

OLIFANTSVLEI WASTEWATER TREATMENT WORKS: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

RE-TENDER DRAWINGS

CONTRACT NO: JW14466R

PREPARED BY:



BUILDING NO. 5 COUNTRY CLUB ESTATE
21 WOODLANDS DRIVE
WOODMEAD
2191
PO BOX 867
GALLO MANOR
2052

TEL: (011) 798-6000

PREPARED FOR:



TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
EGOLI 2001

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

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 COVER PAGE	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-C1-99-D-Z-9901						
		CHECKED	L. NAICKER					CONSULTANT'S NUMBER											
		SERVICES CHECKED						BW1400-RHD-C1-99-D-Z-9901											
		GEOTECHNICAL INVESTIGATION						FILE No											
		SERVITUDES																	
		APPROVED Pr. Eng.No. 20060098	DITHOLO PHOGOLE																
		DATE																	
								C02											

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-0204
BW1400-RHD-C1-02-D-C-0205
BW1400-RHD-C1-02-D-C-0206
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
BW1400-RHD-C1-05-D-C-0501
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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 - PAVEMENT LAYOUT
VAN WYKSRUST PUMP STATION - DEMOLITION WORK TO EXISTING STRUCTURE - GENERAL LAYOUT & SECTIONS
VAN WYKSRUST PUMP STATION - UNDERGROUND DRAINAGE
VAN WYKSRUST PUMP STATION - VALVE CHAMBER LAYOUT AND SECTIONS
VAN WYKSRUST PUMP STATION - NEW SUBSTRUCTURE AND SUPERSTRUCTURE - GENERAL 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 (FOR INFORMATION)
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 AND SLAB, GENERAL LAYOUT AND SECTIONS (OMIT)
NAME BOARD - GENERAL ARRANGEMENT
NAME BOARD - DETAILS
VAN WYKSRUST PUMP STATION AND SUBSTATION C - TYPICAL PAVEMENT DETAILS

MECHANICAL:

DRAWING NUMBER

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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

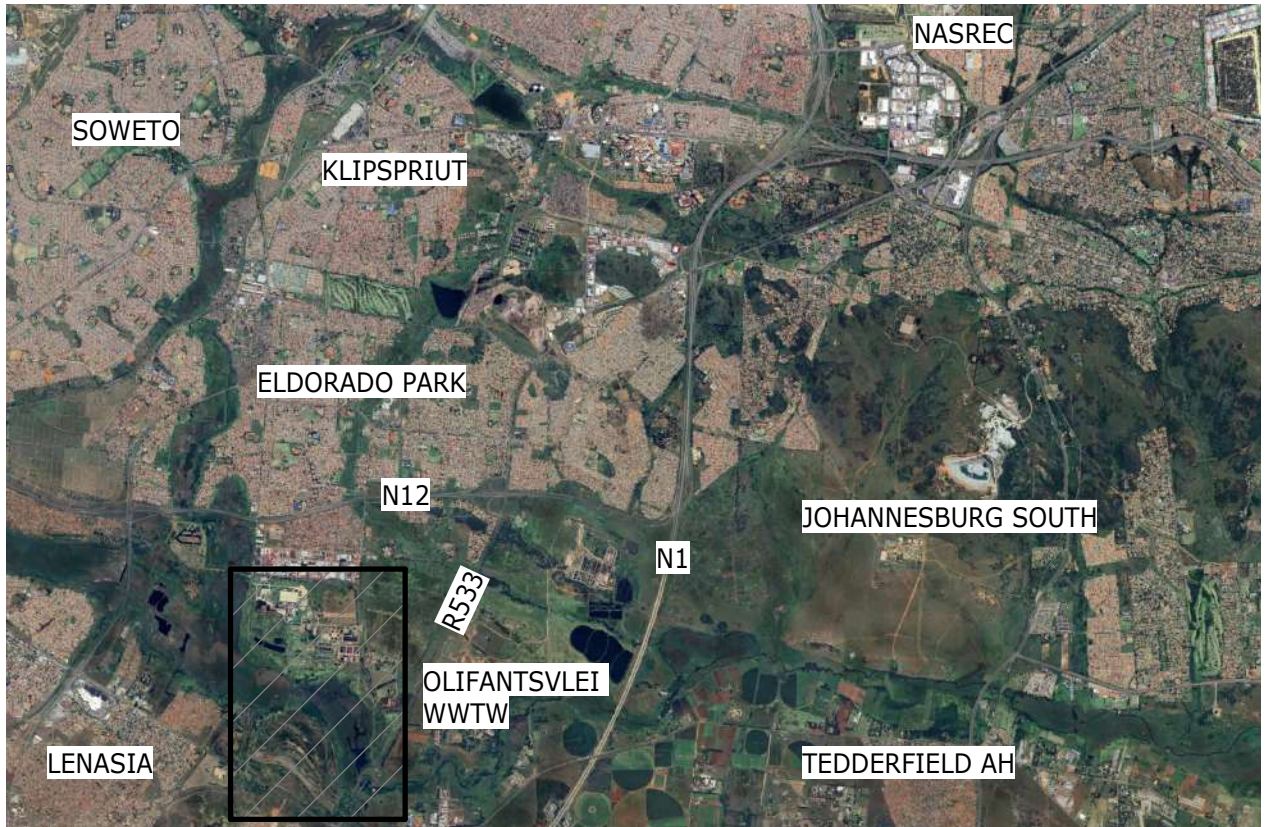
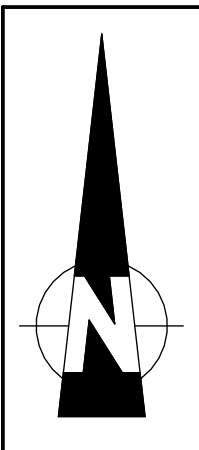
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BW1400-RHD-C1-02-D-E-0268
BW1400-RHD-C1-02-D-E-0269

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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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LOCALITY PLAN
1 : 10000

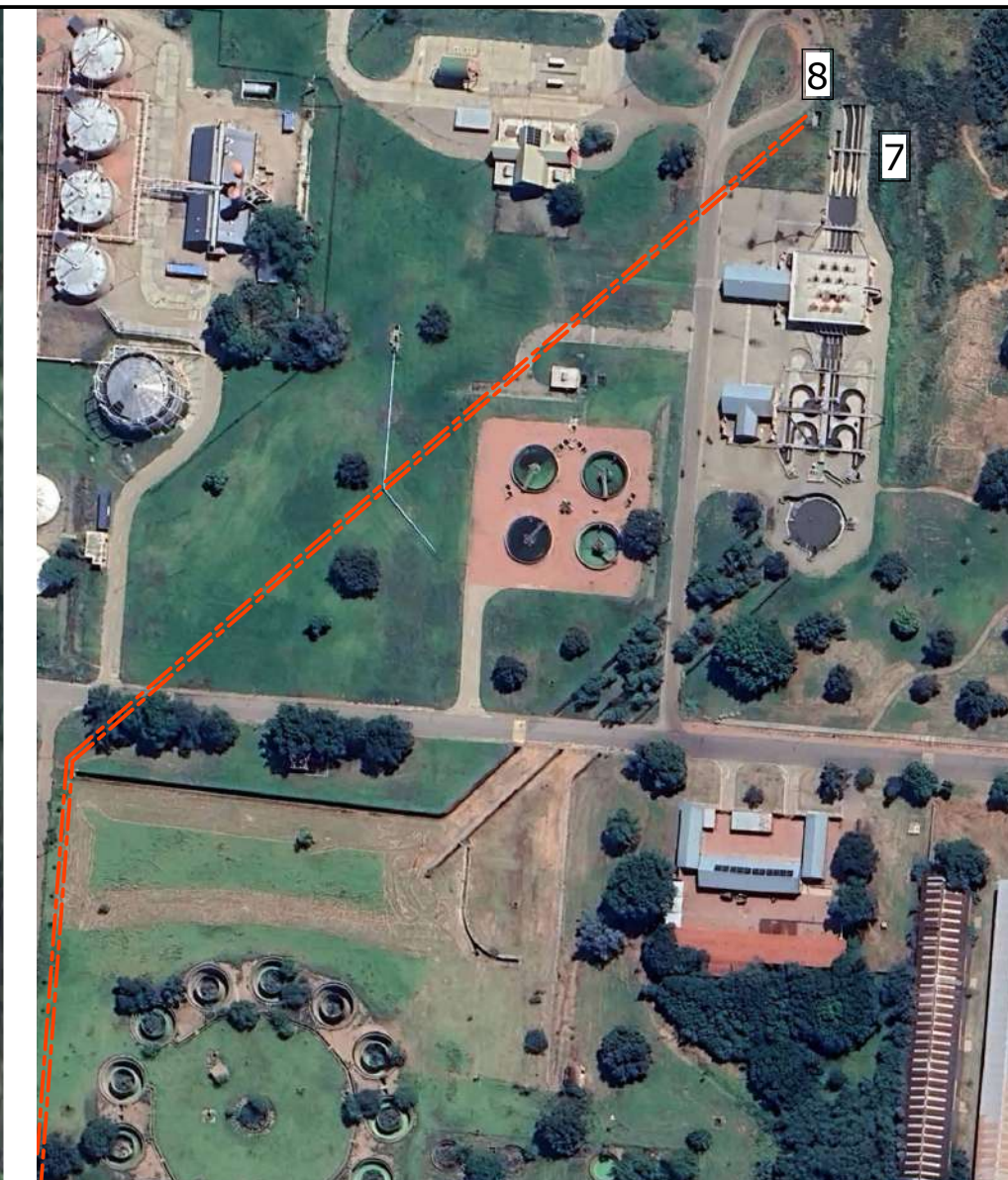
GENERAL LAYOUT OF EXISTING WWTW
1 : 5000

DEPARTMENT	APPROVED	DESIGNATION	DATE	GEO-PROFESSIONAL (BEAR GEO CONSULTANTS - BGC)
				NAME: _____ DATE: _____
				SIGNATURE: _____

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

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

JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG	
		OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION	
		INFRASTRUCTURE RENEWAL PLAN	
		OLIFANTSVLEI	
		GENERAL SITE LAYOUT	
		TEL: (011) 688-1400	
		FAX: (011) 688-1529	



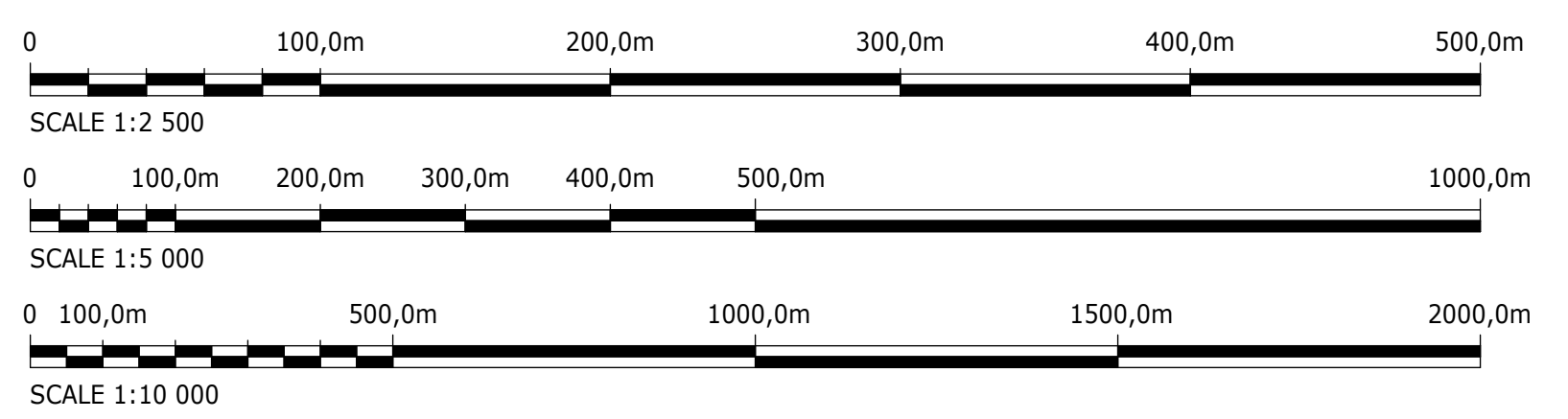
HEAD OF WORKS ENLARGED VIEW
1 : 2500

LEGEND	
1	MAIN ENTRANCE
2	VAN WYKSRUST PUMP STATION
3	SUB - STATION C
4	PROPOSED CONTRACTORS CAMP
5	EXISTING DN700 RISING MAIN PIPELINE 1
6	EXISTING DN700 RISING MAIN PIPELINE 2
7	HEAD OF WORKS
8	EXISTING RISING MAIN PIPELINES 1 & 2 VALVE CHAMBER
9	MATURATION DAM
10	VAN WYKSRUST AND MATURATION DAM ACCESS ROAD
11	MATURATION DAM FEED PIPE
12	EMERGENCY DAM
13	EMERGENCY DAM PUMP STATION
14	EMERGENCY DAM ACCESS ROAD
15	ELECTRICAL BUILDINGS
16	ELUTRIATION BUILDING
17	SUB - STATION B
18	FINAL EFFLUENT PUMP STATION
NOTE: GREY TEXT IS "CONTRACT 2"	

