS 4087
67	DN150	DICL	PN35	FL-FL PIPE (LENGTH TO SUIT)	-	AS 4087
68	DN150	DICL	PN35	FL-FL PIPE 1000 LONG C/W PUDDLE FLANGE AND 20 TAPPING	1	AS 4087
69	DN150	DI	PN16	FL-FL GATE VALVE – RESILIENT SEATED C.W. CLOSE WITH HANDWHEEL	1	AS 4087
70	DN150	DI	PN16	FL-FL NON-RETURN VALVE C/W COUNTERWEIGHT AND SAFETY GUARD	1	AS 4087
71	DN150	DICL	PN35	FL-FL PIPE 300 LONG C/W 20MM TAPPING ON BOTTOM OF PIPE	1	AS 4087
72	DN150	SS	PN16	COUPLING WITH DUST CAP (REFER NOTE 4 ON SD-4190)	1	AS 4087
73	DN150	DI	PN16	TAPPING BAND WITH DN20 (BSP) OFFTAKE	2	AS 4793
74	DN100	PVC-U	SN8	FINISHING COLLAR WITH DT GRATE TO SUIT	1	-
75	DN100	PVC-U	SN8	SCJ 88° ELBOW	1	-
76	-	HDG	-	PIPE SUPPORT TYPE 3 (SD-5303)	2	-
78	DN225	PVC-U	SN8	SCJ 88° ELBOW	2	-
79	DN225	PVC-U	SN8	SCJ 45° JUNCTION F-F THREADED ON BRANCH	1	-
80	DN225	PVC-U	SN8	THREADED END CAP	1	-
81	DN225x150	PVC-U	SN8	LEVEL INVERT TAPER	1	-
82	DN150	PVC-U	SN8	PLAIN COUPLING	1	-

NOTES:

(1) STANDARD DRAWING BASED ON DN375 INCOMING SEWER. FOR PIPE DIMENSIONS FOR ALTERNATIVE INCOMING SEWER DIMENSION REFER TO TABLE 1 IN DRAWING SD-4130-C.

(2) ALTERNATIVE PIPE MATERIAL CAN BE USED TO MATCH INCOMING SEWER PIPE MATERIAL.

(3) REDUCER DIMENSION TO SUIT PUMP OUTLET.

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A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

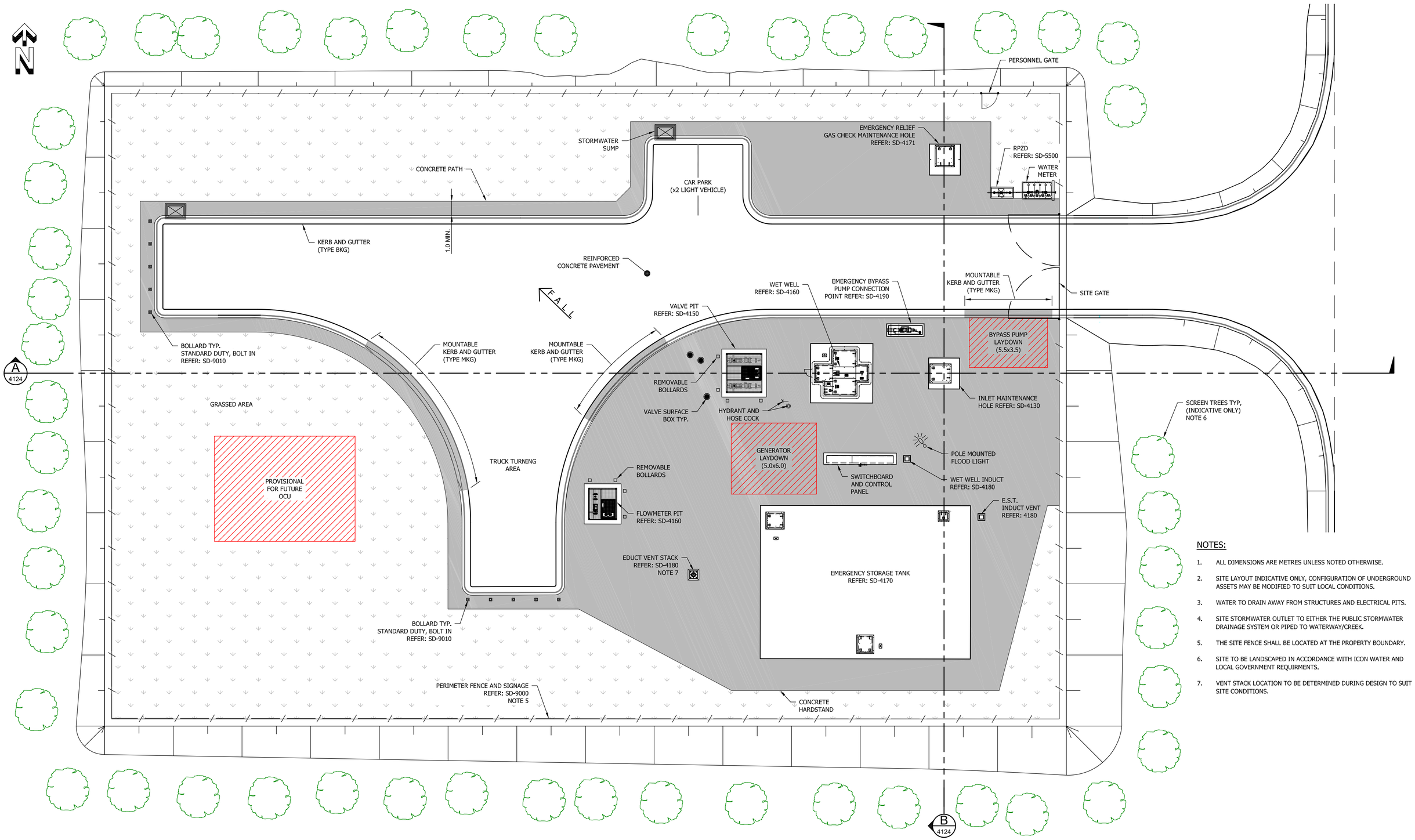
STANDARD DRAWING
SEWAGE PUMP STATIONS
MECHANICAL ITEMS LIST

DRAWING STATUS: Current

SD-4110-C

A1

ISSUE: A



EXAMPLE 1 SITE LAYOUT - SITE PLAN

SCALE: 1:125

0 2.5 5 7.5 10 12.5m

SCALE 1:125

NOTES:

1. ALL DIMENSIONS ARE METRES UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. WATER TO DRAIN AWAY FROM STRUCTURES AND ELECTRICAL PITS.
4. SITE STORMWATER OUTLET TO EITHER THE PUBLIC STORMWATER DRAINAGE SYSTEM OR PIPED TO WATERWAY/CREEK.
5. THE SITE FENCE SHALL BE LOCATED AT THE PROPERTY BOUNDARY.
6. SITE TO BE LANDSCAPED IN ACCORDANCE WITH ICON WATER AND LOCAL GOVERNMENT REQUIRMENTS.
7. VENT STACK LOCATION TO BE DETERMINED DURING DESIGN TO SUIT SITE CONDITIONS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
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Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

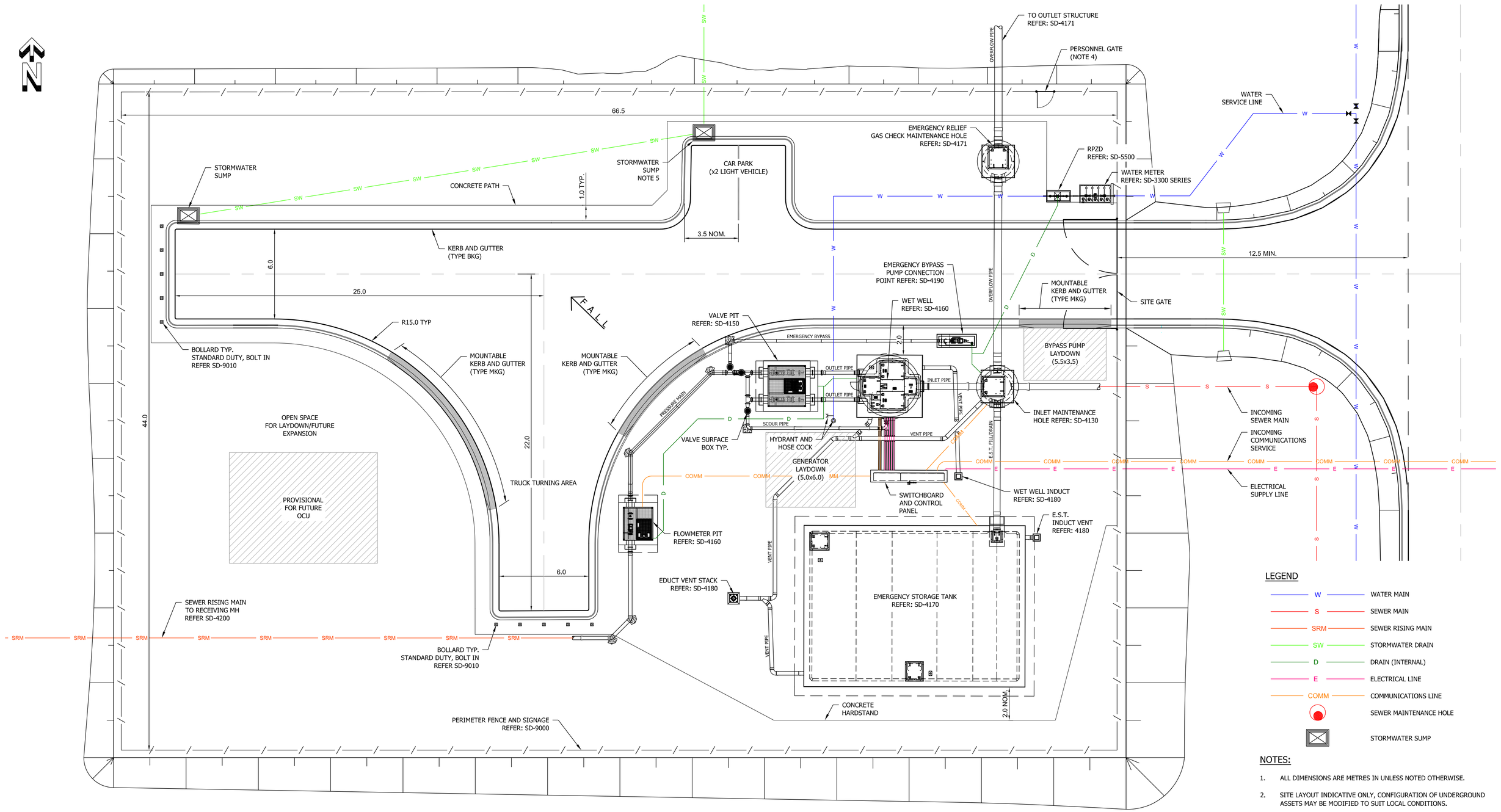
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 1
SITE PLAN

DRAWING STATUS: Current

SD-4120-C

A1

ISSUE: A



LEGEND

- W — WATER MAIN
- S — SEWER MAIN
- SRM — SEWER RISING MAIN
- SW — STORMWATER DRAIN
- D — DRAIN (INTERNAL)
- E — ELECTRICAL LINE
- COMM — COMMUNICATIONS LINE
- SEWER MAINTENANCE HOLE
- STORMWATER SUMP

NOTES:

1. ALL DIMENSIONS ARE METRES IN UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. RPZD CABINET TO BE LOCATED AT SITE BOUNDARY WHERE WATER SERVICES ENTER THE SITE.
4. PERSONNEL GATE ONLY REQUIRED IF ACCESS TO THE OVERFLOW STRUCTURE FROM THE MAIN GATE IS IMPRACTICAL.
5. SITE STORMWATER OUTLET TO EITHER THE PUBLIC STORMWATER DRAINAGE SYSTEM OR PIPED TO WATERWAY/CREEK.
6. SOME BOLLARDS AND SURFACE FEATURES OMITTED FOR CLARITY. REFER TO SD-4120 FOR DETAILS.

0 2.5 5 7.5 10 12.5m

SCALE 1:125

EXAMPLE 1 SITE LAYOUT - GENERAL ARRANGEMENT PLAN

SCALE: 1:125

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

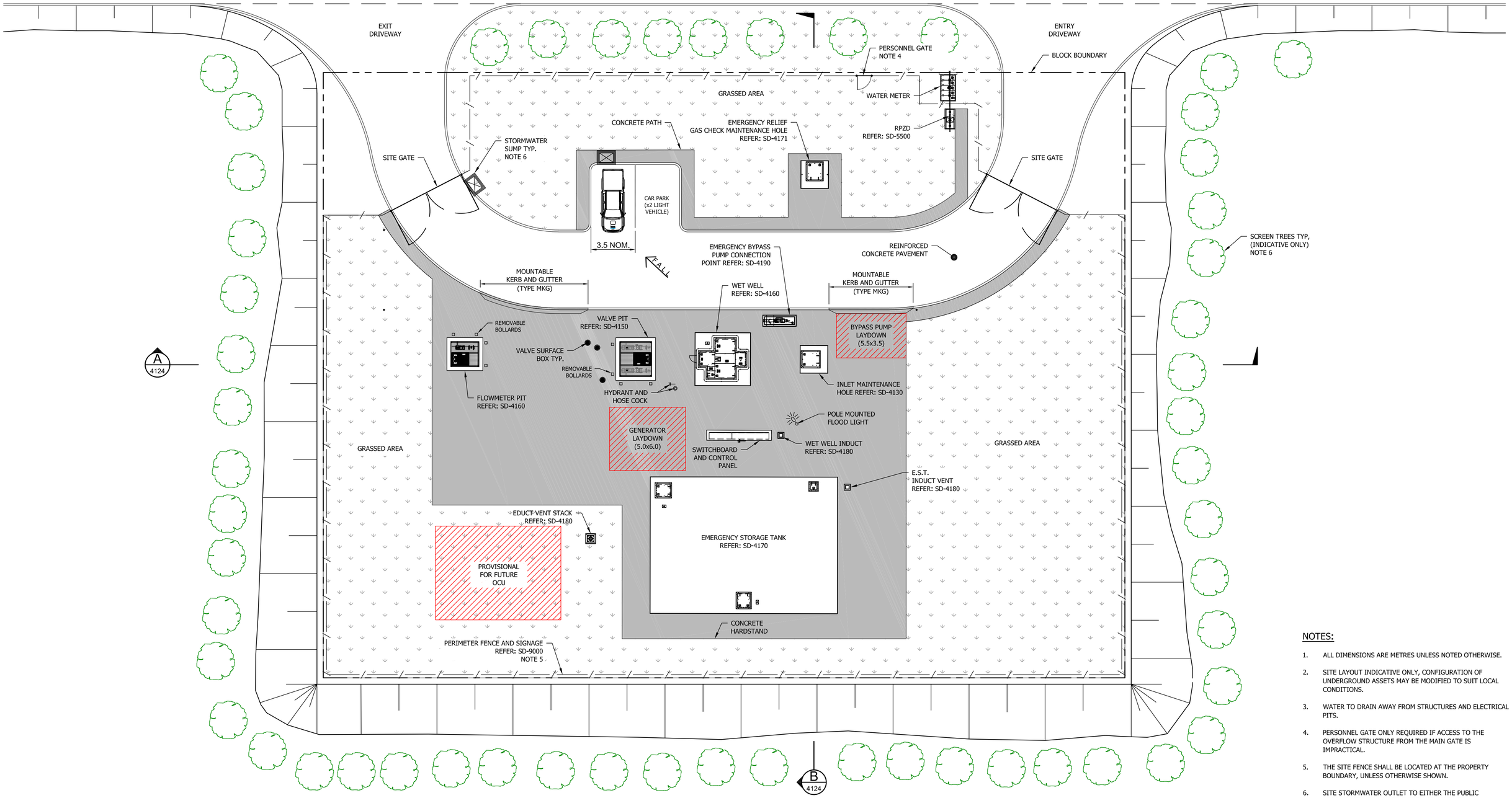
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 1
GENERAL ARRANGEMENT PLAN

DRAWING STATUS: Current

SD-4121-C

A1

ISSUE A



0 3 6 9 12 15m

SCALE 1:150

EXAMPLE 2 SITE LAYOUT - SITE PLAN

SCALE: 1:150

NOTES:

1. ALL DIMENSIONS ARE METRES UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. WATER TO DRAIN AWAY FROM STRUCTURES AND ELECTRICAL PITS.
4. PERSONNEL GATE ONLY REQUIRED IF ACCESS TO THE OVERFLOW STRUCTURE FROM THE MAIN GATE IS IMPRACTICAL.
5. THE SITE FENCE SHALL BE LOCATED AT THE PROPERTY BOUNDARY, UNLESS OTHERWISE SHOWN.
6. SITE STORMWATER OUTLET TO EITHER THE PUBLIC STORMWATER DRAINAGE SYSTEM OR PIPED TO WATERWAY/CREEK.
7. SITE TO BE LANDSCAPED IN ACCORDANCE WITH ICON WATER AND LOCAL GOVERNMENT REQUIRMENTS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
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Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

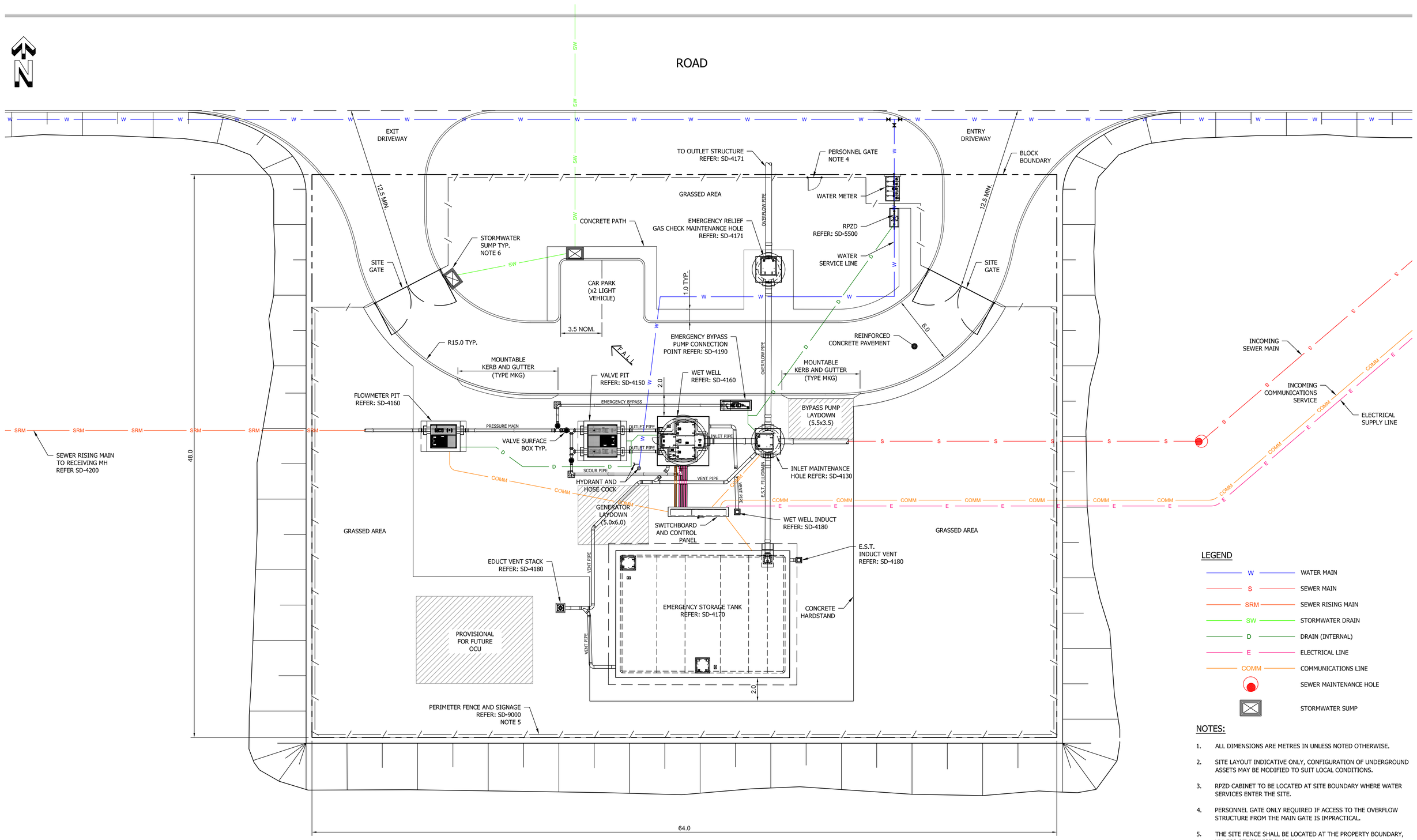
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 2
SITE PLAN

DRAWING STATUS: Current

SD-4122-C

A1

ISSUE A



EXAMPLE 2 SITE LAYOUT - GENERAL ARRANGEMENT PLAN

SCALE: 1:150

0 3 6 9 12 15m

SCALE 1:150

LEGEND

- W — WATER MAIN
- S — SEWER MAIN
- SRM — SEWER RISING MAIN
- SW — STORMWATER DRAIN
- D — DRAIN (INTERNAL)
- E — ELECTRICAL LINE
- COMM — COMMUNICATIONS LINE
- SEWER MAINTENANCE HOLE
- STORMWATER SUMP

NOTES:

1. ALL DIMENSIONS ARE METRES IN UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. RPZD CABINET TO BE LOCATED AT SITE BOUNDARY WHERE WATER SERVICES ENTER THE SITE.
4. PERSONNEL GATE ONLY REQUIRED IF ACCESS TO THE OVERFLOW STRUCTURE FROM THE MAIN GATE IS IMPRACTICAL.
5. THE SITE FENCE SHALL BE LOCATED AT THE PROPERTY BOUNDARY, UNLESS OTHERWISE SHOWN.
6. SITE STORMWATER OUTLET TO EITHER THE PUBLIC STORMWATER DRAINAGE SYSTEM OR PIPED TO WATERWAY/CREEK.
7. SOME BOLLARDS AND SURFACE FEATURES OMITTED FOR CLARITY. REFER TO SD-4122 FOR DETAILS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

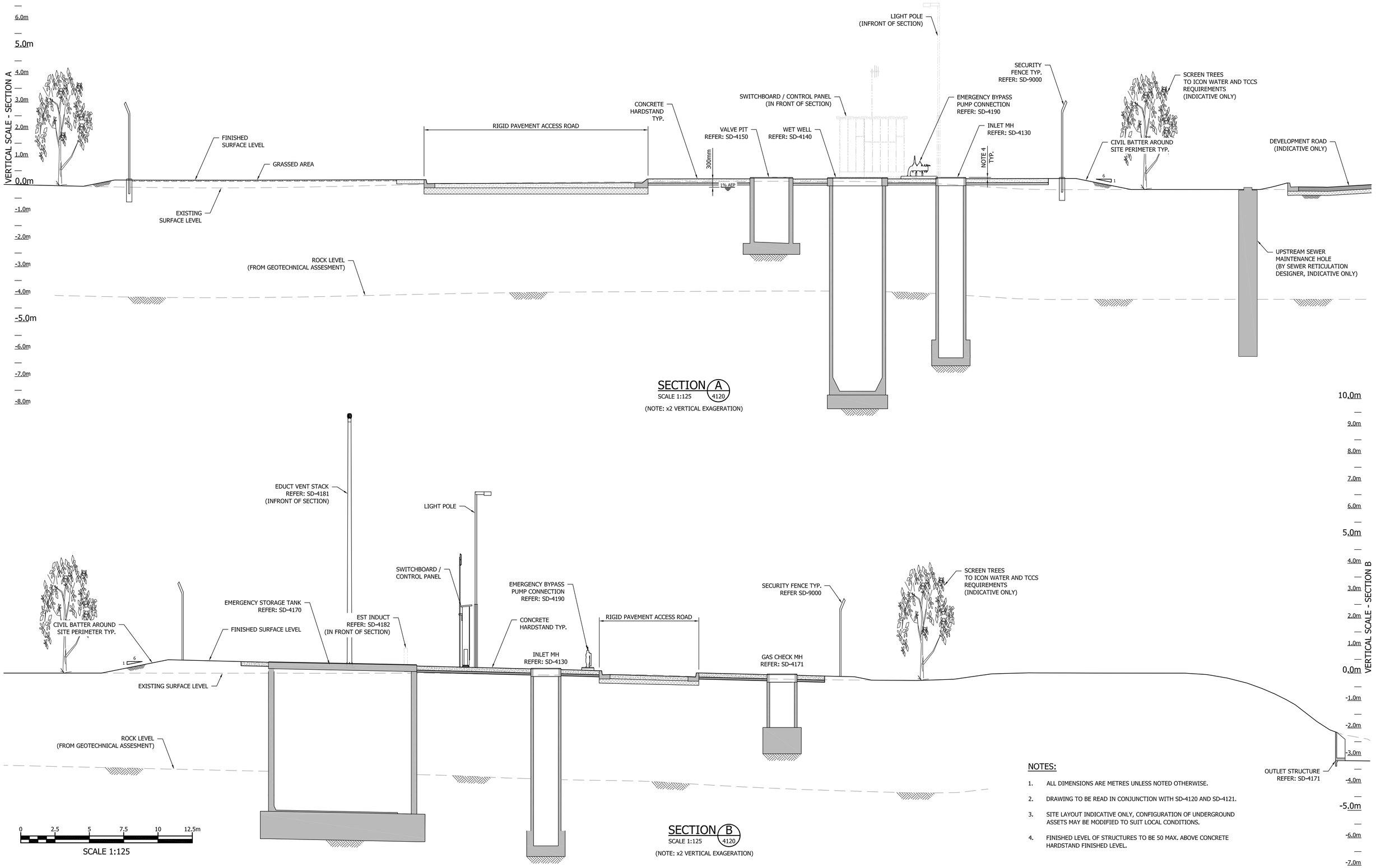
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 2
GENERAL ARRANGEMENT PLAN

DRAWING STATUS: Current

SD-4123-C

A1

ISSUE A



SECTION A
SCALE 1:125 4120
(NOTE: x2 VERTICAL EXAGERATION)

SECTION B
SCALE 1:125 4120
(NOTE: x2 VERTICAL EXAGERATION)

NOTES:

1. ALL DIMENSIONS ARE METRES UNLESS NOTED OTHERWISE.
2. DRAWING TO BE READ IN CONJUNCTION WITH SD-4120 AND SD-4121.
3. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
4. FINISHED LEVEL OF STRUCTURES TO BE 50 MAX. ABOVE CONCRETE HARDSTAND FINISHED LEVEL.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
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Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

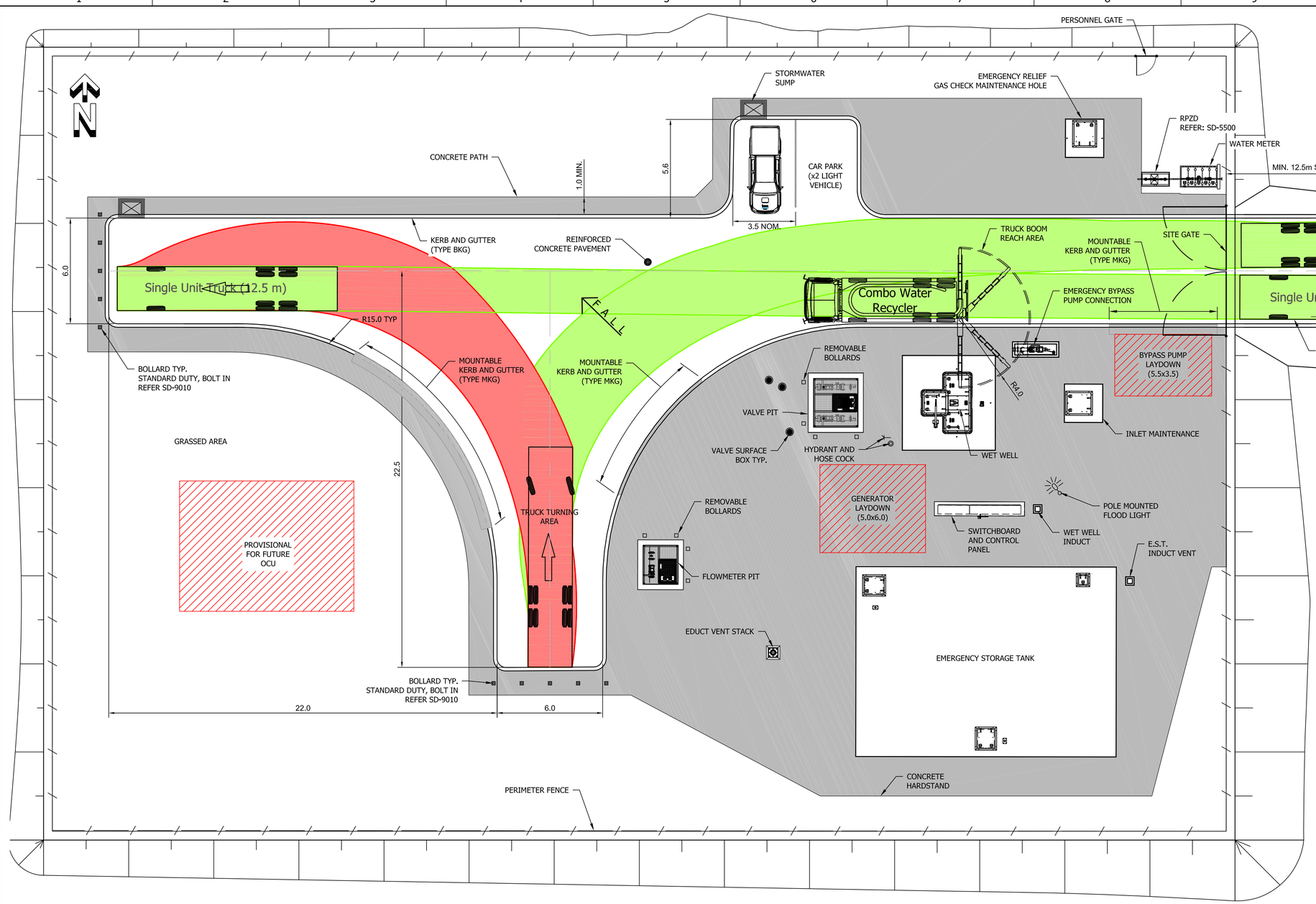
STANDARD DRAWING
SEWAGE PUMP STATIONS
GENERAL ARRANGEMENT SITE SECTIONS

DRAWING STATUS: Current

SD-4124-C

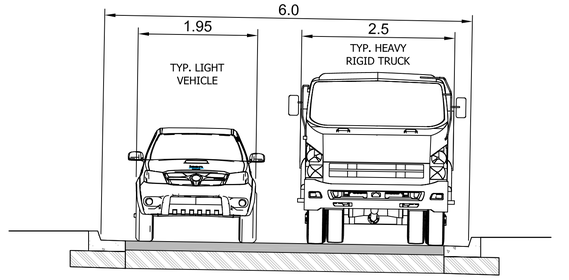
A1

ISSUE: A



EXAMPLE 1 SITE LAYOUT - VEHICLE MOVEMENT PLAN

SCALE: 1:125



TYPICAL PAVEMENT SECTION

SCALE: 1:50

0 2.5 5 7.5 10 12.5m

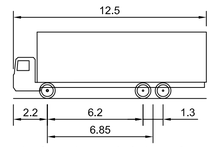
SCALE 1:125

LEGEND

GREEN = FORWARD TURNING PATH
RED = REVERSE TURNING PATH

NOTES:

1. ALL DIMENSIONS ARE METRES UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. TRUCK TURNING PATHS BASED ON AUSTROADS SINGLE UNIT TRUCK/BUS (12.5 m).
4. 12.5m MIN. SETBACK FROM DEVELOPMENT ROAD CARRIAGEWAY TO ALLOW MAINTENANCE VEHICLE TO SAFELY PARK WHILE OPENING/CLOSING GATES.



Single Unit Truck (12.5 m)

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.490m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS		X
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

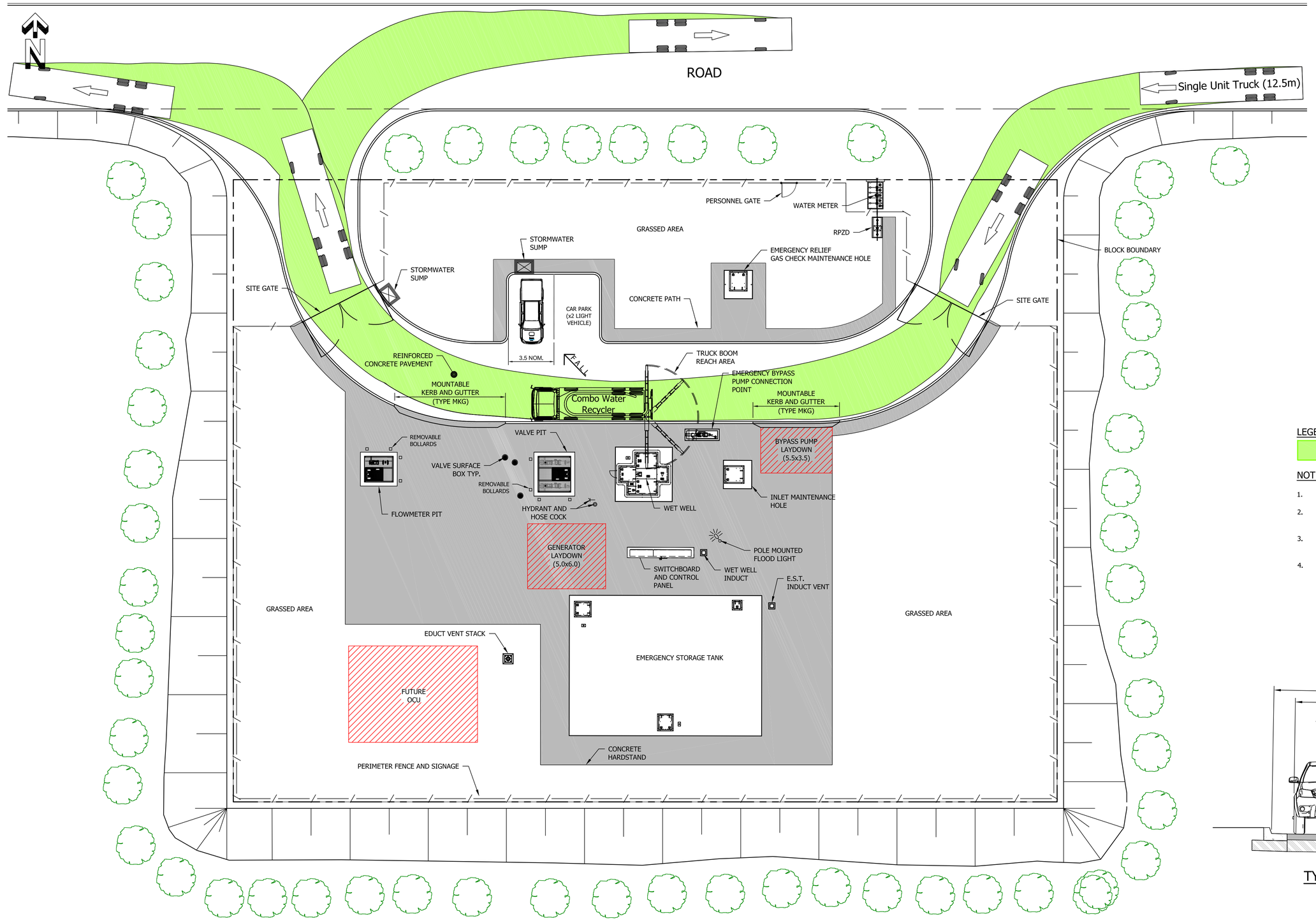
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 1
VEHICLE MOVEMENT PLAN

DRAWING STATUS: Current

SD-4125-C

A1

ISSUE A

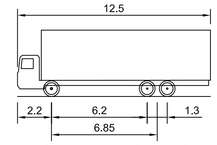


0 2.5 5 7.5 10 12.5m

SCALE 1:125

EXAMPLE 2 SITE LAYOUT - VEHICLE MOVEMENT PLAN

SCALE: 1:150



Single Unit Truck (12.5 m)

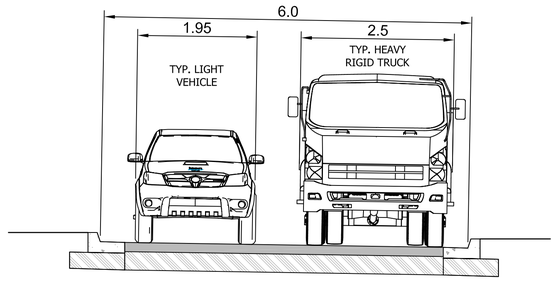
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.490m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

LEGEND

GREEN = FORWARD TURNING PATH
RED = REVERSE TURNING PATH

NOTES:

1. ALL DIMENSIONS ARE METRES UNLESS NOTED OTHERWISE.
2. SITE LAYOUT INDICATIVE ONLY, CONFIGURATION OF UNDERGROUND ASSETS MAY BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. TRUCK TURNING PATHS BASED ON AUSTROADS SINGLE UNIT TRUCK/BUS (12.5 m).
4. 15m MIN. SETBACK FROM DEVELOPMENT ROAD CARRIAGEWAY TO ALLOW MAINTENANCE VEHICLE TO SAFELY PARK WHILE OPENING/CLOSING GATES.



