

OLIFANTSVLEI WASTEWATER TREATMENT WORKS: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

DRAWING LIST:

GENERAL:

DRAWING NUMBER
BW1400-RHD-C1-99-D-C-9901
BW1400-RHD-C1-99-D-C-9902
BW1400-RHD-C1-99-D-C-9903

DRAWING TITLE
COVER PAGE
DRAWING REGISTER
GENERAL NOTES

CIVIL:

DRAWING NUMBER
BW1400-RHD-C1-00-D-C-0001
BW1400-RHD-C1-01-D-C-0101
BW1400-RHD-C1-01-D-C-0102
BW1400-RHD-C1-01-D-C-0103
BW1400-RHD-C1-01-D-C-0104
BW1400-RHD-C1-02-D-C-0201
BW1400-RHD-C1-02-D-C-0202
BW1400-RHD-C1-02-D-C-0203
BW1400-RHD-C1-02-D-C-0204
BW1400-RHD-C1-02-D-C-0205
BW1400-RHD-C1-03-D-C-0301
BW1400-RHD-C1-03-D-C-0302
BW1400-RHD-C1-03-D-C-0303
BW1400-RHD-C1-04-D-C-0401
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BW1400-RHD-C1-06-D-C-0601
BW1400-RHD-C1-06-D-C-0602
BW1400-RHD-C1-07-D-C-0701
BW1400-RHD-C1-07-D-C-0702
BW1400-RHD-C1-08-D-C-0801
BW1400-RHD-C1-09-D-C-0901
BW1400-RHD-C1-10-D-C-1001
BW1400-RHD-C1-11-D-C-1101
BW1400-RHD-C1-11-D-C-1102
BW1400-RHD-C1-11-D-C-1201

DRAWING TITLE
GENERAL SITE LAYOUT
VAN WYKSRUST PUMP STATION - SITE LAYOUT
VAN WYKSRUST PUMP STATION - SITE LAYOUT ISOMETRIC
VAN WYKSRUST PUMP STATION - STORMWATER TERRACING
VAN WYKSRUST PUMP STATION - TERRACE AND DRAINAGE PAVEMENT LAYOUT
VAN WYKSRUST PUMP STATION - GENERAL LAYOUT & SECTIONS
VAN WYKSRUST PUMP STATION - DOOR AND WINDOW SCHEDULE
VAN WYKSRUST PUMP STATION - SKIP TRUCK LAYOUT
VAN WYKSRUST PUMP STATION - UNDERGROUND DRAINAGE
VAN WYKSRUST PUMP STATION - VALVE CHAMBER LAYOUT AND SECTIONS
VAN WYKSRUST PUMP STATION - SPLITTER BOX LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - BYPASS CHAMBER LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - BYPASS MANHOLE & SUMP LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - GENERATOR SLAB LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - ELEVATED GUARD HOUSE LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - PERIMETER WALL DETAIL
VAN WYKSRUST PUMP STATION - PERIMETER WALL SECTIONS
SUBSTATION C - LAYOUT, SECTIONS & DETAILS
SUBSTATION C - PAVEMENT LAYOUT AND DETAILS
EXISTING VAN WYKSRUST RISING MAINS - SCHEMATIC LAYOUT AND DETAILS
VAN WYKSRUST PUMP STATION - SCREENING LAYOUT, SECTIONS, DETAILS & EARTHWORKS
VAN WYKSRUST PUMP STATION - CONCRETE DOOR SLAB LAYOUT, SECTION, DETAILS & EARTHWORKS
SIGN BOARD - GENERAL ARRANGEMENT
SIGN BOARD - DETAILS
VAN WYKSRUST PUMP STATION AND SUBSTATION C - TYPICAL PAVEMENT DETAILS

STRUCTURAL:

DRAWING NUMBER
BW1400-RHD-C1-03-D-S-0321
BW1400-RHD-C1-03-D-S-0322
BW1400-RHD-C1-03-D-S-0323
BW1400-RHD-C1-04-D-S-0421
BW1400-RHD-C1-05-D-S-0521
BW1400-RHD-C1-09-D-S-0921

DRAWING TITLE
VAN WYKSRUST PUMP STATION - SPLITTER BOX REINFORCEMENT
VAN WYKSRUST PUMP STATION - BYPASS CHAMBER REINFORCEMENT
VAN WYKSRUST PUMP STATION - BYPASS MANHOLE AND SUMP REINFORCEMENT
VAN WYKSRUST PUMP STATION - GENERATOR SLAB REINFORCEMENT
VAN WYKSRUST PUMP STATION - ELEVATED GUARD HOUSE SLAB REINFORCEMENT
VAN WYKSRUST PUMP STATION - SCREENINGS FACILITY SLAB REINFORCEMENT

MECHANICAL:

DRAWING NUMBER
BW1400-RHD-C1-01-D-M-0141
BW1400-RHD-C1-02-D-M-0241
BW1400-RHD-C1-02-D-M-0242
BW1400-RHD-C1-02-D-M-0243

DRAWING TITLE
VAN WYKSRUST PUMP STATION - SCREENINGS CHANNEL MECHANICAL LAYOUT
VAN WYKSRUST PUMP STATION - GENERAL ARRANGEMENT AND SECTIONS
VAN WYKSRUST PUMP STATION - PIPE SCHEDULE
VAN WYKSRUST PUMP STATION - PROCESS FLOW DIAGRAM

ELECTRICAL:

DRAWING NUMBER
BW1400-RHD-C1-00-D-E-0051
BW1400-RHD-C1-00-D-E-0052
BW1400-RHD-C1-02-D-E-0251
BW1400-RHD-C1-02-D-E-0252
BW1400-RHD-C1-02-D-E-0253
BW1400-RHD-C1-02-D-E-0254
BW1400-RHD-C1-02-D-E-0255
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BW1400-RHD-C1-02-D-E-0259
BW1400-RHD-C1-02-D-E-0260
BW1400-RHD-C1-02-D-E-0261
BW1400-RHD-C1-02-D-E-0262
BW1400-RHD-C1-02-D-E-0263
BW1400-RHD-C1-02-D-E-0264
BW1400-RHD-C1-02-D-E-0265
BW1400-RHD-C1-02-D-E-0266
BW1400-RHD-C1-02-D-E-0267
BW1400-RHD-C1-02-D-E-0268
BW1400-RHD-C1-02-D-E-0269

DRAWING TITLE
COMMUNICATIONS - FIBRE OPTIC RETICULATION CABLE ROUTING
ELECTRICAL - MEDIUM VOLTAGE RETICULATION CABLE ROUTING
ELECTRICAL - MEDIUM VOLTAGE RETICULATION SINGLE LINE DIAGRAM
CONTROL & INSTRUMENTATION CABLE BLOCK DIAGRAM
MOTOR CONTROL CENTER - SINGLE LINE DIAGRAM
MCC SCHEMATIC DIAGRAM - (SHEET 1 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 2 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 3 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 4 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 5 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 6 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 7 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 8 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 9 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 10 OF 11)
MCC SCHEMATIC DIAGRAM - (SHEET 11 OF 11)
TYPICAL INSTRUMENT LOOP DIAGRAMS - (SHT 1 OF 5)
TYPICAL INSTRUMENT LOOP DIAGRAMS - (SHT 2 OF 5)
TYPICAL INSTRUMENT LOOP DIAGRAMS - (SHT 3 OF 5)
TYPICAL INSTRUMENT LOOP DIAGRAMS - (SHT 4 OF 5)
TYPICAL INSTRUMENT LOOP DIAGRAMS - (SHT 5 OF 5)

DEPARTMENT		APPROVED		DESIGNATION		DATE	

CONSULTING ENGINEERS				SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG				DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000				DESIGNED		N. O'GORMAN		 TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529		OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN DRAWING LIST				C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
				DRAWN		N. O'GORMAN								C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 25	JW14466R-RHD-C1-99-D-Z-9902					
				CHECKED		L. NAICKER								CONSULTANT'S NUMBER									
				SERVICES CHECKED										BW1400-RHD-C1-99-D-Z-9902									
				GEOTECHNICAL INVESTIGATION										FILE No									
				SERVITUDES																			
				APPROVED		DITHOLO PHOGOLE																	
				Pr. Eng.No.		20060098																	
				DATE																			
																				DATE			

GENERAL AND SITE SPECIFIC NOTES:

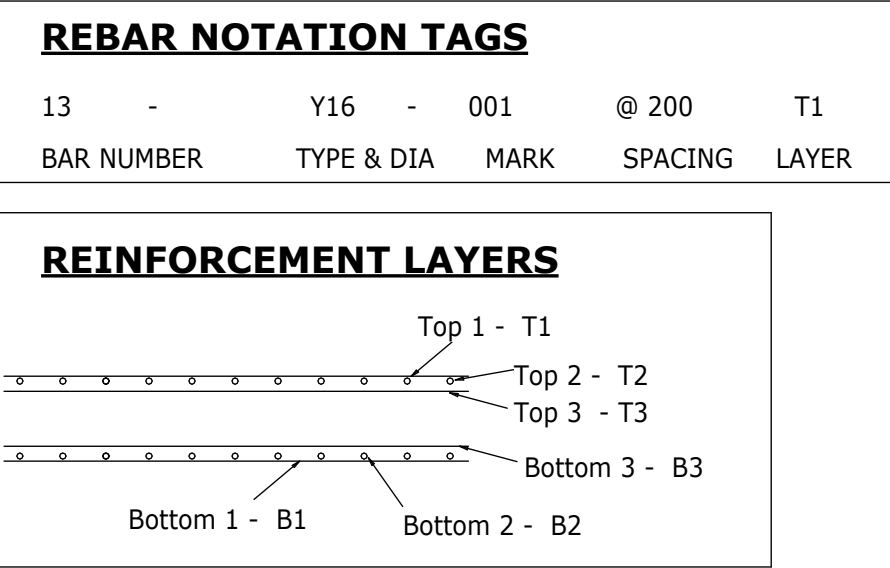
1. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. THE SITE HAS A D3 DOLOMITE DESIGNATION; ALL DESIGNS AND ACTIVITIES ARE TO COMPLY WITH SANS 1936.
3. THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY IF THE FOLLOWING IS ENCOUNTERED DURING EXCAVATION:
- A SUDDEN CHANGE IN THE COLOUR OF THE SOILS.
 - EXPOSURE OF CAVITIES OR OF WEAK OR POROUS SOILS.
 - EXCAVATION OF PALAEO-STRUCTURES.
4. EQUIPMENT DETAILS AND REQUIREMENTS THEREOF ARE TO BE PROVIDED BY THE CONTRACTOR TO FINALISE RELATED DESIGNS. (REFERENCE TO AREAS OF DRAWINGS SHOWN "ON HOLD")
5. THE ACCUMULATION OF WATER (PONDING) IS TO BE AVOIDED ON THE SURFACE OF THIS SITE AND IN EXCAVATIONS.
6. METHOD STATEMENTS TO BE PROVIDED IN ADVANCE TO ALLOW FOR ADEQUATE REVIEW AND APPROVAL THEREOF, PRIOR TO COMMENCEMENT OF CERTAIN ACTIVITIES.
7. SHOP DETAILS TO BE PROVIDED IN ADVANCE TO ALLOW FOR ADEQUATE REVIEW AND APPROVAL THEREOF, PRIOR TO MANUFACTURE.
8. ANY DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER AS SOON AS POSSIBLE. IF THERE IS ANY DISCREPANCY BETWEEN THE DRAWINGS AND THE SPECIFICATION, THE ENGINEER MUST BE INFORMED.
9. ALL FOUNDATIONS TO BE INSPECTED BY THE ENGINEER AND RECORDS OF SUCH, INCLUDING QUALITY CONTROL MEASURES TO BE WELL MAINTAINED FOR DRAFTING OF A REPORT TO BE PROVIDED TO LOCAL AUTHORITY AND THE COUNCIL FOR GEOSCIENCE.
10. DEWATERING/DRAINING OF THE EXISTING STRUCTURES (IN PARTICULAR THE EXISTING PUMP STATION DRY WELL) TO BE DONE IN PARALLEL TO THE SUBSOIL WATER DRAW-DOWN.
11. DRAWING DOWN OF SUBSOIL WATER PERMITTED ONLY TO A MAXIMUM LEVEL OF 8M BELOW NGL WHERE REQUIRED. THIS DEPTH IS NOT TO BE EXCEEDED UNDER ANY CIRCUMSTANCES.
12. AN IN-SITU PENETROMETER TEST OR SIMILAR IS TO BE CONDUCTED BELOW THE EXISTING PUMPSTATION BASEMENT LEVEL. THE RESULTS OF SUCH TESTING SHOULD INDICATE BEARING CAPACITY (SOIL STRENGTH AND DENSITY), AS REQUIRED FOR FINAL DESIGN PURPOSES.
13. THE CONTRACTOR IS TO EXPOSE A PORTION OF THE EXISTING BUILDING BASEMENT WALLS THROUGH CAREFUL EXCAVATION AND IN ACCORDANCE WITH AN APPROVED METHOD STATEMENT. THIS IS FOR THE PURPOSE OF INSPECTION BY THE STRUCTURAL ENGINEER.

GENERAL CONCRETE NOTES:

1. DIMENSIONS MUST NOT BE SCALED OR ASSUMED.
2. CONCRETE CUBE STRENGTH MIN. AT 28 DAYS:
- | | |
|----------------------------|--------------------|
| BLINDING | - 15MPa/19mm STONE |
| RC STRIP FOUNDATION | - 25MPa/19mm STONE |
| RC PILE CAP & GROUND BEAMS | - 30MPa/19mm STONE |
| RC SURFACE BED | - 30MPa/19mm STONE |
| RC COLUMNS, BEAMS & SLABS | - 30MPa/19mm STONE |
| WATER RETAINING STRUCTURES | - 35MPa/19mm STONE |
| NEW PUMP STATION CONCRETE | - 40MPa/19mm STONE |
3. CONCRETE COVER TO REINFORCING: (BELOW GROUND)
- | | |
|----------------------------------|--------------------|
| RC STRIP FOUNDATION | - 50mm (ALL SIDES) |
| RC RAFT FOUNDATION | - 50mm (ALL SIDES) |
| RC PAD FOUNDATION | - 50mm (ALL SIDES) |
| RC SURFACE BED | - 50mm (ALL SIDES) |
| RC COLUMNS, BEAMS, WALLS & SLABS | - 50mm (ALL SIDES) |
4. THE CONTRACTOR NEEDS TO SUPPLY THE STRUCTURAL ENGINEER WITH THE CONCRETE MIX DESIGNS AND CUBE TEST RESULTS.
5. ALL EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY ENGINEER.
6. ALL STEEL REINFORCING TO BE CHECKED AND APPROVED BY ENGINEER BEFORE CASTING ANY CONCRETE.
7. ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO POURING THE BLINDING LAYER.
8. ALL CONCRETE TO BE PROPERLY CURED BY KEEPING SURFACES CONTINUOUSLY DAMP, AT LEAST 7 DAYS AFTER CASTING. CONCRETE SLABS TO BE COVERED WITH MOIST SAND OR PLASTIC MEMBRANE DURING THIS PERIOD, COLUMNS TO BE WRAPPED IN PLASTIC IMMEDIATELY AFTER REMOVAL OF SHUTTERS.
9. GENERALLY THREE CONCRETE TEST CUBE SHALL BE TESTED AT 7 DAYS, 14 DAYS AND 28 DAYS. THE RESULTS SHALL IMMEDIATELY BE FORWARDED TO THE ENGINEERS. ONE SET OF TEST CUBES HAS TO BE MADE PER 50M³ OF CONCRETE OR PART THEREOF DAILY OF EVERY TYPE CAST.

REINFORCING NOTES:

1. ALL REINFORCING STEEL SHALL BE IN COMPLIANCE WITH SANS 920:2011, AND DETAILED TO SANS 10144:2012. MINIMUM YIELD STRENGTH SHALL BE AS LISTED:
- a. Y- HOT ROLLED, DEFORMED HIGH YIELD STEEL = 450 MPa
b. R- HOT ROLLED, ROUND MILD STEEL = 250 MPa
c. WELDED MESH FABRIC = 485 MPa
2. THE FOLLOWING ABBREVIATIONS DENOTES THE FOLLOWING:
- | | | | |
|----|-----|---|---------------------------|
| a. | EF | = | EACH FACE |
| b. | FF | = | FAR FACE |
| c. | NF | = | NEAR FACE |
| d. | EW | = | EACH WAY |
| e. | IF | = | INNER FACE |
| f. | OT | = | OUTER FACE |
| g. | ALT | = | ALTERNATING BARS |
| h. | ABR | = | ALTERNATING BARS REVERSED |
| i. | STG | = | STAGGERED BARS |
| j. | T&B | = | TOP AND BOTTOM |
3. THE CONTRACTOR IS REQUESTED TO INSPECT THE FIXED REINFORCEMENT AND TO ENSURE THAT THE CONCRETE COVER IS AS SPECIFIED ON THE RELEVANT DRAWINGS/NOTES BEFORE THE ENGINEER IS CALLED FOR AN INSPECTION.
4. NO CONCRETE IS TO BE POURED UNLESS THE REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY ENGINEER OR ENGINEER'S REPRESENTATIVE.
5. ENSURE REBAR IS CLEAN OF EXCESSIVE RUST, DUST AND GREASE BEFORE CASTING.
6. ENSURE PROPER VIBRATION OF CONCRETE AROUND AND BETWEEN REBAR AND MESH.



7. CONCRETE COVER TO REINFORCING: (BELOW GROUND)
- | | |
|----------------------------------|--------------------|
| RC STRIP FOUNDATION | - 50mm (ALL SIDES) |
| RC RAFT FOUNDATION | - 50mm (ALL SIDES) |
| RC PAD FOUNDATION | - 50mm (ALL SIDES) |
| RC SURFACE BED | - 50mm (ALL SIDES) |
| RC COLUMNS, BEAMS, WALLS & SLABS | - 50mm (ALL SIDES) |
8. CONCRETE COVER TO REINFORCING: (ABOVE GROUND)
- | | |
|-------------------------------------|--------------------|
| COLUMNS, BEAMS, WALLS & COVER SLABS | - 30mm (ALL SIDES) |
|-------------------------------------|--------------------|
9. ALL REINFORCING FIXED WITH THE SPECIFIED COVER MUST BE INSPECTED AND APPROVED IN WRITING BY THE ENGINEER PRIOR TO ANY CONCRETE BEING CAST.
10. REINFORCEMENT TO BE SECURELY WIRED AT ALL INTERSECTIONS.
11. BARS INDICATED THUS Y10, Y12, etc ARE HIGH TENSILE STEEL.
12. ALL LAPS TO BE 50xDIAMETER OF SMALLER LAPPING BAR.
13. MILD STEEL TO COMPLY WITH SANS 920 TYPE A - GRADE 3.
14. HIGH TENSILE STEEL TO COMPLY WITH SANS 920 TYPE C - GRADE 1.
15. BENDING DIMENSIONS IN ACCORDANCE WITH SANS 282.
16. RADII OF ALL BENDS ARE STANDARD UNLESS "r" IS GIVEN IN THE SCHEDULE.
17. SCABBLE THE CONCRETE FACES OF THE BOX CUT OUTS BEFORE CASTING CONCRETE AROUND PIPE. PLACE SWELLABLE WATER AROUND PIPE PERIMETER AND ALONG THE CENTRE CONCRETE FACE OF THE BOX CUT OUT.

BRICKWORK NOTES:

1. BRICKWORK STRENGTH AS FOLLOWS:
- | | |
|----------------------------------|------------|
| - MASONRY UNITS: | 7MPa (MIN) |
| - MORTAR: | CLASS II |
| - ALLOW MOVEMENT JOINT AS SHOWN. | |
2. STANDARD BRICK WALL SIZES:
- | | |
|-----------------|-------|
| - BRICK COURSE: | 85mm |
| - SINGLE SKIN: | 110mm |
| - DOUBLE SKIN: | 220mm |
4. BRICKFORCE TO BE IMPLEMENTED AT EVERY 3rd COURSE AS WELL AS BELOW SURFACEBEDS WHERE CLAY IS PRESENT.
5. FIRE WALLS: BRICKFORCE EVERY COURSE FOR 5 COURSES FOR EVERY 4420mm HEIGHT OF WALL WITH NORMAL BRICK FORCE AS PER 4. ABOVE BETWEEN.
6. NO HOLES OR CHASES ALLOWED IN BRICK WALL UNLESS INDICATED ON DRAWING, SPECIFICATIONS OR APPROVED BY THE ENGINEER.
7. BRICKWORK TO CONCRETE COLUMN / STRUCTURAL STEEL COLUMN CONNECTION:
- BRICK ISOLATION JOINT WITH JOINTEX FILLER.
 - GALVANIZED HOOP IRON TIES FROM CONCRETE / STEEL INTO BRICK EVERY FOURTH BRICK COURSE.

GENERAL STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL TO BE GRADE S355JR UNLESS OTHERWISE SHOWN.
2. ALL WELDS TO BE 6mm CONTINUOUS FILLET WELDS UNLESS SHOWN OTHERWISE AND TO CONFORM TO APPROVED STANDARDS (SANS 044).
3. ORDINARY BOLTS OF THE FOLLOWING PROPERTY CLASS AND MINIMUM DIAMETER SHALL BE USED IN ALL BOLTED CONNECTIONS:
- MAIN STRUCTURAL CONNECTIONS (BEAMS, PLATE GIRDERS, LATTICE GIRDERS, TRUSSES, RAFTERS, COLUMNS, POSTS, HANGERS, BRACING SYSTEMS, ETC.): CLASS 8.8 BOLTS WITH CLASS 8 NUTS, ALL TO SANS 1700
 - SECONDARY STRUCTURAL CONNECTIONS (PURLINS, GIRTS, SAG BARS, HANDRAIL STANDARDS, STAIR TREADS, LADDERS, ETC.): CLASS 8.8 BOLTS WITH CLASS 4 NUTS, ALL TO SANS 1700
4. BEFORE STRUCTURAL STEEL FABRICATION COMMENCES, THE WORKSHOP FABRICATION DRAWINGS NEED TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR COMMENT.
5. ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE PRIOR TO FABRICATION OF STEEL.
6. THIS DRAWING TO BE READ WITH THE RELEVANT CONCRETE LAYOUTS.
7. **PAINT APPLICATION:**
PAINT MUST BE APPLIED TO THE REQUIRED THICKNESS STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- SHOP PAINTING**
PRIMER: APPLY ONE COAT OF EPOXY ZINC PHOSPHATE ACCORDING TO MANUFACTURER'S SPECIFICATION TO A MINIMUM DRY FILM THICKNESS OF 60 MIRON DFT.
- PAINTING AFTER ERECTION**
TOUCH UP PRIMER ON SITE.
- FINISHING: APPLY TWO COATS OF ACRYLIC POLYURETHANE TO MANUFACTURER'S SPECIFICATION TO A MINIMUM DRY FILM THICKNESS OF 60 MIRON DFT.
- COLOUR TO CLIENT'S SPECIFICATION.
- PURLINS AND GIRTS TO BE HOT DIPPED GALVANIZED TO SANS 121 : 2011 (ISO 1461 : 2009)

SURFACE BED NOTES:

1. CONCRETE CUBE STRENGTH (28 DAY/19mm STONE): SURFACE BED: 30MPa
2. MINIMUM LAP LENGTH OF MESH REINFORCEMENT IS 300mm.
3. SUB-GRADE /INSITU-MATERIAL TO BE COMPACTED AS SPECIFIED.
4. DAMPROOF MEMBRANE TO BE PROVIDED UNDER ALL SLABS AND UNDERGROUND WALLS - MINIMUM 250 MICRON POLYETHELENE MEMBRANE.
5. REINFORCING TO SURFACE BED SHALL HAVE APPROVED SPACER BLOCKS OR STOOLS.
6. ALL DOWEL BARS SHALL BE 100% STRAIGHT, LEVEL AND AT RIGHT ANGLES TO THE JOINT DIRECTION. THE CONTRACTOR SHALL ENSURE THAT DOWELS BARS ARE SECURELY FIXED IN PLACE AND CANNOT BE MISALIGNED DURING POURING OF CONCRETE.
7. WHERE SAWN-CUT JOINTS ARE SPECIFIED THESE SHALL BE CUT BY AN EXPERIENCED SPECIALIST. THE TIMING SHALL BE SUCH AS TO CAUSE SLIGHT RAVELLING AFTER THE CONCRETE HAS HARDENED SUFFICIENTLY TO RESIST DAMAGE BY SAWING BUT BEFORE 4 TO 48 HOURS AFTER PLACEMENT OF CONCRETE.
8. ALL SURFACE BEDS TO BE MOIST CURED FOR MINIMUM 7 DAYS .
9. NO HOLES OR CHASES SHALL BE CUT OR FORMED IN SURFACE BEDS UNLESS INDICATED ON DRAWINGS, DETAILED IN SPECIFICATION OR APPROVED BY THE ENGINEER.
10. NO CONDUITS, PIPES OR ELECTRICAL OR MECHANICAL EQUIPMENT SHALL BE CAST INTO SURFACE BEDS UNLESS INDICATED ON DRAWINGS, DETAILED IN SPECIFICATION OR APPROVED BY THE ENGINEER.

FOUNDATION NOTES:

1. FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO CASTING.
2. A 50mm THICK CLASS 15MPa/19mm STONE BLINDING LAYER TO BE CAST UNDER THE FULL EXTENT OF ALL REINFORCED CONCRETE BASES.
3. BACKFILLING SHALL BE DONE WITH APPROVED MATERIAL PLACED IN LAYERS OF 200mm MAXIMUM DEPTH BEFORE COMPACTION AND EACH LAYER SHALL BE COMPACTED TO 95% MOD AASHTO DENSITY OR AS DIRECTED BY THE ENGINEER.
4. ONLY MANUAL COMPACTION OF SOIL IS TO TAKE PLACE WITHIN 500mm OF WALLS.
5. POOR FOUNDING MATERIAL BELOW FOUNDATION SHALL BE REMOVED TO THE DEPTH ORDERED BY THE ENGINEER AND BACKFILLED WITH APPROVED FILL MATERIAL

QUALITY CONTROL NOTES:

1. REQUESTS FOR INFORMATION (RFI) SHALL BE SENT TO THE STRUCTURAL ENGINEER VIA EMAIL CORRESPONDENCE - REFERENCING THE DRAWING NUMBER AND AREA OF INTEREST AS AND WHERE APPLICABLE.
2. TIMELINES FOR THE REVIEW AND RESPONSE FOR RFIs, VARIATION AND CHANGE ORDERS SHALL BE GOVERNED BY THE APPLICABLE CONSTRUCTION CONTRACT USED.
3. THE FOLLOWING MATERIAL CERTIFICATES AND QUALITY INFORMATION SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER PRIOR TO THE USE OF THE RESPECTIVE MATERIALS:
- STRUCTURAL STEEL GRADE CERTIFICATE
 - REINFORCING STEEL GRADE CERTIFICATE
 - CONCRETE MIX DESIGN
 - CONCRETE AGGREGATE SOURCE AND GRADING CERTIFICATE
 - BRICK STRENGTH TEST CERTIFICATE
 - SOIL DENSITY TESTS OF LAYER WORKS
4. ALL CONCRETE ELEMENTS SHALL BE INSPECTED BY THE STRUCTURAL ENGINEER PRIOR TO CASTING CONCRETE. APPROVAL FROM THE STRUCTURAL ENGINEER IS REQUIRED TO CAST A CONCRETE ELEMENT. APPROVAL IS BASED ON THE COMPLIANCE TO THE DESIGN DRAWINGS AND SPECIFICATIONS, WITHIN THE RELEVANT AND APPLICABLE TOLERANCES SPECIFIED.
5. ALL INSPECTIONS SHALL BE REQUESTED VIA EMAIL CORRESPONDENCE TO THE STRUCTURAL ENGINEER AT LEAST 48 HOURS PRIOR TO THE TIME OF DESIRED INSPECTION. WHERE URGENT OR CRITICAL INSPECTION IS REQUIRED, THE STRUCTURAL ENGINEER SHOULD BE CONTACTED VIA THE MOST APPROPRIATE MEANS WHEREAFTER THE ENGINEER SHALL ATTEND TO THE REQUEST IN DUE COURSE.
6. THE CONTRACTOR SHALL ENSURE THAT THE AREA/ELEMENT BEING INSPECTED FOR PRE-POUR APPROVAL IS IN A COMPLETED STATE - HENCE THE DECK/BOX SHALL BE CLEAN OF RUBBLE AND DEBRIS, ALL COVER BLOCKS ARE INSTALLED AND COVER IS SUFFICIENT, THE REBAR IS INSTALLED ACCORDING TO BE DRAWING AND BENDING SCHEDULE, THE ELEMENT DIMENSIONS ARE AS PER THE DRAWINGS. IT IS STRONGLY ADVISED THAT THE CONTRACTOR ENSURES THE ABOVE PRE-POUR CONDITIONS HAVE BEEN CHECKED PRIOR TO THE ENGINEER'S ARRIVAL AT THE INSPECTION.
7. RESULTS OF ALL TESTS I.E.: CUBE TESTS, DENSITY TESTS ETC. SHALL BE SENT TO THE STRUCTURAL ENGINEER FOR APPROVAL AS SOON AS THE RESULTS ARE AVAILABLE VIA PROCORE (VDC CONSTRUCTION DOCUMENTATION PLATFORM

DEPARTMENT	APPROVED	DESIGNATION	DATE

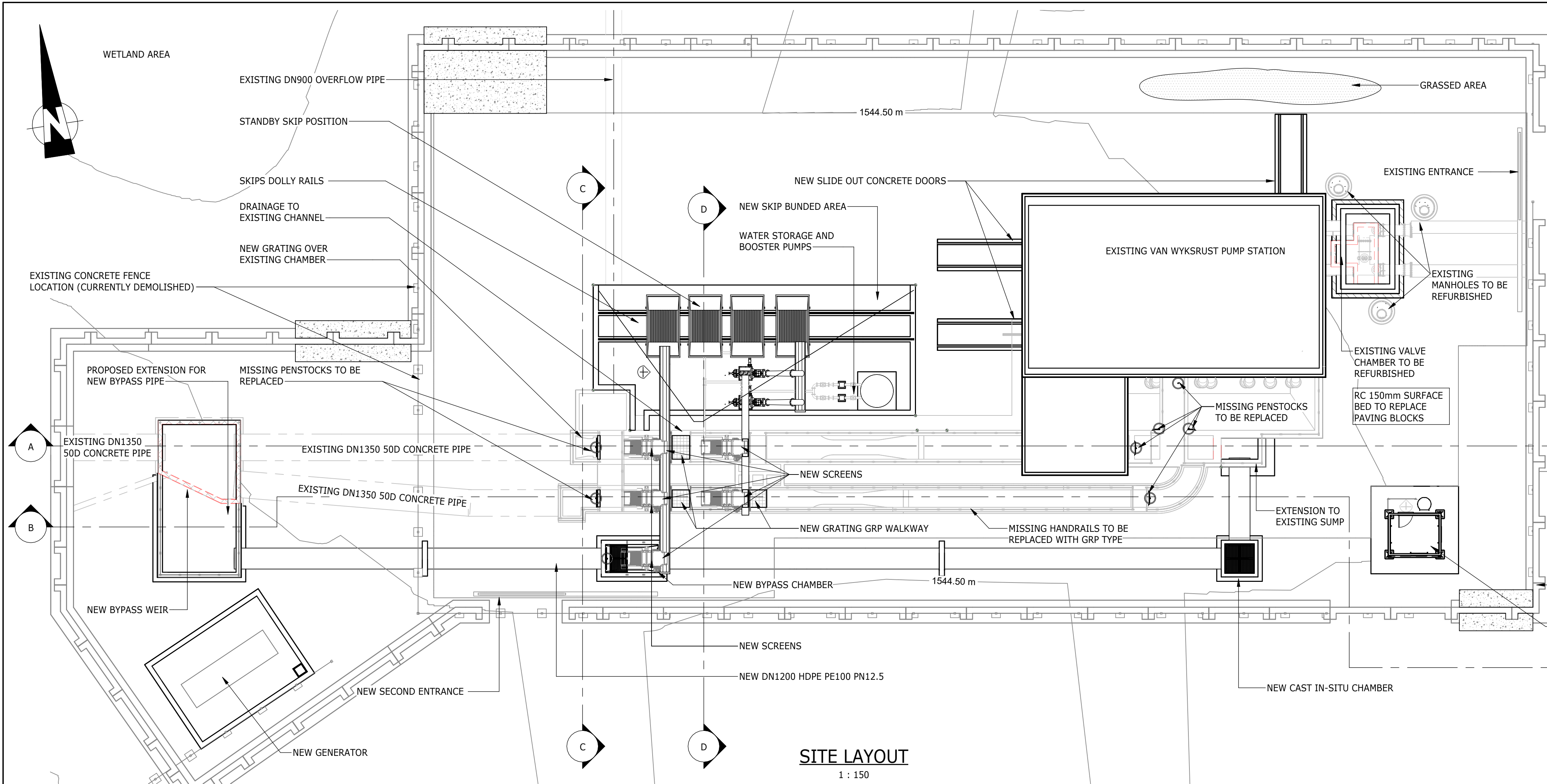
CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.								
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	N. O'GORMAN		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN GENERAL NOTES				AS SHOWN	C01			ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW NUMBER					
		DRAWN	N. O'GORMAN									C02			ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 25	JW14466R-RHD-C1-99-D-Z-9903					
		CHECKED	L. NAICKER									CONSULTANT'S NUMBER											
		SERVICES CHECKED										BW1400-RHD-C1-99-D-Z-9903											
		GEOTECHNICAL INVESTIGATION										FILE No											
		SERVITUDES																					
		APPROVED	DITHOLO PHOGOLE																				
Pr. Eng.No.	20060098																						
DATE																							



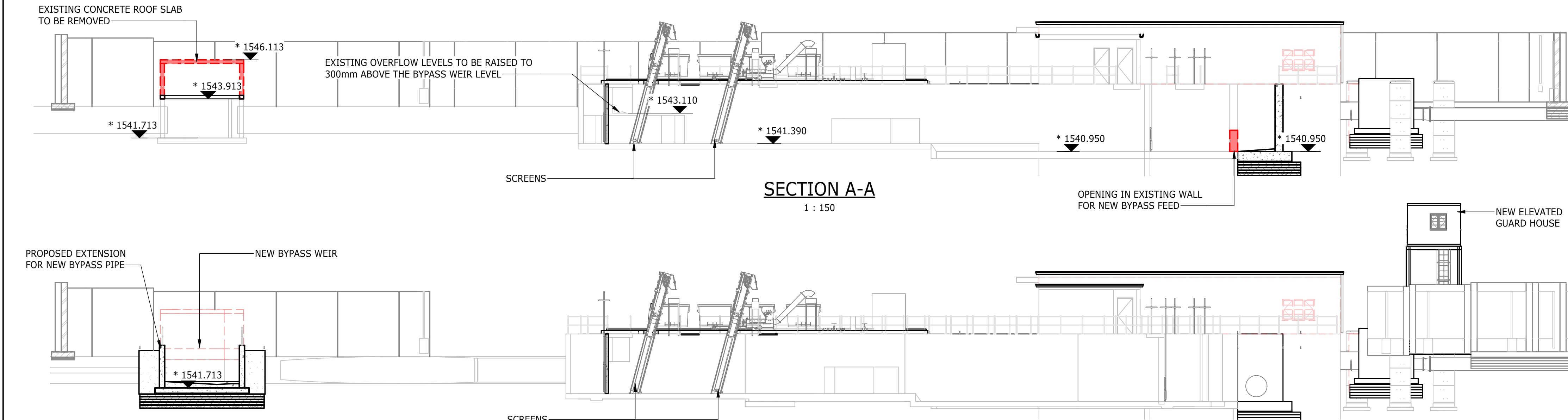
GENERAL LAYOUT OF EXISTING WWTW

JOHANNESBURG WATER (SOC) LTD	
 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529

DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
	AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER						
		C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-00-D-C-0001						
						CONSULTANT'S NUMBER						
						BW1400-RHD-C1-00-D-C-0001						
						FILE No						
DATE						C02						



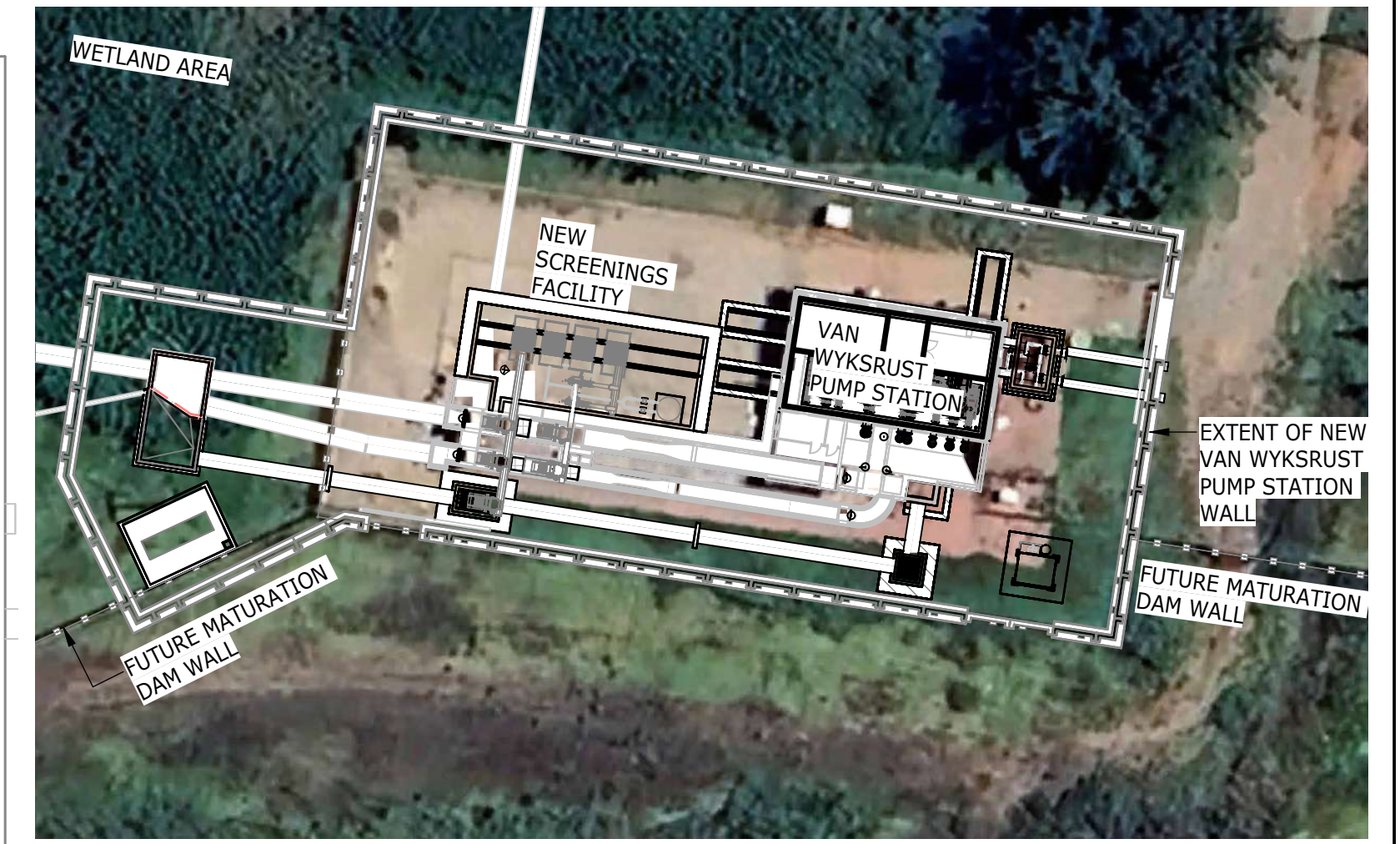
SITE LAYOUT
1 : 150



SECTION A-A
1 : 150

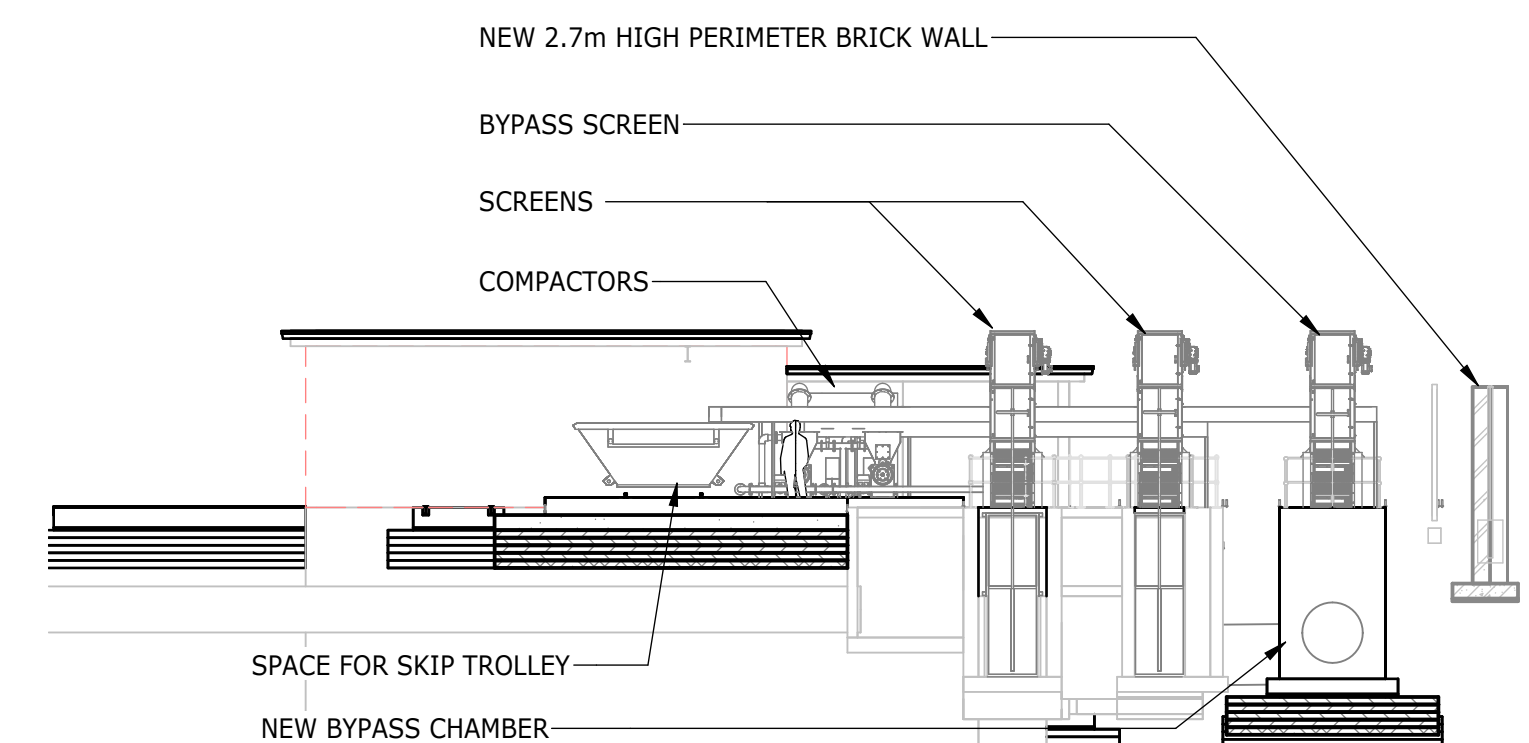
DEPARTMENT	APPROVED	DESIGNATION	DATE

SECTION B-B
1 : 150

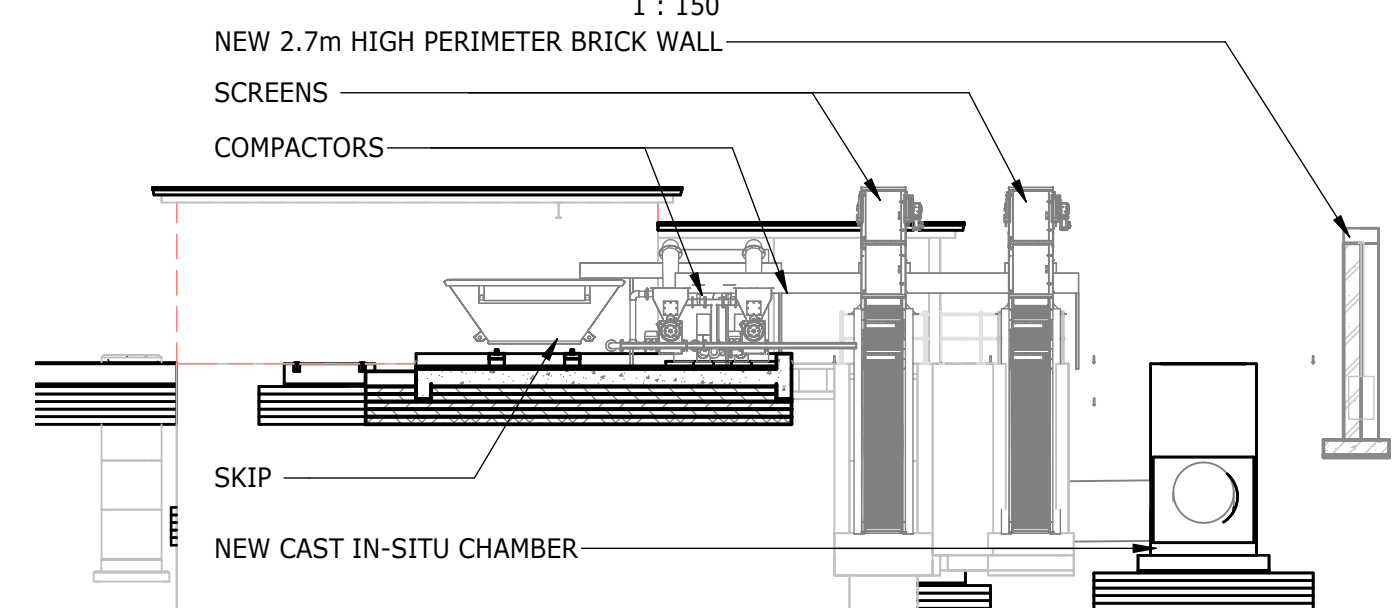


LOCALITY PLAN
1 : 500

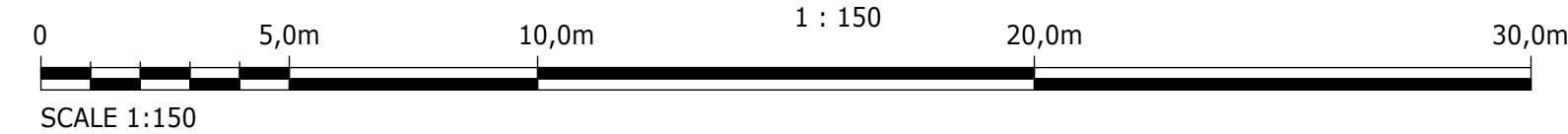
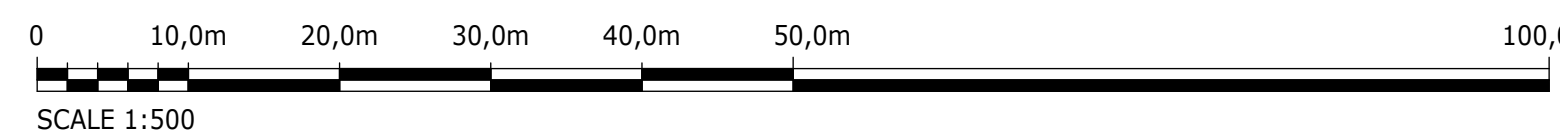
- NOTES:**
- DIMENSIONS/LEVELS ARE INDICATIVE AT THIS STAGE AND TO BE CONFIRMED PRIOR TO CONSTRUCTION.
 - FOUNDATION INSPECTIONS BY PROFESSIONAL TEAM REQUIRED.
 - CONSTRUCTION ACTIVITIES TO ENSURE NO DAMAGE TO EXISTING INFRASTRUCTURE. METHOD STATEMENTS REQUIRED PRIOR TO COMMENCEMENT OF SUCH ACTIVITIES.
 - MECHANICAL EQUIPMENT INDICATED ON THIS DRAWING ARE SCHEMATIC.
 - CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 - POTABLE WATER PIPE TO BE DESIGNED AND INSTALLED BY CONTRACTOR, IN ACCORDANCE WITH SANS1936, IN CONSULTATION WITH THE WORKS PERSONNEL AND ENGINEERS.
 - POTABLE WATER PIPES TO BE INSTALLED ABOVE GROUND WHERE POSSIBLE AND TO BE HDPE PE100 PN16."



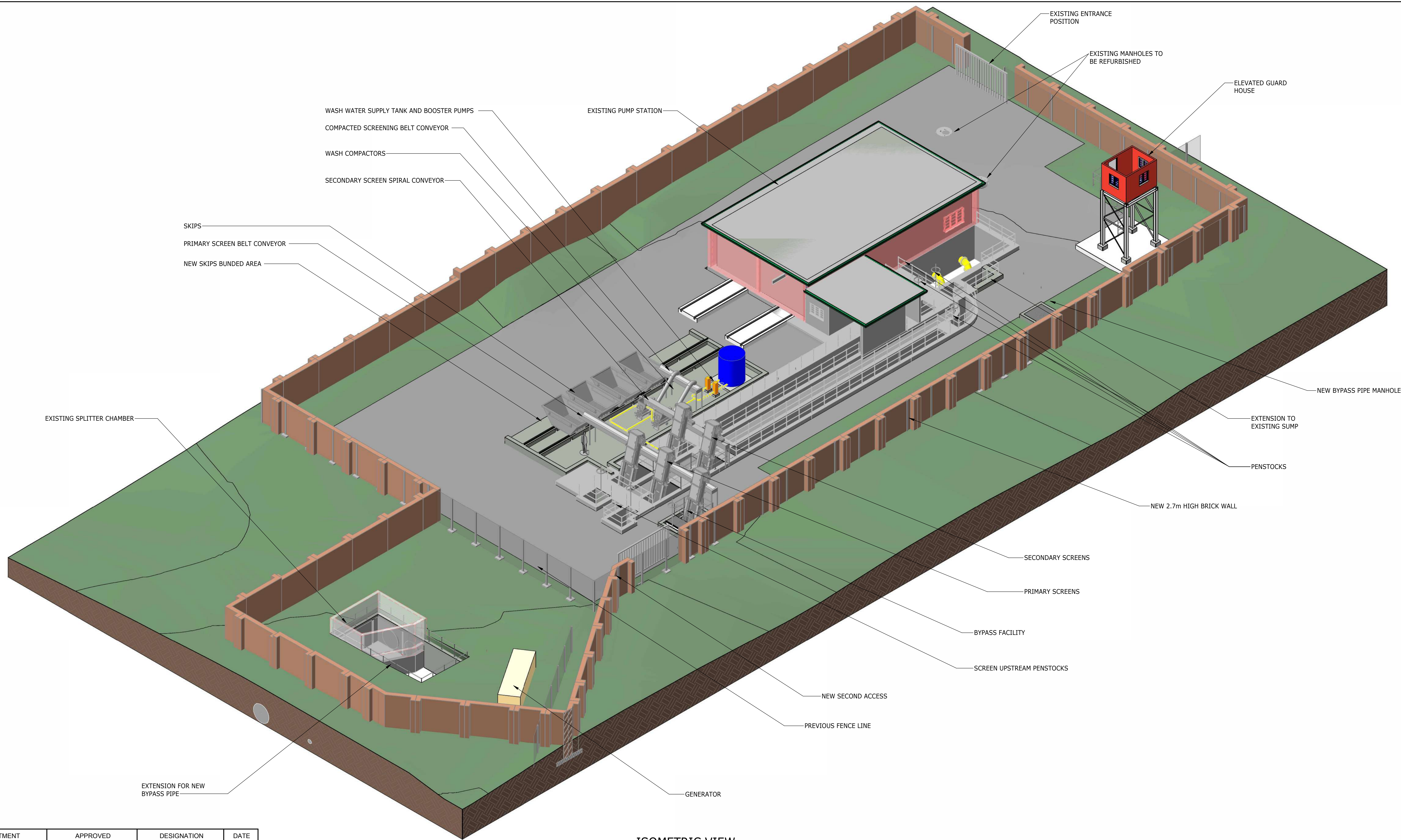
SECTION C-C
1 : 150



SECTION D-D
1 : 150



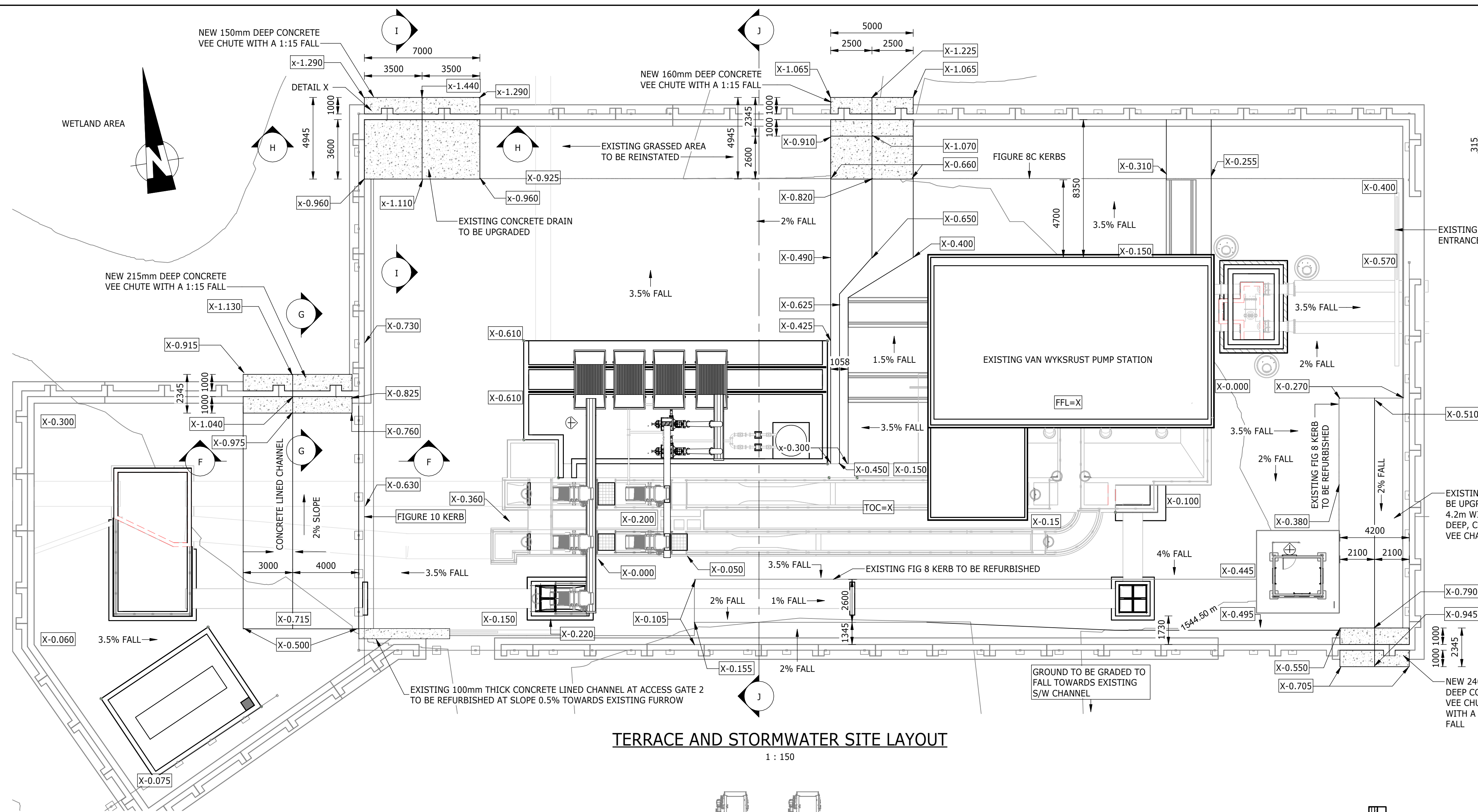
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION SITE LAYOUT	AS SHOWN			C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
		DRAWN	N. O'GORMAN							C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-01-D-C-0101					
		CHECKED	L. NAICKER											CONSULTANT'S NUMBER					
		SERVICES CHECKED												BW1400-RHD-C1-01-D-C-0101					
		GEOTECHNICAL INVESTIGATION												FILE No					
		SERVITUDES																	
		APPROVED	DITHOLO PHOGOLE																
Pr. Eng.No.	20060098																		
		DATE						DATE											



ISOMETRIC VIEW

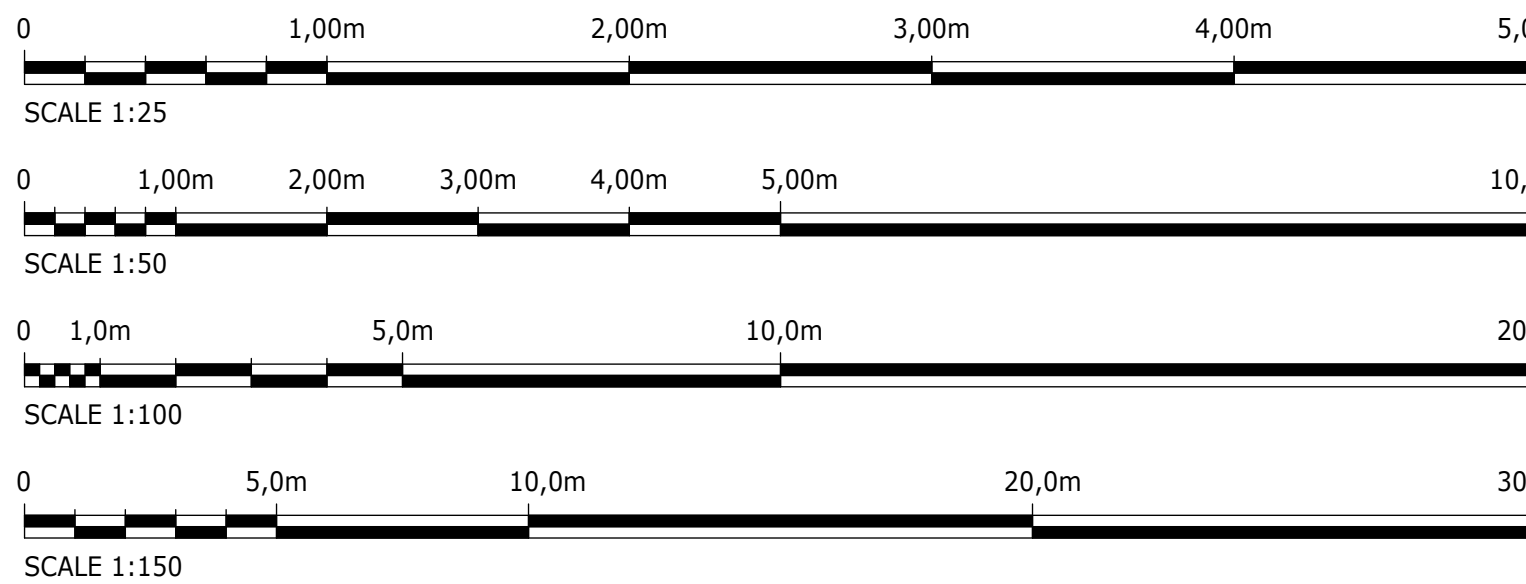
DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER	 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS PUMP STATION ISOMETRIC SITE LAYOUT	DATE			AS SHOWN	C01			ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER		
		C02	ISSUED FOR RE-TENDER					D. PHOGOLE	FEB 26		JW14466R-RHD-C1-01-D-C-0102								
											CONSULTANT'S NUMBER								
											BW1400-RHD-C1-01-D-C-0102								
											FILE No								
				C02															



NOTES:

1. DIMENSIONS/LEVELS ARE INDICATIVE AT THIS STAGE AND TO BE CONFIRMED PRIOR TO CONSTRUCTION. ALL LEVELS TBC UPON RECEIPT OF THE CONTRACTORS SURVEY DATA.
2. ALL TREES AND SHRUBS WITHIN 5m FROM WATER-BEARING SERVICE, TO BE REMOVED/CLEARED.
3. CONSTRUCTION ACTIVITIES TO ENSURE NO DAMAGE TO EXISTING INFRASTRUCTURE. METHOD STATEMENTS REQUIRED PRIOR TO COMMENCEMENT OF SUCH ACTIVITIES.