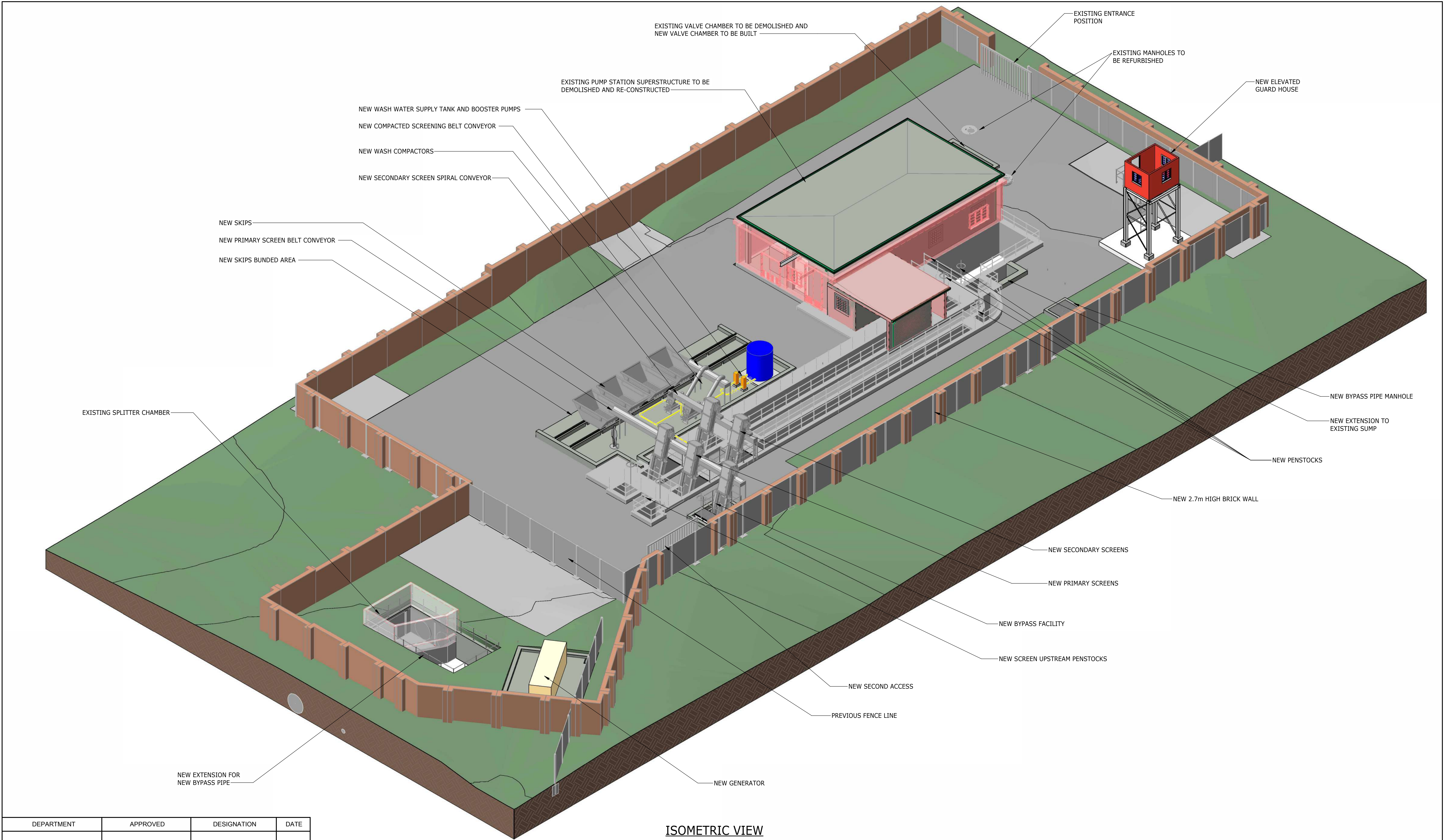
LEGEND:	
---	= PIPELINE BELOW GROUND
---	= PIPELINE ABOVE GROUND



VAN WYKSRUST PUMP STATION ENLARGED VIEW
1 : 2500

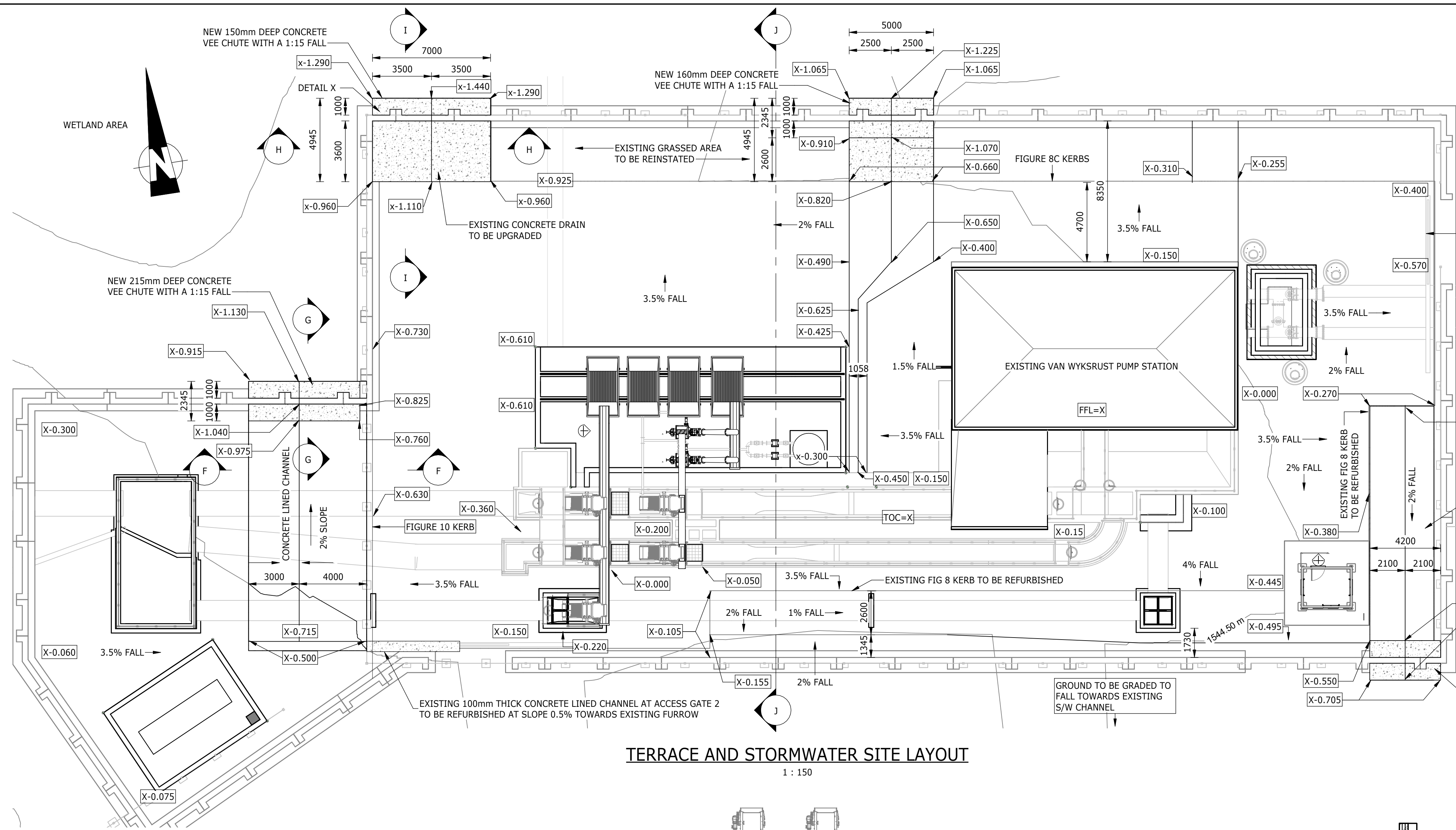


DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.	
	AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER	
		C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	CONSULTANT'S NUMBER	
						BW1400-RHD-C1-00-D-C-0001	
						FILE No	
DATE						C02	

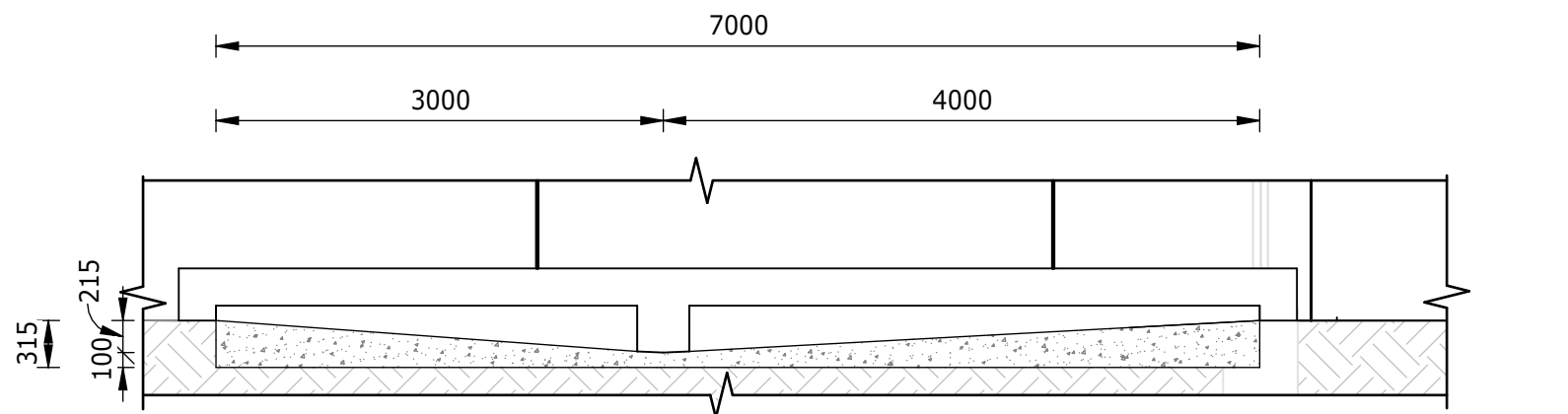


DEPARTMENT	APPROVED	DESIGNATION	DATE

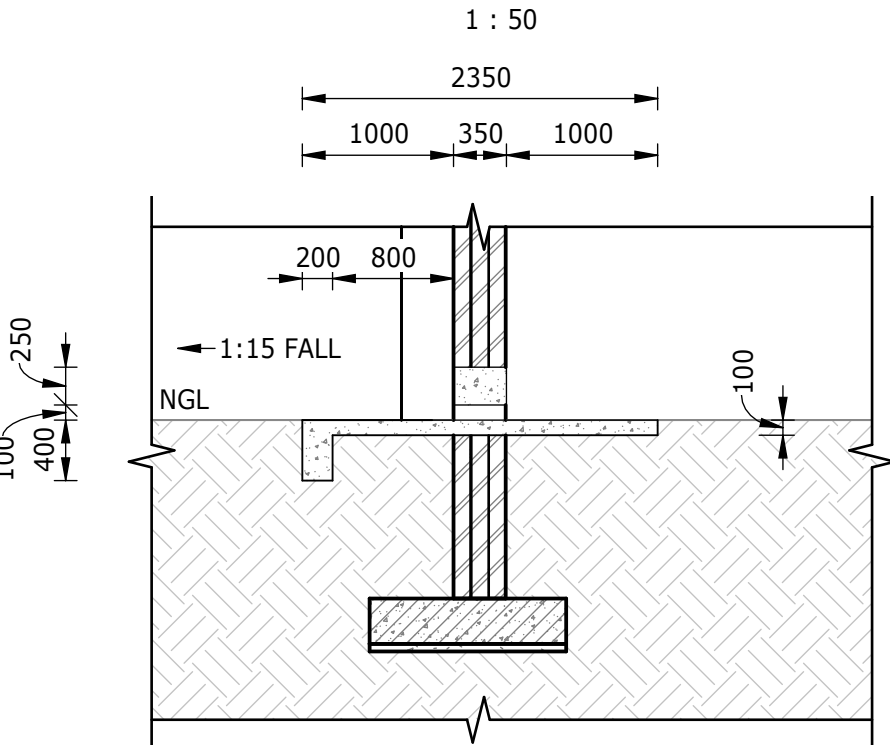
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. 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	JULY 26	JW14466R-RHD-C1-01-D-C-0102							
		CONSULTANT'S NUMBER																	
		BW1400-RHD-C1-01-D-C-0102																	
		FILE No																	
		APPROVED DITHOLO PHOGOLE Pr. Eng.No. 20060098								C02									
		DATE																	