TYPICAL PAVEMENT SECTION

SCALE: 1:50

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

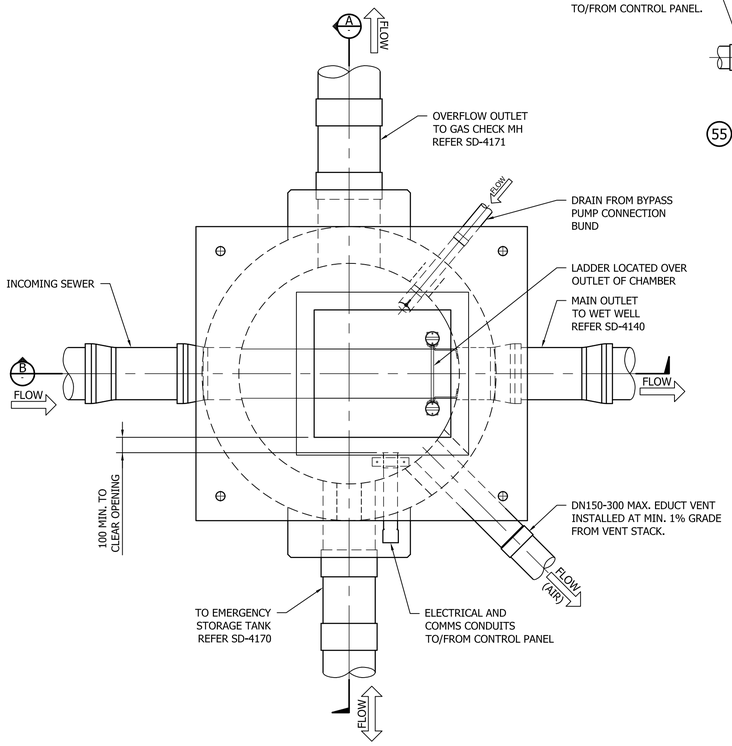
STANDARD DRAWING
SEWAGE PUMP STATIONS
EXAMPLE SITE 2
VEHICLE MOVEMENT PLAN

DRAWING STATUS: Current

SD-4126-C

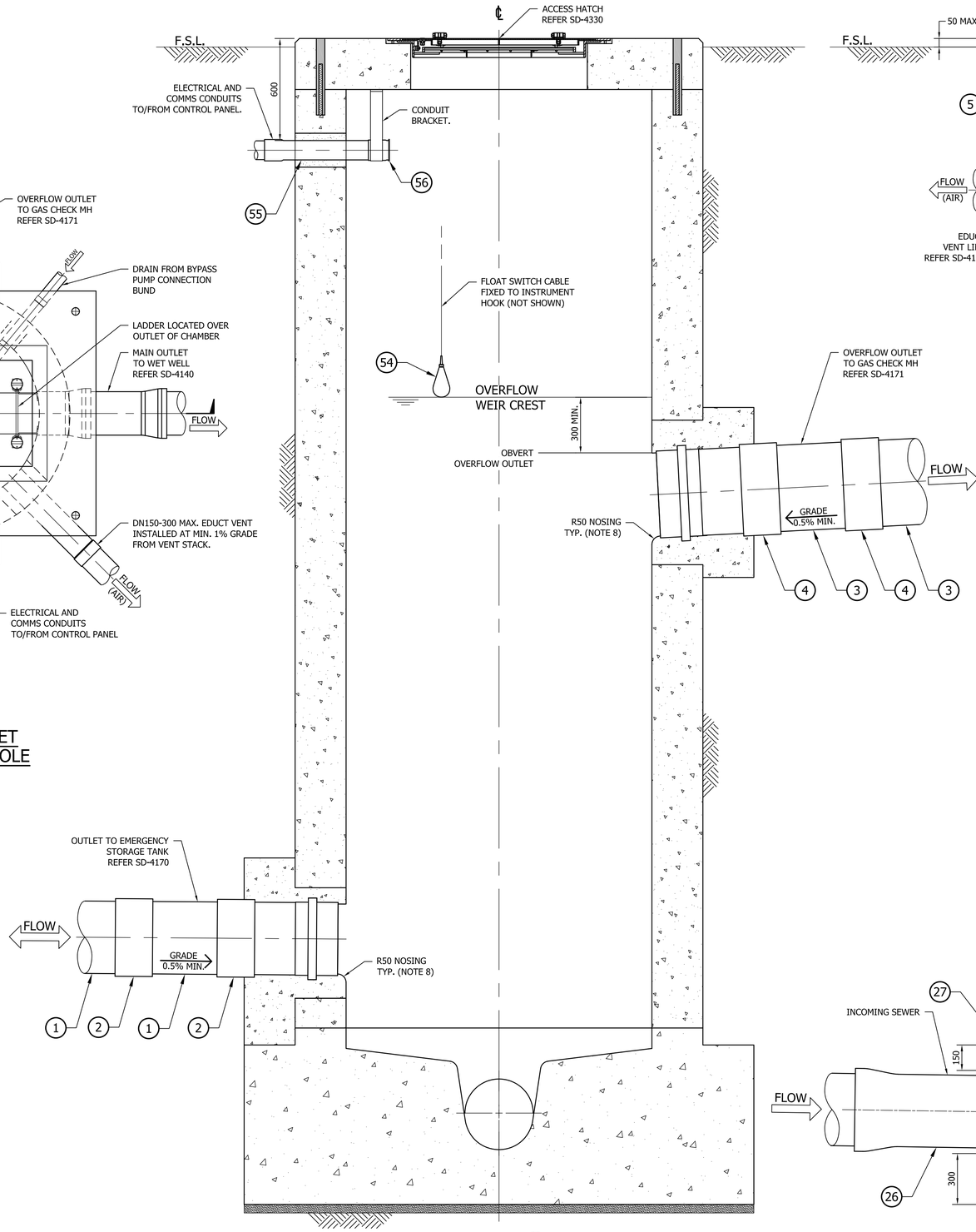
A1

ISSUE: A



PLAN VIEW INLET MAINTENANCE HOLE

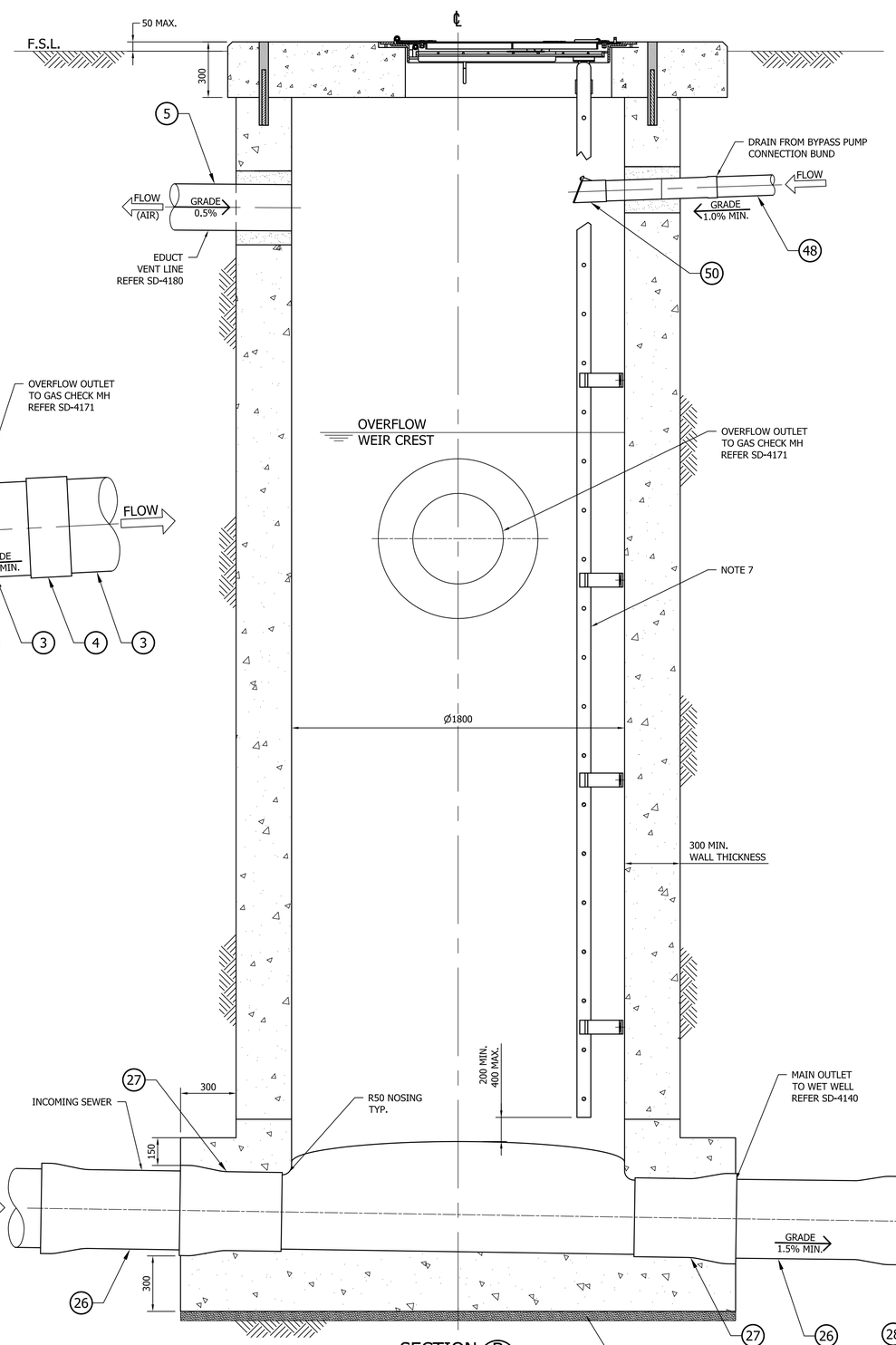
SCALE: 1:25.



SECTION A

SCALE 1:15

THROUGH EMERGENCY STORAGE FILL/DRAIN AND OVERFLOW OUTLET



SECTION B

SCALE 1:15

THROUGH INCOMING SEWER

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PIPE LOCATIONS AND PENETRATIONS HAVE BEEN ADJUSTED IN THE SECTIONS VIEWS FOR BEST VISUAL REPRESENTATION, REFER TO THE PLAN VIEW AND SITE PLANS FOR LOCATION DETAILS.
3. TO BE READ IN CONJUNCTION WITH HYDRAULIC GRADE LINE DRAWING FOR INVERT LEVELS.
4. REFER TO WSA 02 PART 2 FOR FOUNDATION DETAILS.
5. DESIGN TO MEET THE REQUIREMENTS OF AS 1657.
6. LADDER FIXINGS SHALL BE FIXED A MINIMUM DISTANCE OF 100 mm FROM A CONSTRUCTION JOINT (CJ).
7. FOR IMH DEEPER THAN 6m TO INVERT, CONSULT ICON WATER FOR REQUIREMENTS REGARDING LADDERS AND PLATFORMS.
8. FORM ROUNDED NOSING ON UPPER EDGE OF INLET AND OUTLET PIPES TO PREVENT RAGGING AND FUTURE DAMAGE TO EQUIPMENT AND CABLES.

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A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

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DAM		RES		SPS		X
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

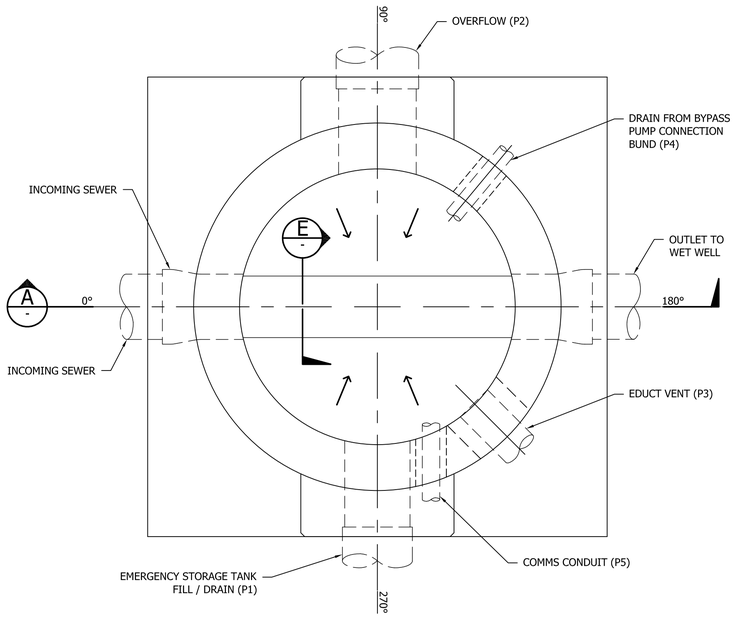
STANDARD DRAWING
SEWAGE PUMP STATIONS
INLET MAINTENANCE HOLE

DRAWING STATUS: Current

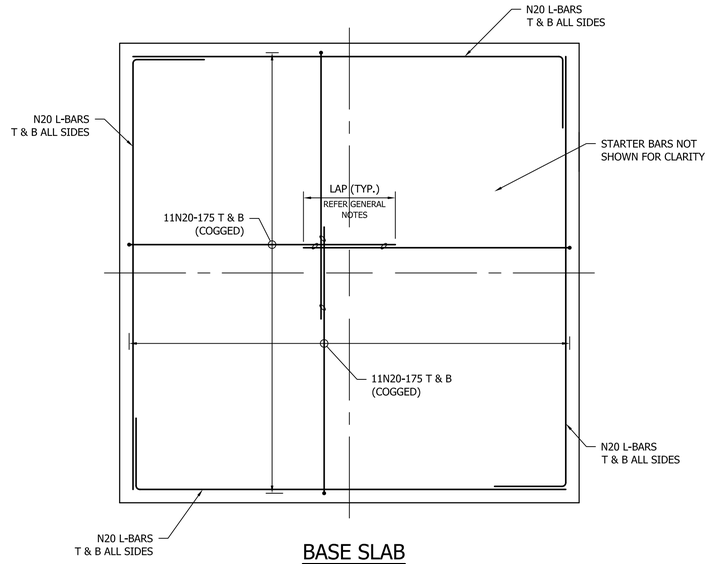
SD-4130-C

A1

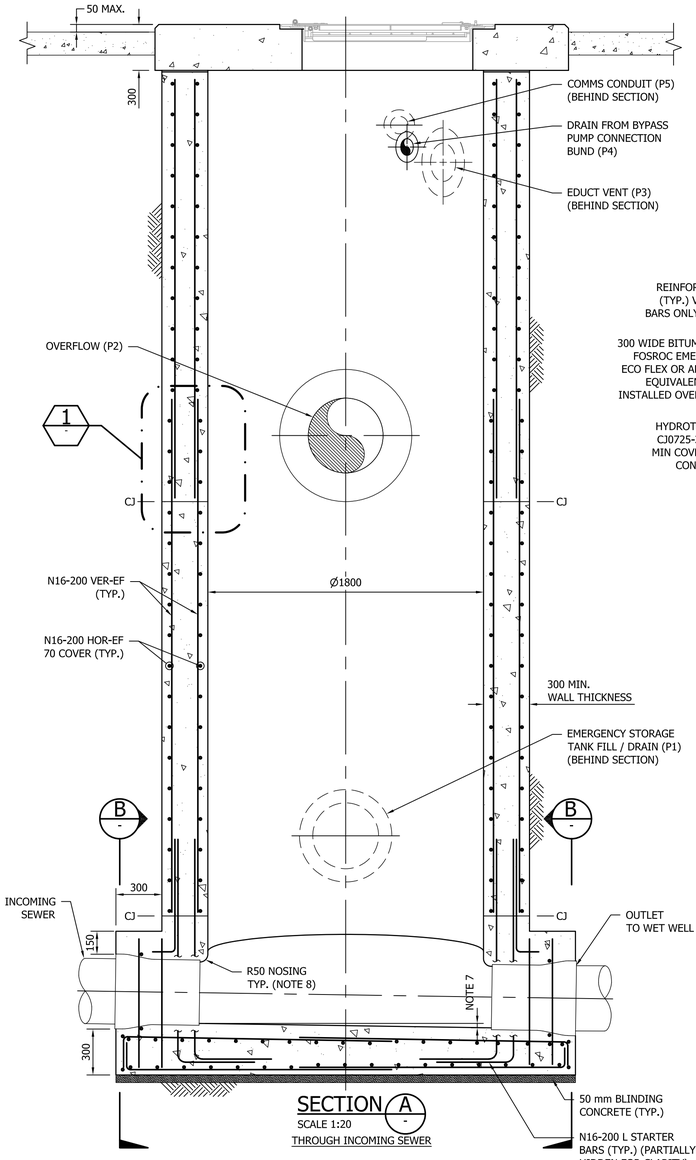
ISSUE: A



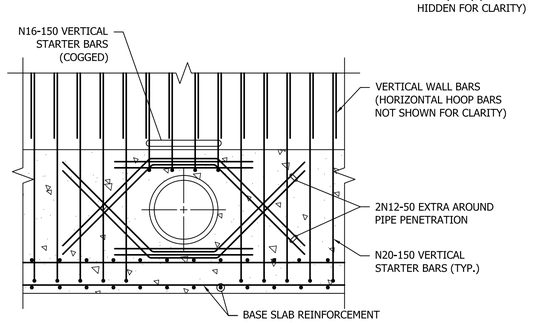
PLAN VIEW INLET MAINTENANCE HOLE
SCALE: 1:20



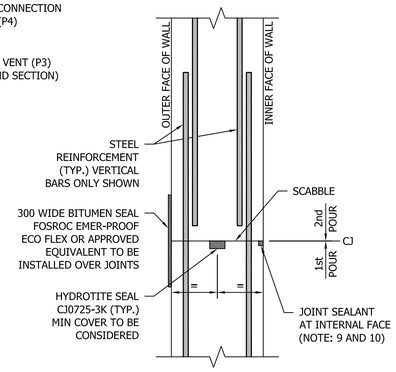
BASE SLAB REINFORCEMENT PLAN
SCALE: 1:20



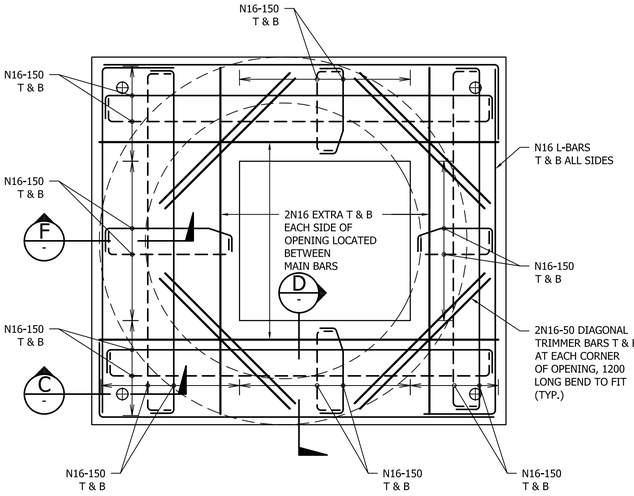
SECTION A
SCALE 1:20
THROUGH INCOMING SEWER



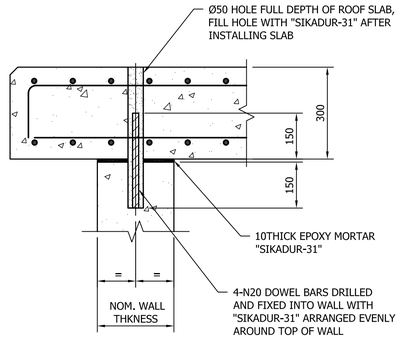
SECTION B
SCALE 1:20



DETAIL 1
SCALE 1:10



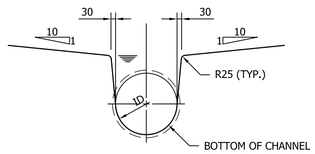
TOP SLAB REINFORCEMENT PLAN
SCALE: 1:20



ALL REINFORCEMENT N16-125 UNO

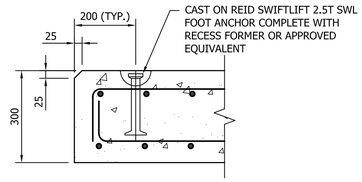
SECTION F
SCALE 1:10

PRECAST TOP SLAB CONNECTION



SECTION E
SCALE 1:20

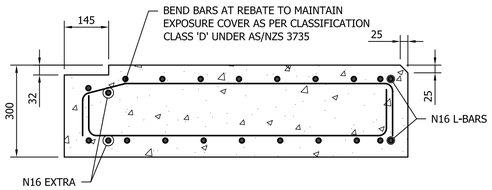
BENCHING PROFILE



ALL REINFORCEMENT N16-150 UNO

SECTION C
SCALE 1:10

LIFTING ANCHORS



ALL REINFORCEMENT N16-125 UNO

SECTION D
SCALE 1:10

REINFORCEMENT DETAIL AT HATCH REBATE

PENETRATION DETAILS (NOTE 11)					
PENETRATION No.	SIZE	ANGLE	CENTRE LINE OF PENETRATION (mAHD)	DESCRIPTION	TYPE OF PENETRATION
P1	DN375	270°	T.B.C.	EMERGENCY STORAGE TANK FILL/DRAIN	TYPE 1
P2	DN450	90°	T.B.C.	OVERFLOW	TYPE 1
P3	DN225	225°	T.B.C.	EDUCT VENT	TYPE 3
P4	DN100	135°	T.B.C.	DRAIN FROM EMERGENCY BYPASS	TYPE 3
P5	DN100	270°	T.B.C.	COMMS CONDUIT	TYPE 3

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PRECAST ROOF SLAB TO HAVE A MAXIMUM STRENGTH OF 25 MPa AT TIME OF LIFTING.
3. SPREADER BEAM TO BE USED TO ENSURE LIFT FORCE IS VERTICAL AND LOADS TO ANCHORS ARE EQUAL.
4. MAXIMUM SELF WEIGHT OF SLAB + STEEL COVERS, WLL = 3.5T (LIFTING WEIGHT).
5. CONTRACTOR TO CONFIRM THE MAXIMUM LIFTING WEIGHT OF THE SLAB LESS THAN THE SELF WEIGHT - IF THE WEIGHT OF THE SLAB IS GREATER THAN THE SELF WEIGHT INDICATED ON THE DRAWING, ICON WATER SHALL BE NOTIFIED FOR FURTHER ADVICE.
6. ALL PROPRIETARY ITEMS SHALL BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.
7. TYPICAL STRAIGHT THROUGH BENCHING SHOWN, FOR DETAILS OF BENCHING WITH PIPE DEFLECTION REFER TO SD-2208.
   FALL THROUGH MH SHALL BE AS FOLLOWS:
   - STRAIGHT THROUGH FLOW, MIN FALL 30 mm
   - FOR CHANGE IN FLOW DIRECTION, MIN FALL = 80 mm
8. FORM ROUNDED NOSING ON UPPER EDGE OF INLET AND OUTLET PIPES TO PREVENT RAGGING AND FUTURE DAMAGE TO EQUIPMENT AND CABLES.
9. SEALANT SHALL BE PLACED WHEN AMBIENT TEMPERATURE IS LESS THAN 25°C.
10. SEALANT SHALL BE POLYURETHANE BASED JOINT SEALANT SIKA FLEX-PRO OR FOSROC EMERSEAL 200 OR APPROVED EQUIVALENT, SEALANT TO BE APPLIED ACCORDING TO MANUFACTURES INSTRUCTIONS INCLUDING PRIMING OF JOINT SURFACE.
11. FOR PIPEWORK PENETRATION DETAILS REFER TO SD-4107 AND SD-4108.

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DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

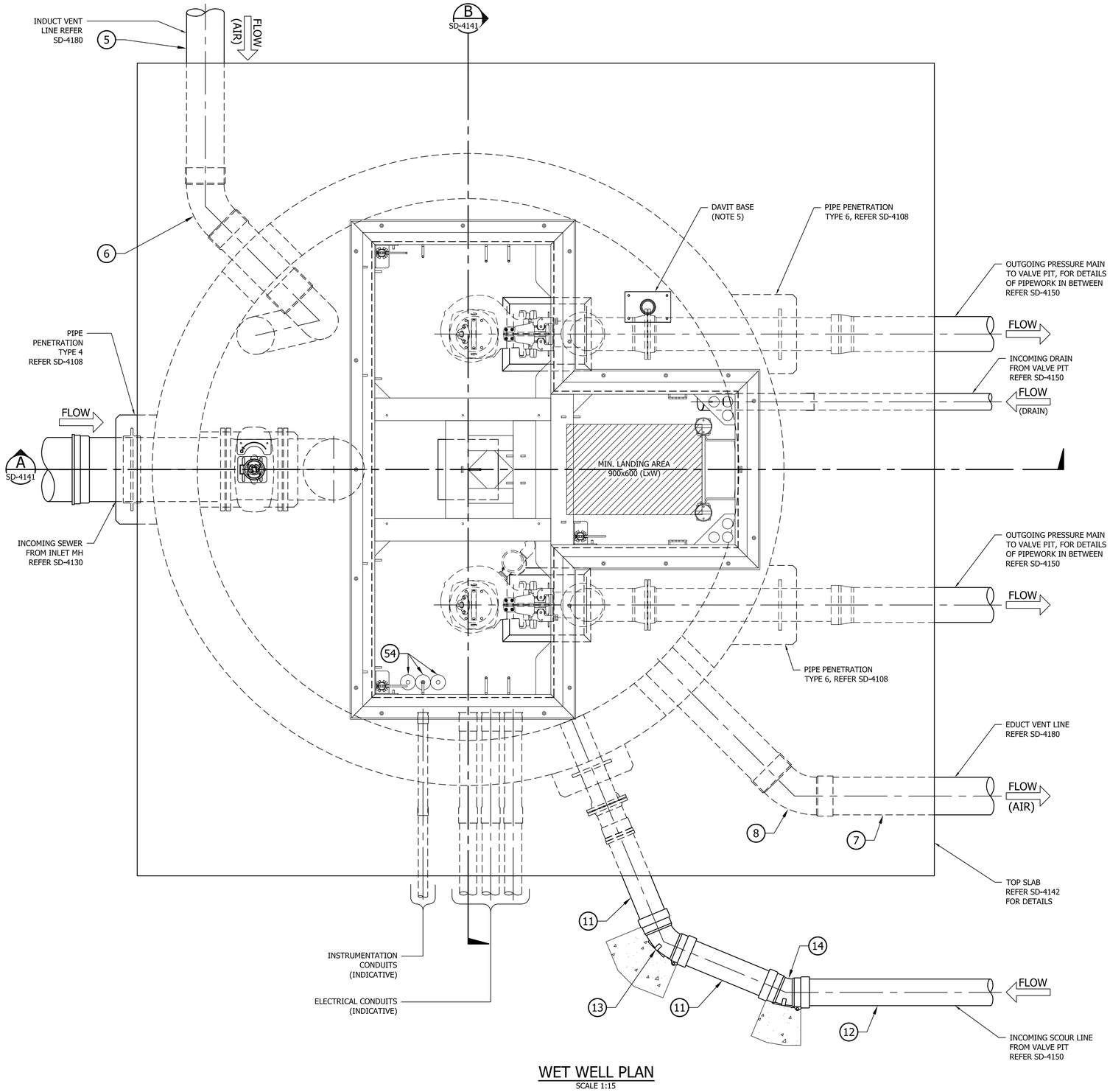
STANDARD DRAWING SEWAGE PUMP STATIONS INLET MAINTENANCE HOLE CONCRETE DETAILS

DRAWING STATUS: Current

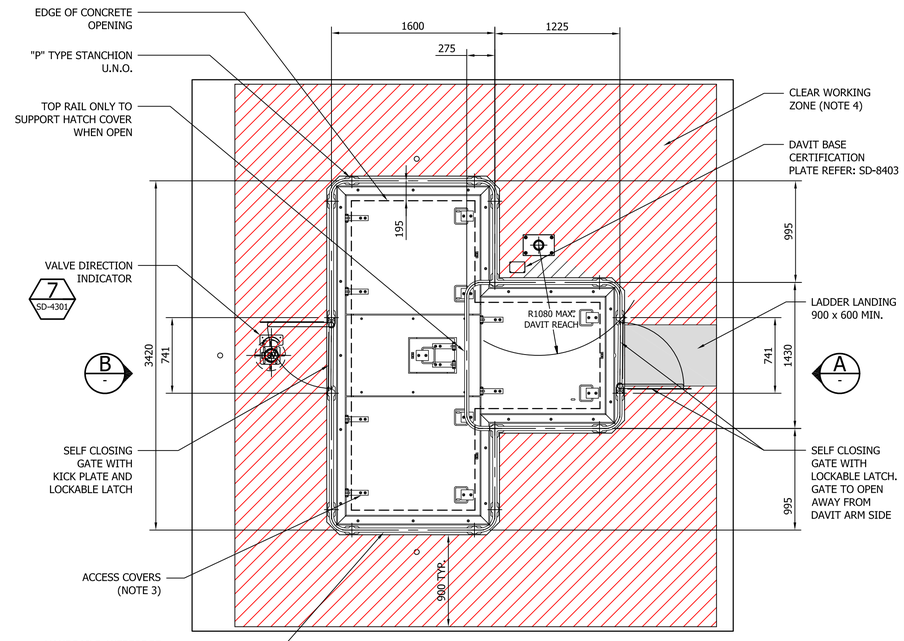
SD-4131-C

A1

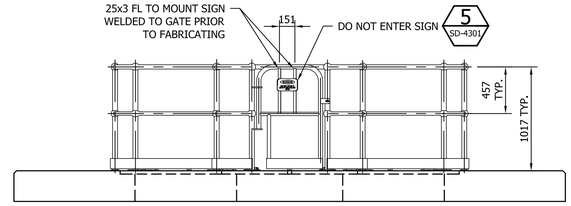
ISSUE: A



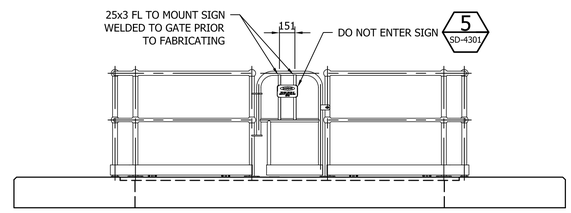
WET WELL PLAN
SCALE 1:15



HANDRAIL PLAN
SCALE: 1 : 25



LADDER HATCH ACCESS GATE
ELEVATION A
SCALE 1:25



RADAR HATCH ACCESS GATE
ELEVATION B
SCALE 1:25

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. NATURAL VENTILATION SHOWN.
3. FOR ACCESS COVER DETAILS REFER TO SD-4340.
4. CLEAR WORKING ZONE AROUND HANDRAIL AND DAVIT BASE TO BE FREE OF ANY OBSTACLES AND TRIP HAZARDS TO ENSURE UNOBSTRUCTED ACCESS FOR OPENING ACCESS COVERS AND OPERATING THE DAVIT ARM WINCH.
5. DAVIT BASE DETAILS: EMBEDMENT, DEPTH, BOLT SIZE AND PLATE SIZE TO BE SPECIFIED IN DETAIL DESIGN.

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DAM		RES			SPS		X
BWS		WAT			STP		
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

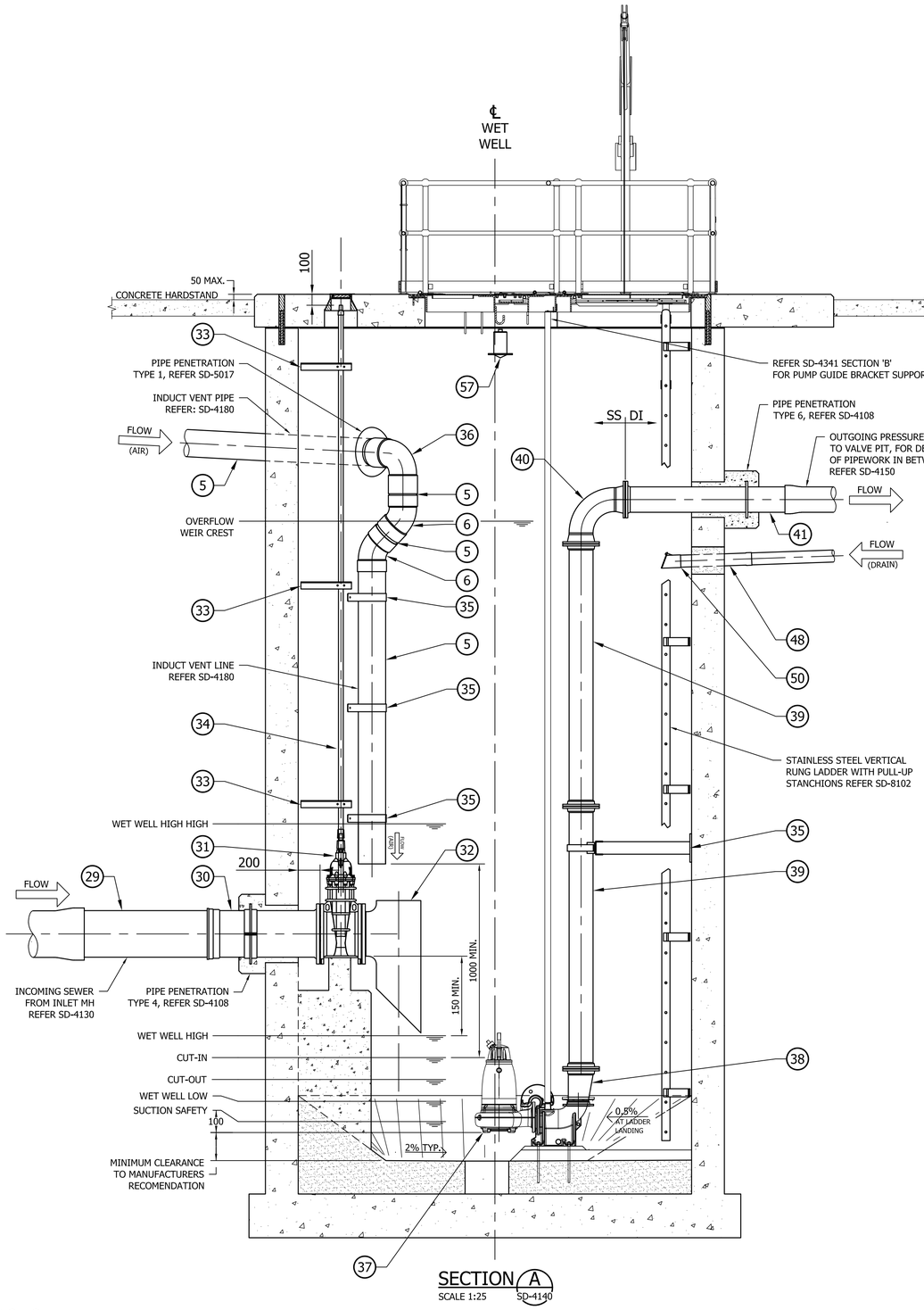
STANDARD DRAWING
SEWAGE PUMP STATIONS
WET WELL PLAN

DRAWING STATUS: Current

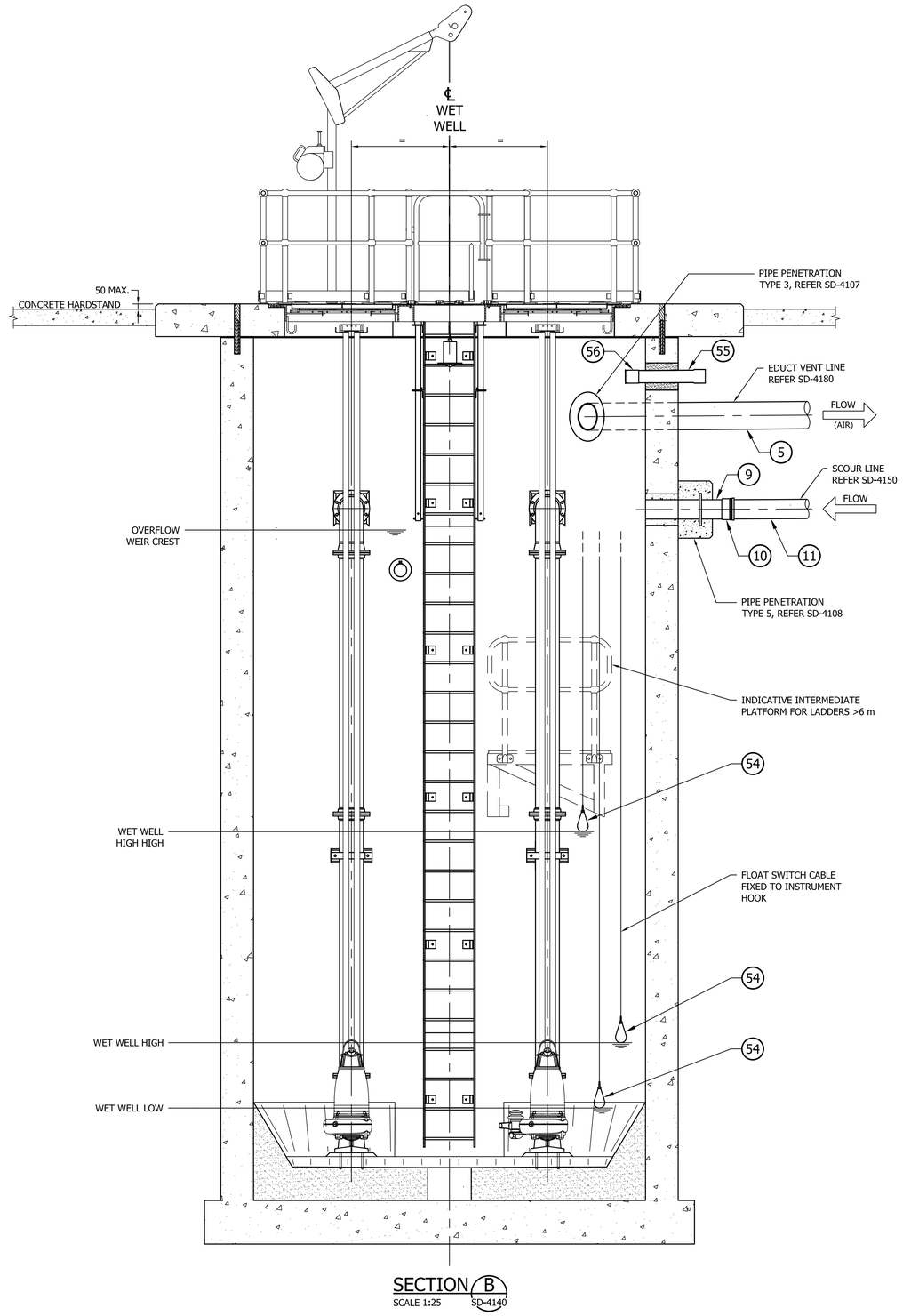
SD-4140-D

A1

ISSUE: A



SECTION A
SCALE 1:25 SD-4140



SECTION B
SCALE 1:25 SD-4140

NOTES:

1. DESIGN MUST ENSURE INLET ARRANGEMENT DOES NOT ADVERSELY IMPACT THE PUMPS OPERATION.
2. MINIMUM VELOCITY IN VERTICAL RISER TO BE SUFFICIENT TO PREVENT BLOCKAGES IN THE MAIN.