DEPARTMENT	APPROVED	DESIGNATION	DATE

SURVEYED	
DESIGNED	Z.NZUZA
DRAWN	Z.NZUZA
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD

**Johannesburg Water**

TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

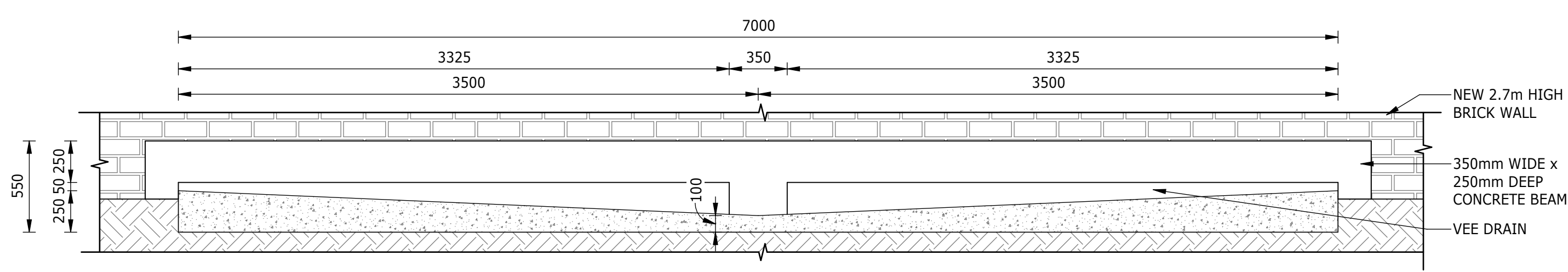
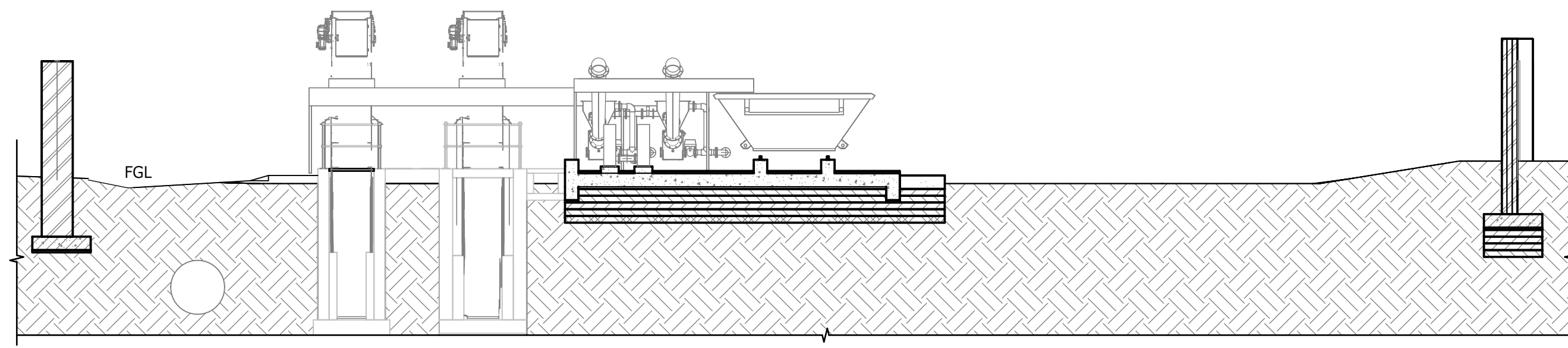
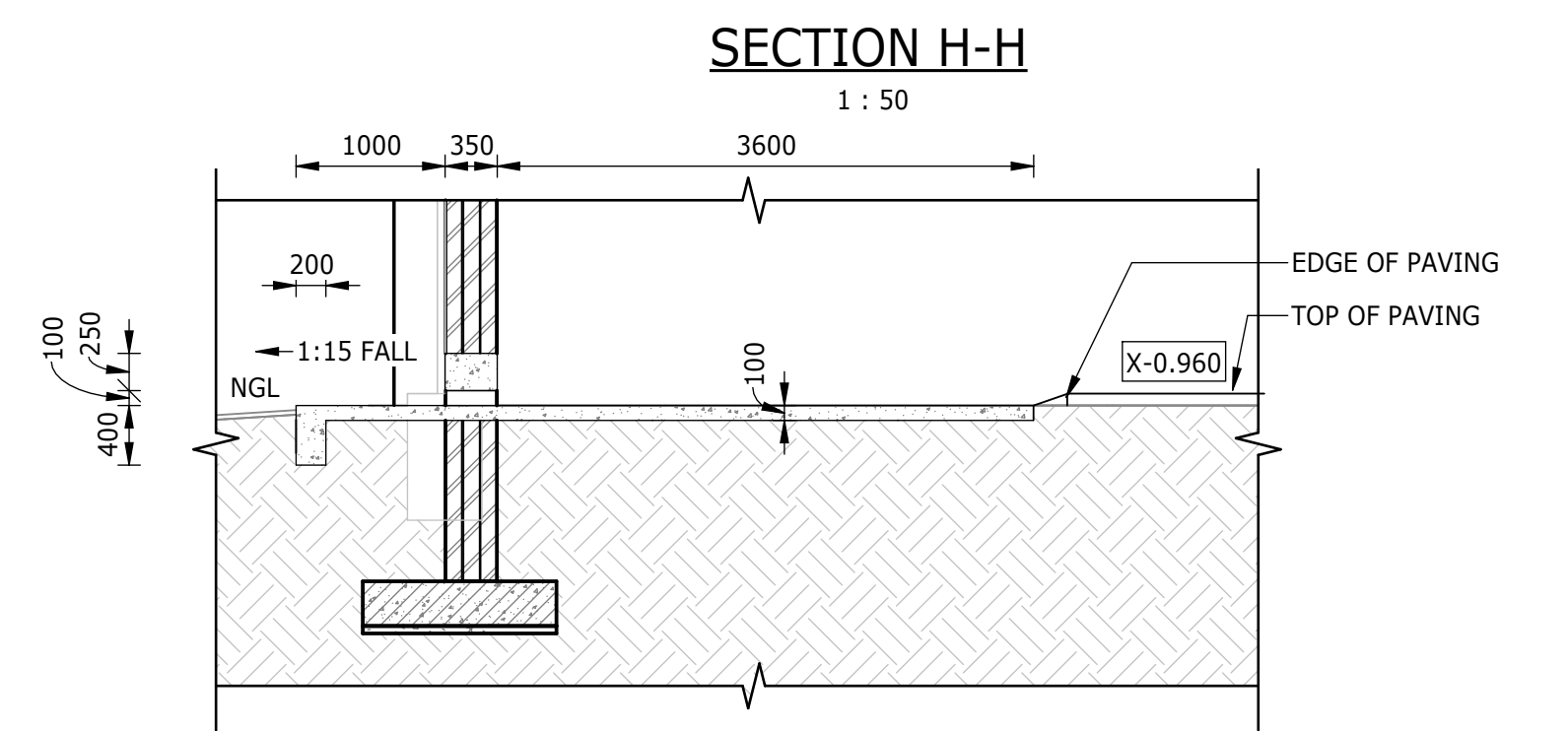
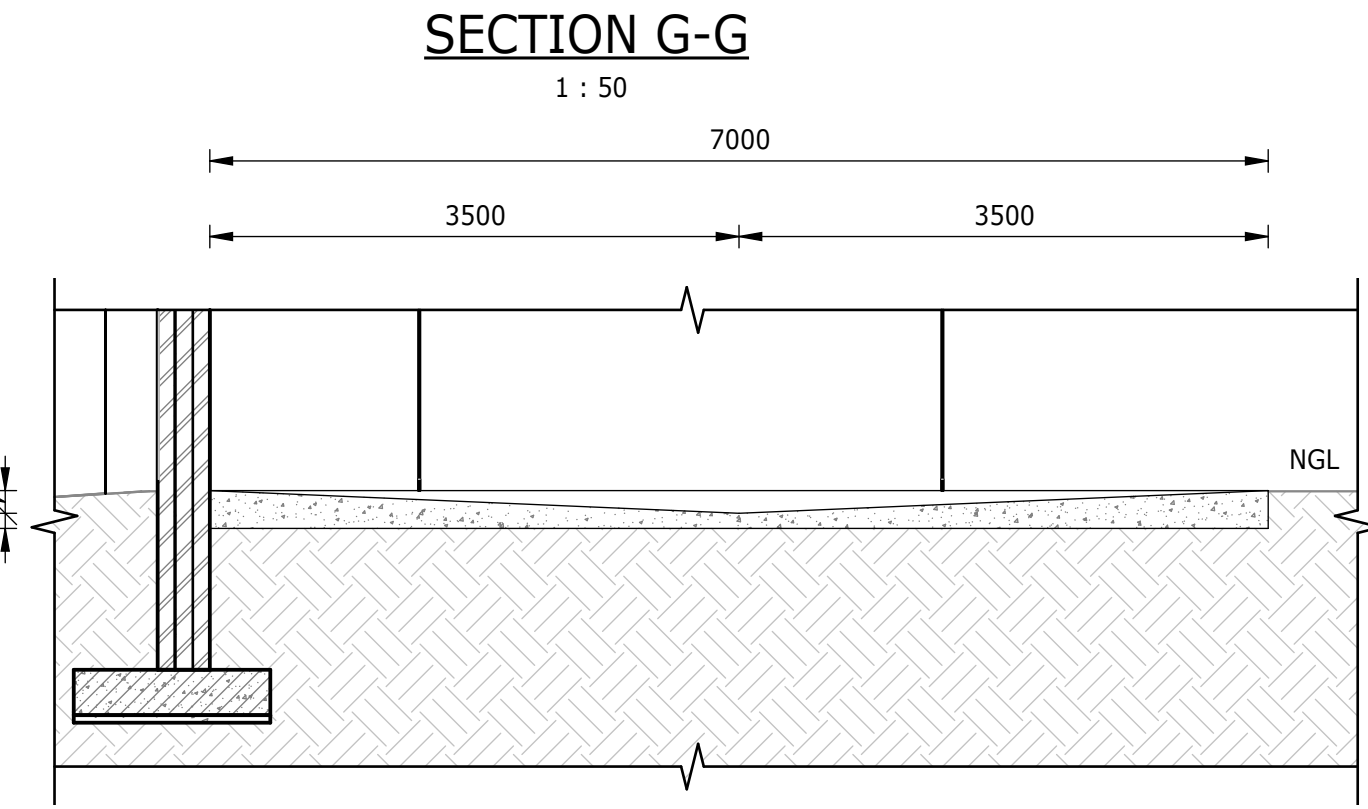
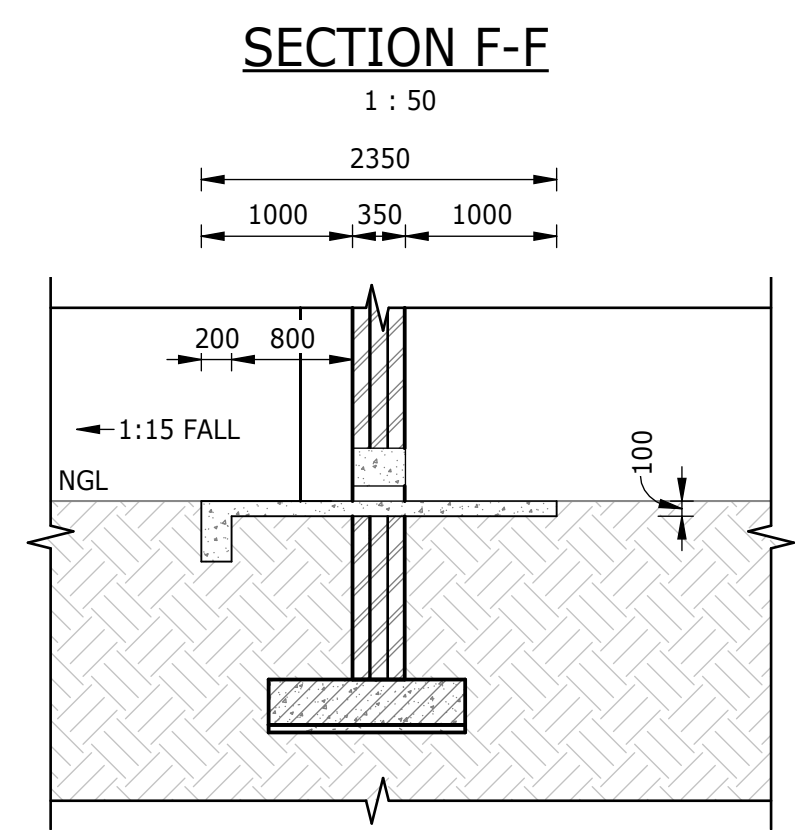
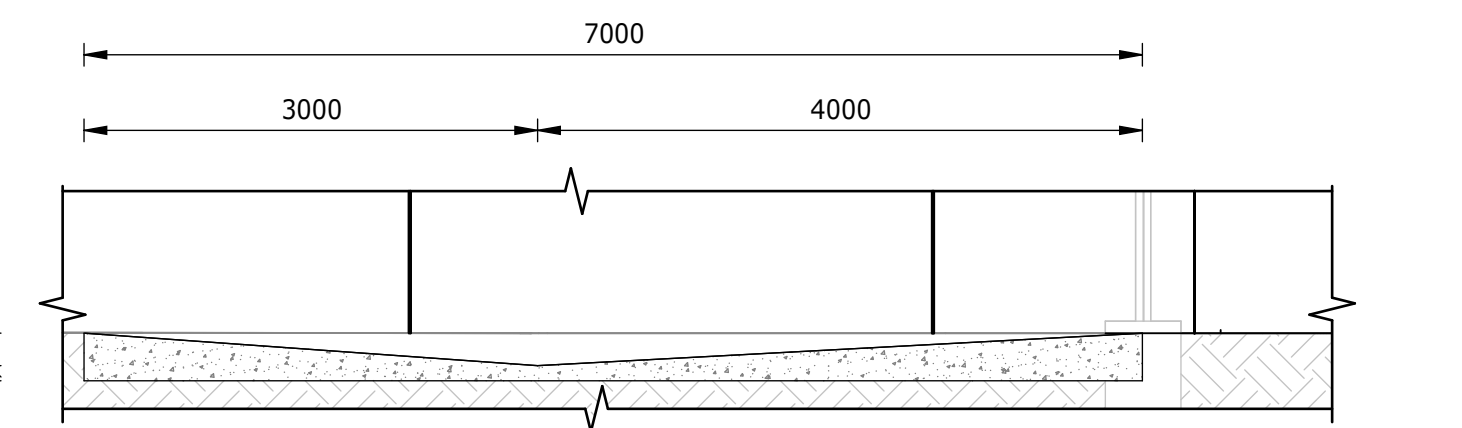
TEL: (011) 688-1400
FAX: (011) 688-1529

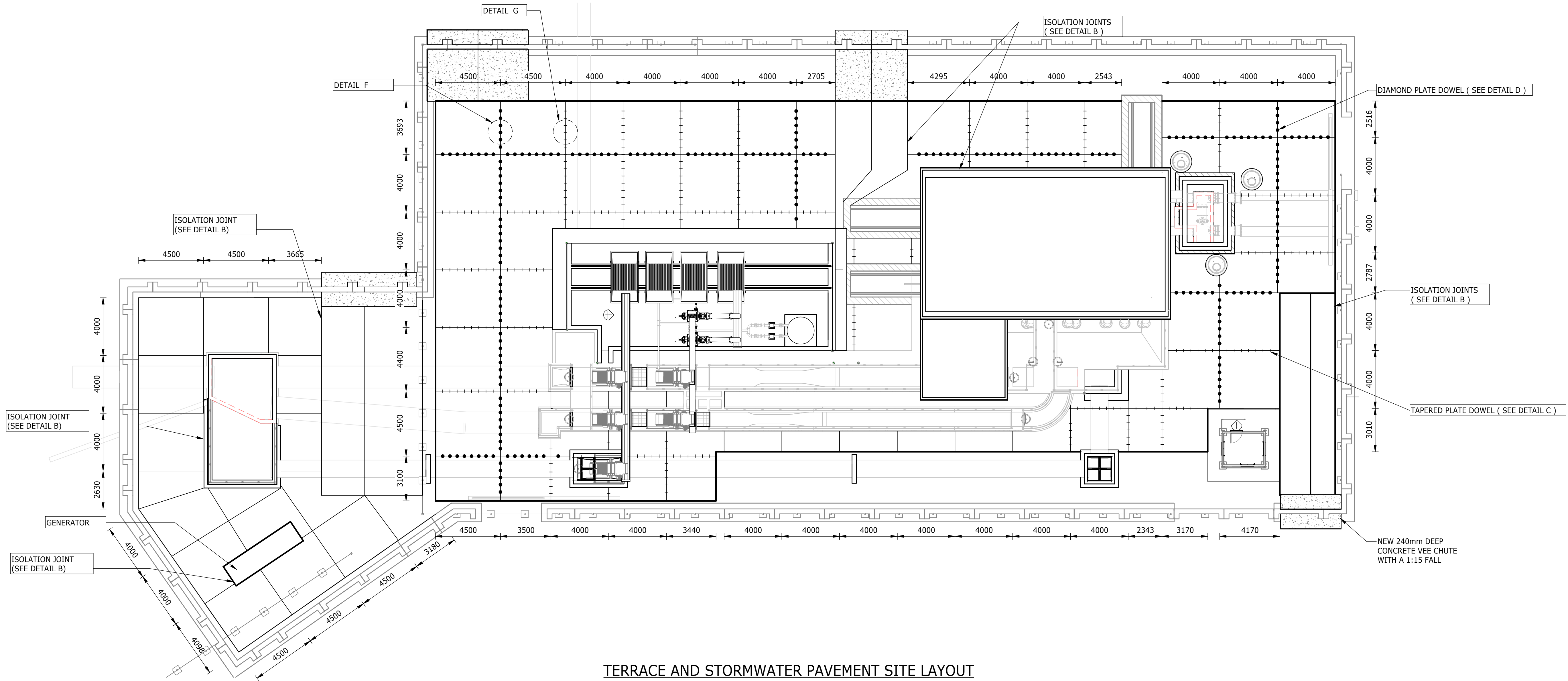
CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN
VAN WYKRUST PUMP STATION
TERRACE AND DRAINAGE LAYOUT

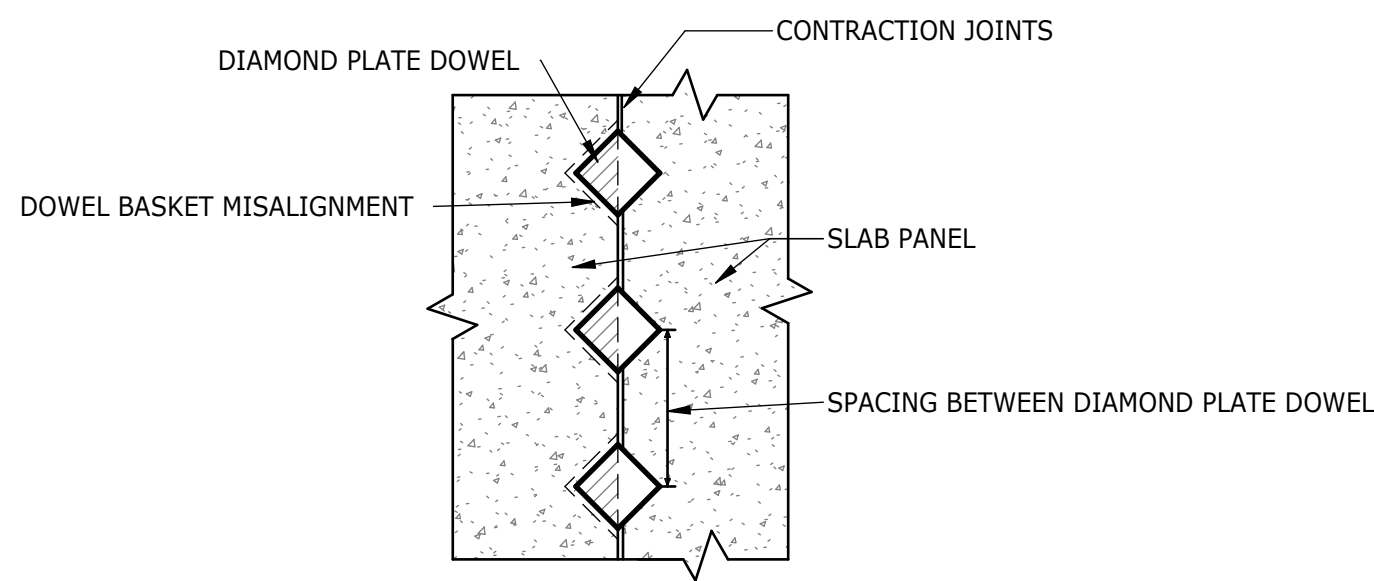
DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
DATE	AS SHOWN	C01 ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
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					CONSULTANT'S NUMBER
					BW1400-RHD-C1-01-D-C-0103
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					C02





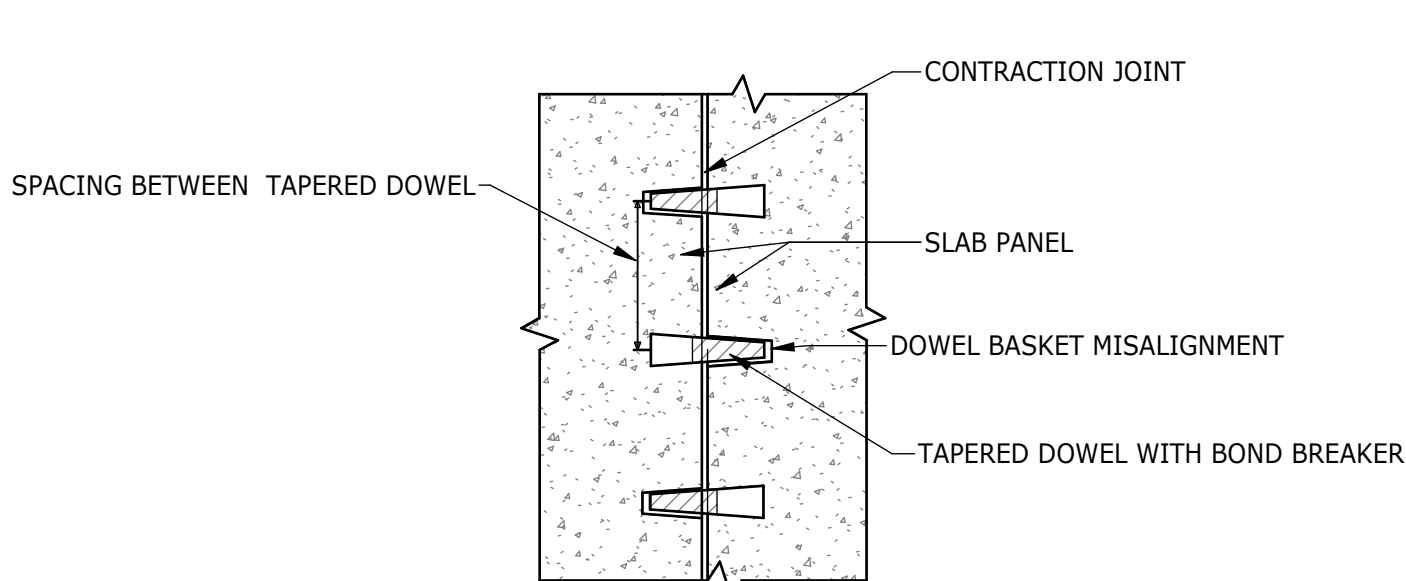
TERRACE AND STORMWATER PAVEMENT SITE LAYOUT

1 : 150



DETAIL F: DIAMOND PLATE DOWEL ORIENTATION

1 : 20



DETAIL G: TAPERED PLATE DOWEL ORIENTATION

NTS

NOTES ON DOWEL JOINTED PLAIN CONCRETE (DJPC) CONSTRUCTION

1. SEE DRAWING BW1400-RHD-C1-12-D-C-1201 FOR TYPICAL PAVEMENT DETAILS.
2. - - REPRESENTS TAPERED PLATE DOWEL (SEE DETAIL C)
3. o - REPRESENTS DIAMOND PLATE DOWEL (SEE DETAIL D)
4. JOINTS MUST BE DRY AND DUST FREE, LOOSE MATERIAL MUST BE BLOWN AWAY WITH COMPRESSED AIR, BEFORE IT IS SEALED.
5. INSERT BACKING CHORD TO REQUIRED DEPTH, PREFERABLY USING A DEPTH-GAUGE TOOL TO ENSURE EVEN JOINT.
6. JOINT MUST BE SEALED WITH THE SPECIFIED SILICON SEALANT. THE SEALANT MUST BE POURED INTO THE JOINT, ENSURING THAT THE JOINT IS COMPLETELY FILLED.
7. JOINT SURFACE MUST BE TOOLED WITH A CONCAVE SMOOTHING TOOL AND ANY EXCESS SEALANT REMOVED. (IF SO REQUIRED BY THE SEALANT MANUFACTURER'S TECHNICAL SPECIFICATIONS.
8. JOINTS SHOULD NOT BE STRESSED FOR AT LEAST 48 HOURS AFTER SEALING. TRAFFIC SHOULD BE KEPT OFF THE CONCRETE SLABS FOR AT LEAST 48 HOURS.
9. THE THICKNESS OF THE SILICON SEALANT SHOULD NEVER EXCEED THE WIDTH OF THE JOINT. SILICON SEALANTS SHALL NOT BE POURED IN THICKNESS EXCEEDING 20mm. SILICON SEALANTS SHALL TO BE PERFORMED AS PER MANUFACTURER'S SPECIFICATIONS.
10. ALL CONCRETE FINISHED BY BROOMING (TEST PANEL TO BE CAST AND APPROVED BY CLIENT).
11. ALL CONCRETE MUST BE PROPERLY CURED TO PREVENT MOISTURE LOSS AND EXCESSIVE SHRINKAGE. CURING COMPOUND TO BE PRESENTED TO THE ENGINEER AT LEAST 7 DAYS PRIOR TO CONSTRUCTION FOR APPROVAL.
12. CONCRETE QUALITY, STRENGTH AND COMPOSITION SHALL COMPLY WITH THE REQUIREMENTS OF CLAUSE 7103.
13. ALL CONCRETE COMPONENTS TO COMPLY WITH PROJECT SPECIFICATIONS.
14. DETAIL "TAPERED PLATE DOWELED TRANSVERSE CONTRACTION JOINT" DOWELS FOR THE 150mm CONCRETE SLAB HAVE DIMENSIONS 85x300x40x15 AT 500mm SPACING. A SAWN JOINT IS REQUIRED FOR THE CONTRACTION JOINT. BOND BREAKER DETAILS TO BE SUBMITTED TO ENGINEER FOR APPROVAL AT LEAST 14 DAYS BEFORE APPLICATION. DETAIL "A" SAW CUTS TO BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGE TO SURROUNDING CONCRETE SURFACE.
15. THE SUBBASE SHOULD BE PRIMED TO CURE THE SUBBASE AND TO BIND THE FINES NEAR THE TOP OF THE SURFACE AS TO INCREASE THE DURABILITY OF THE MATERIAL. THE SUBBASE SHOULD BE FREE FROM DUST AND STRUCTURALLY SOUND PRIOR TO CASTING OF CONCRETE. AREA SHOULD BE DAMP PRIOR TO CASTING OF CONCRETE.
16. COMMITTEE OF LAND AND TRANSPORT OFFICIALS (COLTO) 1998, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES WILL APPLY TO THE CONSTRUCTION OF THE RELATED WORKS. MORE SPECIFICALLY COLTO SECTION 7100 FOR THE RELATED CONCRETE WORKS.
17. STEEL FOR PLATE DOWELS SHALL COMPLY WITH SANS SPECIFICATIONS FOR CLAUSE 7102 (F) OF COLTO FOR DOWELS. EDGES SHALL BE SAWN AND TRIMMED SMOOTH.

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS



Building No. 5 Country
Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	T. MOETI
DRAWN	V. MARINDI
CHECKED	T. MOETI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD



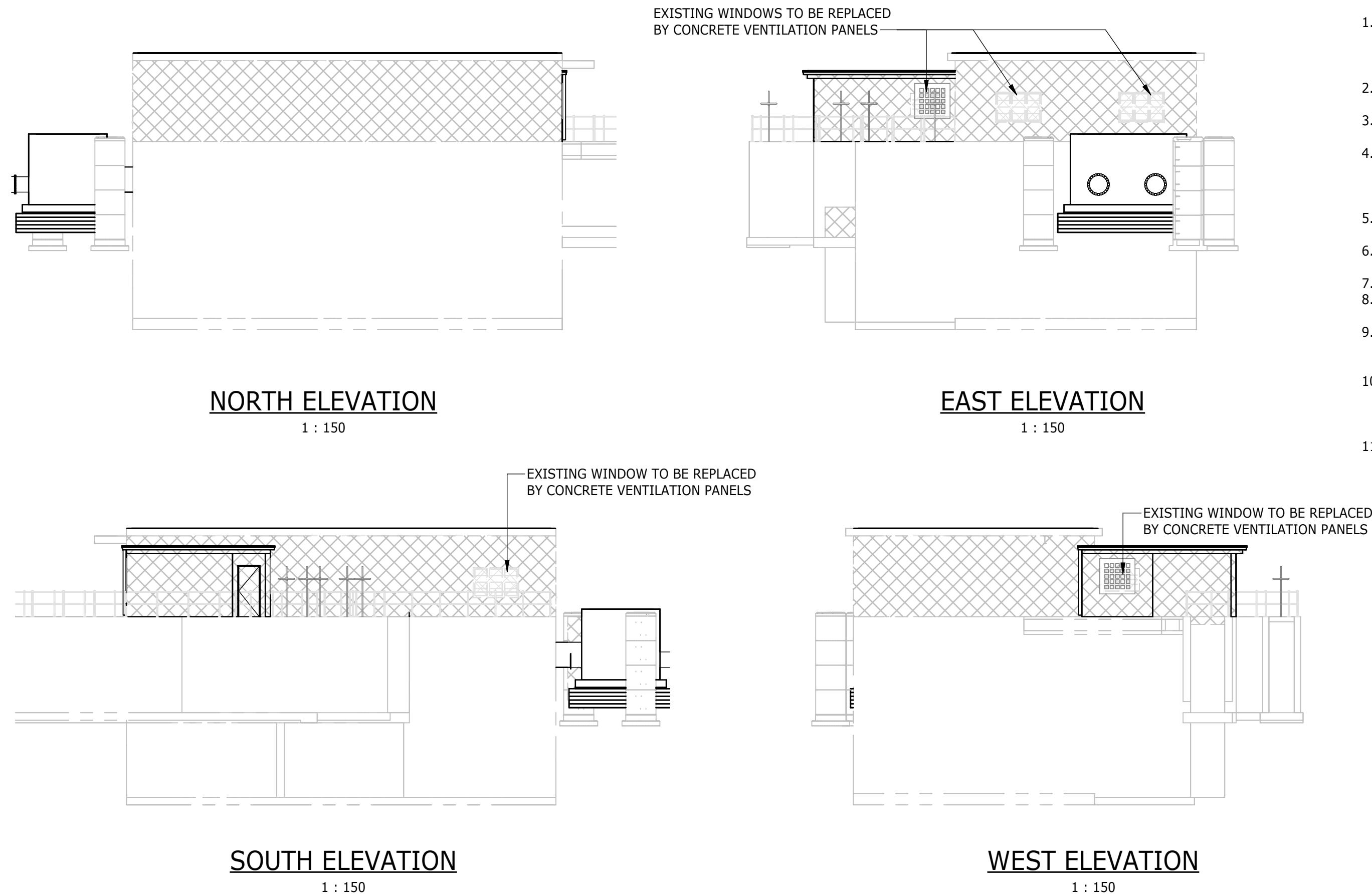
TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

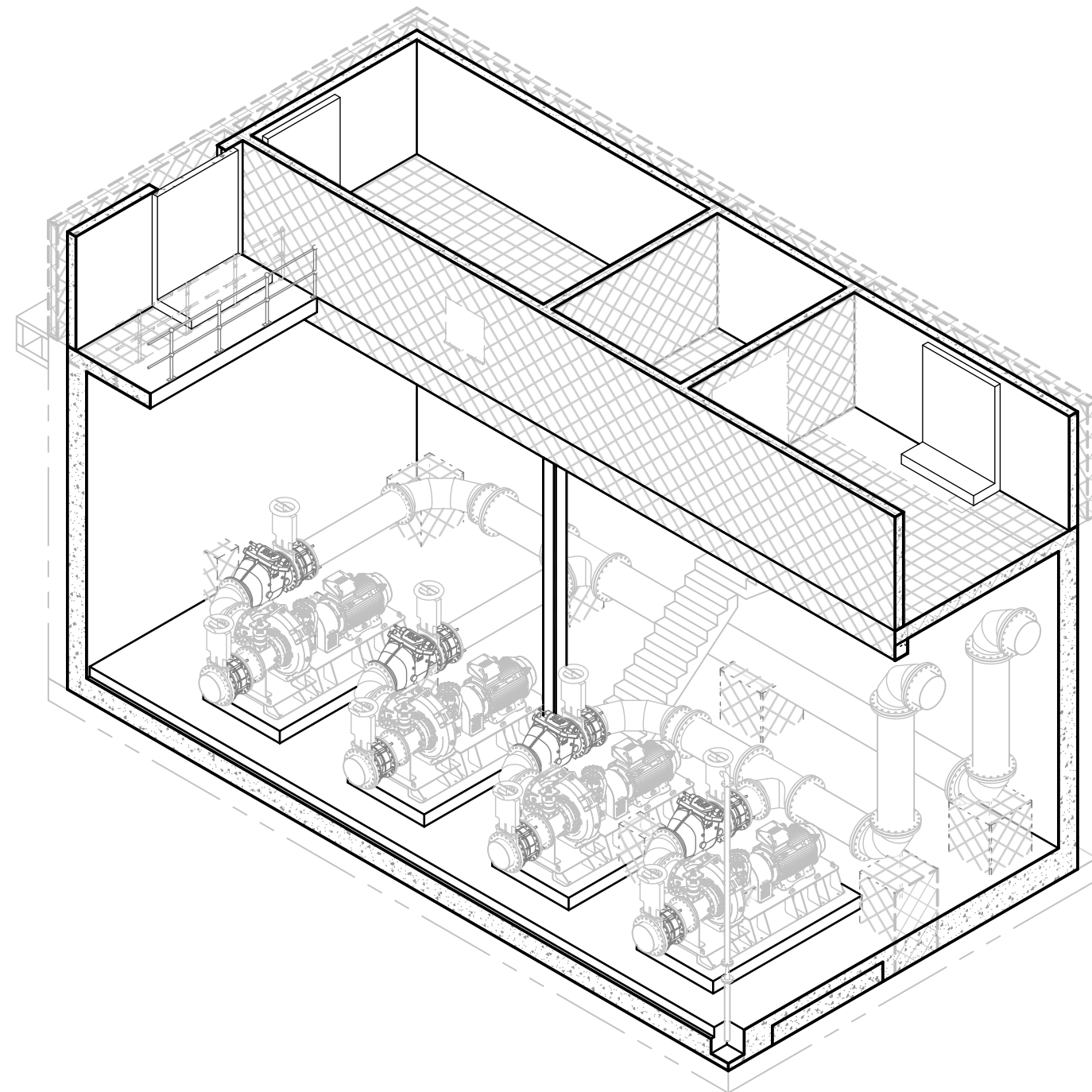
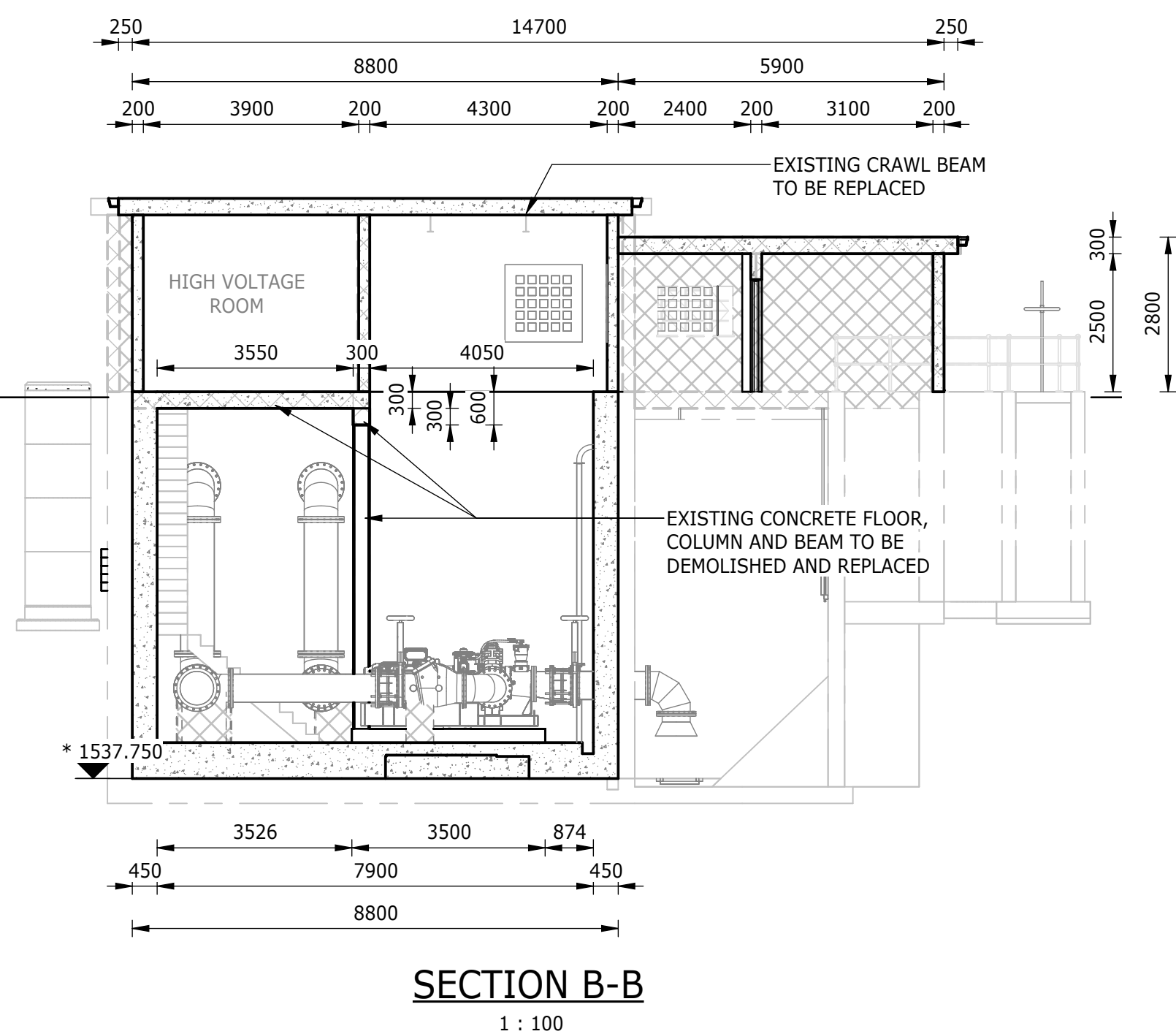
CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKRUST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
VAN WYKRUST PUMP STATION
TERRACE AND DRAINAGE PAVEMENT LAYOUT

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
DATE	AS SHOWN	C01 ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER
		C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-01-D-C-0104
					CONSULTANT'S NUMBER
					BW1400-RHD-C1-01-D-C-0104
					FILE No
					C02



- NOTES:**
1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 2. BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 3. EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
 4. EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
 5. SETTING-OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
 6. MECHANICAL EQUIPMENT INDICATED ON THIS DRAWING ARE SCHEMATIC.
 7. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
 8. REFER TO DWG BW1400-RHD-C1-02-D-C-1001 FOR THE DOOR INFORMATION.
 9. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 10. GUTTERS, DOWNPIPES, ROOF SCREED, WATER-PROOFING, ETC. REQUIREMENTS, TBC ONCE SURVEYS AND ASSESSMENT OF CURRENT CONDITION HAS BEEN RECEIVED FROM THE CONTRACTOR.
 11. "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS



**Building No. 5 Country
Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000**

SURVEYED	
DESIGNED	L. NAICKER
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng.No. DATE	DITHOLO PHOGOLE 20060098

JOHANNESBURG WATER (SOC) LTD

**TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001**

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
VAN WYKSRUST PUMP STATION
GENERAL ARRANGEMENT AND SECTIONS

DESIGN MANAGER

DATE _____

SCALE

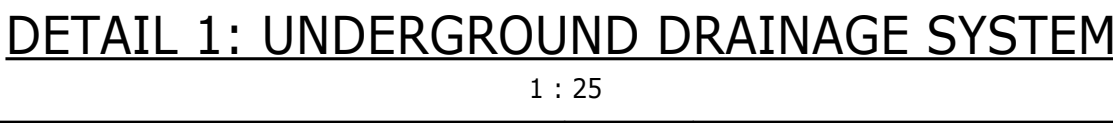
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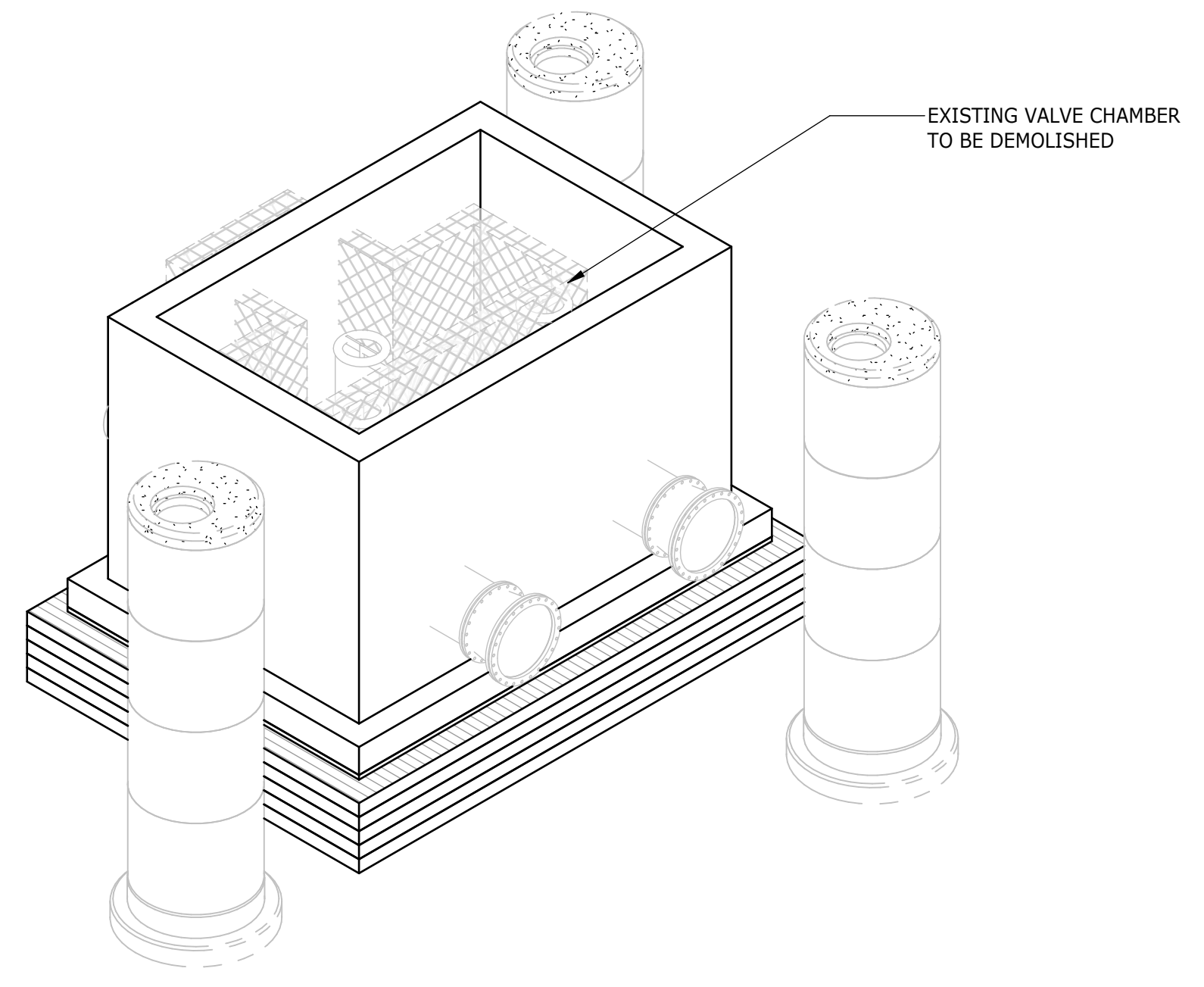
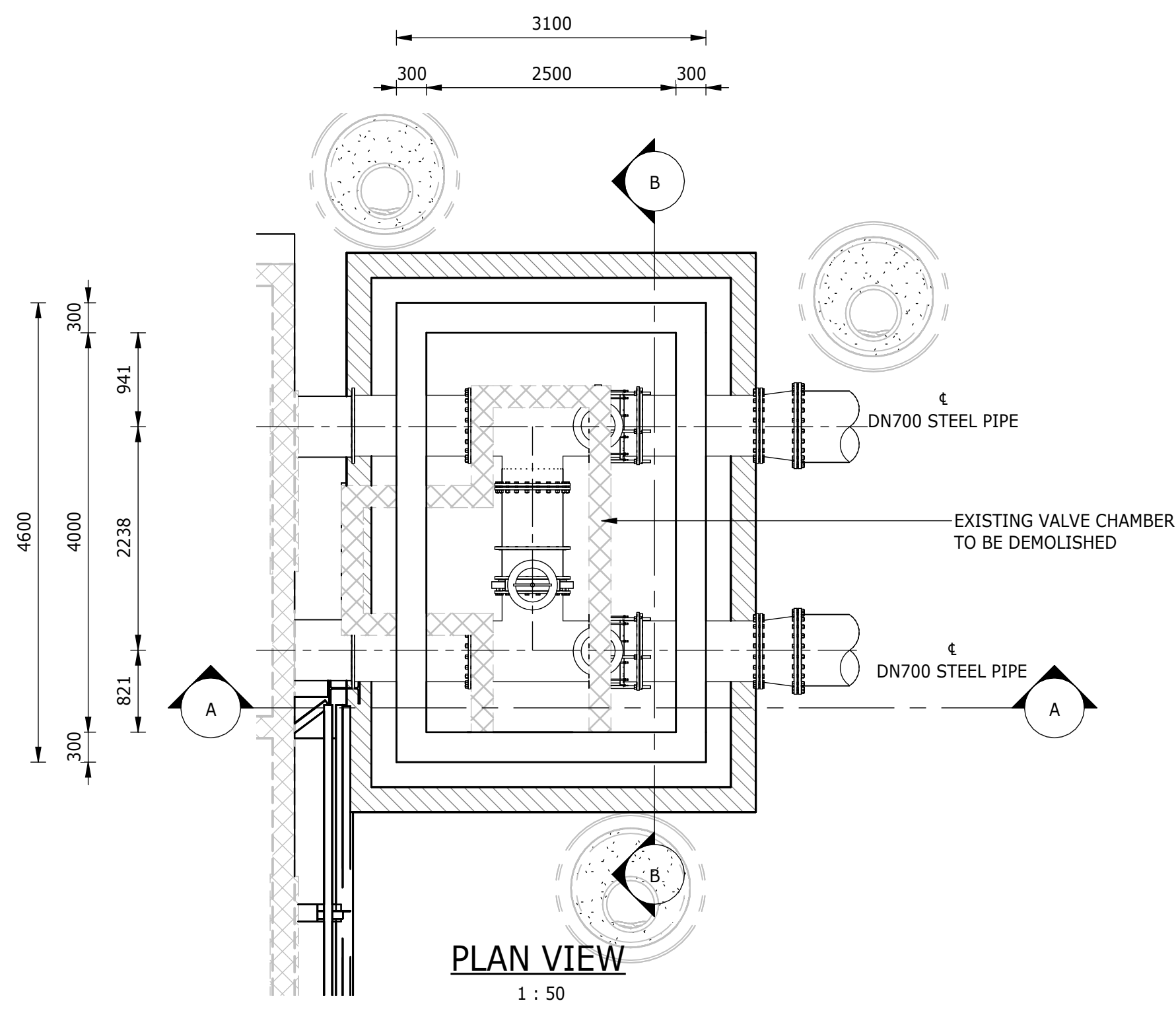
APPROVED

DATE _____

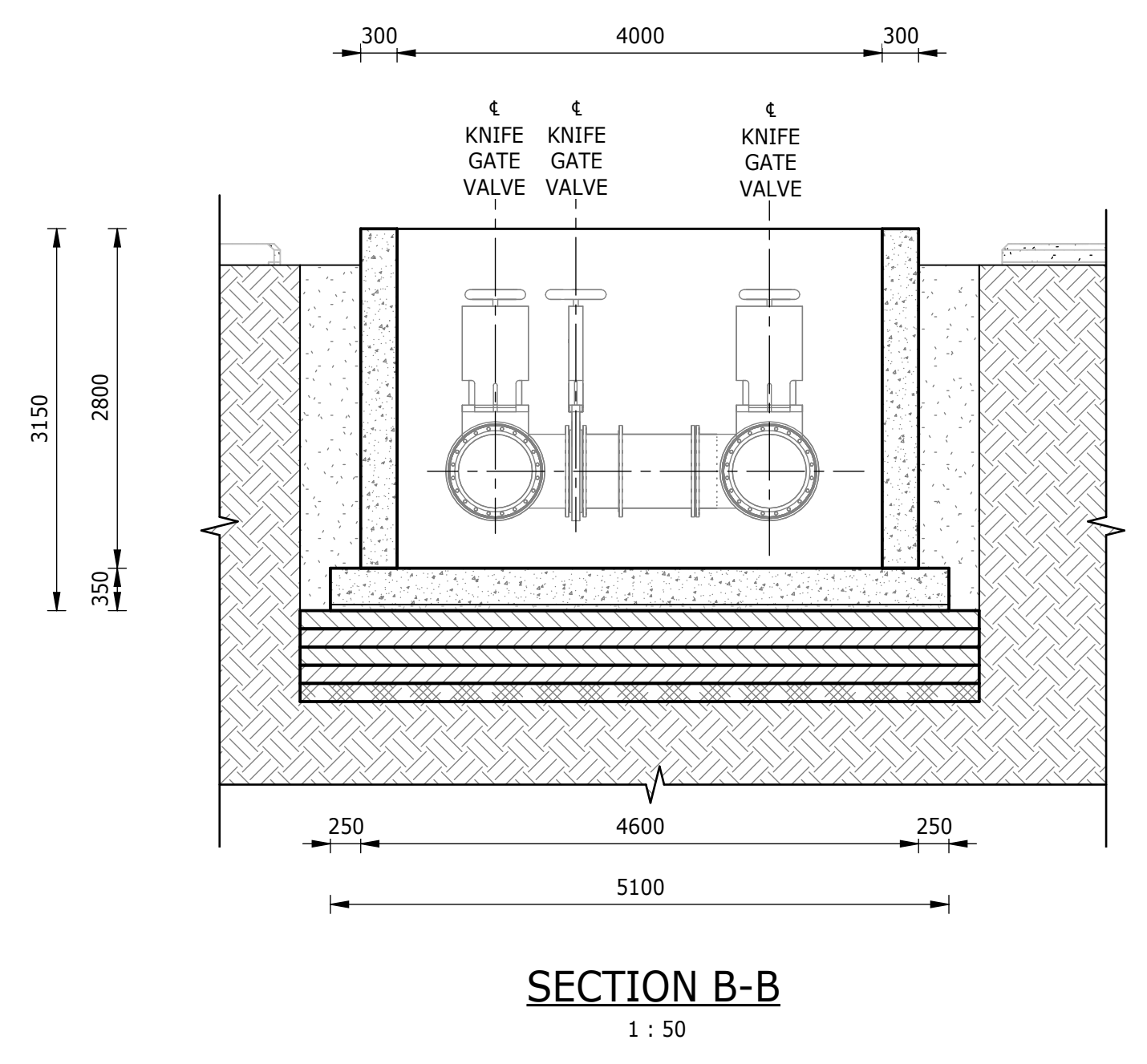
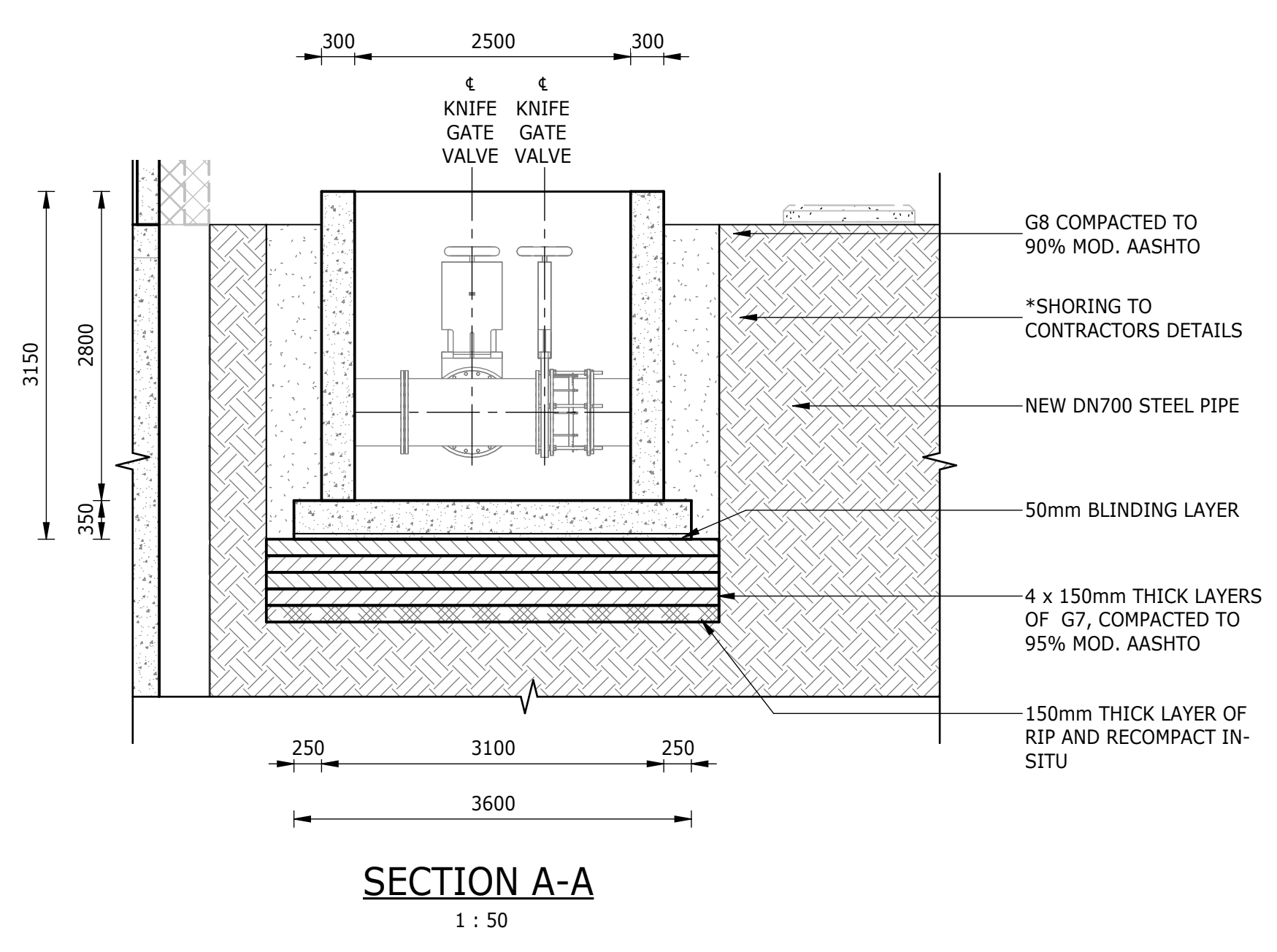
DRAWING NO.

C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER						
C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-C-0201						
				CONSULTANT'S NUMBER						
				BW1400-RHD-C1-02-D-C-0201						
				FILE No						
				C02						

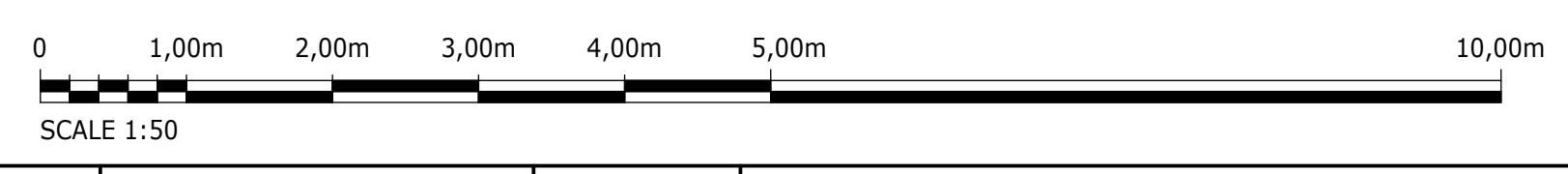




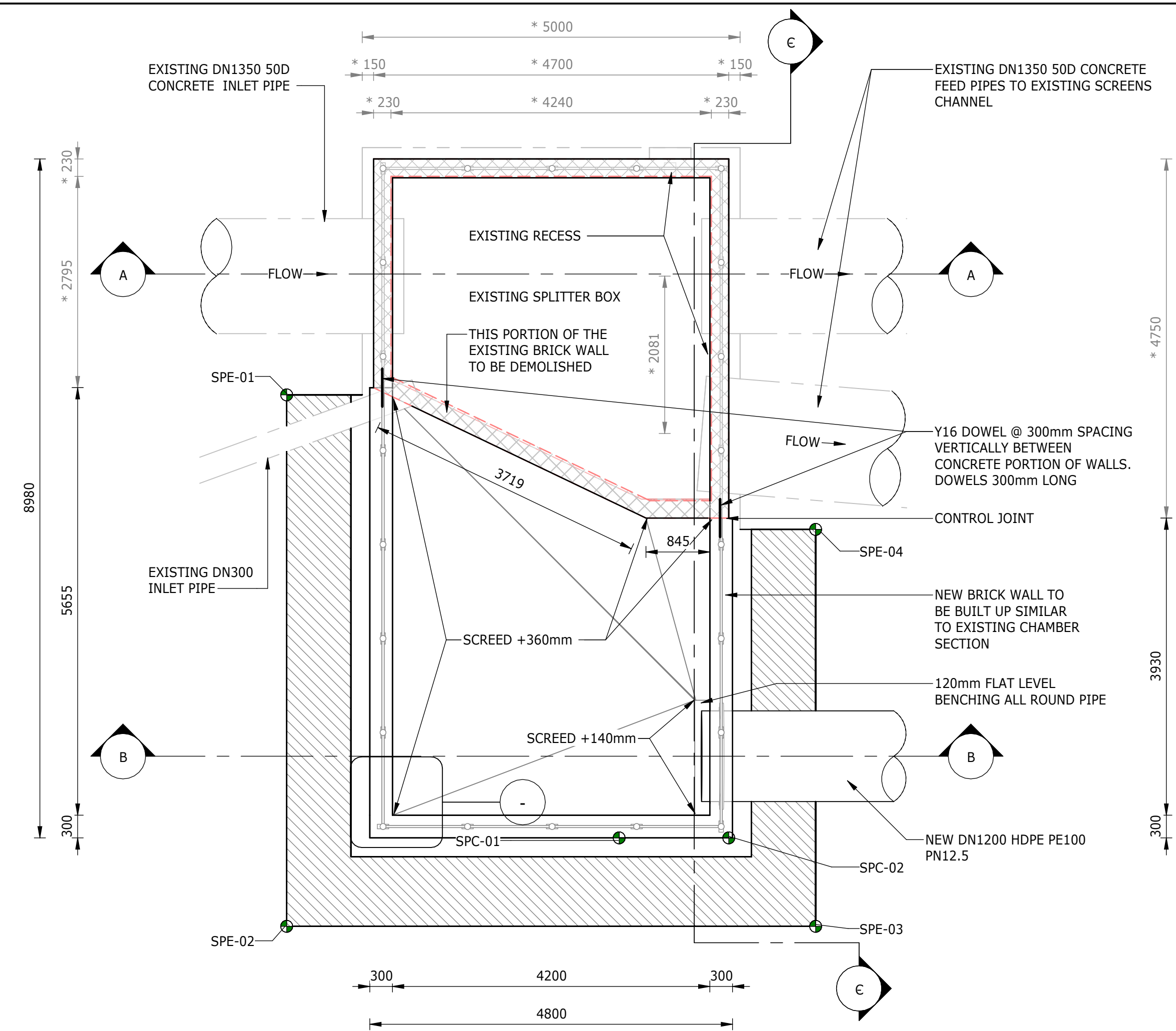
- NOTES:**
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 4. EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
 5. SETTING-OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
 6. MECHANICAL EQUIPMENT INDICATED ON THIS DRAWING ARE SCHEMATIC.
 7. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
 8. SHORING OR OTHER APPROPRIATE LATERAL SUPPORT TO CONTRACTORS DETAILS, WHERE REQUIRED.
 9. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 10. CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.



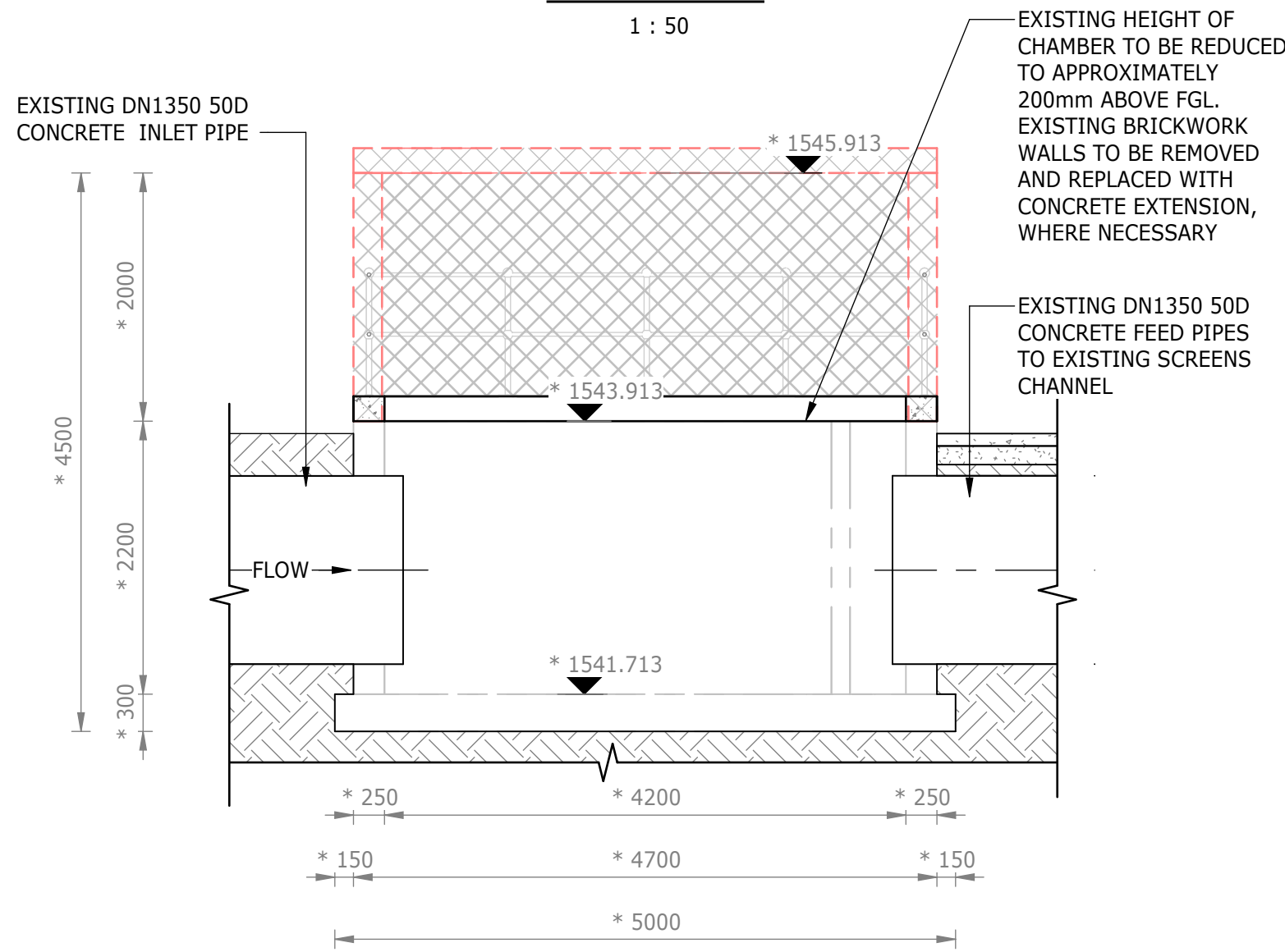
DEPARTMENT	APPROVED	DESIGNATION	DATE



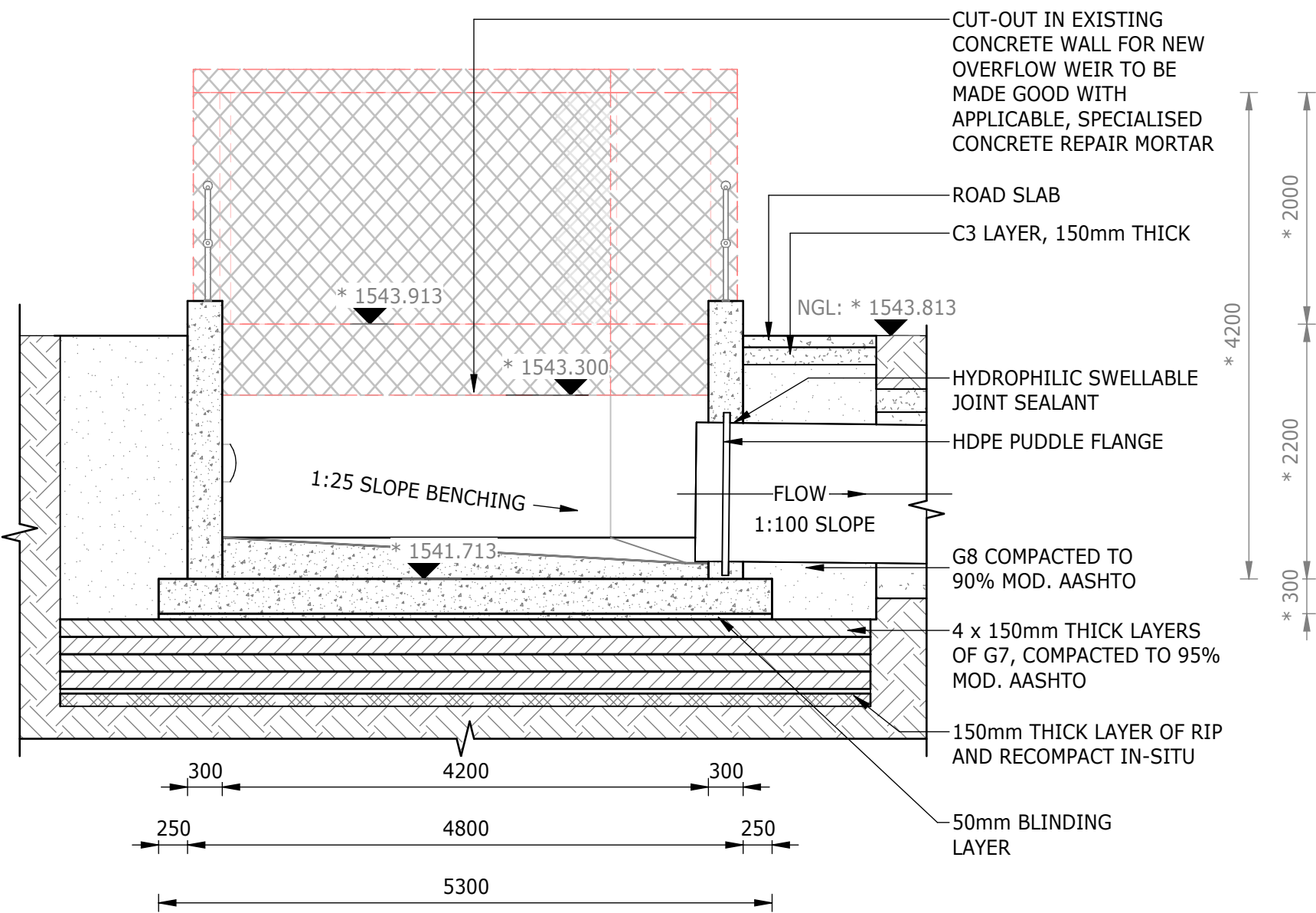
CONSULTING ENGINEERS		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.											
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529			OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION VALVE CHAMBER GENERAL ARRANGEMENT AND SECTIONS				C01	ISSUED FOR INFORMATION	D. PHOGOLE	SEP 25	JW NUMBER							
		DESIGNED	L. NAICKER									C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	CONSULTANT'S NUMBER							
		DRAWN	N. O'GORMAN															BW1400-RHD-C1-02-D-C-0205					
		CHECKED	L. NAICKER															FILE No					
		SERVICES CHECKED																					
		GEOTECHNICAL INVESTIGATION																					
SERVITUDES								C02															
APPROVED	DITHOLO PHOGOLE																						
Pr. Eng.No.	20060098																						
DATE																							



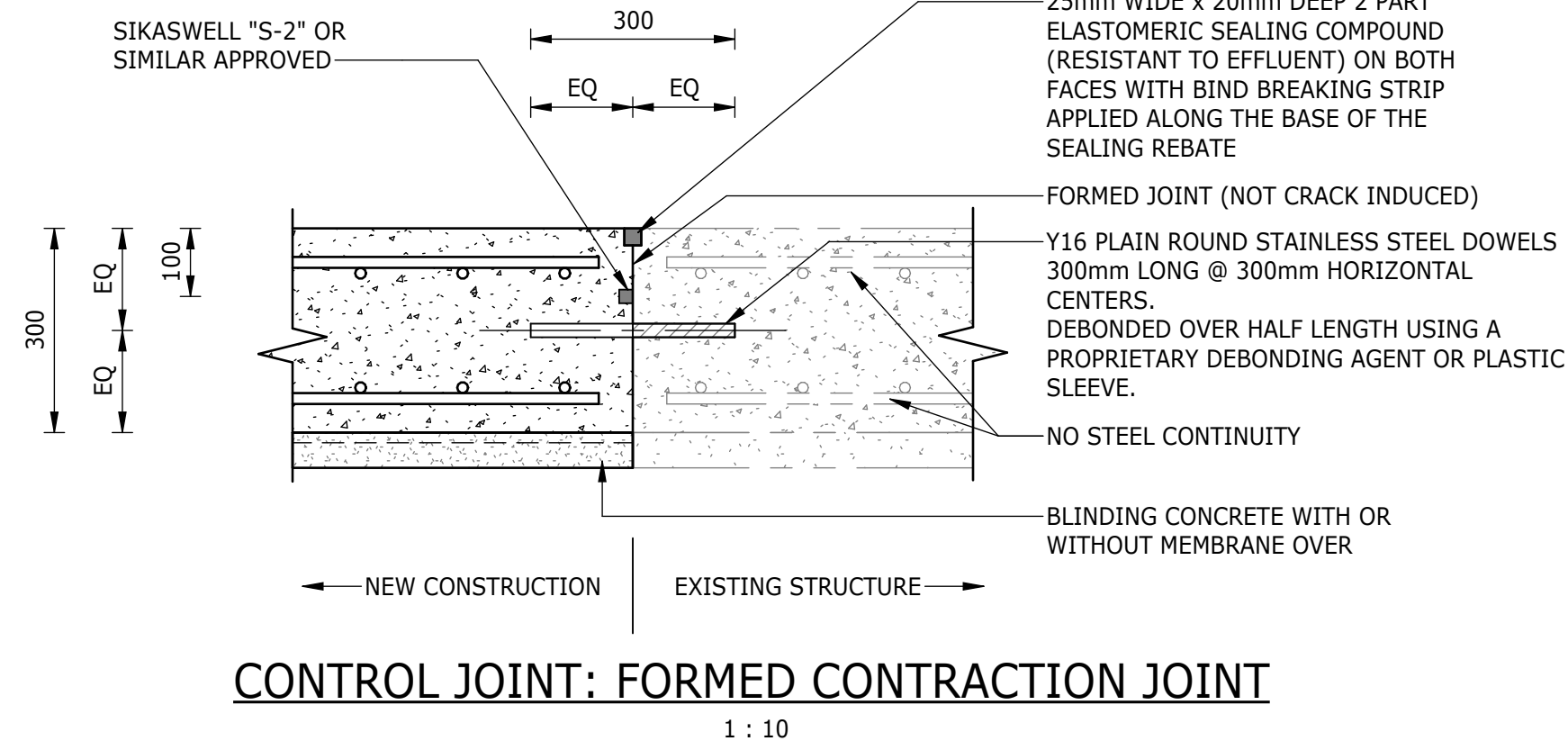
PLAN VIEW
1 : 50



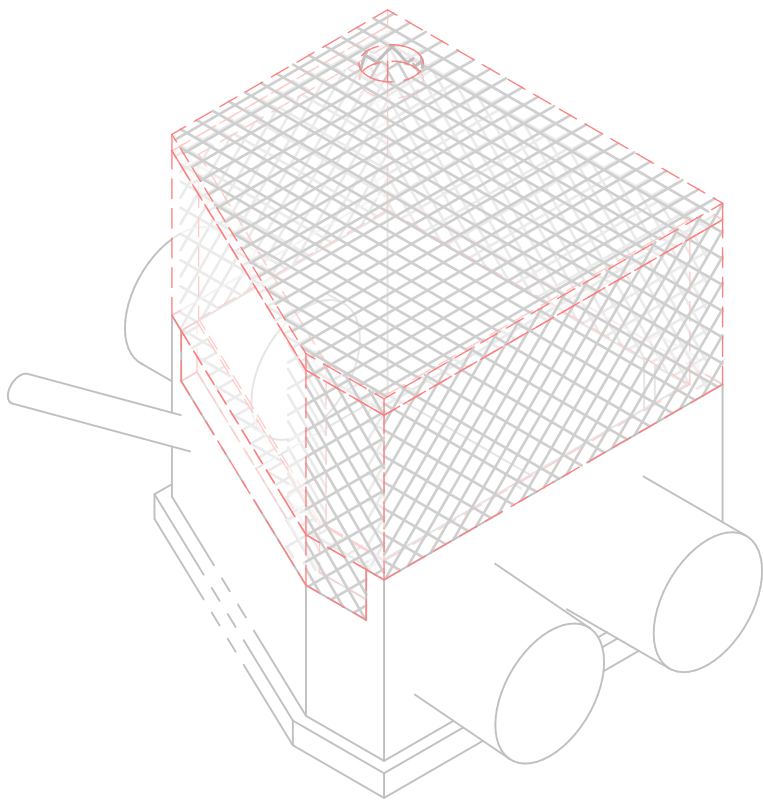
SECTION A-A
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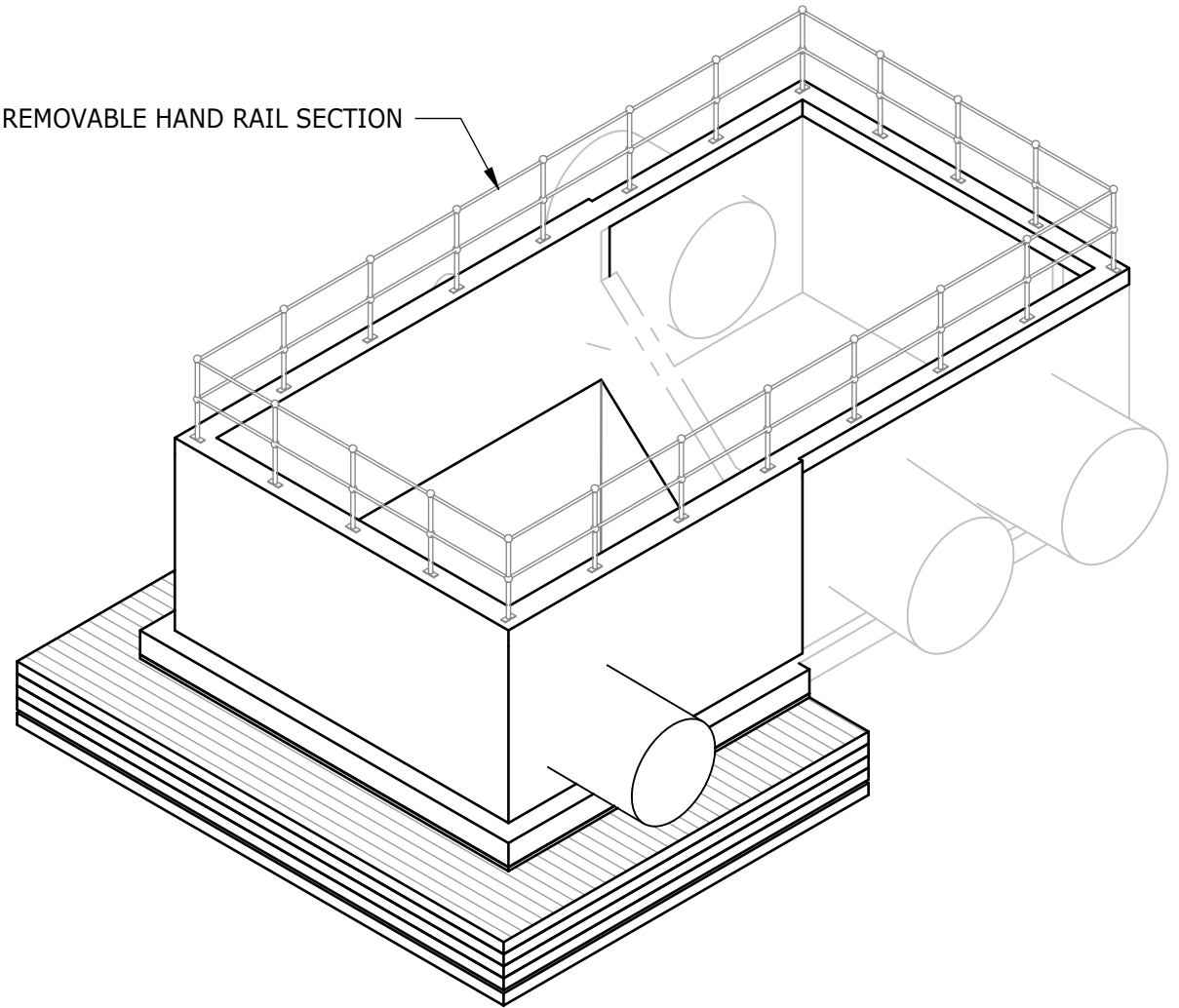
SECTION B-B
1 : 50



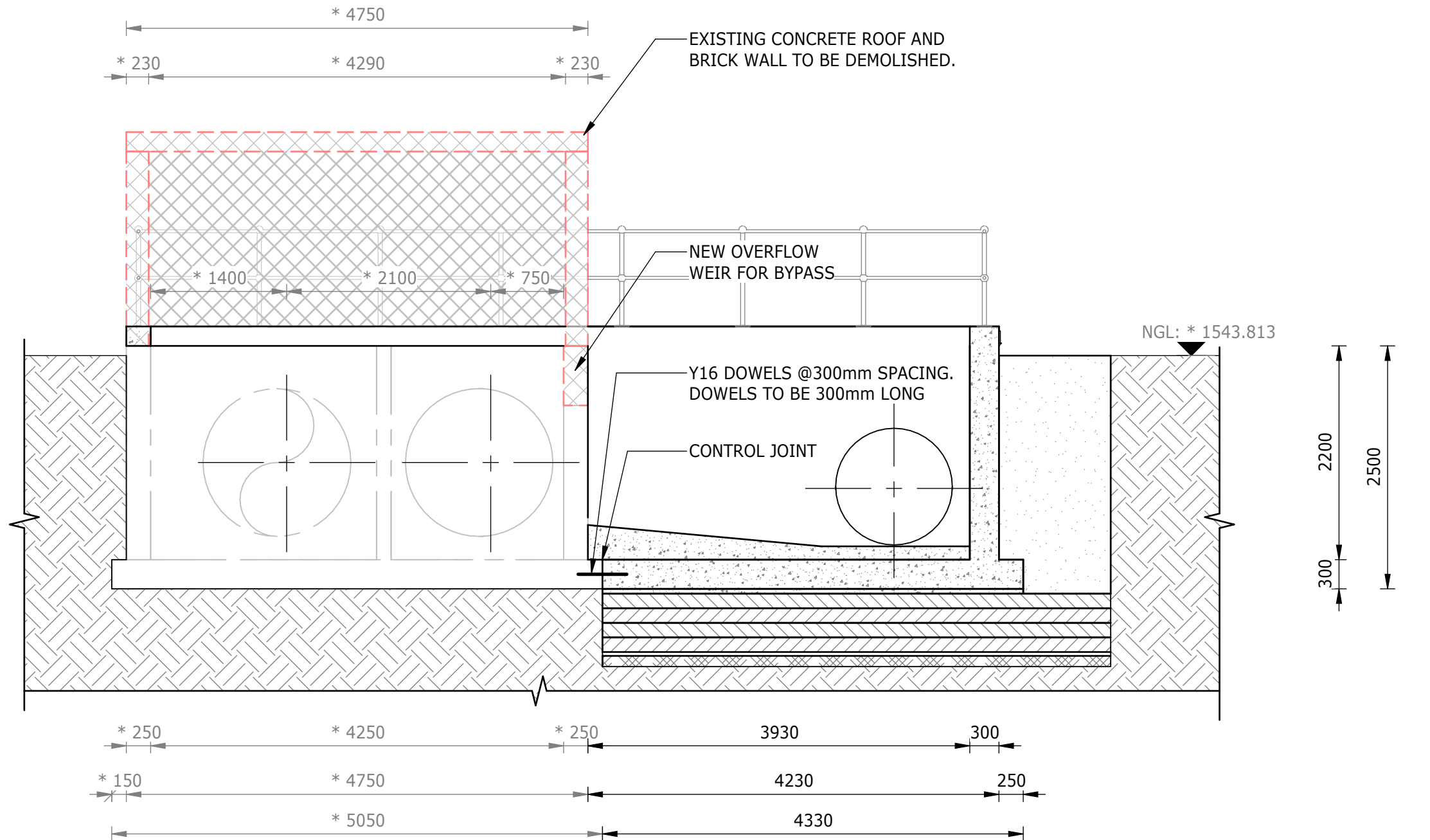
- NOTES:**
1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 2. BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 3. EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
 4. EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
 5. SETTING-OUT POINTS ARE A GUIDE: FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
 6. SHORING OR OTHER APPROPRIATE LATERAL SUPPORT TO CONTRACTORS DETAILS, WHERE REQUIRED.
 7. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 8. CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.