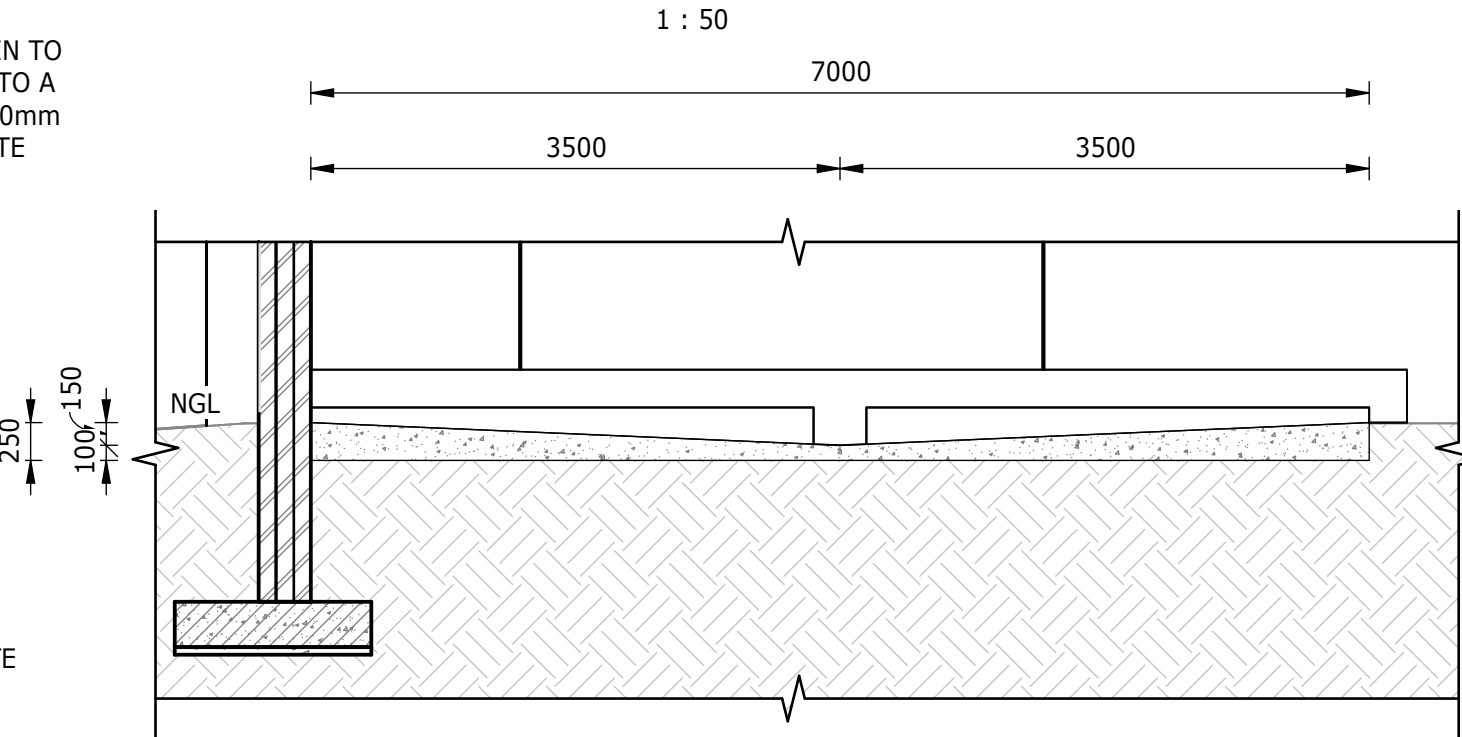
TERRACE AND STORMWATER SITE LAYOUT
1 : 150