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

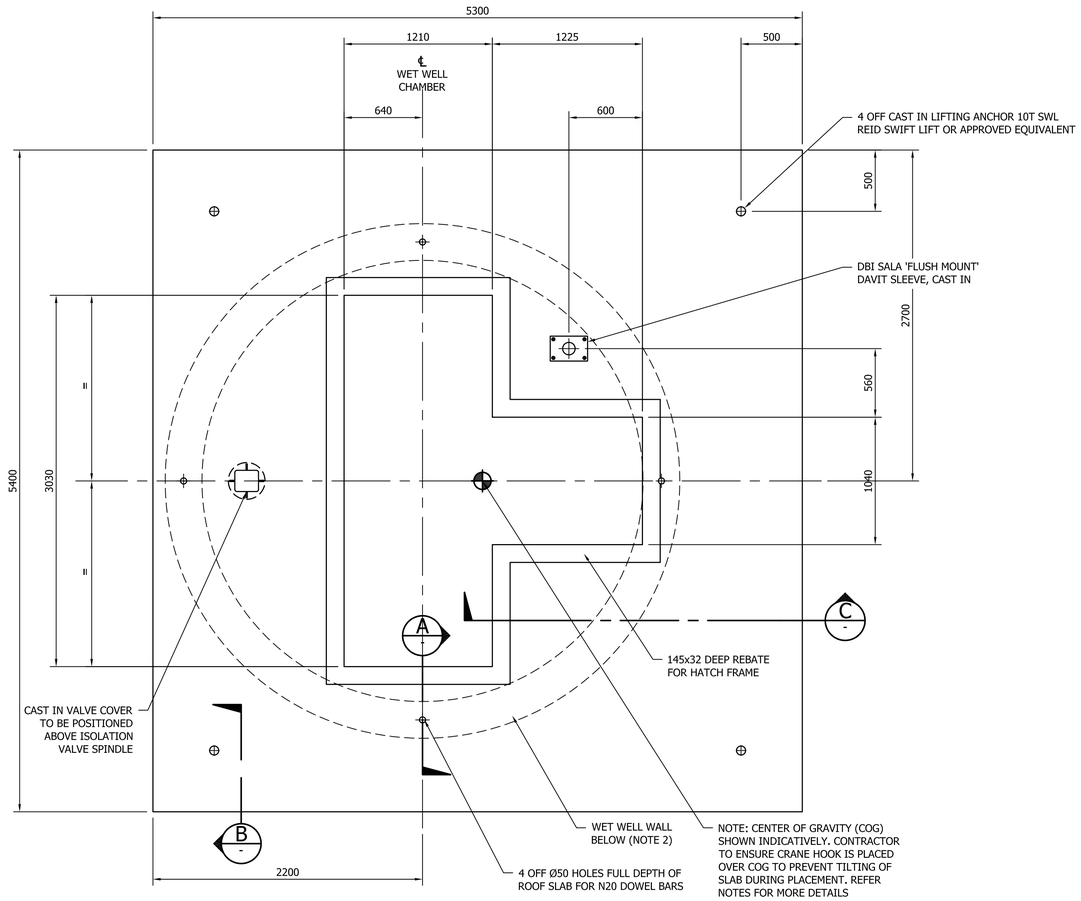
STANDARD DRAWING
SEWAGE PUMP STATIONS
WET WELL
MECHANICAL DETAILS

DRAWING STATUS
Current

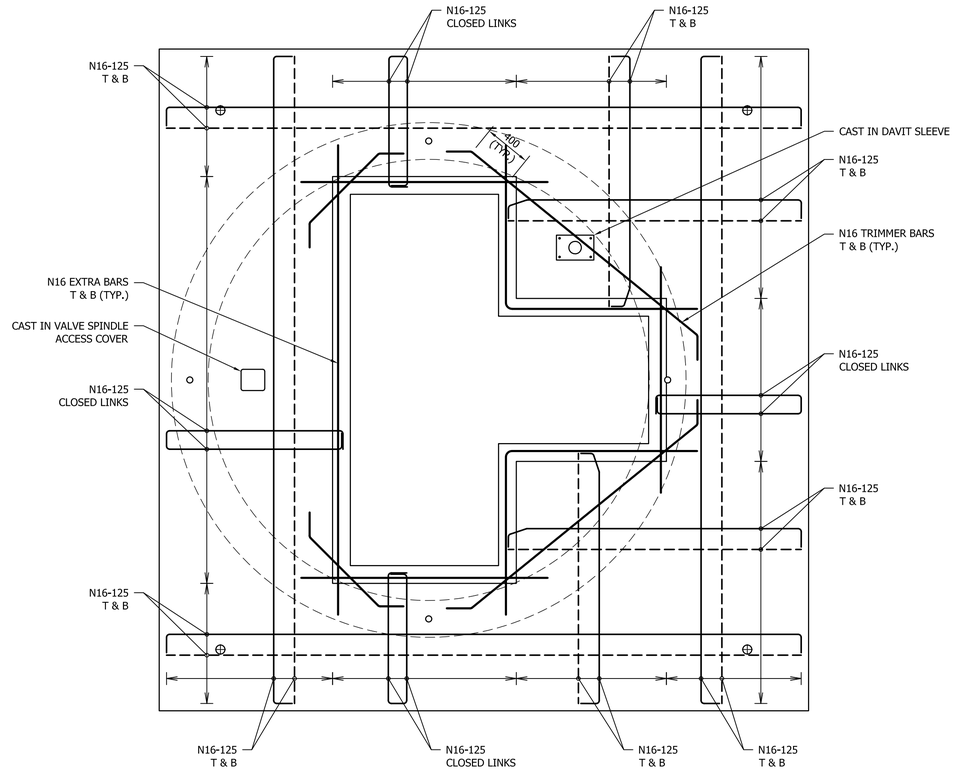
SD-4141-C

A1

ISSUE A

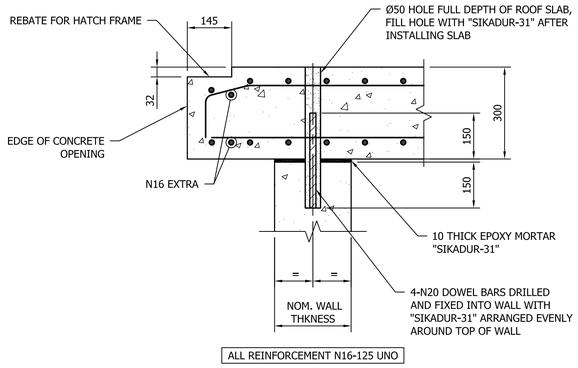


TOP SLAB PLAN
SCALE: 1 : 25



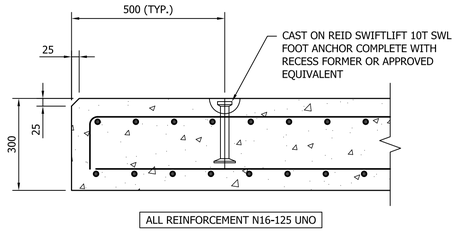
TOP COVER = 60 mm
BOTTOM COVER = 70 mm

TOP SLAB REINFORCEMENT PLAN
SCALE: 1 : 25



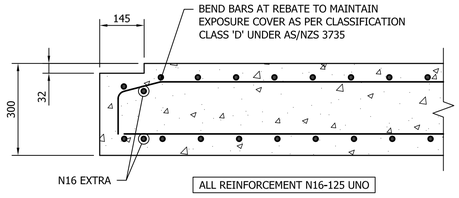
ALL REINFORCEMENT N16-125 UNO

SECTION A
SCALE 1:10



ALL REINFORCEMENT N16-125 UNO

SECTION B
SCALE 1:10



ALL REINFORCEMENT N16-125 UNO

SECTION C
SCALE 1:10

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH WET WELL DRAWINGS: SD-4140, SD-4141 AND SD-4143.
3. PRECAST ROOF SLAB TO HAVE A MAXIMUM STRENGTH OF 40MPa AT TIME OF LIFTING.
4. SPREADER BEAM TO BE USED TO ENSURE LIFT FORCE IS VERTICAL AND LOADS TO ANCHORS ARE EQUAL.
5. MAXIMUM SELF WEIGHT OF SLAB + STEEL COVERS, WLL = 17.8T (LIFTING WEIGHT).
6. DESIGN LOAD FACTORS FOR LIFTING:
   - LIVE LOAD FACTOR: 1.35
   - DYNAMIC LOAD FACTOR: 1.3 (SINGLE CRANE LIFT)
   - UNEVEN LOAD DISTRIBUTION FACTOR: 1:1
   - ADDITIONAL SELF WEIGHT ALLOWANCE: 1.0
7. LIFTING DESIGN HAS ONLY ALLOWED FOR VERTICAL LIFTING OF THE SLAB.
8. CONTRACTOR TO CONFIRM THE MAXIMUM LIFTING WEIGHT OF THE SLAB LESS THAN THE SELF WEIGHT - IF THE WEIGHT OF THE SLAB IS GREATER THAN THE SELF WEIGHT INDICATED ON THE DRAWING, ICON WATER SHALL BE NOTIFIED FOR FURTHER ADVICE.
9. ALL PROPRIETARY ITEMS SHALL BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

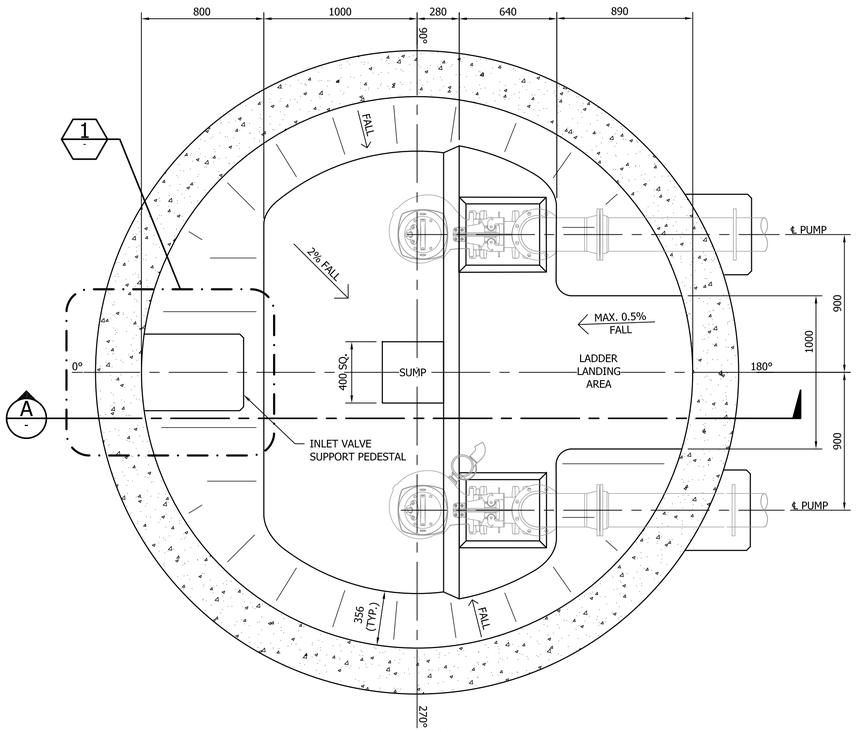
icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
WET WELL
TOP SLAB DETAILS

DRAWING STATUS: Current

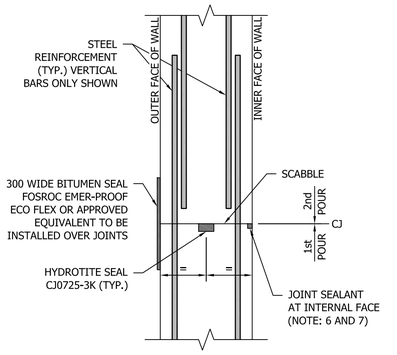
SD-4142-C

A1 | ISSUE A



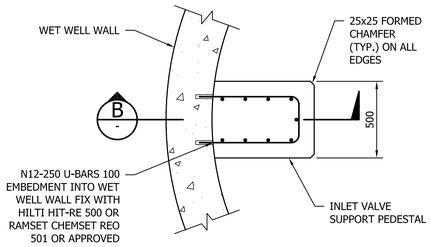
WET WELL BENCHING PLAN

SCALE: 1:20



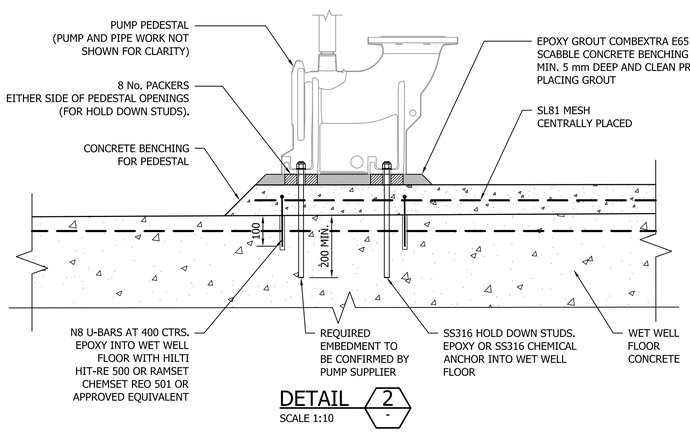
DETAIL 3

SCALE 1:10



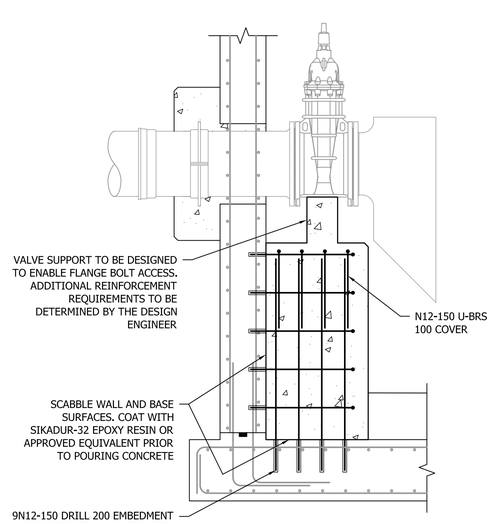
DETAIL 1

SCALE 1:20



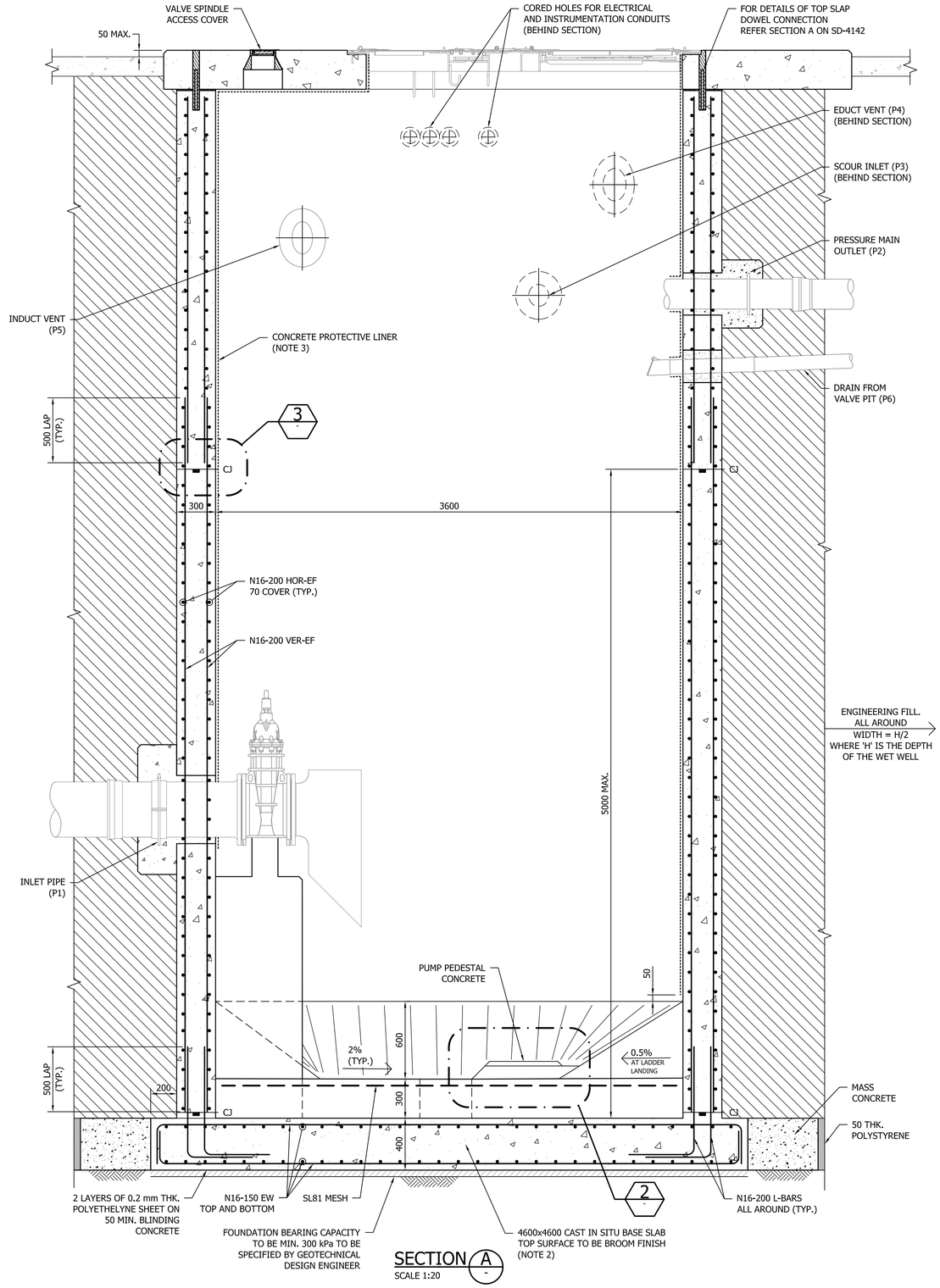
DETAIL 2

SCALE 1:10



SECTION B

SCALE 1:20



SECTION A

SCALE 1:20

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. BASE SLAB INDICATIVE, DESIGN ENGINEER TO DESIGN FOR BUOYANCY FORCES AND GROUND CONDITIONS.
3. CORROSION PROTECTION OF WET WELL SHALL BE ACHIEVED BY LINING ALL INTERNAL SURFACES (EXCLUDING BENCHING) WITH CONCRETE PROTECTIVE LINER (CPL) - 3 mm THICK AKS LINER OR APPROVED EQUIVALENT TO WSA-201.
4. SLOPED BENCHING TO BE COATED WITH ULTRA HIGH BUILD SOLVENT-FREE EPOXY (EUH) INTERNATIONAL POLIBRID 705E OR APPROVED EQUIVALENT TO WSA-201. NO COATING ON FLOOR OR UNDER PUMP PEDESTAL.
5. FOR PIPEWORK PENETRATION DETAILS REFER TO SD-4107 AND SD-4108.
6. REFER TO MANUFACTURERS SPECIFICATION REGARDING MINIMUM AND MAXIMUM AMBIENT TEMPERATURES PRIOR TO PLACING SEALANT.
7. SEALANT SHALL BE POLYURETHANE BASED JOINT SEALANT SIKA FLEX-PRO OR FOSROC EMERSEAL 200 OR APPROVED EQUIVALENT, SEALANT TO BE APPLIED ACCORDING TO MANUFACTURES INSTRUCTIONS INCLUDING PRIMING OF JOINT SURFACE.
8. ENSURE ANCHOR BOLTS ARE TIGHTENED TO THE REQUIRED TORQUE AS PER MANUFACTURER INSTRUCTIONS.
9. TO ASSIST LEVELING ALIGNMENT, ADJUSTING NUTS MAY BE INSTALLED ON THE CHEMICAL ANCHOR UNDER THE BASEPLATE. AFTER THE WEDGES ARE INSTALLED AND PRIOR TO GROUTING, THE ADJUSTING NUTS SHALL BE BACKED OFF.
10. SQUARE WASHERS SHALL BE USED BETWEEN ALL HOLDING DOWN NUTS AND THE PEDESTAL. WASHERS SHALL BE 50 x 50 x 5 mm MIN.

PENETRATION DETAILS (NOTE 5)

PENETRATION No.	SIZE	ANGLE	CENTRE LINE OF PENETRATION (mAHD)	DESCRIPTION	TYPE OF PENETRATION
P1	DN375	0°	T.B.C.	INCOMING SEWER	TYPE 4
P2 (x 2)	DN200	REFER PLAN	T.B.C.	PRESSURE MAIN	TYPE 5
P3	DN150	247.5°	T.B.C.	SCOUR INLET	TYPE 5
P4	DN250	225°	T.B.C.	EDUCT VENT	TYPE 3
P5	DN250	45°	T.B.C.	INDUCT VENT	TYPE 3
P6	DN100	REFER PLAN	T.B.C.	VALVE PIT DRAIN	TYPE 3

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
WET WELL
CONCRETE DETAILS

DRAWING STATUS: Current

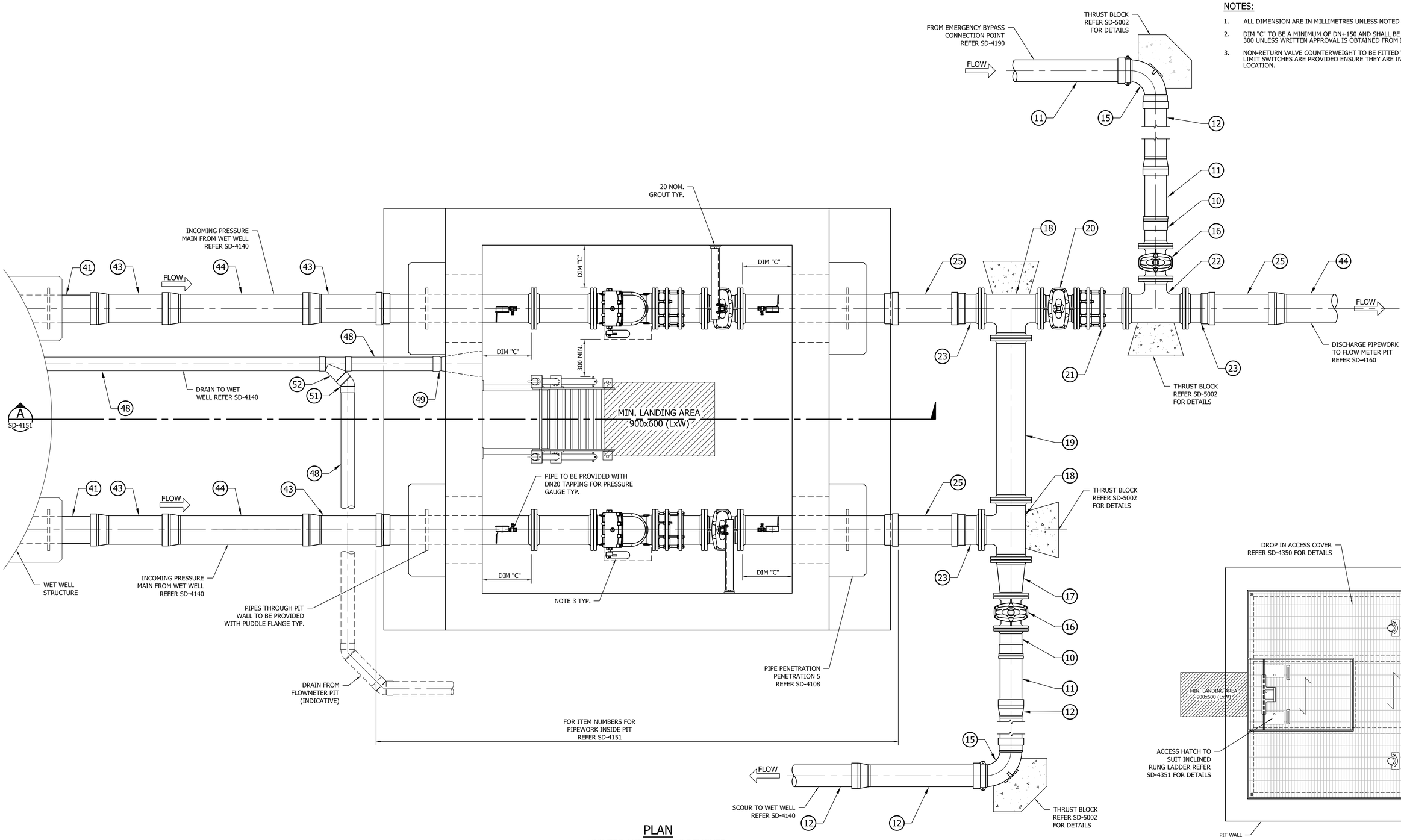
SD-4143-C

A1

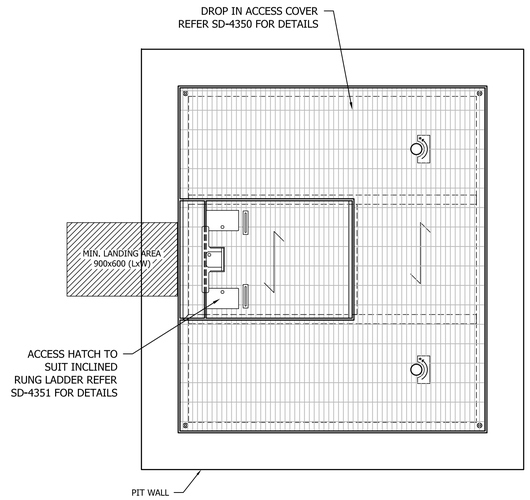
ISSUE: A

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. DIM "C" TO BE A MINIMUM OF DN+150 AND SHALL BE NO LESS THAN 300 UNLESS WRITTEN APPROVAL IS OBTAINED FROM ICON WATER.
3. NON-RETURN VALVE COUNTERWEIGHT TO BE FITTED WITH A GUARD. IF LIMIT SWITCHES ARE PROVIDED ENSURE THEY ARE IN AN ACCESSIBLE LOCATION.



PLAN
(COVERS AND HATCHES REMOVED)
SCALE: 1 : 15



PLAN - ACCESS AND COVERS
SCALE: 1 : 20

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

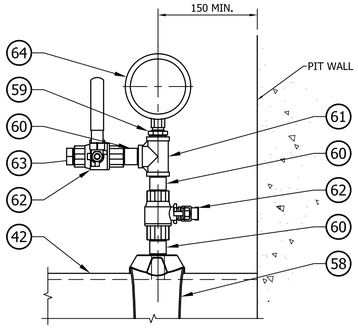
STANDARD DRAWING
SEWAGE PUMP STATIONS
VALVE PIT
PLAN

DRAWING STATUS: Current

SD-4150-C

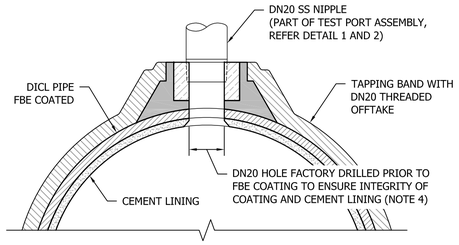
A1

ISSUE: A

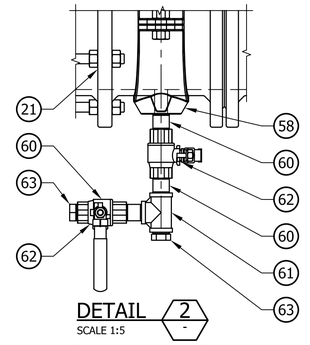


DETAIL 1
SCALE 1:5

PRESSURE GAUGE AND TEST PORT DETAIL

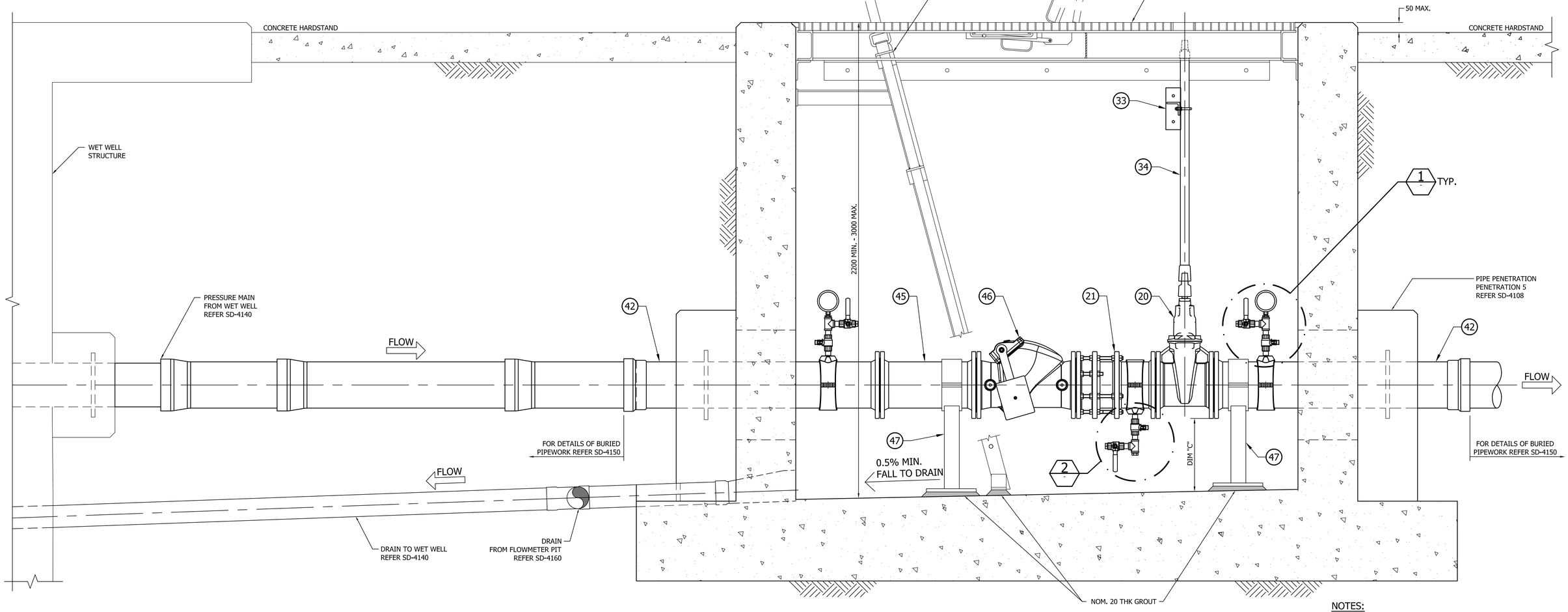


TYPICAL SECTION
TAPPING BAND ARRANGEMENT
SCALE: N.T.S.



DETAIL 2
SCALE 1:5

ISOLATION TEST PORT DETAIL



SECTION A
SCALE 1:10 SD-4150

(PIPEWORK TYPICAL FOR BOTH DISCHARGE PIPES)

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. SAFETY GUARD REQUIRED WHEN COUNTERWEIGHT IS INSTALLED.
3. DIM "C" TO BE A MINIMUM OF DN+150 AND SHALL BE NO LESS THAN 300 UNLESS WRITTEN APPROVAL IS OBTAINED FROM ICON WATER.
4. THE CEMENT LINING AND OR FBE COATING TO BE INSPECTED BEFORE INSTALLATION OF TAPPING BAND TO CONFIRM THE INTEGRITY OF THE LINING AND THE FBE COATING.

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A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

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Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

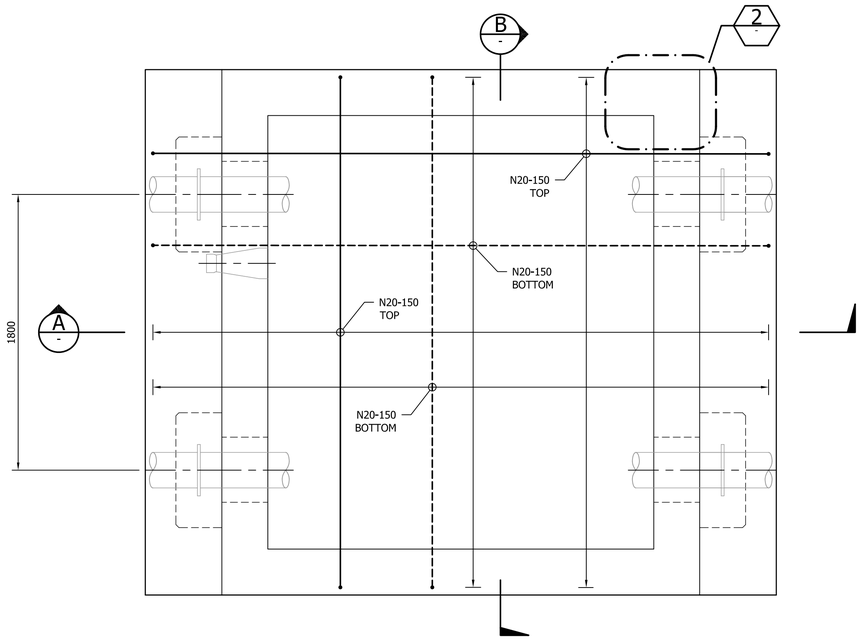
STANDARD DRAWING
SEWAGE PUMP STATIONS
VALVE PIT
SECTIONS

DRAWING STATUS: Current

SD-4151-C

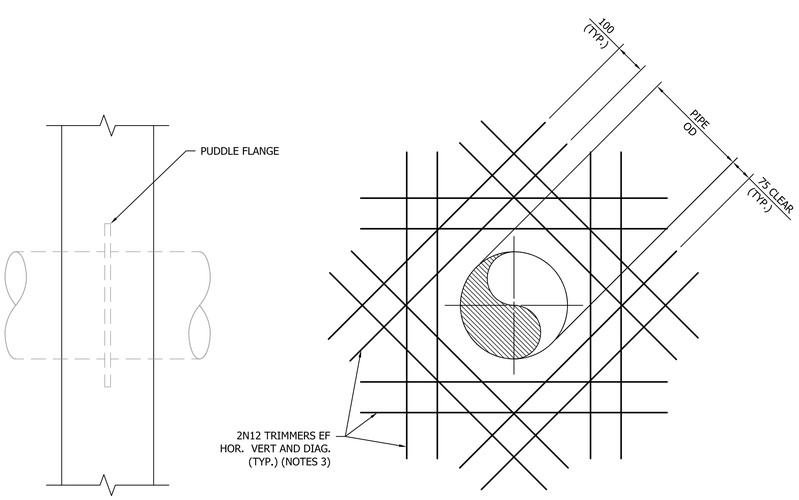
A1

ISSUE A



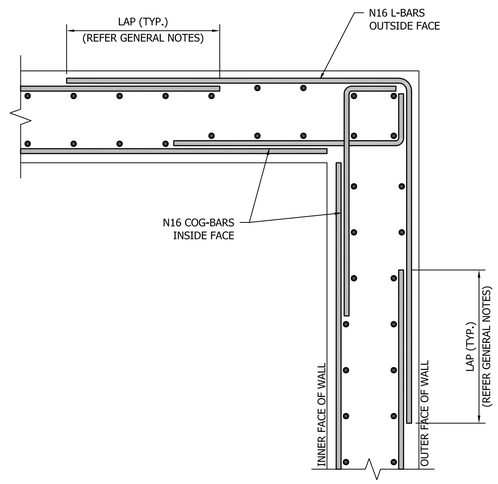
VALVE PIT REINFORCEMENT FLOOR PLAN

SCALE: 1 : 20



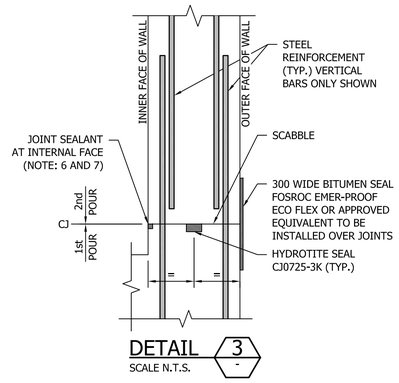
DETAIL 1
SCALE N.T.S.