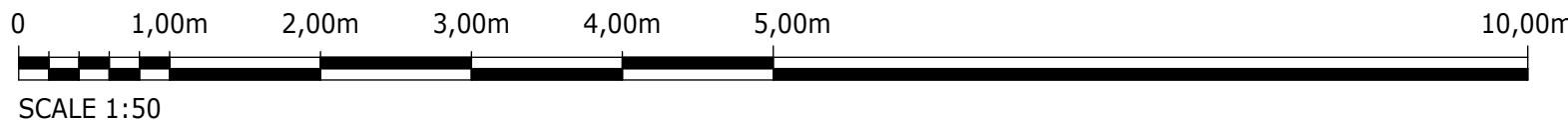
TYPICAL ISOMETRIC VIEW OF DEMOLITION WORK



TYPICAL ISOMETRIC VIEW OF EXTENSION



SECTION C-C
1 : 50



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

ATANA
Legacy Awaits

Building No. 5 Country Club Estate
21 Woodlands Drive
Woodmead 2191
PO Box 867
Gallo Manor 2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	L. NAICKER
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD

Johannesburg Water

TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION

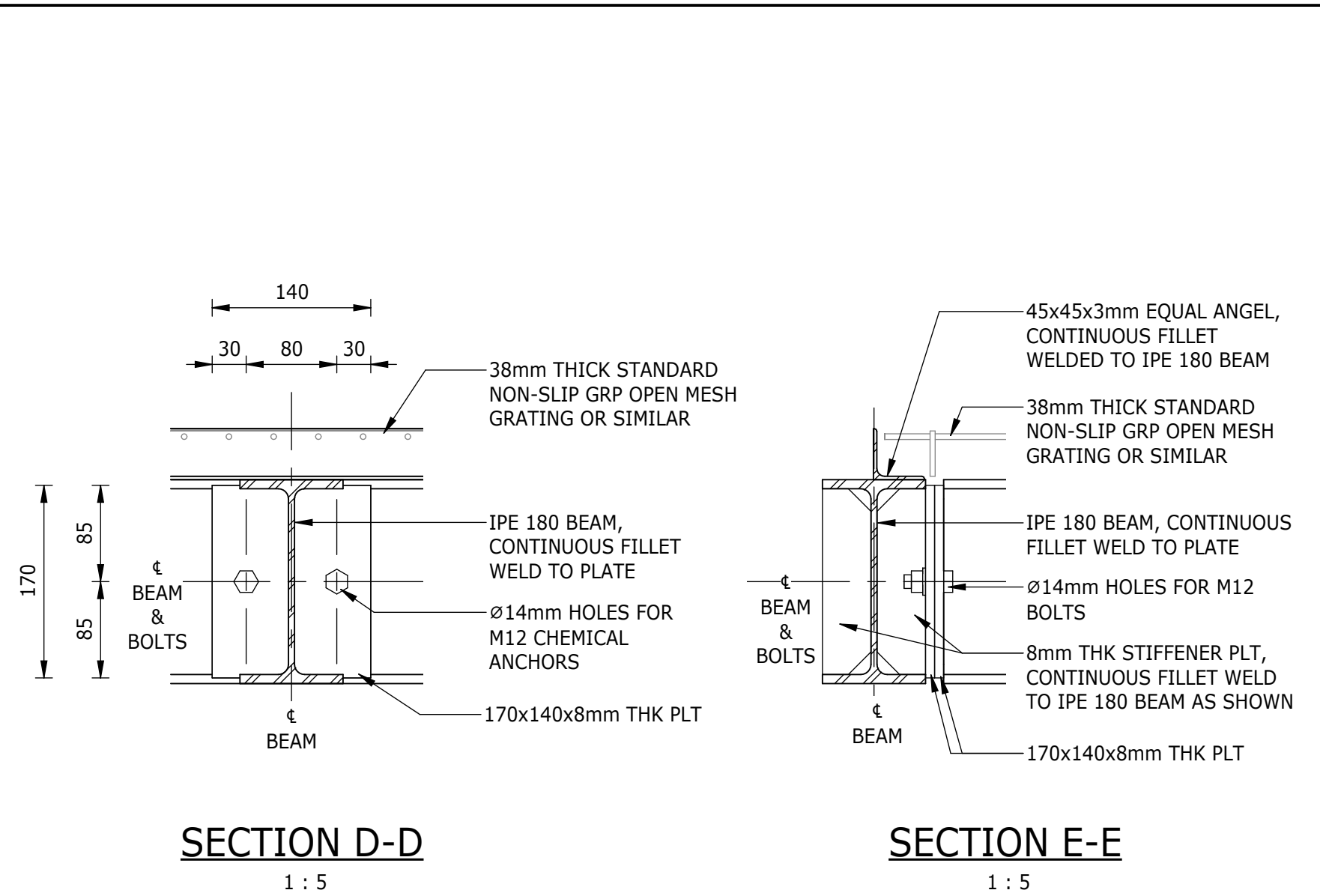
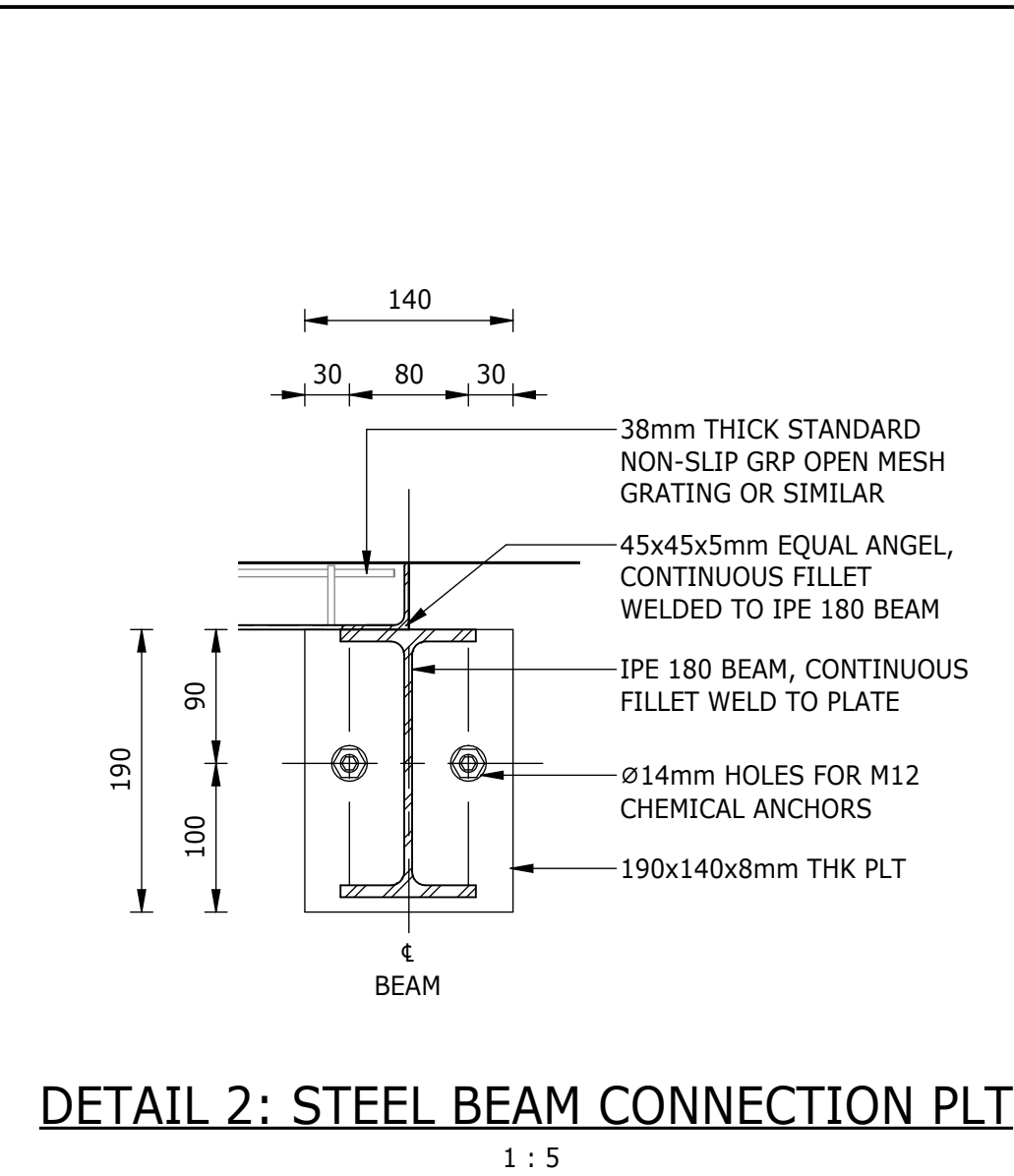
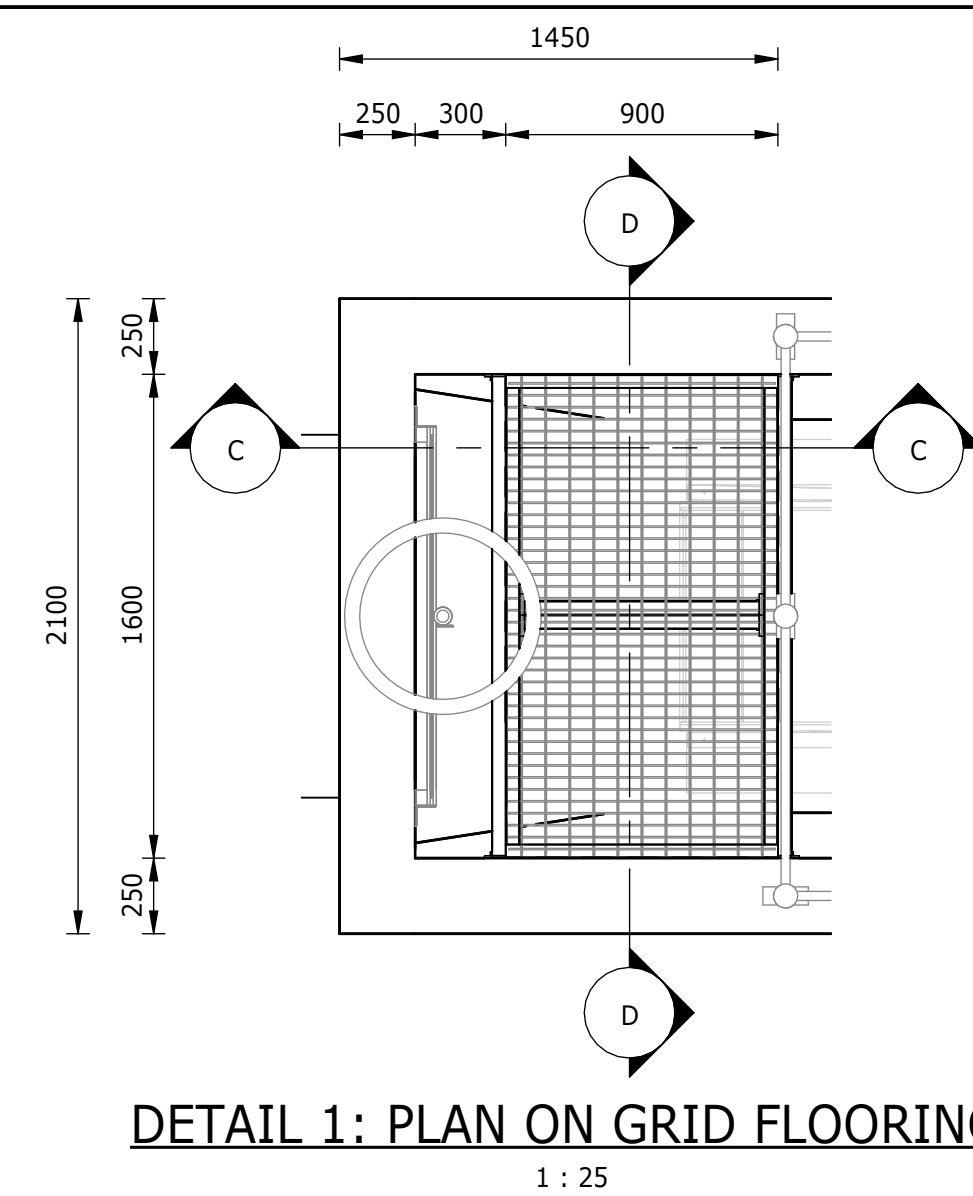
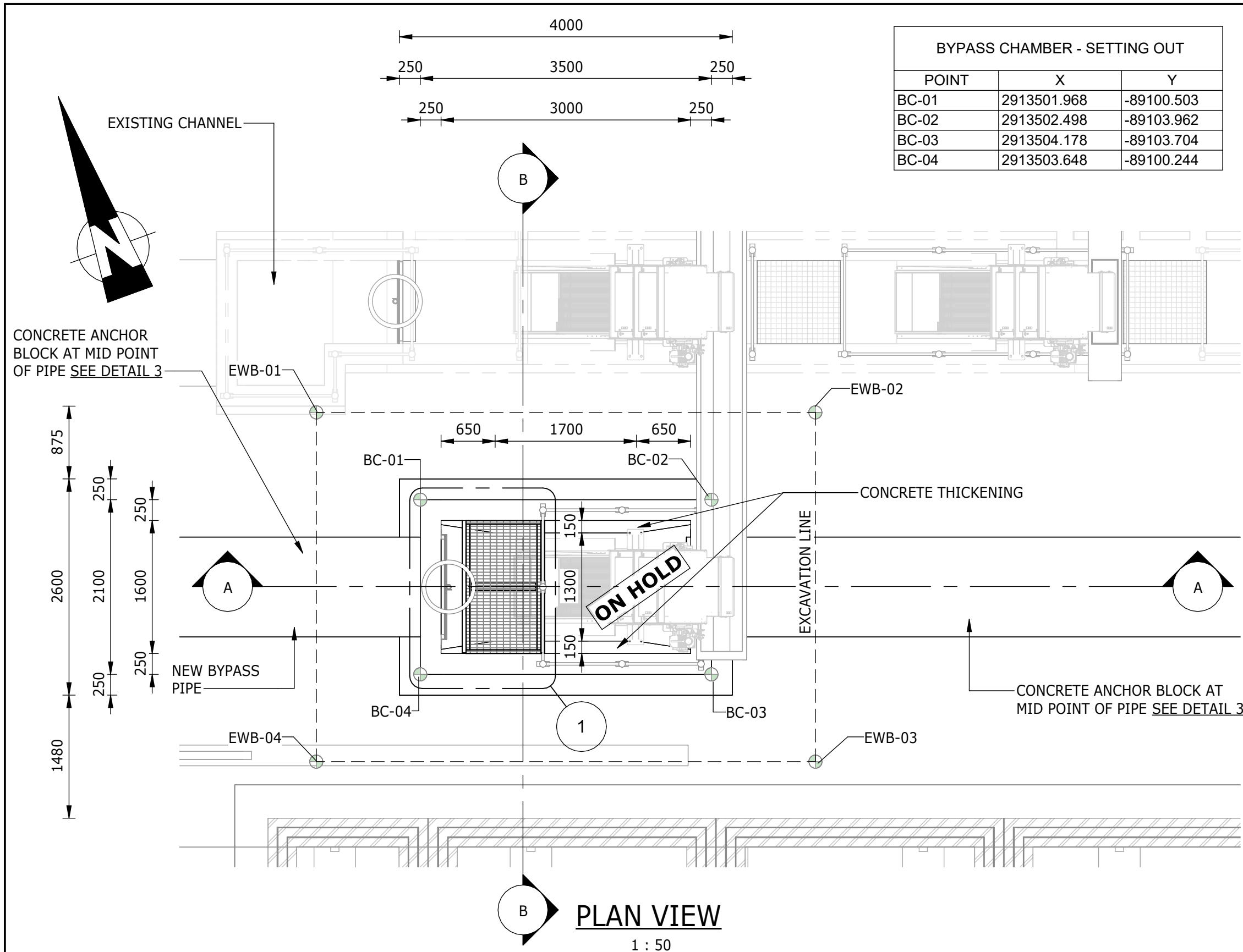
INFRASTRUCTURE RENEWAL PLAN

VAN WYKSURST PUMP STATION

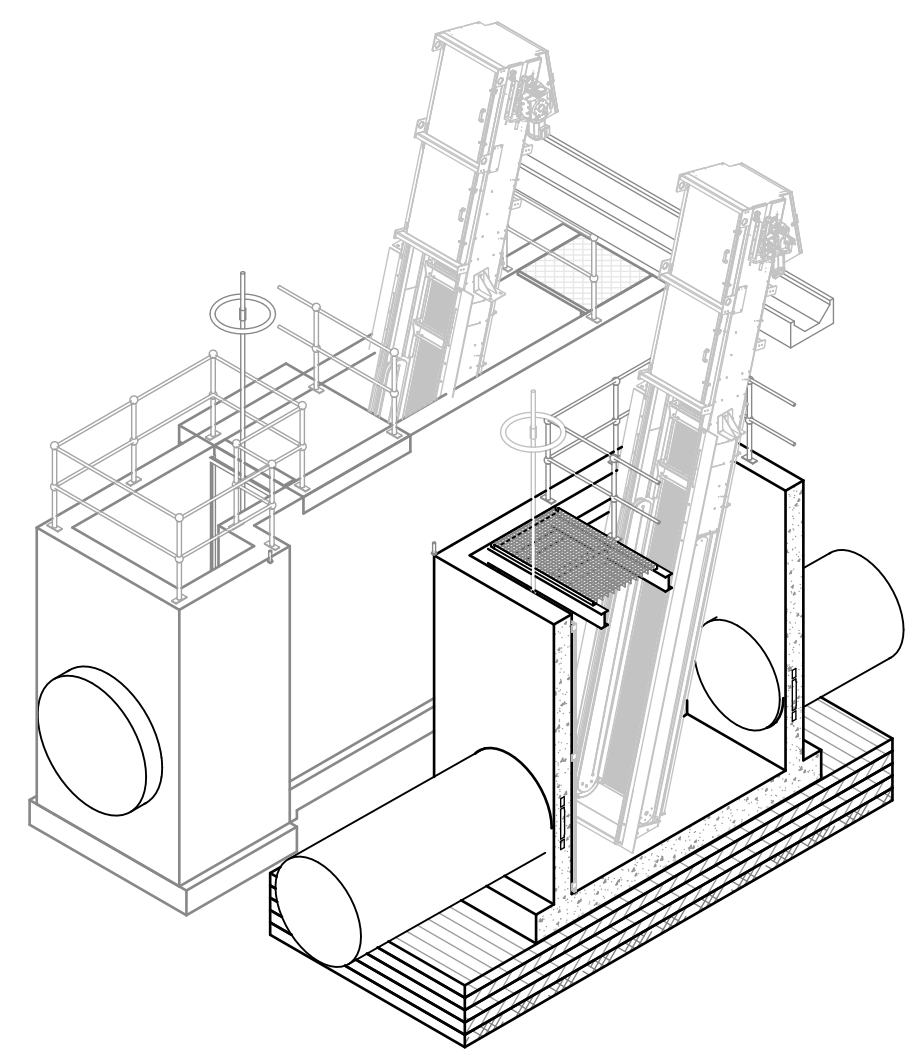
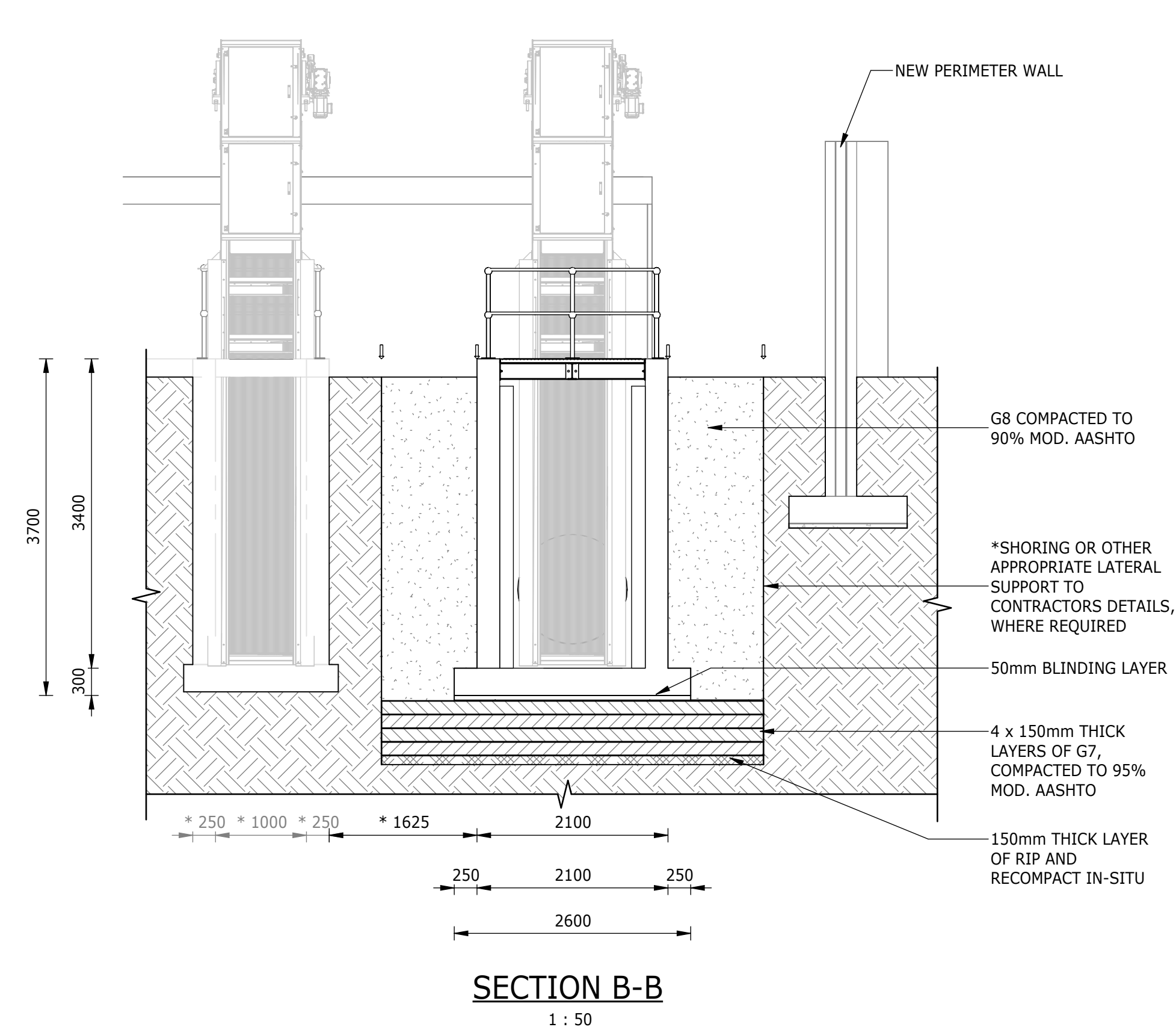
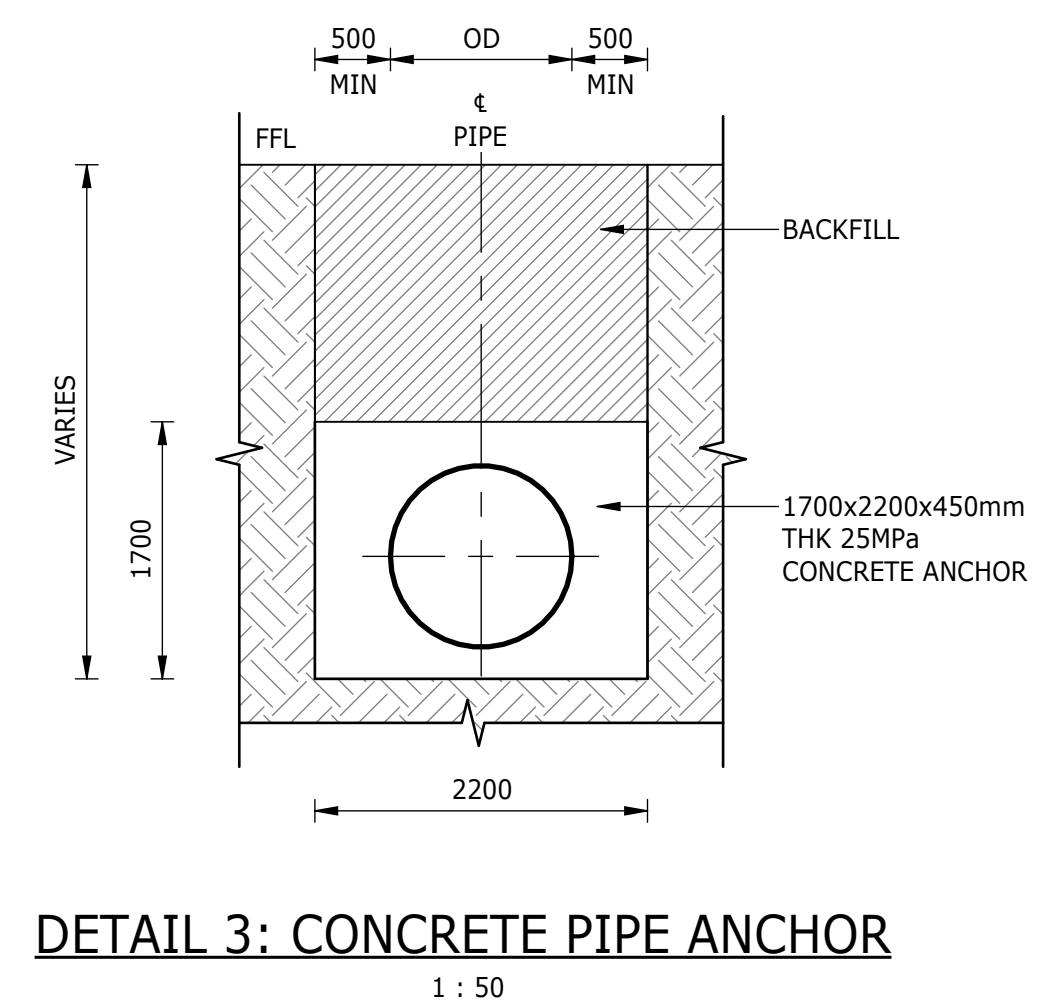
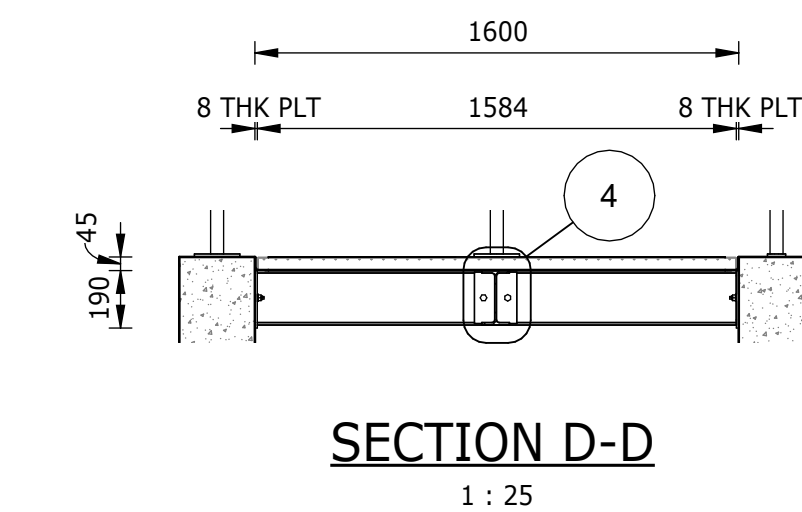
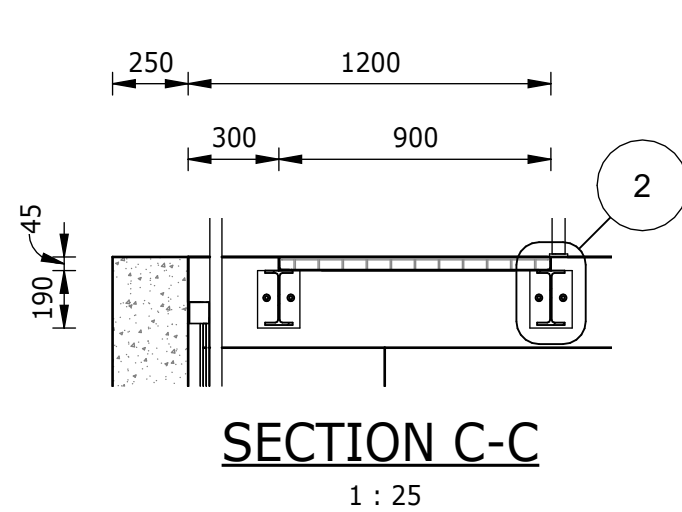
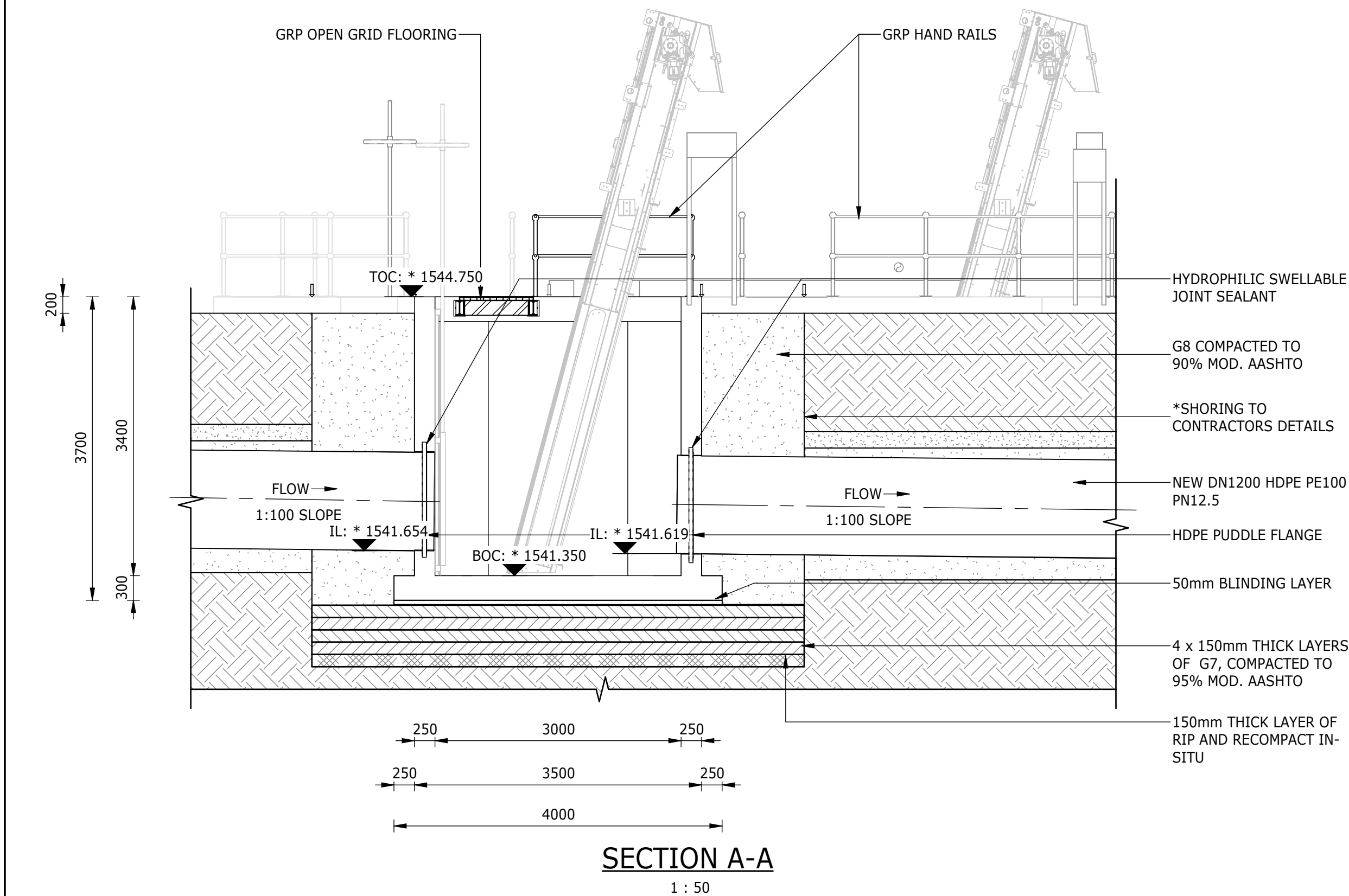
EXISTING SPLITTER BOX EXTENSION

GENERAL ARRANGEMENT, SECTIONS & EARTHWORKS

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
	AS SHOWN	C01 ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
		C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-03-D-C-0301
					CONSULTANT'S NUMBER
					BW1400-RHD-C1-03-D-C-0301
					FILE No
					C02



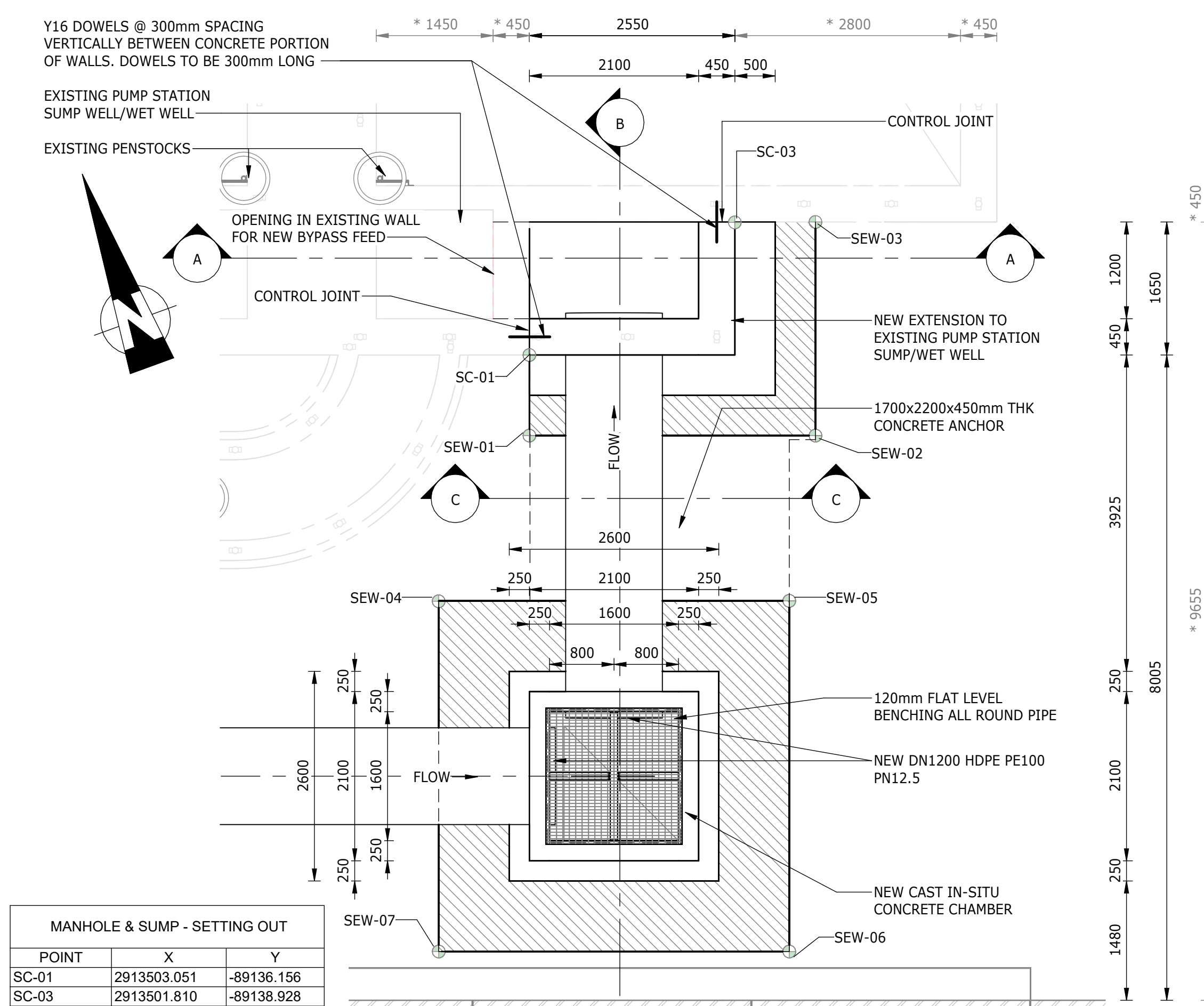
- NOTES:**
1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 2. BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 3. EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
 4. EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
 5. SETTING-OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
 6. MECHANICAL EQUIPMENT INDICATED ON THIS DRAWING ARE SCHEMATIC.
 7. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
 8. SHORING OR OTHER APPROPRIATE LATERAL SUPPORT TO CONTRACTORS DETAILS, WHERE REQUIRED.
 9. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 10. CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.
 11. "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.*



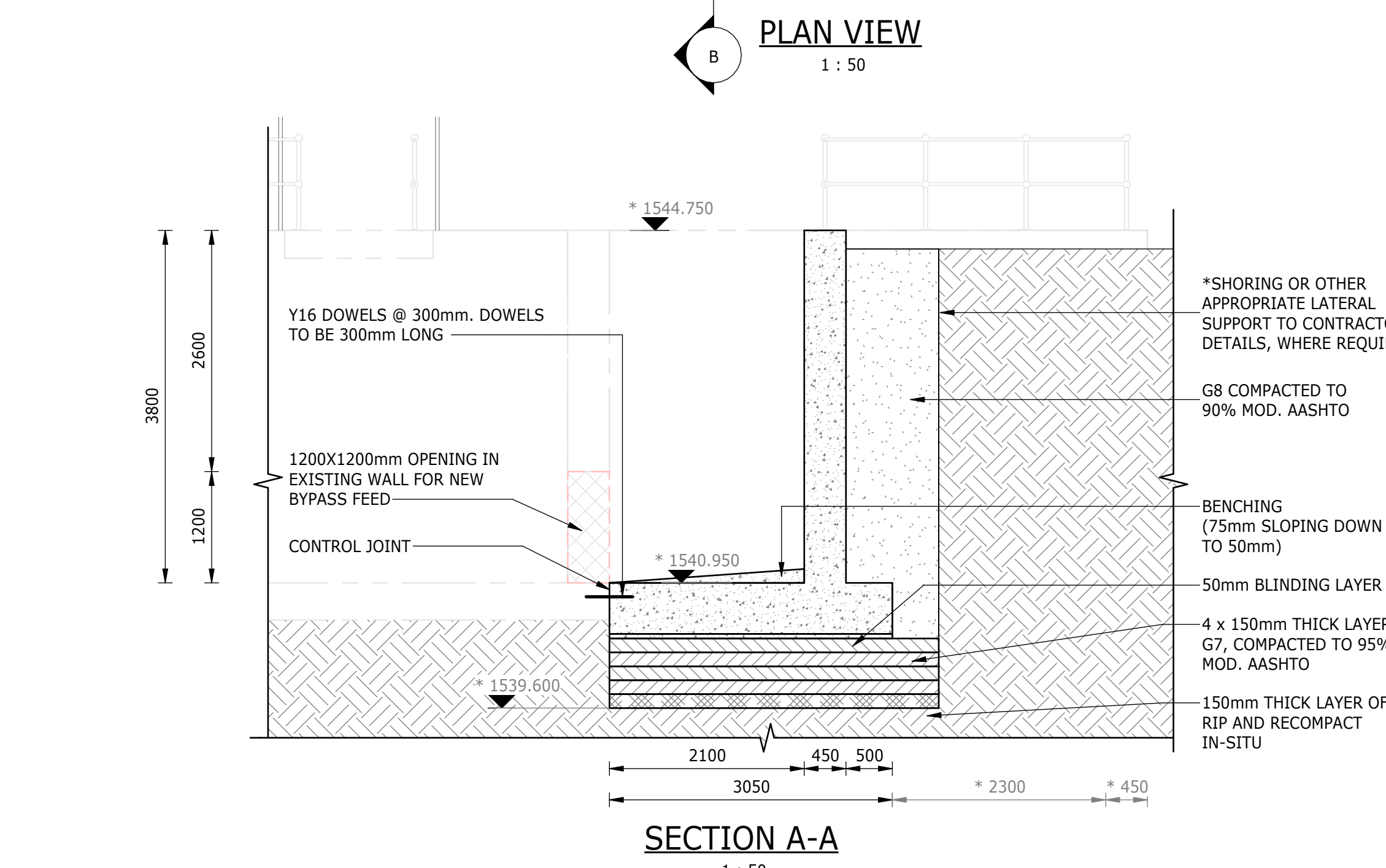
DEPARTMENT	APPROVED	DESIGNATION	DATE



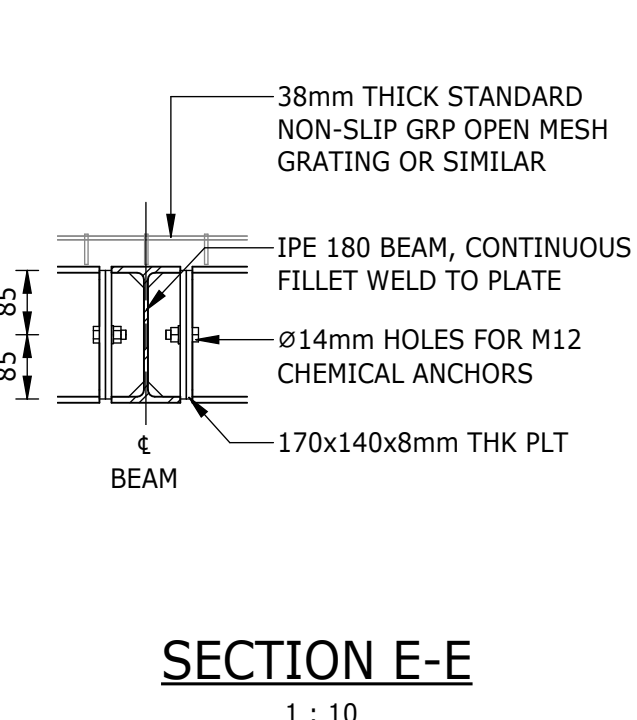
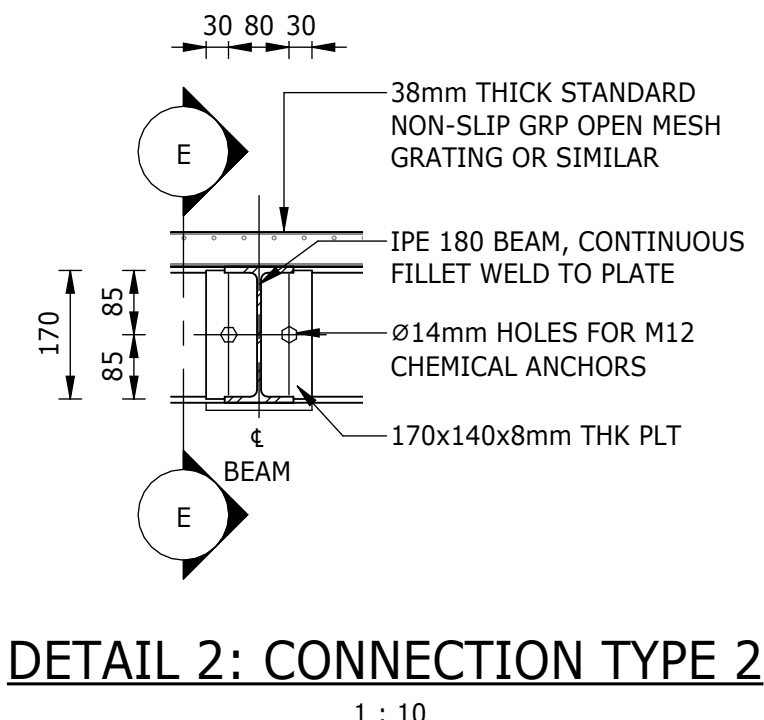
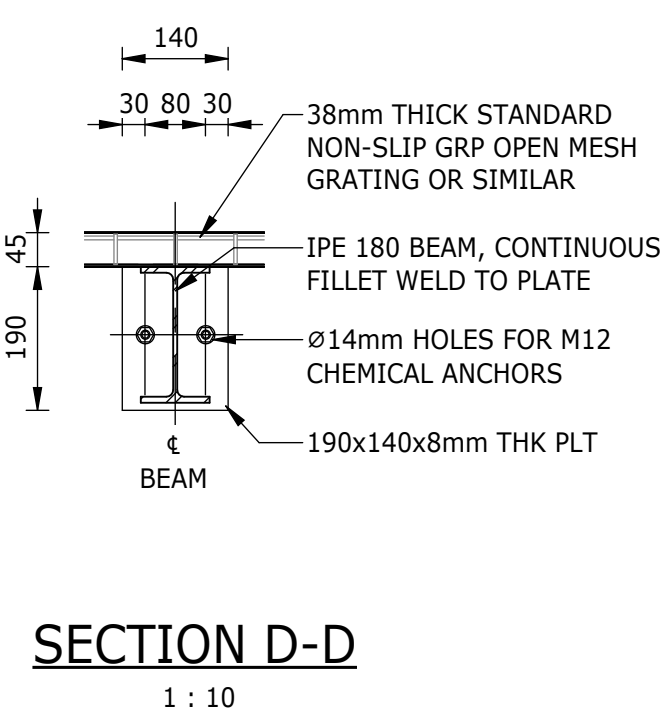
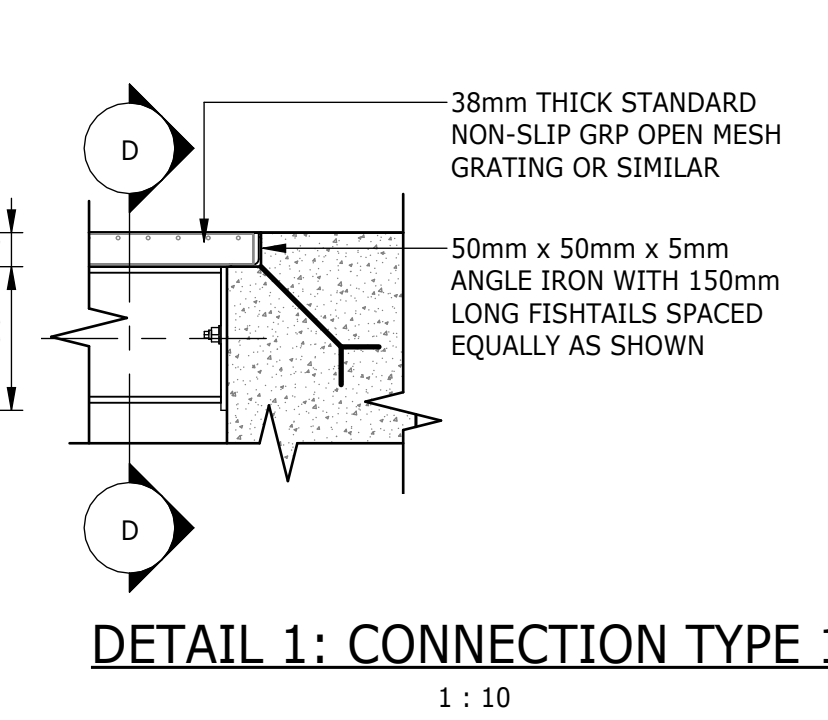
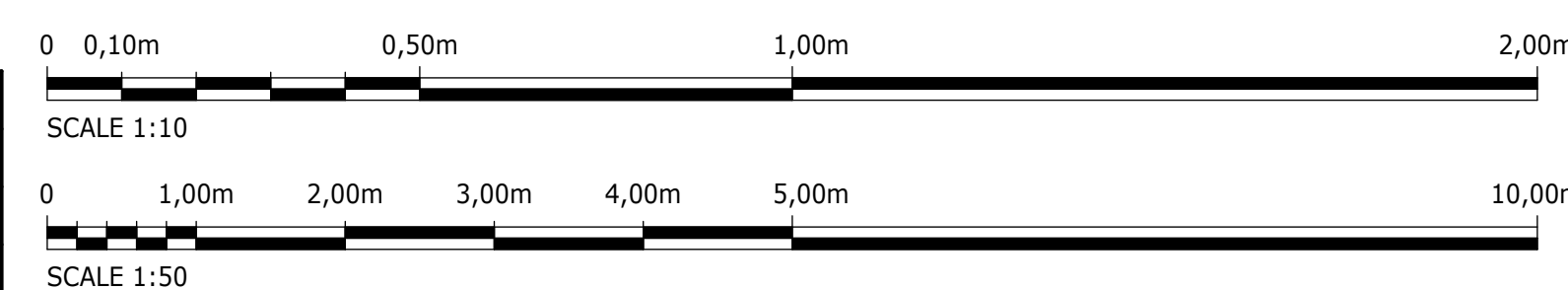
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.									
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001	OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION BYPASS CHAMBER GENERAL ARRANGEMENT, SECTIONS & EARTHWORKS	DATE			AS SHOWN	C01			ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER						
		DRAWN	N. O'GORMAN								C02			ISSUED FOR RE- TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-03-D-C-0302						
		CHECKED	L. NAICKER								CONSULTANT'S NUMBER												
		SERVICES CHECKED									BW1400-RHD-C1-03-D-C-0302												
		GEOTECHNICAL INVESTIGATION									FILE No												
		SERVITUDES																					
		APPROVED	DITHOLO PHOGOLE																				
		Pr. Eng.No.	20060098																				
		DATE																					
								Johannesburg Water			TEL: (011) 688-1400												
						FAX: (011) 688-1529																	



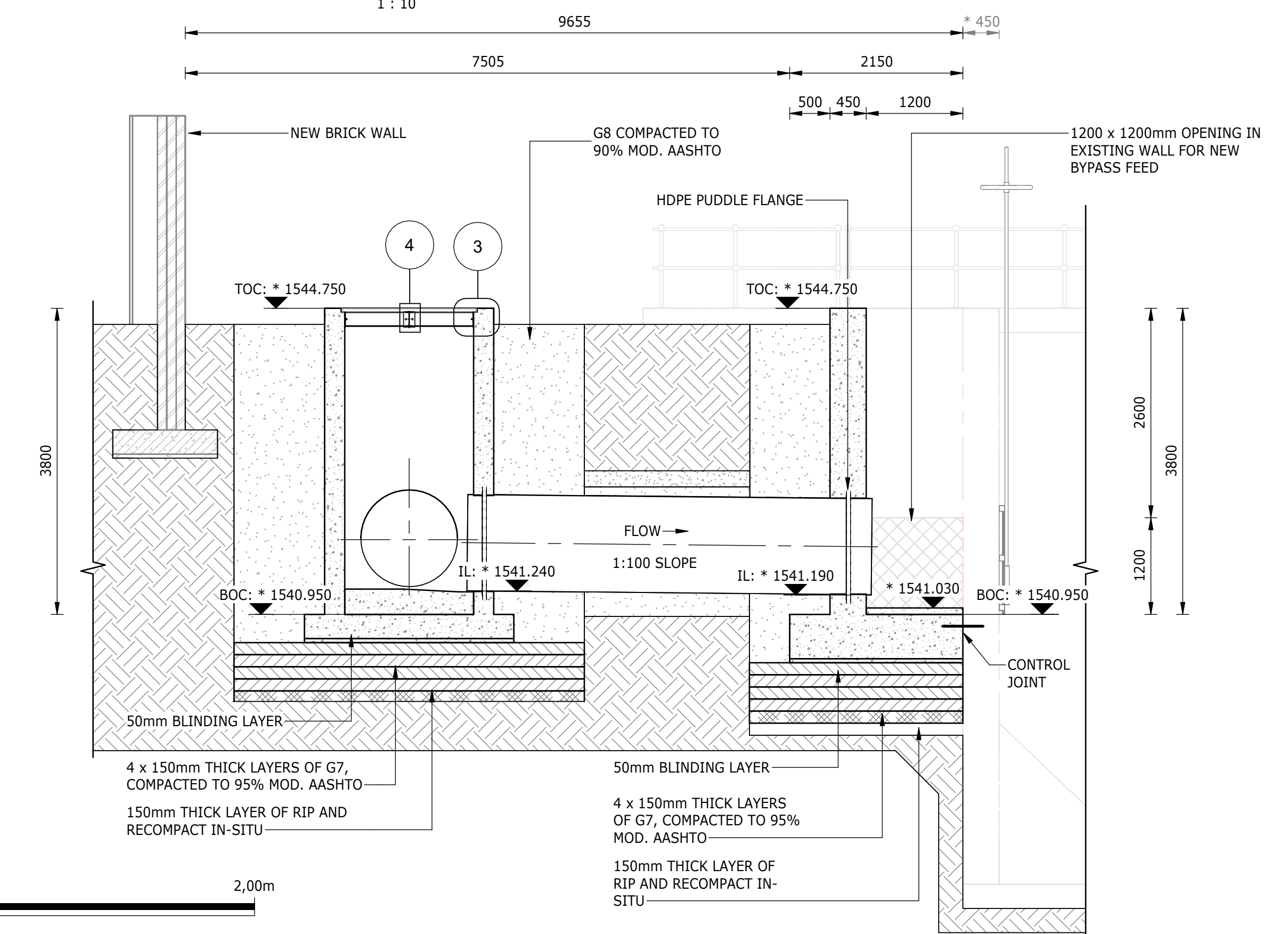
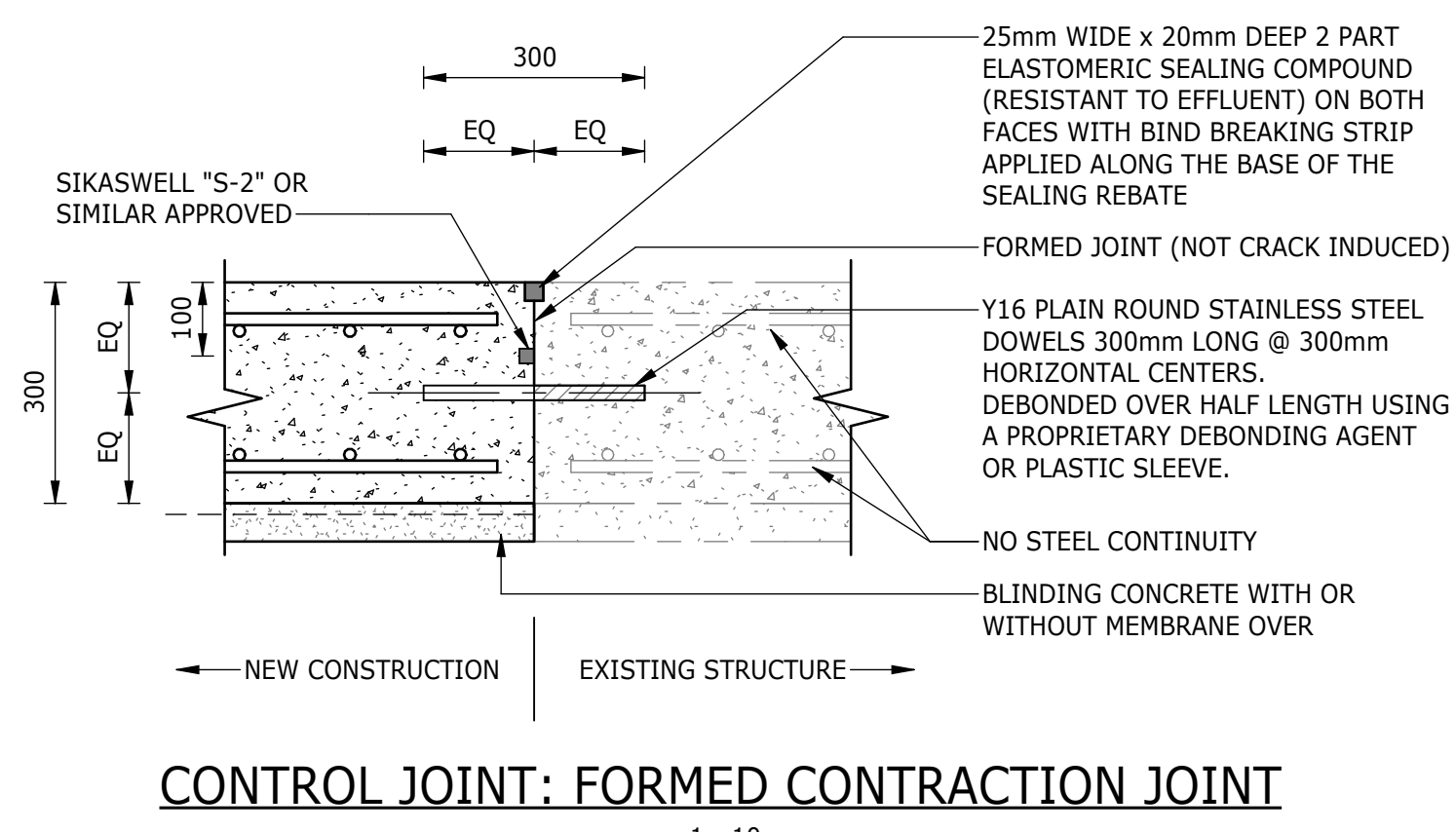
MANHOLE & SUMP - SETTING OUT		
POINT	X	Y
SC-01	2913503.051	-89136.156
SC-03	2913501.810	-89138.928



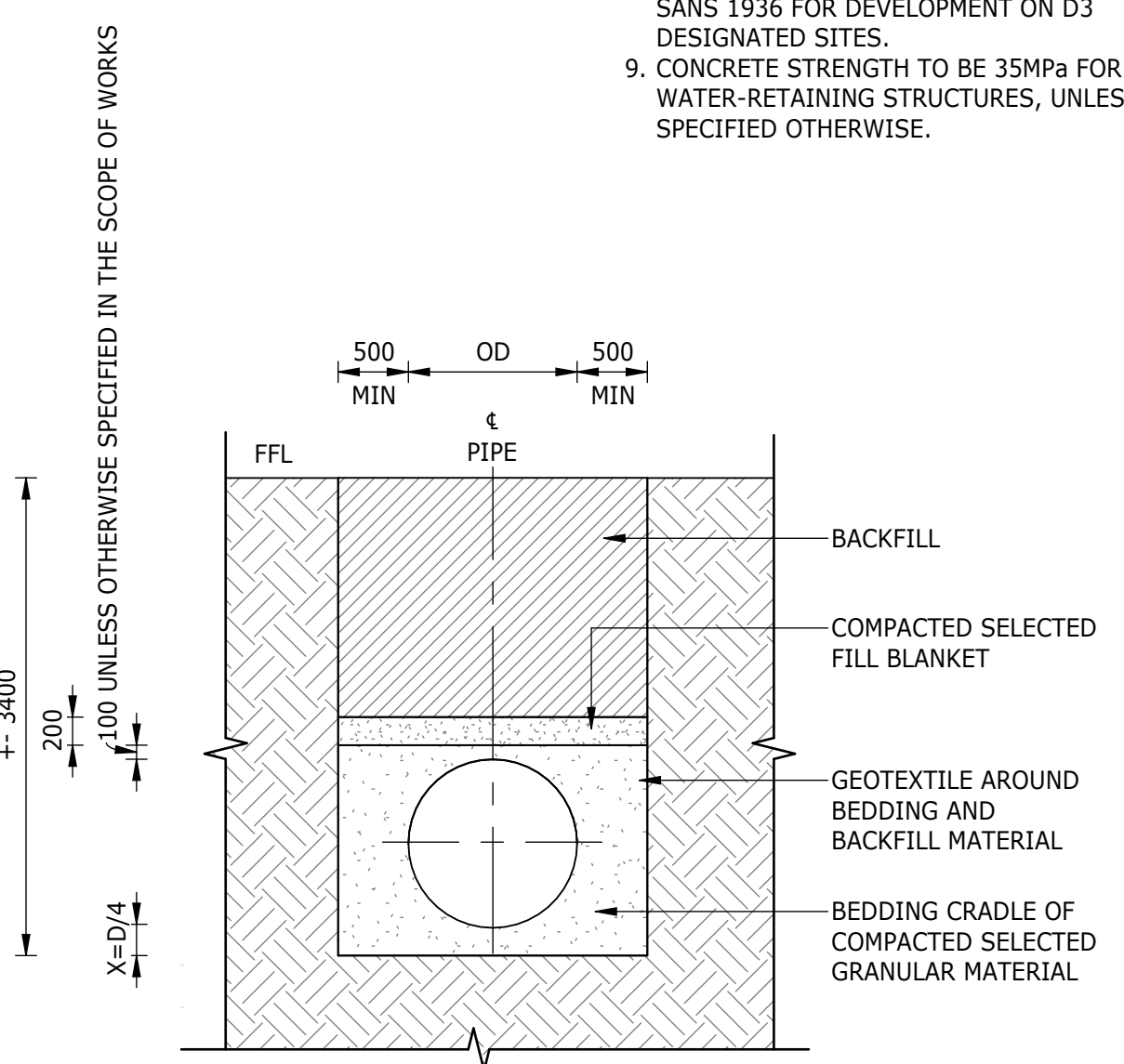
DEPARTMENT	APPROVED	DESIGNATION	DATE



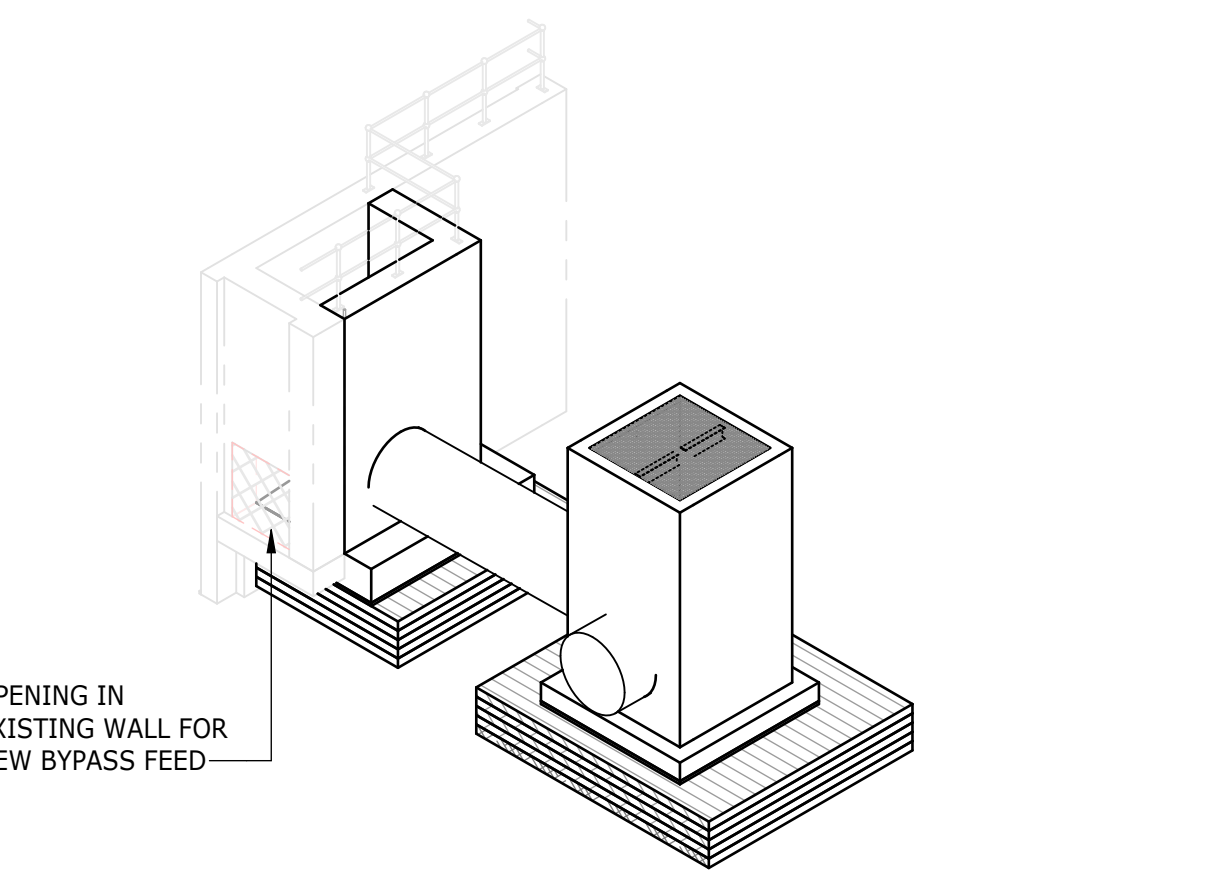
- NOTES:**
1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
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 6. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
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 8. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 9. CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.