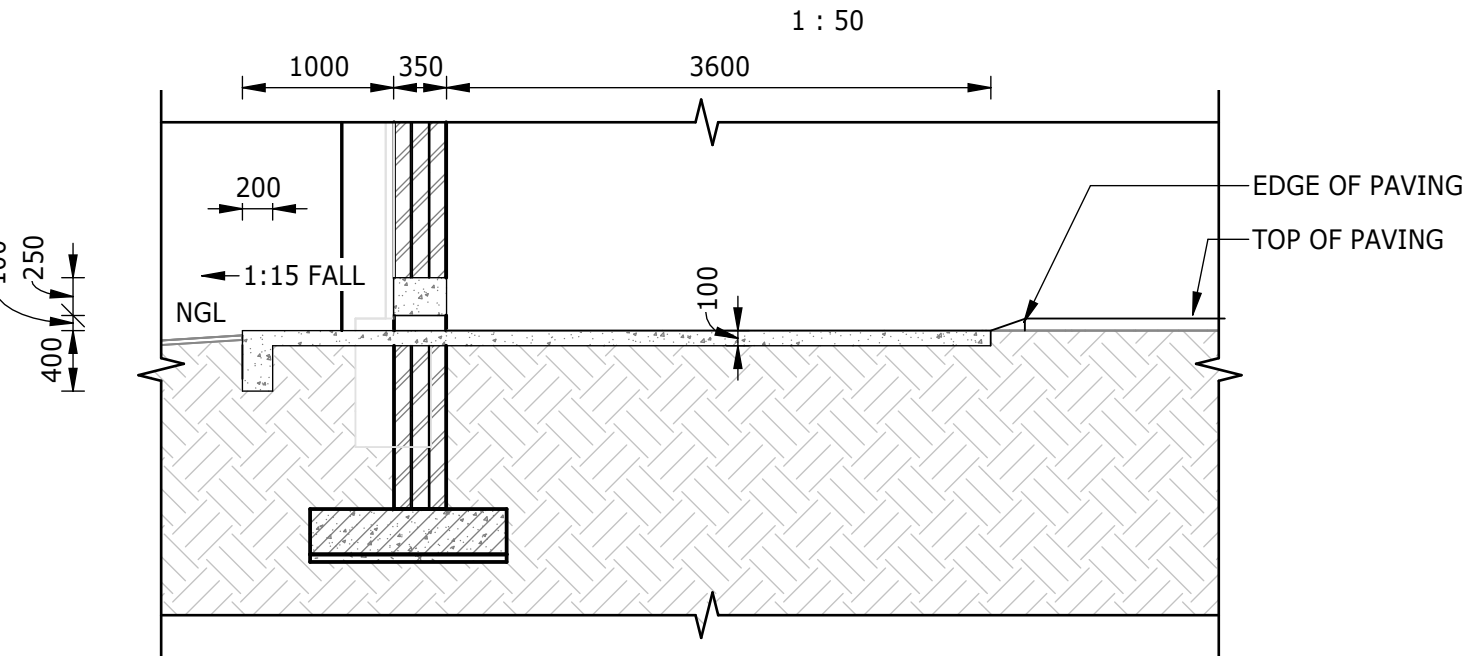
SECTION F-F



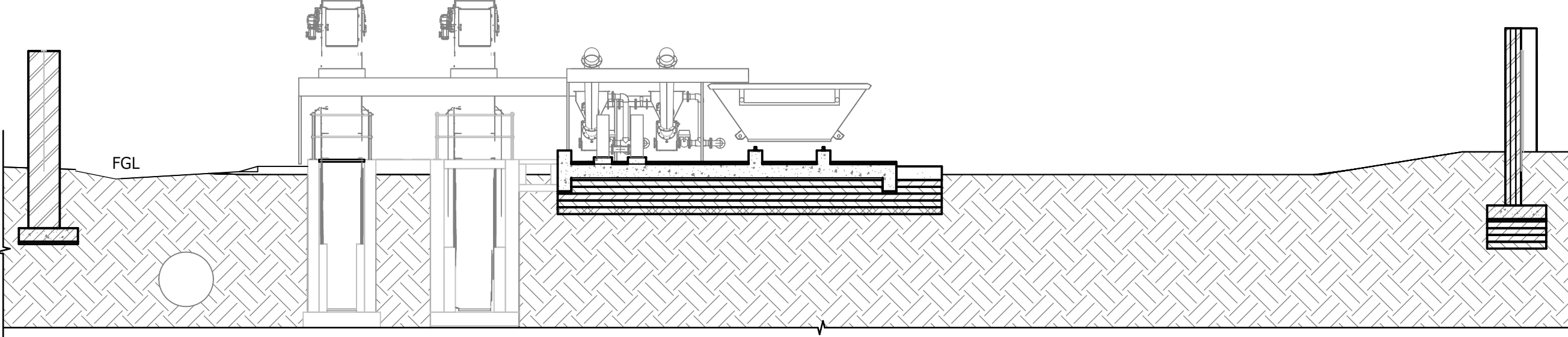
SECTION G-G



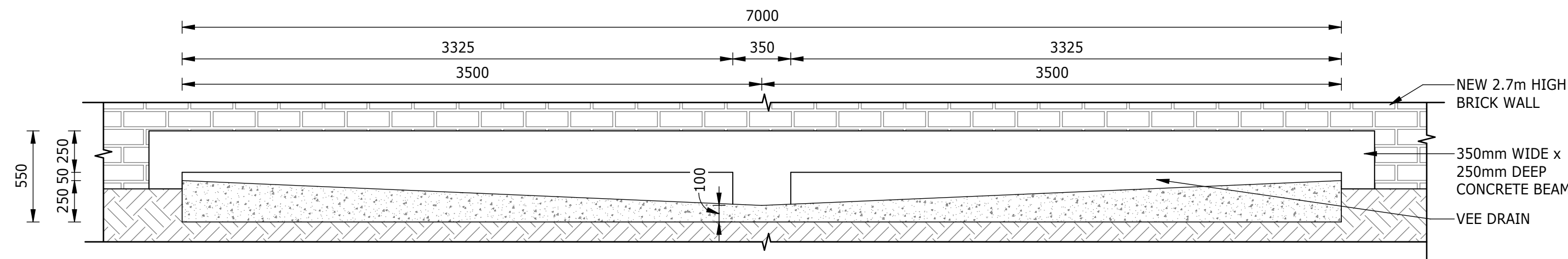
SECTION H-H



SECTION I-I



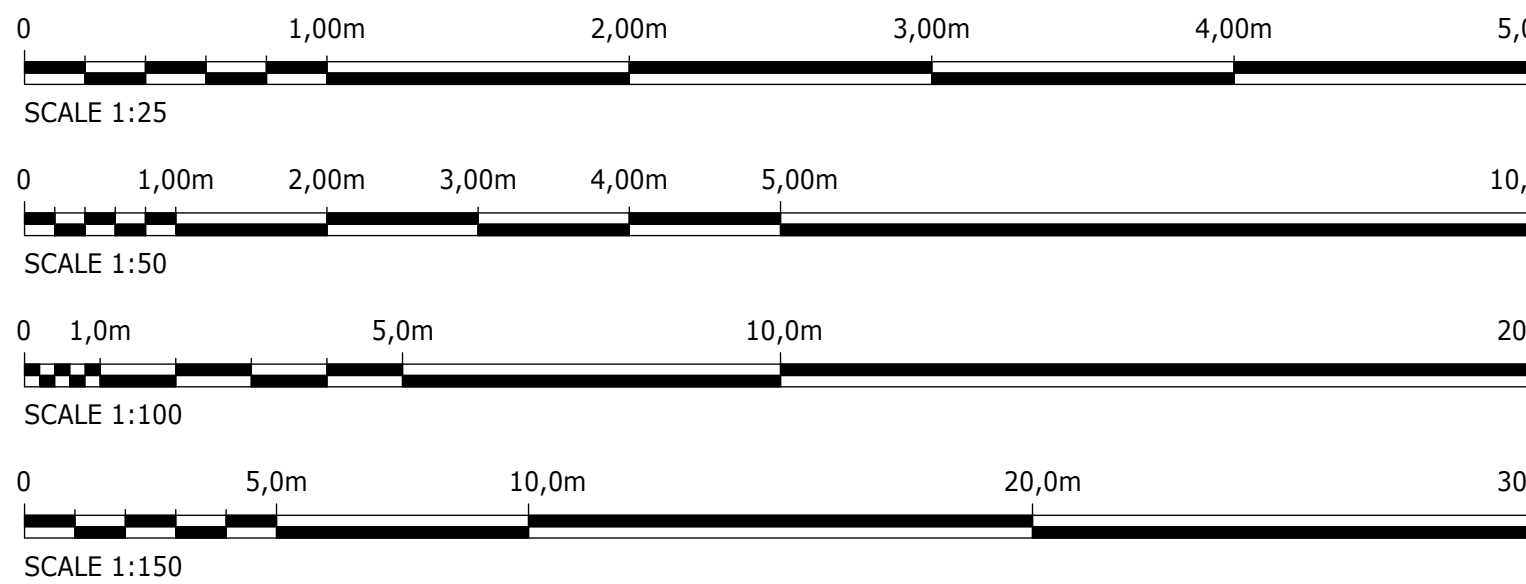
SECTION J-J



DETAIL X

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

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	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

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

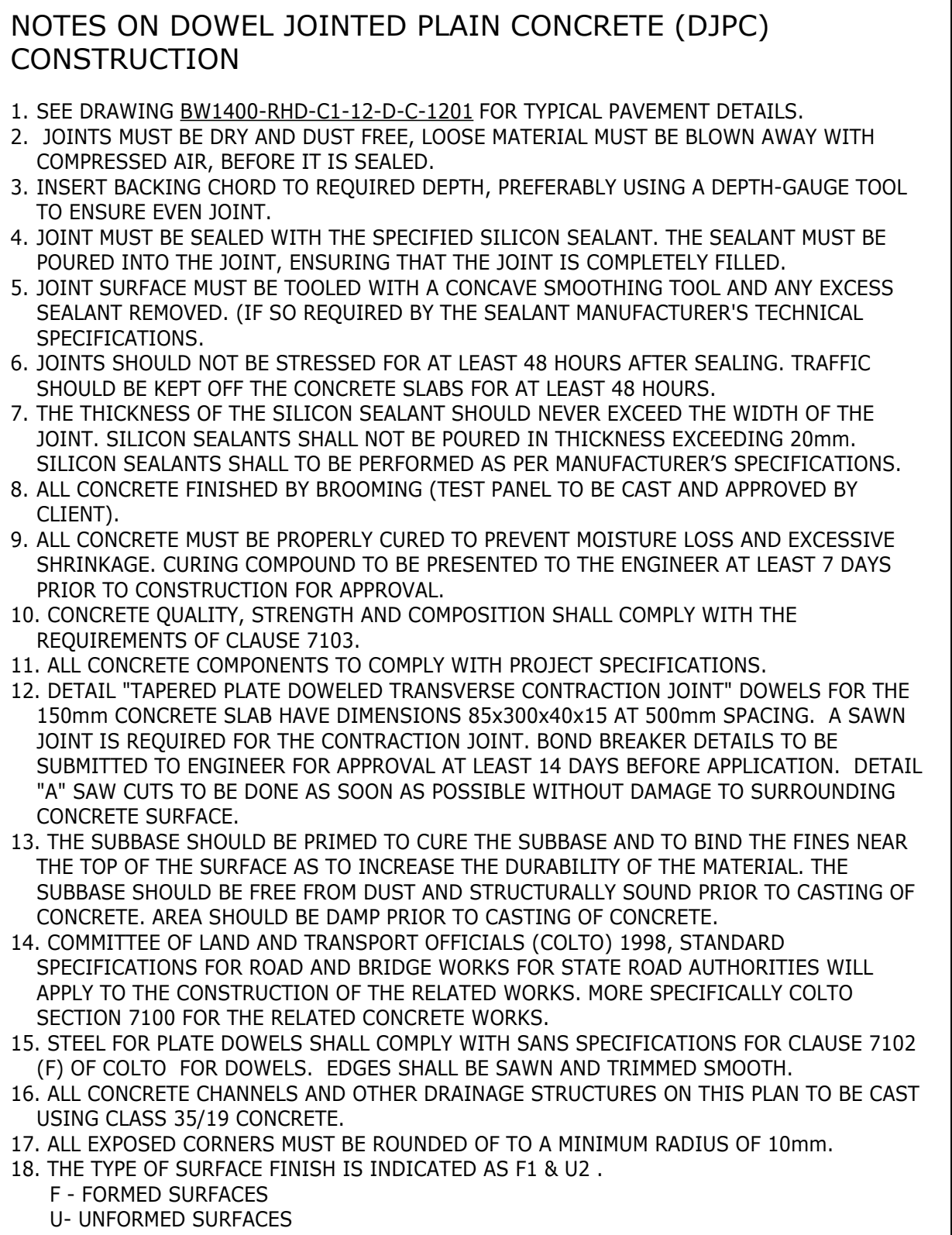
VAN WYKRUST PUMP STATION

TERRACE AND DRAINAGE LAYOUT

DESIGN MANAGER

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	JULY 26	JW14466R-RHD-C1-01-D-C-0103
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-01-D-C-0103
				FILE No
				C02



1 : 150



1 : 20

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

CITY OF JOHANNESBURG

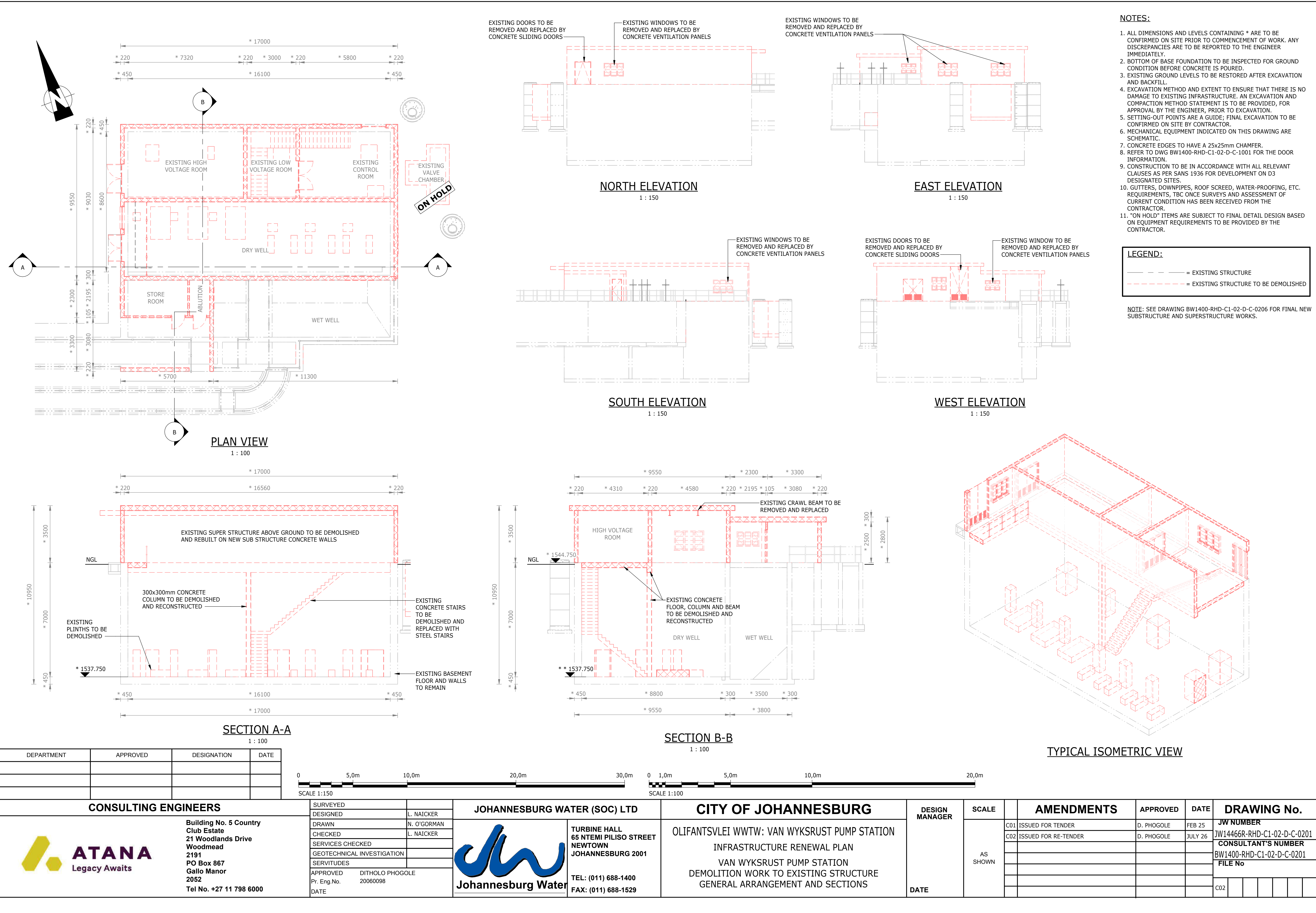
OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

VAN WYKSRUST PUMP STATION

PAVEMENT LAYOUT

DESIGN MANAGER	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	JULY 26	JW14466R-RHD-C1-01-D-C-0104						
						CONSULTANT'S NUMBER						
						BW1400-RHD-C1-01-D-C-0104						
						FILE No						
DATE						C02						



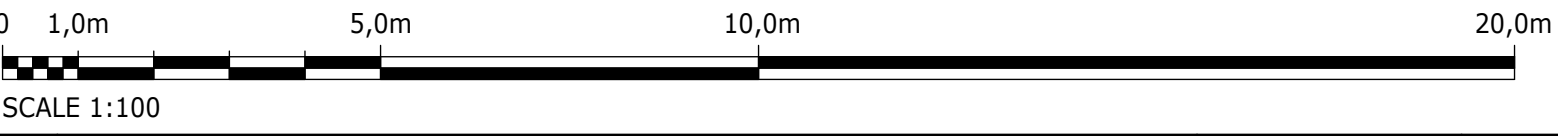
- NOTES:**
- ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 - EXISTING GROUND LEVELS TO BE RESTORED AFTER EXCAVATION AND BACKFILL.
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 - REFER TO DWG BW1400-RHD-C1-02-D-C-1001 FOR THE DOOR INFORMATION.
 - CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 - GUTTERS, DOWNPIPES, ROOF SCREED, WATER-PROOFING, ETC. REQUIREMENTS, TBC ONCE SURVEYS AND ASSESSMENT OF CURRENT CONDITION HAS BEEN RECEIVED FROM THE CONTRACTOR.
 - "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR.