TYPICAL CAST-IN PIPE PENETRATION IN WALL



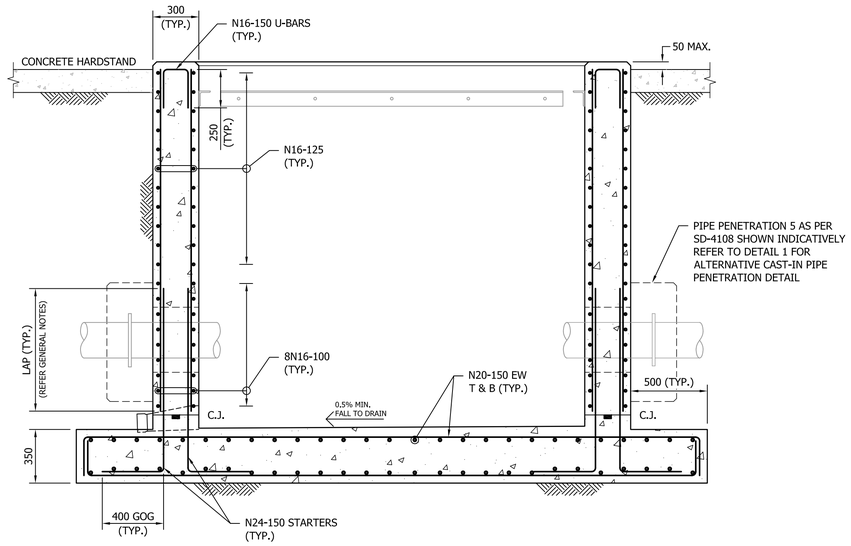
DETAIL 2
SCALE N.T.S.

TYPICAL WALL CORNER REINFORCEMENT

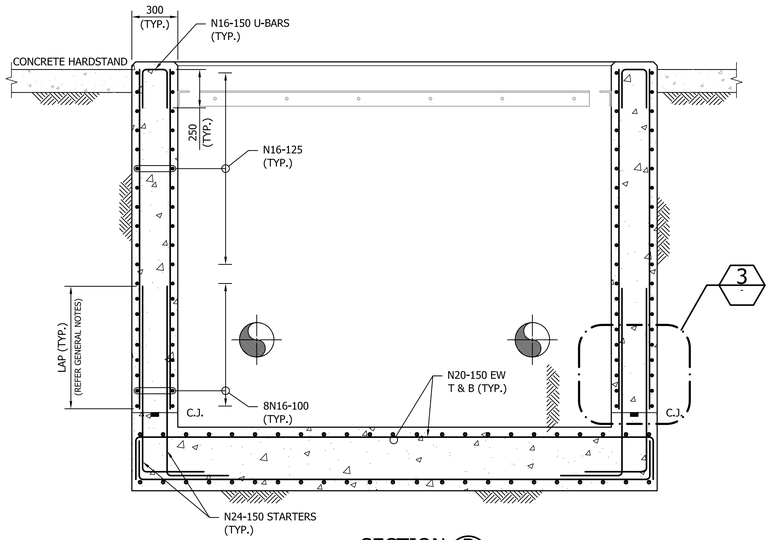


DETAIL 3
SCALE N.T.S.

TYPICAL CONSTRUCTION JOINT



SECTION A
SCALE 1:20



SECTION B
SCALE 1:20

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR CONCRETE AND REINFORCEMENT NOTES REFER TO GENERAL NOTES ON SD-4102.
3. HORIZONTAL AND VERTICAL TRIMMER BARS SHALL BE PLACED WITHIN MAIN REINFORCING BARS. DIAGONAL TRIMMER BARS SHALL BE PLACED AND TIED BEHIND MAIN REINFORCING TO CENTRES AS SHOWN.
4. BASE SLAB INDICATIVE, DESIGN ENGINEER TO DESIGN FOR BUOYANCY FORCES AND GROUND CONDITIONS.
5. FOR PIPEWORK PENETRATION DETAILS REFER TO SD-4107 AND SD-4108.
6. SEALANT SHALL BE PLACED WHEN AMBIENT TEMPERATURE IS LESS THAN 25°C.
7. SEALANT SHALL BE POLYURETHANE BASED JOINT SEALANT SIKA FLEX-PRO OR FOSROC EMERSEAL 200 OR APPROVED EQUIVALENT, SEALANT TO BE APPLIED ACCORDING TO MANUFACTURES INSTRUCTIONS INCLUDING PRIMING OF JOINT SURFACE.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

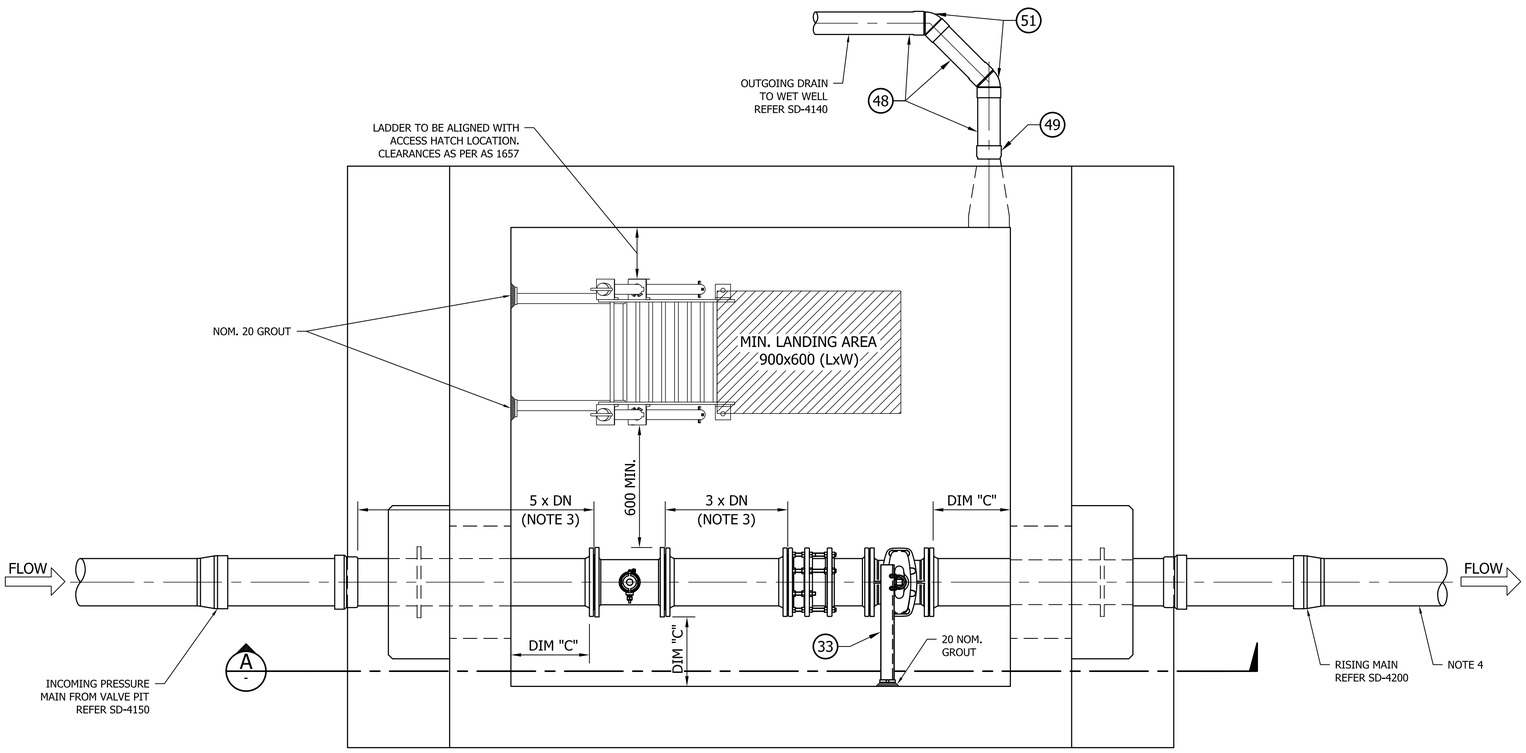
STANDARD DRAWING
SEWAGE PUMP STATIONS
VALVE PIT
CONCRETE DETAILS

DRAWING STATUS: Current

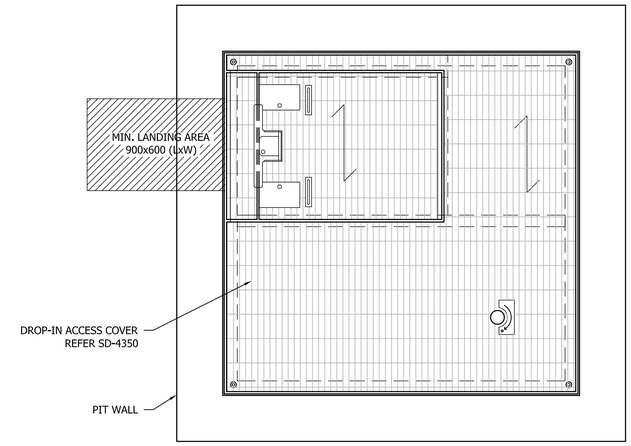
SD-4152-C

A1

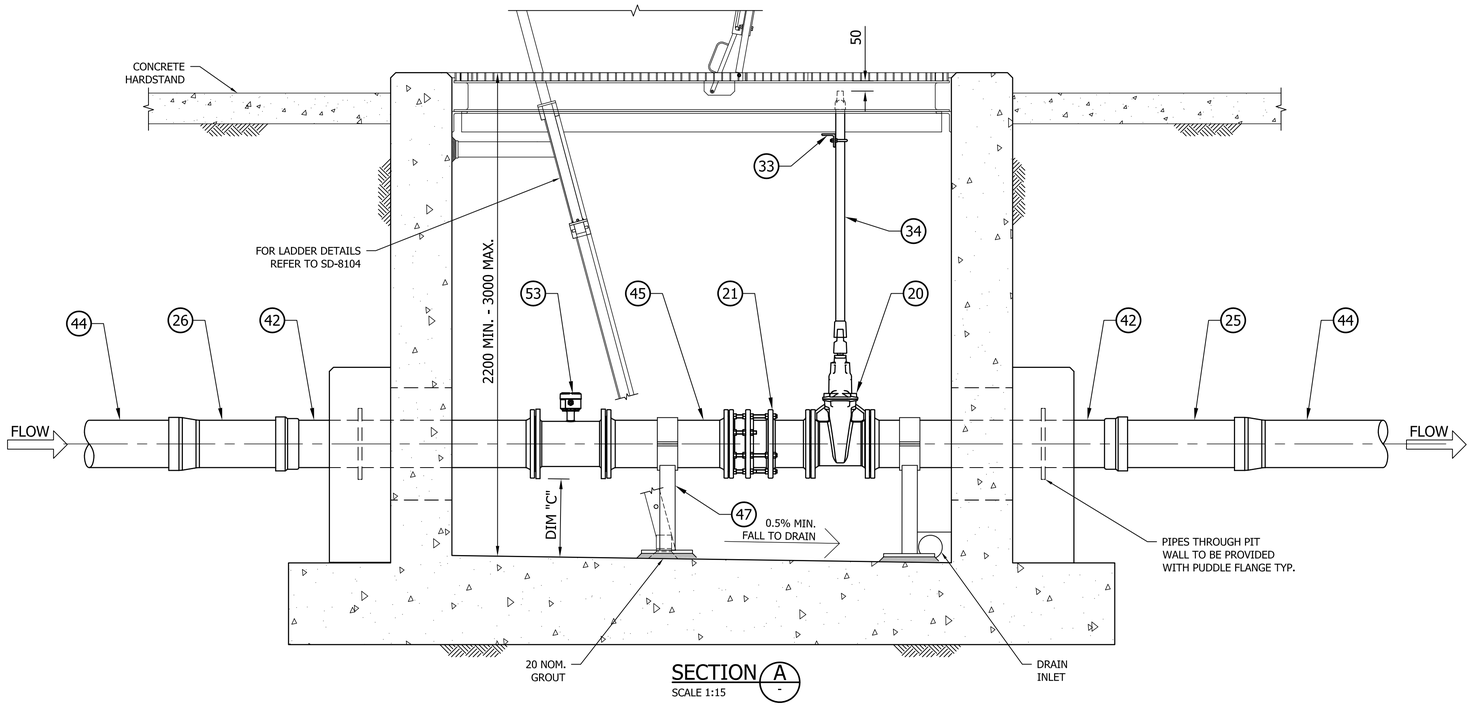
ISSUE A



PLAN
(COVERS AND HATCHES REMOVED)
SCALE: 1 : 15



PLAN - ACCESS AND COVERS
SCALE: 1 : 20



SECTION A -
SCALE 1:15

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. DIM "C" TO BE A MINIMUM OF DN+150 AND SHALL BE NO LESS THAN 300 UNLESS WRITTEN APPROVAL IS OBTAINED FROM ICON WATER.
3. PROVIDE STRAIGHT PIPE FOR A MINIMUM 5 x DN UPSTREAM AND 3 x DN DOWNSTREAM OF FLOWMETER. STRAIGHT PIPE TO BE FREE OF VALVES, DISMANTLING JOINTS AND OTHER FITTINGS.
4. DOWNSTREAM OF FLOWMETER CHAMBER, ICON WATER ACCEPTS THE USE OF POLYETHYENE MATERIAL.

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Date:
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DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

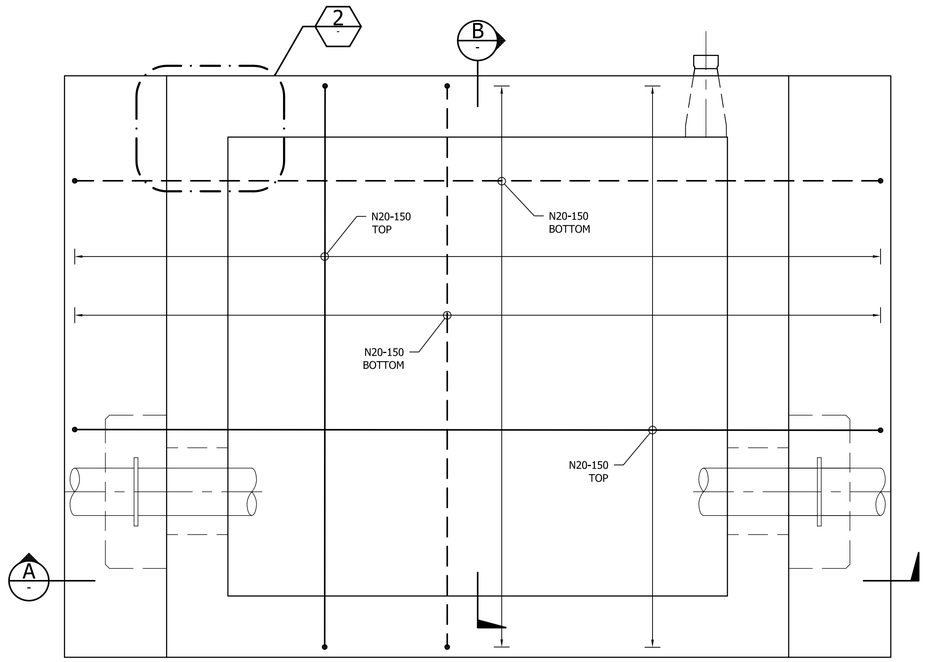
STANDARD DRAWING
SEWAGE PUMP STATIONS
FLOWMETER PIT
PLAN AND SECTION

DRAWING STATUS: Current

SD-4160-C

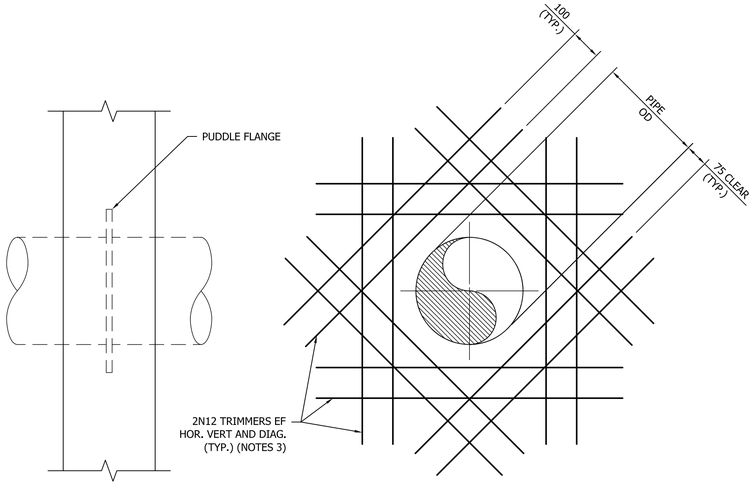
A1

ISSUE: A



VALVE PIT REINFORCEMENT FLOOR PLAN

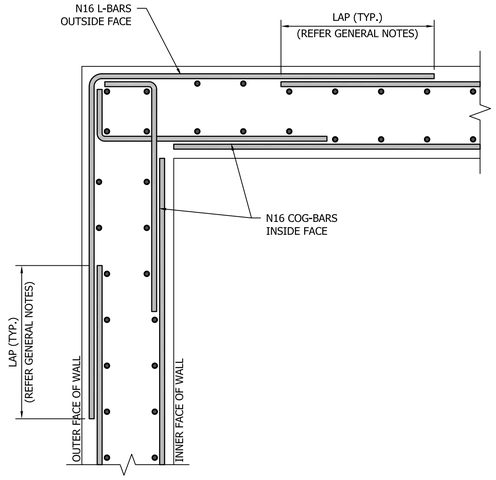
SCALE: 1 : 15



DETAIL 1

SCALE N.T.S.

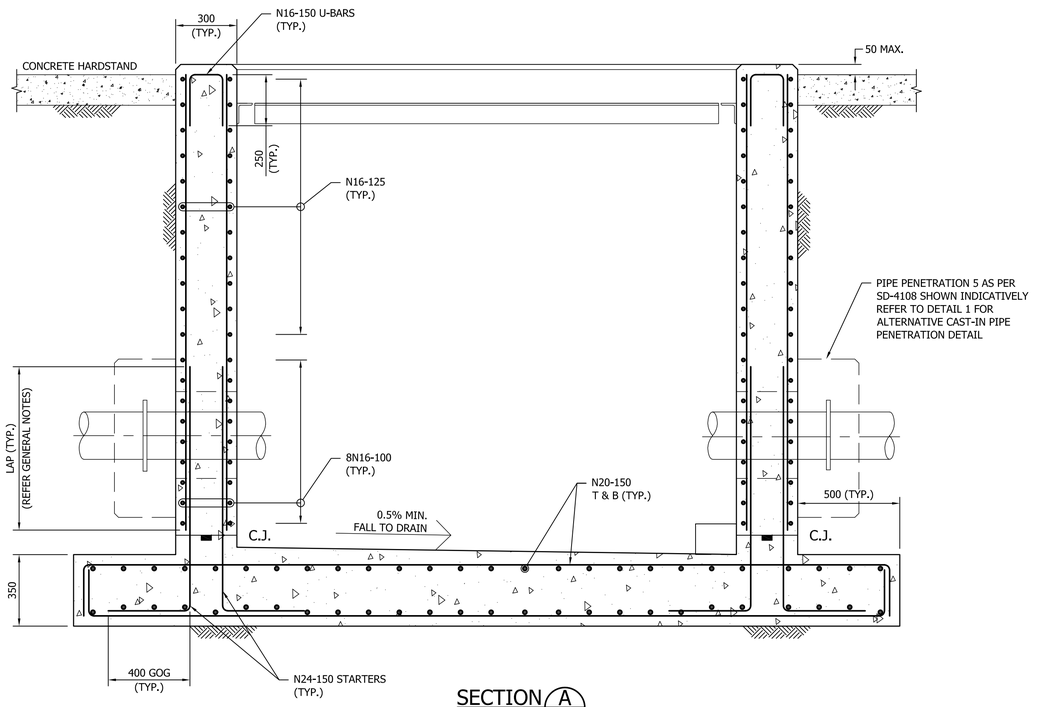
TYPICAL CAST-IN PIPE PENETRATION IN WALL



DETAIL 2

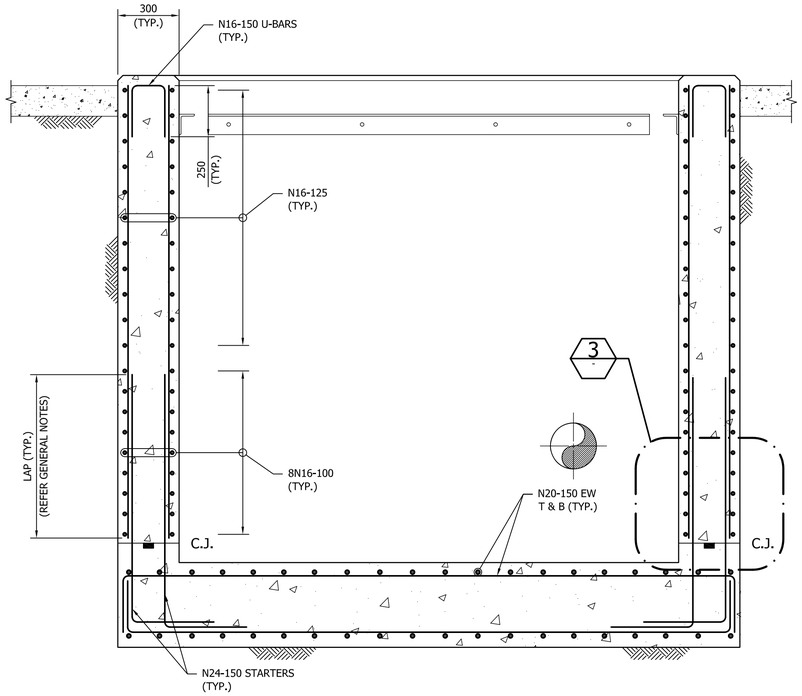
SCALE N.T.S.

TYPICAL WALL CORNER REINFORCEMENT



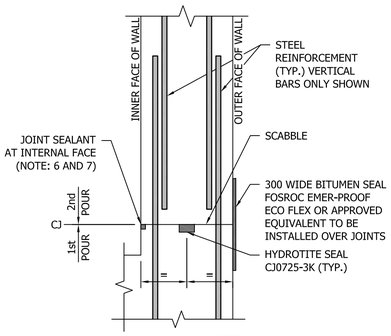
SECTION A

SCALE 1:15



SECTION B

SCALE 1:15



DETAIL 3

SCALE N.T.S.

TYPICAL CONSTRUCTION JOINT

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR CONCRETE AND REINFORCEMENT NOTES REFER TO GENERAL NOTES ON SD-4102.
3. HORIZONTAL AND VERTICAL TRIMMER BARS SHALL BE PLACED WITHIN MAIN REINFORCING BARS. DIAGONAL TRIMMER BARS SHALL BE PLACED AND TIED BEHIND MAIN REINFORCING TO CENTRES AS SHOWN.
4. BASE SLAB INDICATIVE, DESIGN ENGINEER TO DESIGN FOR BUOYANCY FORCES AND GROUND CONDITIONS.
5. FOR PIPEWORK PENETRATION DETAILS REFER TO SD-4107 AND SD-4108.
6. SEALANT SHALL BE PLACED WHEN AMBIENT TEMPERATURE IS LESS THAN 25°C.
7. SEALANT SHALL BE POLYURETHANE BASED JOINT SEALANT SIKA FLEX-PRO OR FOSROC EMERSEAL 200 OR APPROVED EQUIVALENT, SEALANT TO BE APPLIED ACCORDING TO MANUFACTURES INSTRUCTIONS INCLUDING PRIMING OF JOINT SURFACE.

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A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

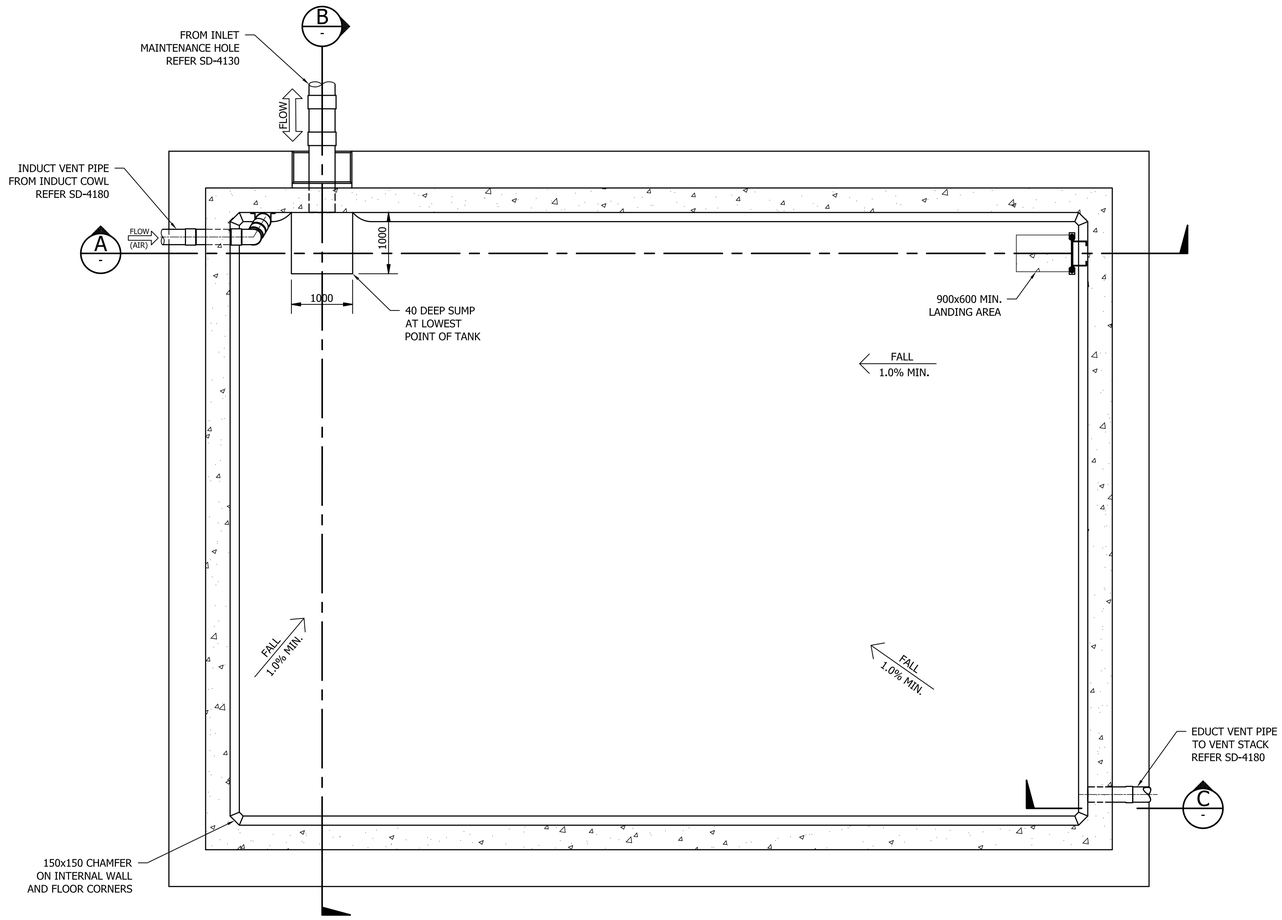
STANDARD DRAWING
SEWAGE PUMP STATIONS
FLOWMETER PIT
CONCRETE DETAILS

DRAWING STATUS: Current

SD-4161-C

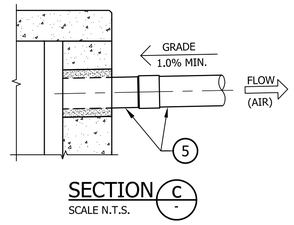
A1

ISSUE: A



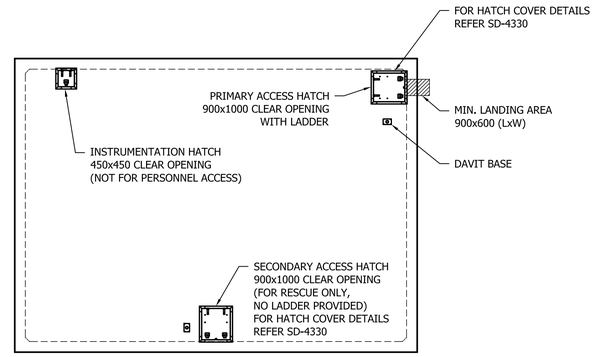
TANK BASE PLAN

SCALE- N.T.S.



SECTION C

SCALE N.T.S.

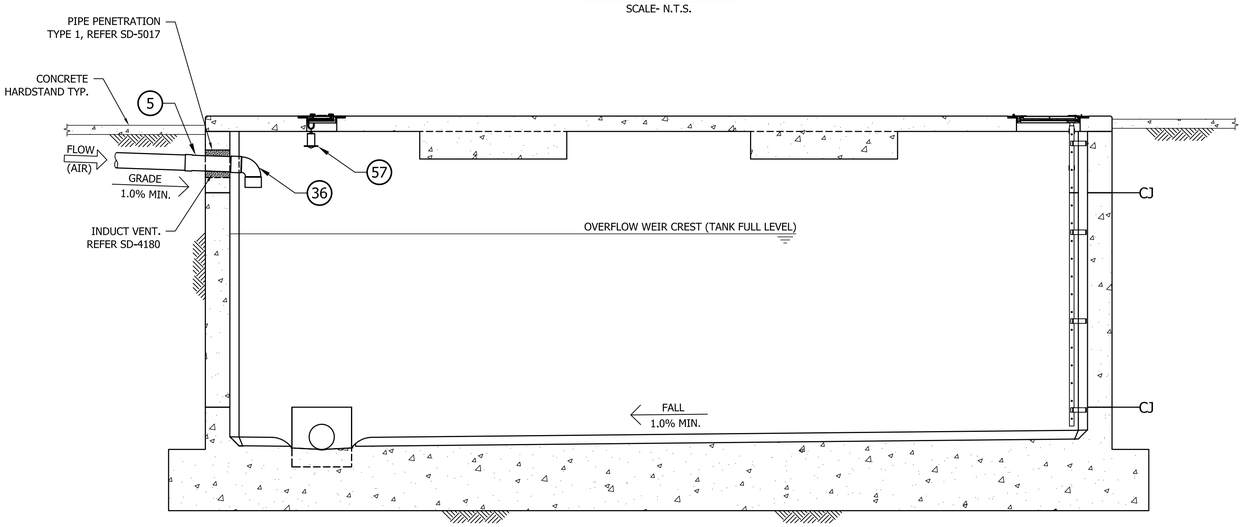


ROOF PLAN

SCALE- N.T.S.

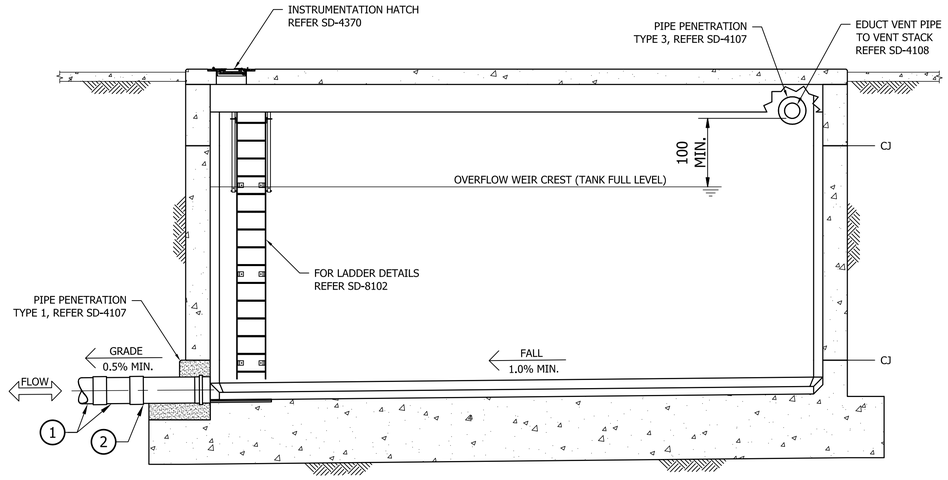
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. VENT LINE TO EDUCT VENT SHAFT (REFER SD-4180) TO BE SIZED TO SUIT AIRFLOW REQUIREMENTS. MINIMUM VENT PIPE SIZE TO BE 1/2 THE DN OF THE INCOMING SEWER OR DN150, WHICHEVER IS LARGER.
3. THE REINFORCED CONCRETE STRUCTURE TO BE DESIGNED TO SUIT SITE AND LOADING REQUIREMENTS. (AS PER AS 3735 - WATER RETAINING STRUCTURES).
4. THE EMERGENCY STORAGE TANK STRUCTURE SHOWN IS INDICATIVE ONLY. FULL STRUCTURAL DESIGN OF THE TANK AND ROOF SLAB MUST BE PROVIDED TO SPECIFIC PROJECT/SITE REQUIREMENTS.
5. THE DETAILS RELATING TO ACCESS/EGRESS AND HEIGHT SAFETY AS DEPICTED ON THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE REQUIREMENTS DETAILED IN ICON WATER SPECIFICATIONS STD-SPE-G-008 AND G-009. THE DESIGNER SHALL PRODUCE PROJECT SPECIFIC (ISSUED FOR CONSTRUCTION) DESIGNS AS APPROPRIATE BASED ON THIS DRAWING AND THE REQUIREMENTS OF THE ABOVE-MENTIONED SPECIFICATIONS.



SECTION A

SCALE N.T.S.