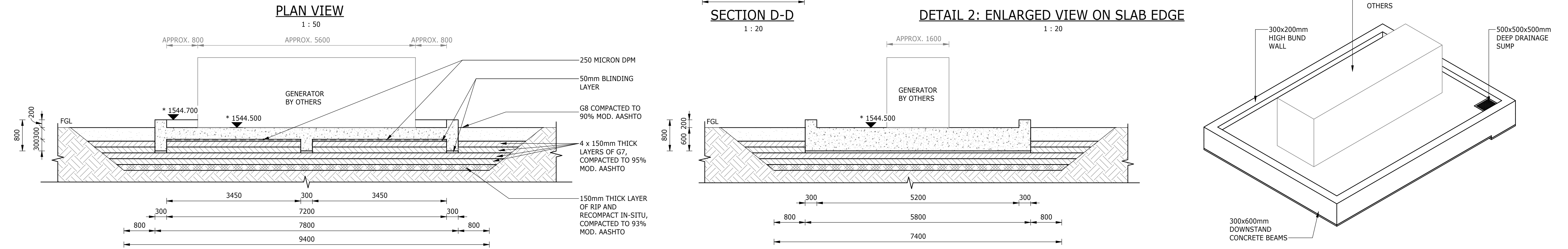
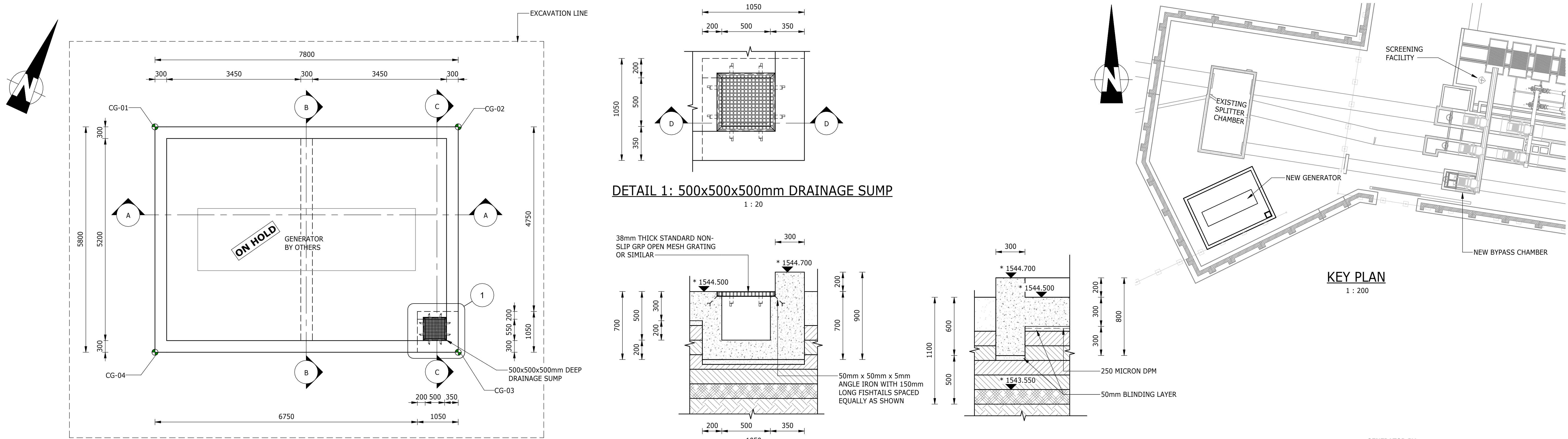
SECTION B-B
1 : 50



SECTION C-C: FLEXIBLE PIPE ON CLASS B BED
1 : 50



CONSULTING ENGINEERS		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529			OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION BYPASS FACILITY MANHOLE & SUMP GENERAL ARRANGEMENT, SECTIONS & EARTHWORKS	AS SHOWN			C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER		
		DESIGNED	L. NAICKER			C02	ISSUED FOR RE- TENDER			D. PHOGOLE	FEB 26	JW14466R-RHD-C1-03-D-C-0303						
		DRAWN	N. O'GORMAN									CONSULTANT'S NUMBER						
		CHECKED	L. NAICKER									BW1400-RHD-C1-03-D-C-0303						
		SERVICES CHECKED										FILE No						
		GEOTECHNICAL INVESTIGATION																
		SERVITUDES																
		APPROVED	DITHOLO PHOGOLE															
Pr. Eng.No.	20060098																	
DATE												C02						



NOTES:

- ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
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- EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
- EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
- SETTING -OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
- CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
- GENERATOR SIZE AND CLEARANCE REQUIREMENTS DEPENDENT ON FINAL EQUIPMENT APPROVAL DURING CONSTRUCTION.
- CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
- CONCRETE STRENGTH TO BE 30MPa AND BLINDING TO BE 15MPa.
- "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.

GENERATOR SLAB - SETTING OUT		
POINT	X	Y
CG-01	2913505.341	-89074.093
CG-02	2913502.171	-89080.890
CG-03	2913505.343	-89082.369
CG-04	2913508.513	-89075.572

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS



Building No. 5 Country
Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	L. NAICKER
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD



TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
VAN WYKSURST PUMP STATION
GENERATOR SLAB
GENERAL ARRANGEMENT, DETAILS & EARTHWORKS

DESIGN
MANAGER

DATE

SCALE

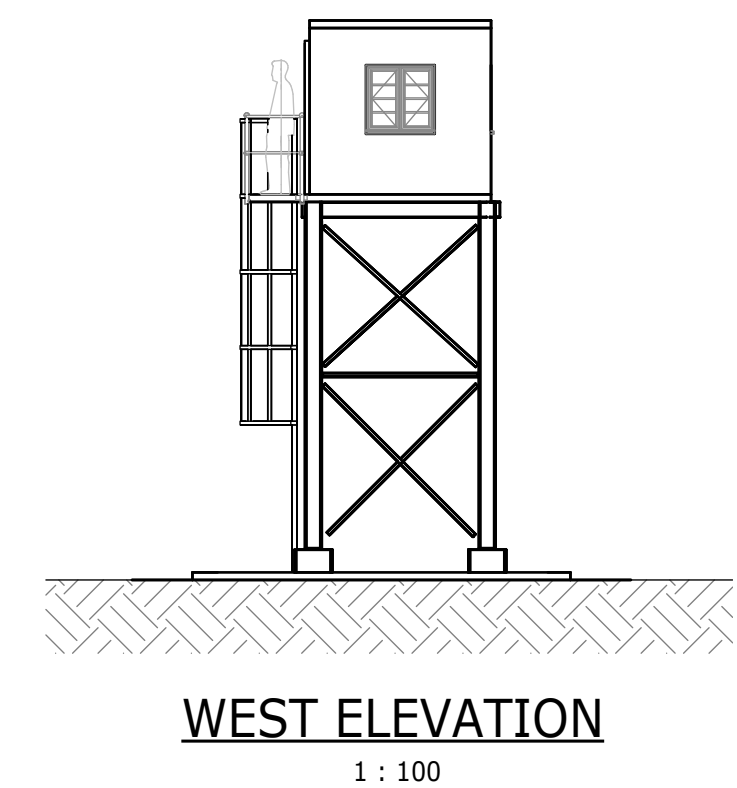
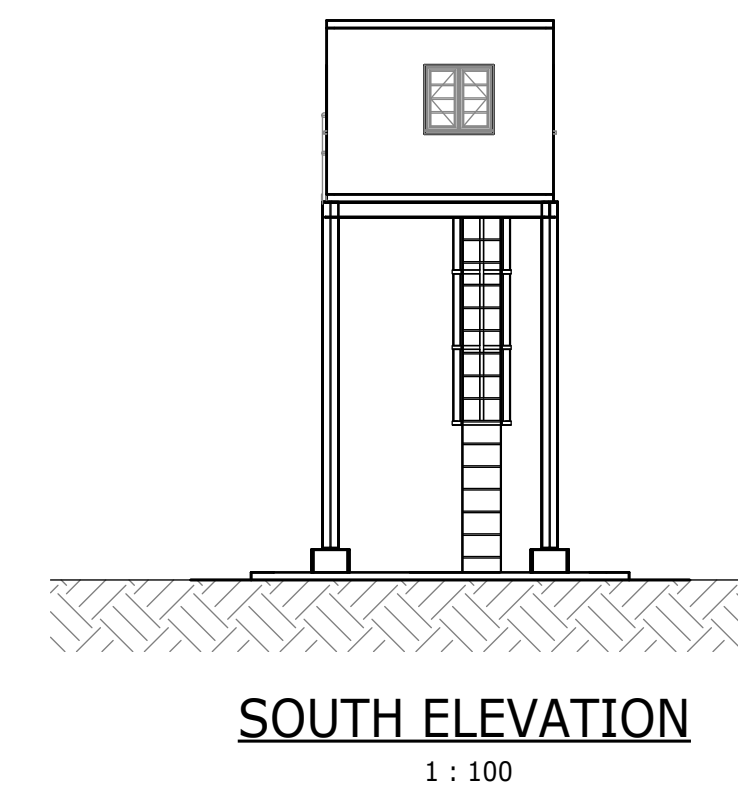
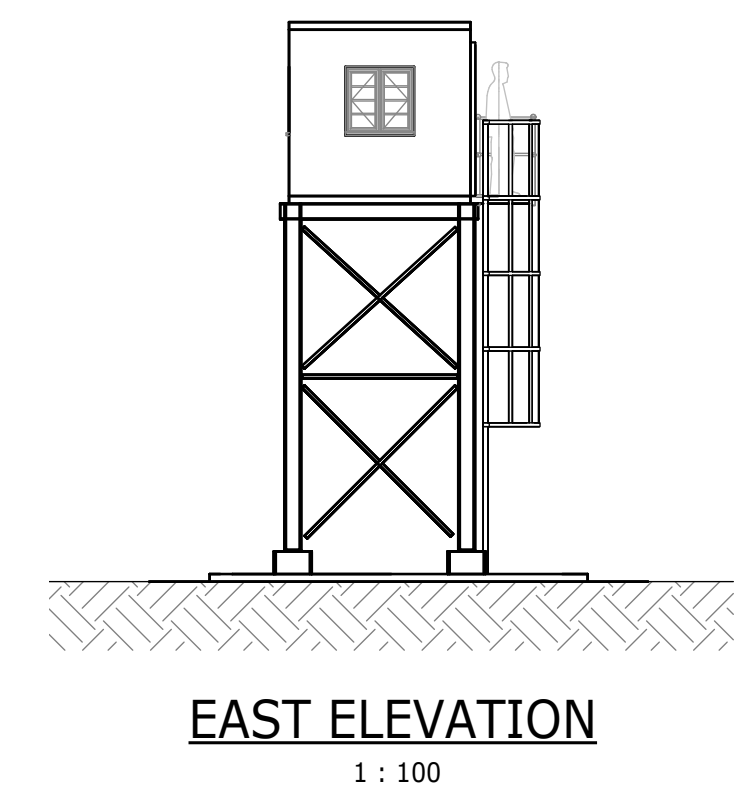
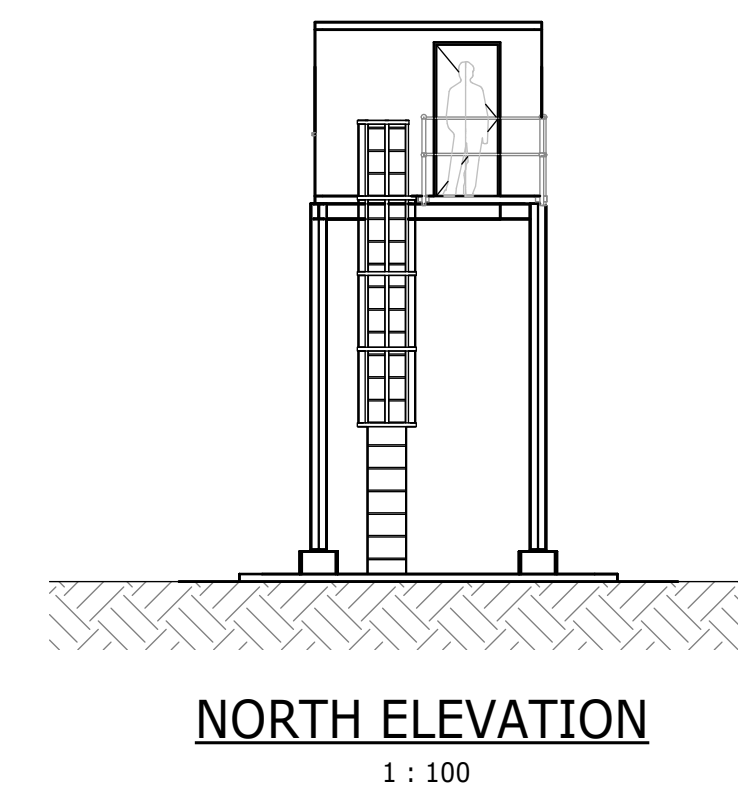
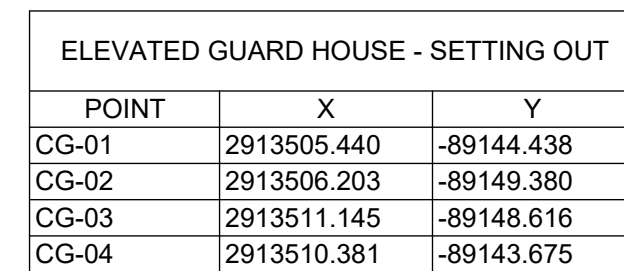
AMENDMENTS

APPROVED

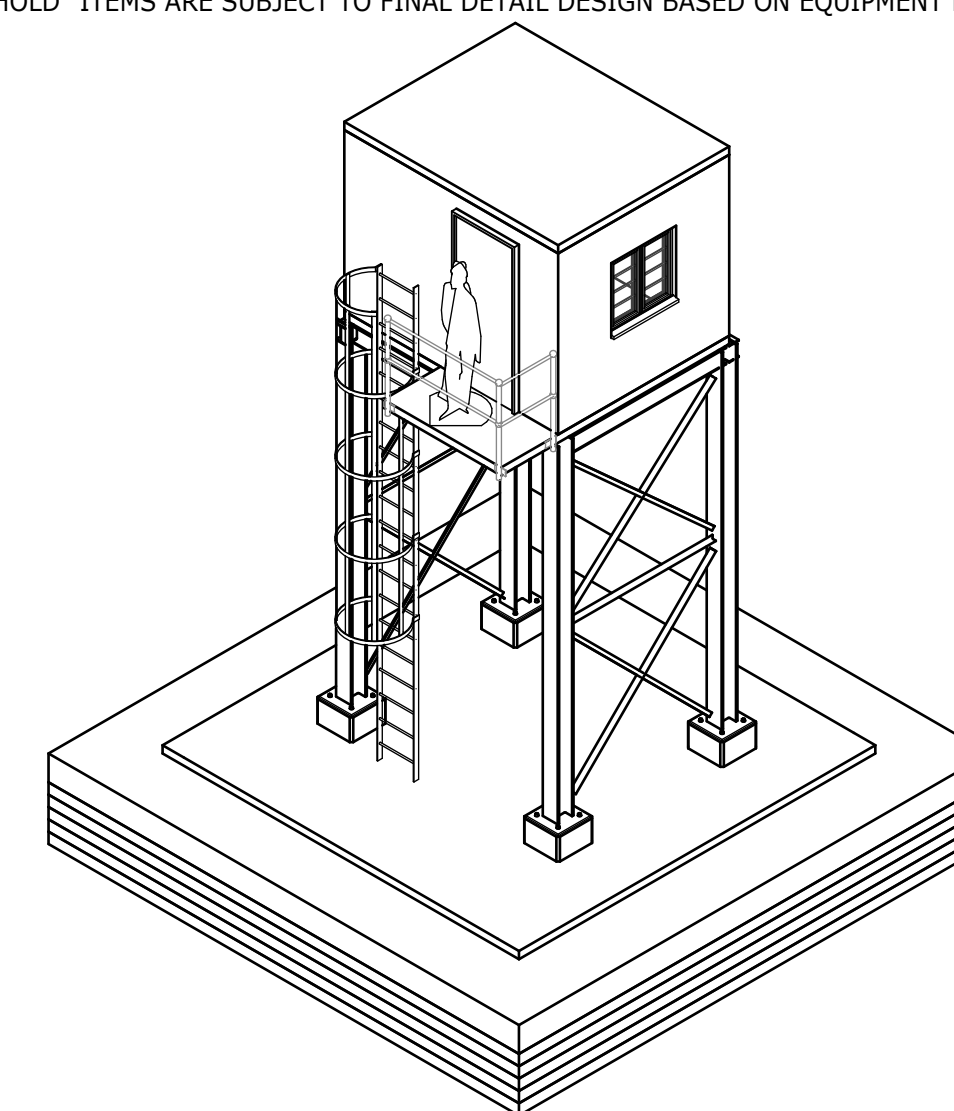
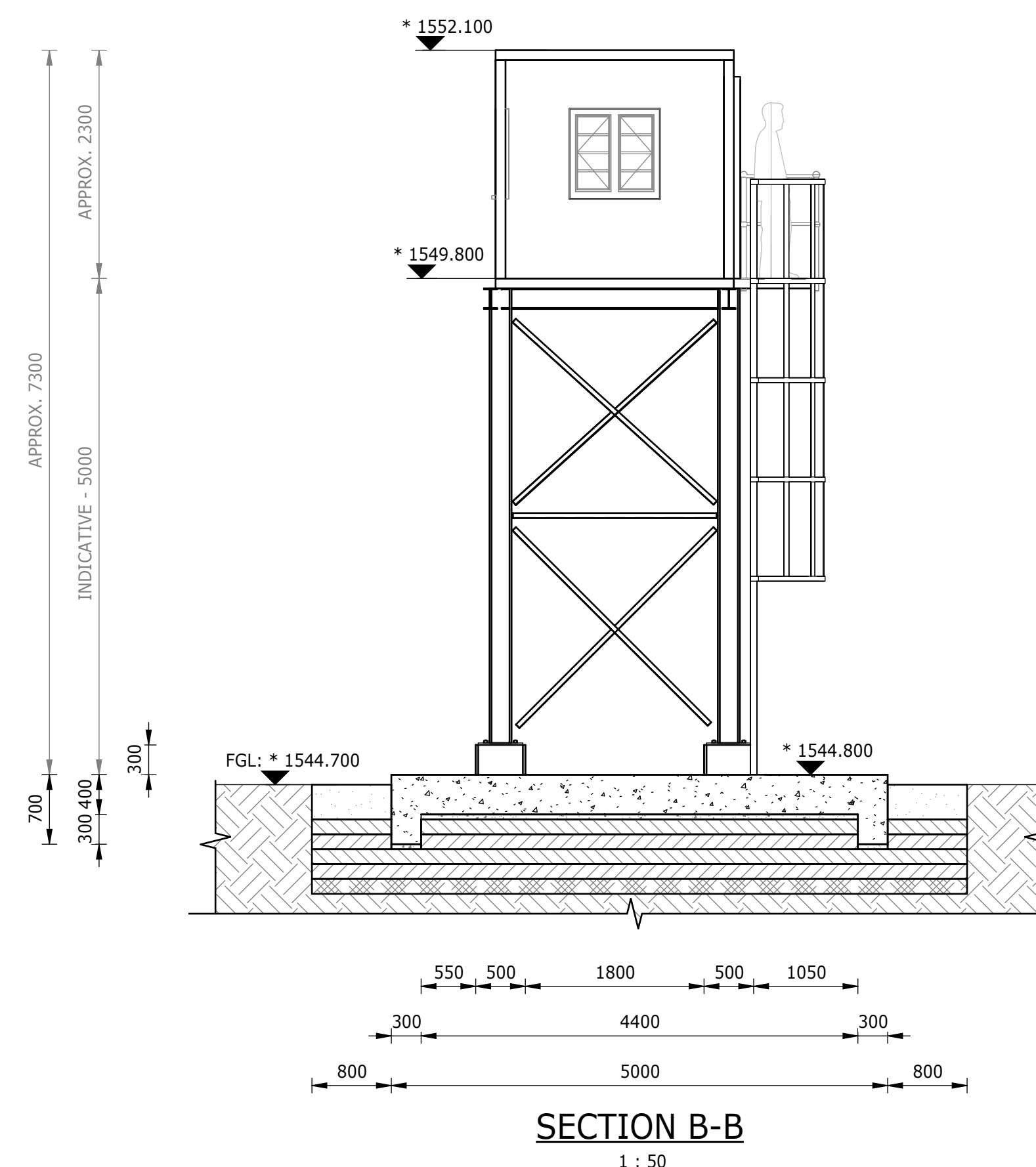
DATE

DRAWING No.

AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER JW14466R-RHD-C1-04-D-C-0401 CONSULTANT'S NUMBER BW1400-RHD-C1-04-D-C-0401 FILE No
	C02	ISSUED FOR RE- TENDER	D. PHOGOLE	FEB 26	
	C02				

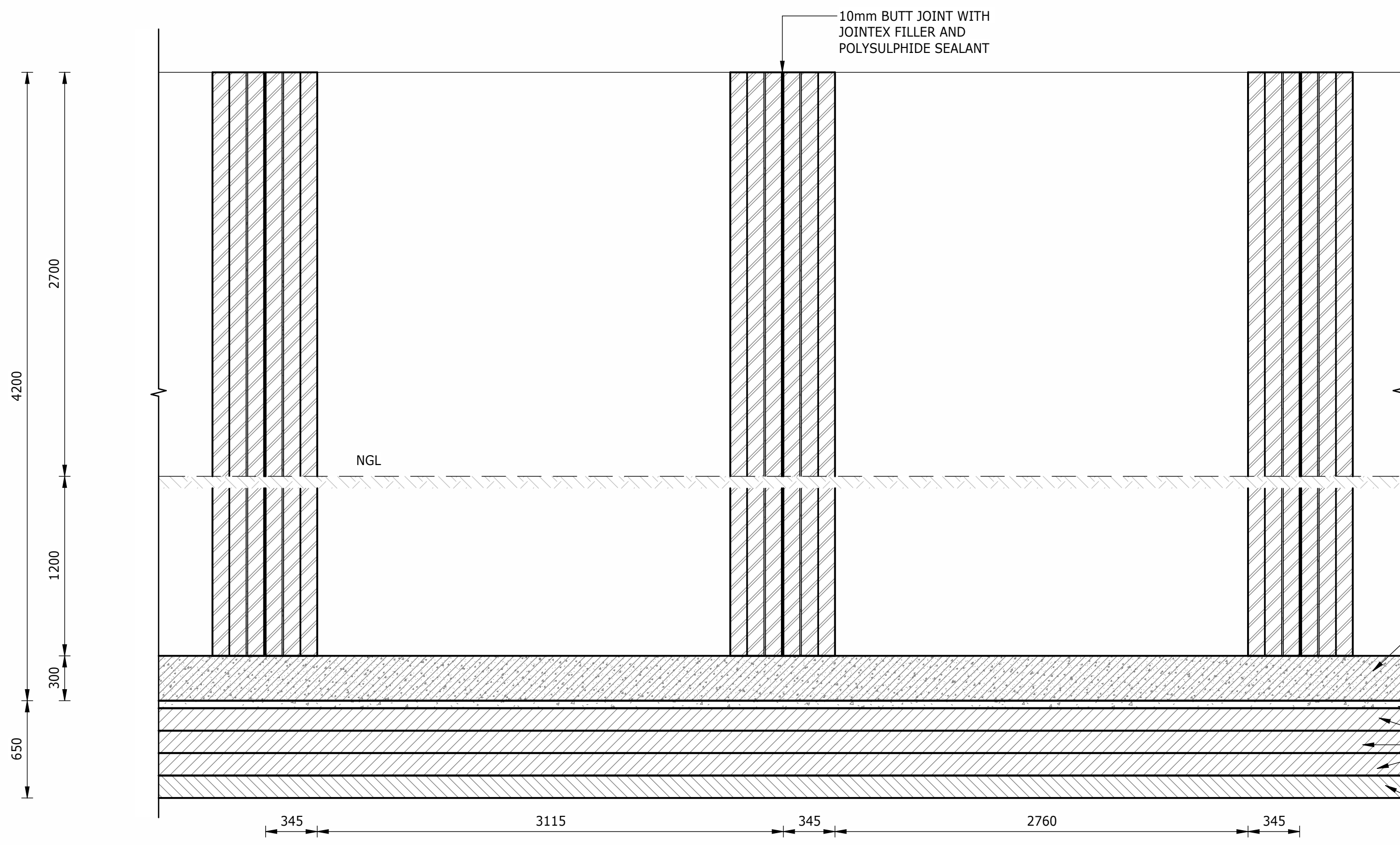


1. ALL DIMENSIONS AND LEVELS CONTAINING " ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
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5. SETTING -OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
6. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
7. SIZE OF SLAB TBC, BASED ON DETAILS OF ELEVATED GUARD-HOUSE, TO BE PROVIDED BY OTHERS.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
9. CONCRETE STRENGTH TO BE 30MPa.
10. "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.

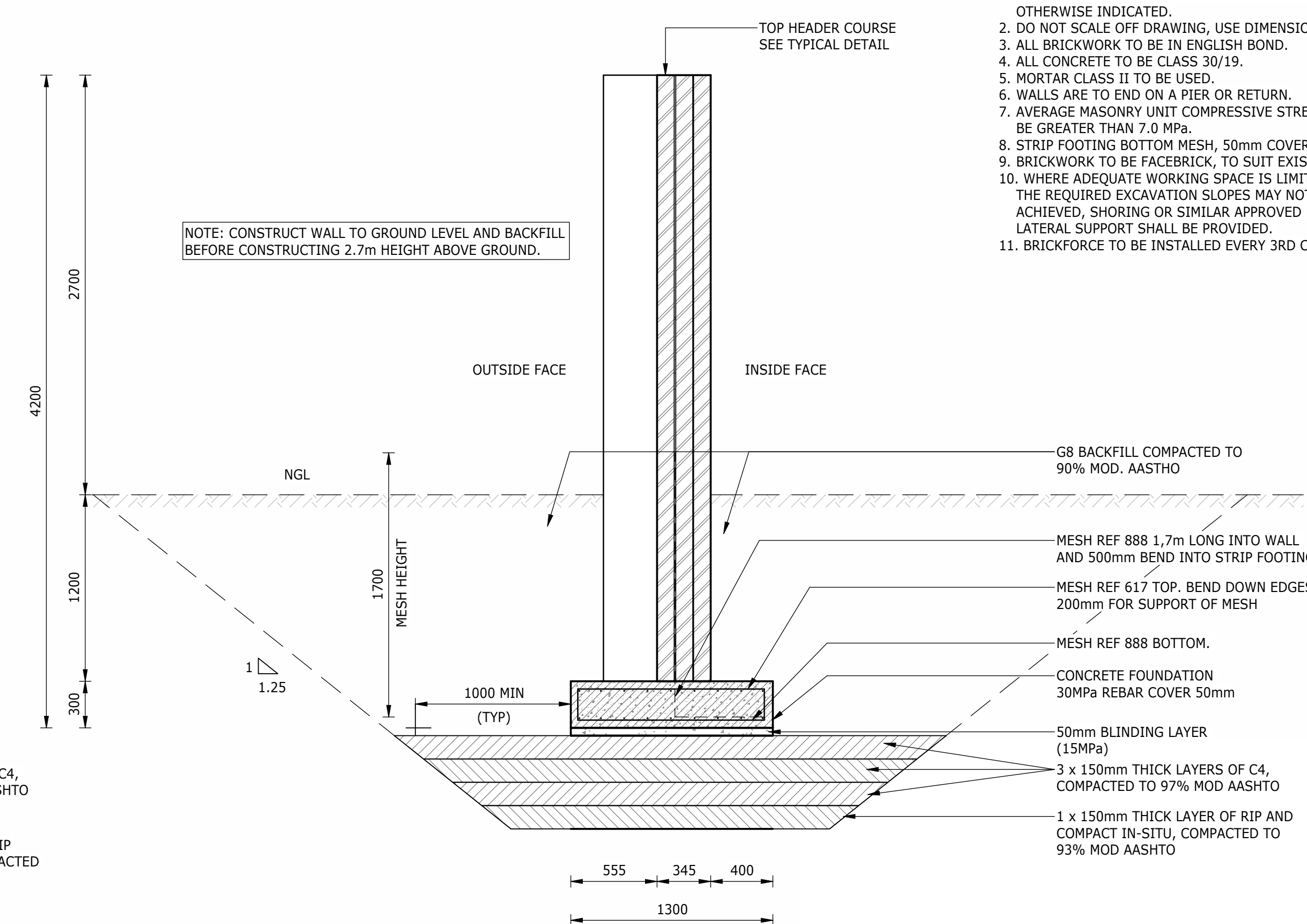


DEPARTMENT	APPROVED	DESIGNATION	DATE

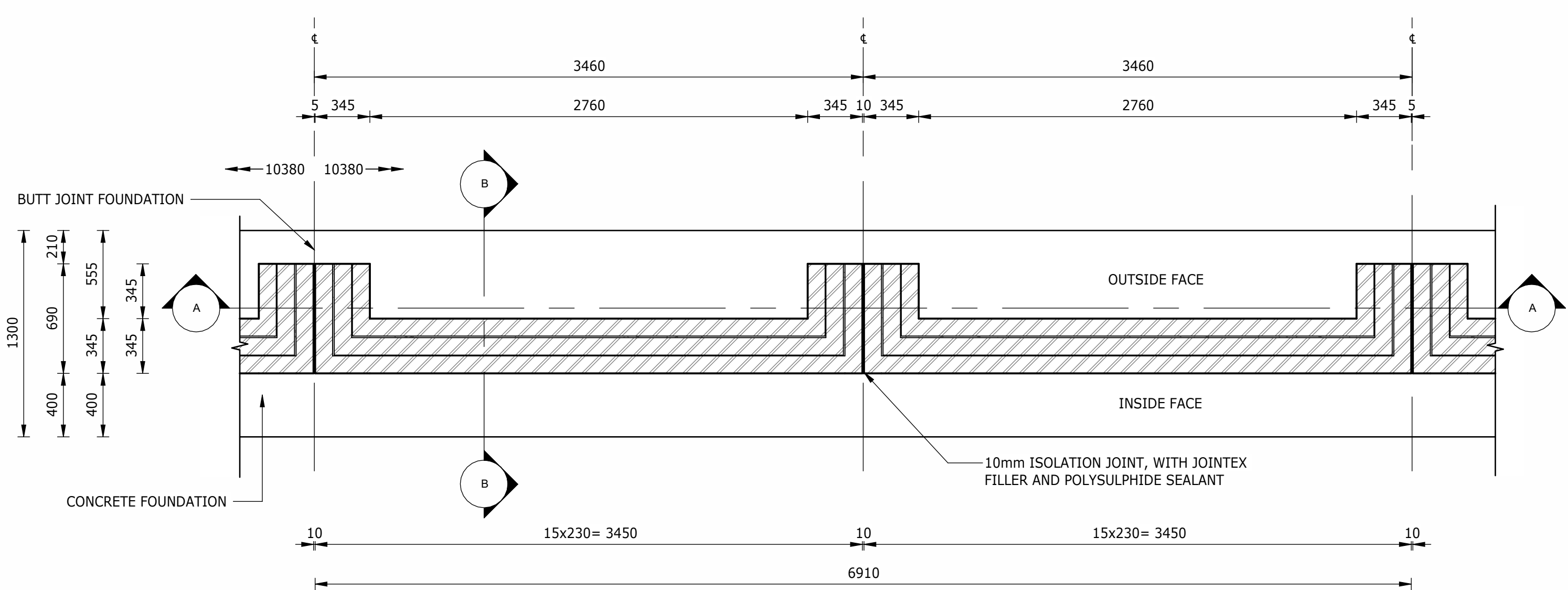
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER	 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION ELEVATED GUARD HOUSE GENERAL ARRANGEMENT AND SECTIONS	AS SHOWN		C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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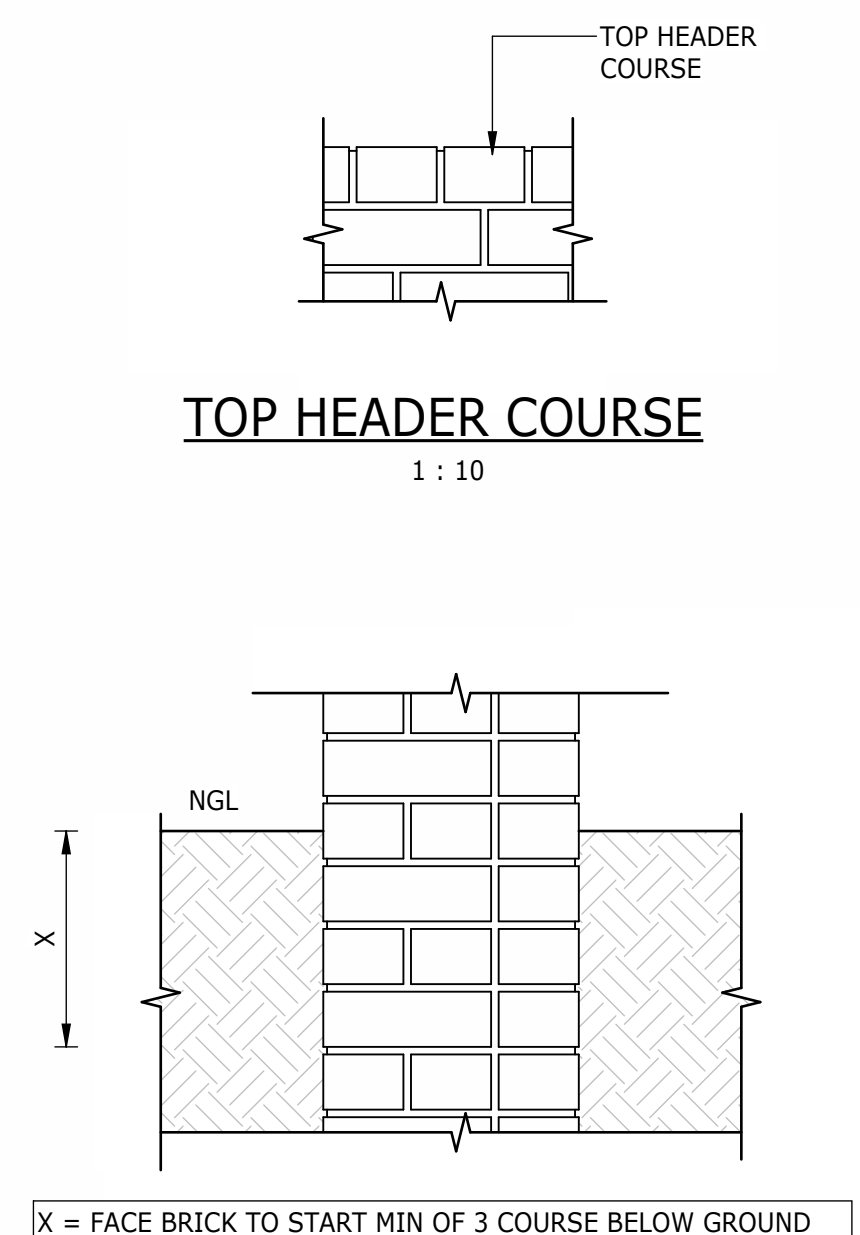
SECTION A-A
1 : 25



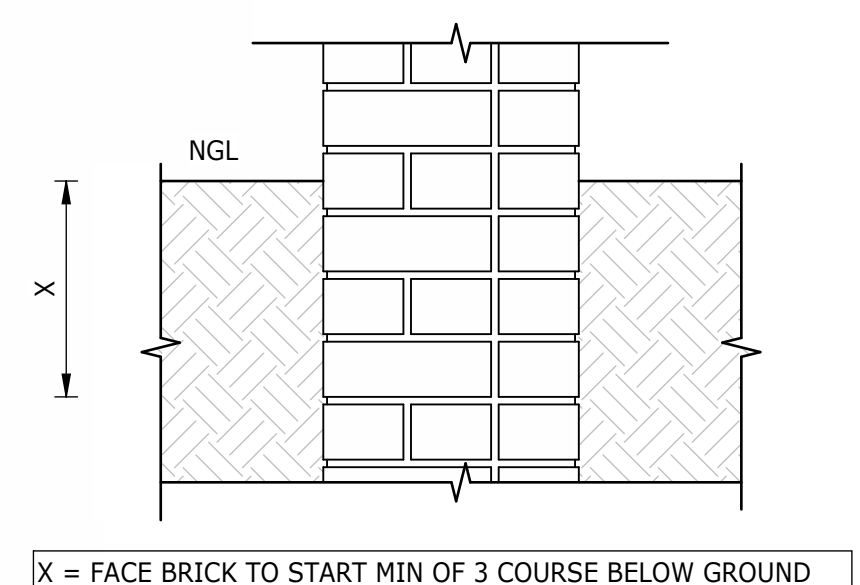
SECTION B-B
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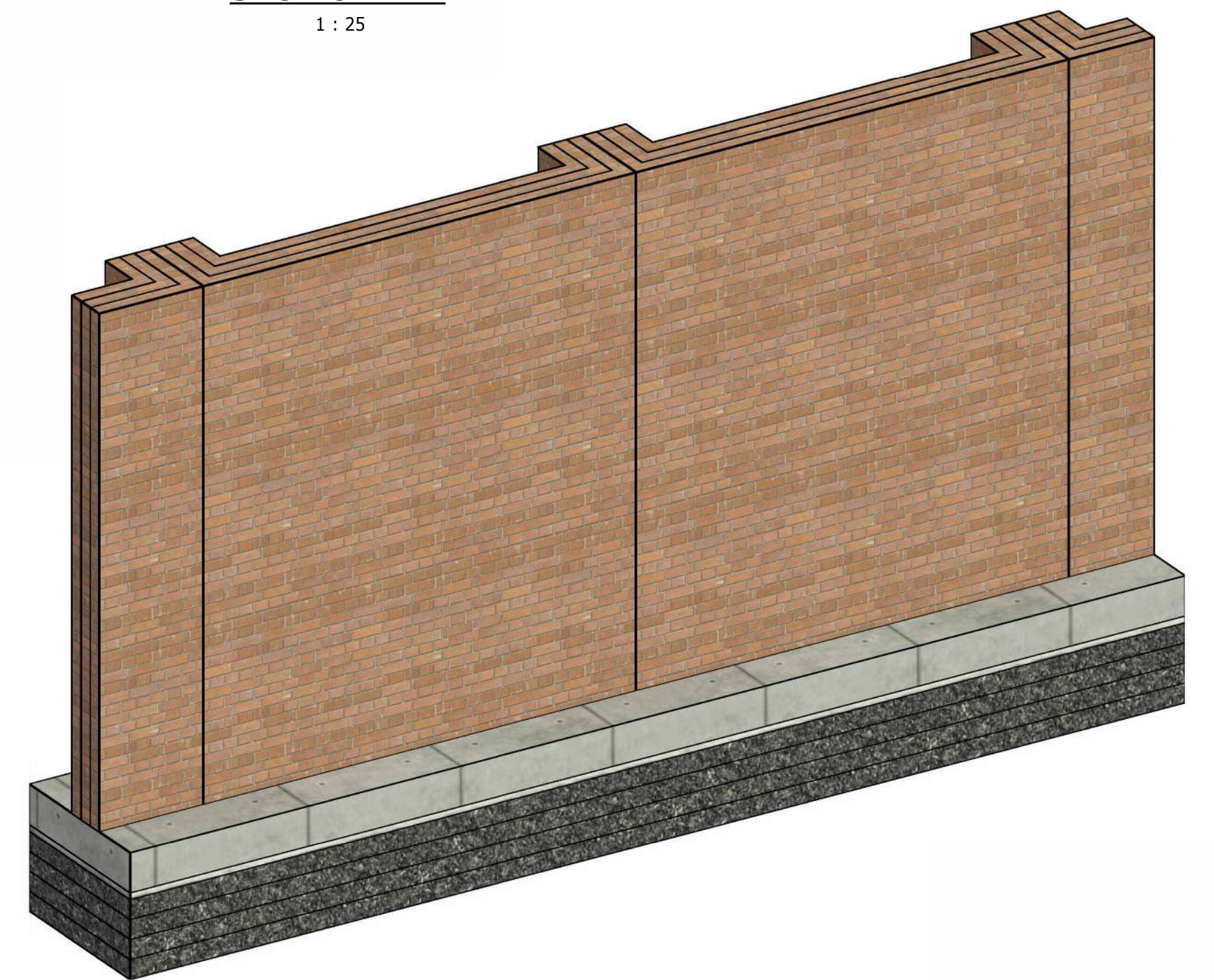
PLAN VIEW
1 : 25



TOP HEADER COURSE
1 : 10



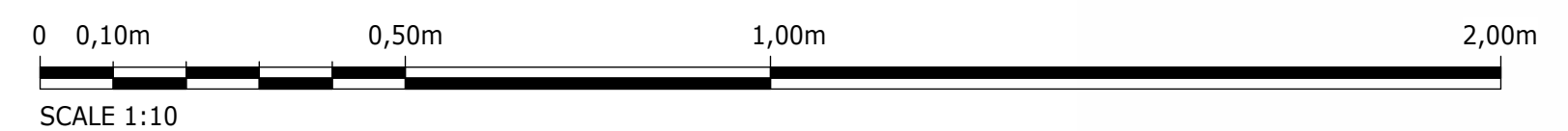
BELOW GROUND COURSE
1 : 10



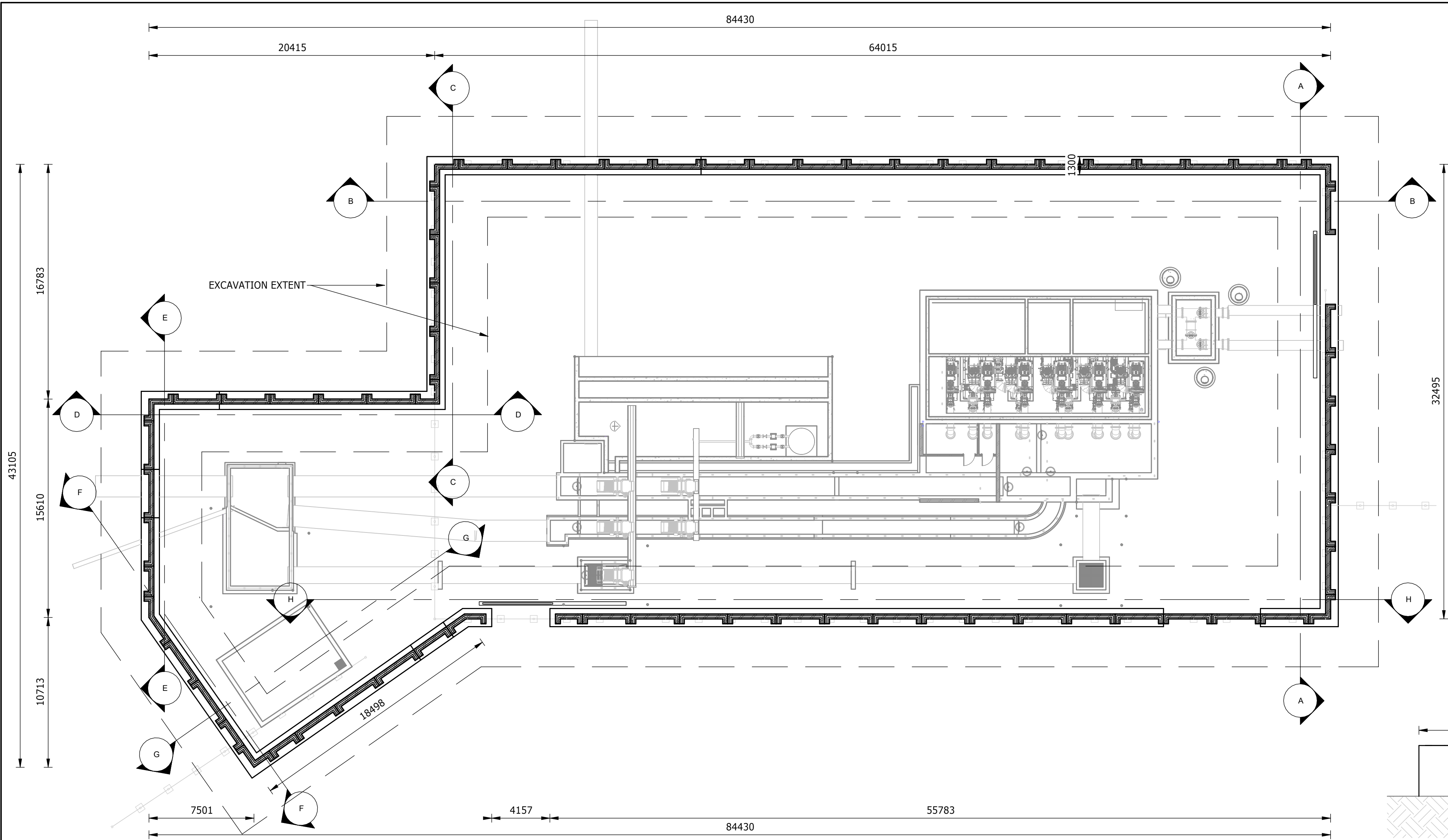
ISOMETRIC VIEW

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
 2. DO NOT SCALE OFF DRAWING, USE DIMENSIONS ONLY.
 3. ALL BRICKWORK TO BE IN ENGLISH BOND.
 4. ALL CONCRETE TO BE CLASS 30/19.
 5. MORTAR CLASS II TO BE USED.
 6. WALLS ARE TO END ON A PIER OR RETURN.
 7. AVERAGE MASONRY UNIT COMPRESSIVE STRENGTH TO BE GREATER THAN 7.0 MPa.
 8. STRIP FOOTING BOTTOM MESH, 50mm COVER.
 9. BRICKWORK TO BE FACEBRICK, TO SUIT EXISTING.
 10. WHERE ADEQUATE WORKING SPACE IS LIMITED AND THE REQUIRED EXCAVATION SLOPES MAY NOT BE ACHIEVED, SHORING OR SIMILAR APPROVED MEANS OF LATERAL SUPPORT SHALL BE PROVIDED.
 11. BRICKFORCE TO BE INSTALLED EVERY 3RD COURSE.

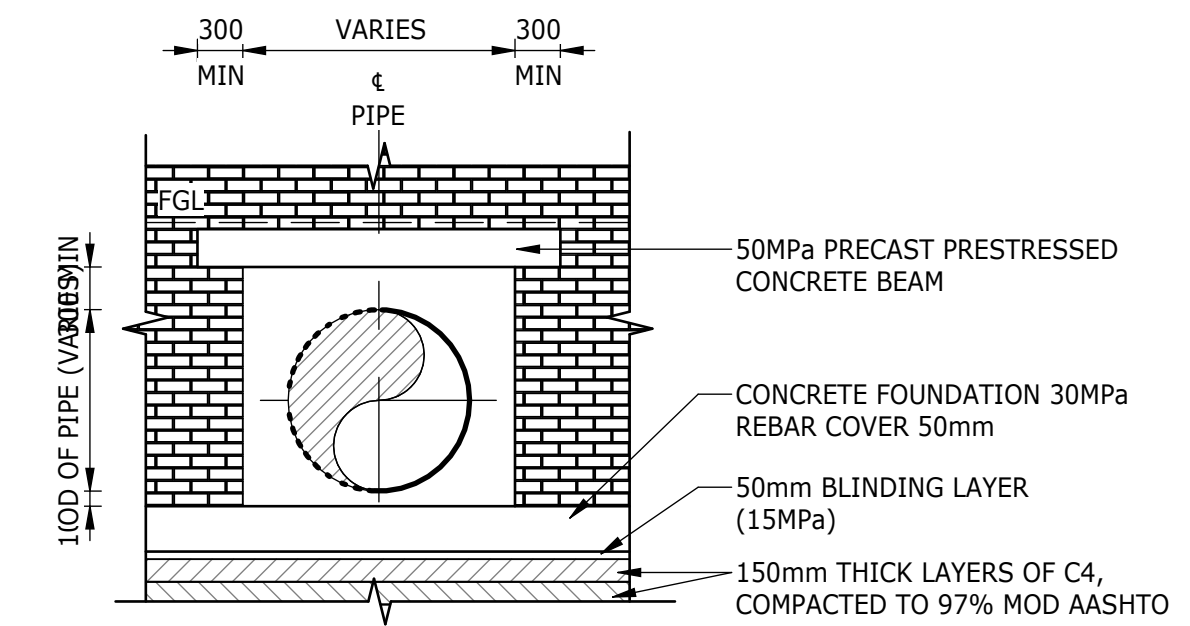
DEPARTMENT	APPROVED	DESIGNATION	DATE



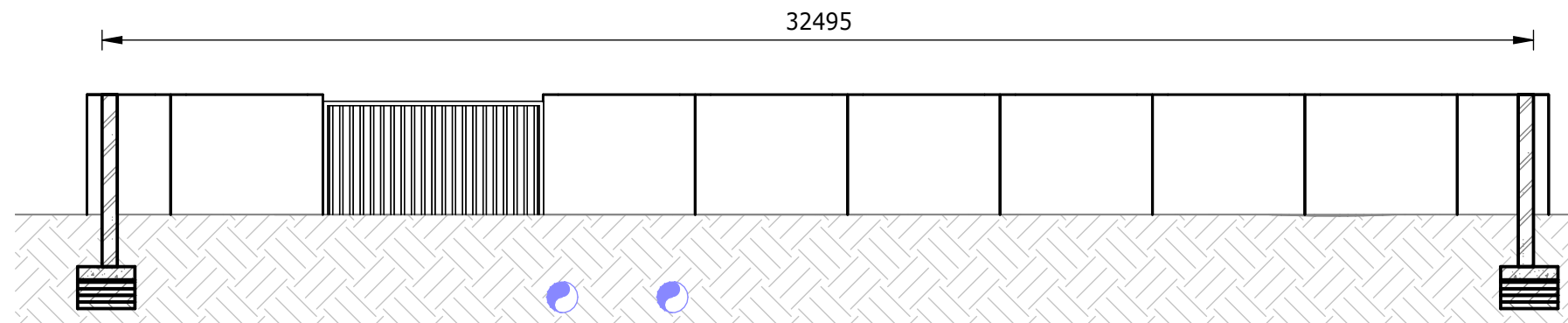
CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION INFRASTRUCTURES RENEWAL PLAN VAN WYKSURST PUMP STATION & SUBSTATION C PERIMETER WALL DETAIL			AS SHOWN	C01			ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER		
		DESIGNED	L. NAICKER				C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-06-D-C-0601						
		DRAWN	N. O'GORMAN									CONSULTANT'S NUMBER						
		CHECKED	L. NAICKER									BW1400-RHD-C1-06-D-C-0601						
		SERVICES CHECKED										FILE No						
		GEOTECHNICAL INVESTIGATION																
		SERVITUDES																
		APPROVED	DITHOLO PHOGOLE															
Pr. Eng.No.	20060098																	
DATE												C02						



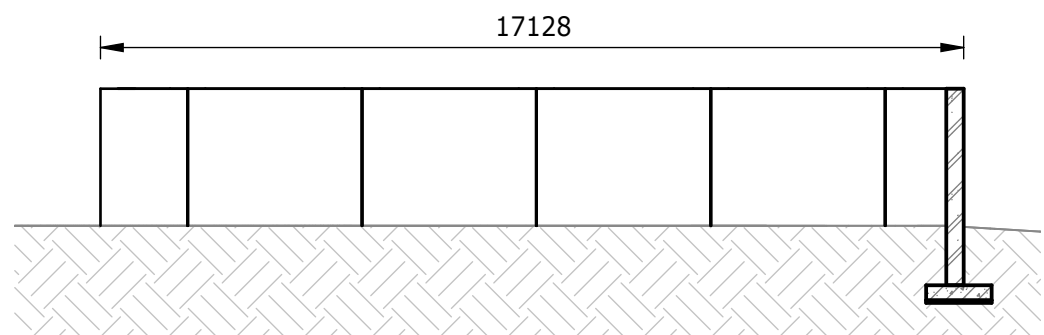
PLAN VIEW
1 : 200



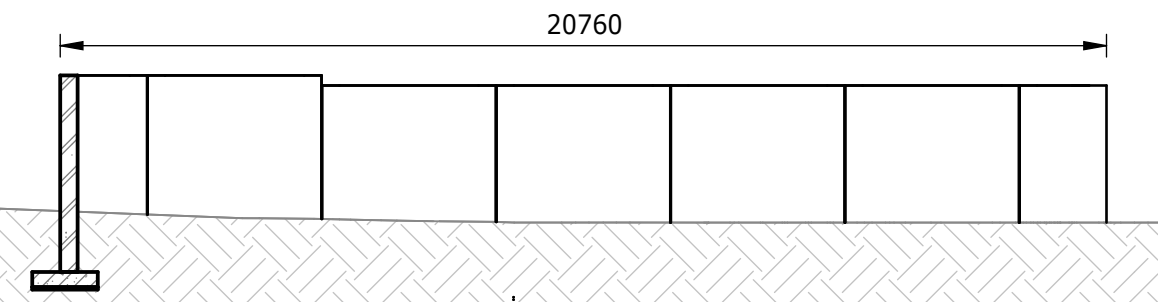
TYPICAL PIPE CROSSING THROUGH WALL DETAIL
1 : 50



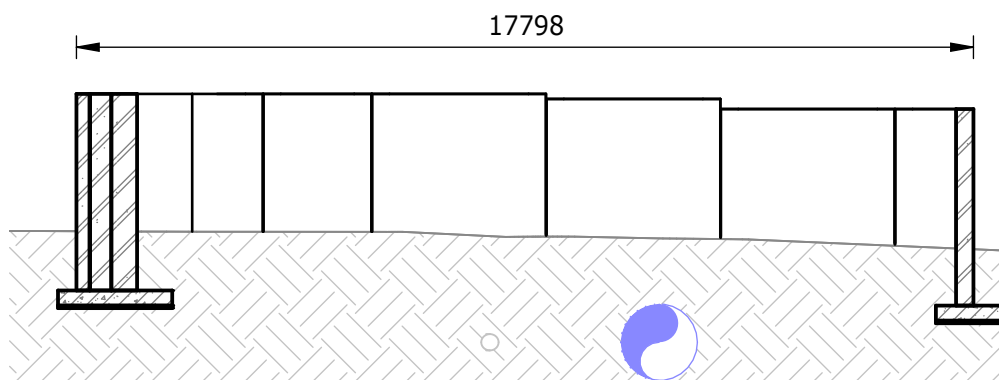
SECTION A-A
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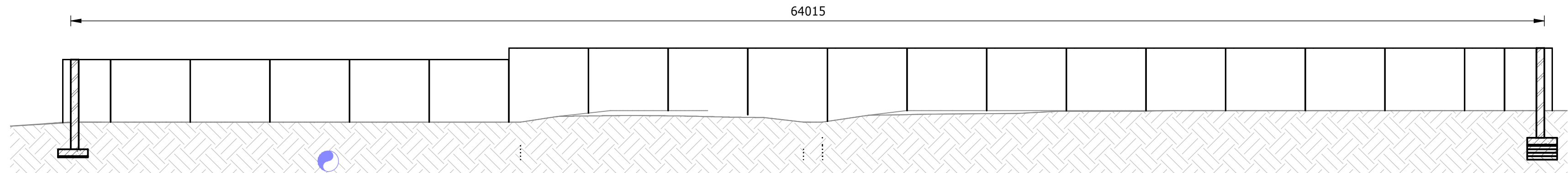
SECTION C-C
1 : 150



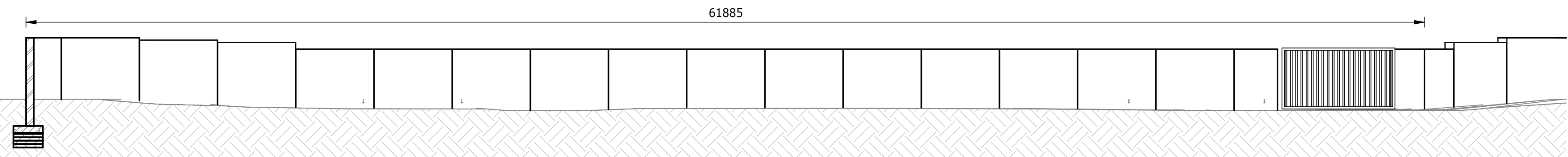
SECTION D-D
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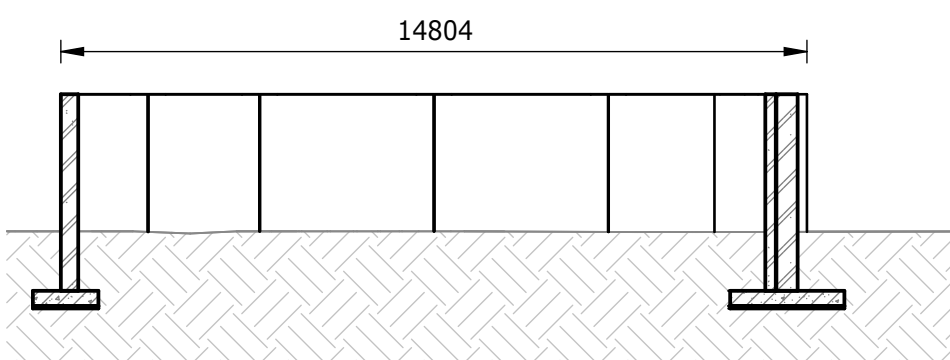
SECTION E-E
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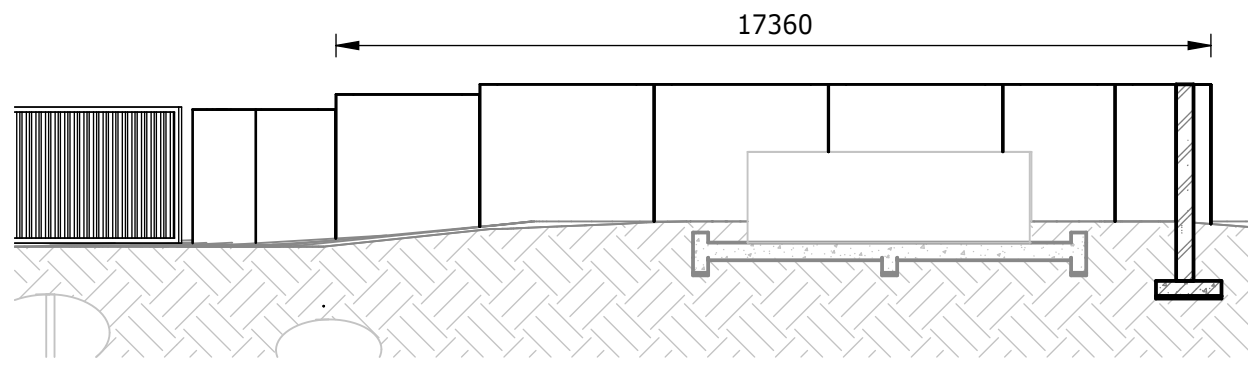
SECTION B-B
1 : 150



SECTION H-H
1 : 150

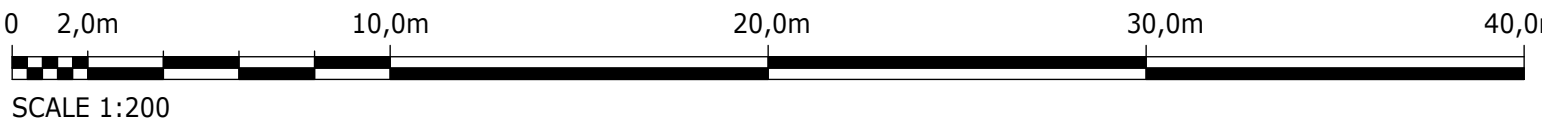


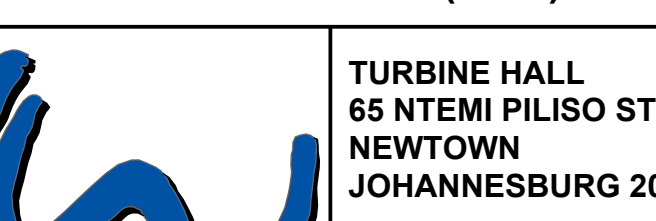
SECTION F-F
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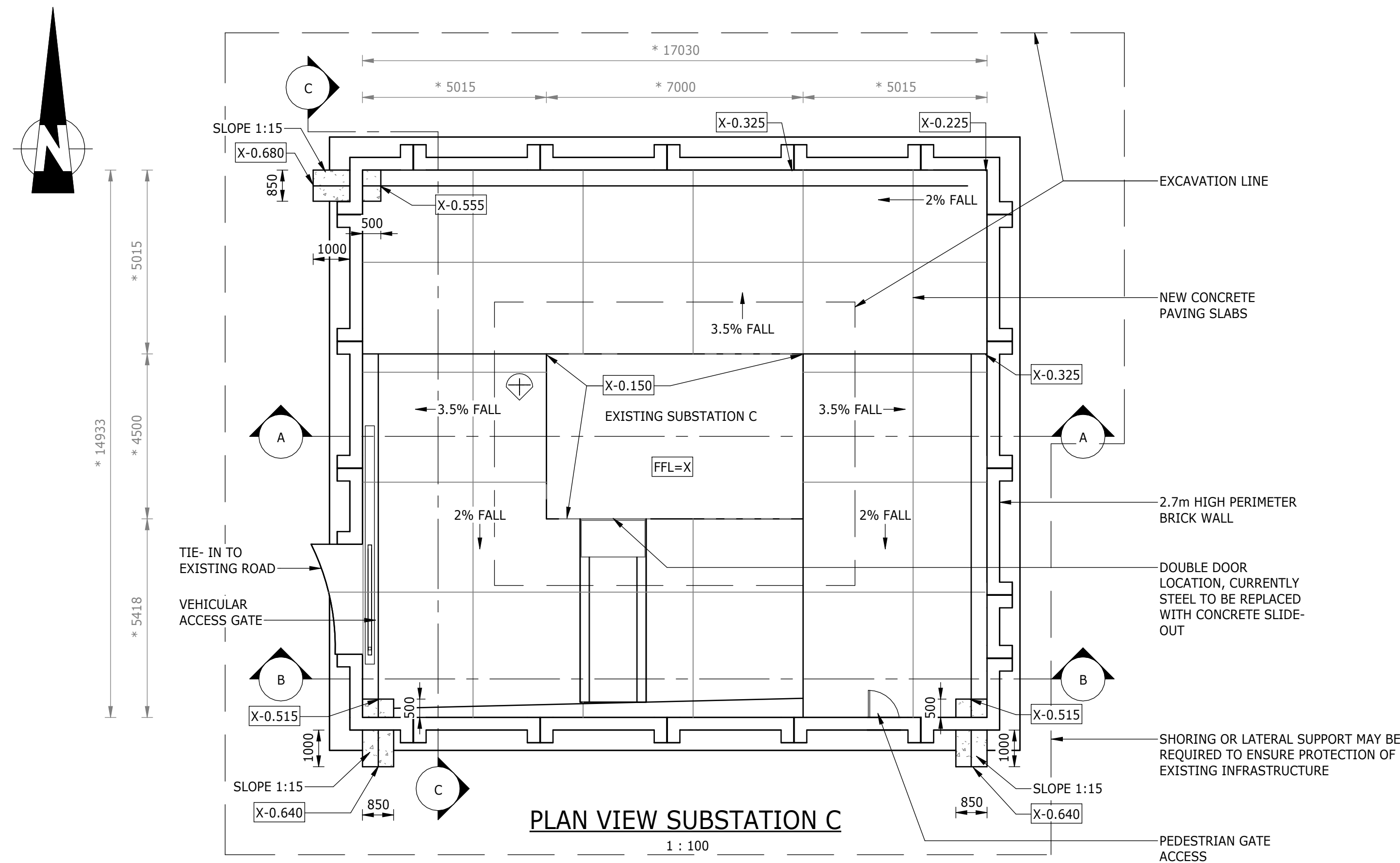