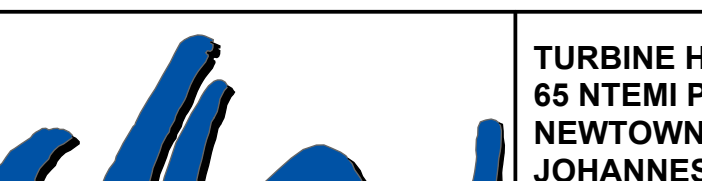
LEGEND:

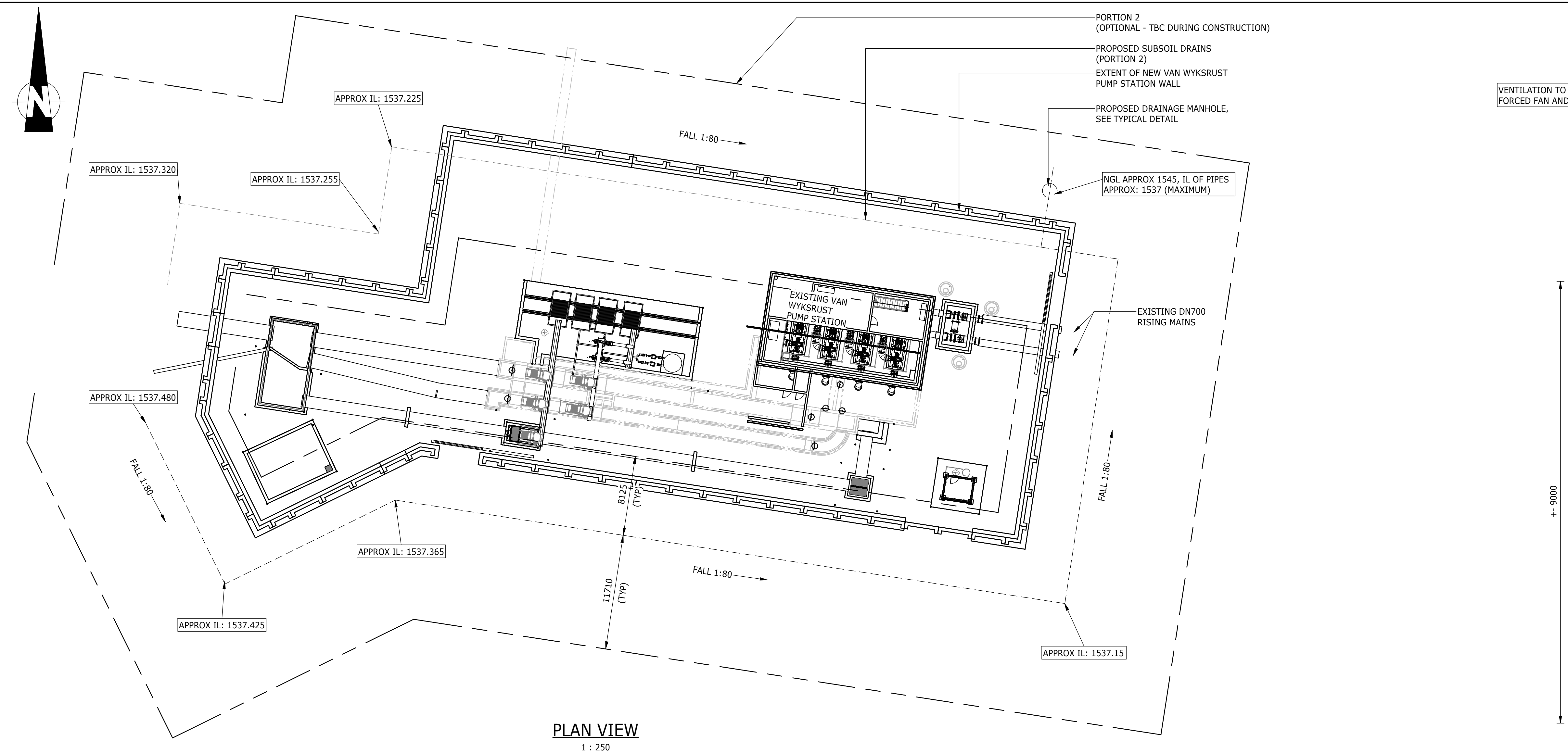
— — — — — = EXISTING STRUCTURE
- - - - - = EXISTING STRUCTURE TO BE DEMOLISHED

NOTE: SEE DRAWING BW1400-RHD-C1-02-D-C-0206 FOR FINAL NEW SUBSTRUCTURE AND SUPERSTRUCTURE WORKS.

DEPARTMENT	APPROVED	DESIGNATION	DATE

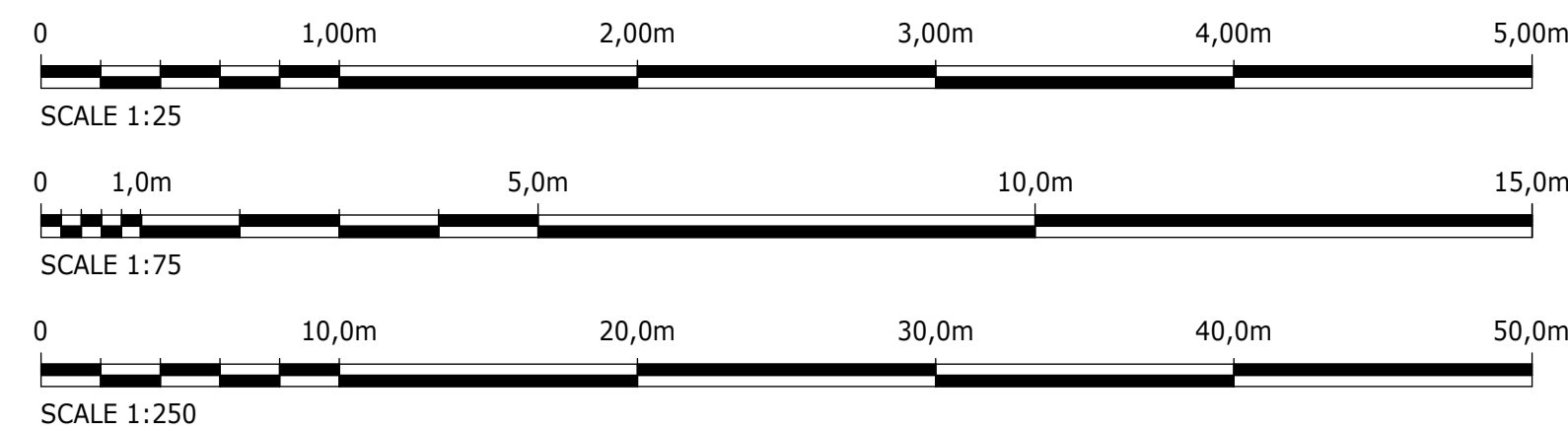


CONSULTING ENGINEERS		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.								
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO 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 DEMOLITION WORK TO EXISTING STRUCTURE GENERAL ARRANGEMENT AND SECTIONS	AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER						
		C02	ISSUED FOR RE-TENDER			D. PHOGOLE	JULY 26			JW14466R-RHD-C1-02-D-C-0201										
										CONSULTANT'S NUMBER										
										BW1400-RHD-C1-02-D-C-0201										
										FILE No										
			</																	



LEGEND:
--- = UNDERGROUND DRAINAGE
--- = EXCAVATION EXTENT

- NOTES:**
1. FOR EXCAVATIONS GREATER THAN 3M, THE CONTRACTOR IS REQUIRED TO APPOINT A COMPETENT PERSON FOR THE INSPECTION AND CERTIFICATION OF TRENCH WALLS/EXCAVATIONS, WHICH SHALL BE DECLARED SAFE IN WRITING BEFORE ANY PERSON MAY ENTER, OR BRACING/SHORING/LATERAL SUPPORT OF ADEQUATE STRENGTH SHALL BE DESIGNED AND INSTALLED TO ENSURE TRENCH WALL STABILITY.
 2. DEWATERING TO A MAXIMUM DEPTH OF 8m BELOW NGL, NOT TO BE EXCEEDED UNDER ANY CIRCUMSTANCES.
 3. ALL LEVELS TO BE CHECKED BASED ON EXISTING INFRASTRUCTURE AND FINAL DRAIN POSITIONS.
 4. LENGTH OF EXCAVATION ARE TO BE KEPT TO MINIMUM TO MINIMISE THE ACCUMULATION OF PONDING WATER.
 5. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 6. SETTING-OUT DETAILS TO BE CONFIRMED ONCE THE ENGINEER IS IN RECEIPT OF THE CONTRACTORS SURVEYS (BOTH GPR AND TOPOGRAPHICAL).
 7. "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	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