SECTION B

SCALE N.T.S.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
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DAM		RES		SPS	
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

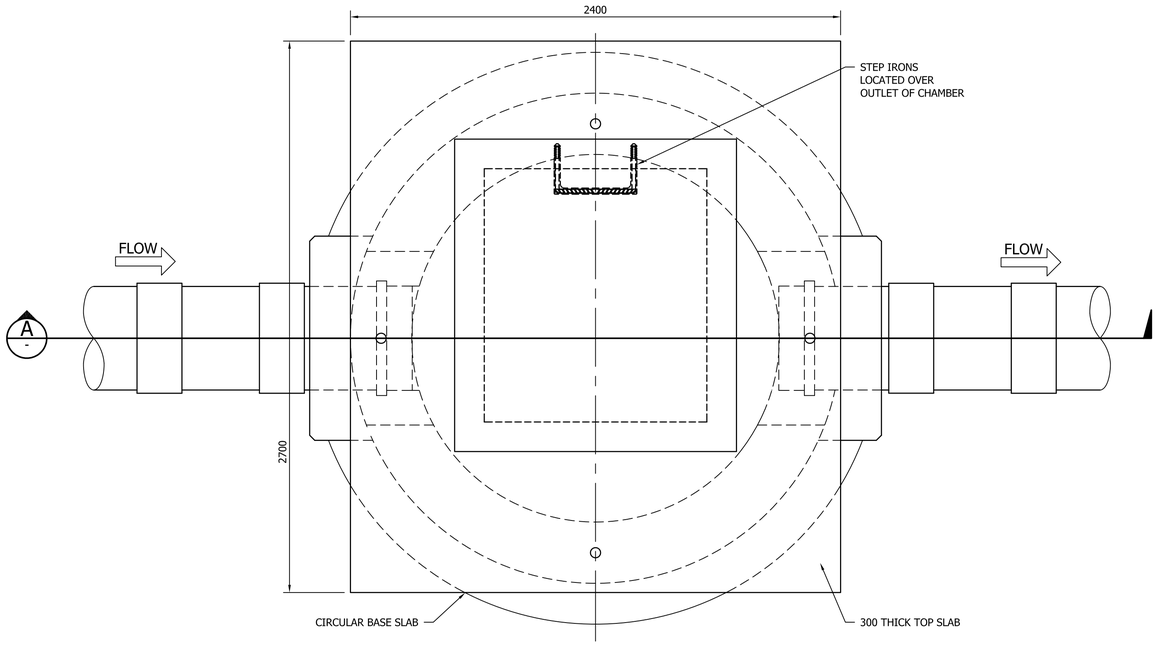
STANDARD DRAWING
SEWAGE PUMP STATIONS
EMERGENCY STORAGE TANK
PLAN AND SECTIONS

DRAWING STATUS: Current

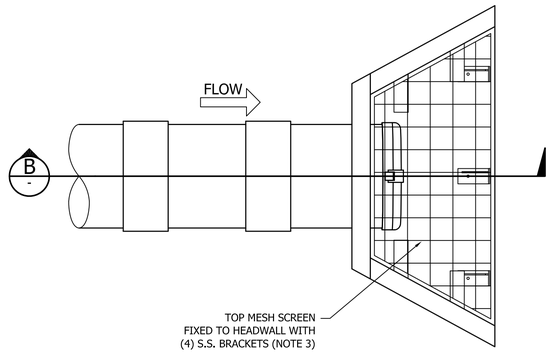
SD-4170-C

A1

ISSUE: A



PLAN VIEW
GAS CHECK MAINTENANCE HOLE
SCALE: N.T.S

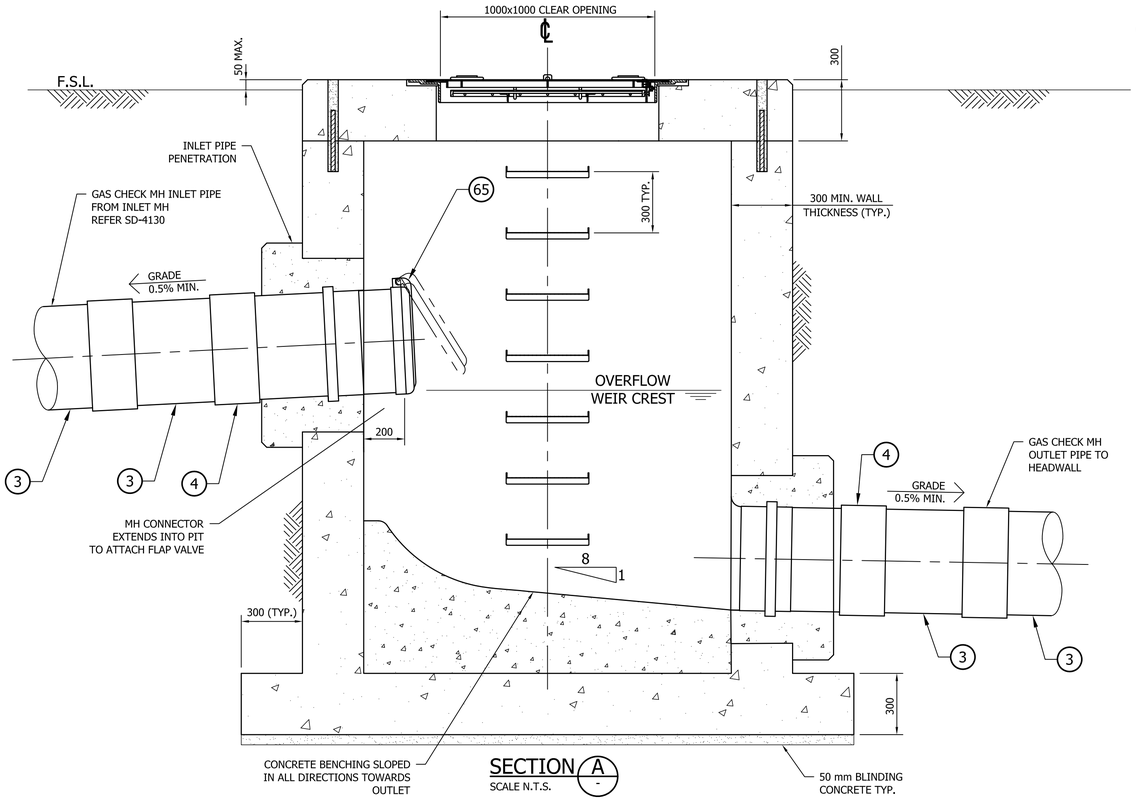


PLAN VIEW
EMERGENCY RELIEF OUTLET
SCALE: N.T.S.

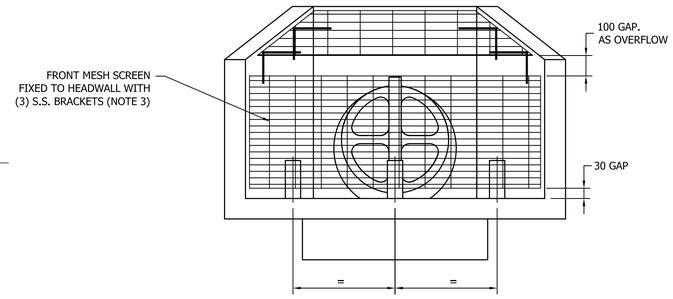
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. OVERFLOW PIPE EMBEDMENT AND TRENCH FILL DETAILS AS PER SD-2101.
3. SCREENS, BRACKETS, FASTENERS AND MASONRY ANCHORS TO BE STAINLESS GRADE 316.
4. THIS DRAWING SHOWS A TYPICAL ARRANGEMENT OF AN EMERGENCY RELIEF SYSTEM. REFER TO SPECIFIC DESIGN DRAWINGS FOR INVERT LEVELS & LOCATION DETAILS.
5. EROSION PROTECTION AT THE HEADWALL DISCHARGE IS TO CONSIST OF RIP-RAP (100 mm MAX SIZE) OR AN EROSION BLANKET.
6. DRAINAGE TO BE INTO ICON WATER NOMINATED DISCHARGE POINT.
7. WHERE OVERFLOW PIPE DISCHARGES TO A FORMED CHANNEL THE INVERT OF THE OVERFLOW PIPE INLET SHALL BE A MINIMUM 150 ABOVE THE TOE OF THE CHANNEL WALL.
8. WHERE OVERFLOW DISCHARGE IS TO A STORMWATER PIPE, THE OVERFLOW PIPE OUTLET SHOULD, IF PRACTICAL, BE DESIGNED CENTRE TO CENTRE WITH THE STORMWATER PIPE. WHERE THIS IS NOT PRACTICAL, THE STRUCTURAL INTEGRITY OF STORMWATER SHALL BE PRESERVED BY ENSURING THAT INVERT LEVELS OR SOFFIT LEVELS ARE SEPARATED BY A MINIMUM VERTICAL DISTANCE OF 150 FOR STORMWATER PIPES UP TO DN900. CONSULT WATER ICON WATER FOR LARGER STORMWATER PIPES.

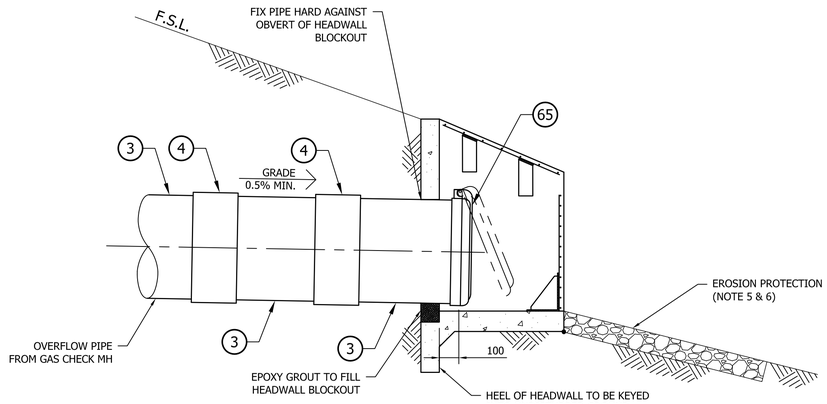
TABLE 1 - OVERFLOW PIPE SIZING	
INLET MH SEWER PIPE	OVERFLOW PIPE
DN300	DN375
DN375	DN450
DN450	DN525



SECTION A
SCALE N.T.S.



FRONT VIEW
EMERGENCY RELIEF OUTLET
SCALE N.T.S.



SECTION B
SCALE N.T.S.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision:

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

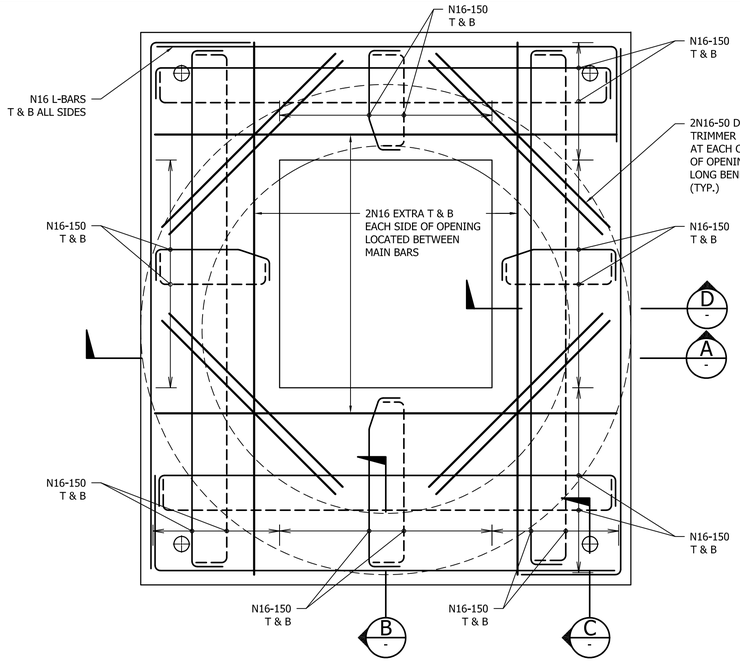
STANDARD DRAWING
SEWAGE PUMP STATIONS
EMERGENCY RELIEF STRUCTURES
GAS CHECK MAINTENANCE HOLE AND OUTLET STRUCTURE
PLAN AND SECTIONS

DRAWING STATUS: Current

SD-4171-C

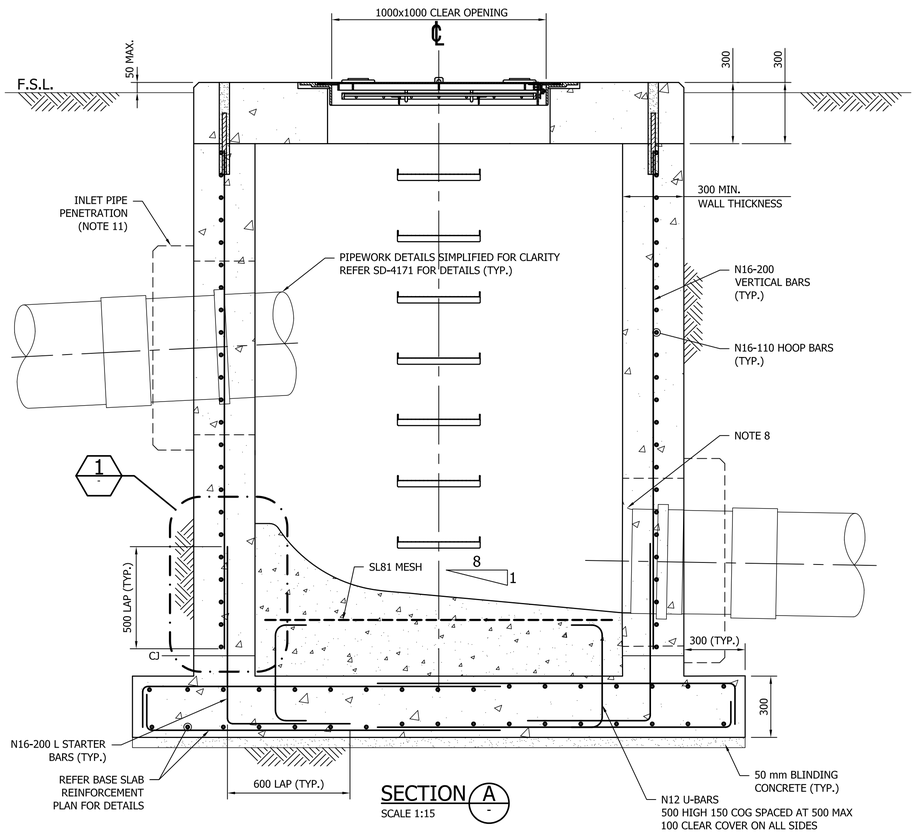
A1

ISSUE: A



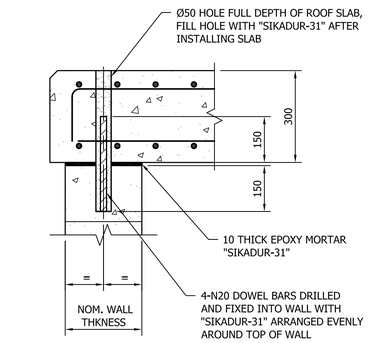
TOP SLAB REINFORCEMENT PLAN

SCALE: 1:15



SECTION A

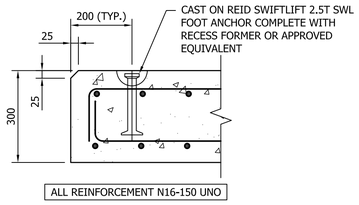
SCALE 1:15



SECTION B

SCALE 1:10

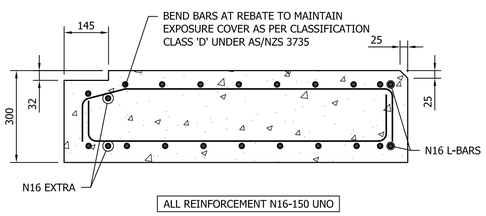
PRECAST TOP SLAB CONNECTION



SECTION C

SCALE 1:10

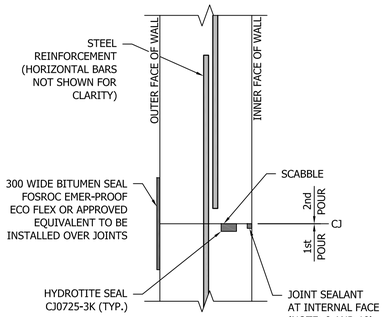
LIFTING ANCHORS



SECTION D

SCALE 1:10

REINFORCEMENT DETAIL AT HATCH REBATE



DETAIL 1

SCALE 1:10

BASE SLAB REINFORCEMENT PLAN

SCALE: 1:15

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PRECAST ROOF SLAB TO HAVE A MAXIMUM STRENGTH OF 25 MPA AT TIME OF LIFTING.
3. SPREADER BEAM TO BE USED TO ENSURE LIFT FORCE IS VERTICAL AND LOADS TO ANCHORS ARE EQUAL.
4. MAXIMUM SELF WEIGHT OF SLAB + STEEL COVERS, WLL = 3.5T (LIFTING WEIGHT).
5. CONTRACTOR TO CONFIRM THE MAXIMUM LIFTING WEIGHT OF THE SLAB LESS THAN THE SELF WEIGHT. IF THE WEIGHT OF THE SLAB IS GREATER THAN THE SELF WEIGHT INDICATED ON THE DRAWING, ICON WATER SHALL BE NOTIFIED FOR FURTHER ADVICE.
6. ALL PROPRIETARY ITEMS SHALL BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.
8. FORM ROUNDED NOSING ON UPPER EDGE OF INLET AND OUTLET PIPES TO PREVENT RAGGING AND FUTURE DAMAGE TO EQUIPMENT AND CABLES.
9. SEALANT SHALL BE PLACED WHEN AMBIENT TEMPERATURE IS LESS THAN 25°C.
10. SEALANT SHALL BE POLYURETHANE BASED JOINT SEALANT SIKA FLEX-PRO OR FOSROC EMERSEAL 200 OR APPROVED EQUIVALENT, SEALANT TO BE APPLIED ACCORDING TO MANUFACTURES INSTRUCTIONS INCLUDING PRIMING OF JOINT SURFACE.
11. FOR PIPEWORK PENETRATION DETAILS REFER TO SD-4107 AND SD-4108.

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REGISTERED ENGINEER
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Discipline:
Date:
Applicable Revision:

DAM		RES			SPS	X	
BWS		WAT			STP		
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
EMERGENCY RELIEF STRUCTURES
GAS CHECK MAINTENANCE HOLE
CONCRETE DETAILS

DRAWING STATUS: Current

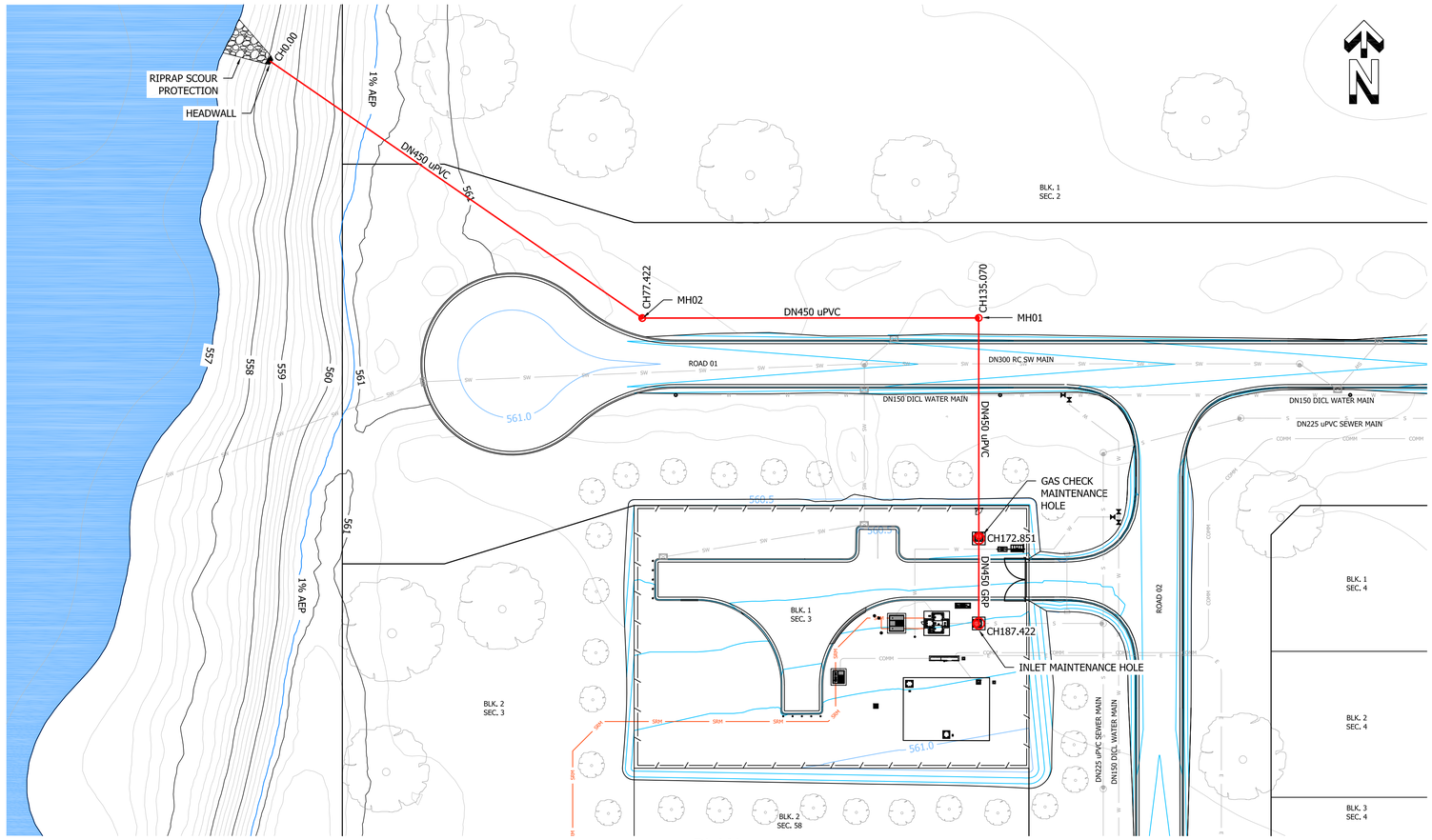
SD-4172-C

A1

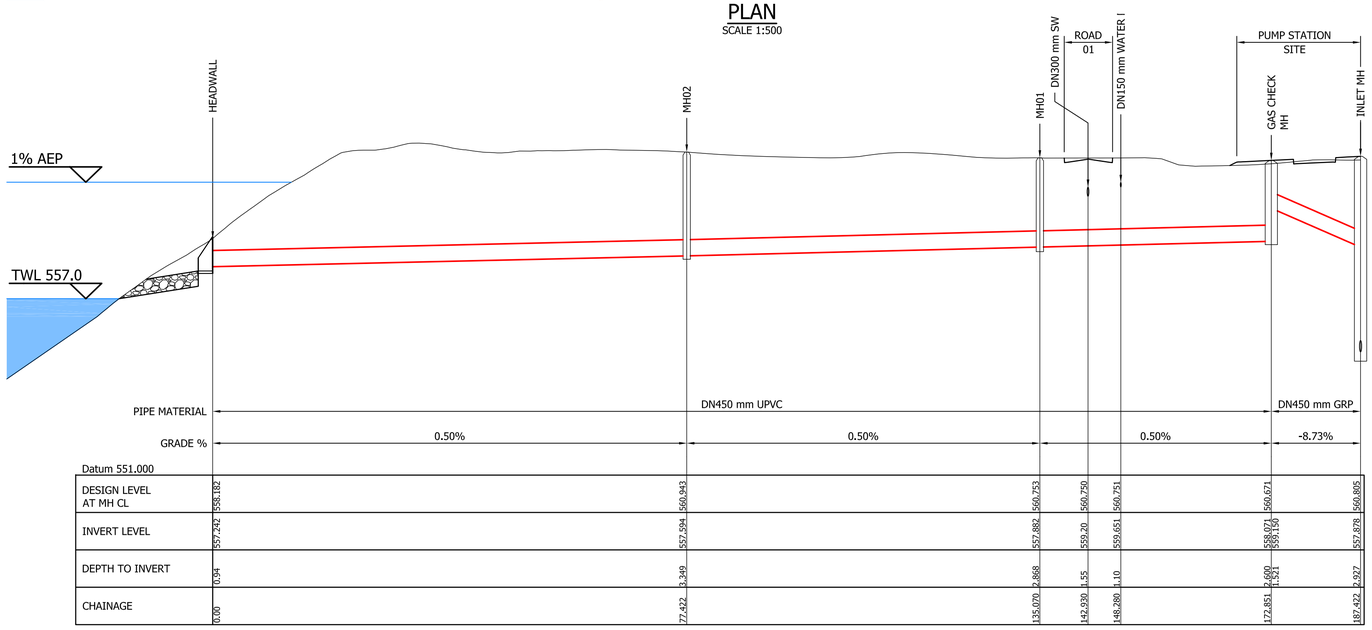
ISSUE: A

OVERFLOW STRUCTURE SETOUT TABLE

CH	EASTING	NORTHING	COVER LEVEL	DESCRIPTION	REFERENCE DRAWING
0.0	698957.774	6089583.645	-	HEADWALL	SD-4171
77.422	699020.506	6089538.439	560.943	MH02	SD-2201
135.070	699078.142	6089537.290	560.753	MH01	SD-2201
172.851	699077.394	6089499.517	560.671	GAS CHECK MH	SD-4171
187.422	699077.080	6089484.949	560.805	INLET MH	SD-4130



PLAN
SCALE 1:500



LONG SECTION - SPS OVERFLOW PIPE
SCALE 1:500 (HOR) 1:100 (VERT)

0 10 20 30 40 50m SCALE 1:500
0 2 4 6 8 10m SCALE 1:100

NOTES:

1. ALL LEVELS ARE IN mAHD.
2. ALL COORDINATES ARE MGA2020 ZONE 55.
3. REFER SD-4102 FOR GENERAL NOTES.
4. FOR PUMP STATION GENERAL ARRANGEMENTS REFER TO SD-4121 AND SD-4123.
5. EXAMPLE SITE 1 LAYOUT SHOWN, THIS DRAWING IS AN EXAMPLE OF A TYPICAL PUMP STATION LAYOUT, OVERFLOW DESIGN TO CONSIDER PROJECT SITE CONDITIONS AND CONSTRAINTS.

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DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

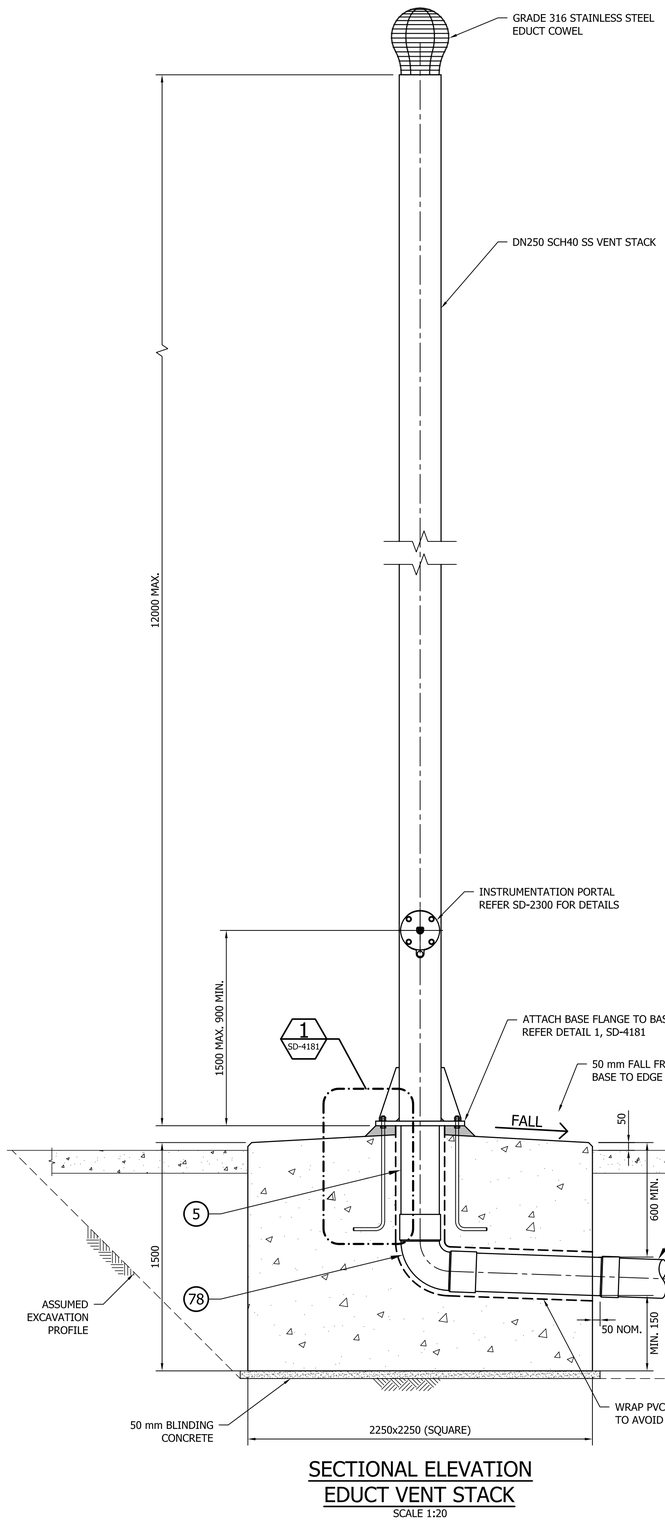
STANDARD DRAWING
SEWAGE PUMP STATIONS
EMERGENCY RELIEF STRUCTURES
OVERFLOW PIPE
PLAN AND LONG SECTION

DRAWING STATUS: Current

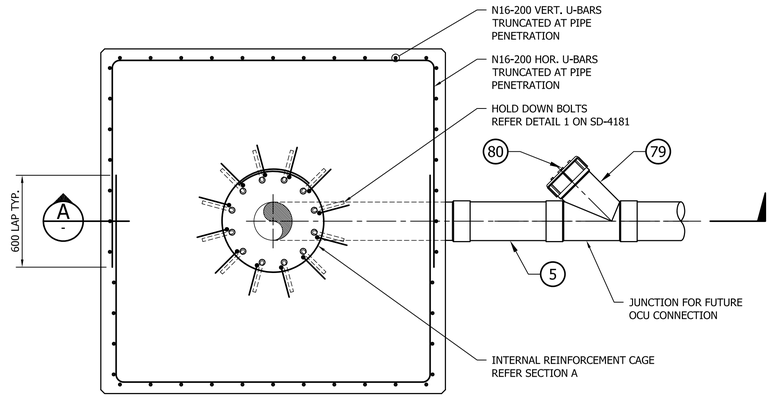
SD-4173-C

A1

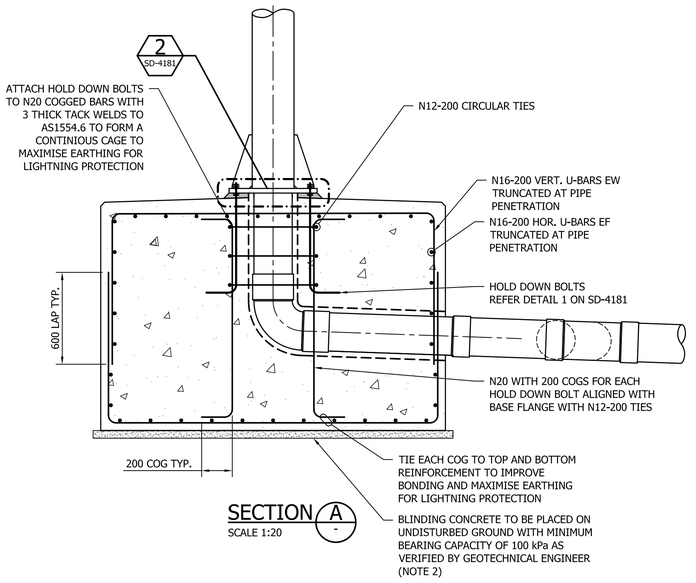
ISSUE: A



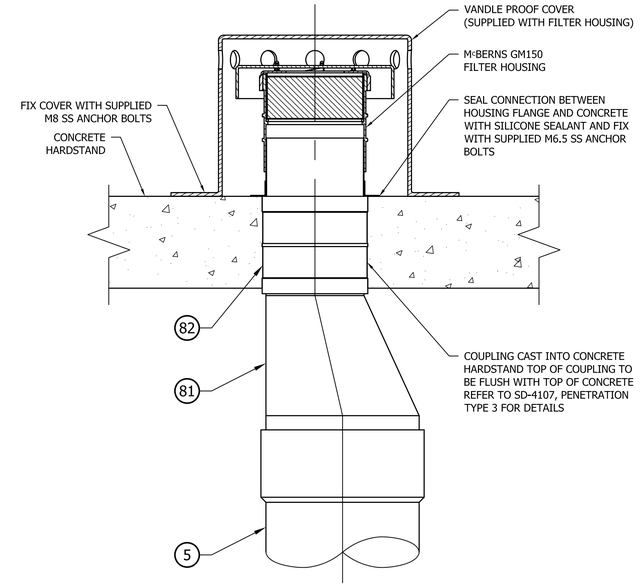
SECTIONAL ELEVATION
EDUCT VENT STACK
SCALE 1:20



REINFORCEMENT PLAN
SCALE 1:20



SECTION A
SCALE 1:20



SECTIONAL ELEVATION
INDUCT VENT
SCALE 1:5

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOOTING DIMENSION SHOWN ON DRAWING SHALL BE CONFIRMED BY A COMPETENT GEOTECHNICAL ENGINEER USING APPROPRIATE DESIGN CHECKS, TO SATISFY THE FOLLOWING CRITERIA, TO SUIT SITE GROUND CONDITIONS:
   2.1 ESTIMATED MINIMUM DIFFERENTIAL SETTLEMENT ACROSS FOOTING WIDTH IS LESS THAN 8 mm AT VARYING APPLIED PRESSURE OF MINIMUM 0 kPa TO A MAXIMUM 100 kPa (APPLIES ACROSS THE WIDTH), UNDER SHORT AND LONG TERM CONDITIONS. OR.
   2.2 IF SETTLEMENT CRITERIA IN 2.1 IS NOT MET SUITABLE GROUND IMPROVEMENT MEASURES SHALL BE DESIGNED BY A COMPETENT GEOTECHNICAL ENGINEER. GROUND IMPROVEMENT DESIGN SUBMITTED TO ICON WATER FOR APPROVAL.
3. FOOTING DESIGN IS NOT SUITABLE FOR AGGRESSIVE GROUND CONDITIONS.
4. VENTILATION SHAFT SHOULD NOT BE ERECTED UNTIL THE CONCRETE BASE HAS REACHED 25 MPa STRENGTH.
5. UNLESS DIRECTED OTHERWISE BY ICON WATER, THE VENTILATION SHAFT SHALL NOT BE PAINTED.
6. EXTERNAL SURFACES FOR ALL STAINLESS STEEL ITEMS SHALL BE BEAD BLASTED TO ACHIEVE A NON-DIRECTIONAL LOW-REFLECTIVE UNIFORM MATT FINISH WITH A SURFACE ROUGHNESS PROFILE OF RA 3.5 TO RA 4.5 MICRONS. BLASTING MEDIA SHALL BE GLASS, THE BLASTING MEDIA SHALL BE FREE OF CONTAMINATION INCLUDING IRON AND STEEL.
7. FINAL DIMENSIONS OF ALL VENTILATION ELEMENTS TO BE SHOWN ON WORK AS EXECUTED DRAWINGS.
8. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED, THE PRODUCT SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

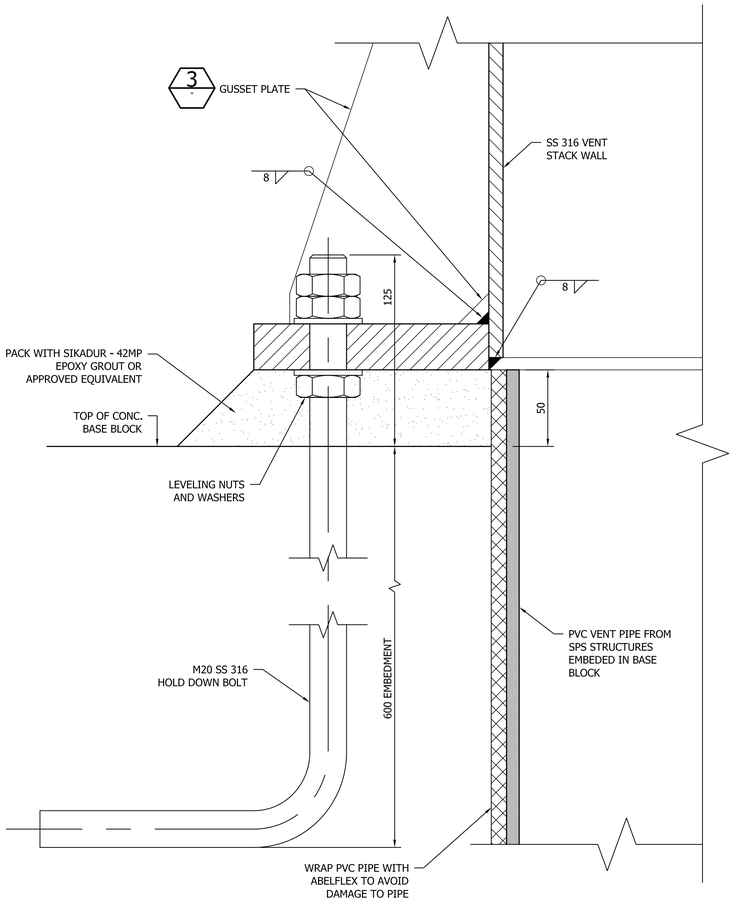
STANDARD DRAWING
SEWAGE PUMP STATIONS
VENTILATION SYSTEM
GENERAL ARRANGEMENTS

DRAWING STATUS: Current

SD-4180-C

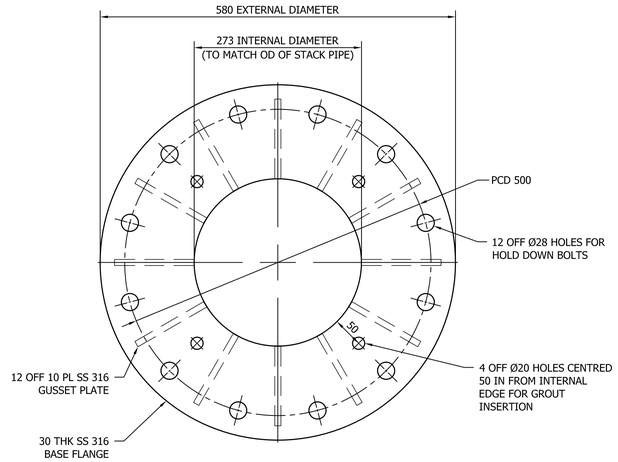
A1

ISSUE A



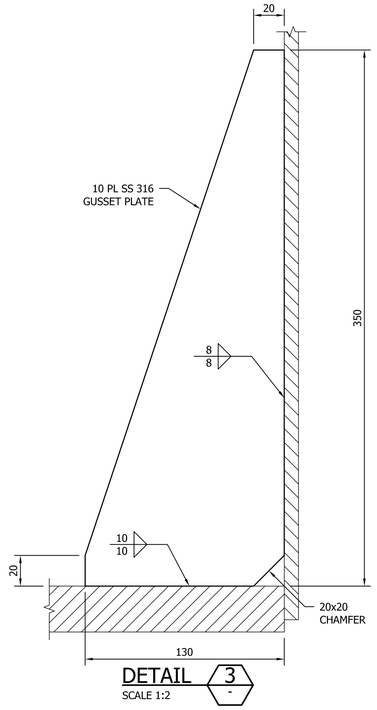
DETAIL 1
SCALE 1:2 SD-4180

VENT STACK BASE BLOCK CONNECTION DETAILS



DETAIL 2
SCALE 1:5 SD-4180

BASE FLANGE DETAILS



DETAIL 3
SCALE 1:2

GUSSET PLATE DETAILS

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR VENTILATION NOTES REFER TO SD-4180.
3. DETAILED DESIGN TO BE DEVELOPED BY STRUCTURAL ENGINEER.