SECTION G-G
1 : 150

DEPARTMENT	APPROVED	DESIGNATION	DATE

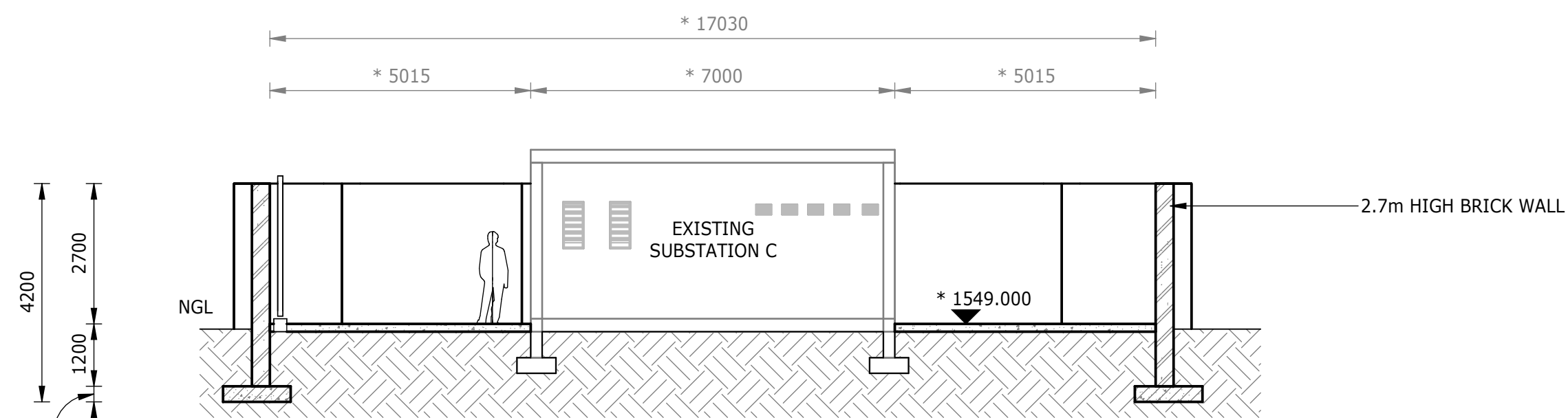


CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.				
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION	INFRASTRUCTURES RENEWAL PLAN VAN WYKS RUST PUMP STATION PERIMETER WALL SECTIONS			AS SHOWN	P01			ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER	
		DRAWN	N. O'GORMAN								C02			ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-06-D-C-0602	
		CHECKED	L. NAICKER											CONSULTANT'S NUMBER				
		SERVICES CHECKED												BW1400-RHD-C1-06-D-C-0602				
		GEOTECHNICAL INVESTIGATION												FILE No				
				SERVITUDES						C02								
				APPROVED	DITHOLO PHOGOLE													
				Pr. Eng.No.	20060098													
				DATE				DATE										



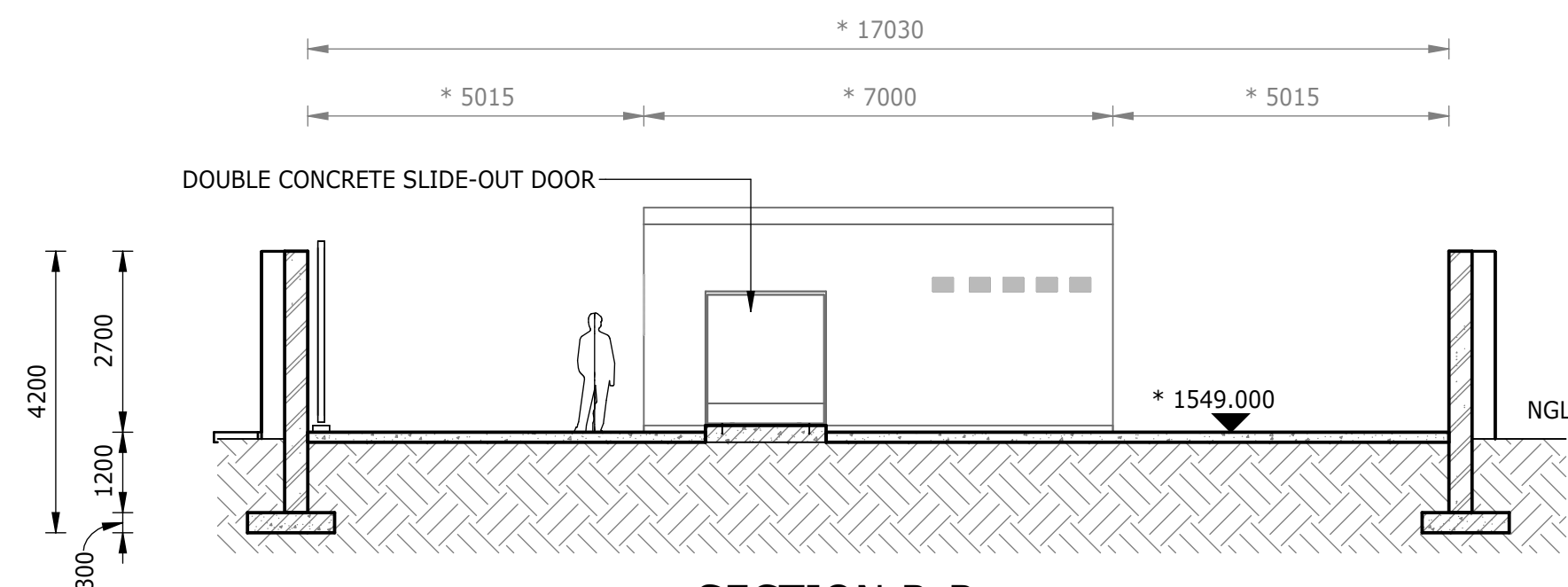
PLAN VIEW SUBSTATION C

1 : 100



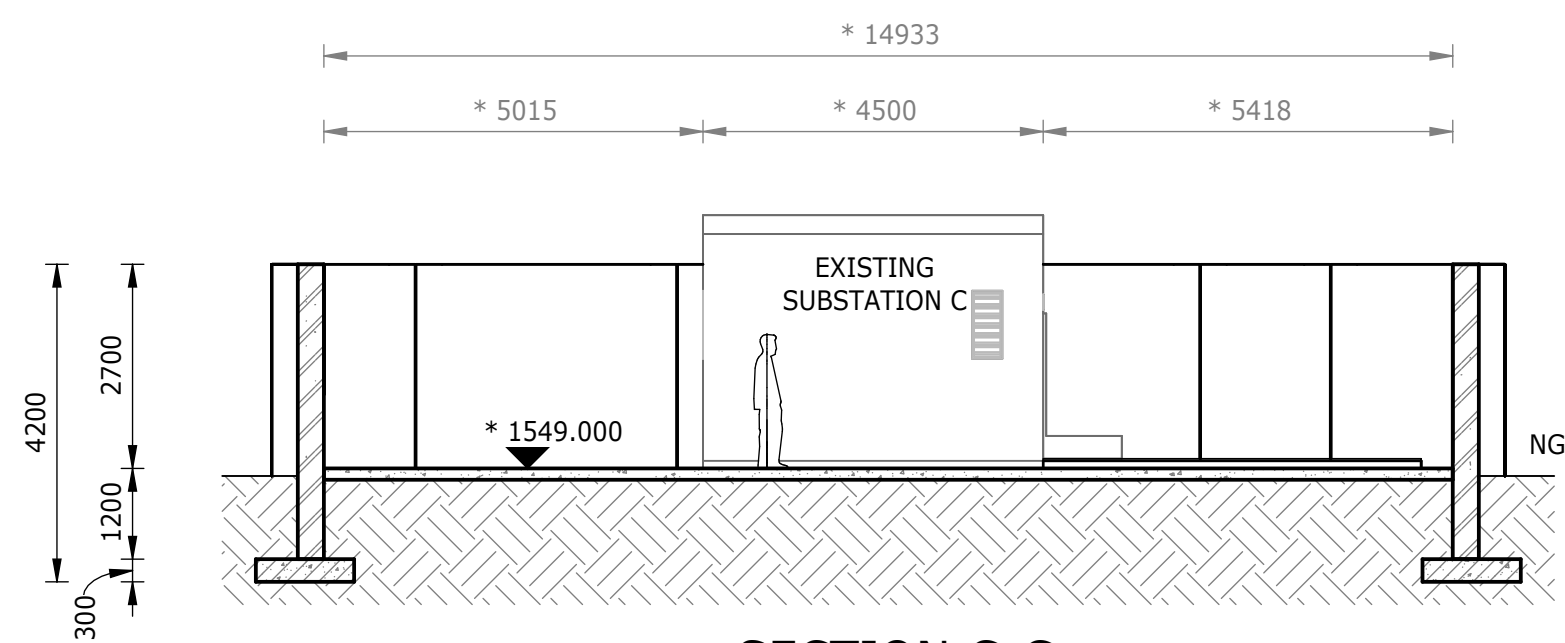
SECTION A-A

1 : 100



SECTION B-B

1 : 100



SECTION C-C

1 : 100



PLAN VIEW SUBSTATION C

1 : 250

NOTES:

1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. SETTING-OUT DETAILS TO BE CONFIRMED ONCE THE ENGINEER IS IN RECEIPT OF THE CONTRACTORS SURVEYS (BOTH GPR AND TOPOGRAPHICAL).
3. CONSTRUCTION ACTIVITIES TO ENSURE NO DAMAGE TO EXISTING INFRASTRUCTURE. METHOD STATEMENTS REQUIRED PRIOR TO COMMENCEMENT OF SUCH ACTIVITIES.
4. SEE DRAWING BW1400-RHD-C1-06-D-C-0601 FOR PERIMETER WALL DETAIL.
5. SEE DRAWING BW1400-RHD-C1-12-D-C-1201 FOR TYPICAL PAVEMENT DETAILS.
6. SEE DRAWING BW1400-RHD-C1-12-D-C-1201 FOR DOOR INFORMATION.
7. SHORING OR OTHER APPROPRIATE LATERAL SUPPORT TO CONTRACTORS DETAILS, WHERE REQUIRED.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.



EXISTING SUBSTATION C

DEPARTMENT	APPROVED	DESIGNATION	DATE



Building No. 5 Country
Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	L. NAICKER
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD



TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001
TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
GENERAL LAYOUT OF
SUBSTATION C

DESIGN
MANAGER

DATE

SCALE

AS
SHOWN

AMENDMENTS

APPROVED

DATE

DRAWING No.

C01

ISSUED FOR TENDER

D. PHOGOLE

FEB 25

C02

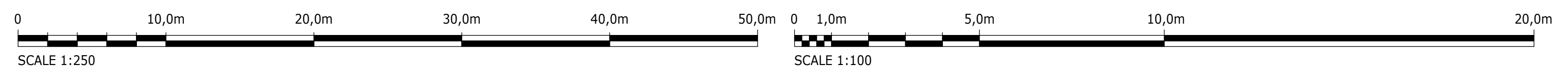
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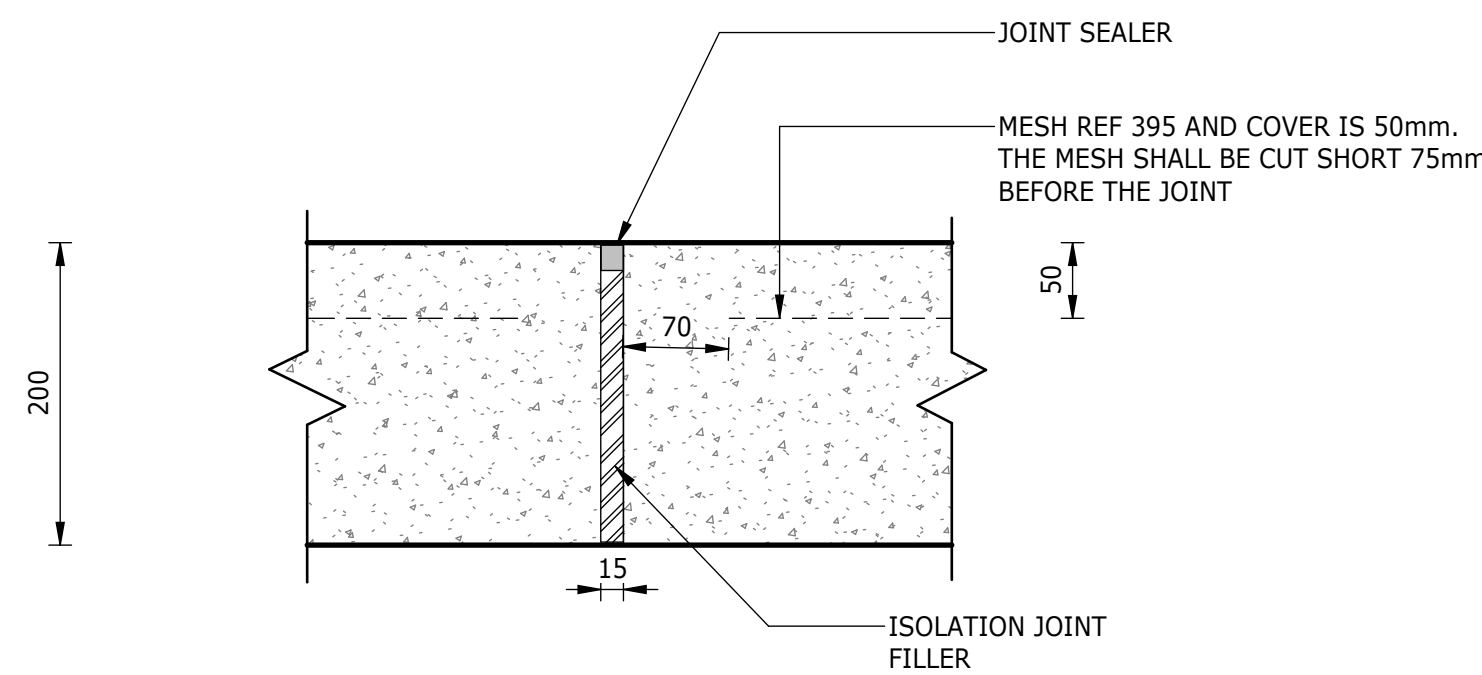
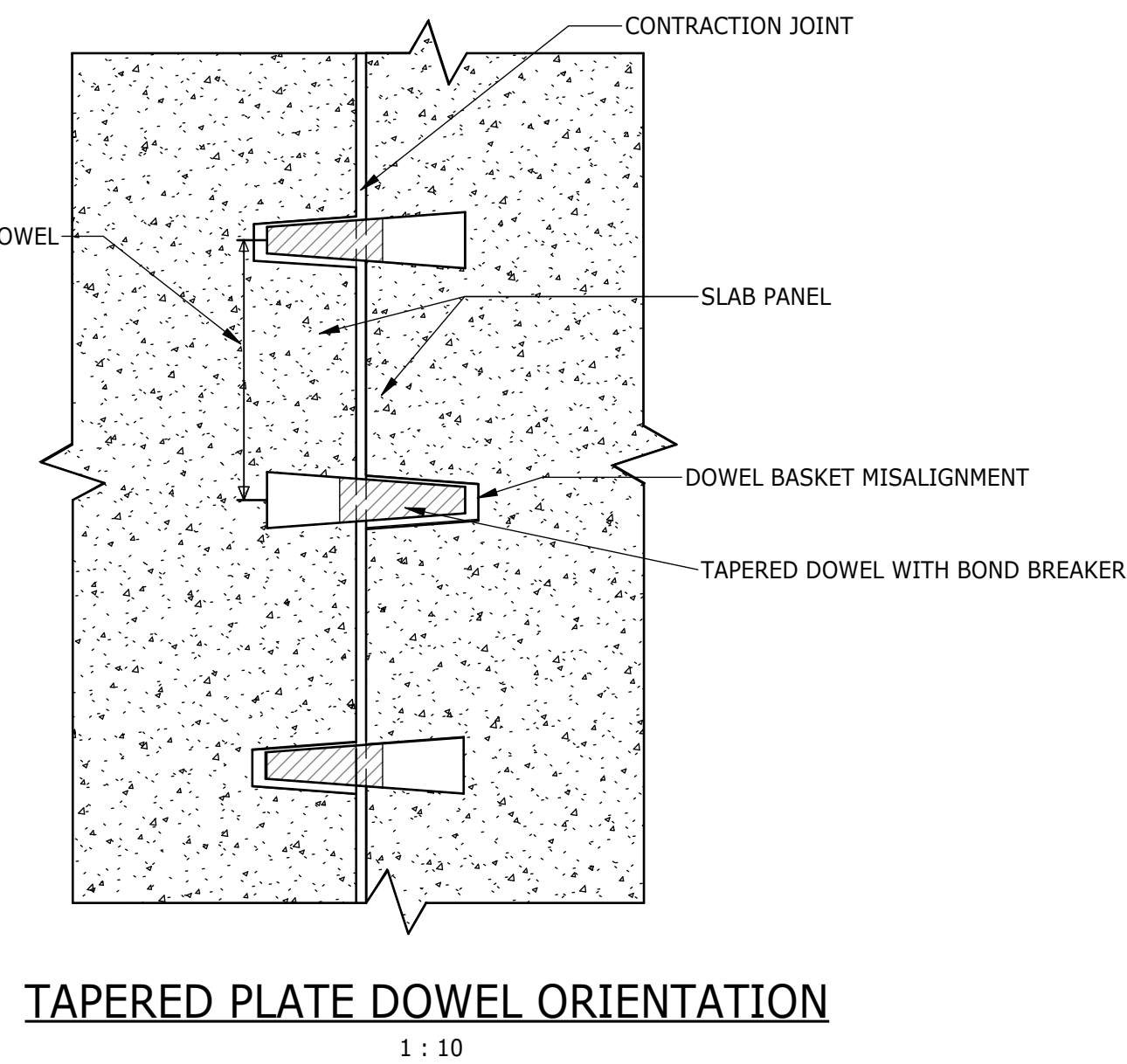
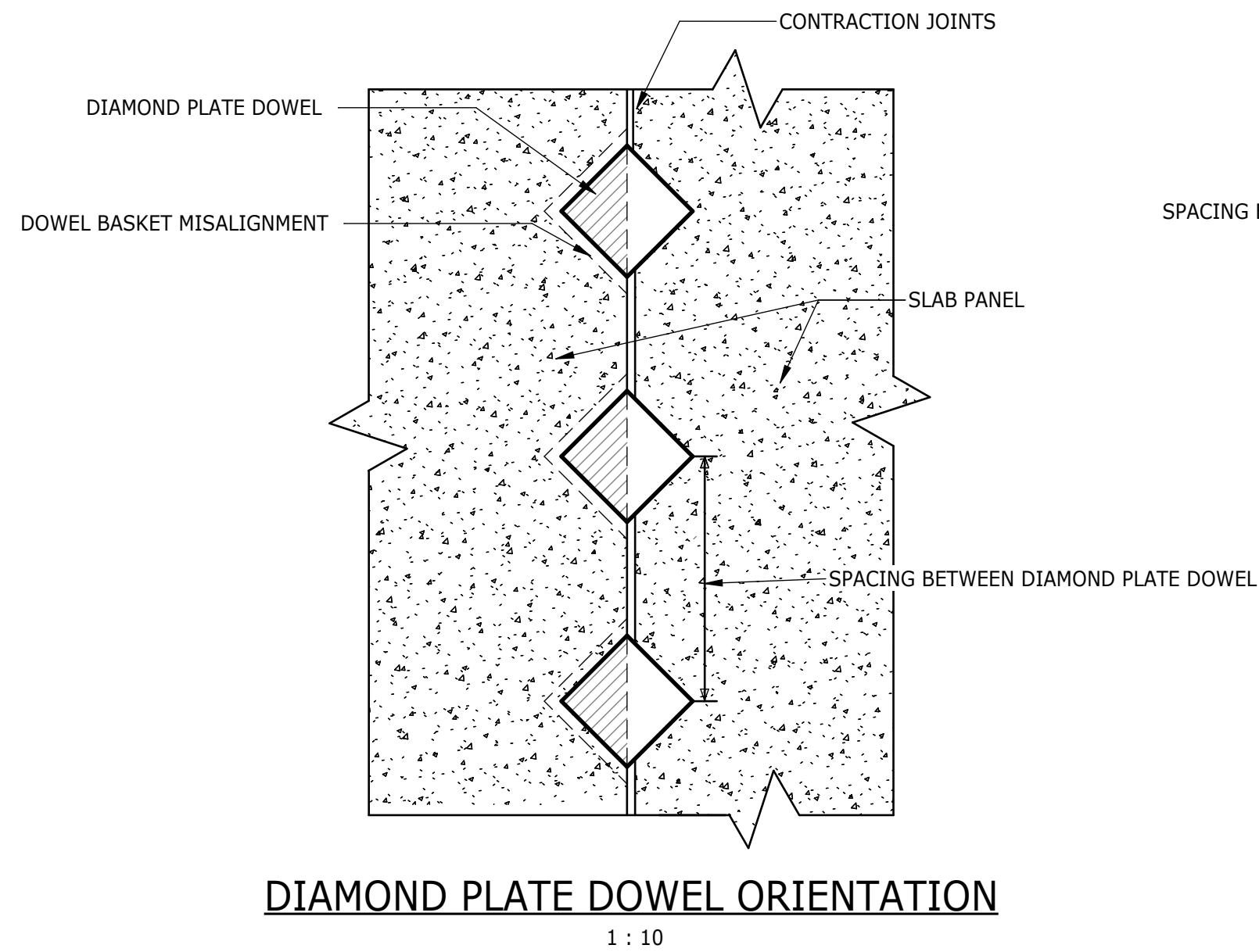
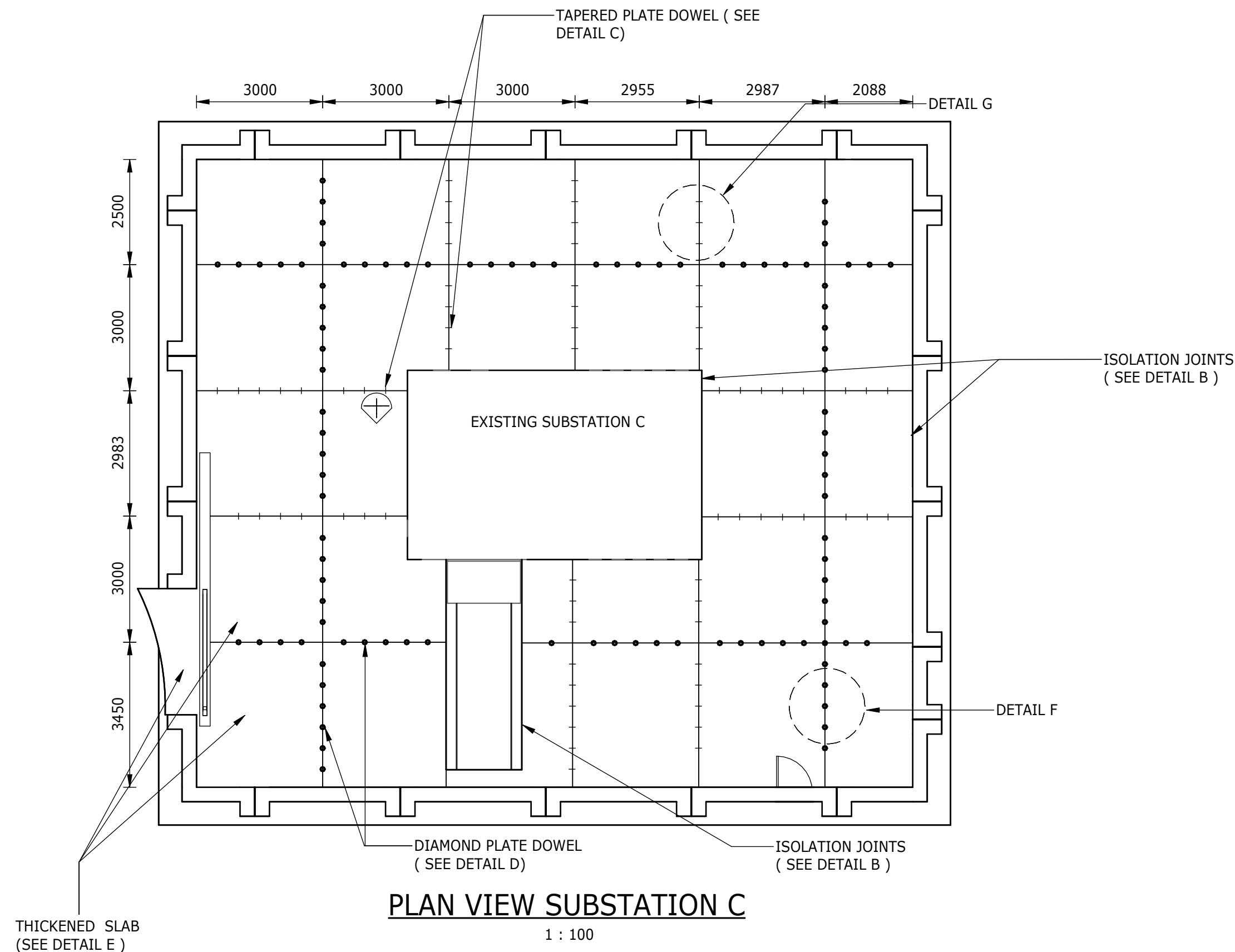
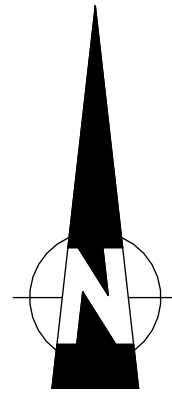
D. PHOGOLE

FEB 25

JW NUMBER
JW14466R-RHD-C1-07-D-C-0701
CONSULTANT'S NUMBER
BW1400-RHD-C1-07-D-C-0701
FILE No

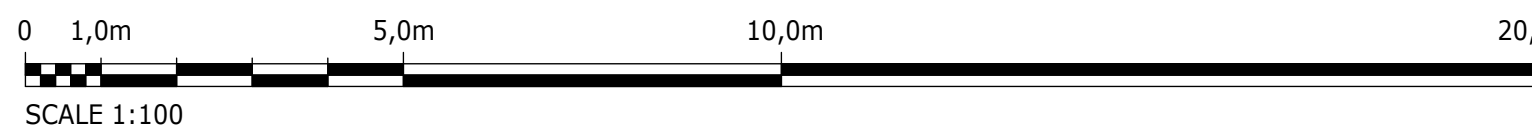
C02



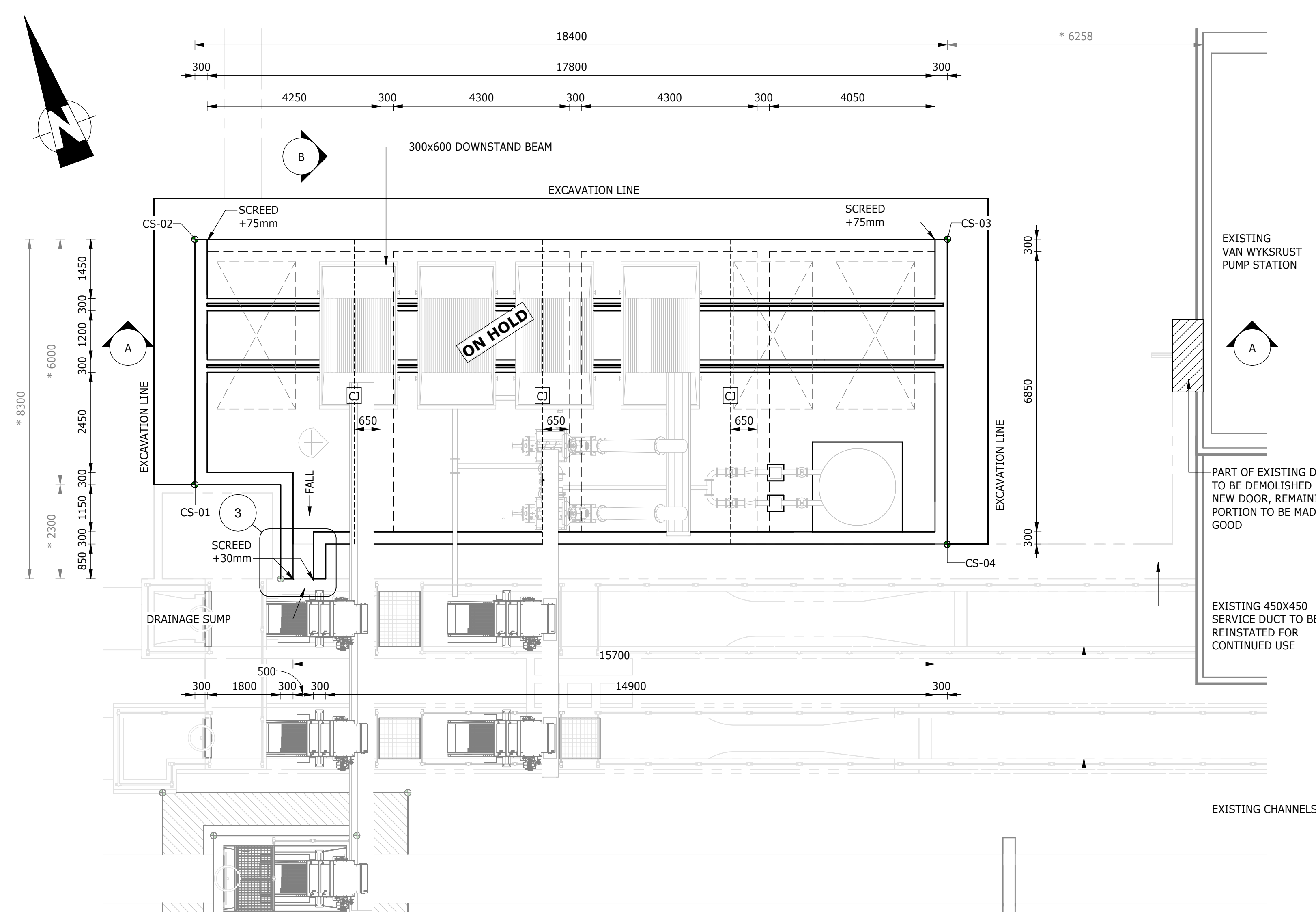


- NOTES ON DOWEL JOINTED PLAIN CONCRETE (DJPC) CONSTRUCTION
- SEE DRAWING BW1400-RHD-C1-12-D-C-1201 FOR TYPICAL PAVEMENT DETAILS.
 - - REPRESENTS TAPERED PLATE DOWEL (SEE DETAIL C)
 - - REPRESENTS DIAMOND PLATE DOWEL (SEE DETAIL D)
 - JOINTS MUST BE DRY AND DUST FREE, LOOSE MATERIAL MUST BE BLOWN AWAY WITH COMPRESSED AIR, BEFORE IT IS SEALED.
 - INSERT BACKING CHORD TO REQUIRED DEPTH, PREFERABLY USING A DEPTH-GAUGE TOOL TO ENSURE EVEN JOINT.
 - JOINT MUST BE SEALED WITH THE SPECIFIED SILICON SEALANT. THE SEALANT MUST BE POURED INTO THE JOINT, ENSURING THAT THE JOINT IS COMPLETELY FILLED.
 - JOINT SURFACE MUST BE TOOLED WITH A CONCAVE SMOOTHING TOOL AND ANY EXCESS SEALANT REMOVED. (IF SO REQUIRED BY THE SEALANT MANUFACTURER'S TECHNICAL SPECIFICATIONS.
 - JOINTS SHOULD NOT BE STRESSED FOR AT LEAST 48 HOURS AFTER SEALING. TRAFFIC SHOULD BE KEPT OFF THE CONCRETE SLABS FOR AT LEAST 48 HOURS.
 - THE THICKNESS OF THE SILICON SEALANT SHOULD NEVER EXCEED THE WIDTH OF THE JOINT. SILICON SEALANTS SHALL NOT BE POURED IN THICKNESS EXCEEDING 20mm. SILICON SEALANTS SHALL TO BE PERFORMED AS PER MANUFACTURER'S SPECIFICATIONS.
 - ALL CONCRETE FINISHED BY BROOMING (TEST PANEL TO BE CAST AND APPROVED BY CLIENT).
 - ALL CONCRETE MUST BE PROPERLY CURED TO PREVENT MOISTURE LOSS AND EXCESSIVE SHRINKAGE. CURING COMPOUND TO BE PRESENTED TO THE ENGINEER AT LEAST 7 DAYS PRIOR TO CONSTRUCTION FOR APPROVAL.
 - CONCRETE QUALITY, STRENGTH AND COMPOSITION SHALL COMPLY WITH THE REQUIREMENTS OF CLAUSE 7103.
 - ALL CONCRETE COMPONENTS TO COMPLY WITH PROJECT SPECIFICATIONS.
 - DETAIL "TAPERED PLATE DOWELED TRANSVERSE CONTRACTION JOINT" DOWELS FOR THE 150mm CONCRETE SLAB HAVE DIMENSIONS 85x300x40x15 AT 500mm SPACING. A SAWN JOINT IS REQUIRED FOR THE CONTRACTION JOINT. BOND BREAKER DETAILS TO BE SUBMITTED TO ENGINEER FOR APPROVAL AT LEAST 14 DAYS BEFORE APPLICATION. DETAIL "A" SAW CUTS TO BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGE TO SURROUNDING CONCRETE SURFACE.
 - THE SUBBASE SHOULD BE PRIMED TO CURE THE SUBBASE AND TO BIND THE FINES NEAR THE TOP OF THE SURFACE AS TO INCREASE THE DURABILITY OF THE MATERIAL. THE SUBBASE SHOULD BE FREE FROM DUST AND STRUCTURALLY SOUND PRIOR TO CASTING OF CONCRETE. AREA SHOULD BE DAMP PRIOR TO CASTING OF CONCRETE.
 - COMMITTEE OF LAND AND TRANSPORT OFFICIALS (COLTO) 1998, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES WILL APPLY TO THE CONSTRUCTION OF THE RELATED WORKS. MORE SPECIFICALLY COLTO SECTION 7100 FOR THE RELATED CONCRETE WORKS.
 - STEEL FOR PLATE DOWELS SHALL COMPLY WITH SANS SPECIFICATIONS FOR CLAUSE 7102 (F) OF COLTO FOR DOWELS. EDGES SHALL BE SAWN AND TRIMMED SMOOTH.

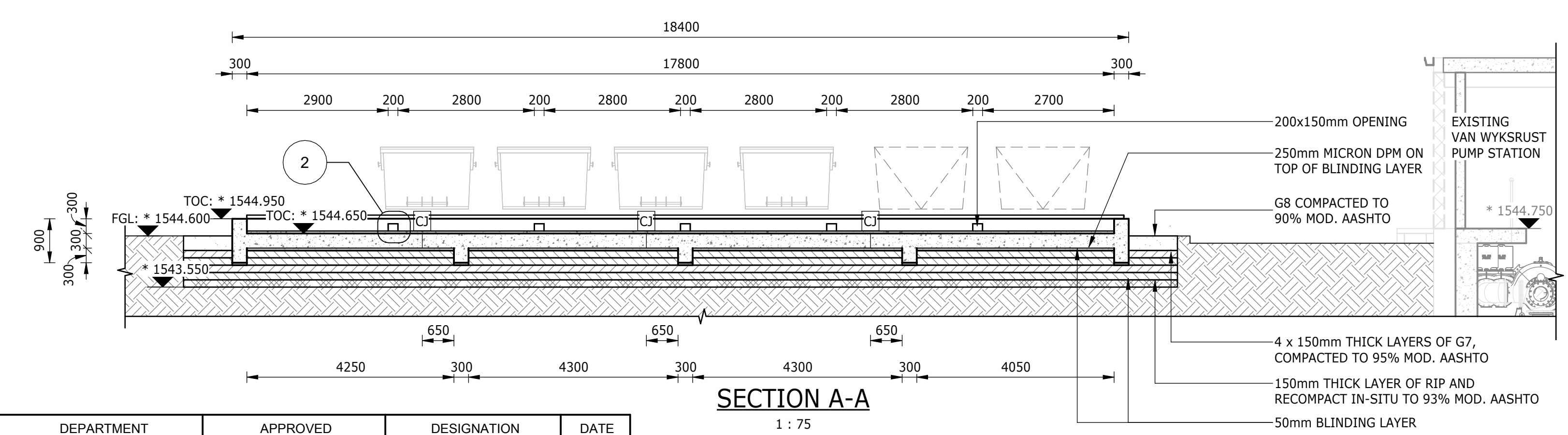
DEPARTMENT	APPROVED	DESIGNATION	DATE



CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	T. MOETI		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN GENERAL PAVEMENT LAYOUT AND DETAILS OF SUBSTATION C	AS SHOWN			C01	ISSUED FOR INFORMATION			D. PHOGOLE	SEP 25	JW NUMBER				
		C02	ISSUED FOR RE-TENDER					D. PHOGOLE	FEB 25	JW14466R-RHD-C1-07-D-C-0702										
										CONSULTANT'S NUMBER										
										BW1400-RHD-C1-07-D-C-0702										
										FILE No										
										C02										



PLAN VIEW
1 : 75



SECTION A-A
1 : 75

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

Building No. 5 Country Club Estate
21 Woodlands Drive Woodmead
2191
PO Box 867 Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	L. NAICKER
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD

TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

VAN WYKSRUST PUMP STATION

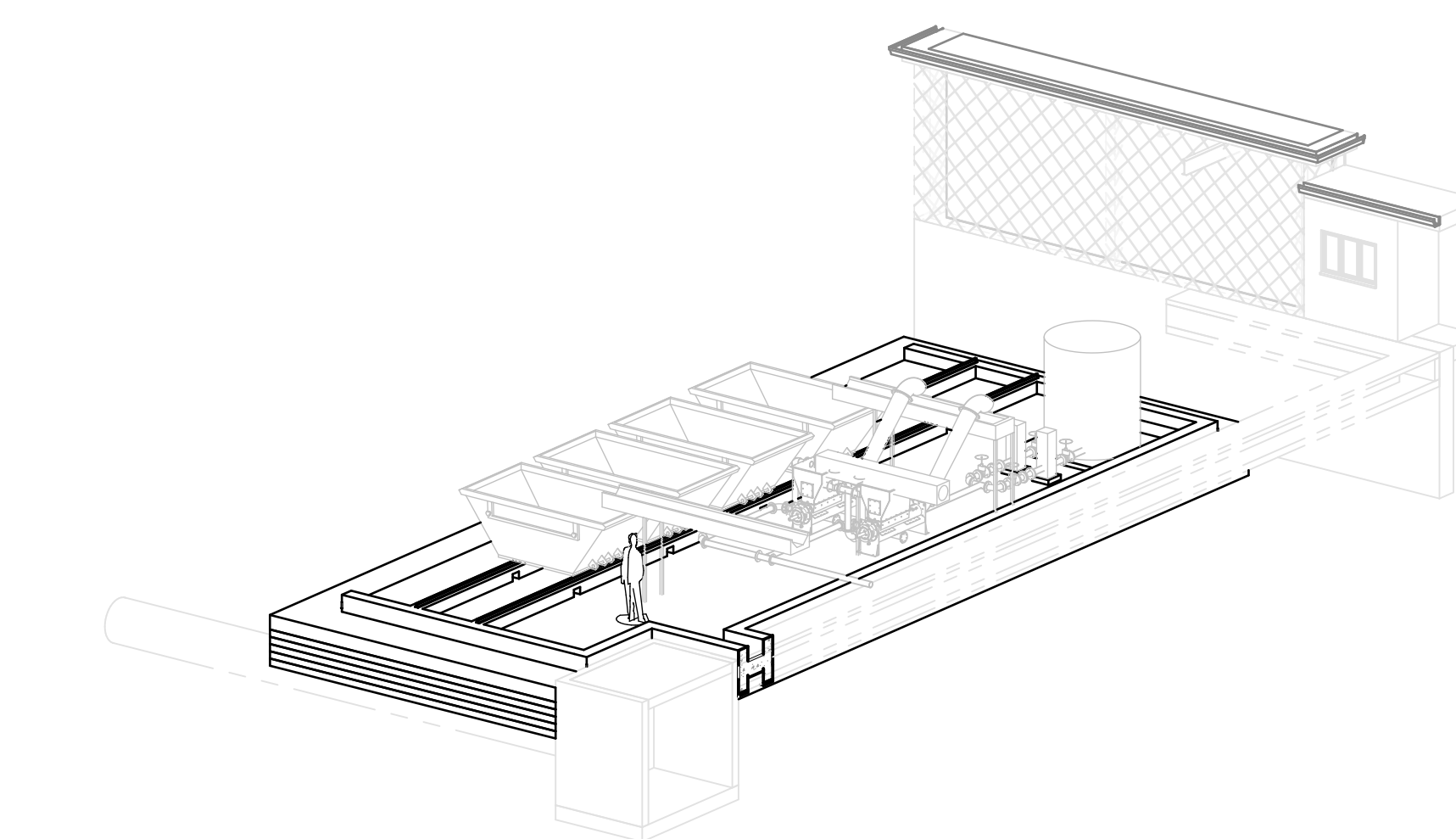
SCREENINGS SLAB

GENERAL ARRANGEMENT, DETAILS & EARTHWORKS

DESIGN MANAGER

DATE

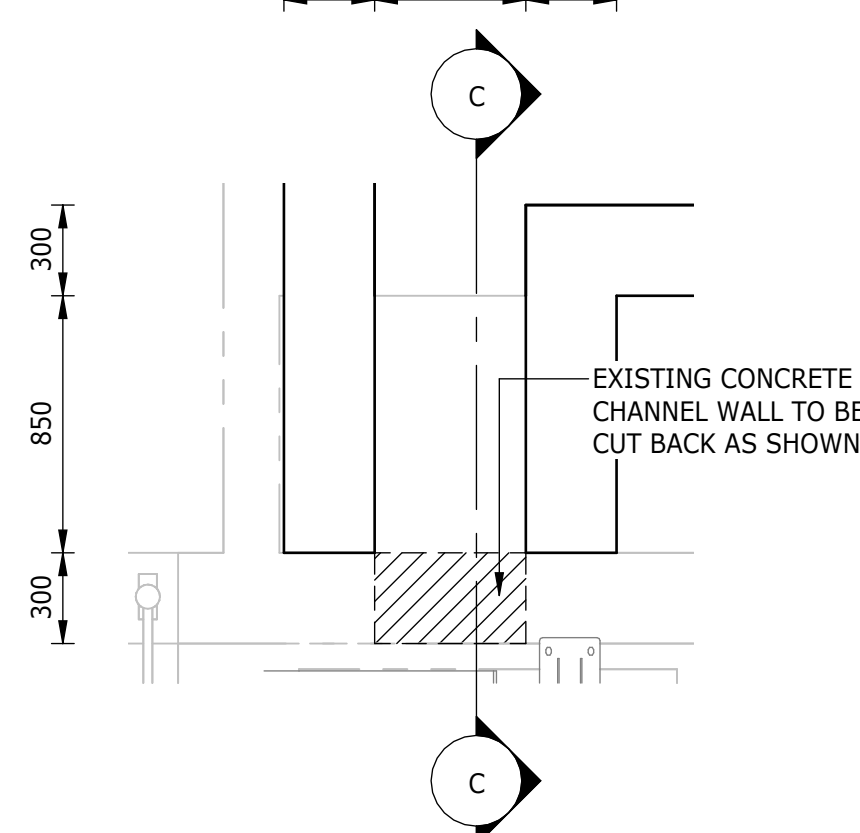
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AS SHOWN	C01 ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
	C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-09-D-C-0901
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-09-D-C-0901
				FILE No
				C02



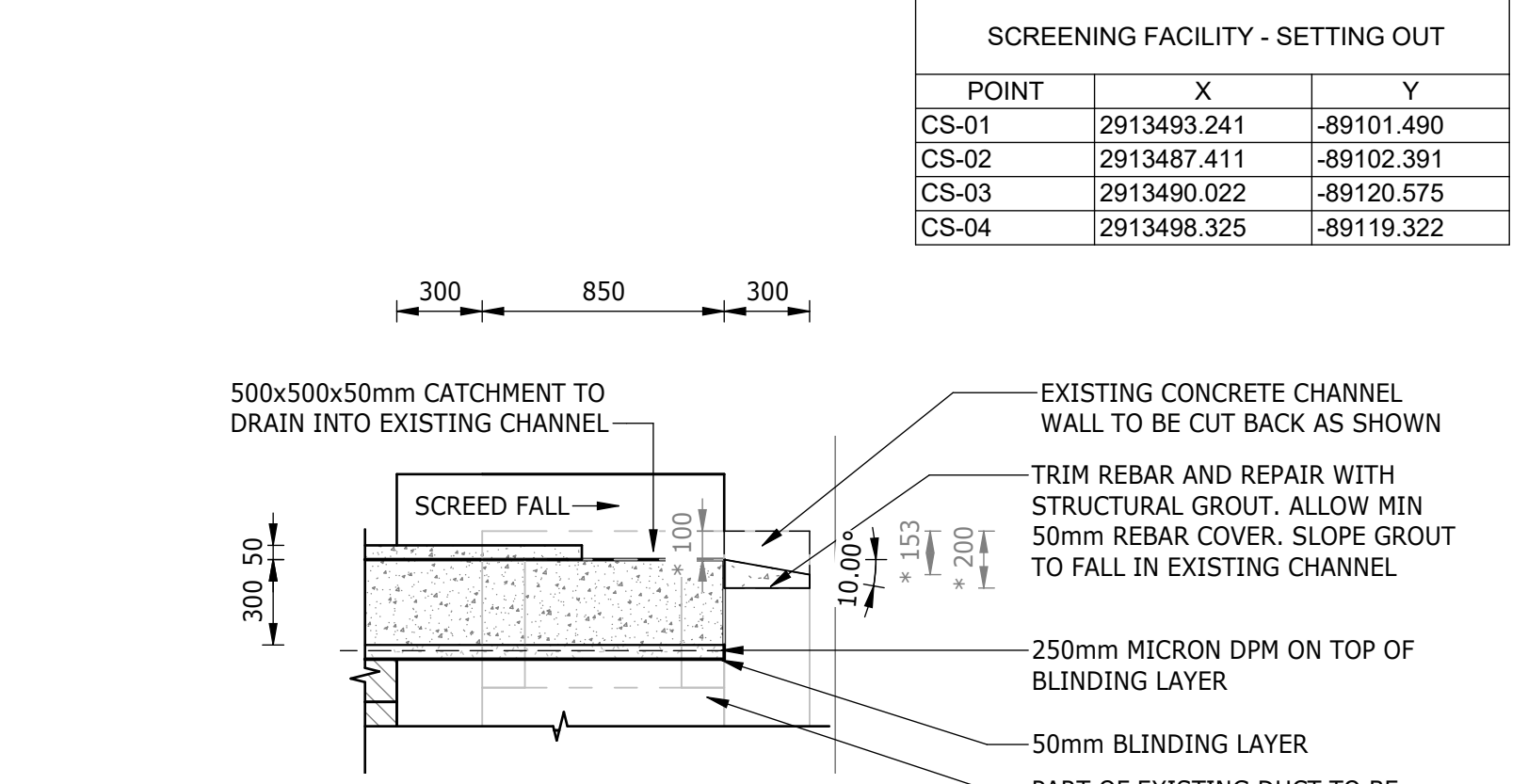
TYPICAL ISOMETRIC VIEW

- NOTES:**
- ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 - EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
 - EXCAVATION METHOD AND EXTENT TO ENSURE THAT THERE IS NO DAMAGE TO EXISTING INFRASTRUCTURE. AN EXCAVATION AND COMPACTION METHOD STATEMENT IS TO BE PROVIDED, FOR APPROVAL BY THE ENGINEER, PRIOR TO EXCAVATION.
 - SETTING-OUT POINTS ARE A GUIDE; FINAL EXCAVATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
 - MECHANICAL EQUIPMENT INDICATED ON THIS DRAWING ARE SCHEMATIC.
 - CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
 - CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 - CONCRETE STRENGTH TO BE 30MPa WITH 15MPa BLINDING LAYER.
 - "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.

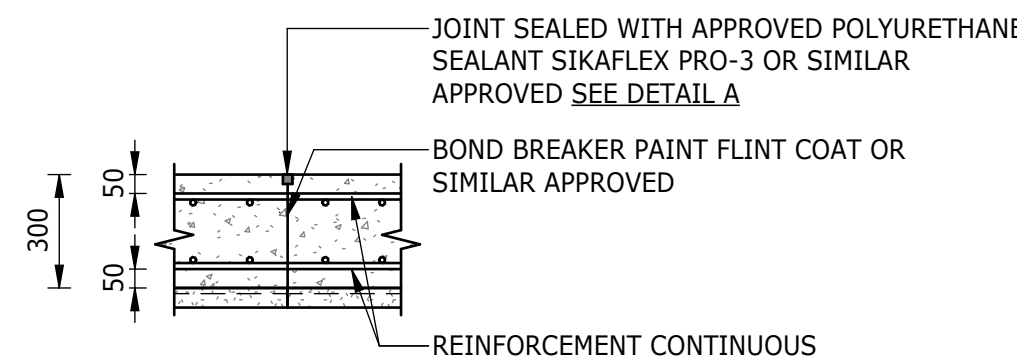
SCREENING FACILITY - SETTING OUT		
POINT	X	Y
CS-01	2913493.241	-89101.490
CS-02	2913487.411	-89102.391
CS-03	2913490.022	-89120.575
CS-04	2913498.325	-89119.322



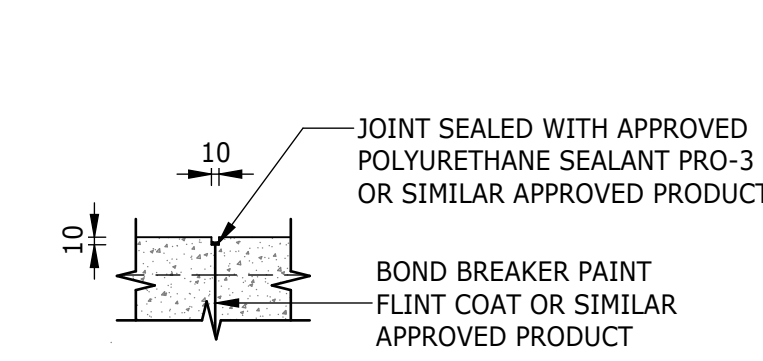
DETAIL 3: DRAINAGE CATCHMENT
1 : 25



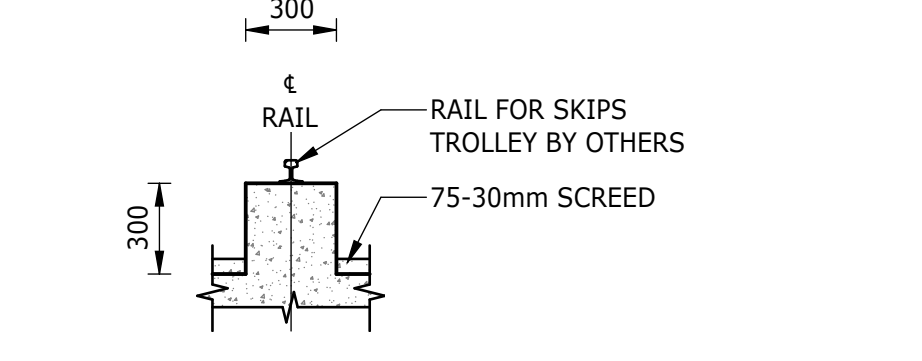
SECTION C-C
1 : 25



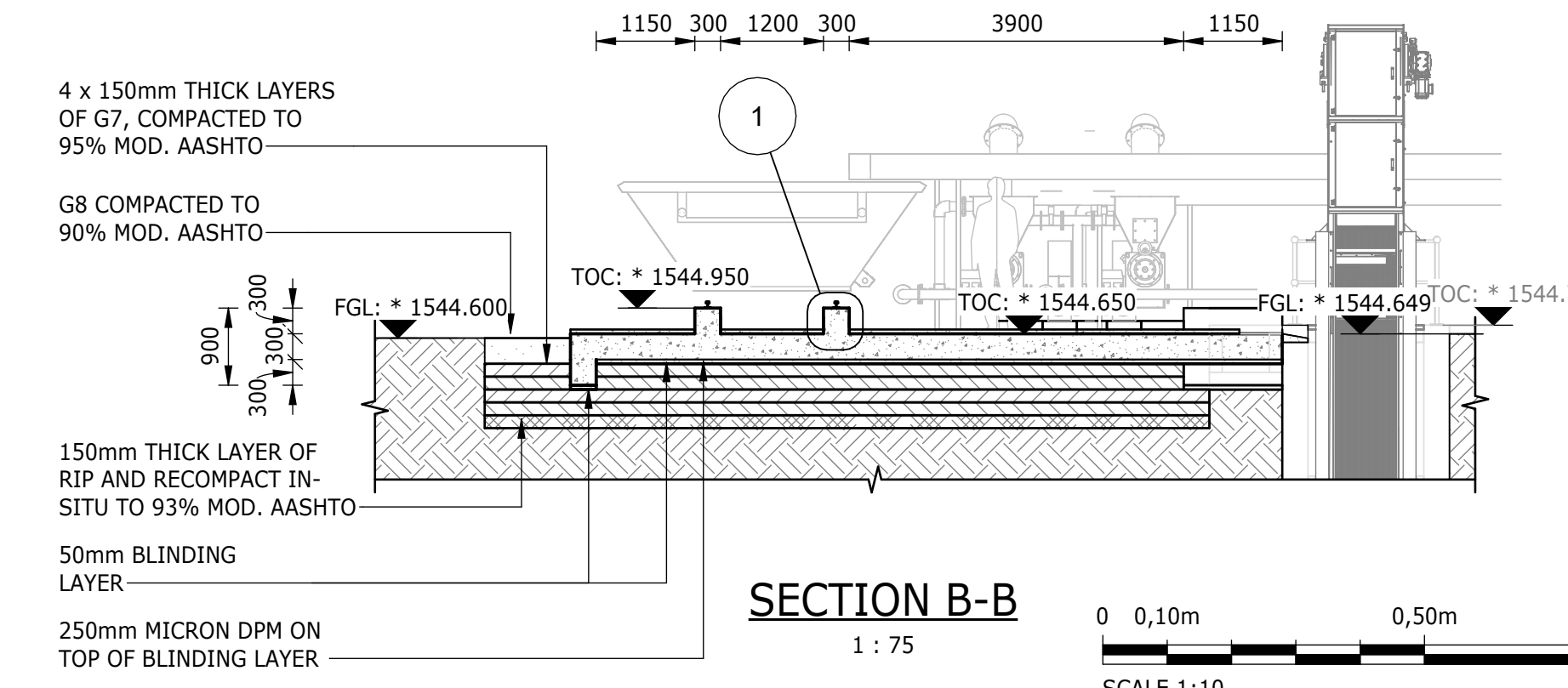
FLOOR CONTRACTION JOINT (CJ)
1 : 20
(INCLUDING GROUND BEAMS)



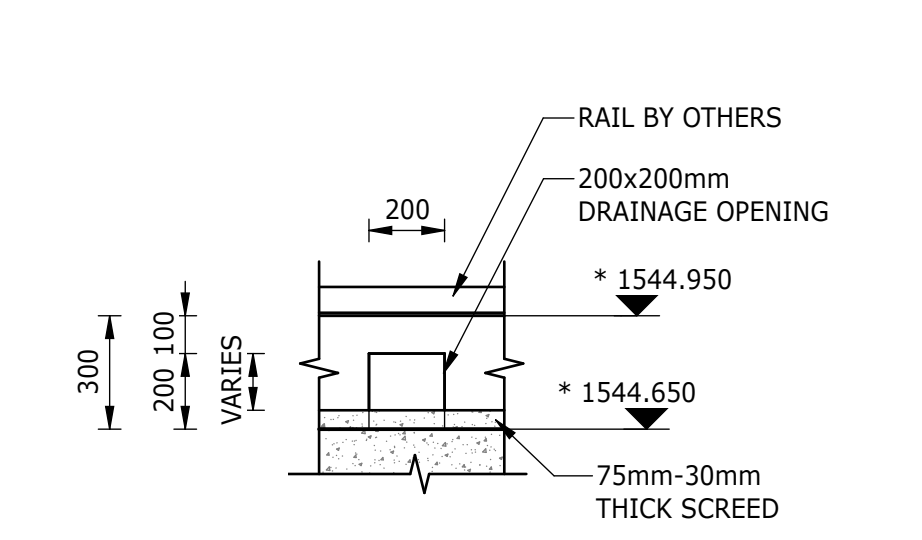
DETAIL A
1 : 10



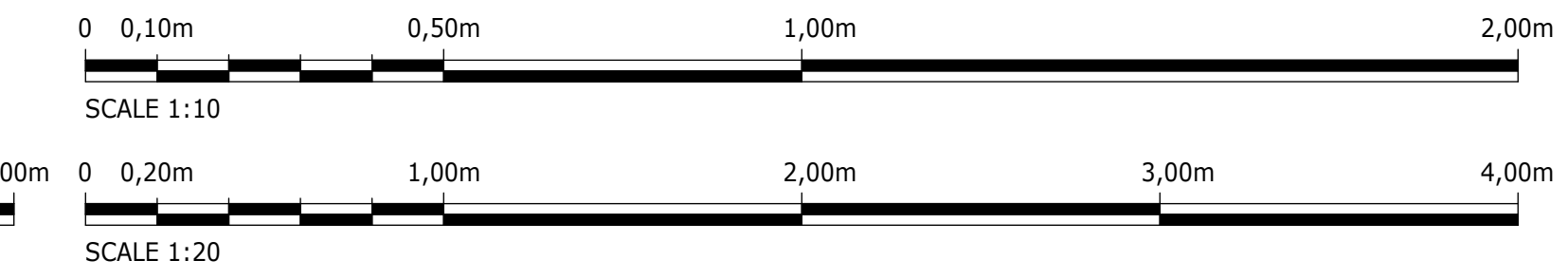
DETAIL 1: STEEL RAIL
1 : 25

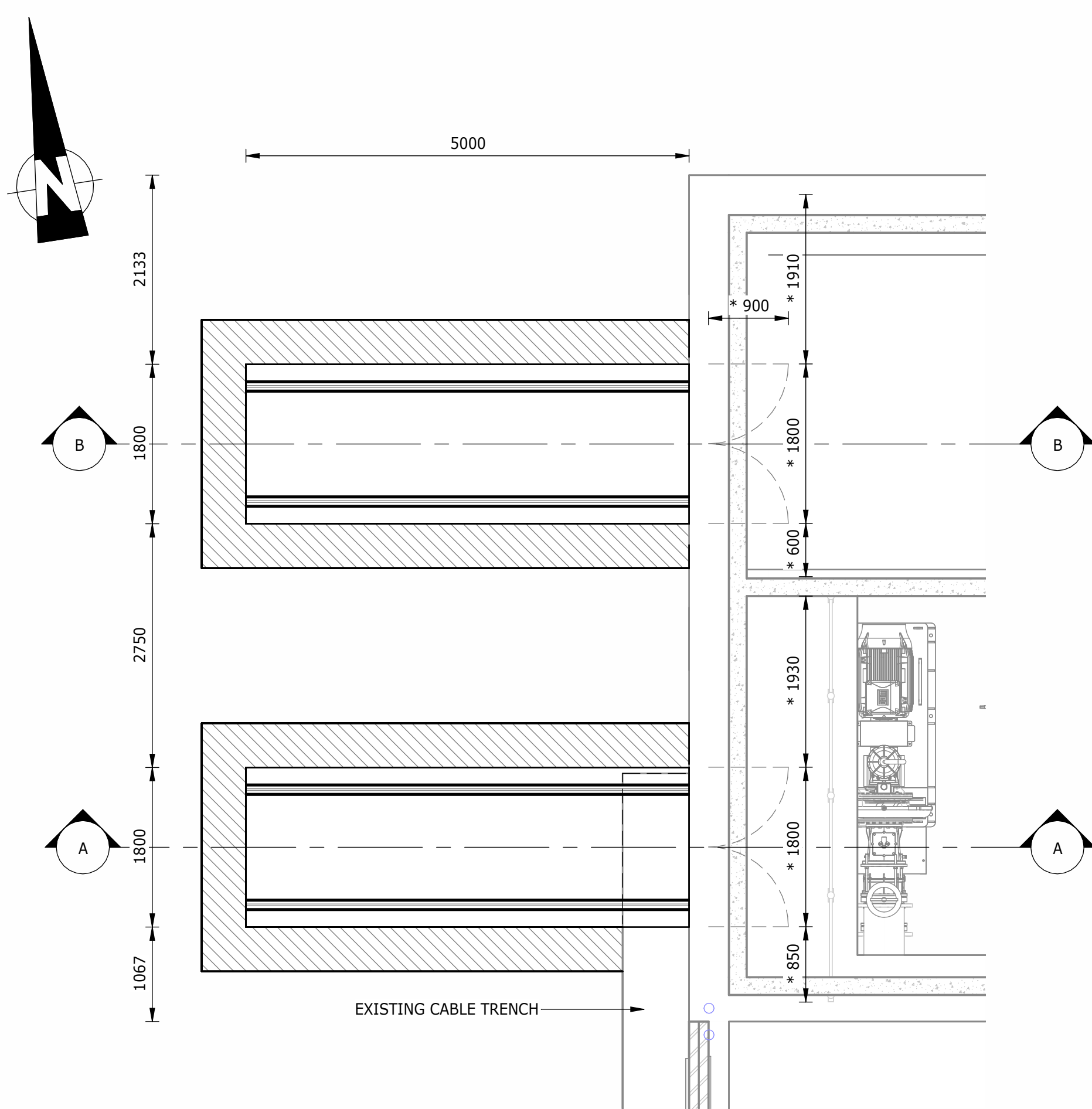


SECTION B-B
1 : 75

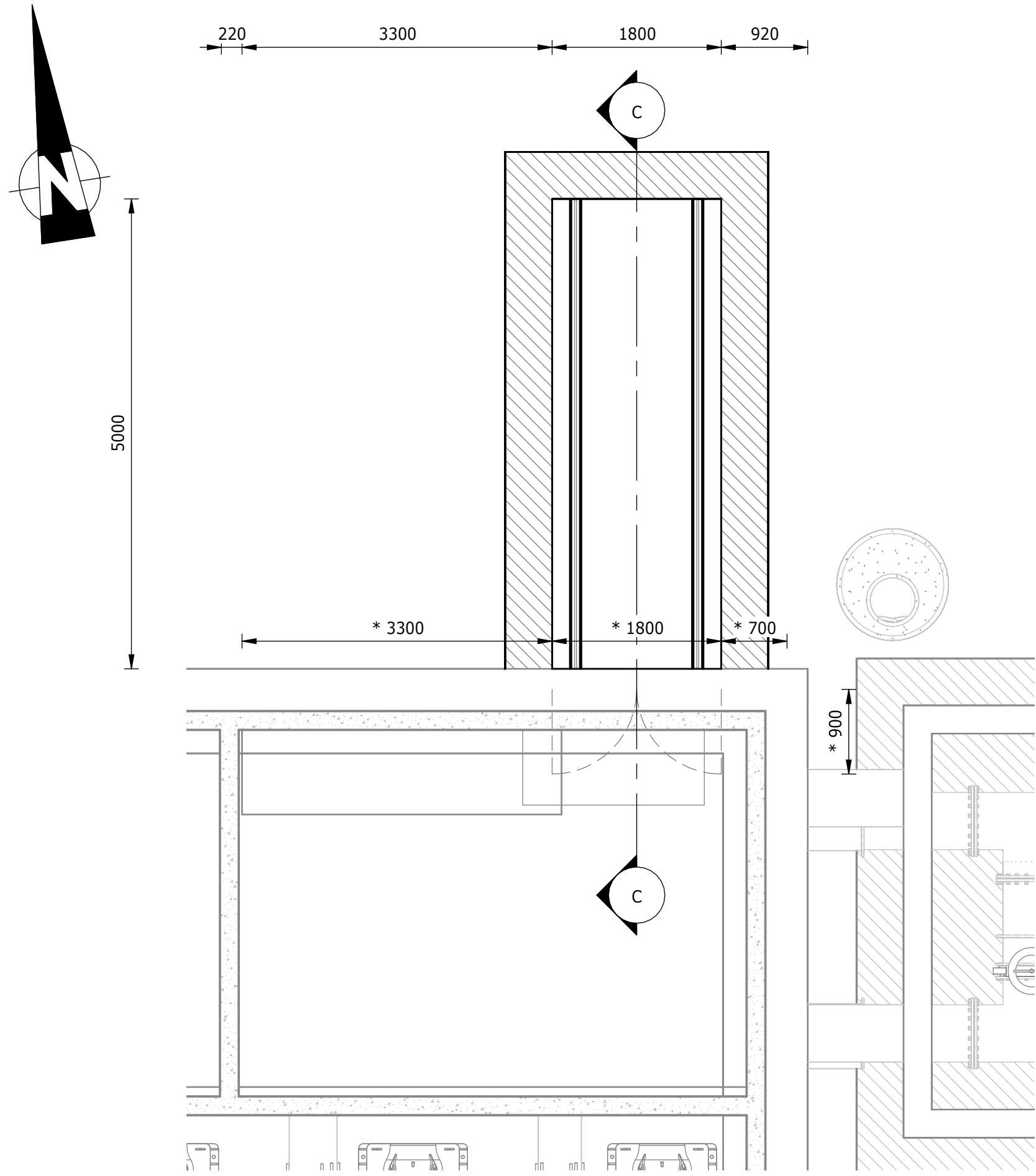


DETAIL 2: DRAINAGE OPENING
1 : 20

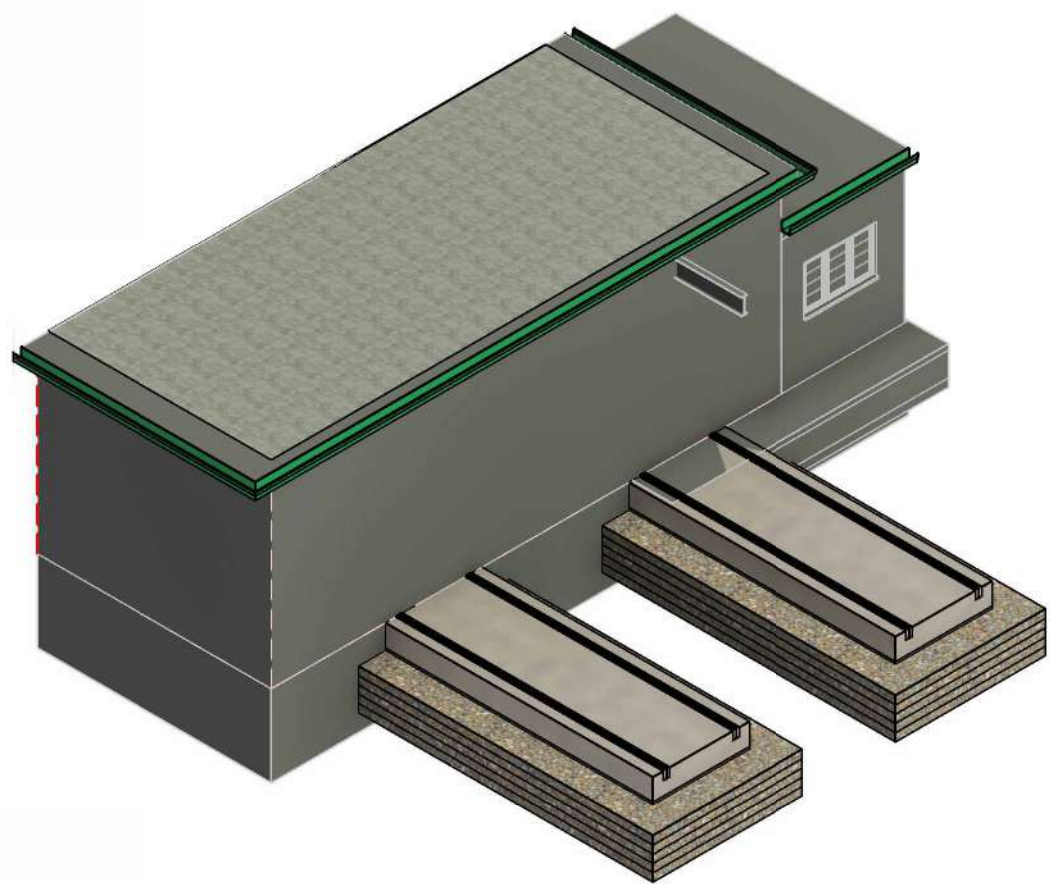




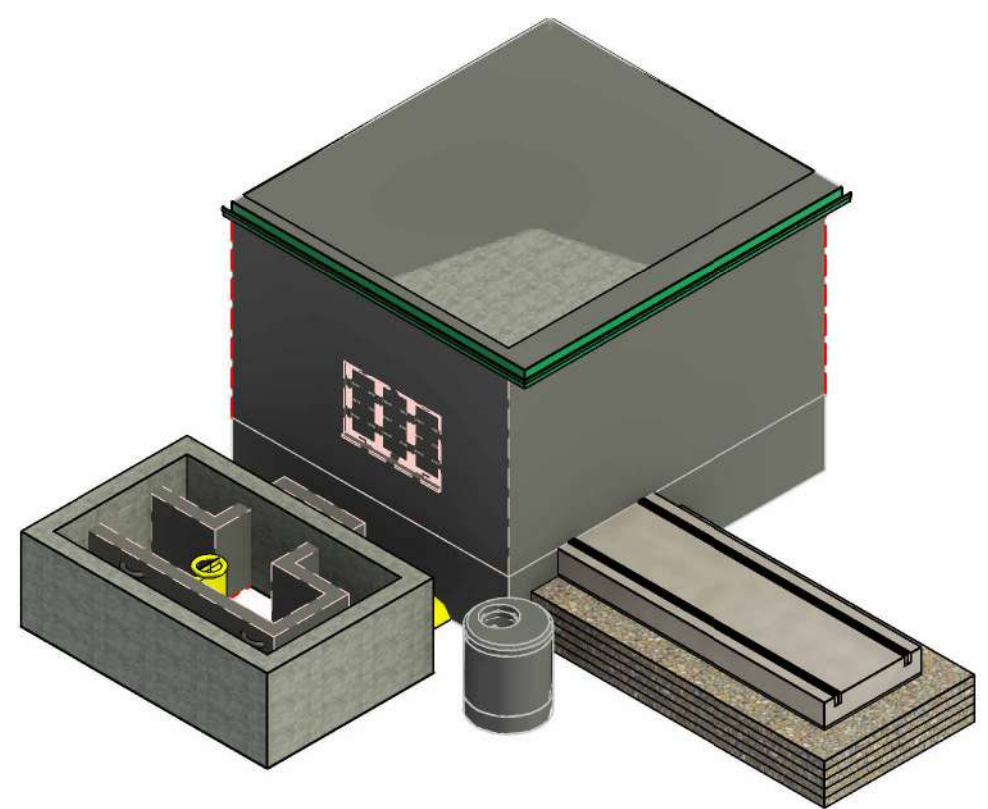
PUMP STATION GALLERY AND MCC ROOM AREA - PLAN VIEW