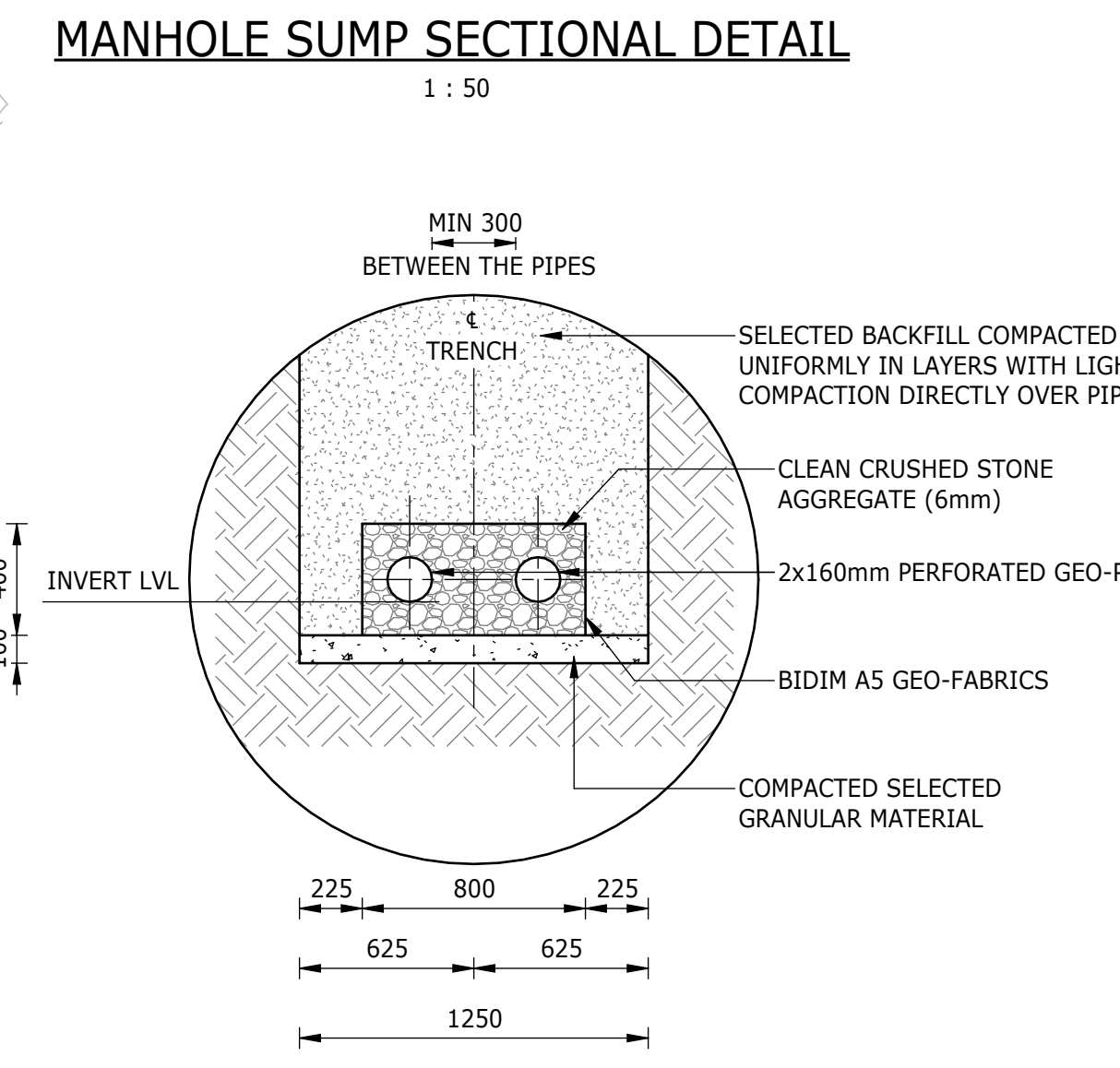
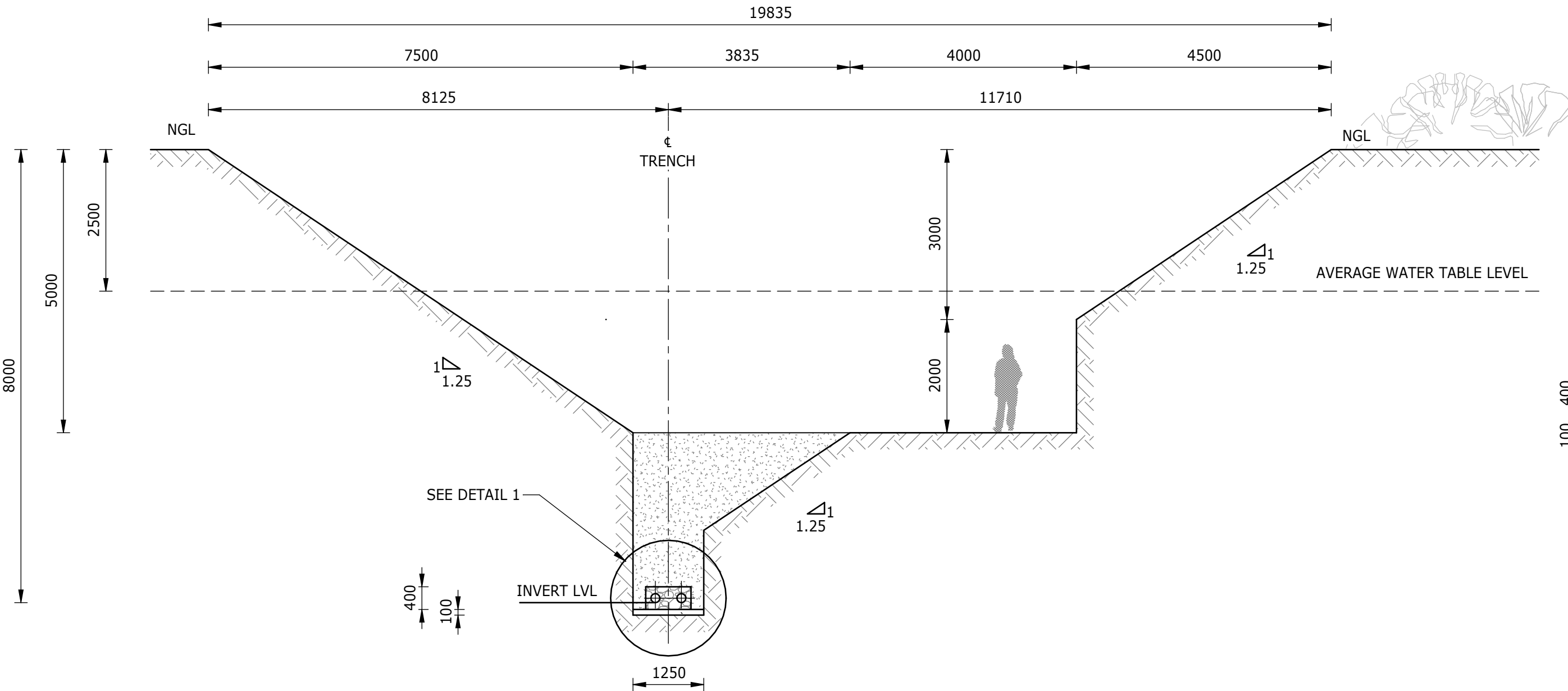
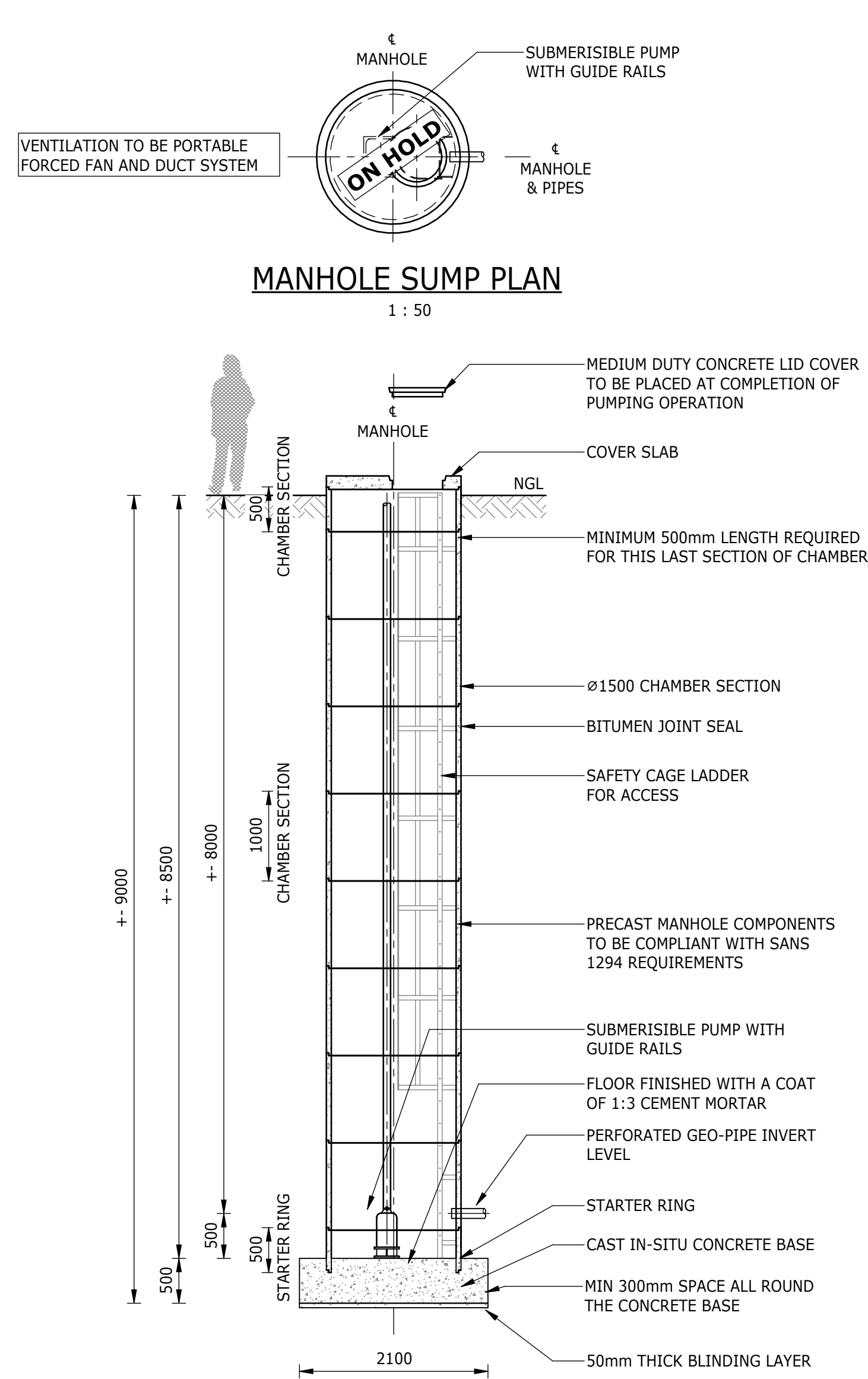
OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

VAN WYKSRUST PUMP STATION
SUBSOIL DRAINAGE
GENERAL LAYOUT AND DETAILS

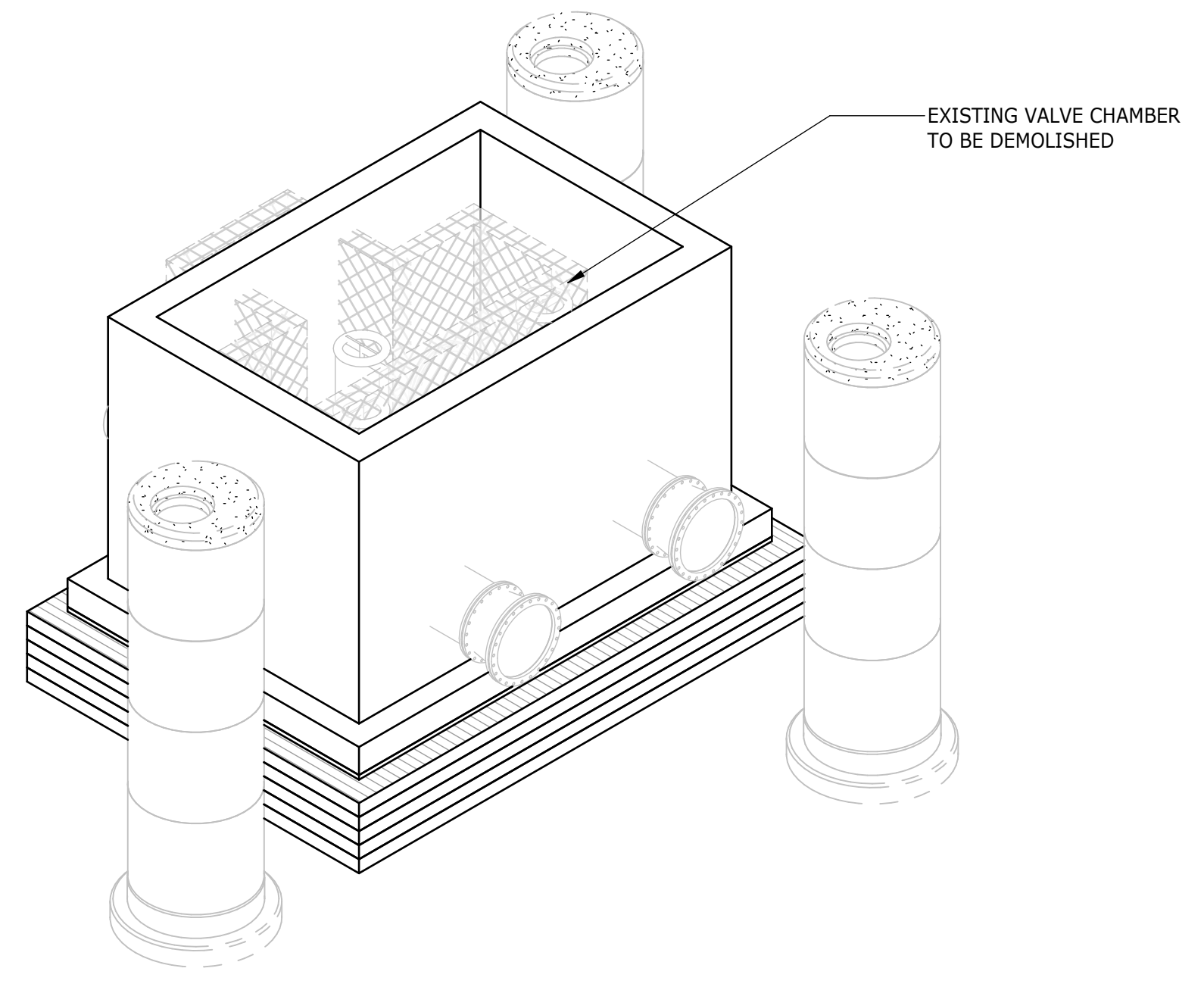
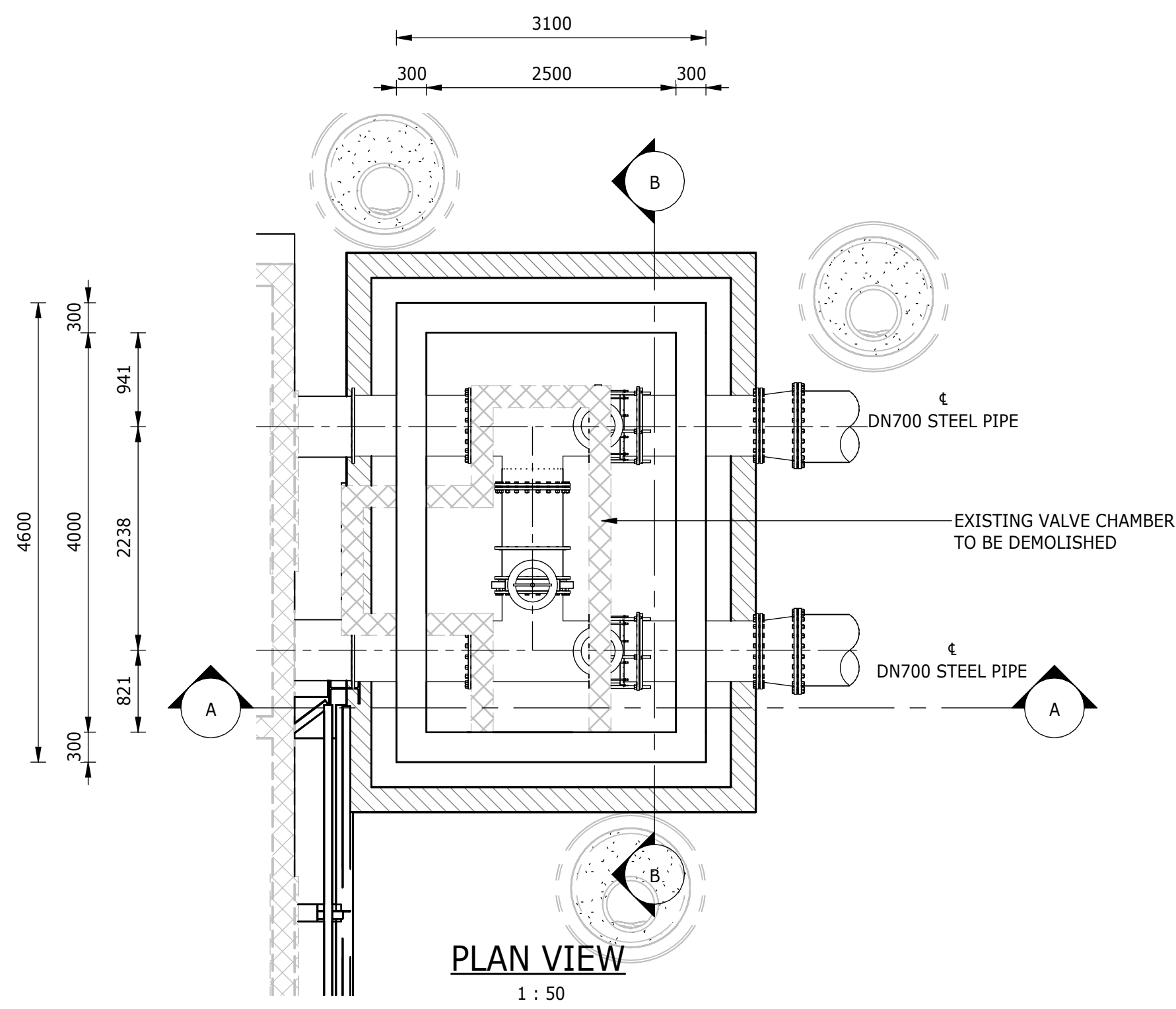
DESIGN MANAGER	
DATE	

SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.
AS SHOWN	P01 ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER JW14466R-RHD-C1-02-D-C-0204
	C02 ISSUED FOR RE-TENDER	D. PHOGOLE	JULY 26	CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-C-0204
				FILE No
				C02

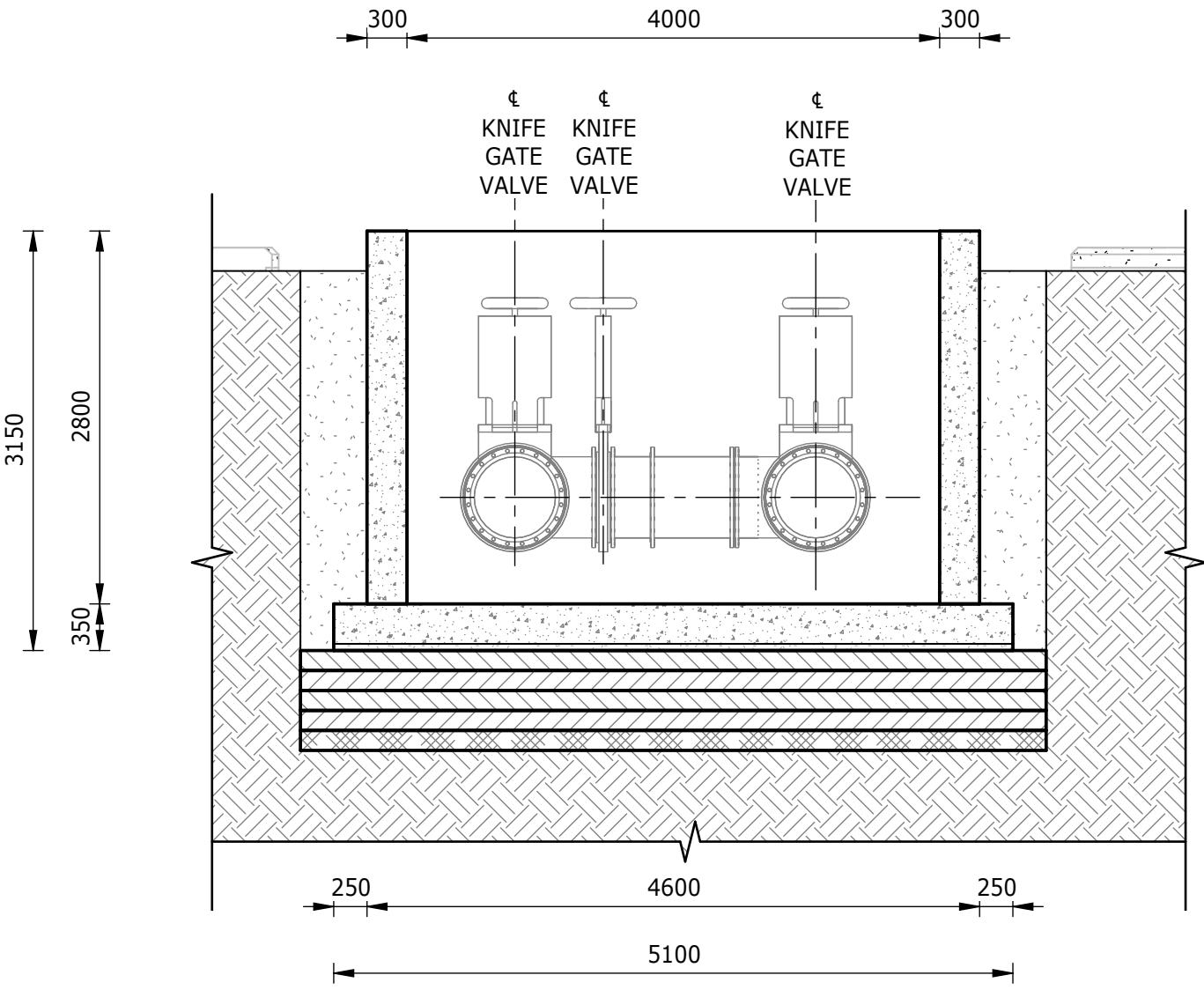
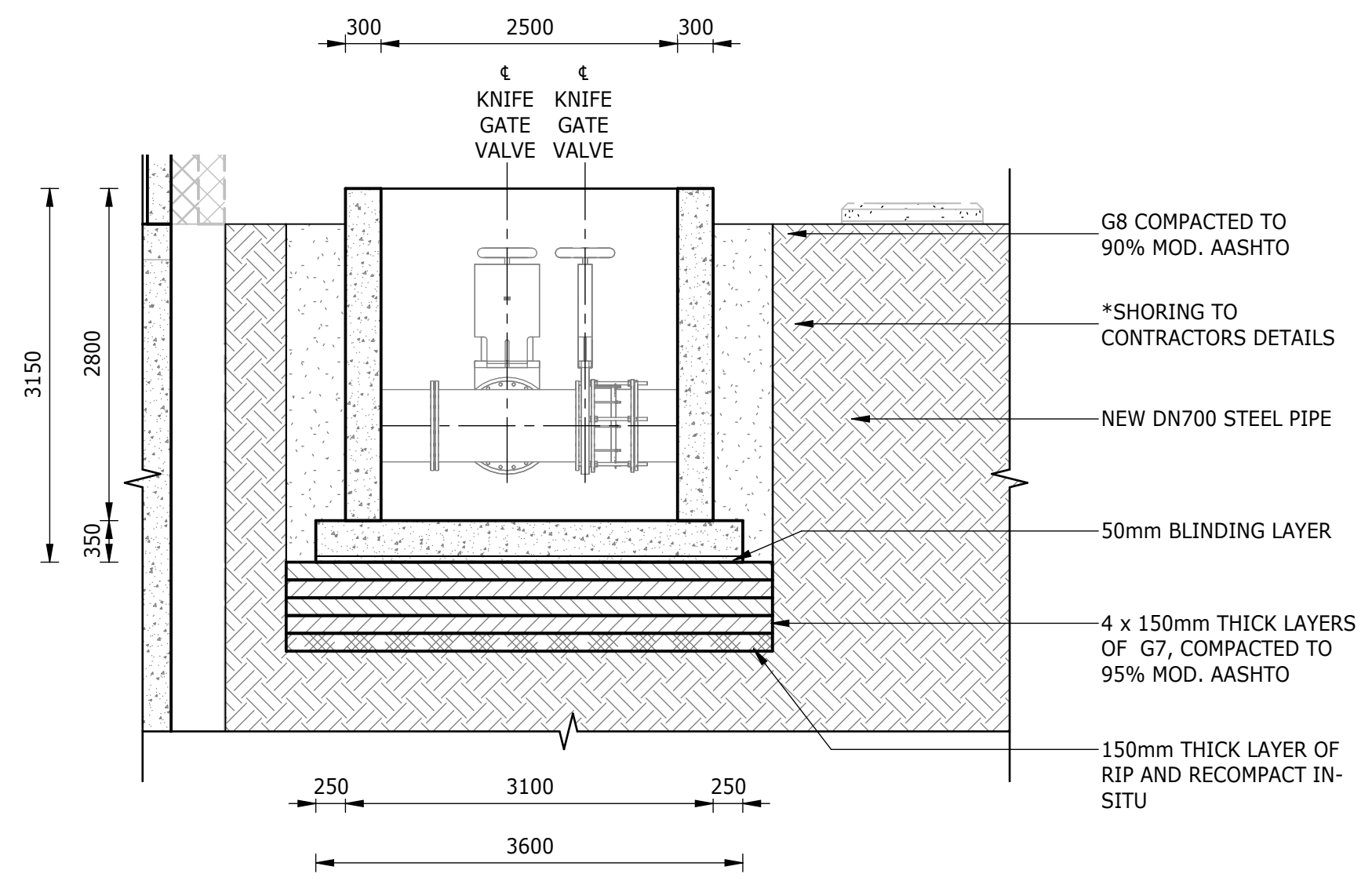


TYPICAL TRENCH CROSS SECTION FOR UNDERGROUND DRAINAGE SYSTEM - "FOR INFORMATION ONLY"