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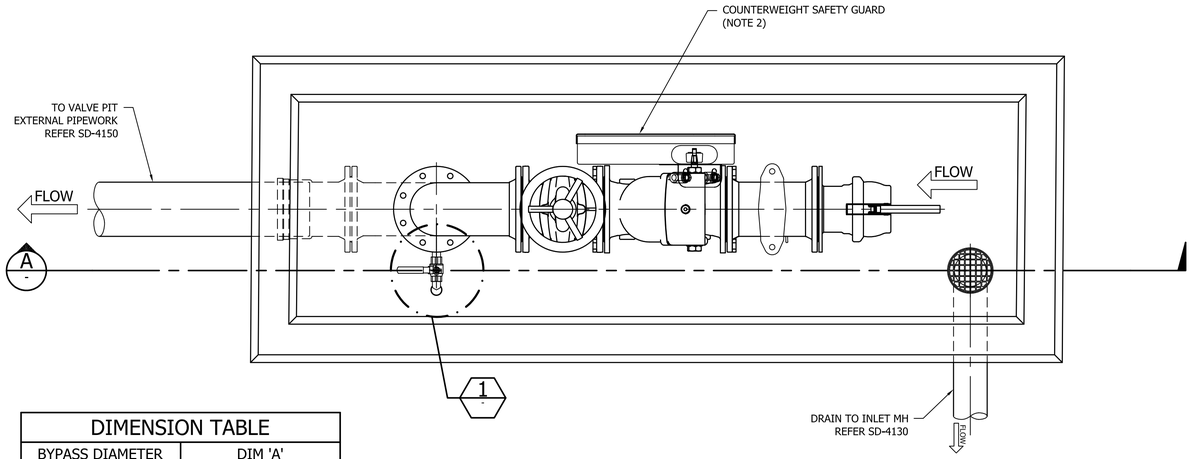
ASSET AREA APPLICABILITY						
DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

STANDARD DRAWING
SEWAGE PUMP STATIONS
VENTILATION SYSTEM
DETAILS

DRAWING STATUS: Current

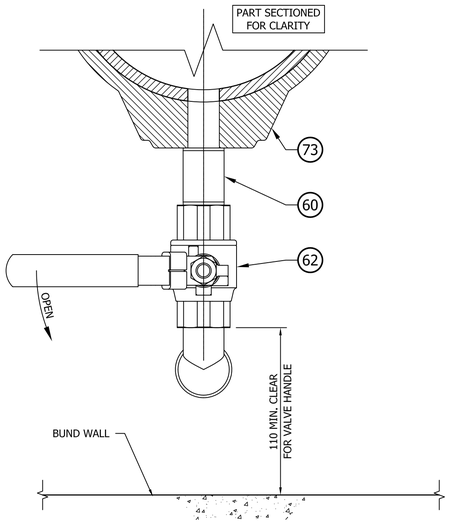
SD-4181-C

A1 | | ISSUE A

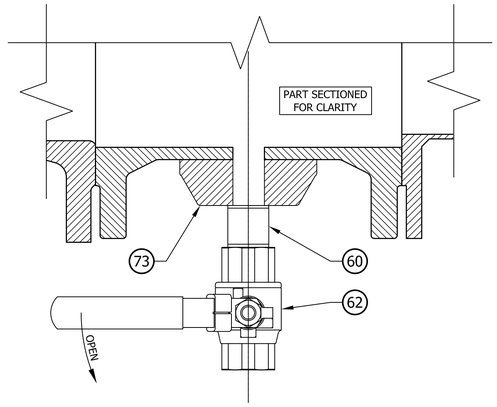


DIMENSION TABLE	
BYPASS DIAMETER	DIM 'A'
DN100	2450
DN150	2650
DN200	2900

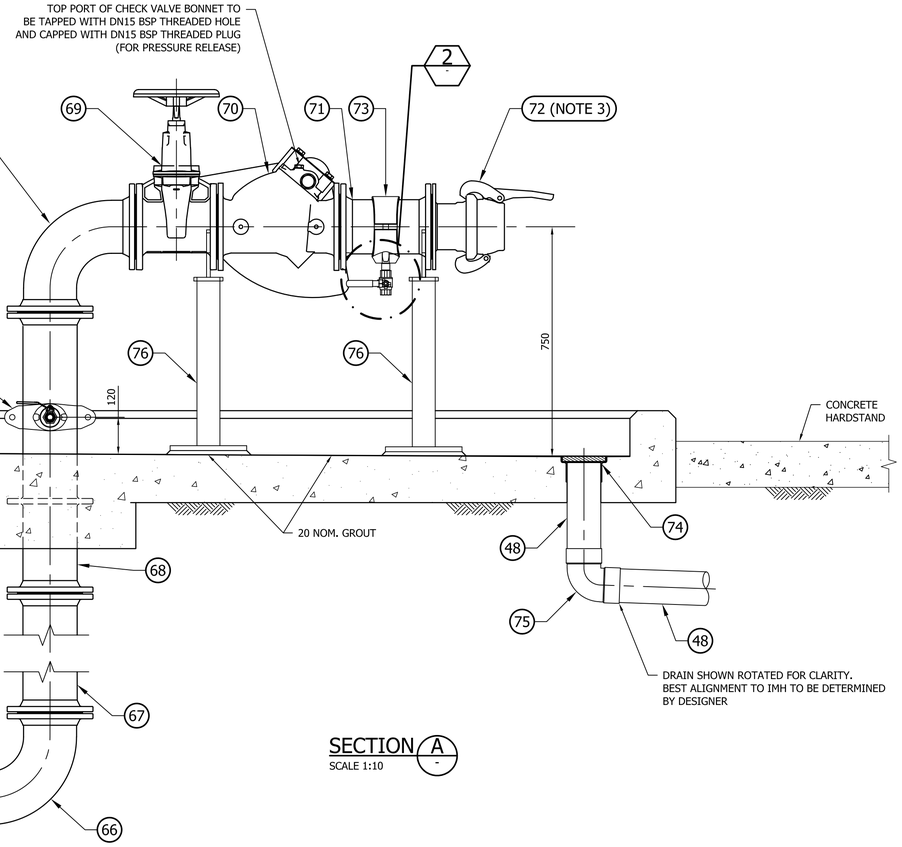
PLAN
SCALE: 1 : 10



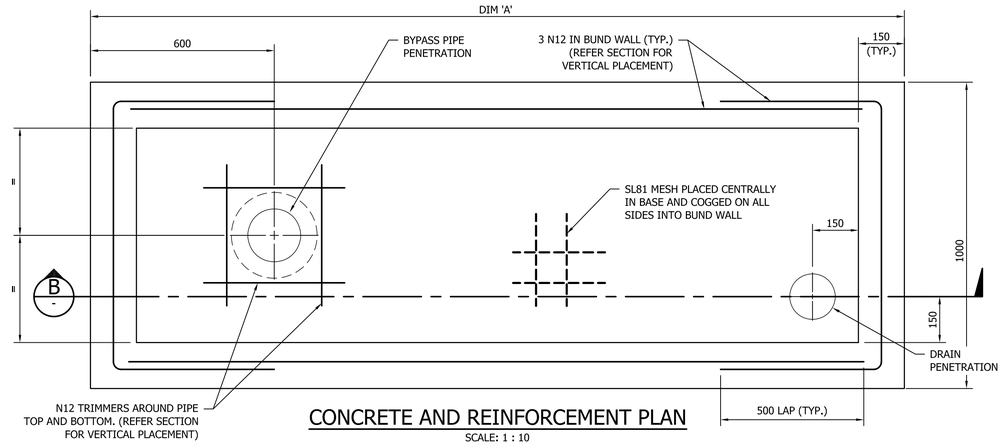
DETAIL 1
SCALE 1:2
DOWNSTREAM ISOLATION TEST POINT



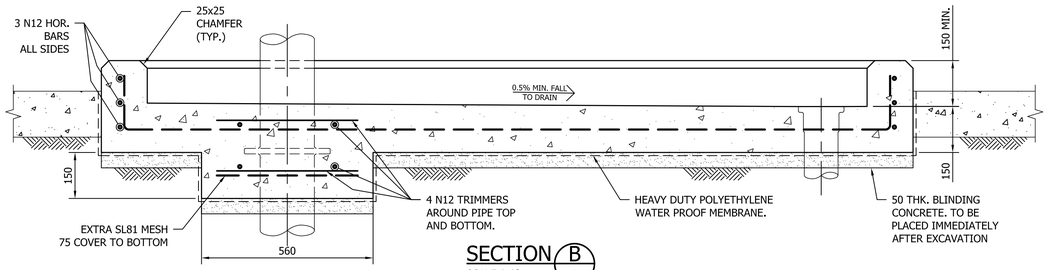
DETAIL 2
SCALE 1:2
UPSTREAM ISOLATION TEST POINT



SECTION A
SCALE 1:10



CONCRETE AND REINFORCEMENT PLAN
SCALE: 1 : 10



SECTION B
SCALE 1:10

NOTES:

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. SAFETY GUARD REQUIRED WHEN COUNTERWEIGHT IS INSTALLED.
3. FOR DN100 BYPASS, THE COUPLING IS TO BE AN ALUMINIUM "KAMLOK" MALE COUPLING (TYPE 633LA). FOR DN150 AND DN200 BYPASS, THE COUPLING IS TO BE GALV. STEEL "BAUER" FEMALE COUPLING (MODEL S73). COUPLINGS TO BE SUPPLIED WITH DUST CAPS SECURED TO THE ASSEMBLY (BAUER COUPLING SHOWN).

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DAM		RES			SPS		X
BWS		WAT			STP		
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

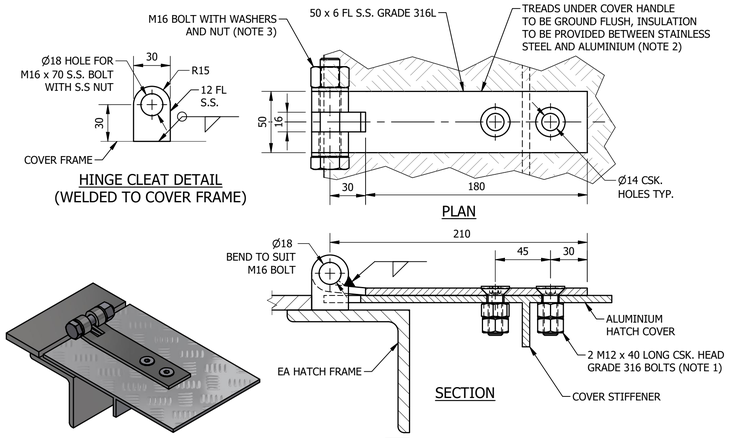
STANDARD DRAWING
SEWAGE PUMP STATIONS
BYPASS PUMP CONNECTION POINT
GENERAL ARRANGEMENT
AND CONCRETE DETAILS

DRAWING STATUS: Current

SD-4190-C

A1

ISSUE: A

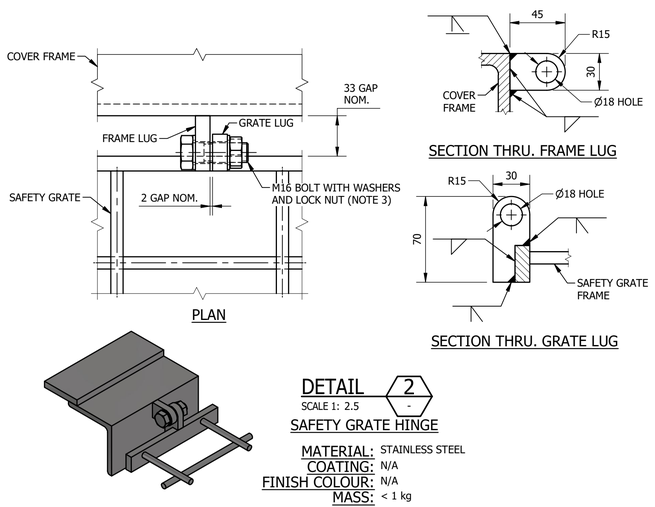


DETAIL 1

SCALE 1: 2.5 -

ACCESS HATCH HINGE

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 1 kg

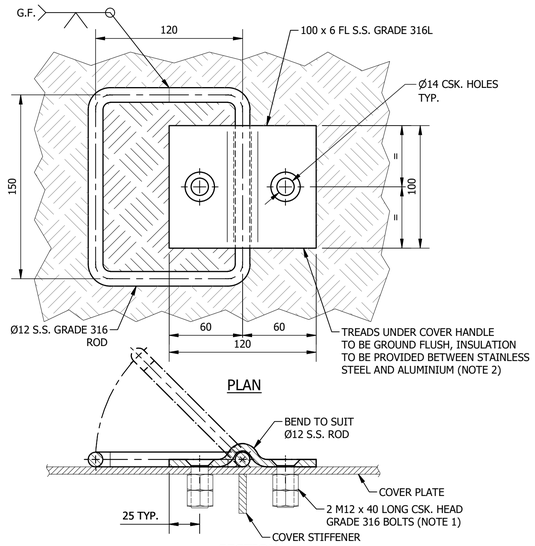


DETAIL 2

SCALE 1: 2.5 -

SAFETY GRATE HINGE

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: < 1 kg

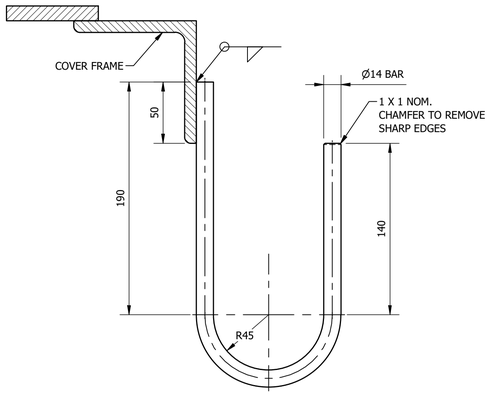


DETAIL 3

SCALE 1: 2.5 -

HATCH LIFTING HANDLE

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 1 kg

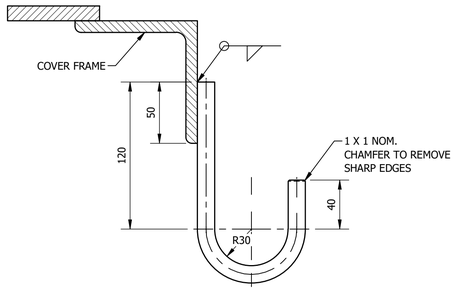


DETAIL 5

SCALE 1: 2.5 -

CABLE / PUMP CHAIN HOOK

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: < 1 kg

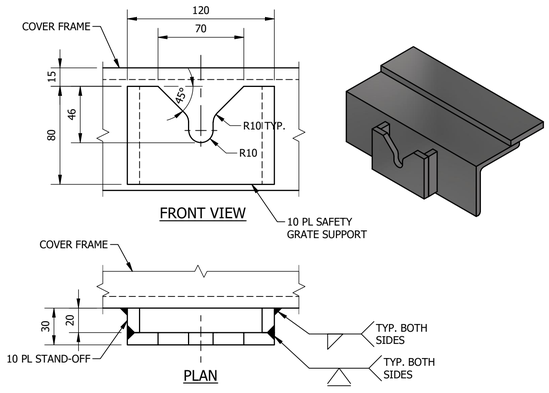


DETAIL 6

SCALE 1: 2.5 -

INSTRUMENTATION HOOK

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: < 1 kg

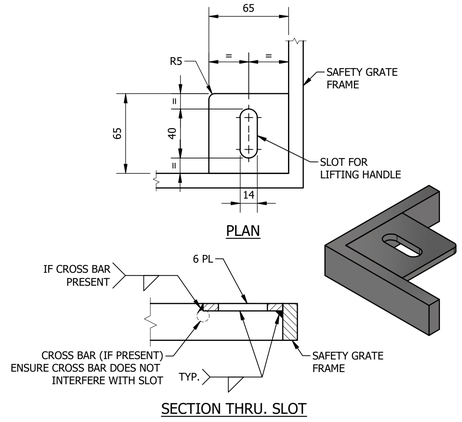


DETAIL 7

SCALE 1: 2.5 -

SAFETY GRATE SUPPORT

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: < 1 kg



DETAIL 8

SCALE 1: 2.5 -

SAFETY GRATE LIFTING HANDLE KEY WAY

MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: < 1 kg

NOTES

1. STAINLESS STEEL TO ALUMINIUM CONNECTIONS TO BE INSULATED WITH "DENSO" PRIMER D AND DENSOPOL 60 TAPE OR APPROVED EQUIVALENT.
2. ALL STAINLESS STEEL FIXTURES INTO ALUMINIUM TO BE SEPARATED WITH INSULATING BUSHES AND RETAINING RINGS OR WASHERS.
3. ALL EXTERNAL HATCH COVER HINGES SHALL HAVE ONE EXTERNAL NUT TACK WELDED TO HINGE BOLT AND ALL INTERNAL SAFETY GRATE HINGES SHALL HAVE LOCK NUTS. NYLOCS (NYLON INSERTED NUTS) ARE NOT PERMITTED.

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DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

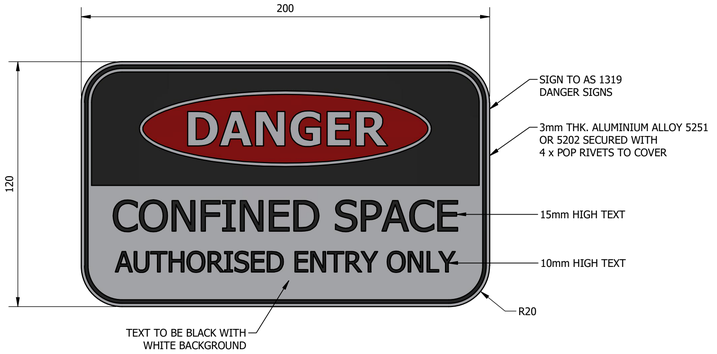
STANDARD DRAWING SEWAGE PUMP STATIONS ACCESS COVERS MISCELLANEOUS DETAILS

DRAWING STATUS: Current

SD-4300-D

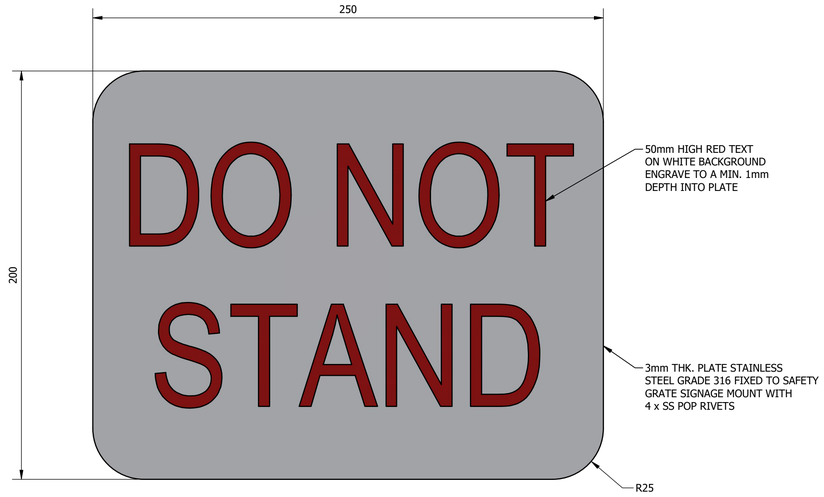
A1

ISSUE A



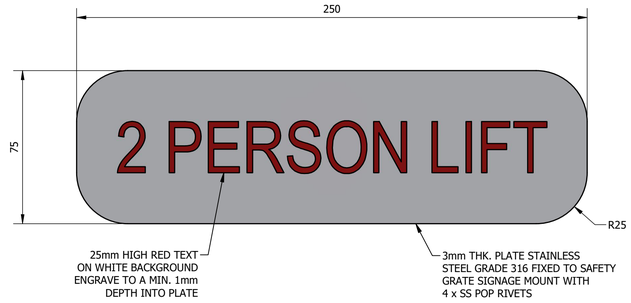
CONFINED SPACE SIGN

DETAIL 1 - SCALE 1: N.T.S.



NO STAND SIGN

DETAIL 2 - SCALE 1: N.T.S.

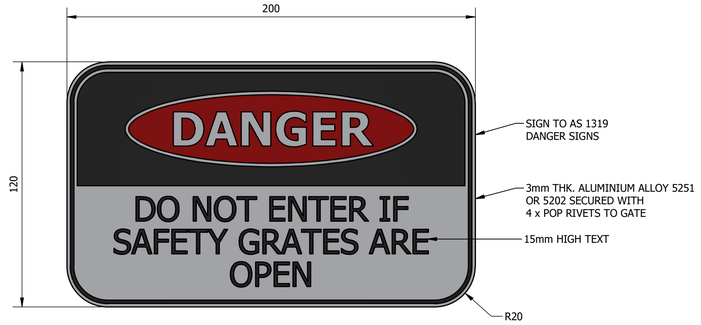


2 PERSON LIFT SIGN

DETAIL 3 - SCALE 1: N.T.S.

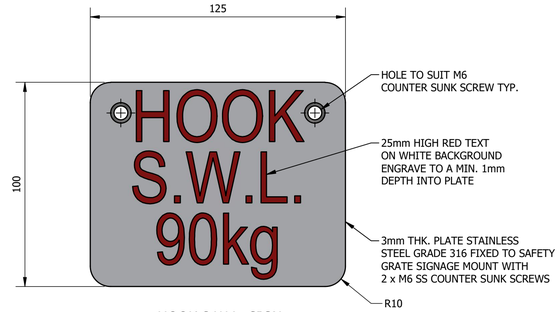
NO SAFETY GRATE SIGN

DETAIL 4 - SCALE 1: N.T.S.



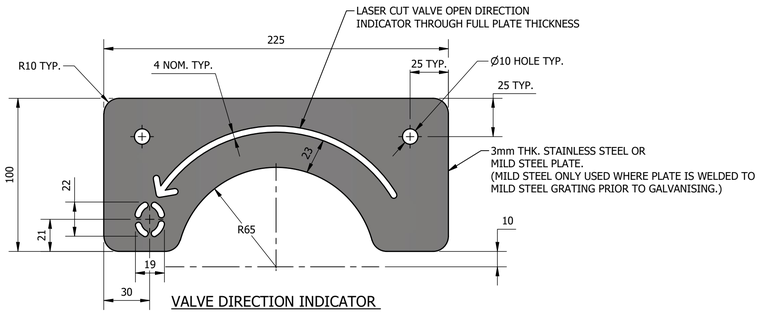
DO NOT ENTER SIGN

DETAIL 5 - SCALE 1: N.T.S.



HOOK S.W.L. SIGN

DETAIL 6 - SCALE 1: N.T.S.



VALVE DIRECTION INDICATOR

DETAIL 7 - SCALE 1: N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. SIGNAGE SPECIFIC TO SEWAGE PUMPING STATIONS FOR OTHER ASSET TYPE SAFETY SIGNAGE REFER TO SD-1300 SERIES DRAWINGS.

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A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

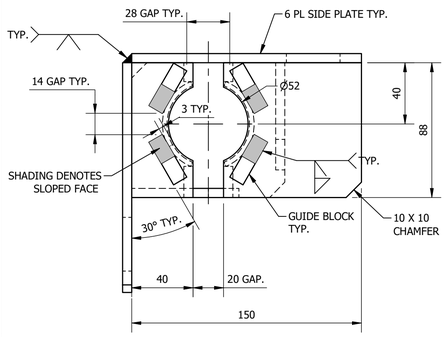
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
SAFETY SIGNAGE

DRAWING STATUS: Current

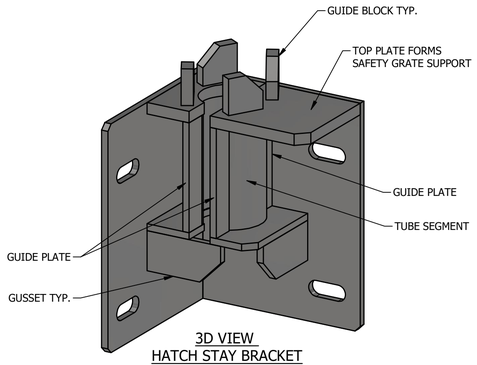
SD-4301-D

A1

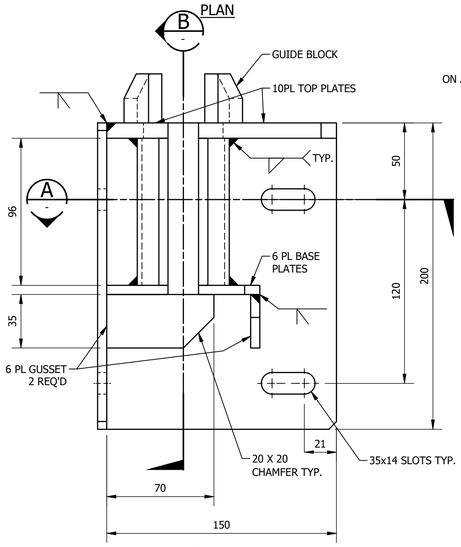
ISSUE A



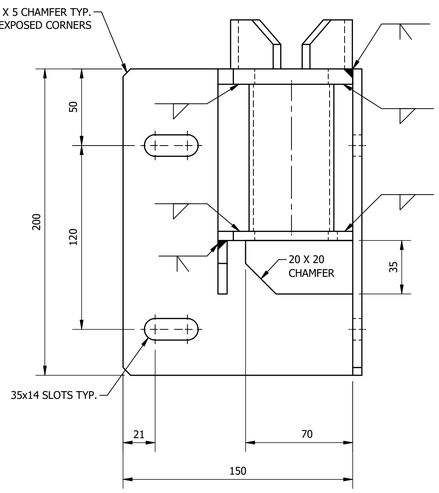
PLAN



3D VIEW
HATCH STAY BRACKET



FRONT VIEW

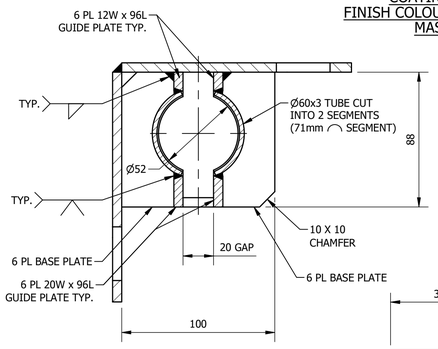


SIDE VIEW

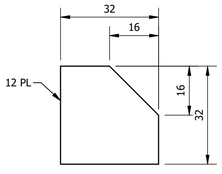
HATCH STAY BRACKET

SCALE 1:2

MATERIAL: STAINLESS STEEL GRADE 316
COATING: N/A
FINISH COLOUR: NATURAL
MASS: 6 kg

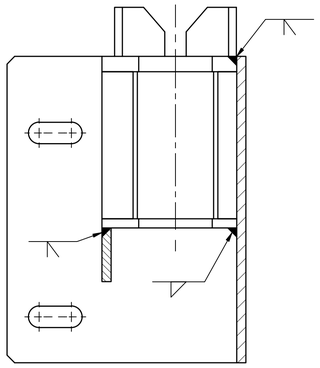


SECTION A
SCALE 1: 2

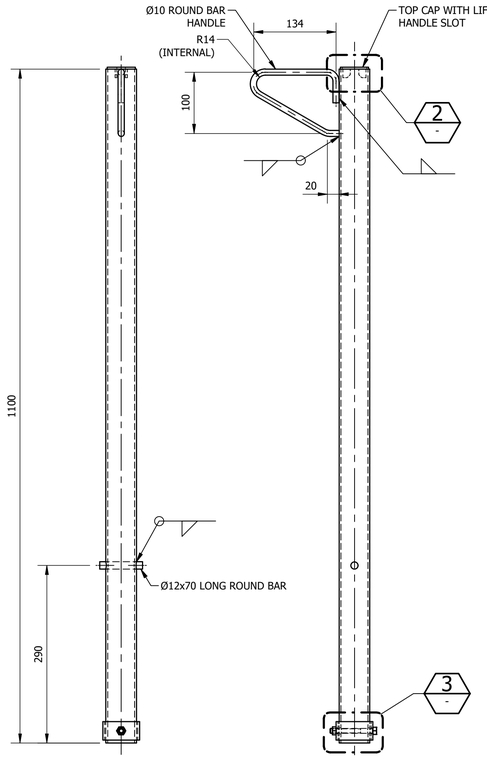


GUIDE BLOCK

DETAIL 1
SCALE 1: 1



SECTION B
SCALE 1: 2

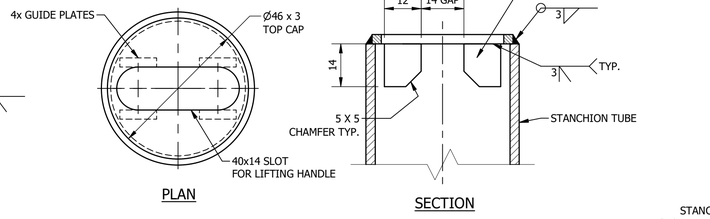


FRONT VIEW SIDE VIEW

HATCH STAY STANCHION

SCALE 1:5

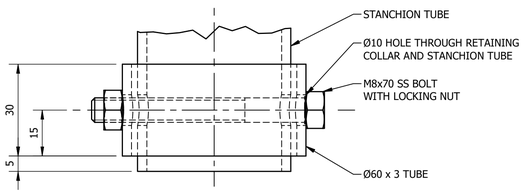
MATERIAL: STAINLESS STEEL GRADE 316
COATING: N/A
FINISH COLOUR: NATURAL
MASS: 5 kg



PLAN SECTION

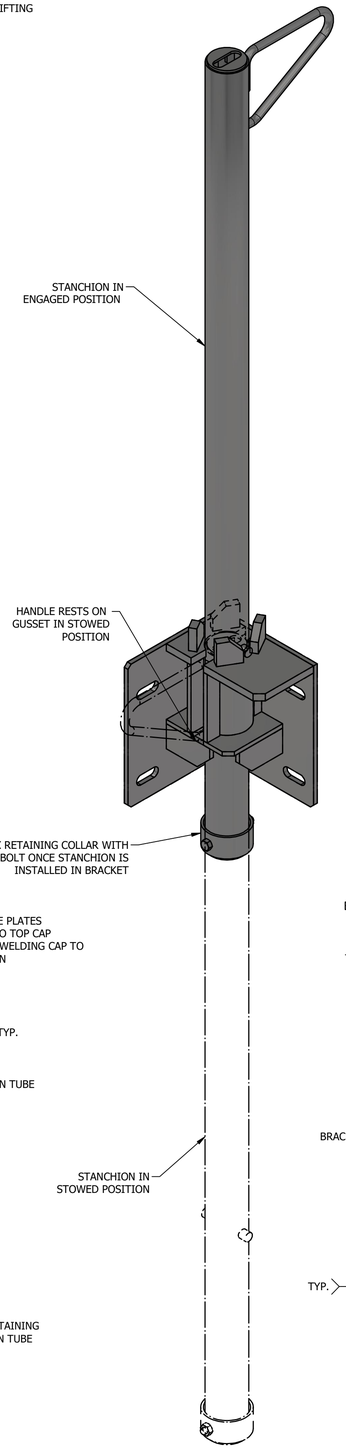
TOP CAP AND LIFTING HOOK SLOT

DETAIL 2
SCALE 1: 1



LOWER RETAINING COLLAR

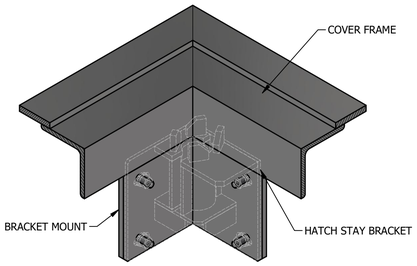
DETAIL 3
SCALE 1: 1



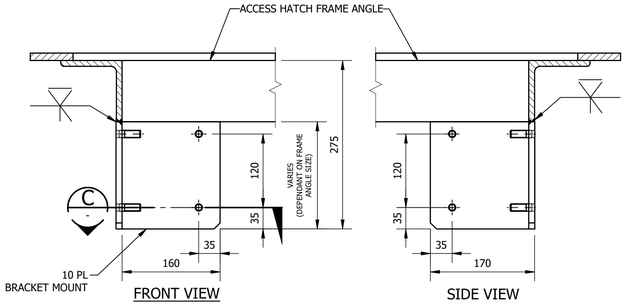
HATCH STAY ASSEMBLY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THE ARRANGEMENT SHOWN IS FOR A HATCH STAY BRACKET WHEN MOUNTED ON THE LEFT HAND SIDE OF THE ACCESS COVER WHEN LOOKING FROM THE FRONT (PAD LOCK) END OF THE HATCH. DETAIL TO BE MIRRORED FOR RIGHT HAND SIDE INSTALLATION FOR BOTH BRACKET AND MOUNT.