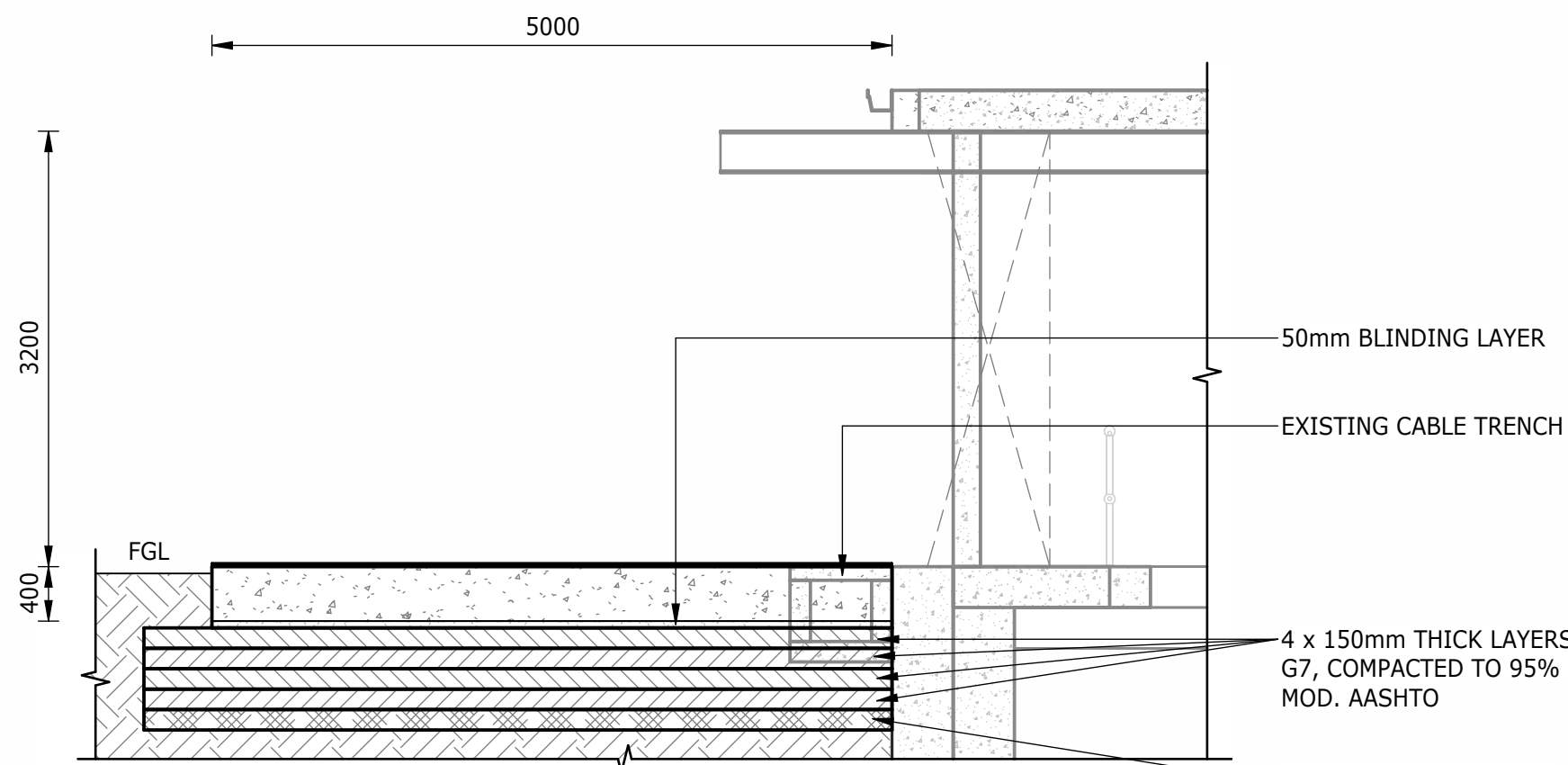
PUMP STATION ENTRANCE - PLAN VIEW



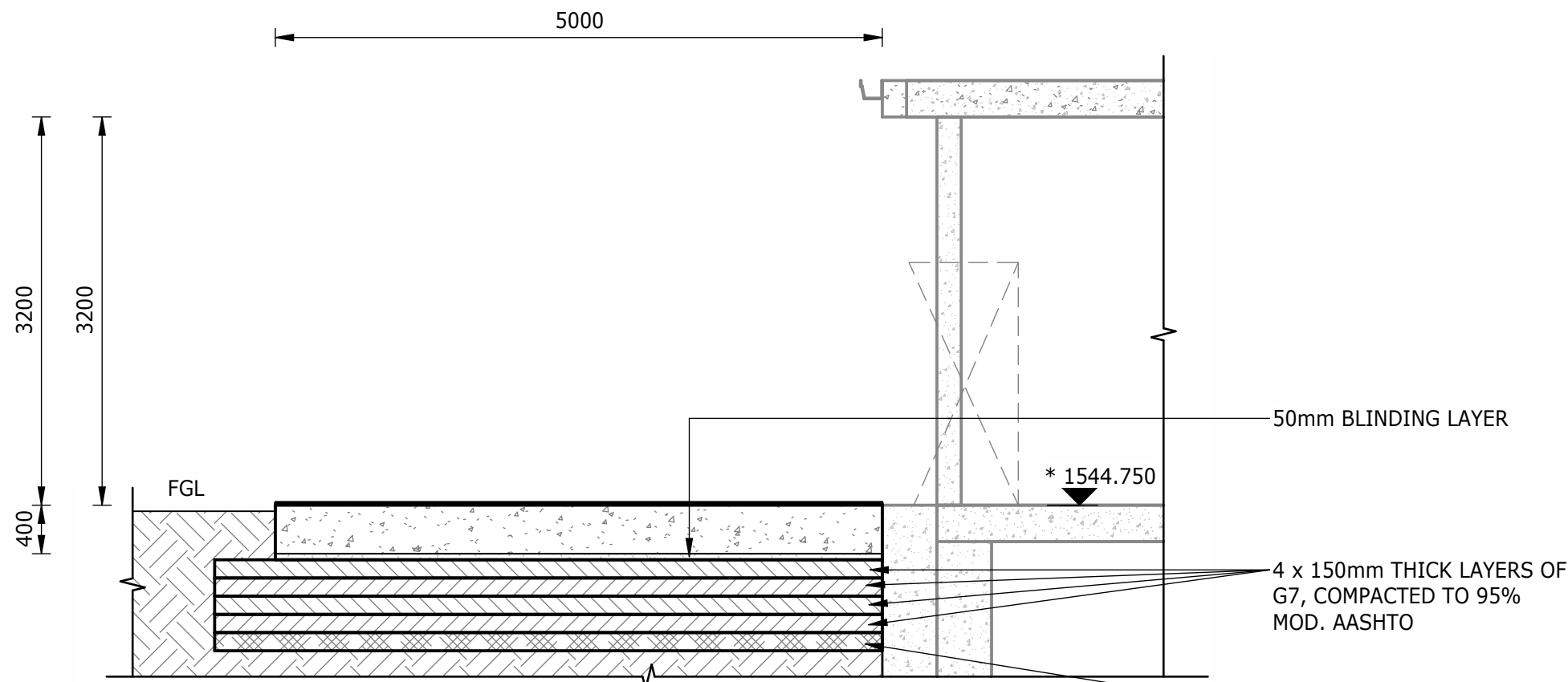
PUMP STATION GALLERY AND MCC ROOM AREA- TYPICAL ISOMETRIC VIEW



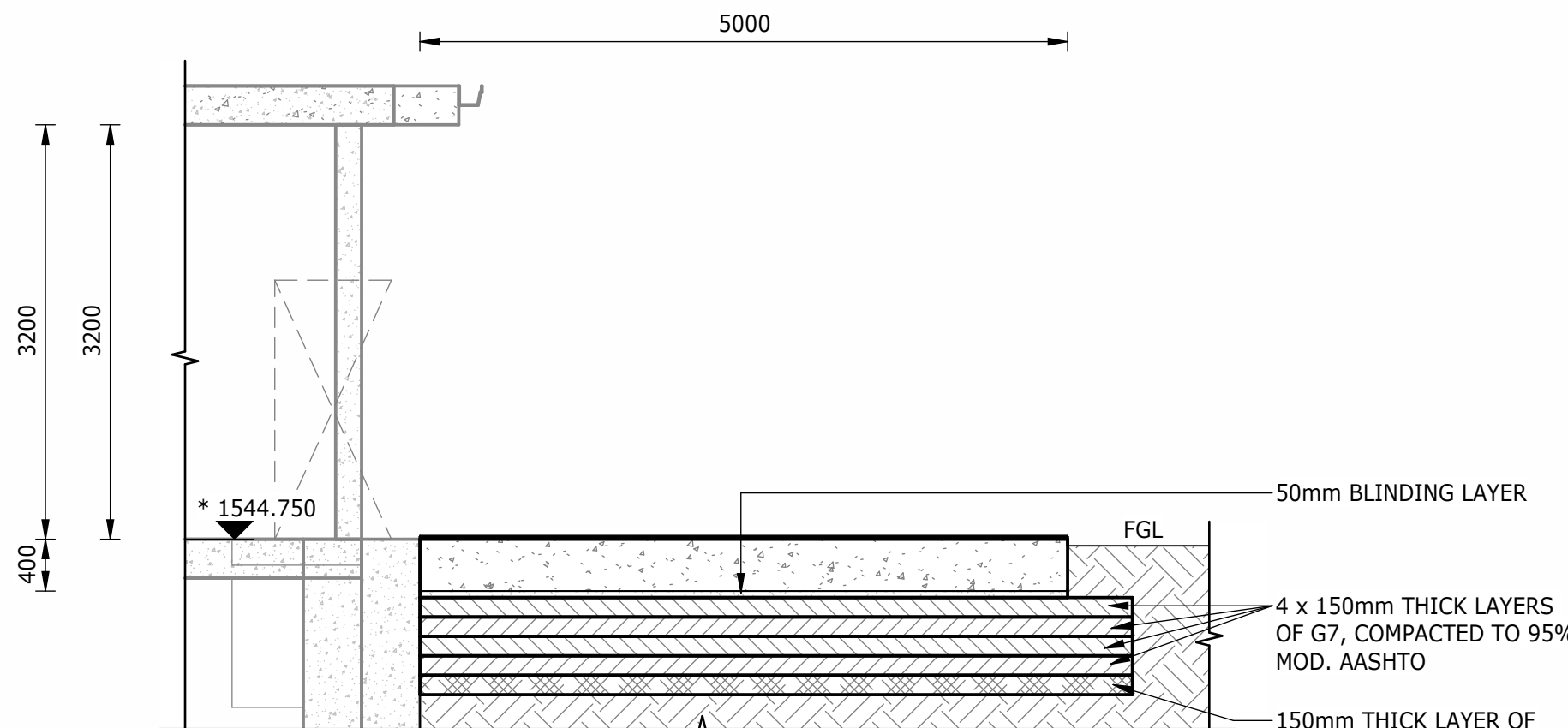
PUMP STATION ENTRANCE - TYPICAL ISOMETRIC VIEW



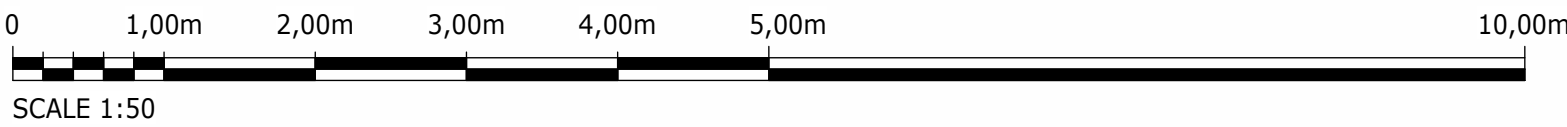
SECTION A-A



SECTION B-B



SECTION C-C



DEPARTMENT	APPROVED	DESIGNATION	DATE

**ATANA**
Legacy Awaits

Building No. 5 Country Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	A. MUJINGA
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD

**Johannesburg Water**

TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

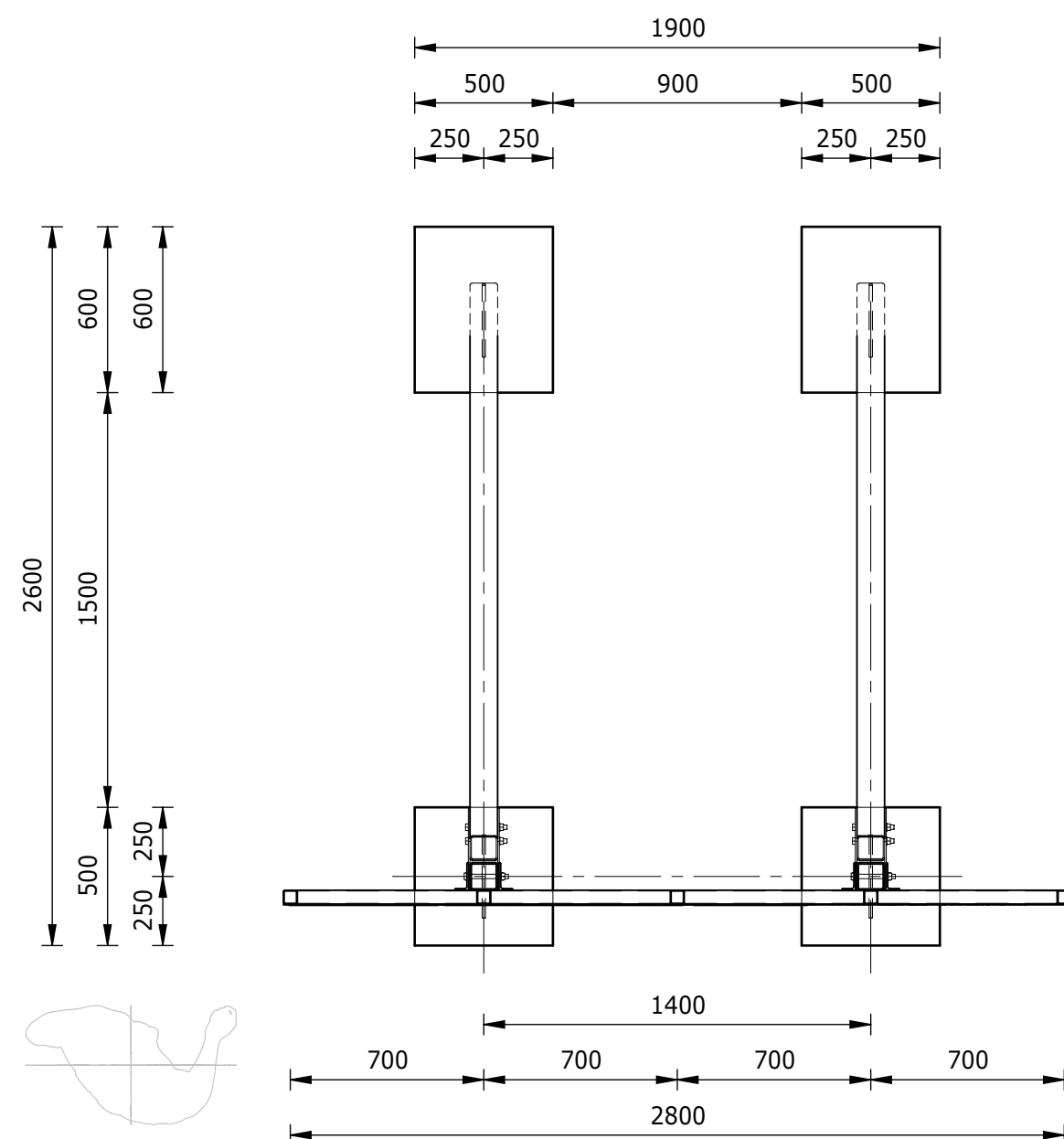
VAN WYKSURST PUMP STATION

CONCRETE DOOR AND SLAB

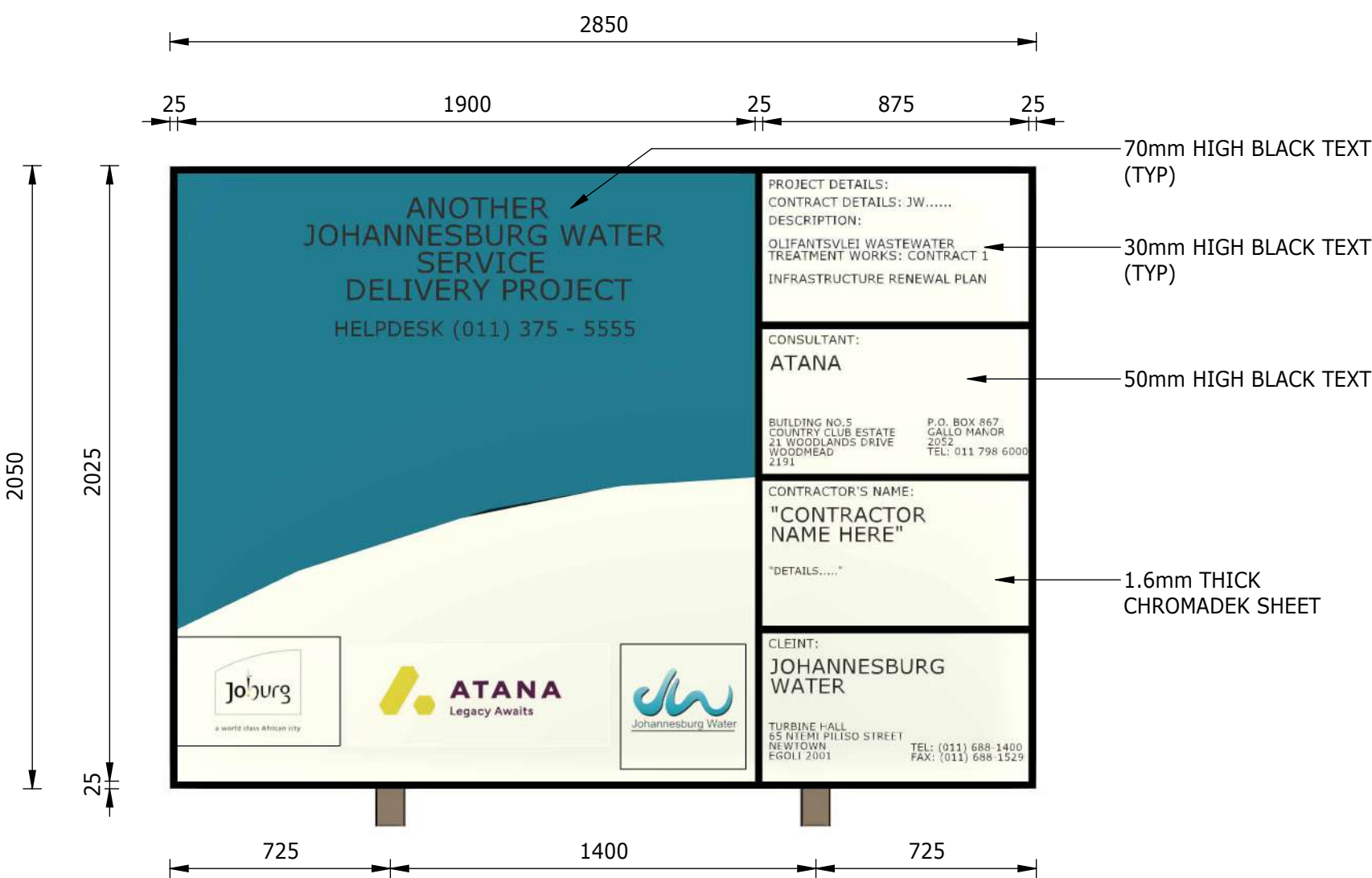
GENERAL LAYOUT, SECTIONS AND DETAILS

DESIGN MANAGER
DATE

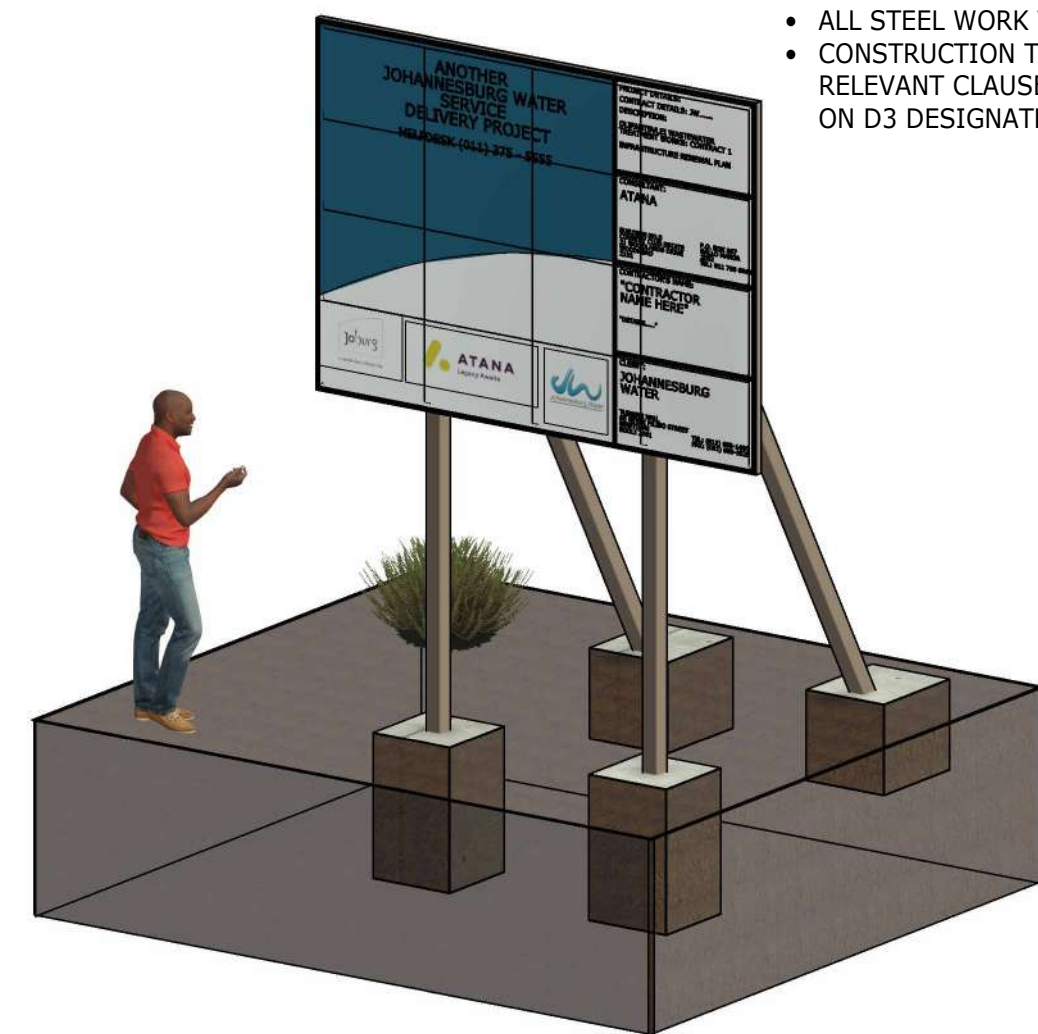
SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
AS SHOWN	C01 ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER
	C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-10-D-C-1001
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-10-D-C-1001
				FILE No
				C02



PLAN VIEW
1 : 25

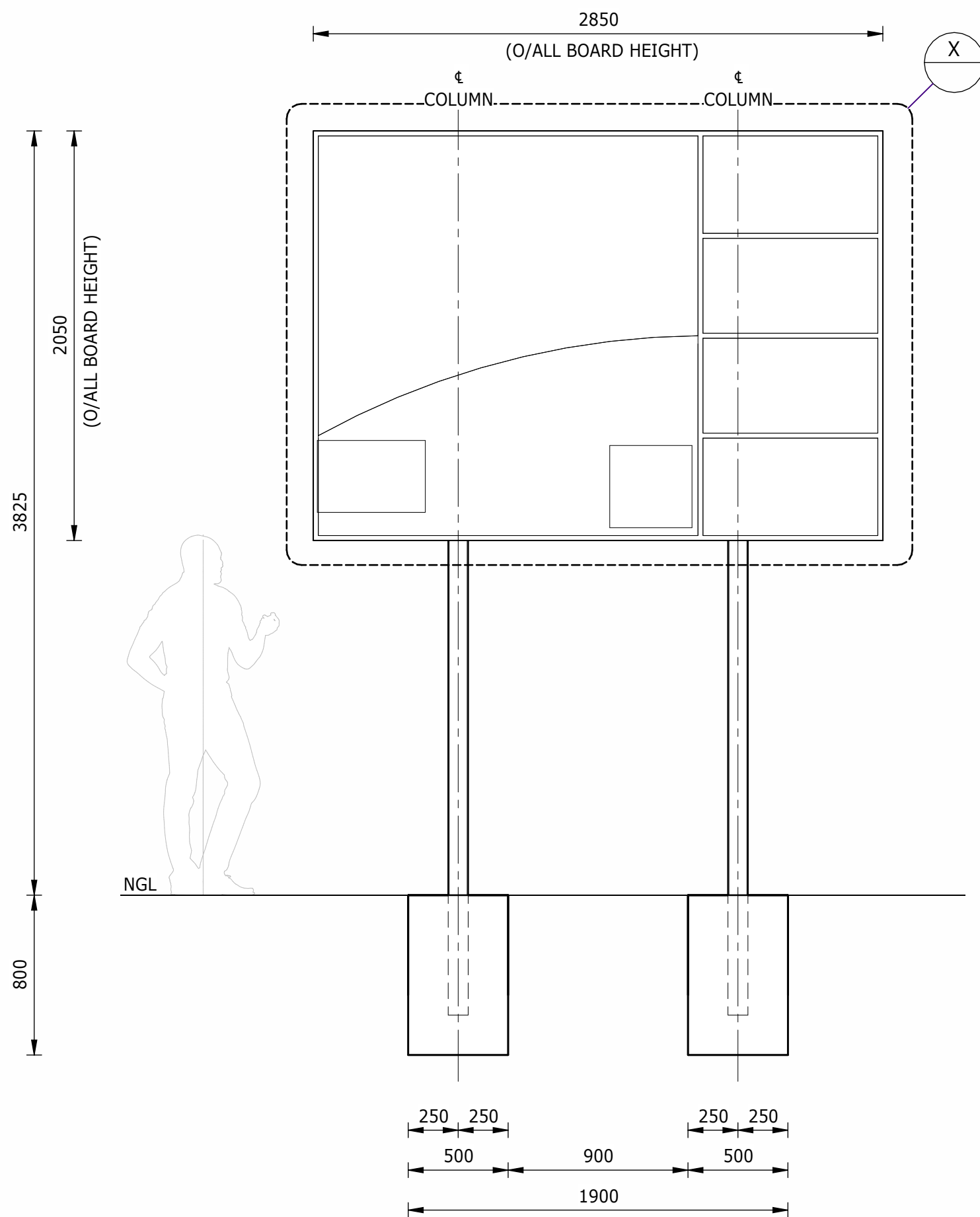


ENLARGED VIEW - X
1 : 20

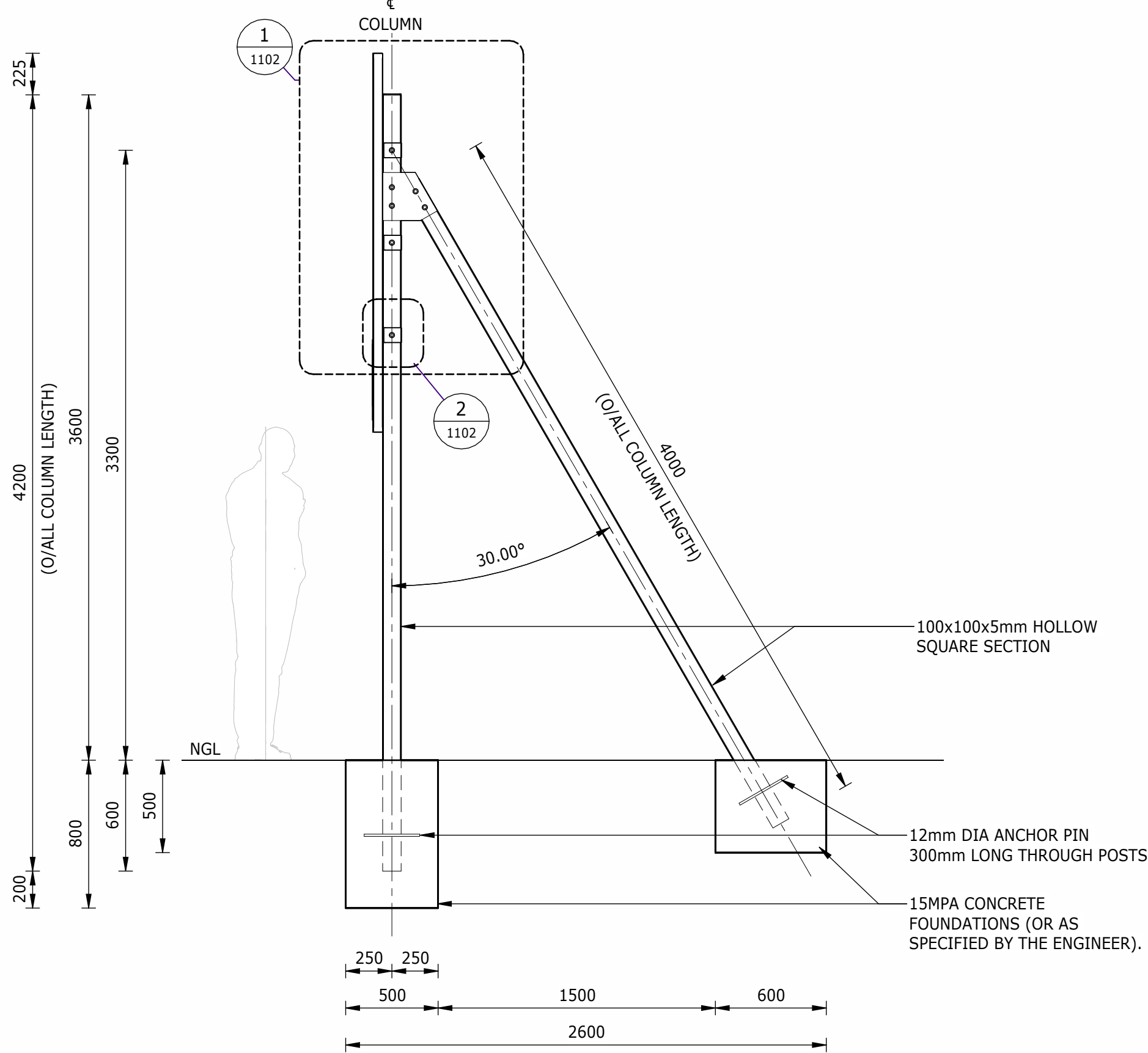


TYPICAL ISOMETRIC VIEW

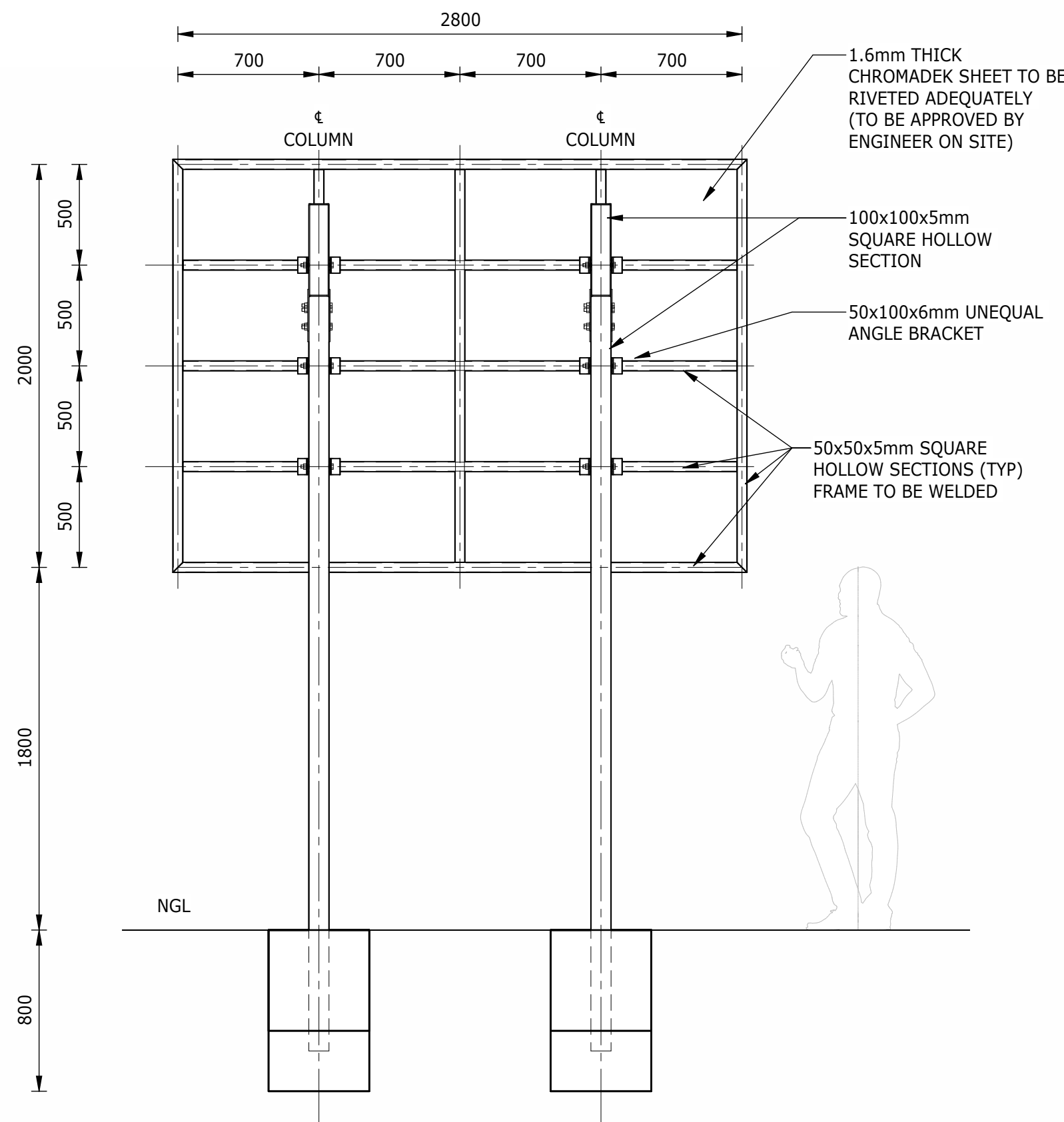
- NOTES:**
- ALL WELDING, RIVETING, FIXING AND PAINTING TO BE APPROVED BY ENGINEER ON SITE.
 - ALL LETTERING TO BE CAPITALISED.
 - FOUNDATIONS TO BE FOUNDED ON MINIMUM 1 x 150mm G7 MATERIAL COMPACTED TO 95% MOD AASHTO.
 - ALL STEEL WORK TO BE GALVANISED MILD STEEL.
 - CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.



FRONT ELEVATION
1 : 25



SIDE ELEVATION
1 : 25



BACK ELEVATION
1 : 25



SCALE 1:25

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS



Building No. 5 Country
Club Estate
21 Woodlands Drive
Woodmead
2191
PO Box 867
Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	N. O'GORMAN
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD



TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

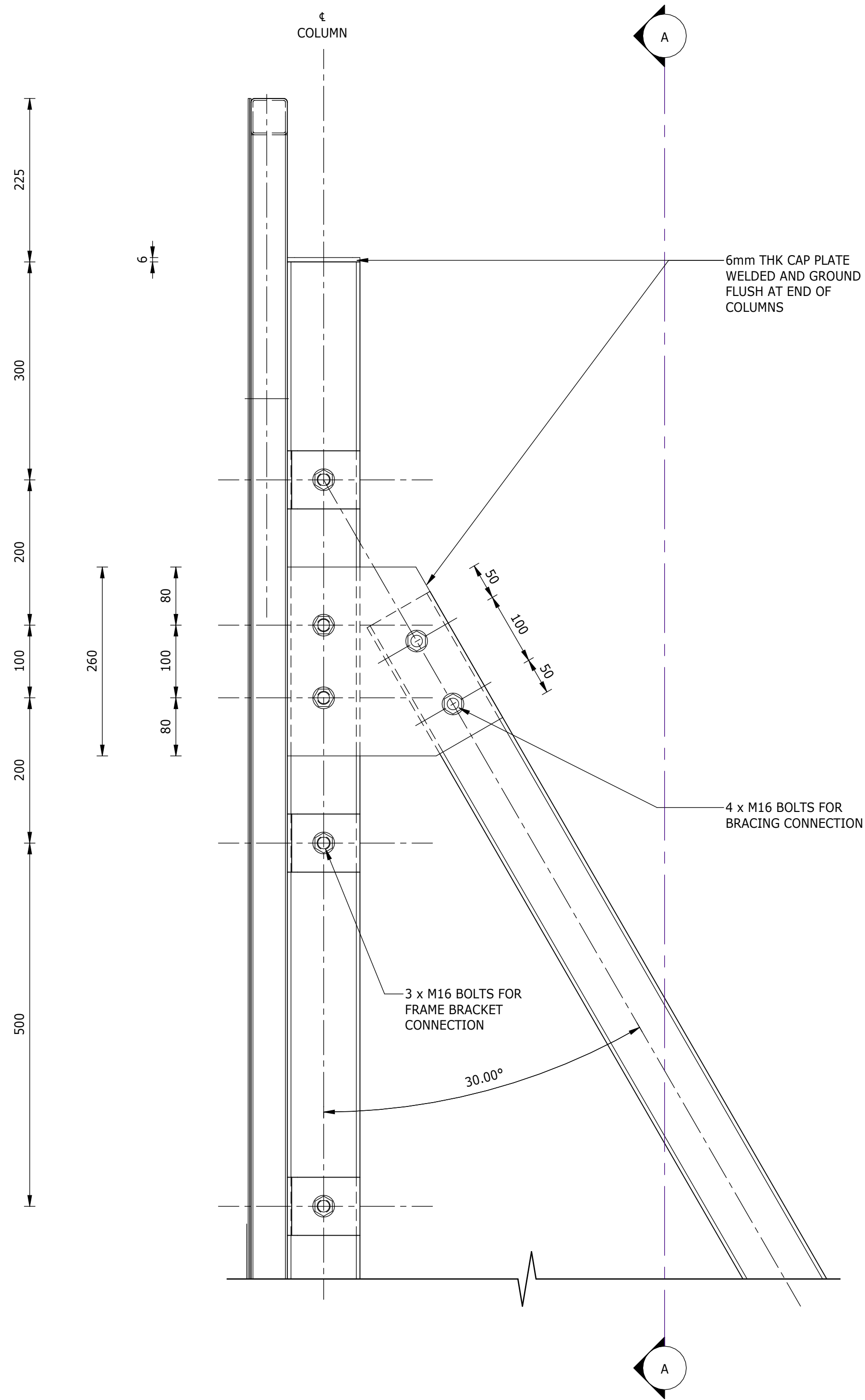
CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
NAMEBOARD
GENERAL ARRANGEMENT AND DETAILS

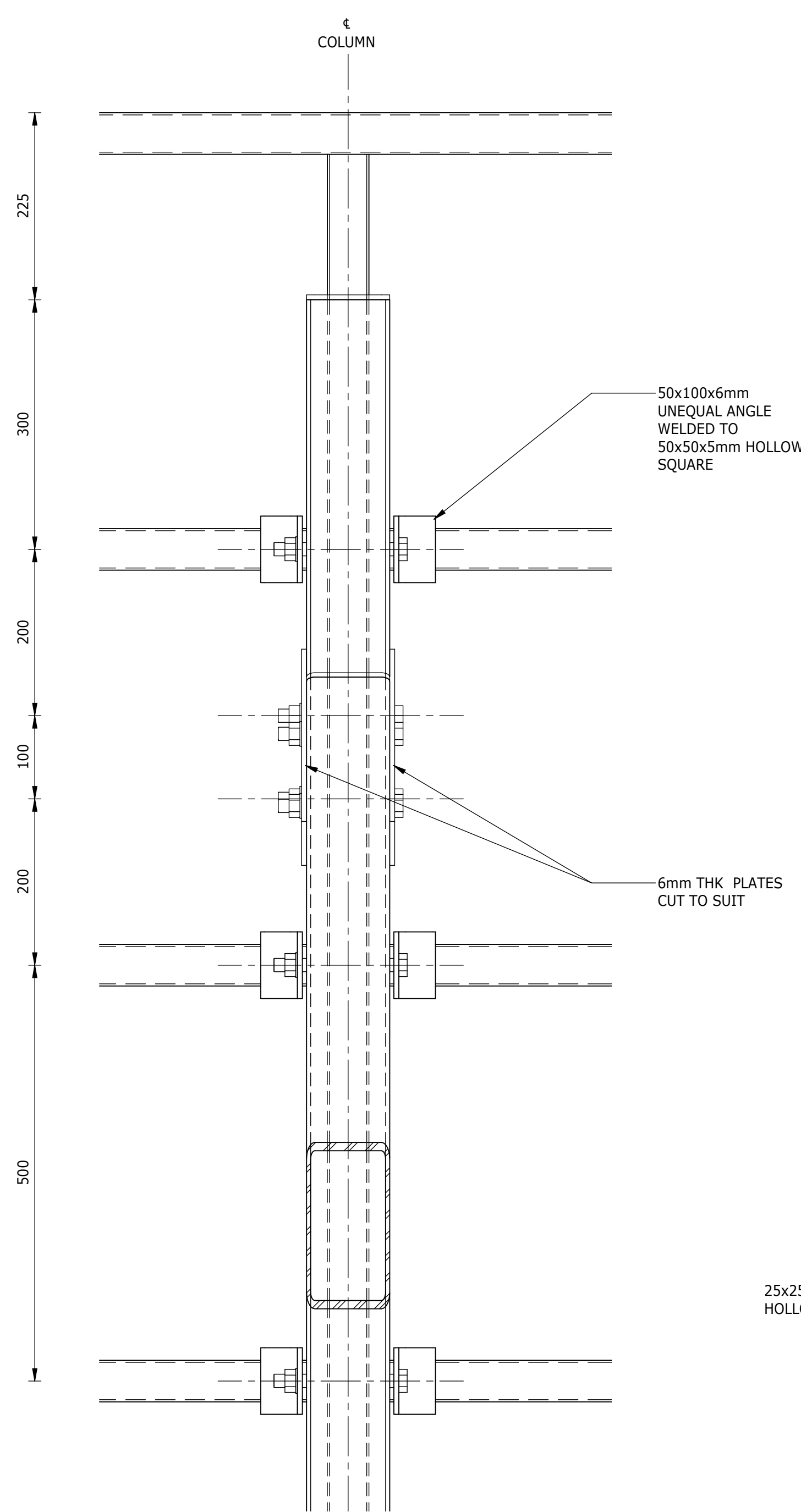
DESIGN
MANAGER

DATE

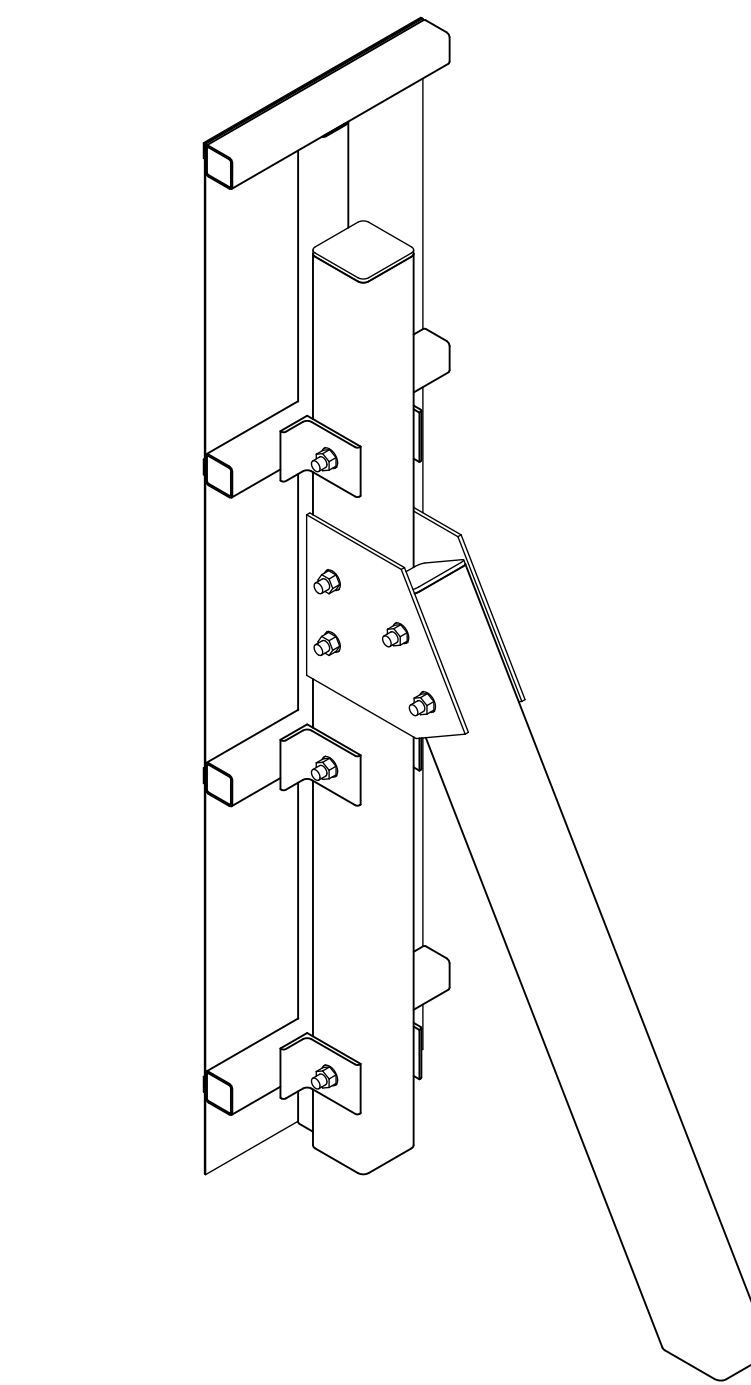
SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
AS SHOWN	C01 ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
	C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-11-D-C-1101
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-11-D-C-1101
				FILE No
				C02



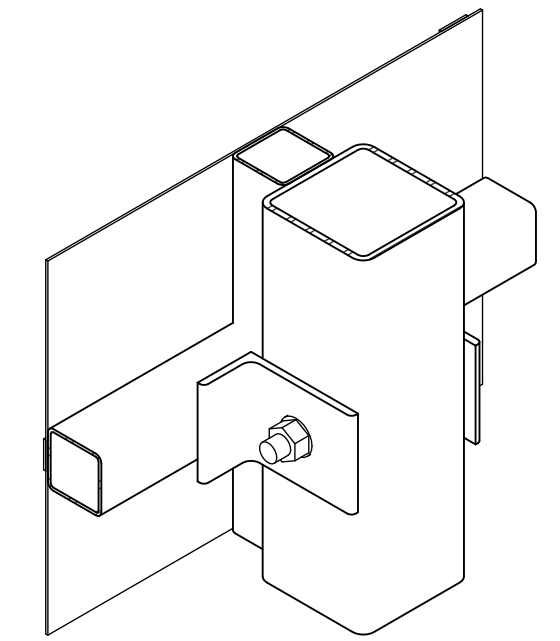
DETAIL 1: BRACING CONNECTION
1 : 5
(2 - SETS REQUIRED AS SHOWN)



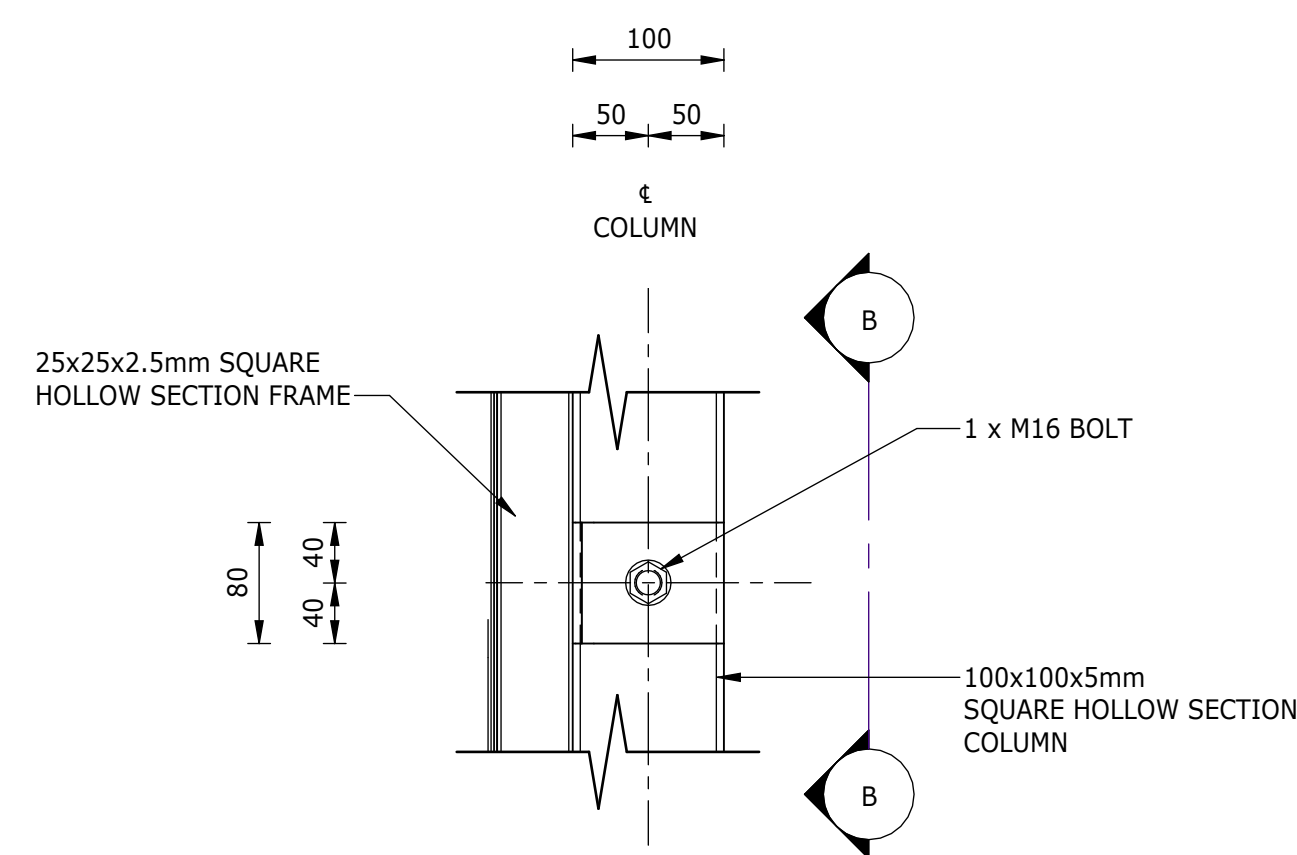
SECTION A-A
1 : 5



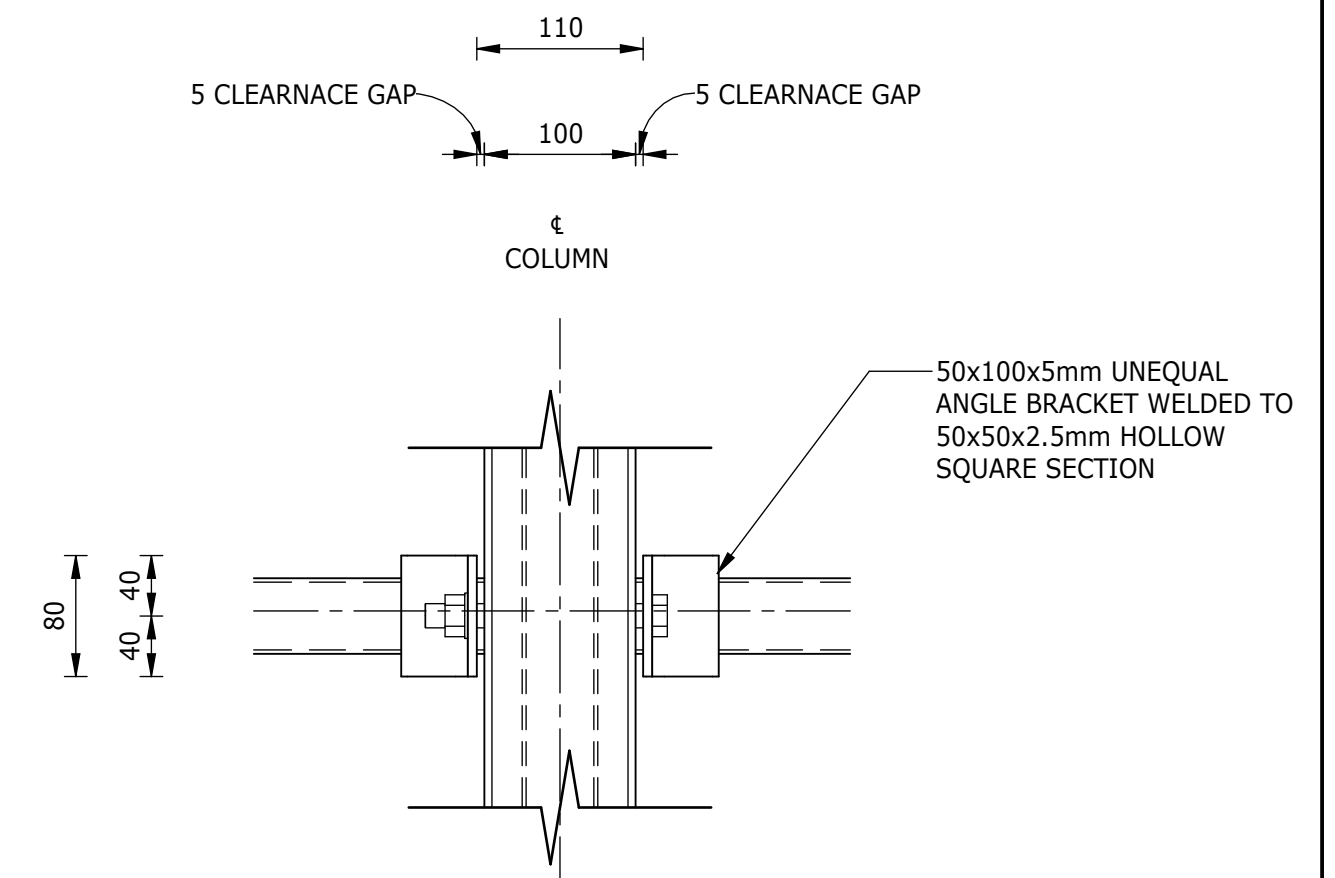
BRACING CONNECTION ISOMETRIC VIEW



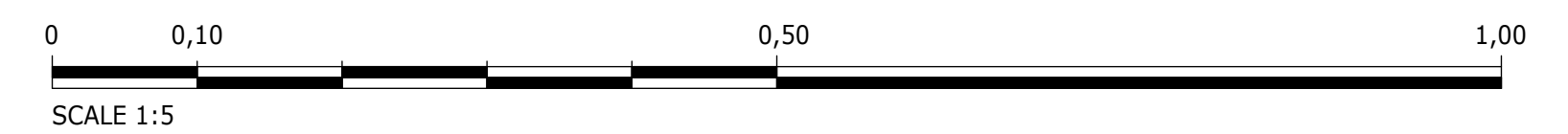
FRAME BRACKET CONNECTION ISOMETRIC VIEW



DETAIL 2: FRAME BRACKET CONNECTION
1 : 5
(6 - SETS REQUIRED AS SHOWN)



SECTION B-B
1 : 5



DEPARTMENT	APPROVED	DESIGNATION	DATE

**ATANA**
Legacy Awaits

Building No. 5 Country Club Estate
21 Woodlands Drive Woodmead
2191
PO Box 867 Gallo Manor
2052
Tel No. +27 11 798 6000

SURVEYED	
DESIGNED	N. O'GORMAN
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

JOHANNESBURG WATER (SOC) LTD


Johannesburg Water

TURBINE HALL
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NEWTOWN
JOHANNESBURG 2001

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKS Rust PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
NAMEBOARD
DETAILS

DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
	AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER						
		C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-11-D-C-1102						
						CONSULTANT'S NUMBER						
						BW1400-RHD-C1-11-D-C-1102						
						FILE No						
DATE						C02						



PAVEMENT DETAILS		
STEEL BASE	DIAMOND PLATE DOWEL	TAPERED PLATE DOWEL
TYPE		
SLAB THICKNESS (mm)	150	150
THICKNESS (mm)	20	15
L = LENGTH (mm)	115	300
S = SPACING (mm)	500	500

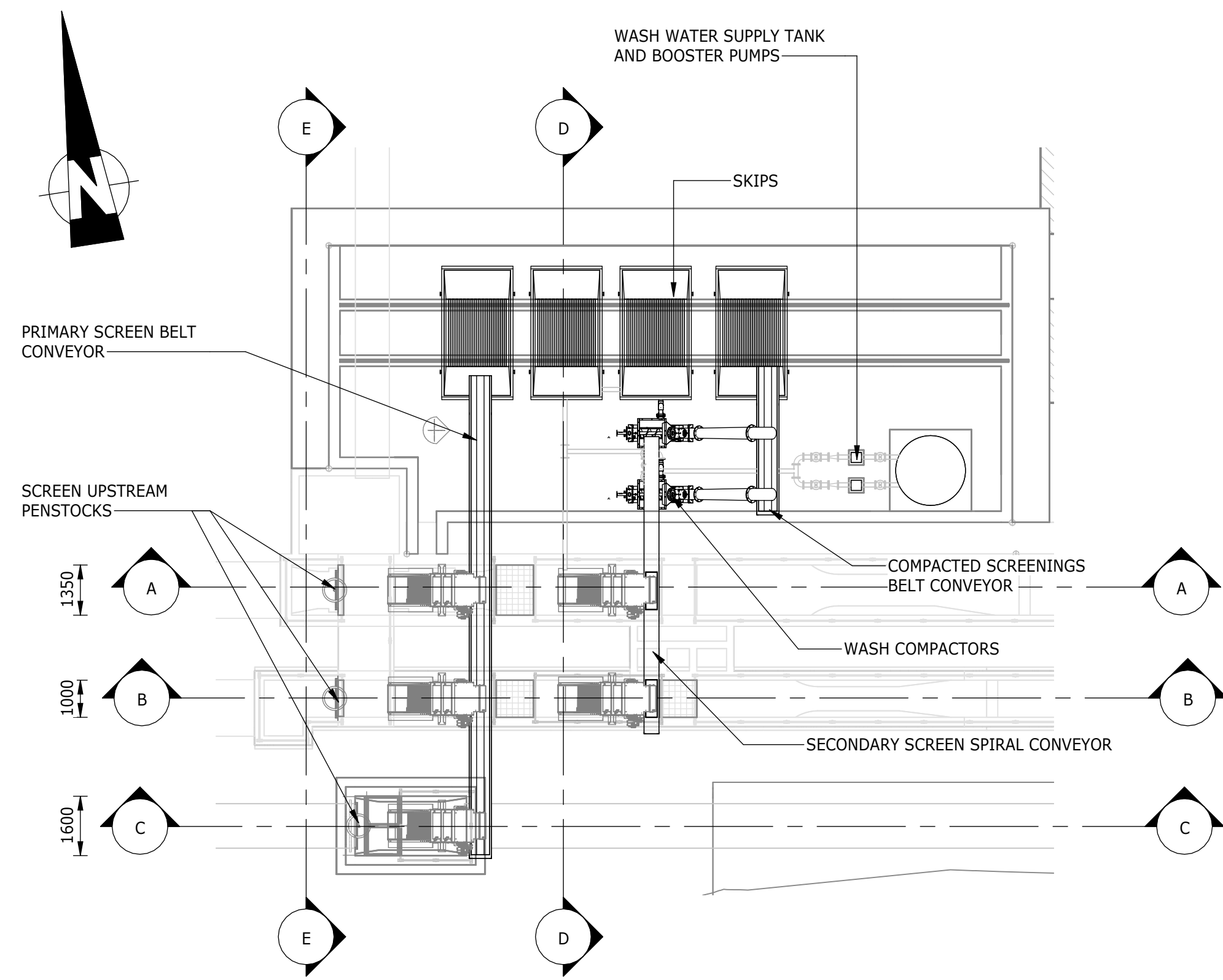


SURVEYED	
DESIGNED	T. MOETI
DRAWN	N. O'GORMAN
CHECKED	L. NAICKER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	DITHOLO PHOGOLE
Pr. Eng.No.	20060098
DATE	