HATCH STAY BRACKET INSTALLED IN FRAME
(STANCHION NOT SHOWN FOR CLARITY)



FRONT VIEW SIDE VIEW

SECTION C
SCALE 1: 5

HATCH STAY BRACKET MOUNT (ON COVER FRAME)

SCALE 1:5

MATERIAL: STAINLESS STEEL GRADE 316L
COATING: N/A
FINISH COLOUR: N/A
MASS: N/A (FORMS PART OF COVER FRAME)

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DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW						
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

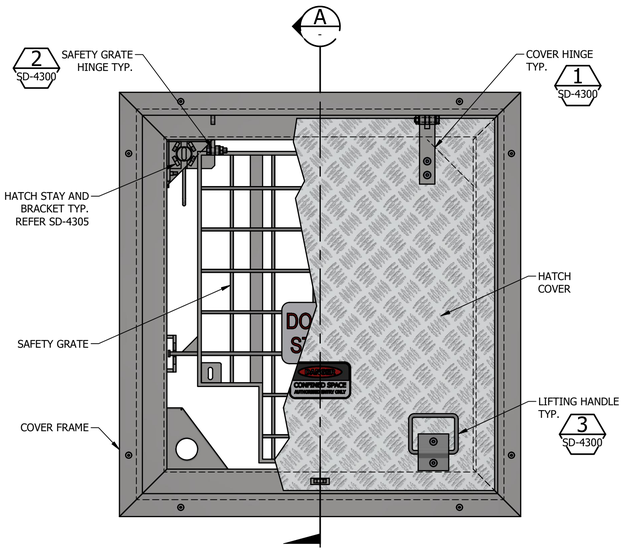
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
STANCHION STYLE HATCH STAY DETAILS

DRAWING STATUS: Current

SD-4305-D

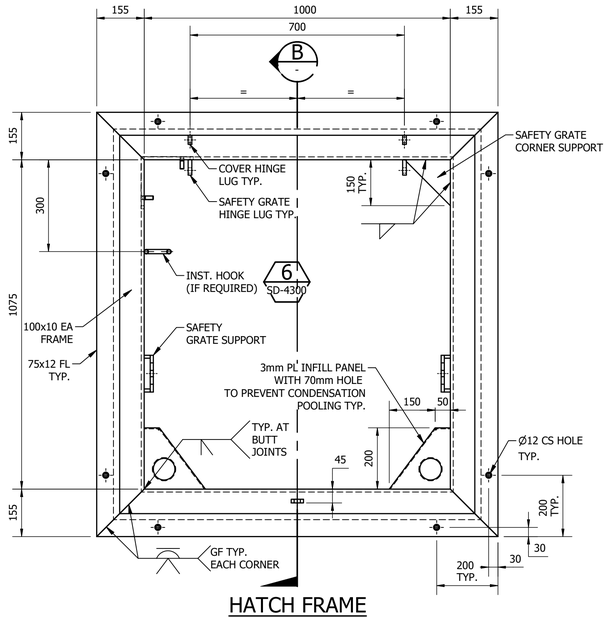
A1

ISSUE A



HATCH COVER ASSEMBLY

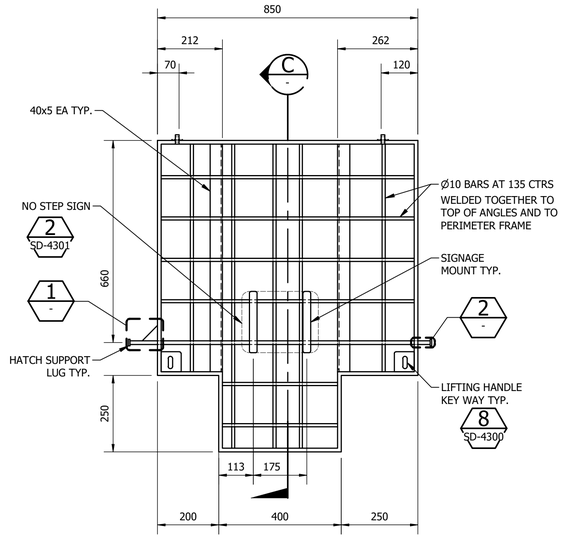
SCALE: 1 : 10



HATCH FRAME

SCALE: 1 : 10

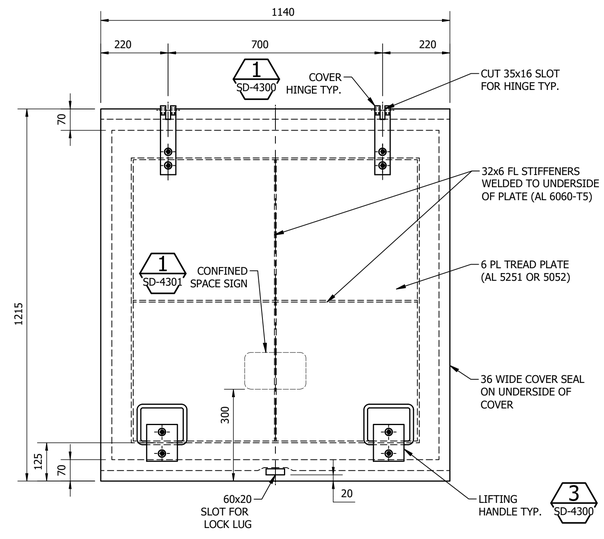
MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 115



SAFETY GRATE

SCALE: 1 : 10

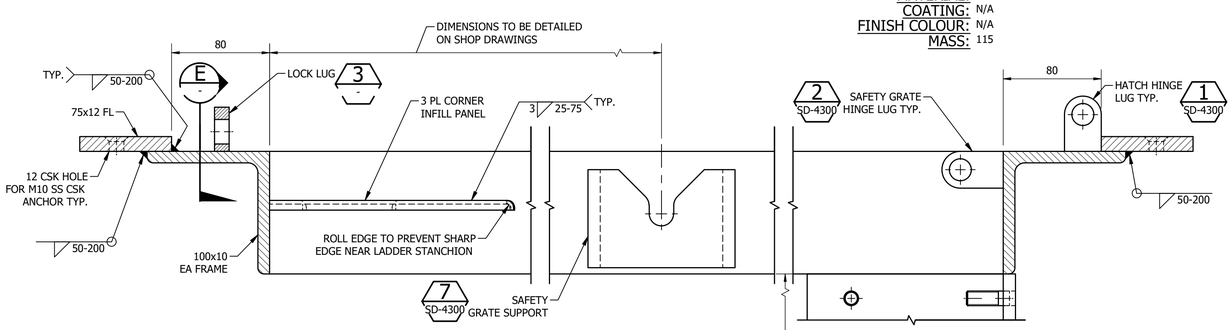
MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 25 kg



HATCH COVER

SCALE: 1 : 10

MATERIAL: ALUMINIUM (SS HANDLES & HINGES)
COATING: N/A
FINISH COLOUR: N/A
MASS: 32 kg

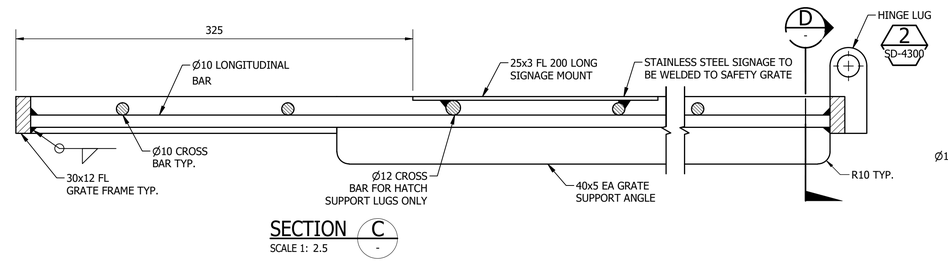


SECTION B

SCALE 1: 2.5

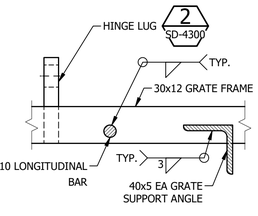
SECTION E

SCALE 1: 2.5



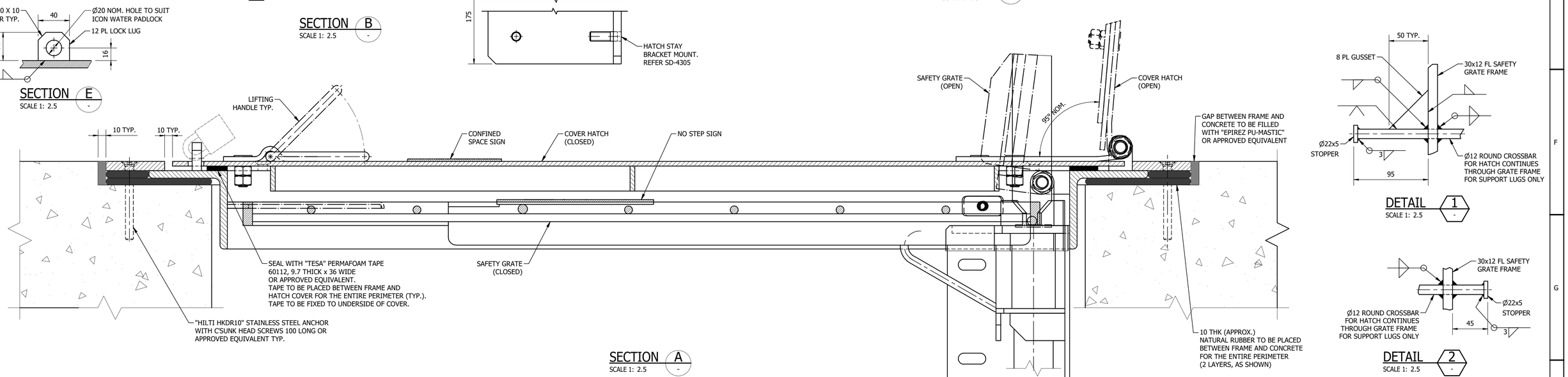
SECTION C

SCALE 1: 2.5



SECTION D

SCALE 1: 2.5



SECTION A

SCALE 1: 2.5

DETAIL 1

SCALE 1: 2.5

DETAIL 2

SCALE 1: 2.5

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

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Date:
Applicable Revision

DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

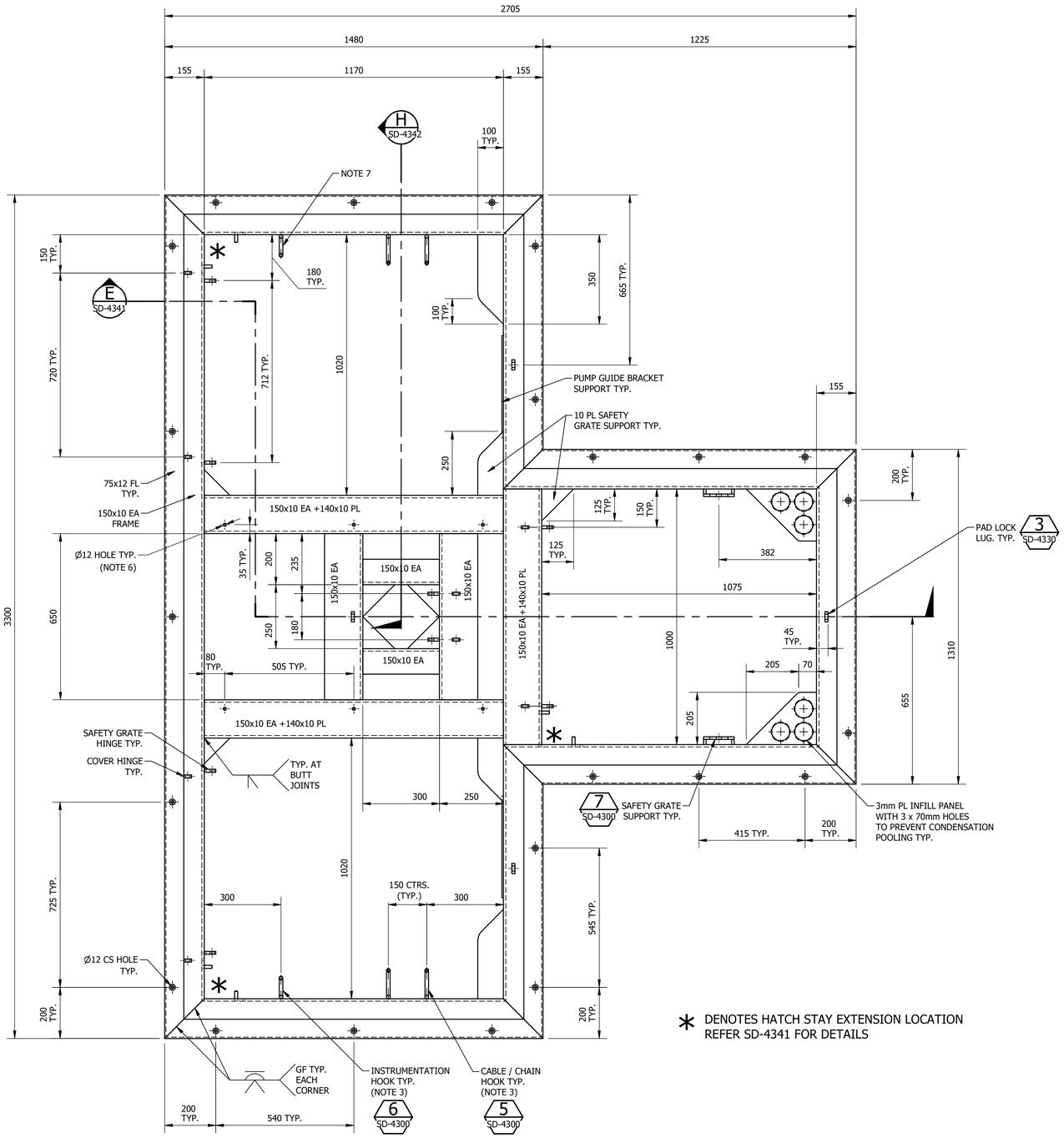
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
INLET MH, GAS CHECK MH AND EMERGENCY STORAGE TANK ACCESS HATCH DETAILS

DRAWING STATUS: Current

SD-4330-C

A1

ISSUE A

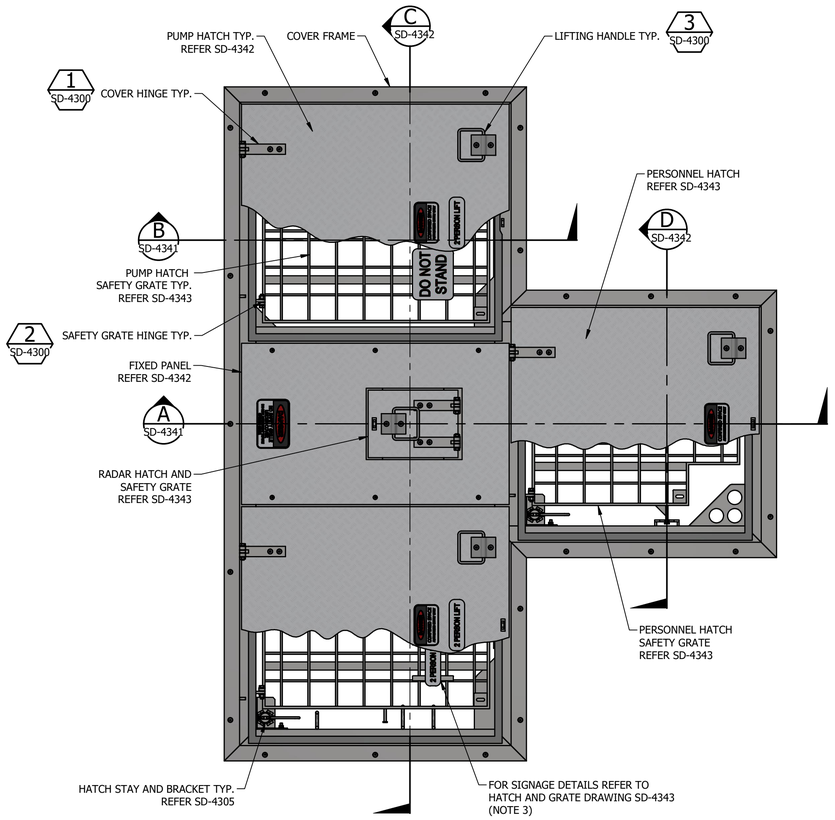


PLAN - COVER FRAME

SCALE: 1 : 10

MATERIAL: STAINLESS STEEL GRADE 316L
COATING: N/A
FINISH COLOUR: N/A
MASS: 550 kg

* DENOTES HATCH STAY EXTENSION LOCATION
REFER SD-4341 FOR DETAILS



COVER ASSEMBLY KEY PLAN

SCALE: N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR WET WELL TOP SLAB OPENING DIMENSIONS REFER TO SD-4142.
3. LOCATION OF SIGNAGE, HOOKS AND PUMP CABLE OPENING MAY VARY SUBJECT TO PROJECT SPECIFIC REQUIREMENTS.
4. NUMBER OF HOOKS TO BE EQUAL TO NUMBER OF CONDUITS PLUS ONE FOR PUMP CHAIN.
5. ALL WELDS ON TOP SURFACES TO BE GROUND FLAT TO ALLOW COVERS AND PANELS TO SIT FLUSH AND SEAL.
6. HOLES FOR FIXED PANEL TO HAVE M10 SS NUT TACK WELDED TO UNDERSIDE OF EA TO SECURE PANEL.
7. LOCATION OF HOOKS TO BE DETERMINED DURING DETAIL DESIGN AND BASED ON NUMBER OF CONDUITS AND LOCATION OF CABLE PENETRATIONS.

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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

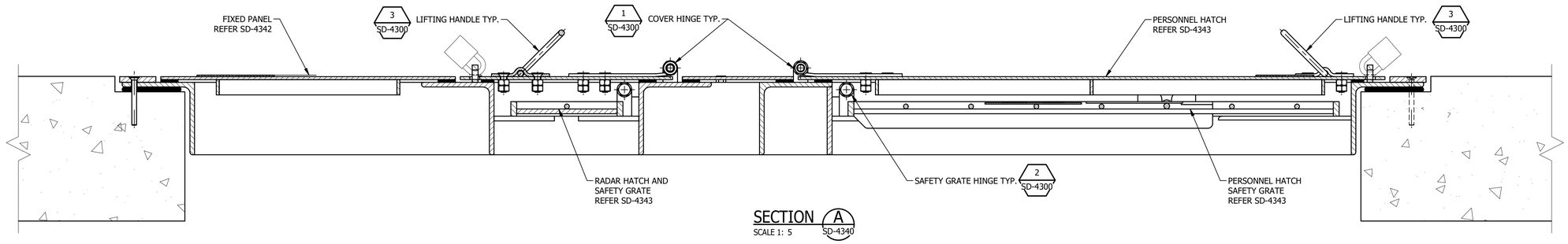
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
WET WELL ACCESS FRAME DETAILS

DRAWING STATUS: Current

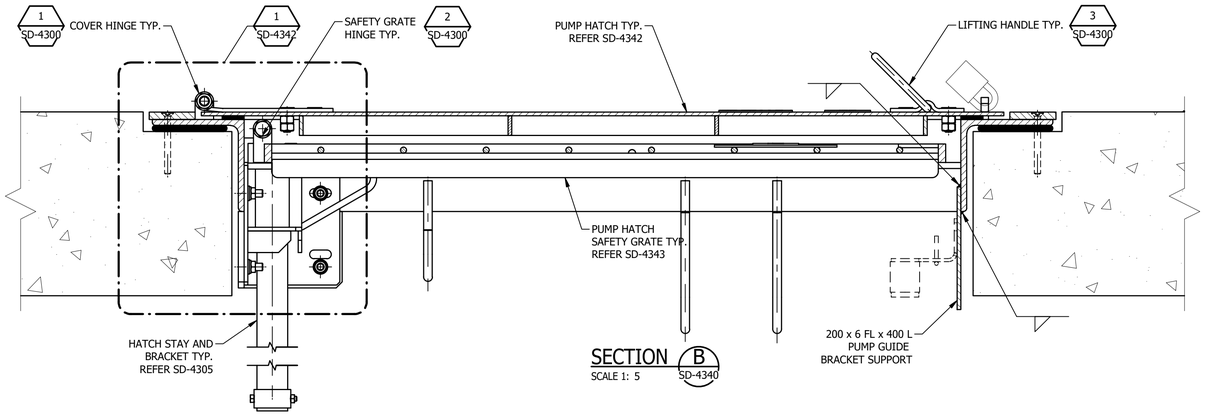
SD-4340-C

A1

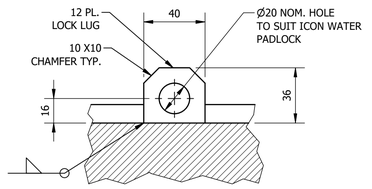
ISSUE A



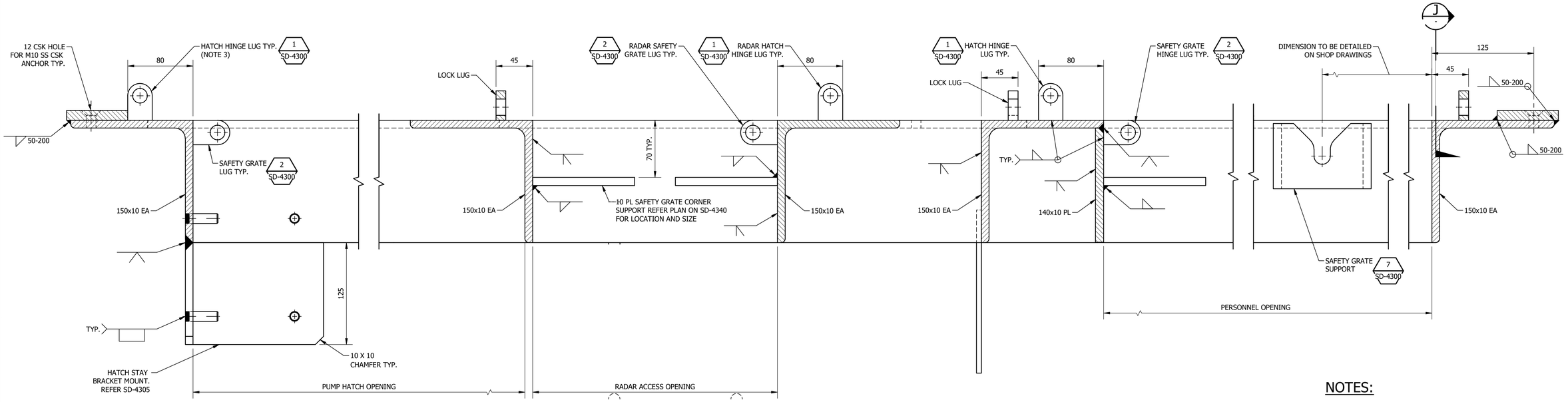
SECTION A (SD-4340)
SCALE 1: 5



SECTION B (SD-4340)
SCALE 1: 5



SECTION J (-)
SCALE 1: 2



SECTION E (SD-4340)
SCALE 1: 2.5

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH SD-4340 AND SD-4342
3. FOR PUMP COVER HATCH SAFETY GRATE AND HATCH HINGE ARE NOT ALIGNED HORIZONTALLY REFER PLAN ON SD-4340 FOR ALIGNMENT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
B	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

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Discipline:
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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

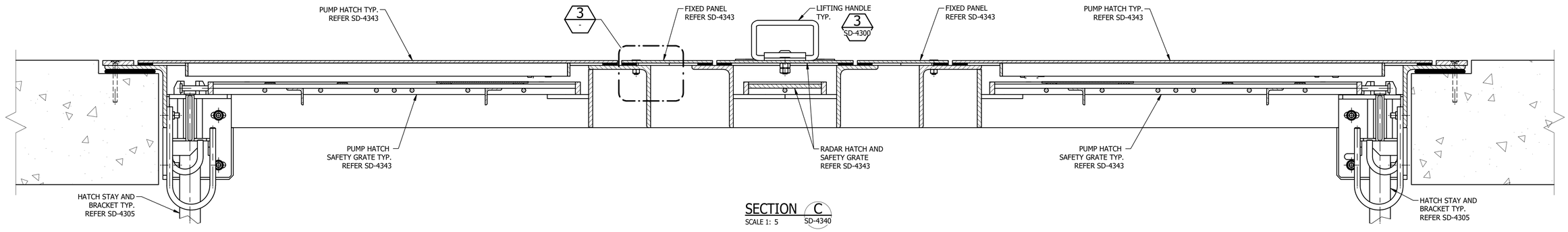
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
WET WELL ACCESS FRAME
SECTIONS AND DETAILS SHEET 1

DRAWING STATUS: Current

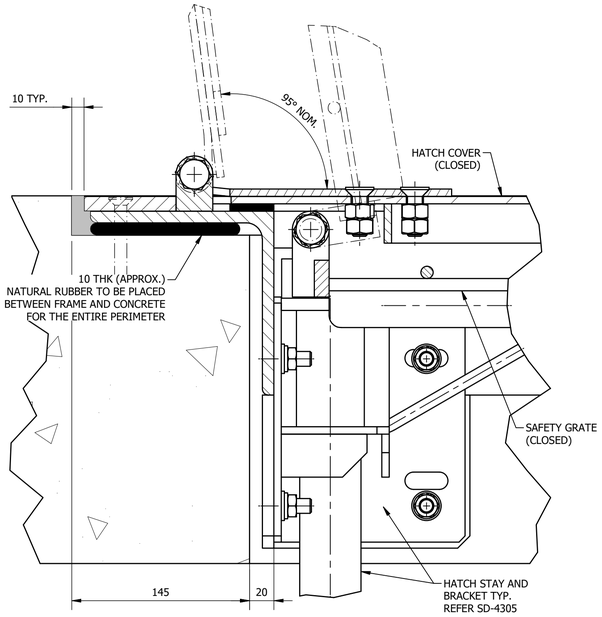
SD-4341-C

A1

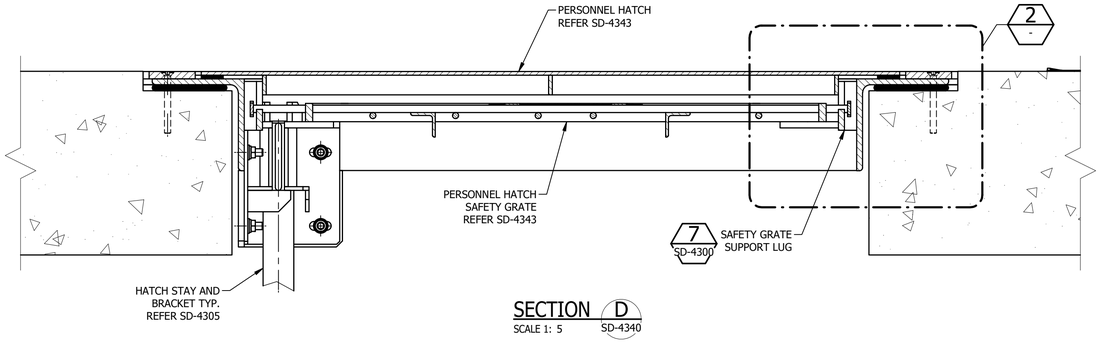
ISSUE: A



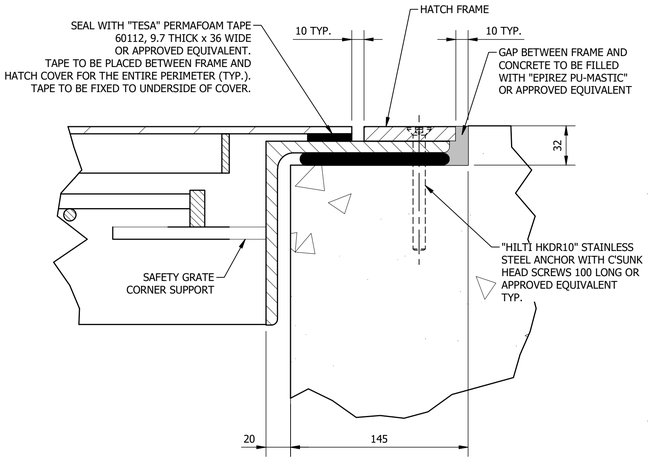
SECTION C
SCALE 1: 5 SD-4340



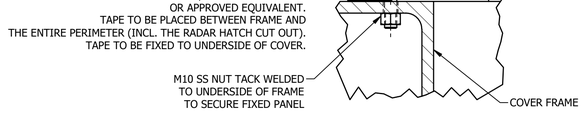
DETAIL 1
SCALE 1: 2.5 SD-4341



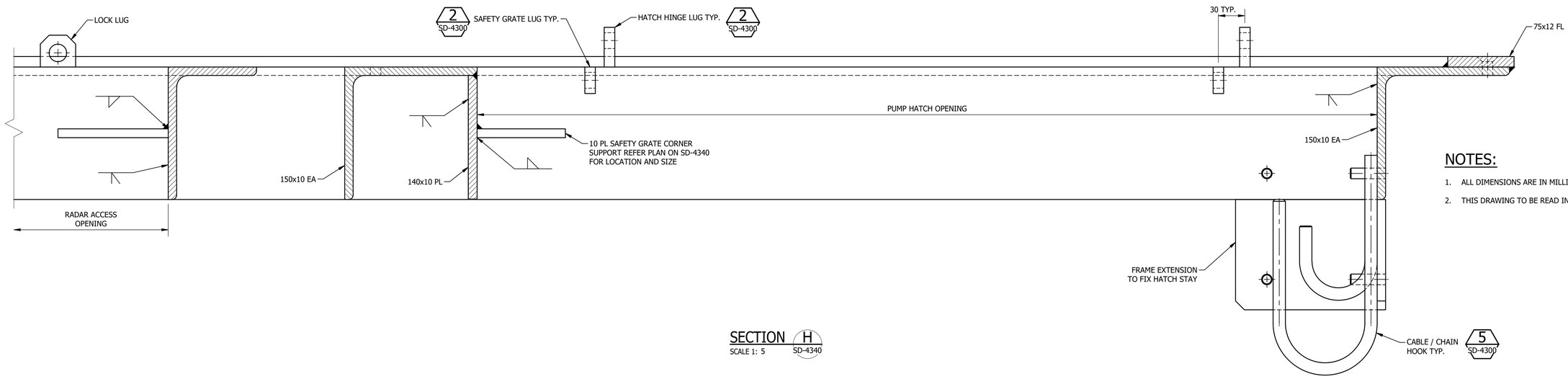
SECTION D
SCALE 1: 5 SD-4340



DETAIL 2
SCALE 1: 2.5



DETAIL 3
SCALE 1: 2.5



SECTION H
SCALE 1: 5 SD-4340

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH SD-4340 AND SD-4341

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BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

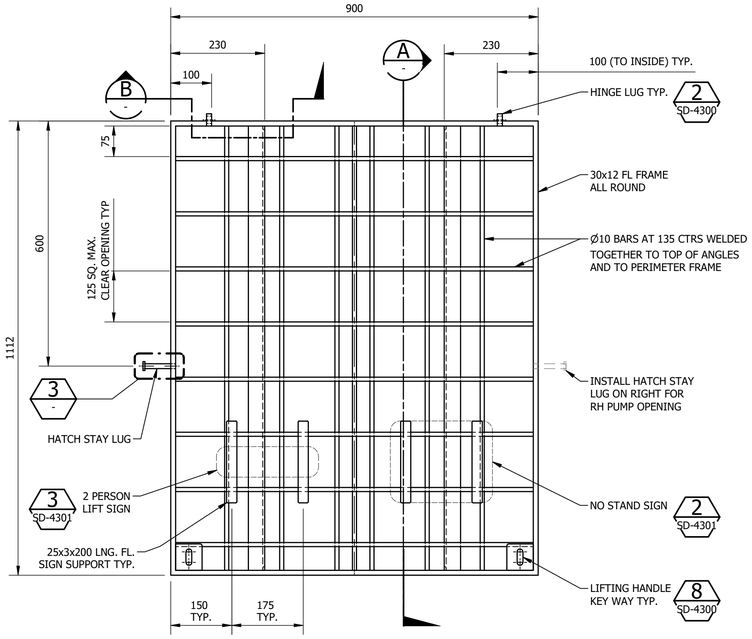
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
WET WELL ACCESS FRAME
SECTIONS AND DETAILS SHEET 2

DRAWING STATUS
Current

SD-4342-C

A1

ISSUE A

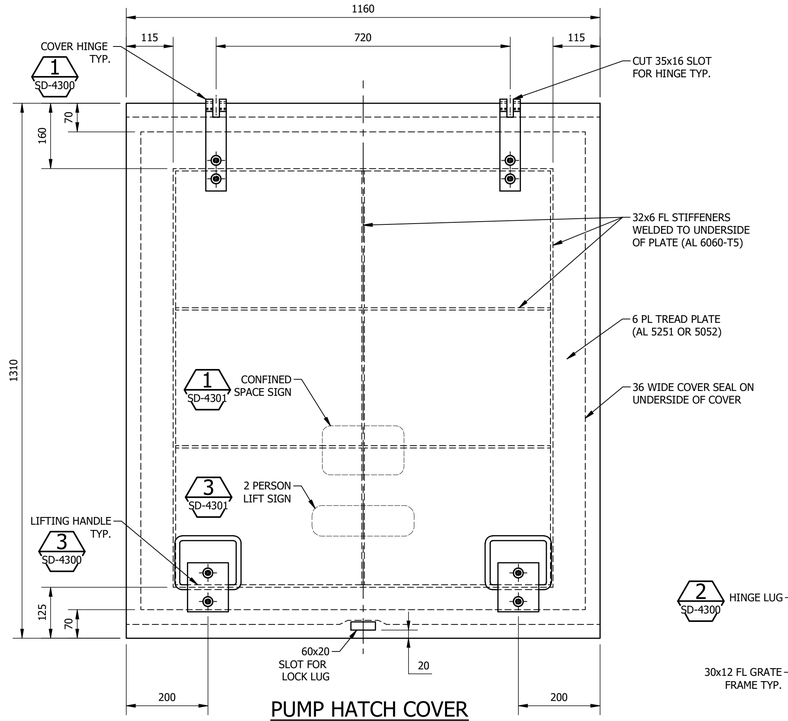


PUMP HATCH SAFETY GRATE

(LH PUMP OPENING SHOWN)

SCALE: 1 : 7.5

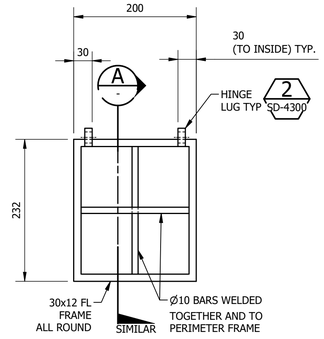
MATERIAL: SS GRADE 316L
COATING: N/A
FINISH COLOUR: N/A
MASS: 29 kg



PUMP HATCH COVER

SCALE: 1 : 7.5

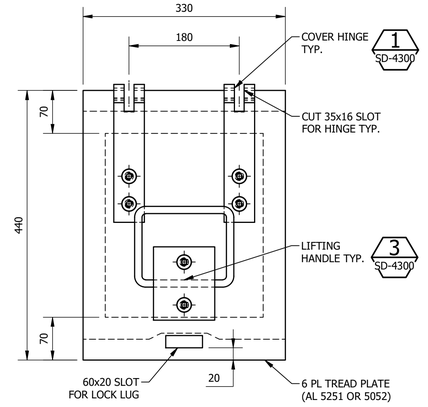
MATERIAL: ALUMINIUM
COATING: N/A
FINISH COLOUR: N/A
MASS: 34 kg



RADAR HATCH SAFETY GRATE

SCALE: 1 : 5

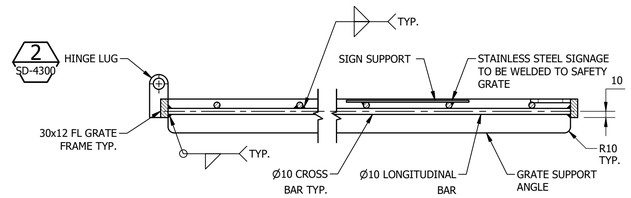
MATERIAL: SS GRADE 316L
COATING: N/A
FINISH COLOUR: N/A
MASS: 3 kg



RADAR HATCH COVER

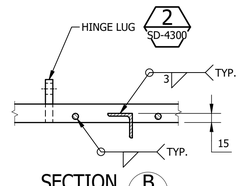
SCALE: 1 : 5

MATERIAL: ALUMINIUM
COATING: N/A
FINISH COLOUR: N/A
MASS: 6 kg



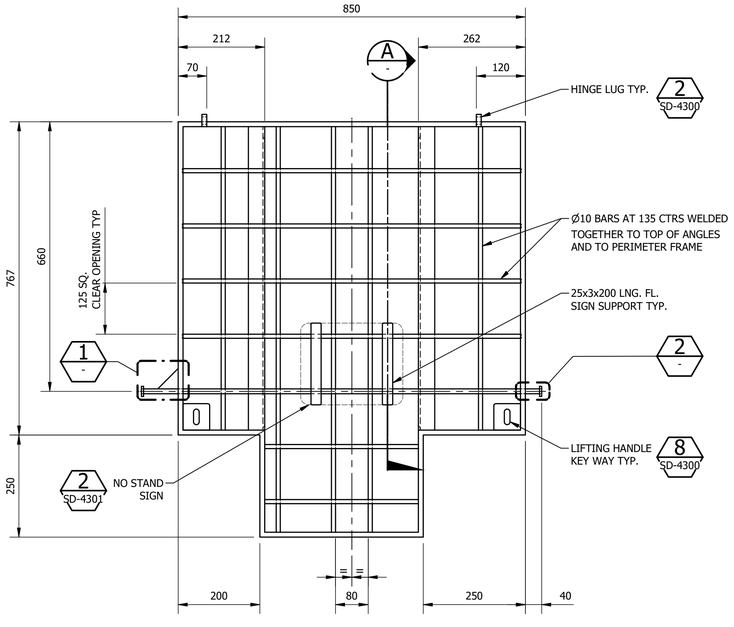
SECTION A

SCALE 1: 5



SECTION B

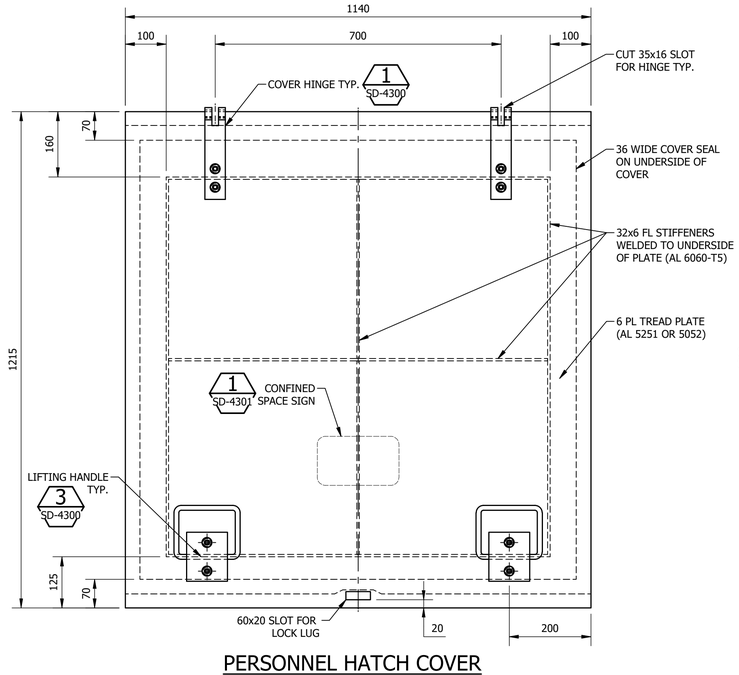
SCALE 1: 5



PERSONNEL HATCH SAFETY GRATE

SCALE: 1 : 7.5

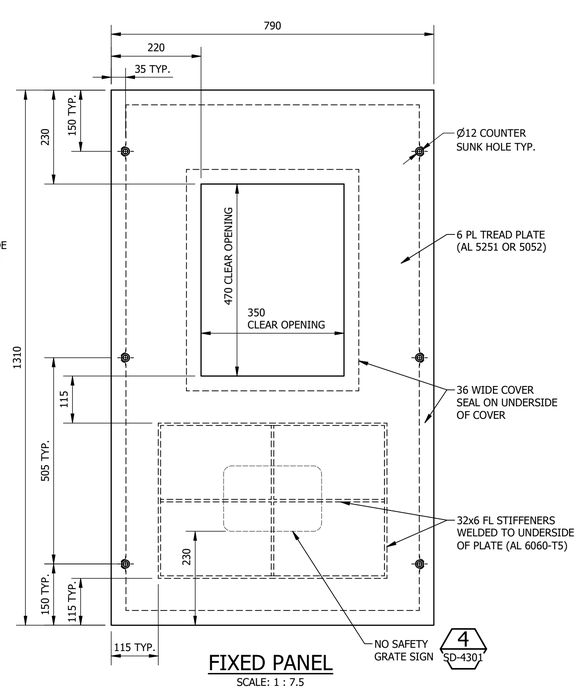
MATERIAL: SS GRADE 316L
COATING: N/A
FINISH COLOUR: N/A
MASS: 23 kg



PERSONNEL HATCH COVER

SCALE: 1 : 7.5

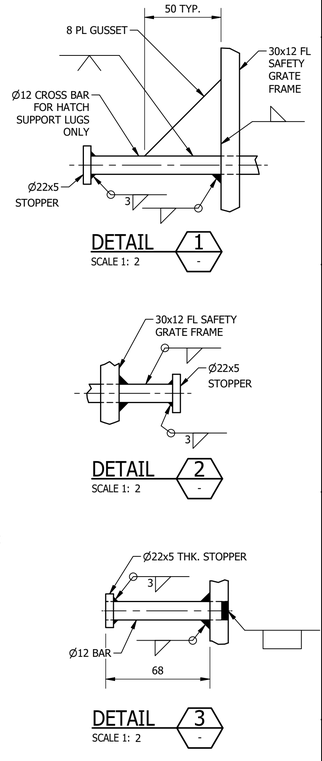
MATERIAL: ALUMINIUM
COATING: N/A
FINISH COLOUR: N/A
MASS: 31 KG



FIXED PANEL

SCALE: 1 : 7.5

MATERIAL: ALUMINIUM
COATING: N/A
FINISH COLOUR: N/A
MASS: 16 KG



No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/10/2025	M. Matusiak	V. Meredith	S. Asadollahi

REGISTERED ENGINEER
Name:
Discipline:
Date:
Applicable Revision

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

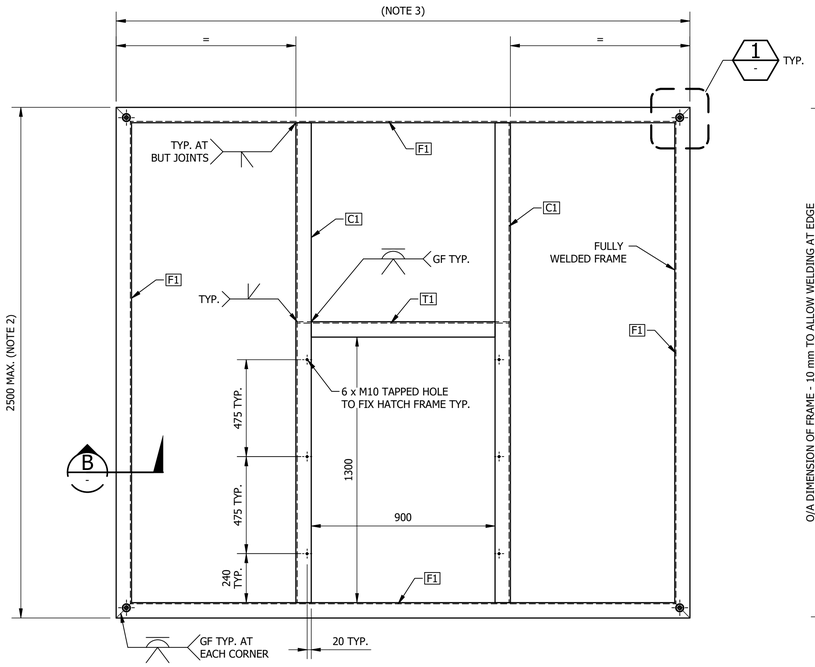
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
WET WELL ACCESS HATCH AND SAFETY GRATE DETAILS

DRAWING STATUS: Current

SD-4343-C

A1

ISSUE: A

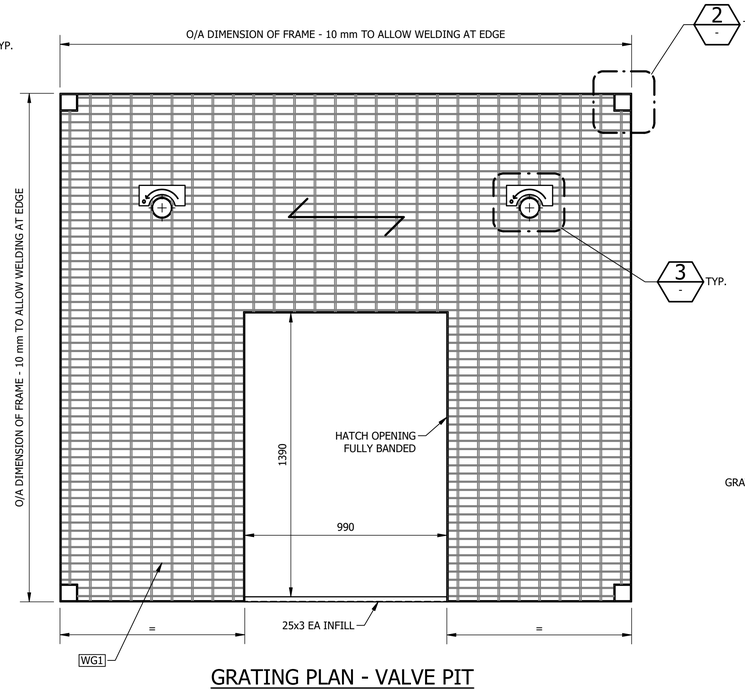


PLAN - VALVE PIT COVER FRAME

(GRATING NOT SHOWN FOR CLARITY, REFER GRATING PLAN)

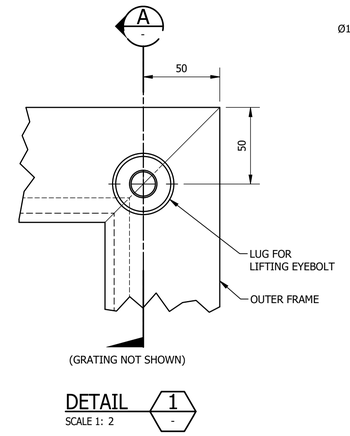
SCALE: 1 : 15

MATERIAL: MILD STEEL
COATING: HOT DIP GALVANISED
FINISH COLOUR: N/A
MASS: 700 kg (INCL. GRATING)



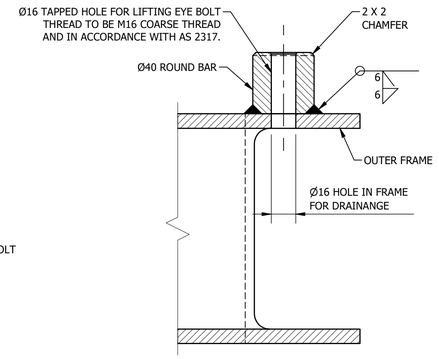
GRATING PLAN - VALVE PIT

SCALE: 1 : 15



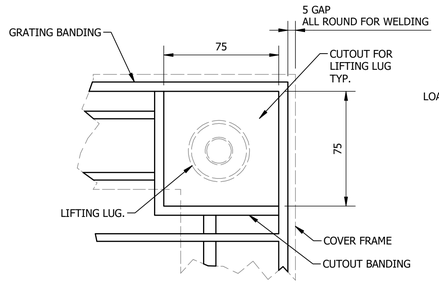
DETAIL 1

SCALE 1: 2



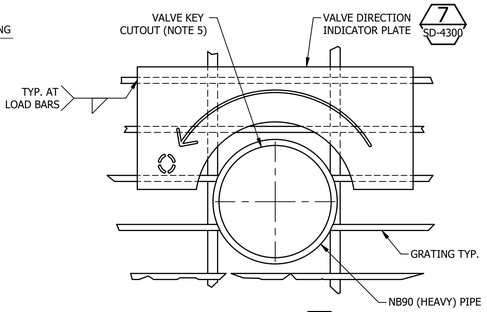
SECTION A

SCALE 1: 2



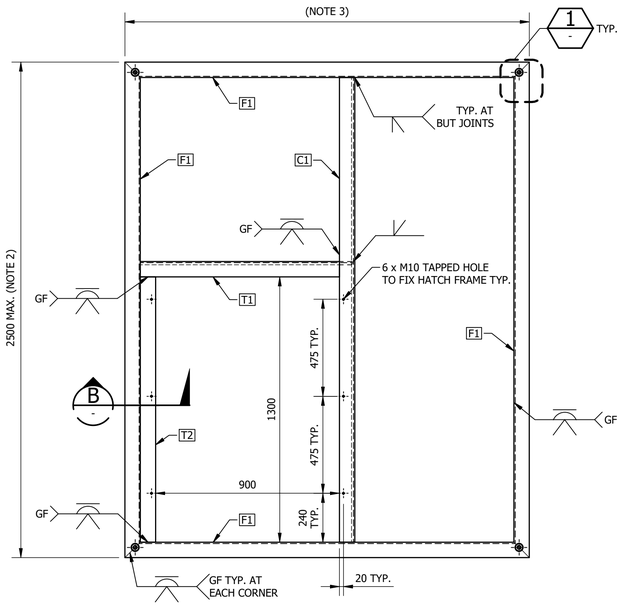
DETAIL 2

SCALE 1: 2



DETAIL 3

SCALE 1: 2

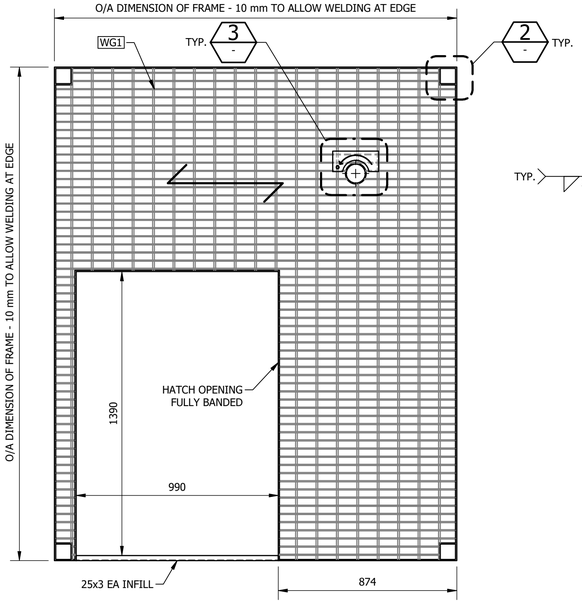


PLAN - FLOW METER PIT COVER FRAME

(GRATING NOT SHOWN FOR CLARITY, REFER GRATING PLAN)

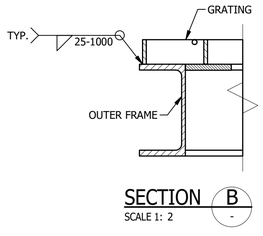
SCALE: 1 : 15

MATERIAL: MILD STEEL
COATING: HOT DIP GALVANISED
FINISH COLOUR: N/A
MASS: 500 kg (INCL. GRATING)



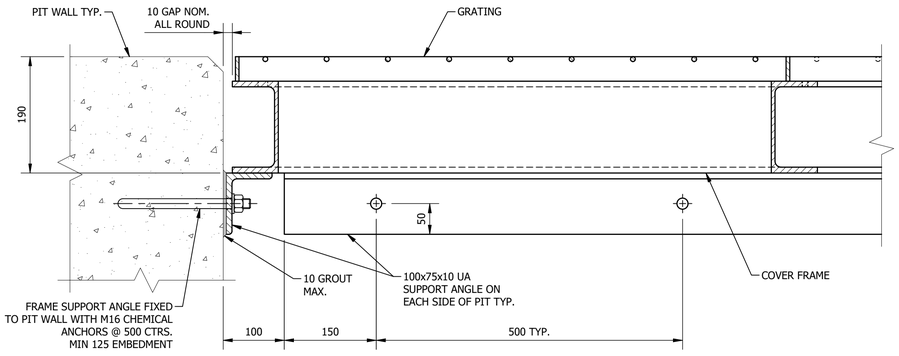
GRATING PLAN - FLOW METER PIT

SCALE: 1 : 15



SECTION B

SCALE 1: 2



SECTION - TYPICAL INSTALLATION

SCALE: 1 : 5

MEMBER SCHEDULE		
MARK	DESCRIPTION	SECTION
F1	OUTER FRAME	150 PFC
C1	CROSS MEMBER	150 PFC
T1	HATCH TRIMMER	150 PFC
T2	HATCH TRIMMER	75 x 10 FL
WG1	WEBFORGE GRATING	C405MPU

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THIS DESIGN IS FOR A COVER PANEL WITH A MAXIMUM LENGTH OF 2500. TO FACILITATE TRANSPORTATION AND EASY HANDLING FOR PITS WITH A LENGTH >2500 MULTIPLE COVER PANELS MAY BE REQUIRED, ADDITIONAL SUPPORT REQUIREMENTS TO BE DETERMINED BY THE DESIGN ENGINEER.
3. MAXIMUM WIDTH TO BE DETERMINED BY THE DESIGN ENGINEER.
4. ALL WELDS ON TOP SURFACES OF FRAME TO BE GROUND FLAT TO ALLOW GRATING PANELS TO SIT FLUSH.
5. VALVE KEY CUTOUTS LOCATED CENTRALLY OVER VALVE SPINDLE EXTENSIONS EXACT LOCATIONS TO BE CONFIRMED PRIOR TO FABRICATION AND GALVANISING.
6. HATCH FRAME TO SUIT ACCESS HATCH FOR INCLINED LADDER. FOR HATCH DETAILS REFER TO SD-4351.

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Discipline:
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Applicable Revision

DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

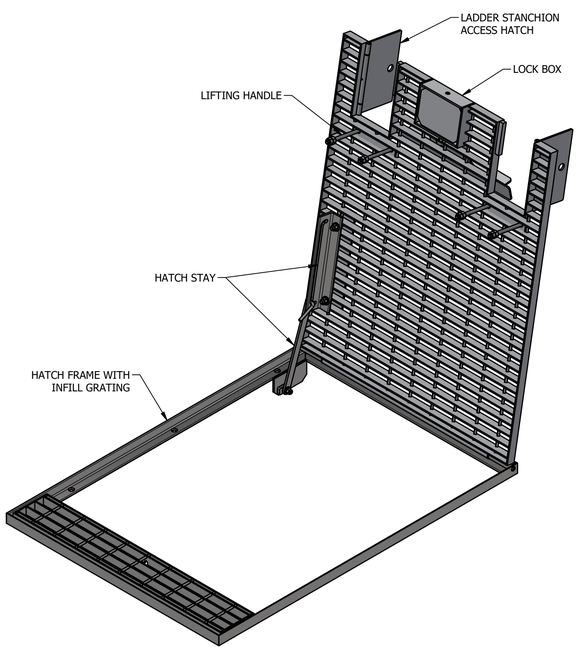
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
VALVE PIT AND FLOWMETER PIT DROP IN COVER FRAME DETAILS

DRAWING STATUS: Current

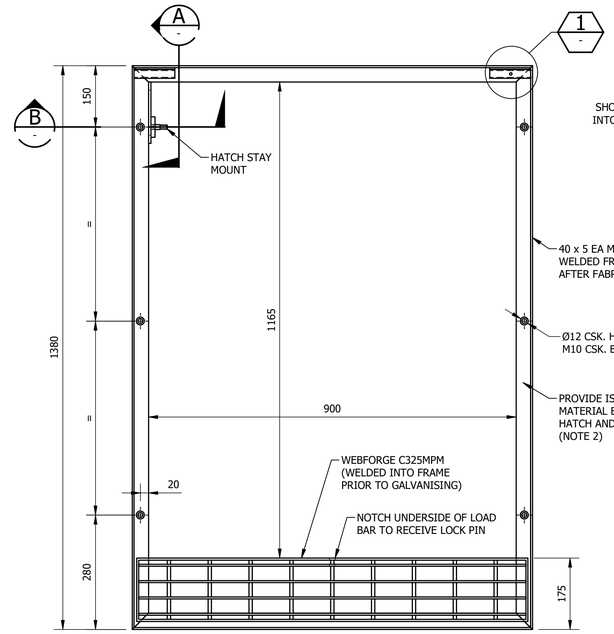
SD-4350-C

A1

ISSUE A

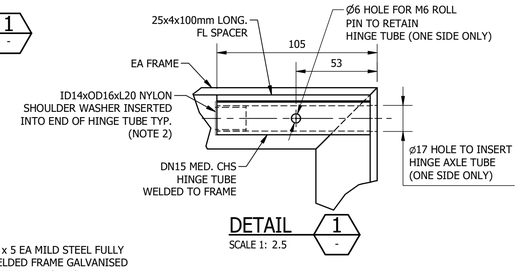


HATCH AND FRAME ARRANGEMENT
(SHOWN IN OPEN POSITION)

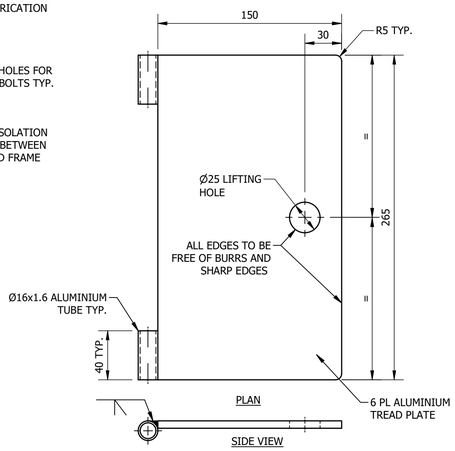


HATCH FRAME
SCALE: 1 : 7.5

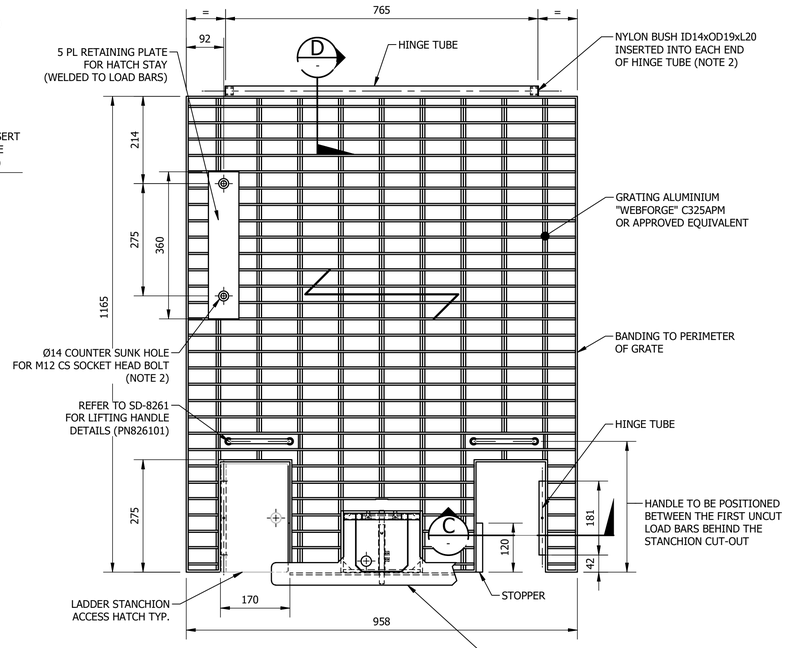
MATERIAL: CARBON STEEL
COATING: HOT DIP GALVANISED
FINISH COLOUR: N/A
MASS: 22 kg



DETAIL 1
SCALE 1: 2.5

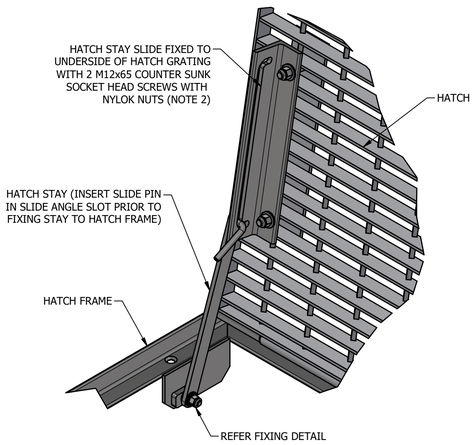


LADDER STANCHION ACCESS HATCH
SCALE: 1 : 2.5

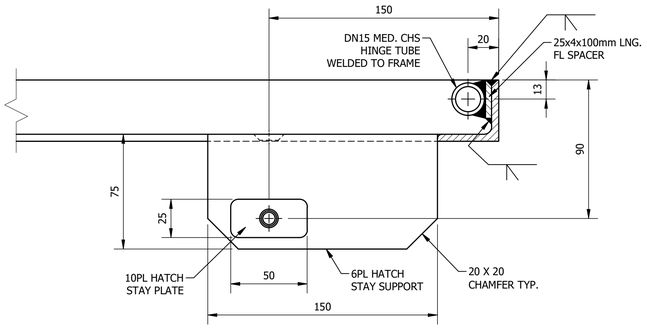


HATCH COVER
SCALE: 1 : 7.5

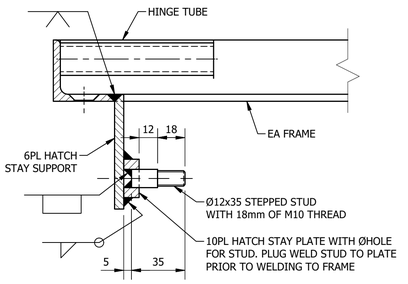
MATERIAL: ALUMINIUM
COATING: N/A
FINISH COLOUR: N/A
MASS: 23 kg



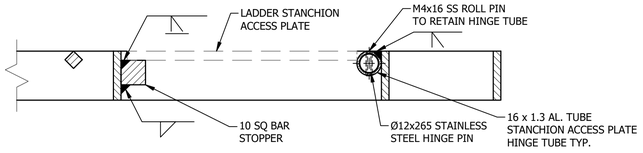
HATCH STAY ASSEMBLY



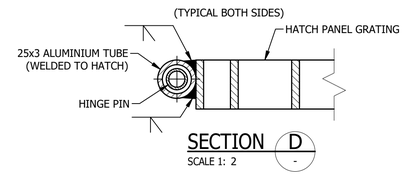
SECTION A
SCALE 1: 2



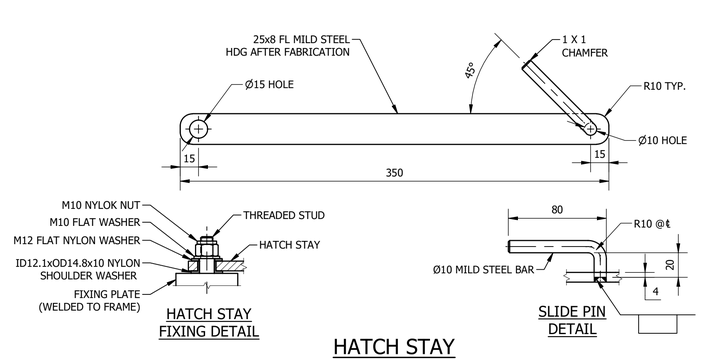
SECTION B
SCALE 1: 2



SECTION C
SCALE 1: 2



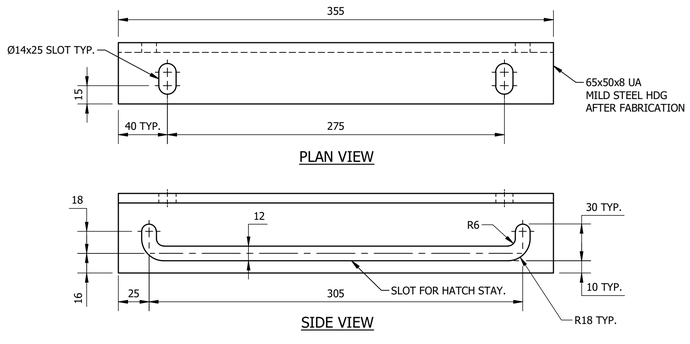
SECTION D
SCALE 1: 2



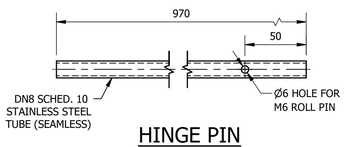
HATCH STAY FIXING DETAIL

SLIDE PIN DETAIL

HATCH STAY
SCALE: 1 : 2.5



HATCH STAY SLIDE ANGLE
SCALE: 1 : 2.5



HINGE PIN
SCALE: 1 : 2.5

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL FASTENERS AND HINGES WITH CONTACT BETWEEN DISSIMILAR METALS (ALUMINIUM, HDG STEEL OR STAINLESS STEEL) TO BE INSULATED WITH WASHERS AND BUSHINGS, SURFACES BETWEEN DISSIMILAR METALS TO BE INSULATED WITH "DENSO" PRIMER D AND DENSOPOL 60 TAPE OR APPROVED EQUIVALENT.
3. ALL MILD STEEL PARTS TO BE HOT DIP GALVANISED AFTER FABRICATION AND WELDING.

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Discipline:
Date:
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DAM		RES		SPS	X		
BWS		WAT		STP			
WTP		SEW					
WPS		REC					

ASSET AREA APPLICABILITY

icon WATER

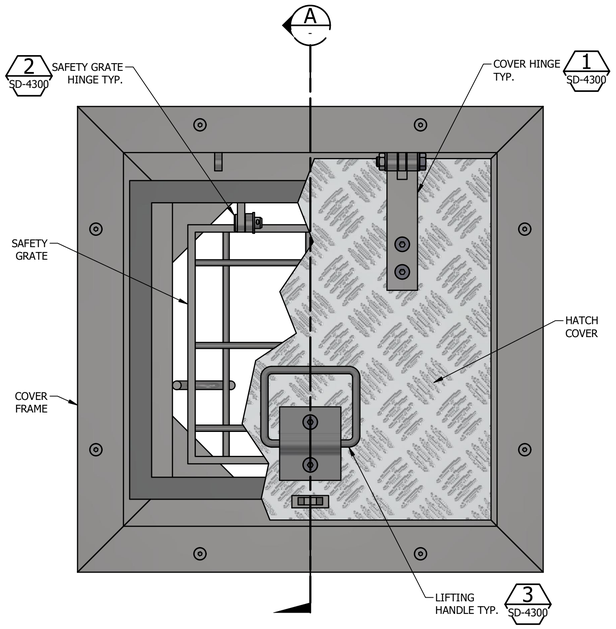
STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
VALVE PIT AND FLOWMETER PIT HINGED ACCESS HATCH DETAILS

DRAWING STATUS: Current

SD-4351-C

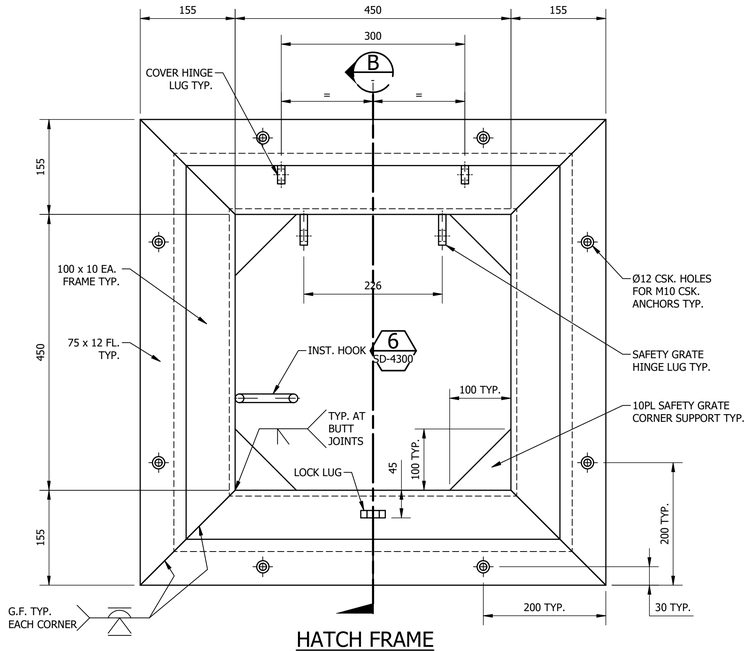
A1

ISSUE: A



HATCH COVER ASSEMBLY

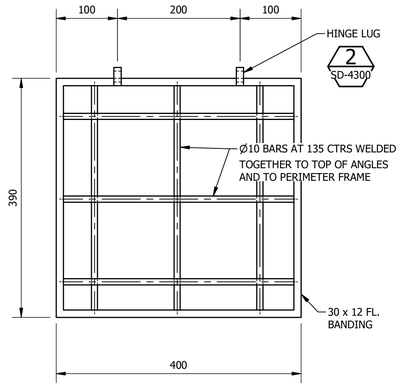
SCALE: 1 : 5



HATCH FRAME

SCALE: 1 : 5

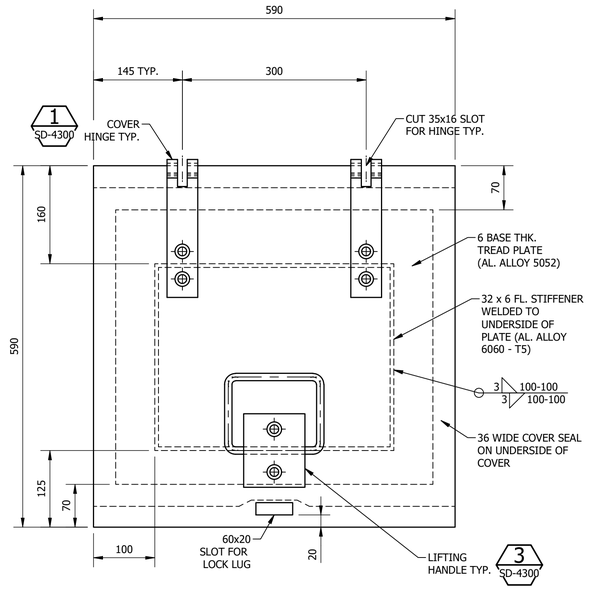
MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 70 kg



SAFETY GRATE

SCALE: 1 : 5

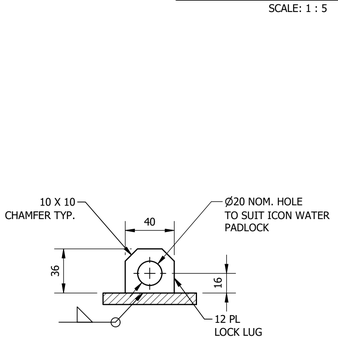
MATERIAL: STAINLESS STEEL
COATING: N/A
FINISH COLOUR: N/A
MASS: 6.5 kg



HATCH COVER

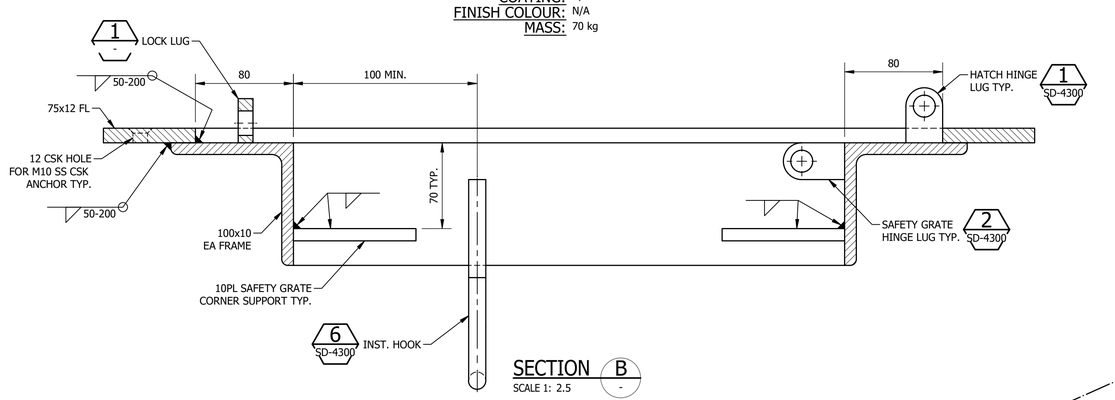
SCALE: 1 : 5

MATERIAL: ALUMINUM (SS HANDLES AND HINGES)
COATING: N/A
FINISH COLOUR: N/A
MASS: 70 kg



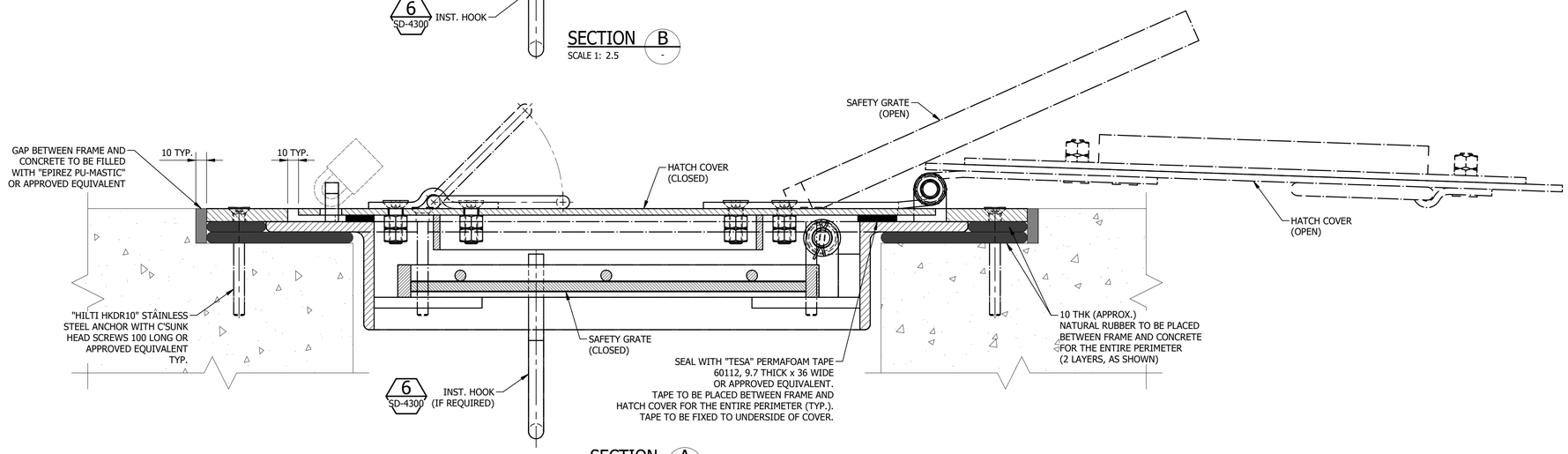
DETAIL 1

SCALE 1: 2.5



SECTION B

SCALE 1: 2.5



SECTION A

SCALE 1: 2.5

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DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW				
WPS		REC				

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMP STATIONS
ACCESS COVERS
EMERGENCY STORAGE TANK INSTRUMENTATION HATCH DETAILS

DRAWING STATUS: Current

SD-4370-C

A1

ISSUE: A