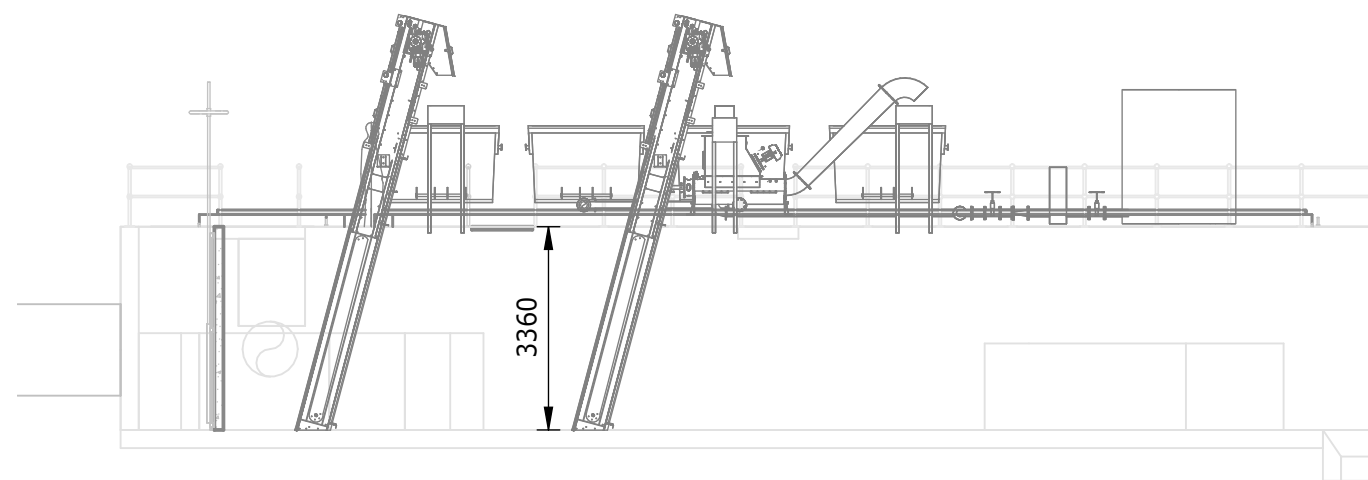


DATE _____

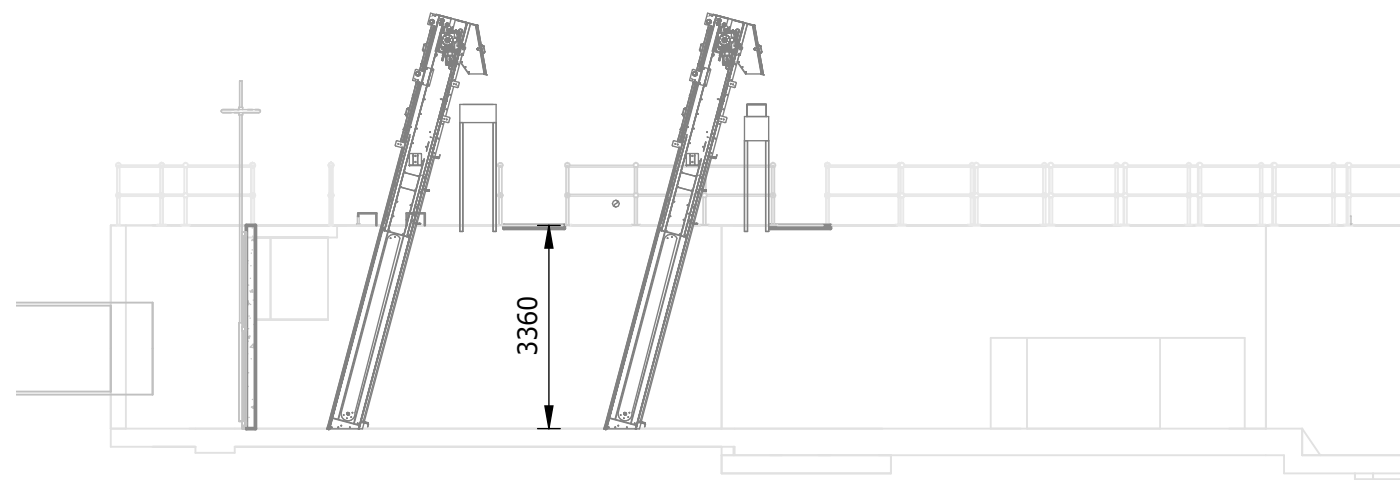




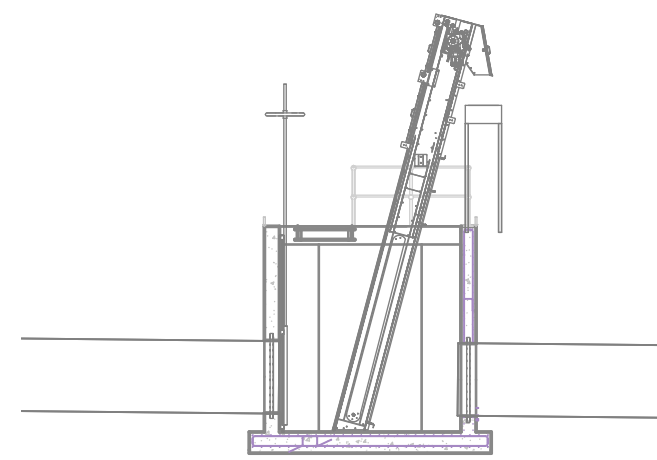
SITE LAYOUT
1 : 125



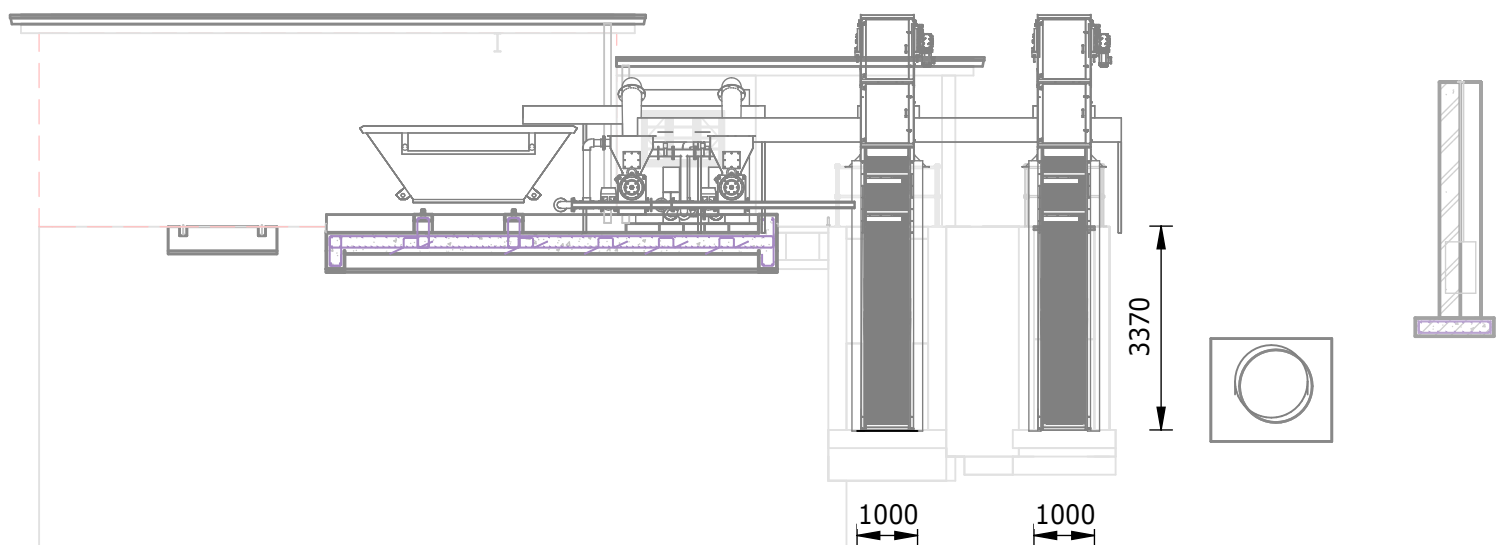
SECTION A-A
1 : 125



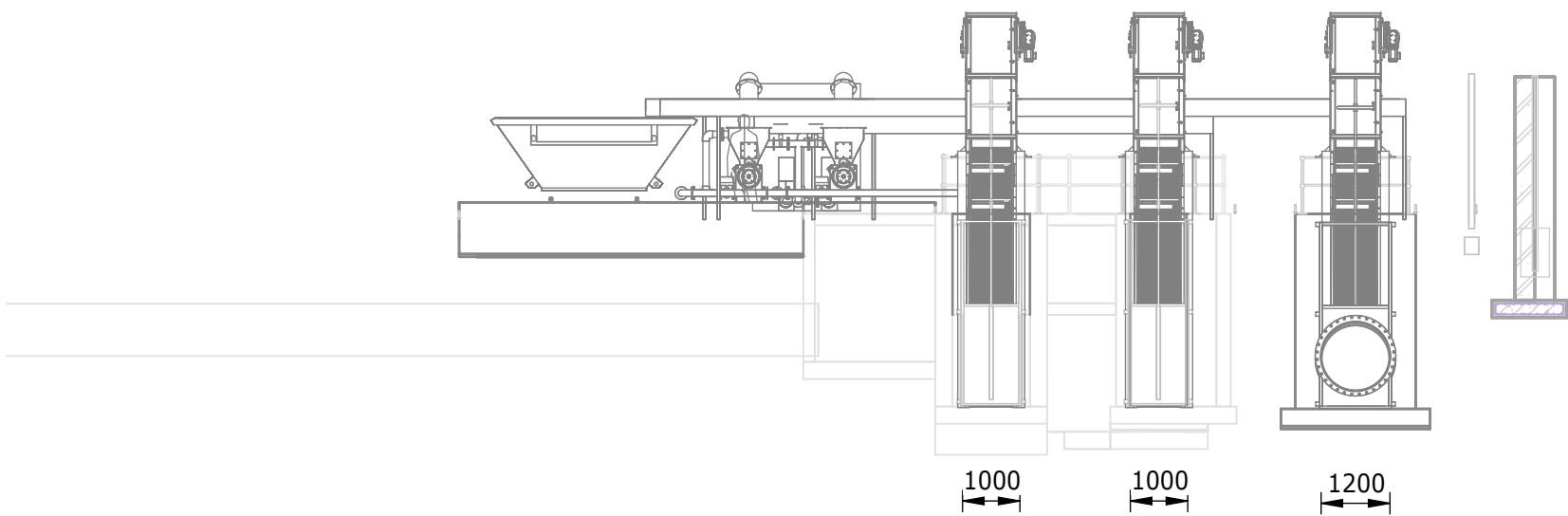
SECTION B-B
1 : 125



SECTION C-C
1 : 125

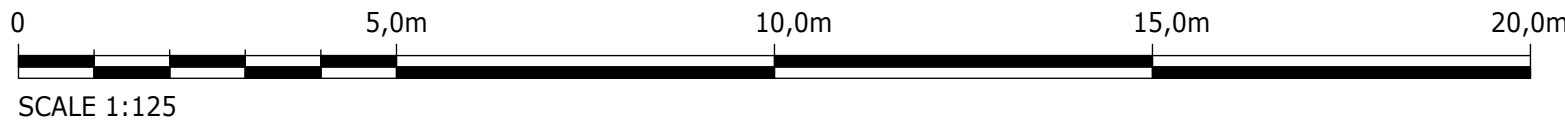


SECTION D-D
1 : 125

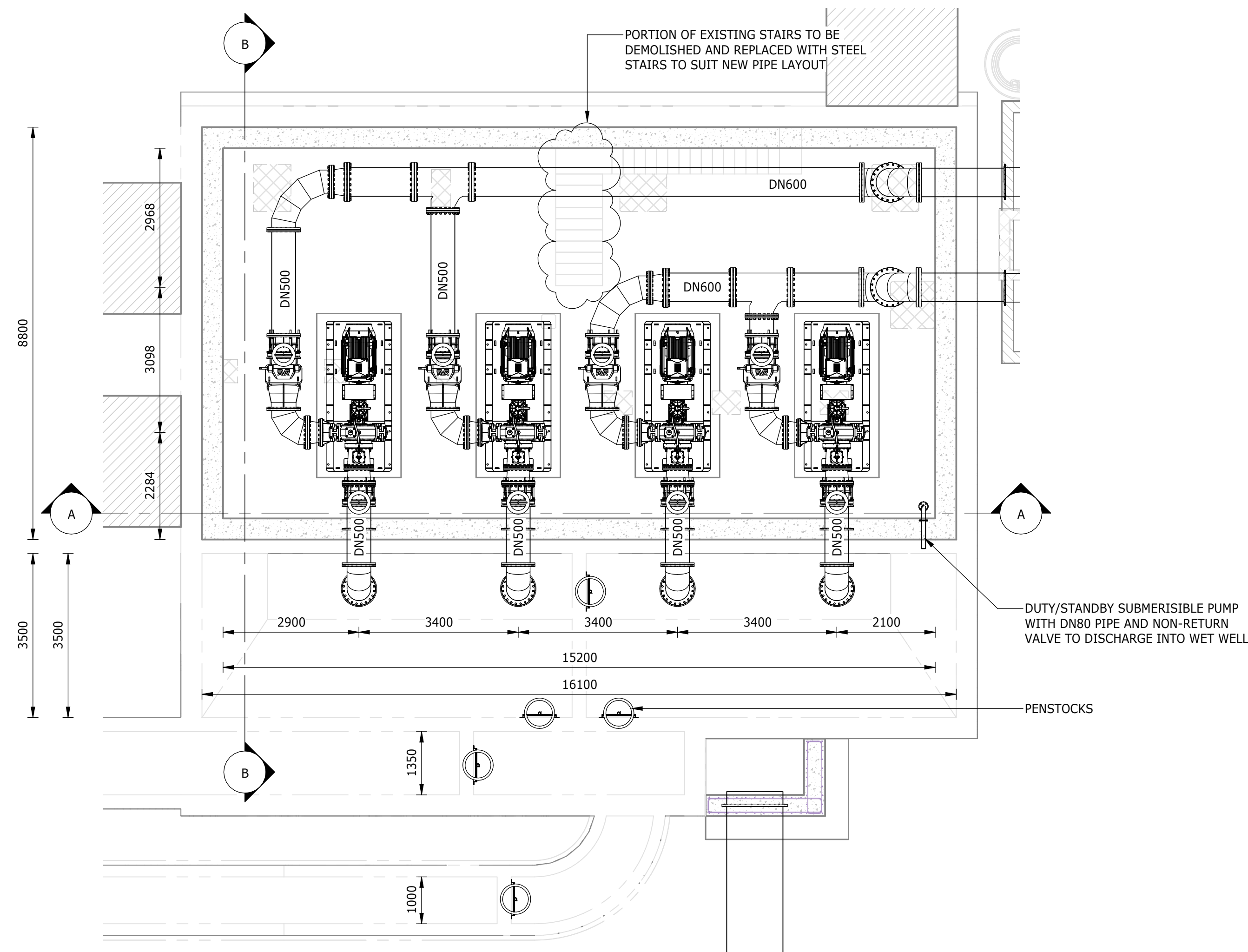


SECTION E-E
1 : 125

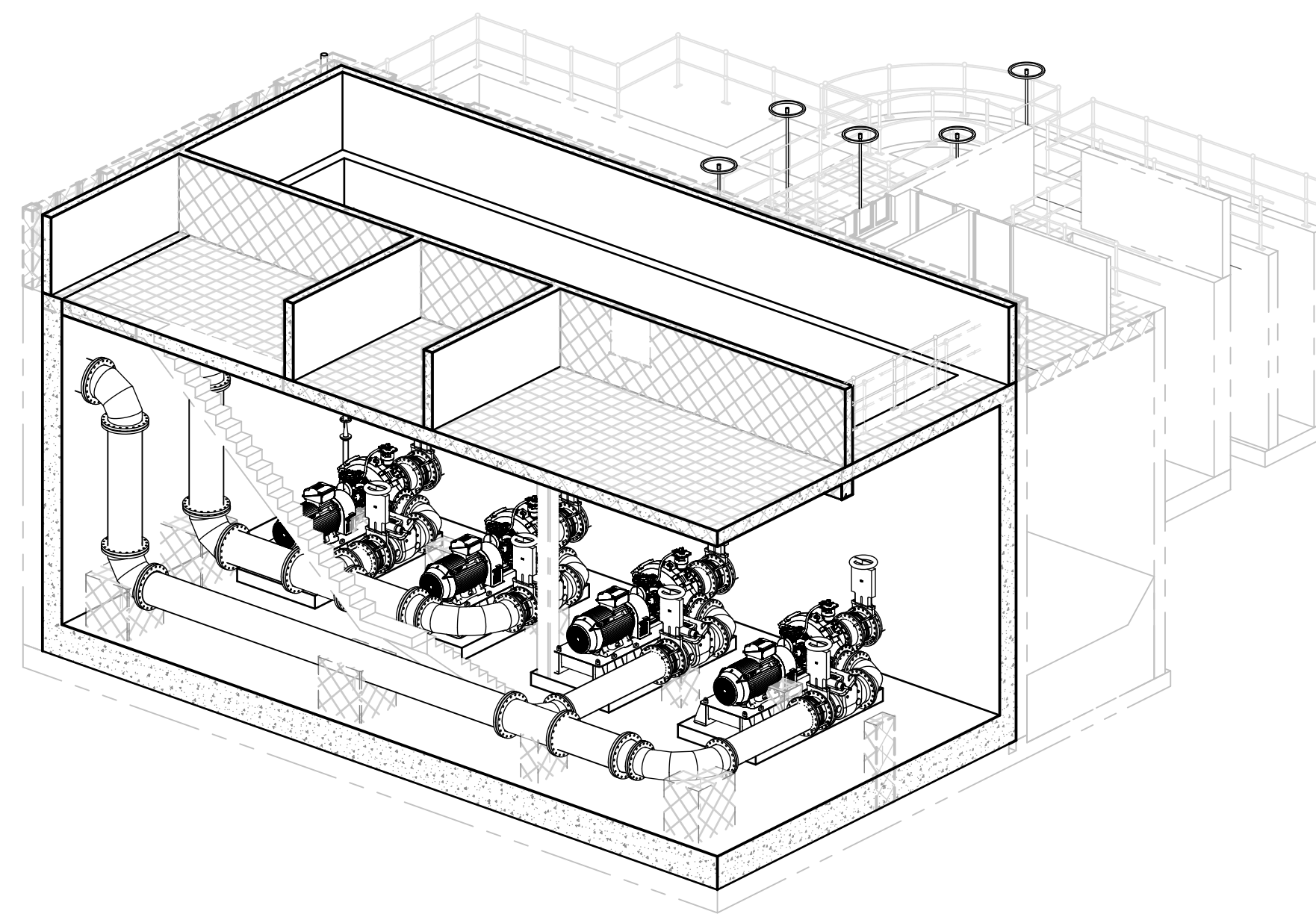
DEPARTMENT	APPROVED	DESIGNATION	DATE



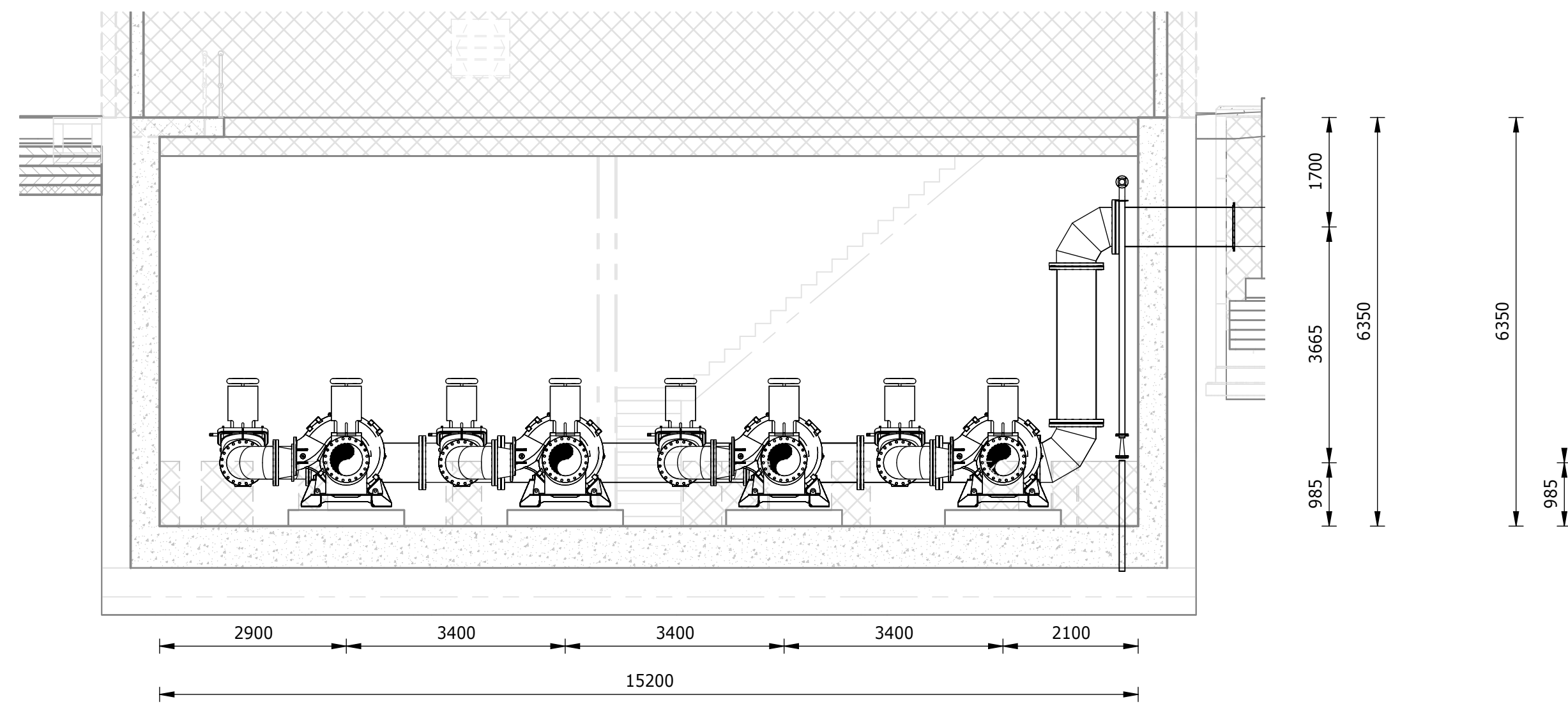
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	E. NAIDOO		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001	OLIFANTSVLEI WWTW: VAN WYKSrust PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSrust PUMP STATION SCREENINGS CHANNEL MECHANICAL LAYOUT	DATE			AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER				
		DRAWN	N. O'GORMAN					C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-01-D-M-0141						
		CHECKED	E. NAIDOO					CONSULTANT'S NUMBER											
		SERVICES CHECKED						BW1400-RHD-C1-01-D-M-0141											
		GEOTECHNICAL INVESTIGATION						FILE No											
		SERVITUDES																	
		APPROVED DITHOLO PHOGOLE																	
		Pr. Eng.No. 20060098																	
		DATE																	
				C02															



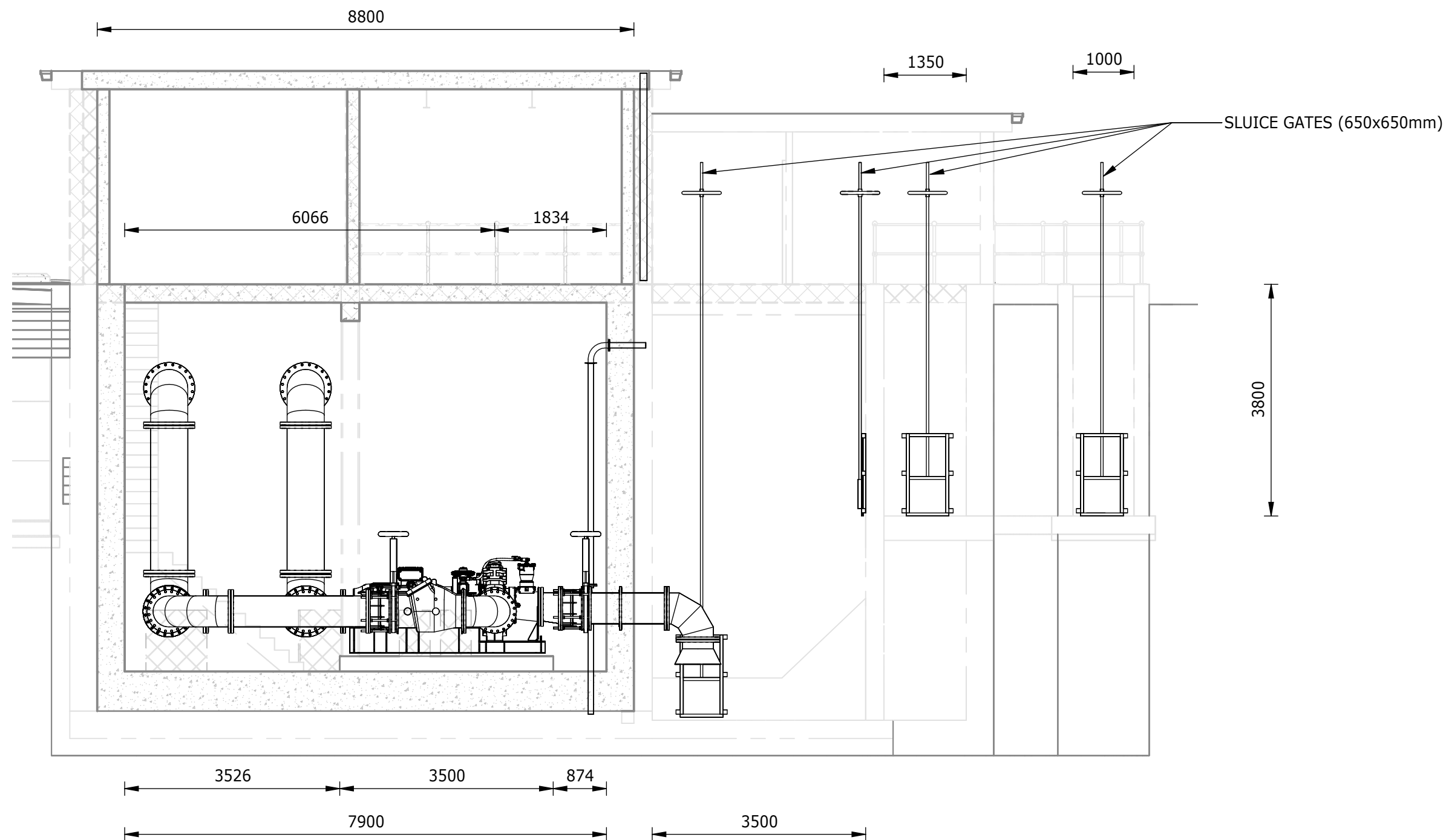
PLAN VIEW ON PUMPS
1 : 75



TYPICAL ISOMETRIC VIEW

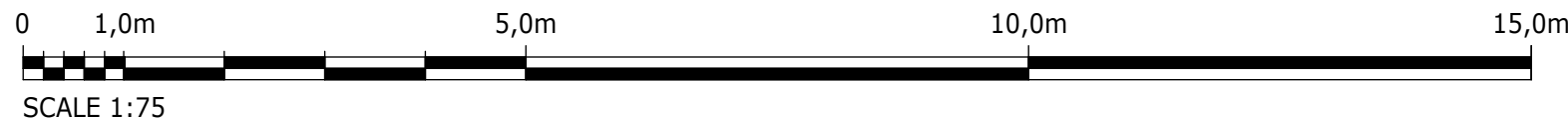


SECTION A-A
1 : 75



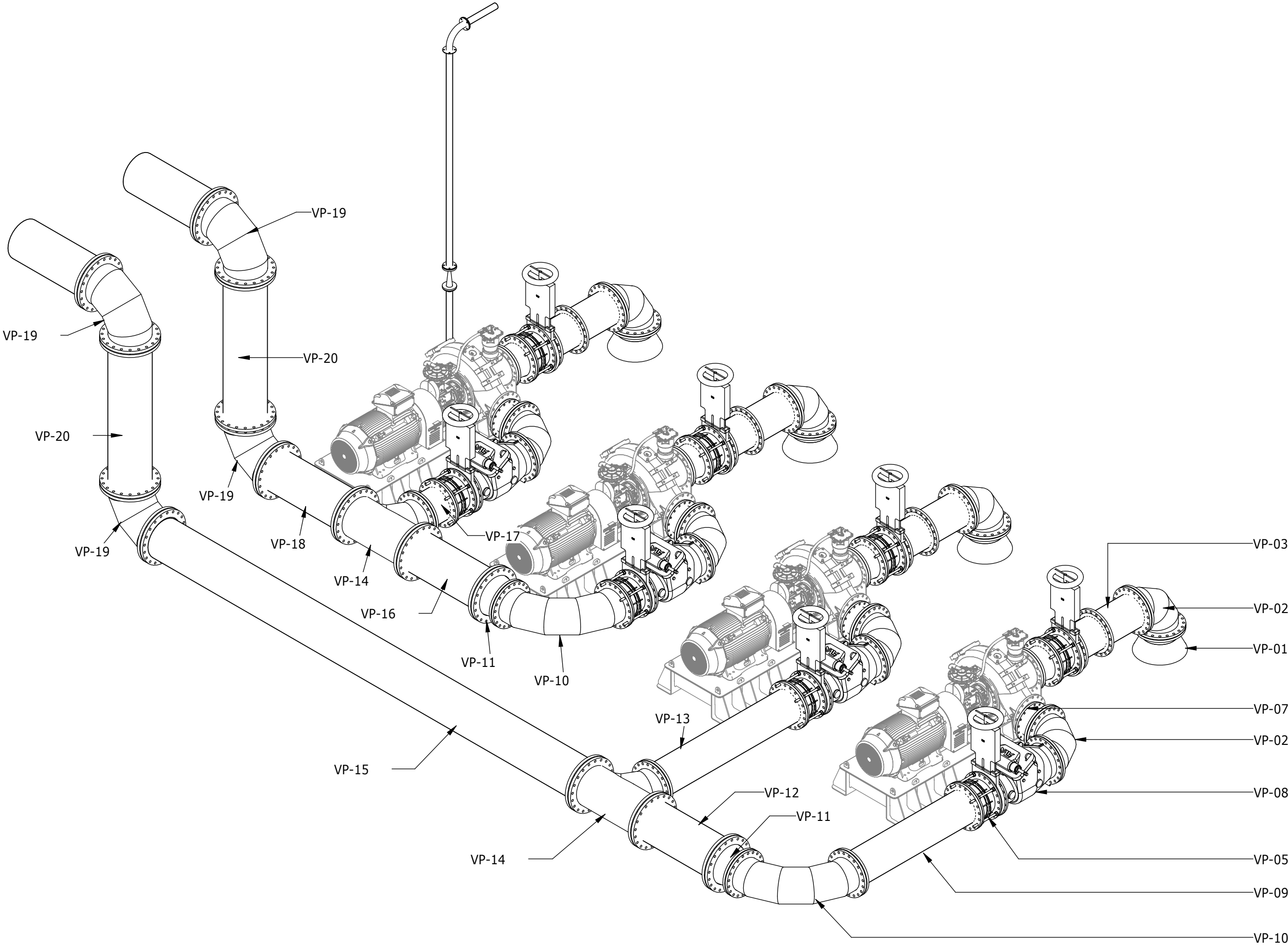
SECTION B-B
1 : 75

DEPARTMENT	APPROVED	DESIGNATION	DATE



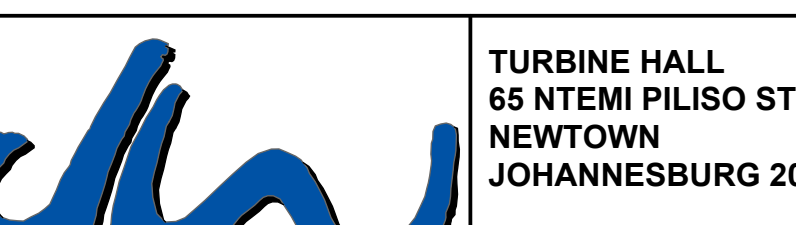
CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.									
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	E. NAIDOO		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION GENERAL ARRANGEMENT AND SECTIONS	DATE	AS SHOWN						C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
		DRAWN	N. O'GORMAN											C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-M-0241					
		CHECKED	L. NAICKER											CONSULTANT'S NUMBER									
		SERVICES CHECKED												BW1400-RHD-C1-02-D-M-0241									
		GEOTECHNICAL INVESTIGATION												FILE No									
		SERVITUDES																					
		APPROVED	DITHOLO PHOGOLE																				
		Pr. Eng.No.	20060098																				
		DATE																					

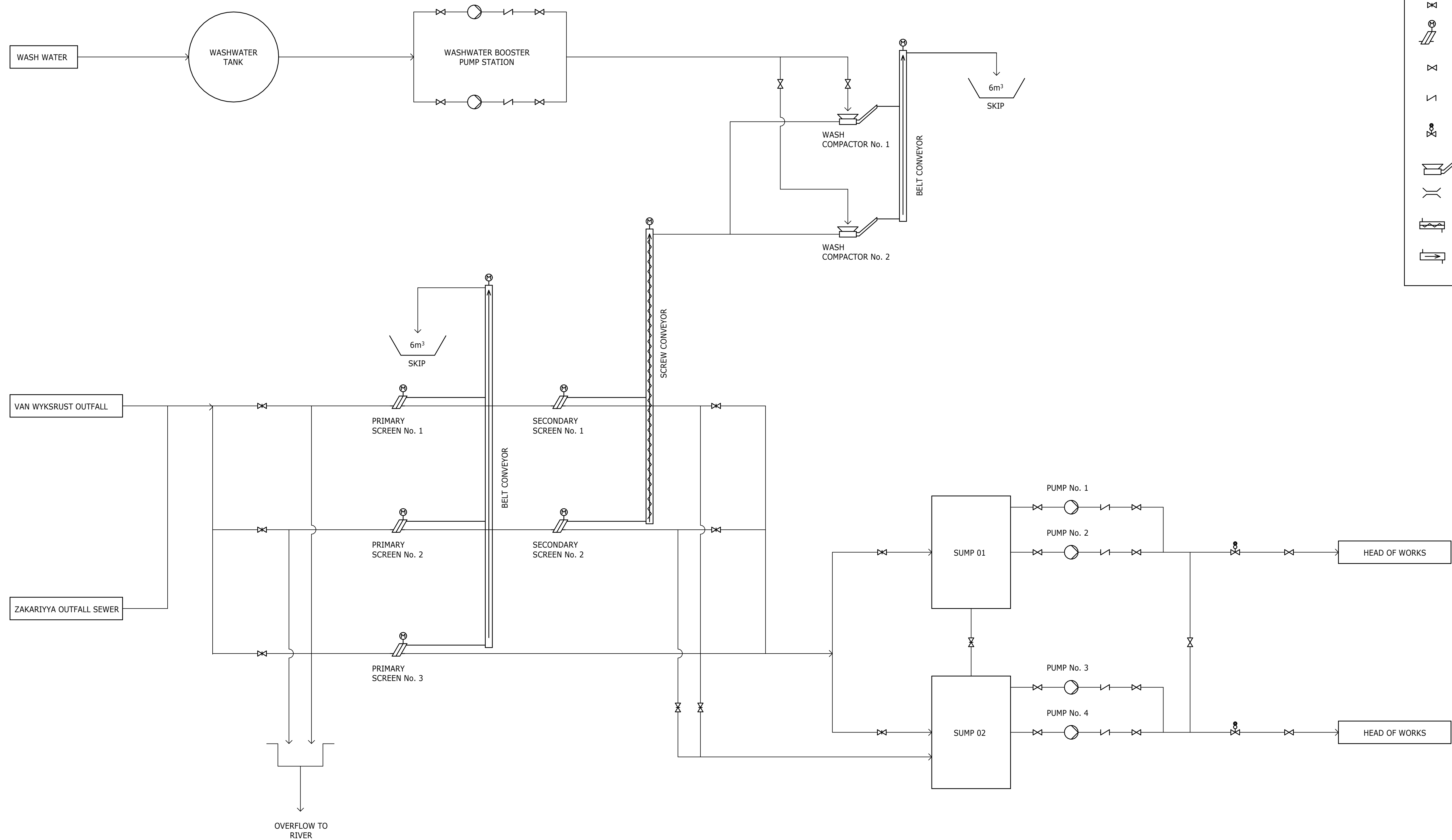
VAN WYKSRUST PUMP STATION PIPE SCHDULE				
ITEM No	DESCRIPTION	MATERIAL	PIPE ENDS	QTY
VP-01	DN500 BELL MOUTH	SANS 719, GRADE B, 8mm	FLANGE ONE SIDE, SANS 1123 1000/3	4
VP-02	DN500 90 DEG SHORT RADIUS BEND	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	8
VP-03	DN500 PUDDLE PIPE, 1680mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE WITH PUDDLE FLANGE, SANS 1123 1000/3	4
VP-04	DN500 KNIFE GATE VALVE	AS PER SPECIFICATIONS	FLANGE BOTH SIDE, SANS 1123 1000/3	8
VP-05	DN500 DISMANTLING JOINT	AS PER SPECIFICATIONS	FLANGE BOTH SIDE, SANS 1123 1000/3	8
VP-06	DN450-DN500 ESSENTRIC ENLARGER	AS PER SPECIFICATIONS	FLANGE BOTH SIDE, SANS 1123 1000/3	4
VP-07	DN400-DN500 CONCENTRIC ENLARGER	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	4
VP-08	DN500 NON-RETURN SWING CHECK VALVE	AS PER SPECIFICATIONS	FLANGE BOTH SIDE, SANS 1123 1000/3	4
VP-09	DN500 STRAIGHT PIPE, 2260mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-10	DN500 90 DEG MEDIUM RADIUS BEND	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	2
VP-11	DN500-DN600 CONCENTRIC ENLARGER	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	2
VP-12	DN600 STRAIGHT PIPE, 1430mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-13	DN500 STRAIGHT PIPE, 2660mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-14	DN600 SWEEP TEE	SANS 719, GRADE B, 8mm	FLANGE ALL SIDES, SANS 1123 1000/3	2
VP-15	DN600 STRAIGHT PIPE, 8320mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-16	DN600 STRAIGHT PIPE, 1440mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-17	DN500 STRAIGHT PIPE, 420mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-18	DN600 STRAIGHT PIPE, 1510mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	1
VP-19	DN600 90 DEG SHORT RADIUS BEND	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	4
VP-20	DN600 STRAIGHT PIPE, 2430mm LONG	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	2



TYPICAL ISOMETRIC VIEW

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.									
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529			OLIFANTSVLEI WWTW: VAN WYKSrust PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSrust PUMP STATION PIPE SCHEDULE	AS SHOWN			C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
		DESIGNED	E. NAIDOO									C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-M-0242					
		DRAWN	N. O'GORMAN									CONSULTANT'S NUMBER									
		CHECKED	E. NAIDOO									BW1400-RHD-C1-02-D-M-0242									
		SERVICES CHECKED										FILE No									
		GEOTECHNICAL INVESTIGATION										C02									
		SERVITUDES																			
		APPROVED	DITHOLO PHOGOLE																		
		Pr. Eng.No.	20060098																		
DATE																					



DEPARTMENT	APPROVED	DESIGNATION	DATE

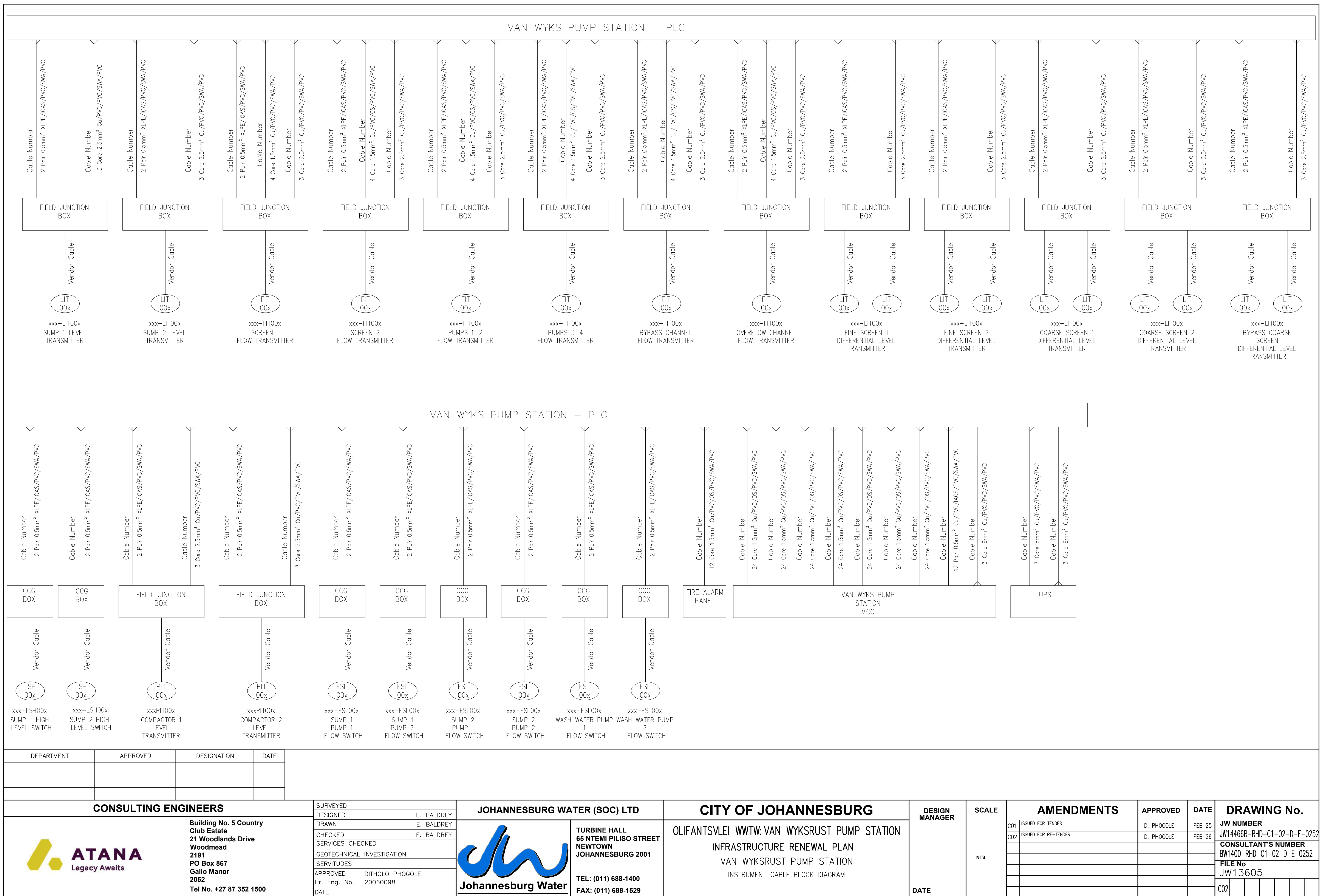
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.									
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED		T. RAMASHAPA		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529			OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION				C01 ISSUED FOR TENDER		D. PHOGOLE	FEB 25	JW NUMBER					
		DRAWN		N. O'GORMAN						INFRASTRUCTURE RENEWAL PLAN				C02 ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-M-0243					
		CHECKED		E. NAIDOO						VAN WYKS RUST PUMP STATION								CONSULTANT'S NUMBER					
		SERVICES CHECKED								PROCESS FLOW DIAGRAM								BW1400-RHD-C1-02-D-M-0243					
		GEOTECHNICAL INVESTIGATION																FILE No					
		SERVITUDES																					
		APPROVED		DITHOLO PHOGOLE								DATE	AS SHOWN										
Pr. Eng.No.		20060098																					
DATE																							

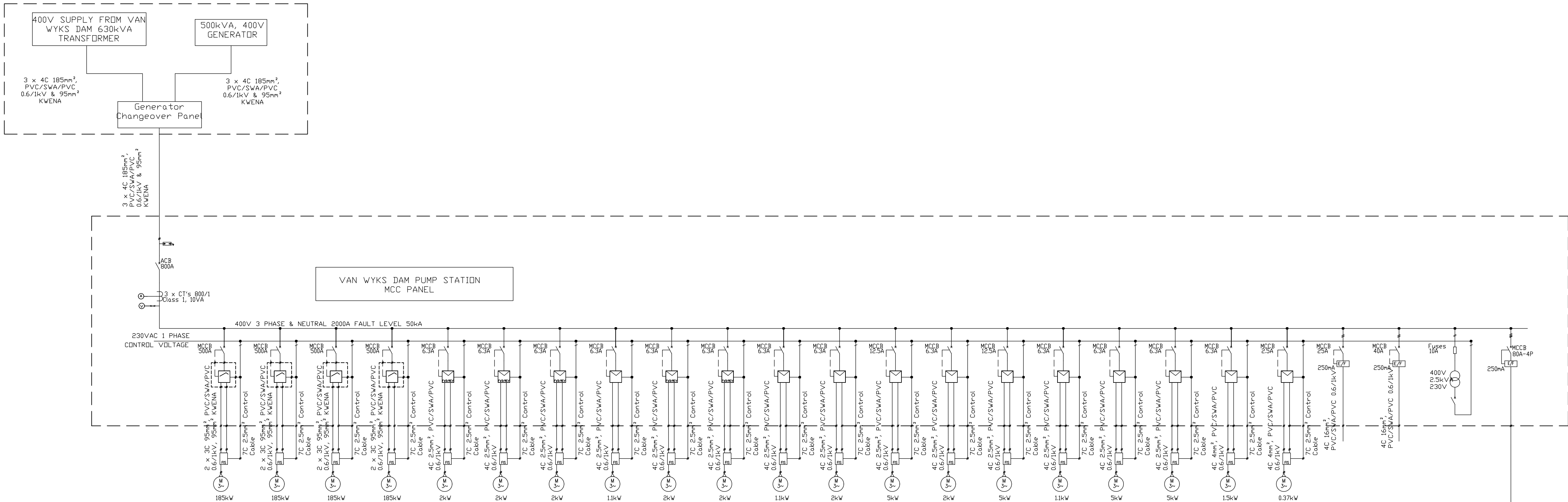


DEPARTMENT		APPROVED		DESIGNATION		DATE																													
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.					
ATANA Legacy Awaits Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500								DESIGNED		E. BALDREY		Johannesburg Water		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529				OLIFANTSVLEI WWTW: VAN WYKSrust PUMP STATION INFRASTRUCTURE RENEWAL PLAN COMMUNICATIONS FIBRE OPTIC RETICULATION CABLE ROUTING				DATE		NTS		C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER	
								DRAWN		E. BALDREY																C02		ISSUED FOR RE-TENDER		D. PHOGOLE		FEB 26		JW14466R-RHD-C1-00-D-E-0051	
								CHECKED		E. BALDREY																								CONSULTANT'S NUMBER	
								SERVICES CHECKED																										BW1400-RHD-C1-00-D-E-0051	
								GEOTECHNICAL INVESTIGATION																										FILE No	
								SERVITUDES																JW 13605											
								APPROVED		DITHOLO PHOGOLE																									
								Pr. Eng. No.		20060098																									
								DATE																											

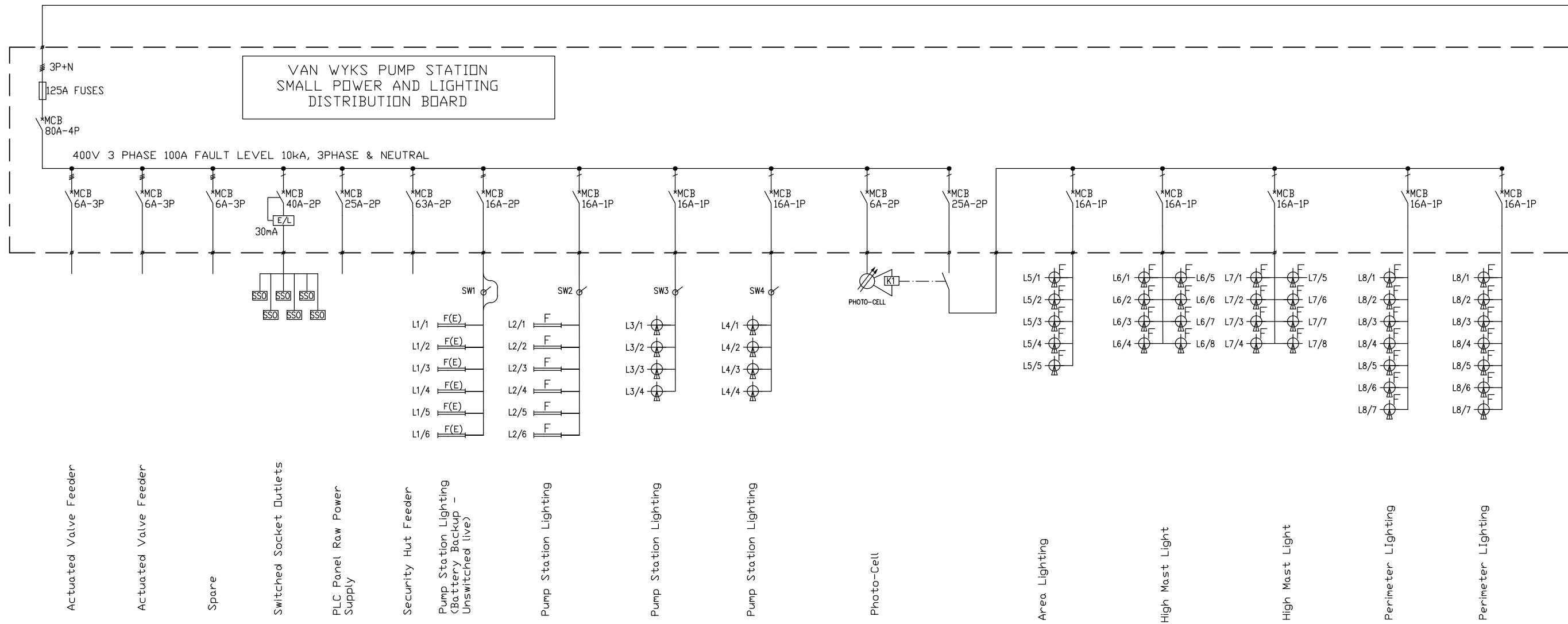


DEPARTMENT		APPROVED		DESIGNATION		DATE																															
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.							
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500								DESIGNED		E. BALDREY		 Johannesburg Water		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529				OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN ELECTRICAL MEDIUM VOLTAGE RETICULATION CABLE ROUTING				DATE		NTS		C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER			
								C02		ISSUED FOR RE-TENDER																D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER							
																														FILE No							
																														JW 13605							
																														C02							





DESCRIPTION	Incomer	Sump No. 1 Pump No. 1	Sump No. 2 Pump No. 2	Sump No. 1 Pump No. 1	Sump No. 2 Pump No. 2	Coarse Screen 1 Drive	Coarse Screen 2 Drive	BYPASS Channel Coarse Screen Drive	Coarse Screens Discharge Conveyor	Fine Screen Drive	Fine Screen 2 Drive	Screen Press 1	Screen Press Washer	Screen Press 2	Screen Press Washer	Fine Screens Discharge Conveyor 2	Wash Pump 1	Wash Water Pump 2	Pump Station Sump Station	Pump Station Blower Fan	Electric Hoist	Feeder Socket	Control Transformer	
CUBICLE NUMBER		185kW	185kW	185kW	185kW	2kW	2kW	2kW	11kW	2kW	2kW	11kW	2.2kW	5kW	2.2kW	5kW	11kW	3kW	3kW	1.5kW	0.37kW	10kW	10kW	2.5kVA
kW		185kW	185kW	185kW	185kW	2kW	2kW	2kW	11kW	2kW	2kW	11kW	2.2kW	5kW	2.2kW	5kW	11kW	3kW	3kW	1.5kW	0.37kW	10kW	10kW	2.5kVA
F.I.C.	800A	311A	311A	311A	311A	3.4A	3.4A	3.4A	1.9A	3.4A	3.4A	1.9A	3.8A	8.2A	3.8A	8.2A	1.9A	4.9A	4.9A	3A	1A	17A	17A	3.4A
CIRCUIT BREAKER	800A	500A	500A	500A	500A	6.3A	6.3A	6.3A	6.3A	6.3A	6.3A	6.3A	12.5A	12.5A	12.5A	6.3A	6.3A	6.3A	3A	2.5A	25A	40A	N/A	
EARTH FAULT FUSE (A)		375mA (E1sec-T)	375mA (E1sec-T)	375mA (E1sec-T)	375mA (E1sec-T)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	250mA (E1sec-X)	10A	
CONTACTOR		400A	400A	400A	400A	32A	32A	32A	32A	32A	32A	32A	32A	32A	32A	32A	32A	32A	32A	9A	N/A	N/A	40A	



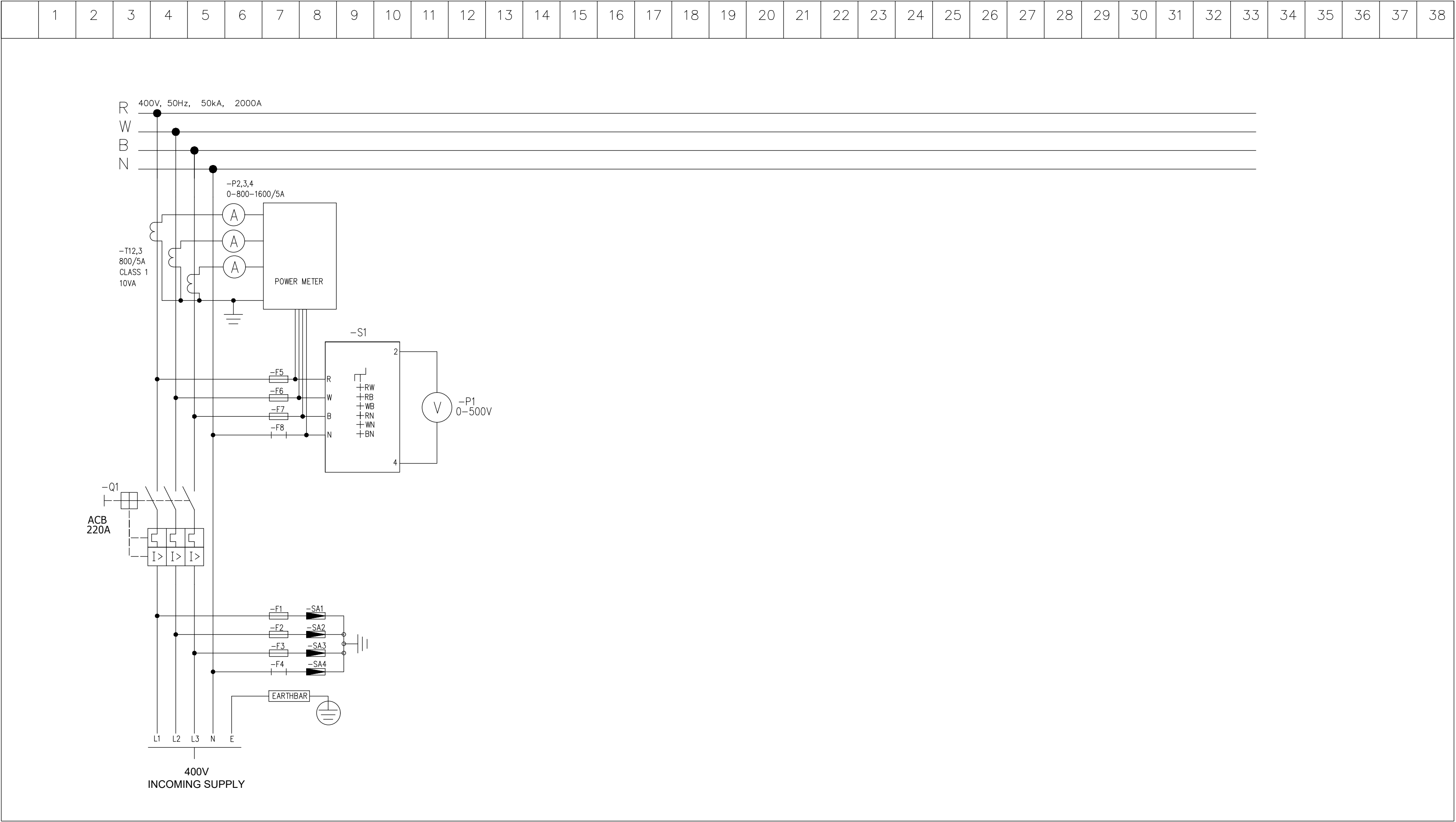
KEY PLAN	
	CIRCUIT BREAKER WITH EARTH FAULT
	DIRECT ON LINE STARTER
	VARIABLE SPEED DRIVE
	STAR/DELTA STARTER
	SOFT STARTER
	FIELD ISOLATOR STATION
	EMERGENCY STOP STATION
	3 PHASE MOTOR
	TRANSFORMER
	FIELD STATION
	E-STOP & STOP/START
	CURRENT TRANSFORMER
	AMMETER
	VOLTMETER
	SURGE ARRESTER
	1200mm 2x25W LED
	FLOOD LIGHT - LED 220W
	PHOTO CELL DAYLIGHT SWITCH
	LED BULKHEAD FITTING-50W
	SINGLE LIGHT SWITCH

NOTES SUMMARY - Van Wyksdrift Pump Station MCC
FORM: 3B
TYPE 2 CO-ORDINATION
BUSBAR RATING: 2000A
FAULT LEVEL: 50KA
IAC - REQUIRED AS PER SANS SPECIFICATIONS
COLOUR: ELECTRIC ORANGE
LENGTH: TBC mm
HEIGHT: TBC mm
DEPTH: 600 mm
MATERIAL: 2mm MILD STEEL
MOUNTING: FREE STANDING
FRONT ACCESS
CABLE ENTRY: BOTTOM
INSTALLATION: SUBSTATION
RATING: IP44
DRIVE CONTROL & MONITORING: CONVENTIONAL
COMMUNICATION: ETHERNET

DEPARTMENT		APPROVED		DESIGNATION		DATE																											
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.			
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500								DESIGNED		E. BALDREY		 TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529				OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION MOTOR CONTROL CENTRE SINGLE LINE DIAGRAM				NTS		C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER JW14466R-RHD-C1-02-D-E-0253			
								DRAWN		E. BALDREY												C02		ISSUED FOR RE-TENDER		D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0253			
								CHECKED		E. BALDREY																				FILE No			
								SERVICES CHECKED																						JW13605			
								GEOTECHNICAL INVESTIGATION																									
								SERVITUDES																									
								APPROVED		DITHOLO PHOGOLE						DATE																	
		Pr. Eng. No.		20060098																													

NOTES:

TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.

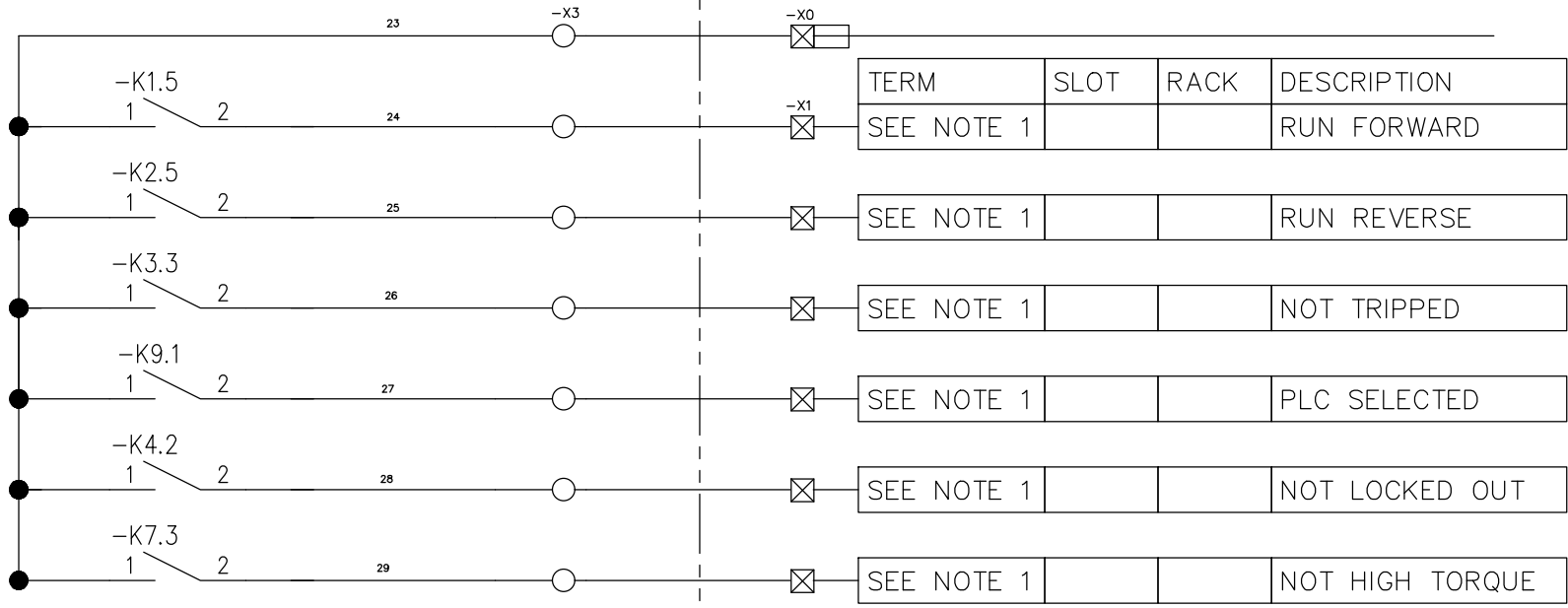
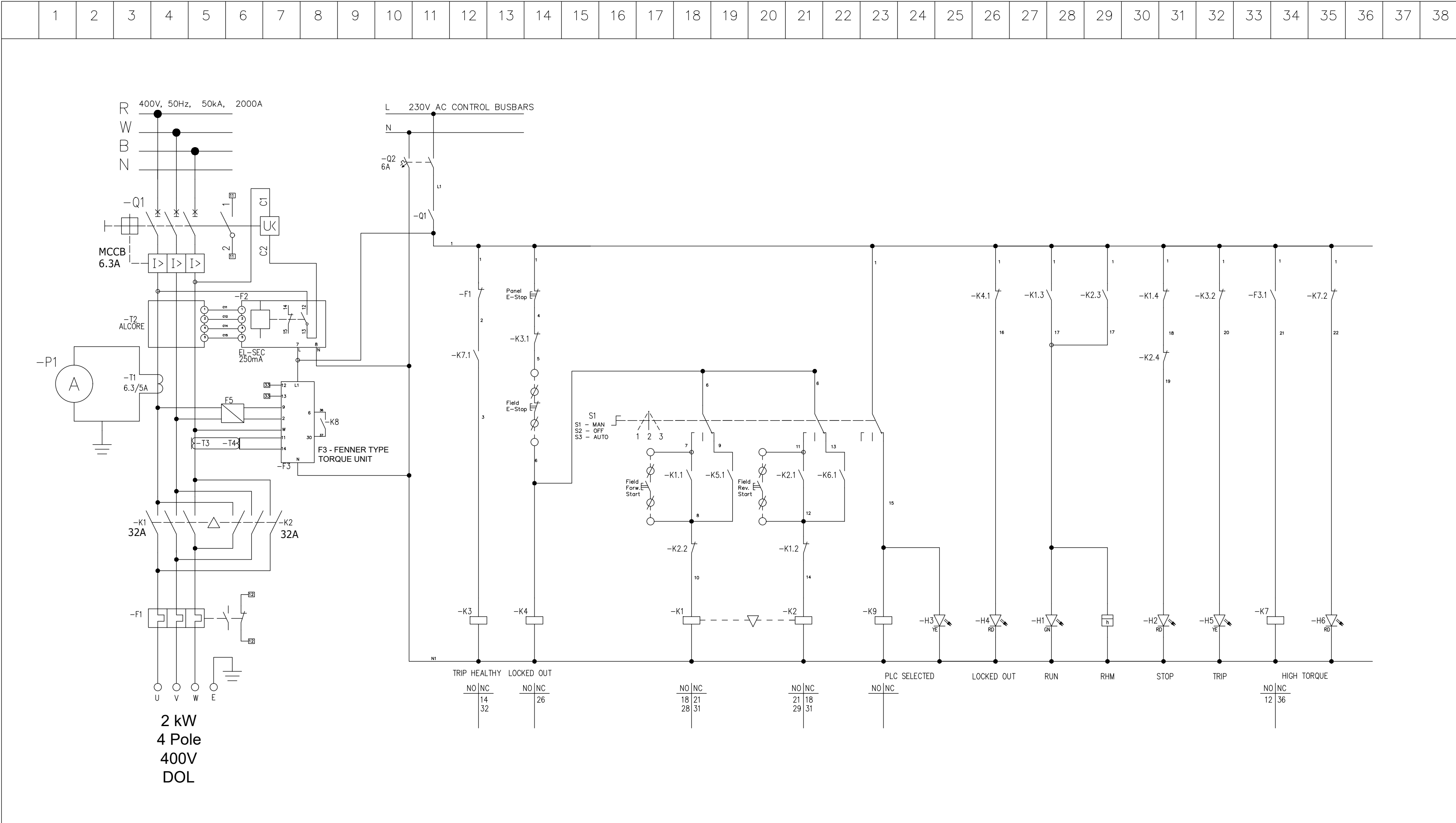


DEPARTMENT	APPROVED	DESIGNATION	DATE

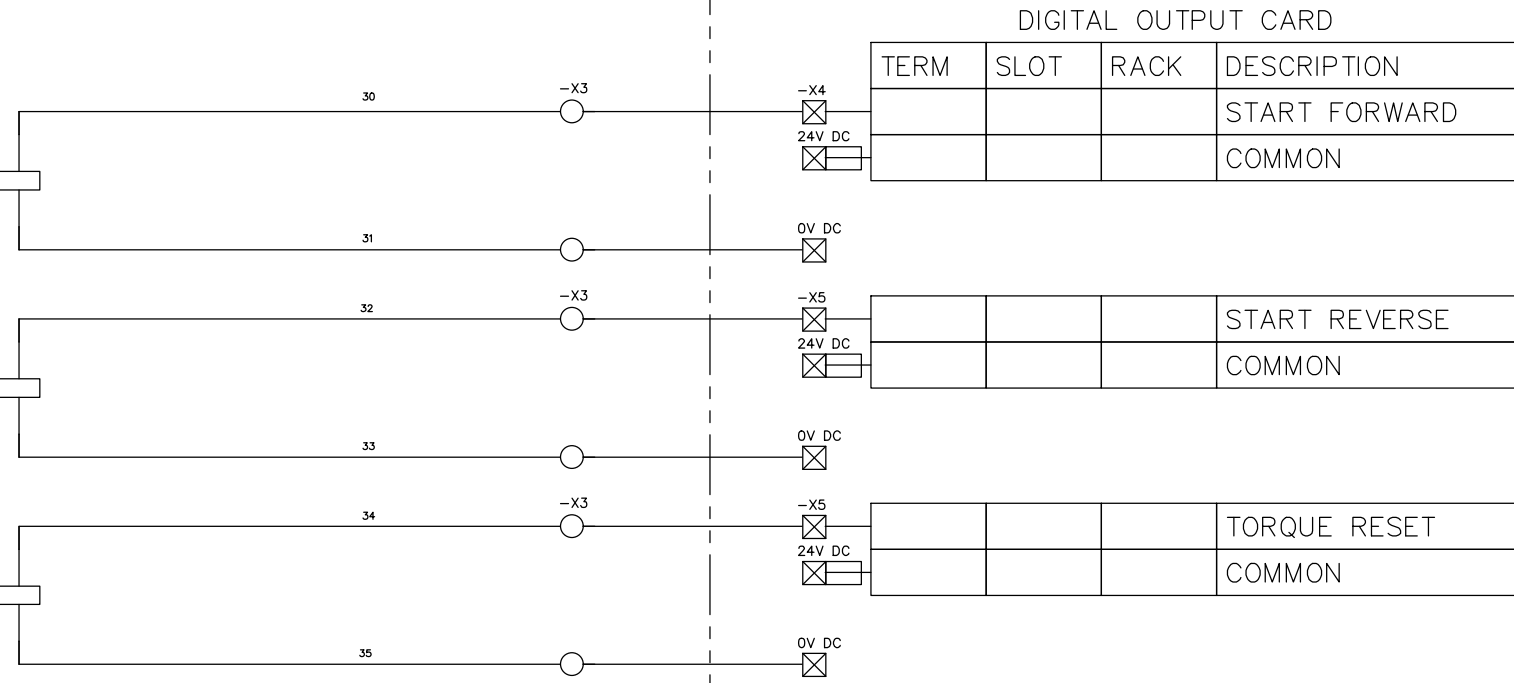
CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.			
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY	 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW:VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM INCOMER (Sht 1 of 11)	DATE	NTS			C01	ISSUED FOR TENDER			D. PHOGOLE	FEB 25	JW NUMBER	
		C02	ISSUED FOR RE-TENDER								D. PHOGOLE	FEB 26			JW14466R-RHD-C1-02-D-E-0254			
															CONSULTANT'S NUMBER			
															BW1400-RHD-C1-02-D-E-0254			
															FILE No			
															JW13605			
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NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION

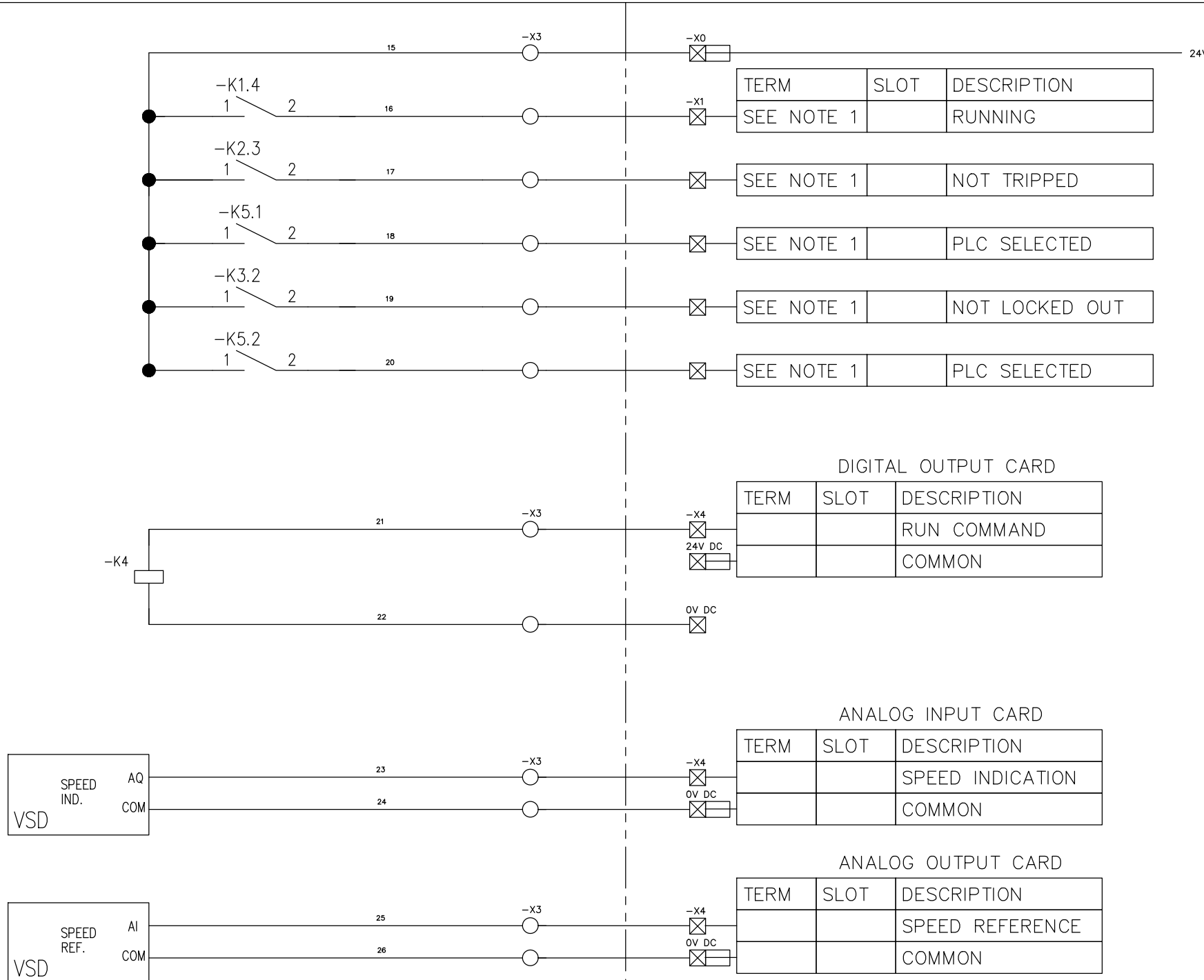
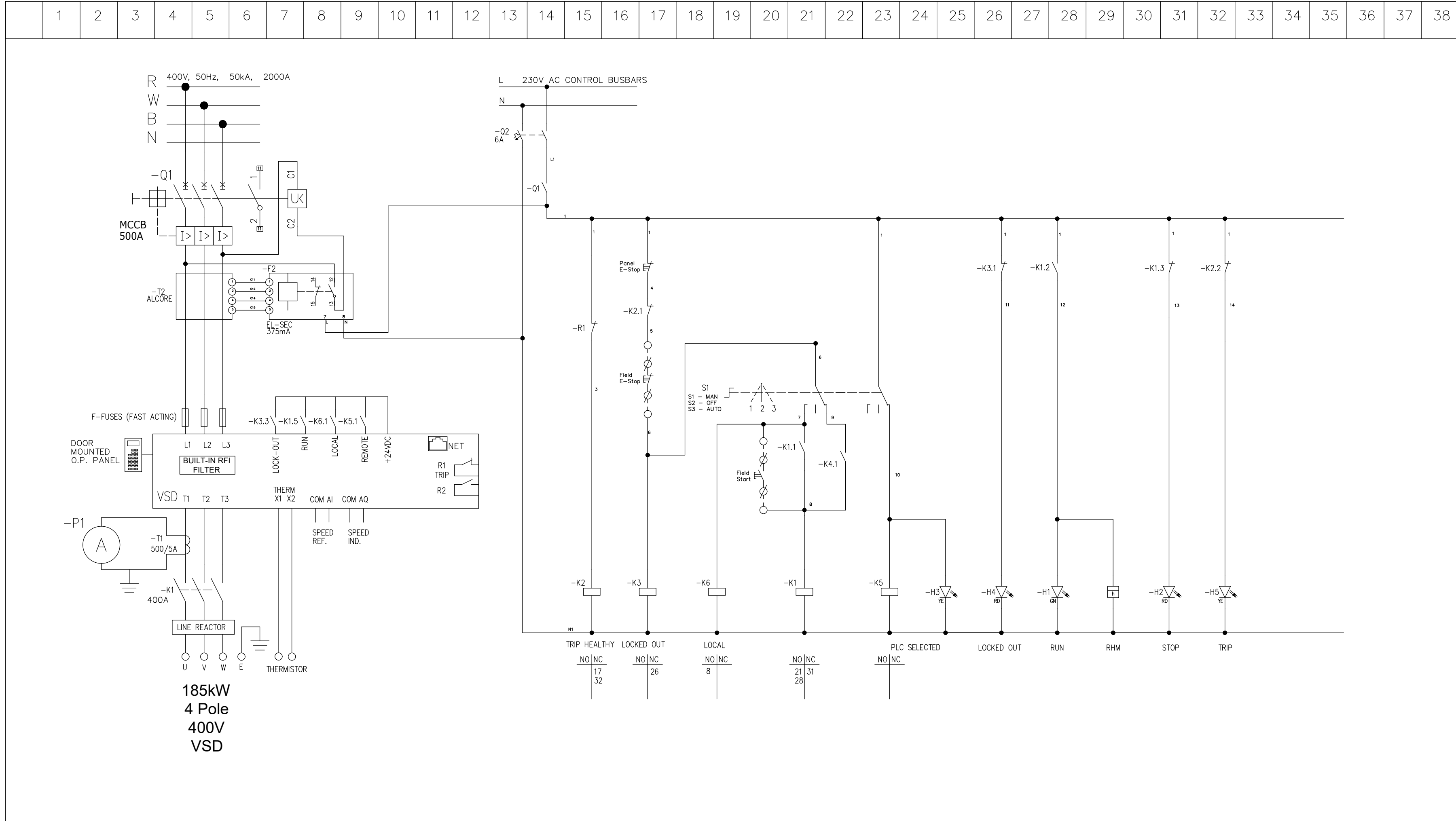


DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION MCC SCHEMATIC DIAGRAM SCREEN FORWARD/REVERSE DOL STARTER (Sht 2 of 11)	DATE	NTS			C01	ISSUED FOR TENDER			
		DRAWN	E. BALDREY						C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0255		
		CHECKED	E. BALDREY										CONSULTANT'S NUMBER		
		SERVICES CHECKED											BW1400-RHD-C1-02-D-E-0255		
		GEOTECHNICAL INVESTIGATION											FILE No		
		SERVITUDES						JW13605							
		APPROVED	DITHOLO PHOGOLE					C02							
Pr. Eng. No.	20060098														
DATE															

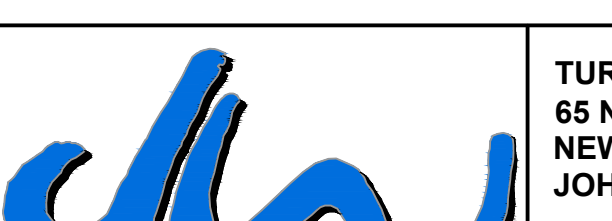
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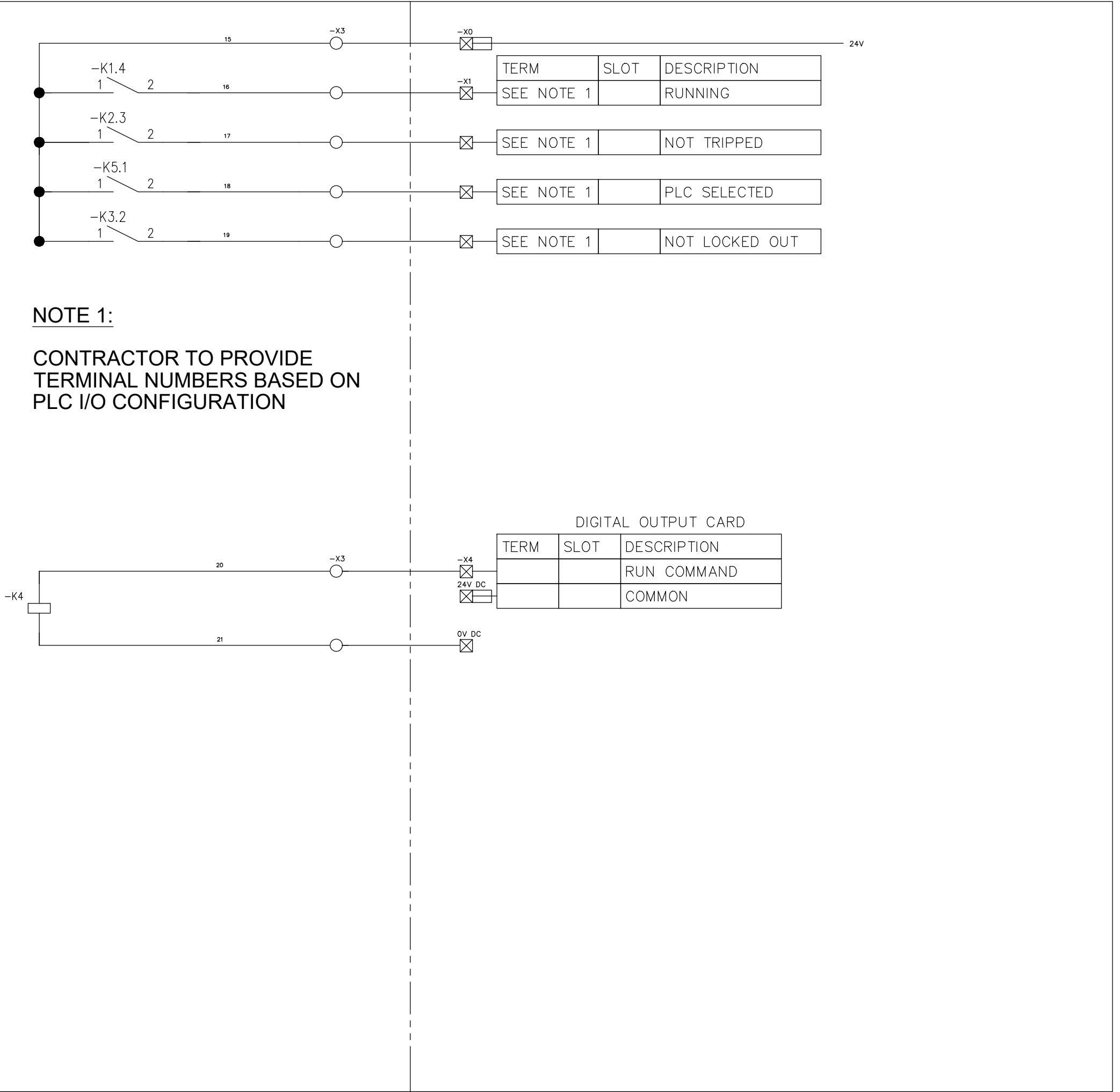
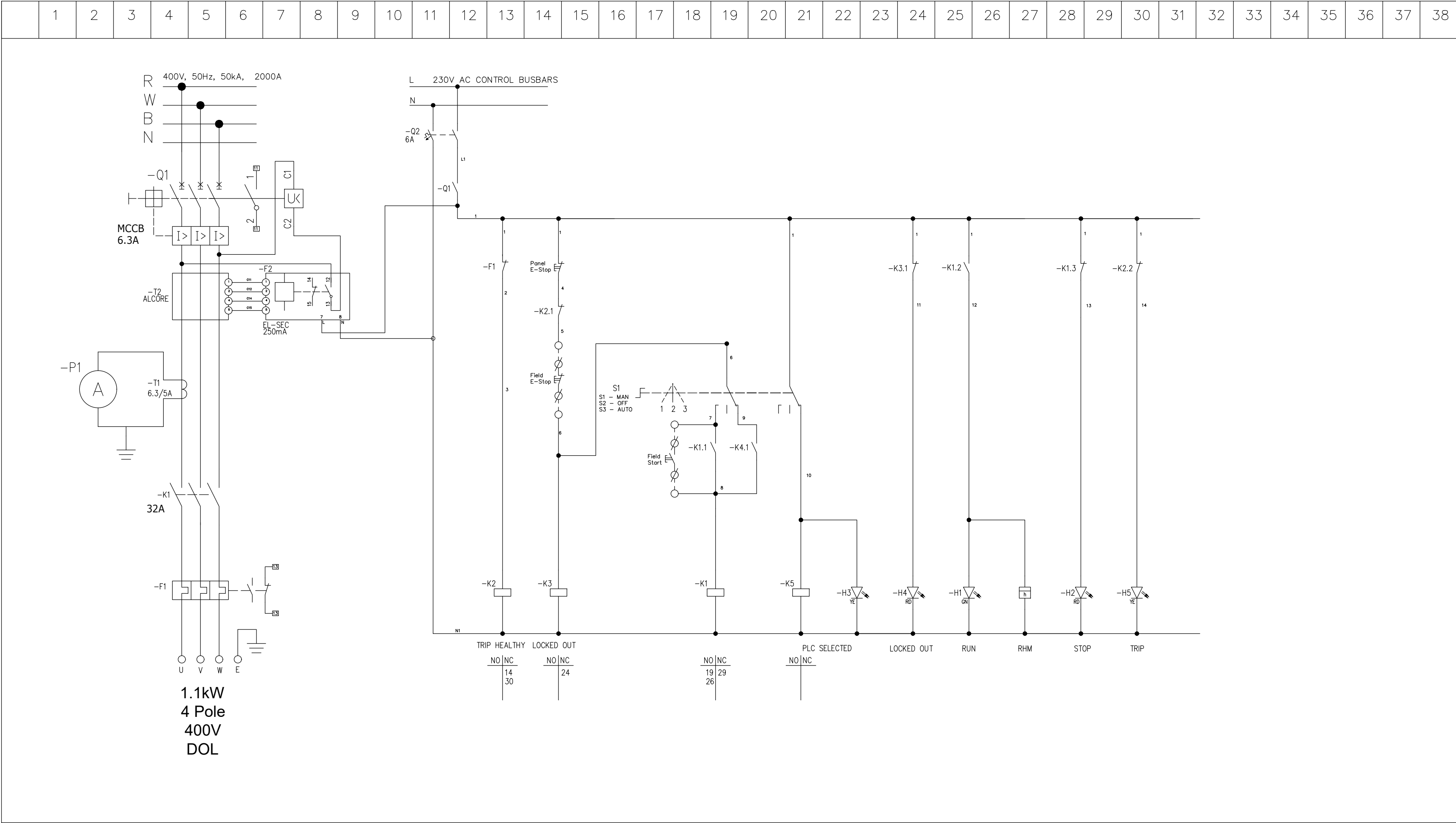
NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION

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CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.							
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW:VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM MAIN PUMP VSD STARTER (Sht 3 of 11)	DATE			C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER							
		DRAWN	E. BALDREY							C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0256							
		CHECKED	E. BALDREY											CONSULTANT'S NUMBER							
		SERVICES CHECKED												BW1400-RHD-C1-02-D-E-0256							
		GEOTECHNICAL INVESTIGATION												FILE No							
				SERVITUDES												JW13605					
				APPROVED	DITHOLO PHOGOLE									C02							
				Pr. Eng. No.	20060098																
				DATE																	

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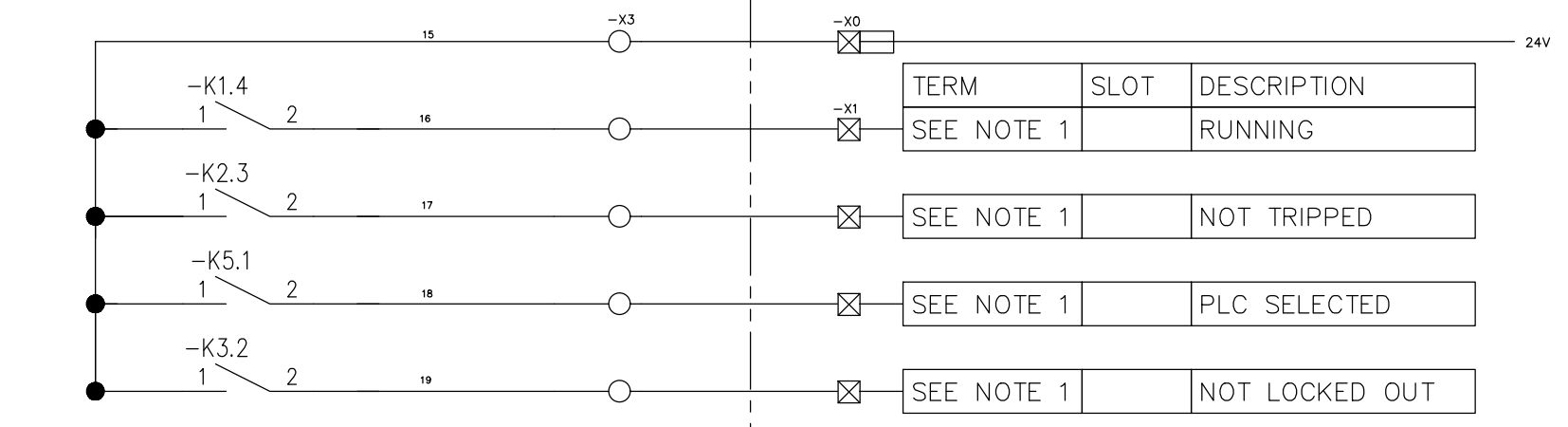


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CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.								
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	SURVEYED			TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529				OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION MCC SCHEMATIC DIAGRAM SCREENING CONVEYOR DOL STARTER (Sht 4 of 11)				C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER				
		DESIGNED	E. BALDREY										C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0257				
		DRAWN	E. BALDREY																		
		CHECKED	E. BALDREY																		
		SERVICES CHECKED																			
		GEOTECHNICAL INVESTIGATION																			
		SERVITUDES																			
		APPROVED	DITHOLO PHOGOLE																		
		Pr. Eng. No.	20060098																		
		DATE																			

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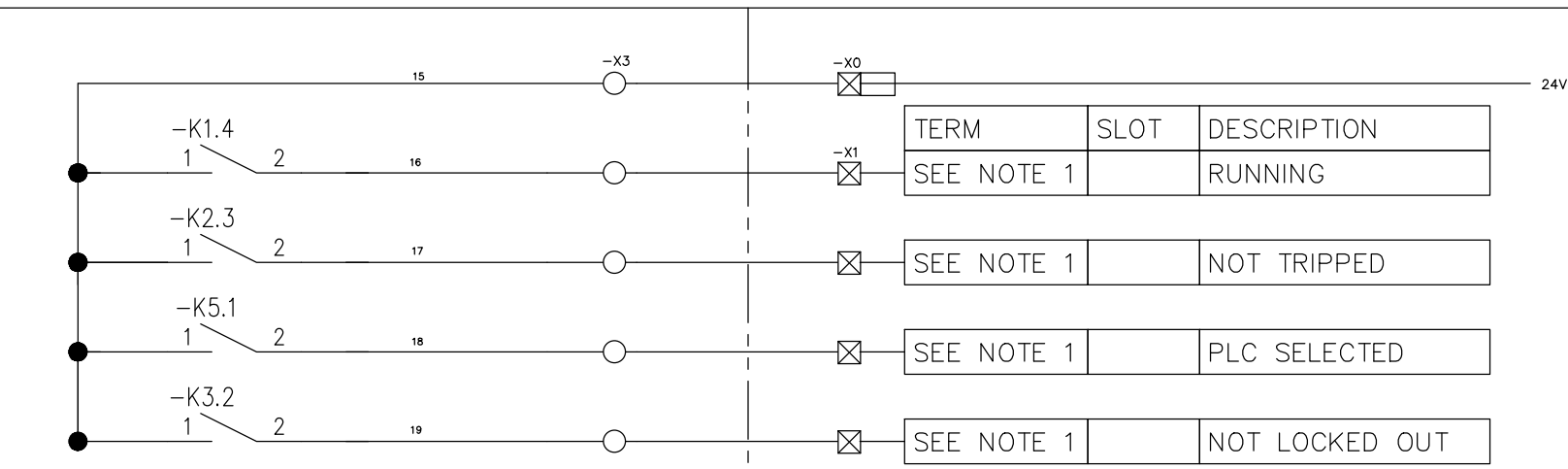
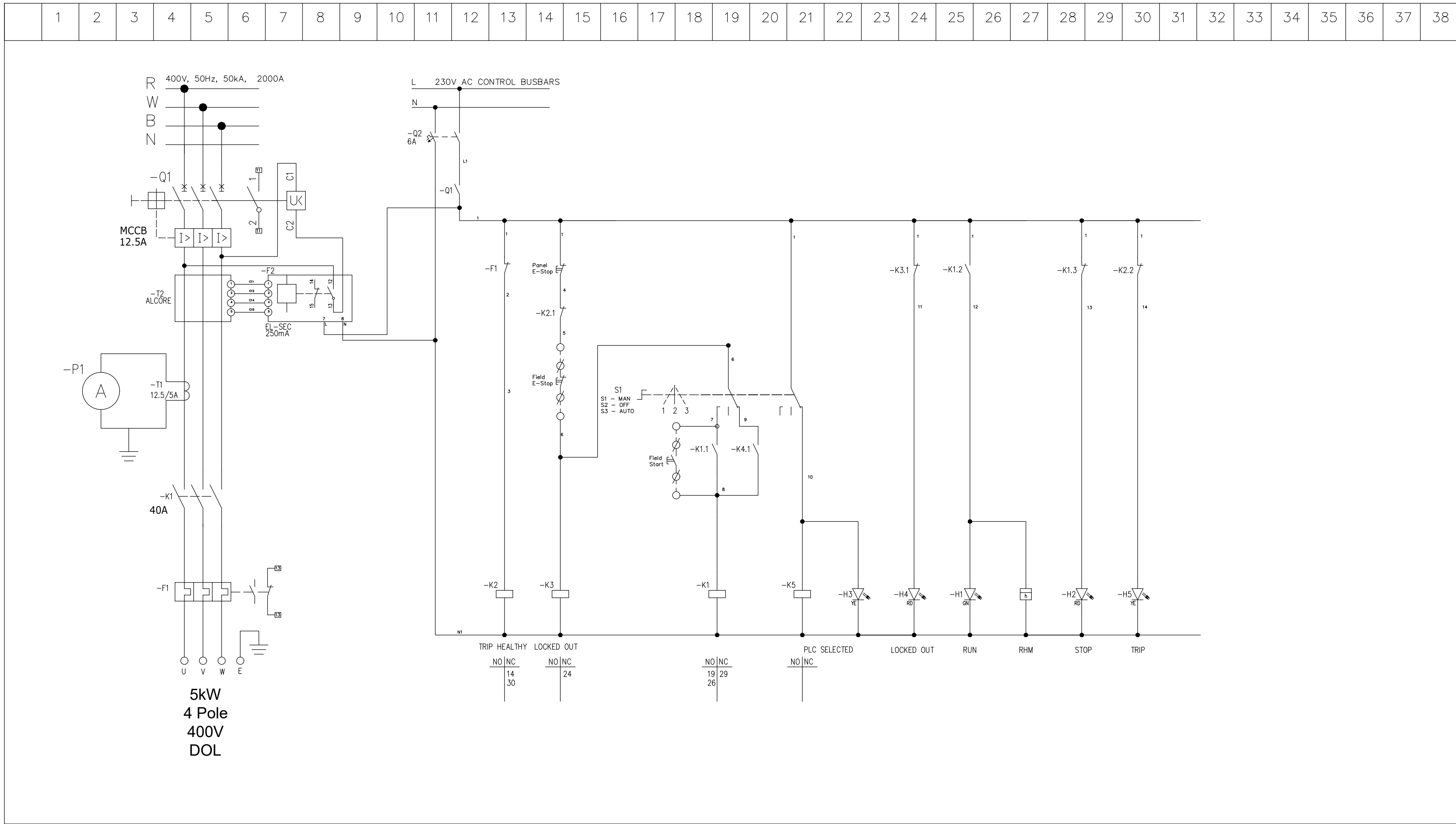
DIGITAL OUTPUT CARD

TERM	SLOT	DESCRIPTION
		RUN COMMAND
		COMMON

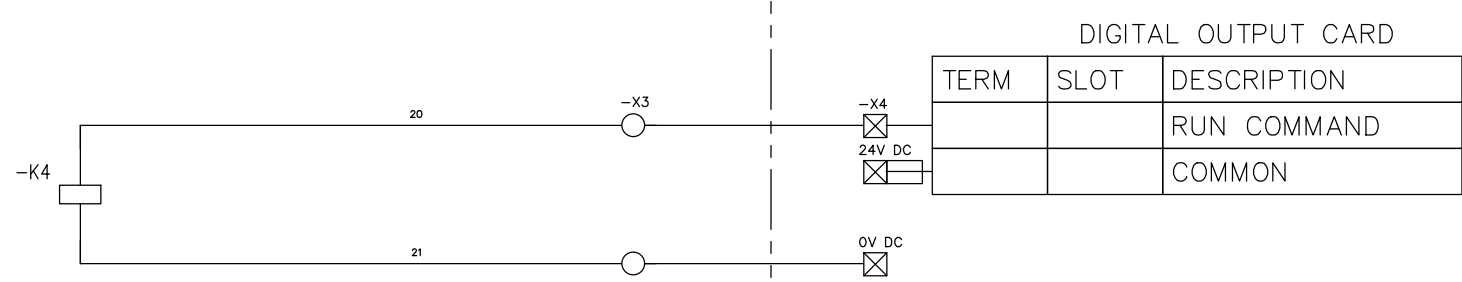
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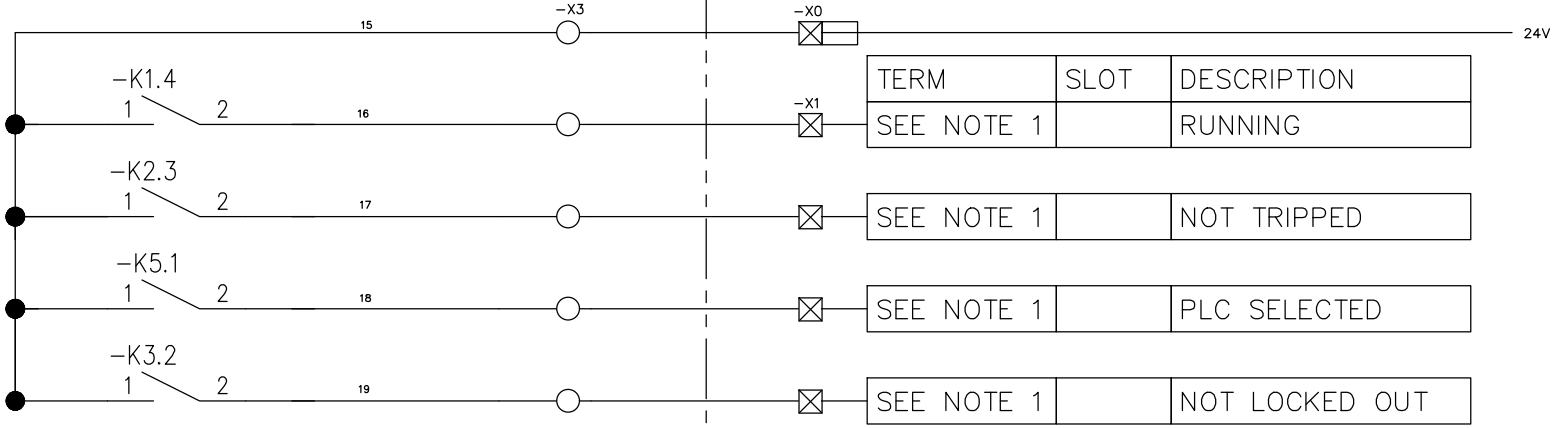
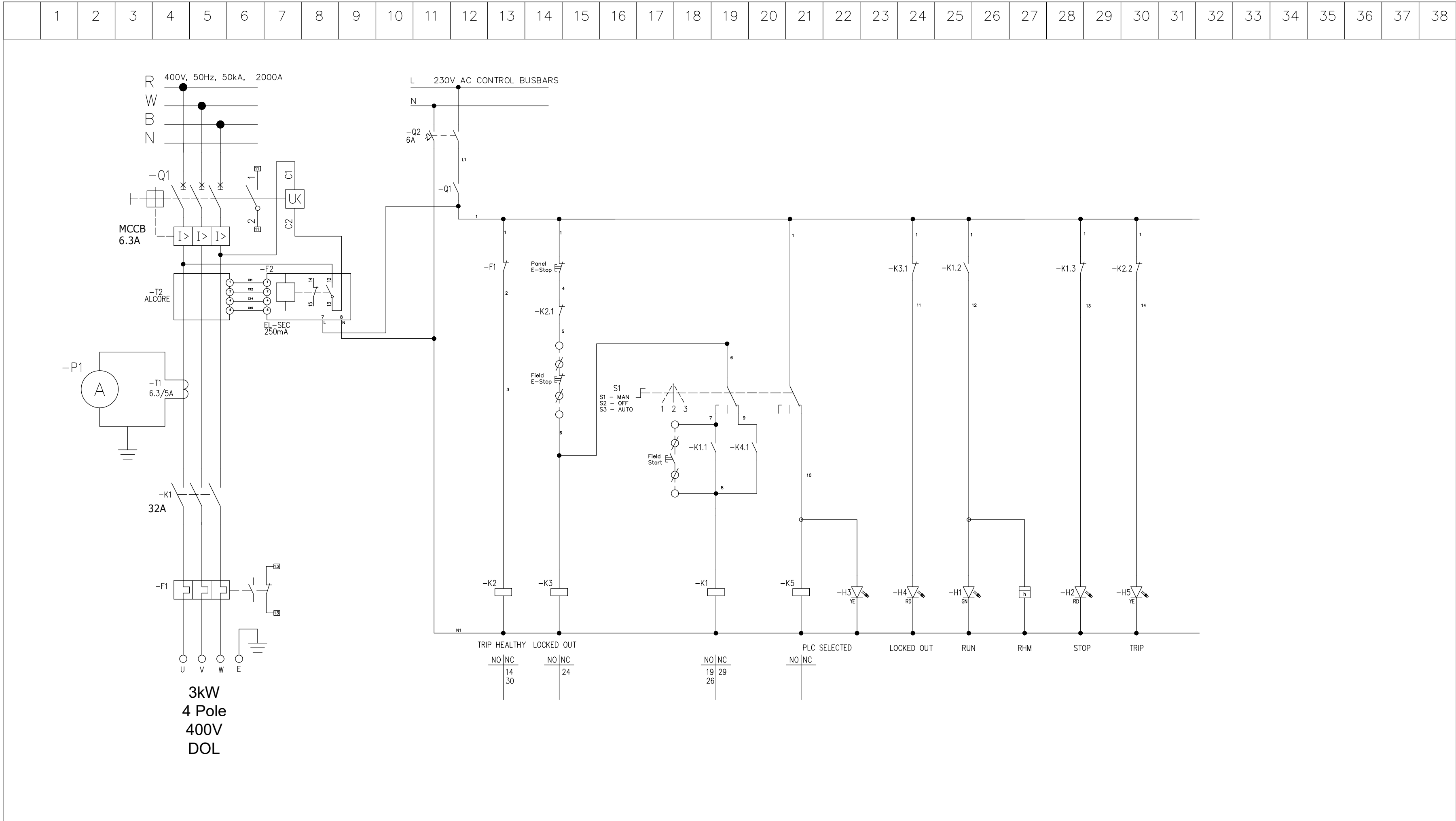


DEPARTMENT	APPROVED	DESIGNATION	DATE

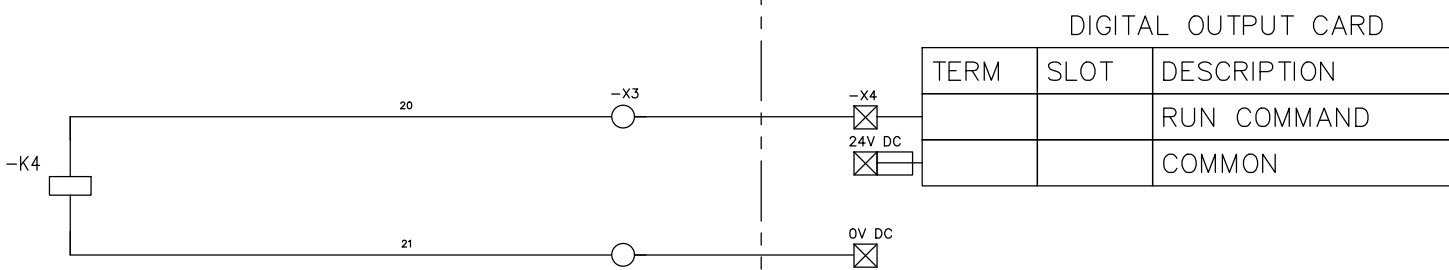
CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	SURVEYED		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM SCREENING PRESS WASHER DOL STARTER (Sht 6 of 11)							
		DESIGNED	E. BALDREY										
		DRAWN	E. BALDREY										
		CHECKED	E. BALDREY										
		SERVICES CHECKED											
		GEOTECHNICAL INVESTIGATION											
		SERVITUDES											
		APPROVED	DITHOLO PHOGOLE										
		Pr. Eng. No.	20060098										
		DATE											
							DATE						
									C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
									C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0259
													CONSULTANT'S NUMBER
													BW1400-RHD-C1-02-D-E-0259
													FILE No
													JW13605
													C02
						</							

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NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION

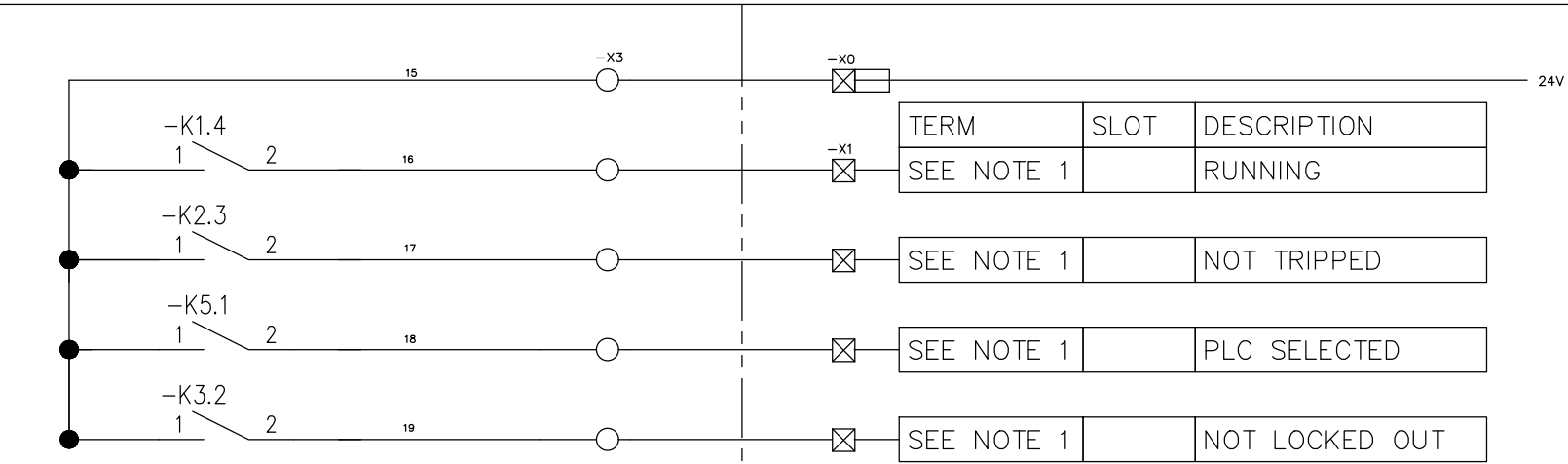
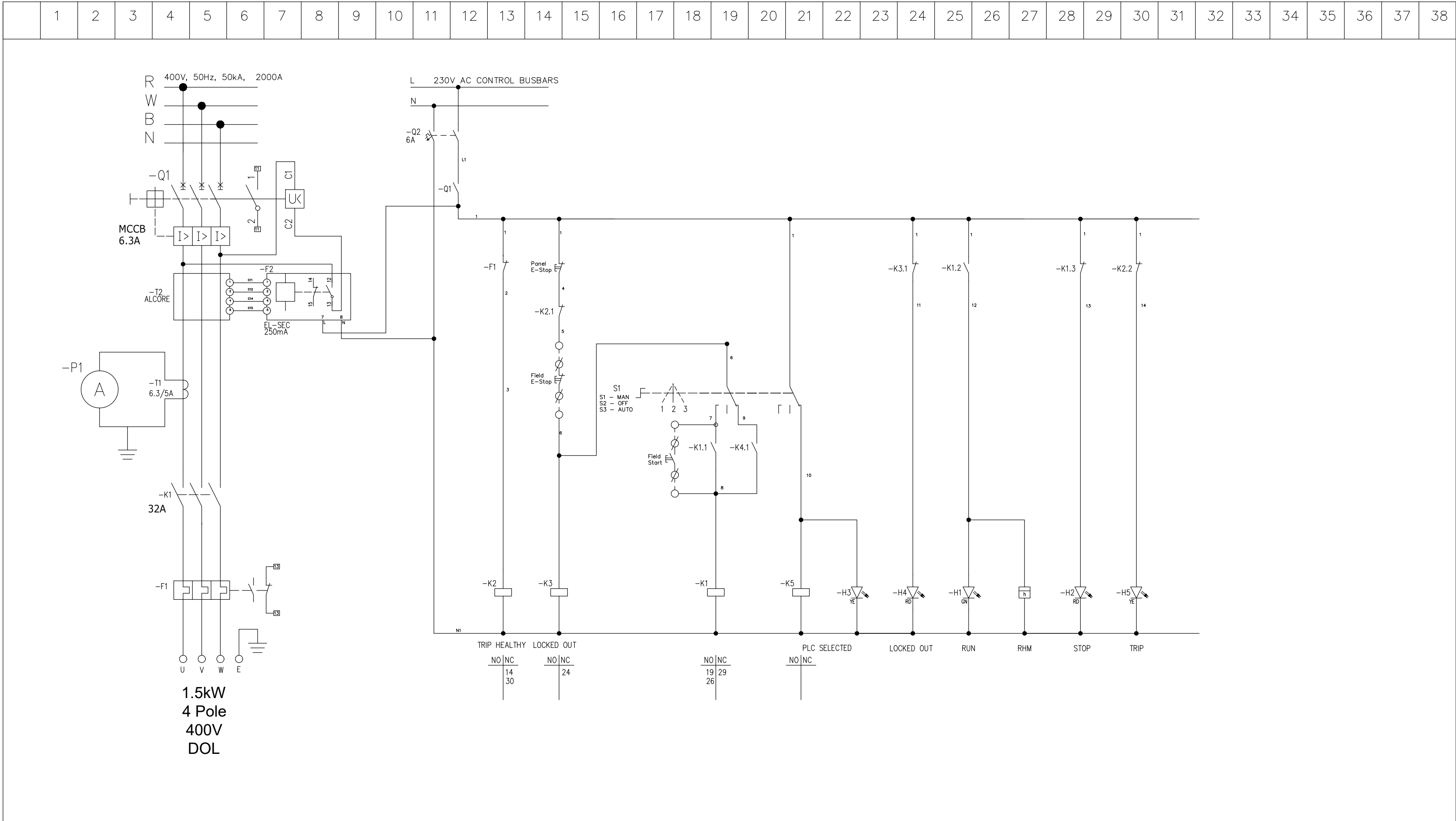


DEPARTMENT	APPROVED	DESIGNATION	DATE

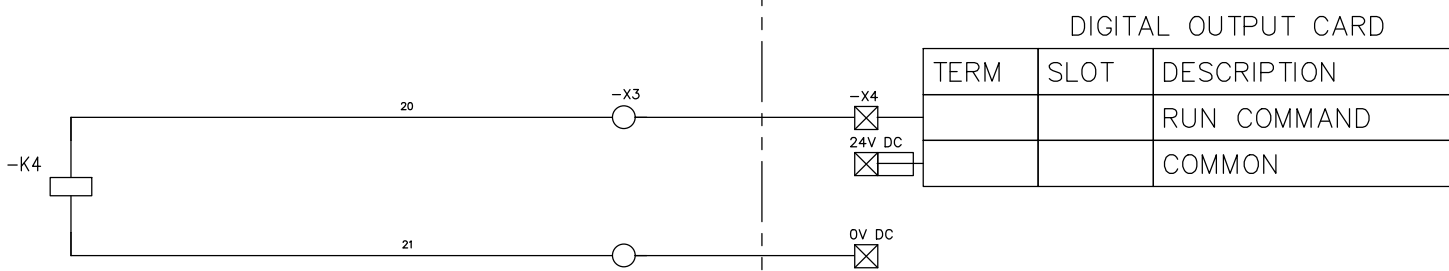
CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	SURVEYED		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM WASH WATER PUMP DOL STARTER (Sht 7 of 11)							
		DESIGNED	E. BALDREY										
		DRAWN	E. BALDREY										
		CHECKED	E. BALDREY										
		SERVICES CHECKED											
		GEOTECHNICAL INVESTIGATION											
		SERVITUDES											
		APPROVED	DITHOLO PHOGOLE										
		Pr. Eng. No.	20060098										
		DATE											
											</		

NOTES:

TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.



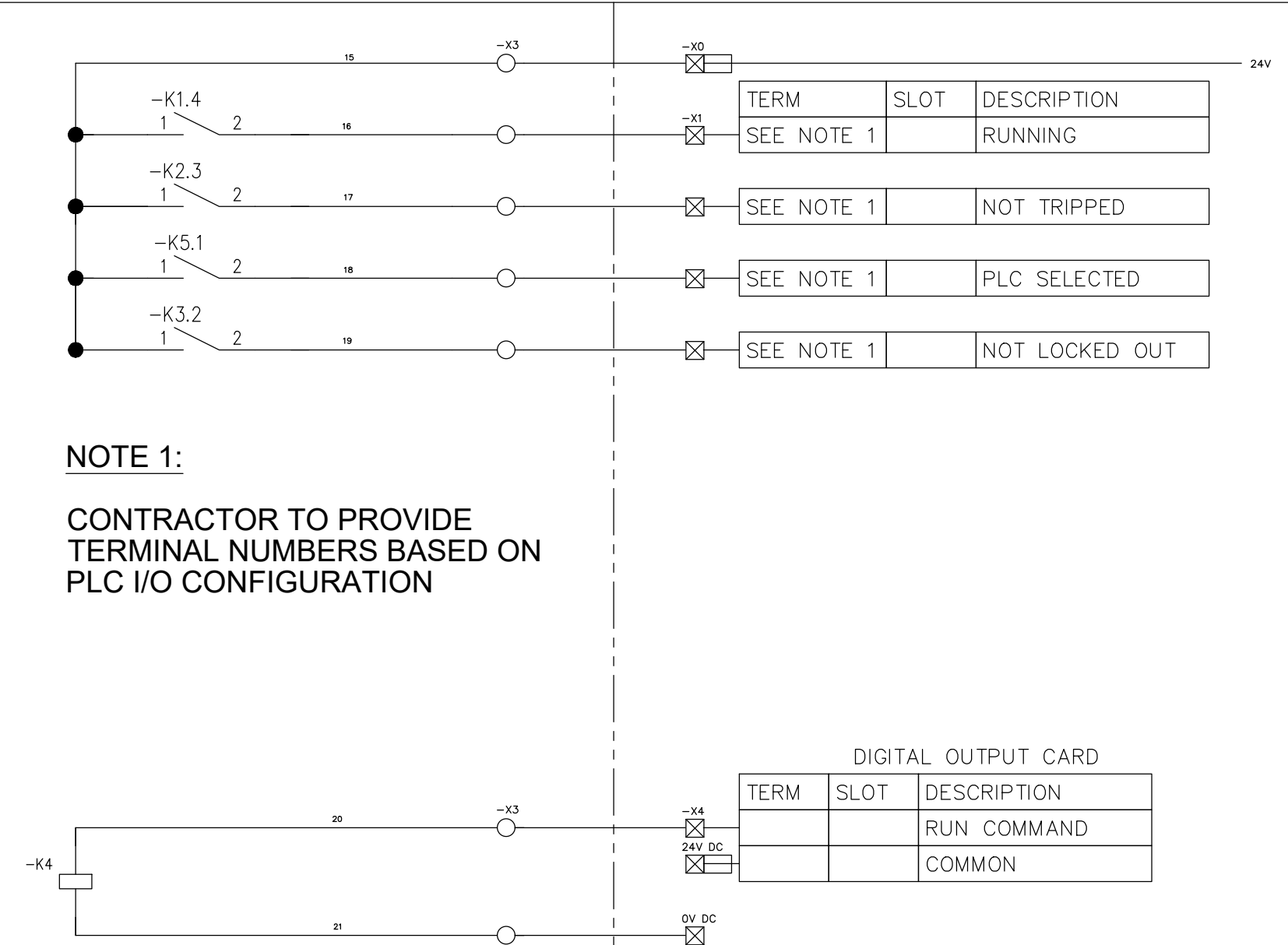
NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION



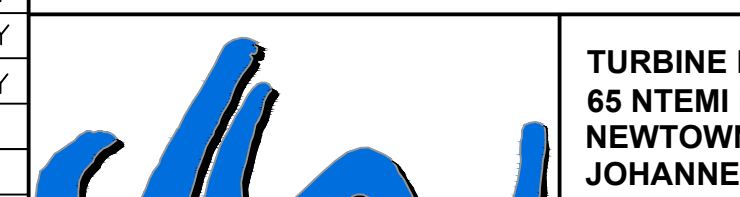
DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.		
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM PUMP STATION SUMP PUMP DOL STARTER (Sht 8 of 11)		C01			ISSUED FOR TENDER	D. PHOGOLE			FEB 25	JW NUMBER	
		DRAWN	E. BALDREY					C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0261					
		CHECKED	E. BALDREY									CONSULTANT'S NUMBER					
		SERVICES CHECKED										BW1400-RHD-C1-02-D-E-0261					
		GEOTECHNICAL INVESTIGATION										FILE No					
		SERVITUDES													JW13605		
		APPROVED	DITHOLO PHOGOLE														
		Pr. Eng. No.	20060098														
		DATE															

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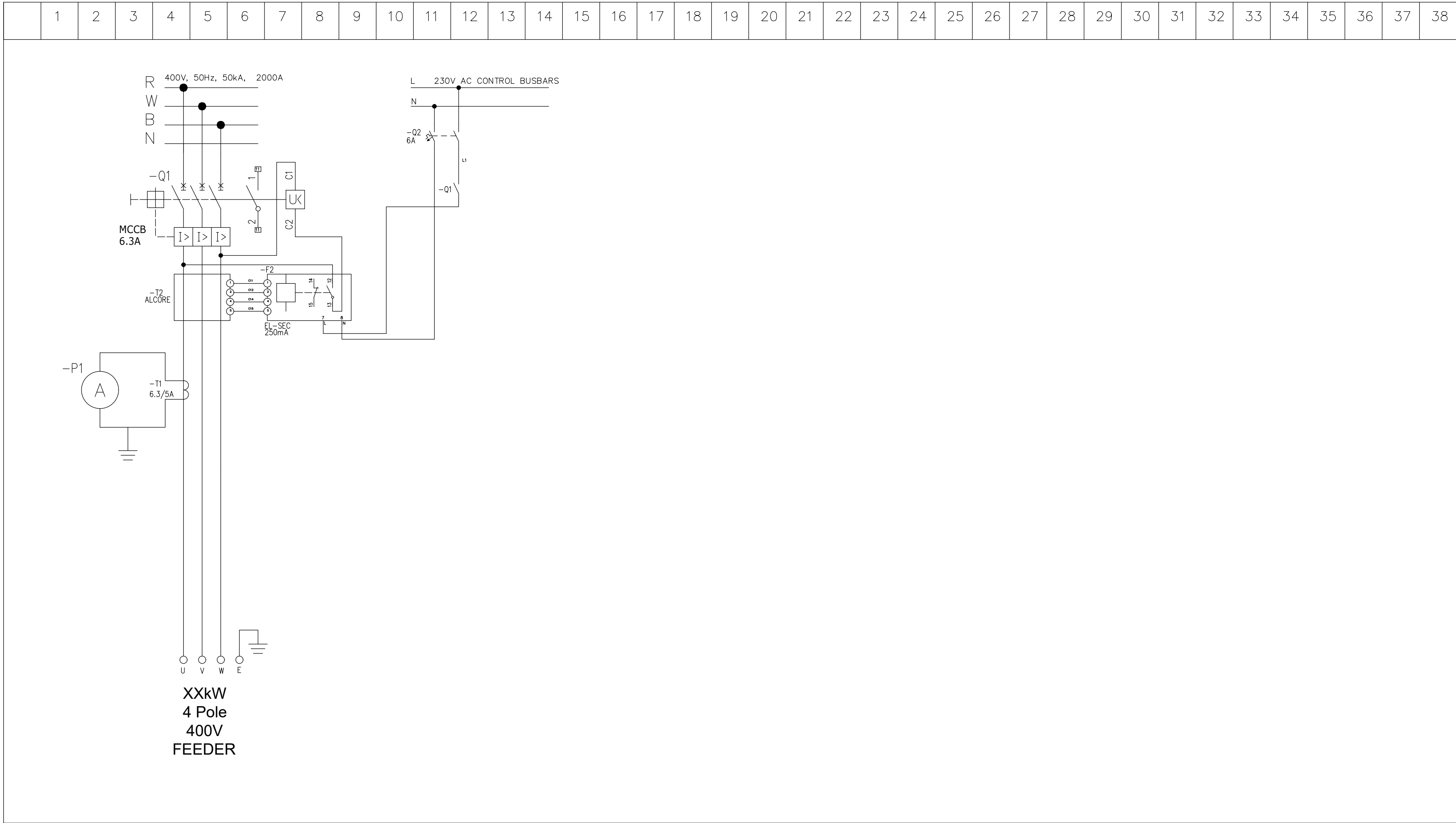


DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.										
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY	 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM PUMP STATION EXTRACTION FAN DOL STARTER (Sht 9 of 11)	DATE						NTS	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
		DRAWN	E. BALDREY											C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0262					
		CHECKED	E. BALDREY											CONSULTANT'S NUMBER									
		SERVICES CHECKED												BW1400-RHD-C1-02-D-E-0262									
		GEOTECHNICAL INVESTIGATION												FILE No									
		SERVITUDES												JW13605									
		APPROVED	DITHOLO PHOGOLE																				
Pr. Eng. No.	20060098																						
DATE				C02																			

NOTES:

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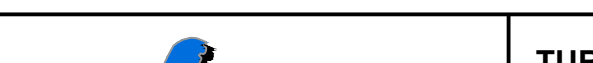


DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS			APPROVED	DATE	DRAWING No.						
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001	OLIFANTSVLEI WWTW:VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM TYPICAL FEEDER SCHEMATIC (Sht 10 of 11)		NTS			C01	ISSUED FOR TENDER	D. PHOGOLE			FEB 25	JW NUMBER					
		DRAWN	E. BALDREY								C02	ISSUED FOR RE-TENDER	D. PHOGOLE			FEB 26	JW14466R-RHD-C1-02-D-E-0263					
		CHECKED	E. BALDREY								CONSULTANT'S NUMBER											
		SERVICES CHECKED									BW1400-RHD-C1-02-D-E-0263											
		GEOTECHNICAL INVESTIGATION									FILE No											
		SERVITUDES							JW13605													
APPROVED DITHOLO PHOGOLE Pr. Eng. No. 20060098																						
DATE																						

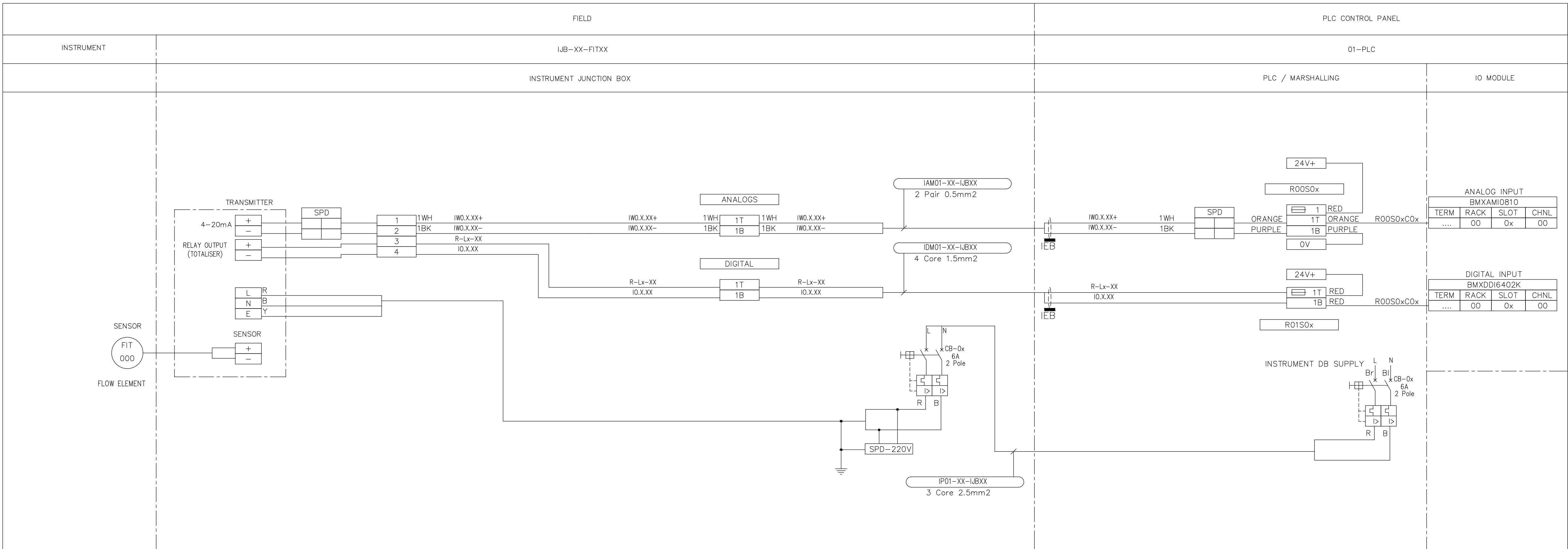
TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.

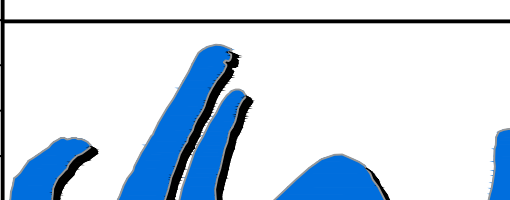


CONSULTING ENGINEERS						SURVEYED DESIGNED E. BALDREY DRAWN E. BALDREY CHECKED E. BALDREY SERVICES CHECKED GEOTECHNICAL INVESTIGATION SERVITUDES APPROVED DITHOLO PHOGOLE Pr. Eng. No. 20060098 DATE		JOHANNESBURG WATER (SOC) LTD  Johannesburg Water		JOHANNESBURG WATER (SOC) LTD TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529		CITY OF JOHANNESBURG OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM CONTROL TRANSFORMER SCHEMATIC (Sht 11 of 11)		DESIGN MANAGER DATE		SCALE NTS		AMENDMENTS C01 ISSUED FOR TENDER C02 ISSUED FOR RE-TENDER		APPROVED D. PHOGOLE D. PHOGOLE		DATE FEB 25 FEB 26		DRAWING No. JW NUMBER JW14466R-RHD-C1-02-D-E-0264 CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0264 FILE No JW13605 C02	
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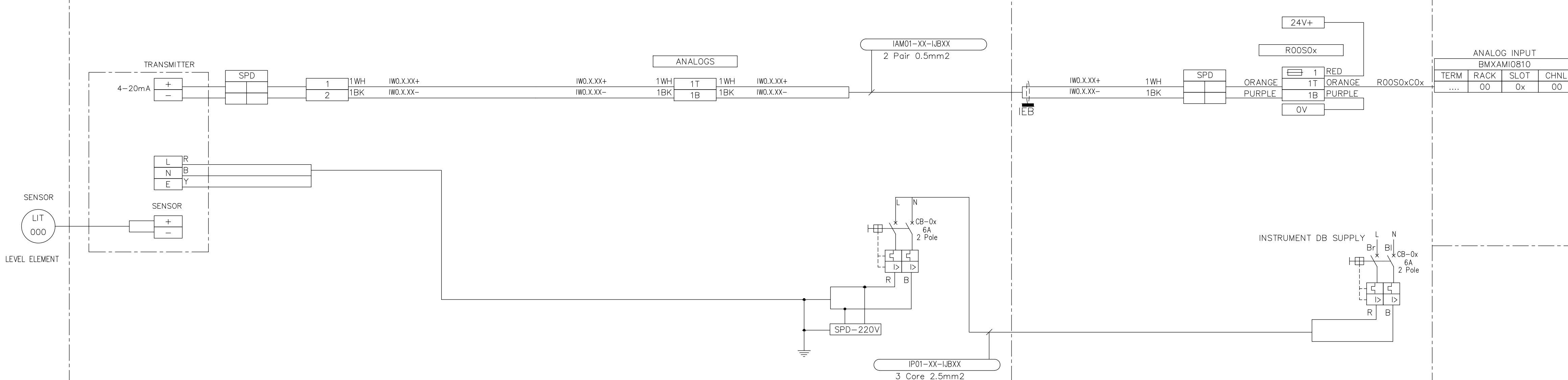
NOTES:

TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF INSTRUMENT LOOP DRAWINGS, TO BE ISSUED TO THE CLIENT FOR APPROVAL PRIOR TO INSTALLATION.



DEPARTMENT		APPROVED	DESIGNATION	DATE																								
CONSULTING ENGINEERS					SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.											
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500					DRAWN	E. BALDREY	 TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN TYPICAL INSTRUMENT LOOP DIAGRAMS FLOW TRANSMITTER (Sht 1 of 5)		C01			ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER												
					CHECKED	E. BALDREY				C02			ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	CONSULTANT'S NUMBER												
					SERVICES CHECKED											BW1400-RHD-C1-02-D-E-0265												
					GEOTECHNICAL INVESTIGATION											FILE No												
					SERVITUDES											JW13605												
					APPROVED	DITHOLO PHOGOLE																						
					Pr. Eng. No.	20060098																						
DATE																												

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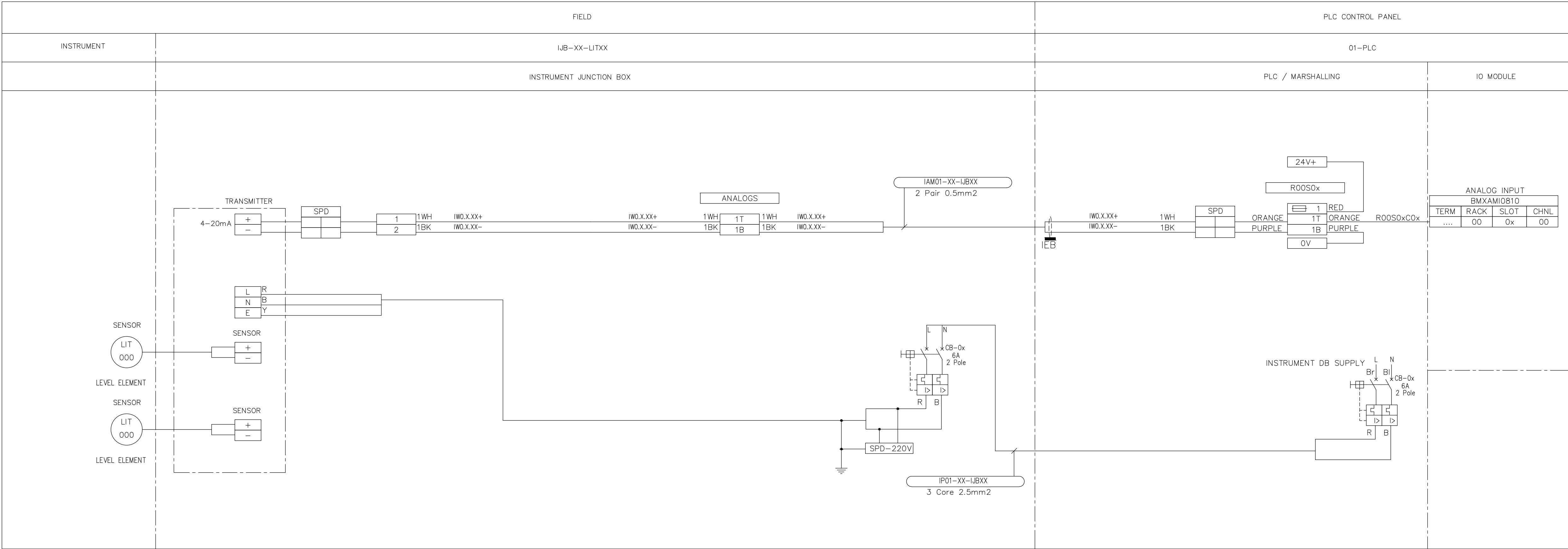
CONSULTING ENGINEERS	
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500

JOHANNESBURG WATER (SOC) LTD	
 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529

DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
		C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER					
	C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466-RHD-C1-02-D-E-0266						
					CONSULTANT'S NUMBER						
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					JW13605						
	DATE						C02				

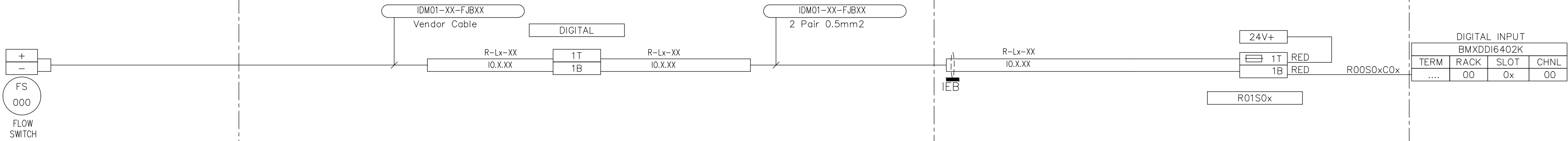
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DEPARTMENT		APPROVED		DESIGNATION		DATE																																	
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.									
ATANA Legacy Awaits Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500								DESIGNED		E. BALDREY		Johannesburg Water		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529				OLIFANTSVLEI WWTW:VAN WYKSRUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN TYPICAL INSTRUMENT LOOP DIAGRAMS SCREEN DIFFERENTIAL LEVEL TRANSMITTER (Sht 3 of 5)				DATE				C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER JW14466-RHD-C1-02-D-E-0267					
								DRAWN		E. BALDREY																C02		ISSUED FOR RE-TENDER		D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0267					
								CHECKED		E. BALDREY																								FILE No					
								SERVICES CHECKED																										JW 13605					
								GEOTECHNICAL INVESTIGATION																												C02			
								SERVITUDES																															
								APPROVED		DITHOLO PHOGOLE																													
								Pr. Eng. No.		20060098																													
								DATE																															

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CONSULTING ENGINEERS	
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500

JOHANNESBURG WATER



Johannesburg Water

CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

TYPICAL INSTRUMENT LOOP DIAGRAMS

FLOW SWITCH (Sht 4 of 5)

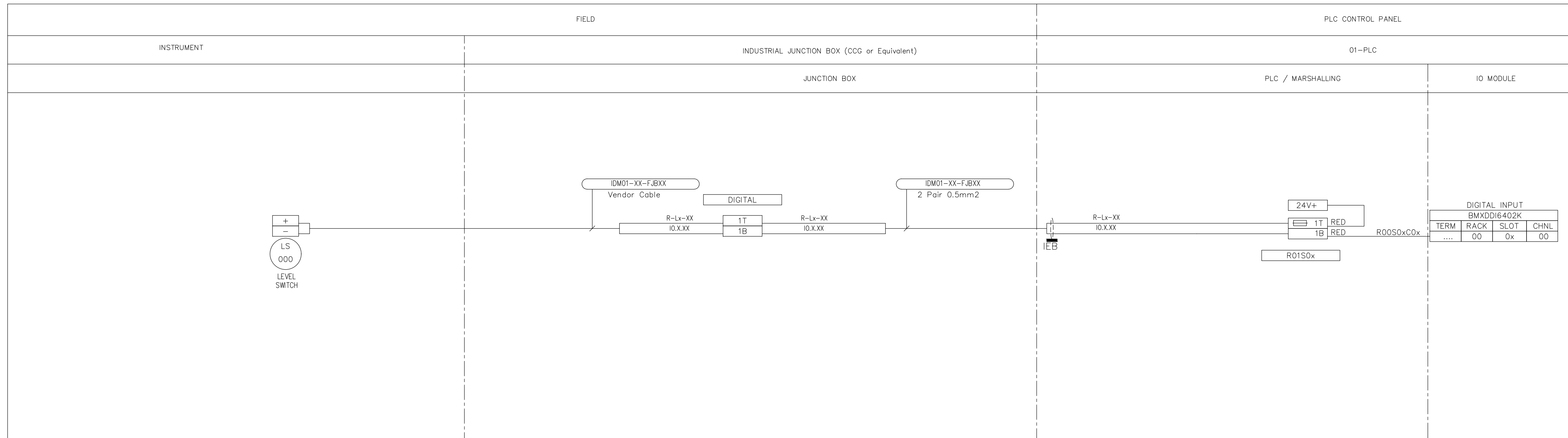
SCALE

APPROVED	DATE
D. PHOGOLE	FEB 25
D. PHOGOLE	FEB 26

DRAWING No.				
JW NUMBER				
JW14466-RHD-C1-02-D-E-0268				
CONSULTANT'S NUMBER				
BW1400-RHD-C1-02-D-E-0268				
FILE No				
JW13605				
C02				

NOTES:

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