DETAIL 1: UNDERGROUND DRAINAGE SYSTEM

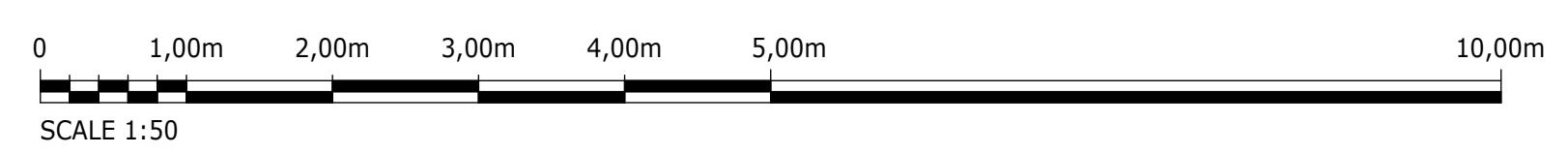


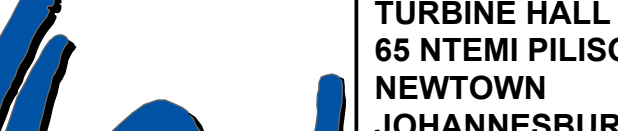
TYPICAL ISOMETRIC VIEW

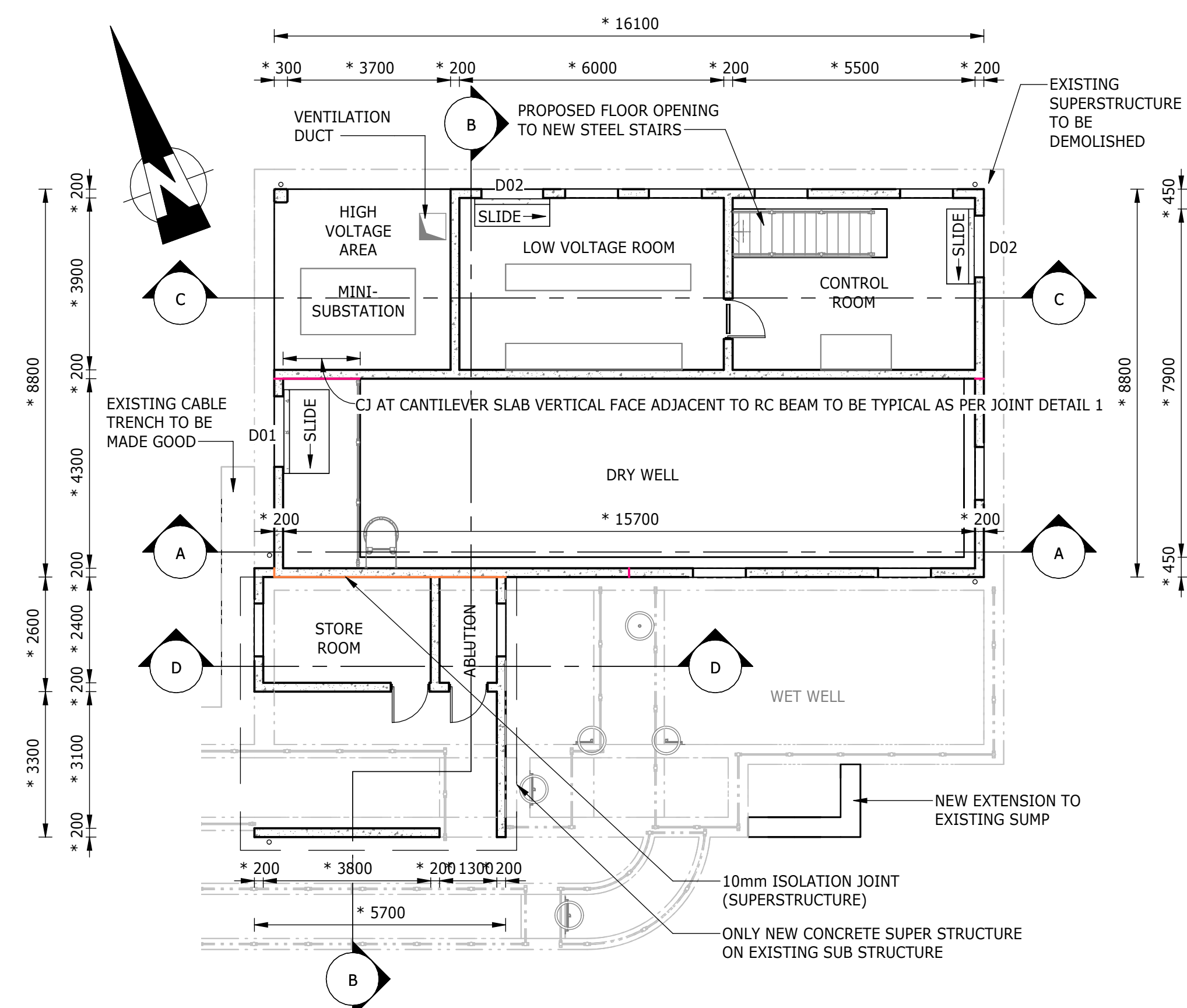


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 10. CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.

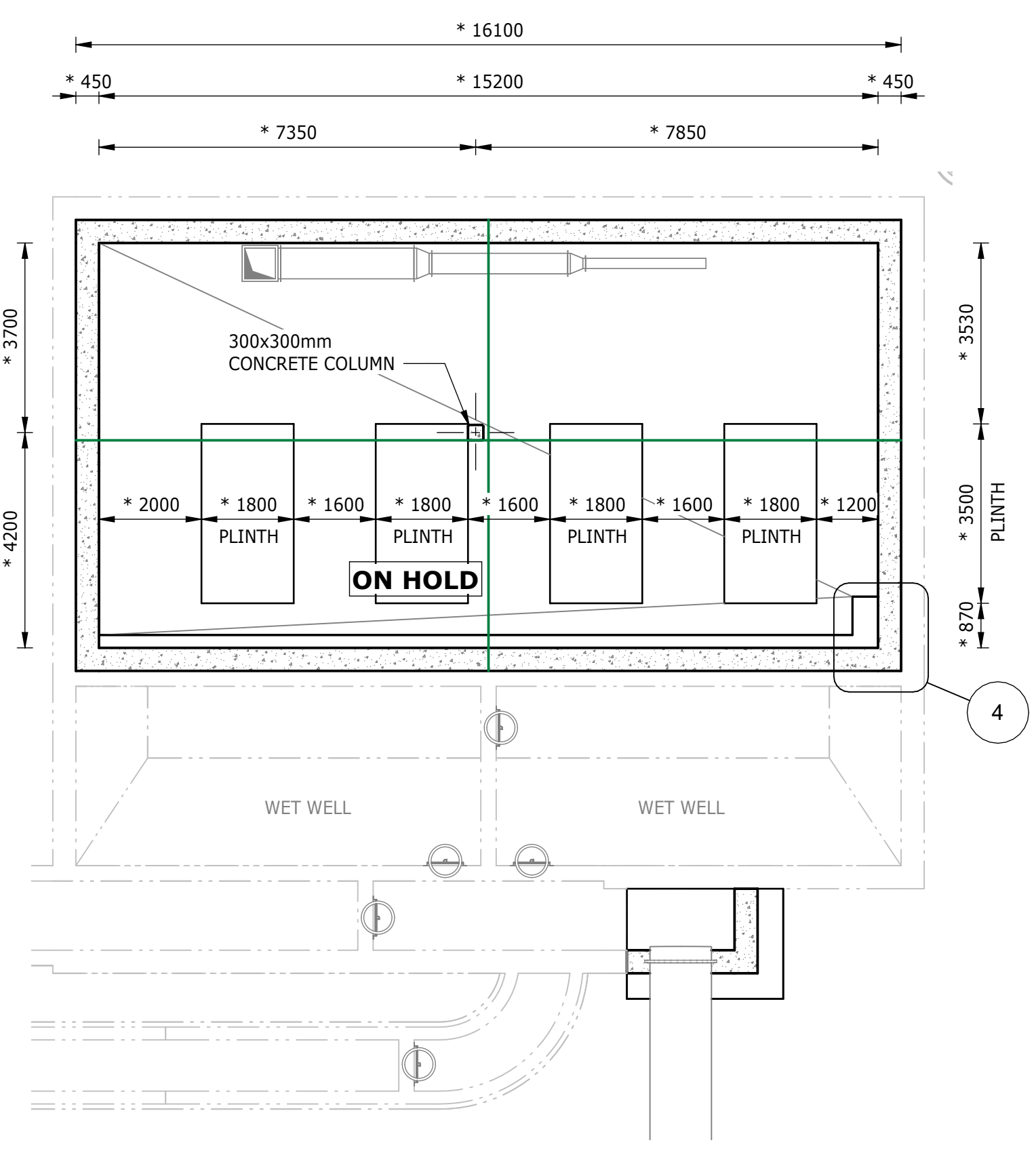
DEPARTMENT	APPROVED	DESIGNATION	DATE



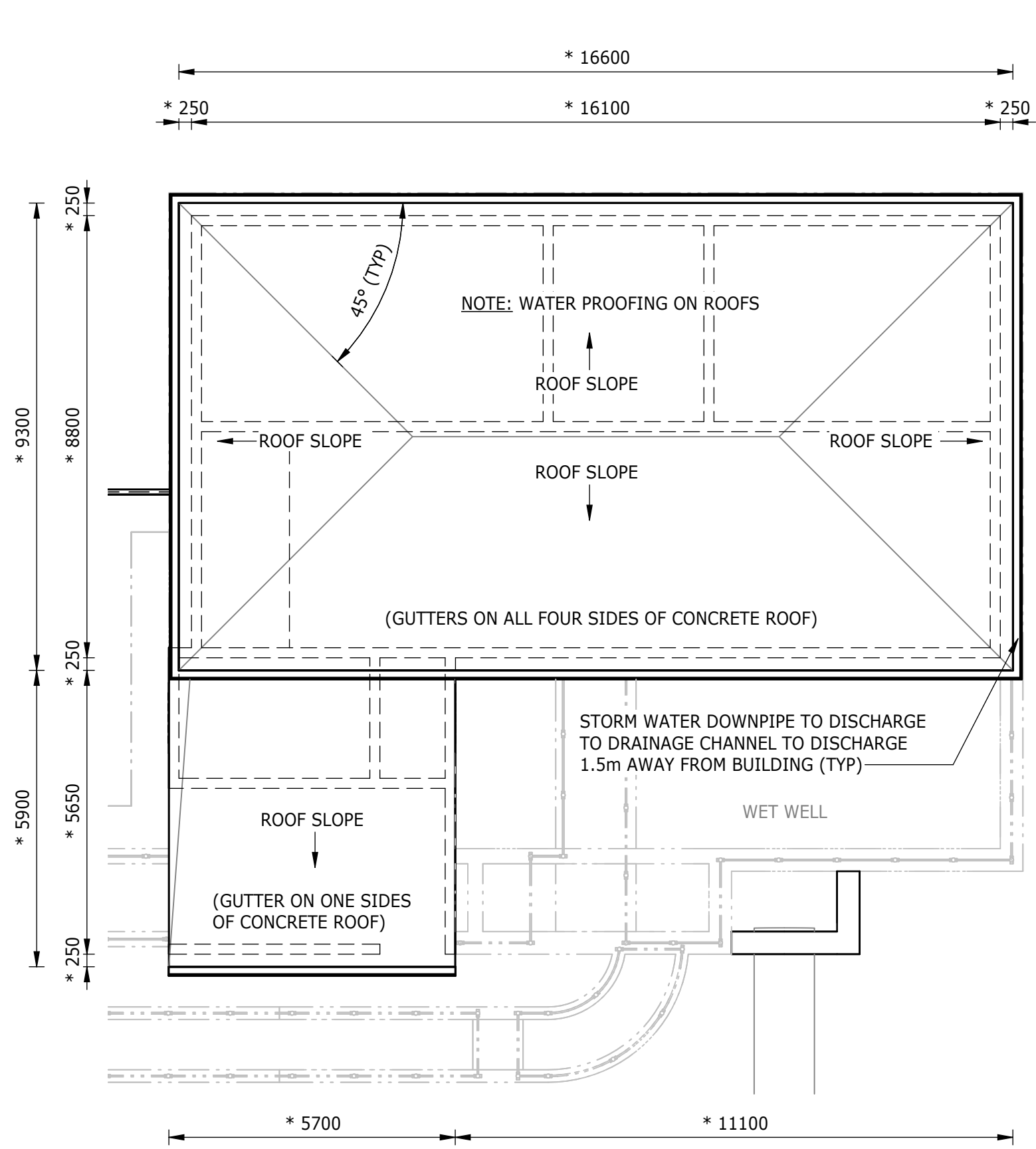
CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO 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			AS SHOWN	C01			ISSUED FOR INFORMATION	D. PHOGOLE	SEP 25	JW NUMBER			
		DESIGNED	L. NAICKER				C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-C-0205							
		DRAWN	N. O'GORMAN				CONSULTANT'S NUMBER												
		CHECKED	L. NAICKER				BW1400-RHD-C1-02-D-C-0205												
		SERVICES CHECKED					FILE No												
		GEOTECHNICAL INVESTIGATION																	
		SERVITUDES																	
		APPROVED	DITHOLO PHOGOLE																
Pr. Eng.No.	20060098																		
DATE																			
						DATE							C02						



PLAN VIEW - SUPERSTRUCTURE FLOOR - LEVEL 1545.750
1 : 100



PLAN VIEW - BELOW WALKWAY - LEVEL 1541.000
1 : 100



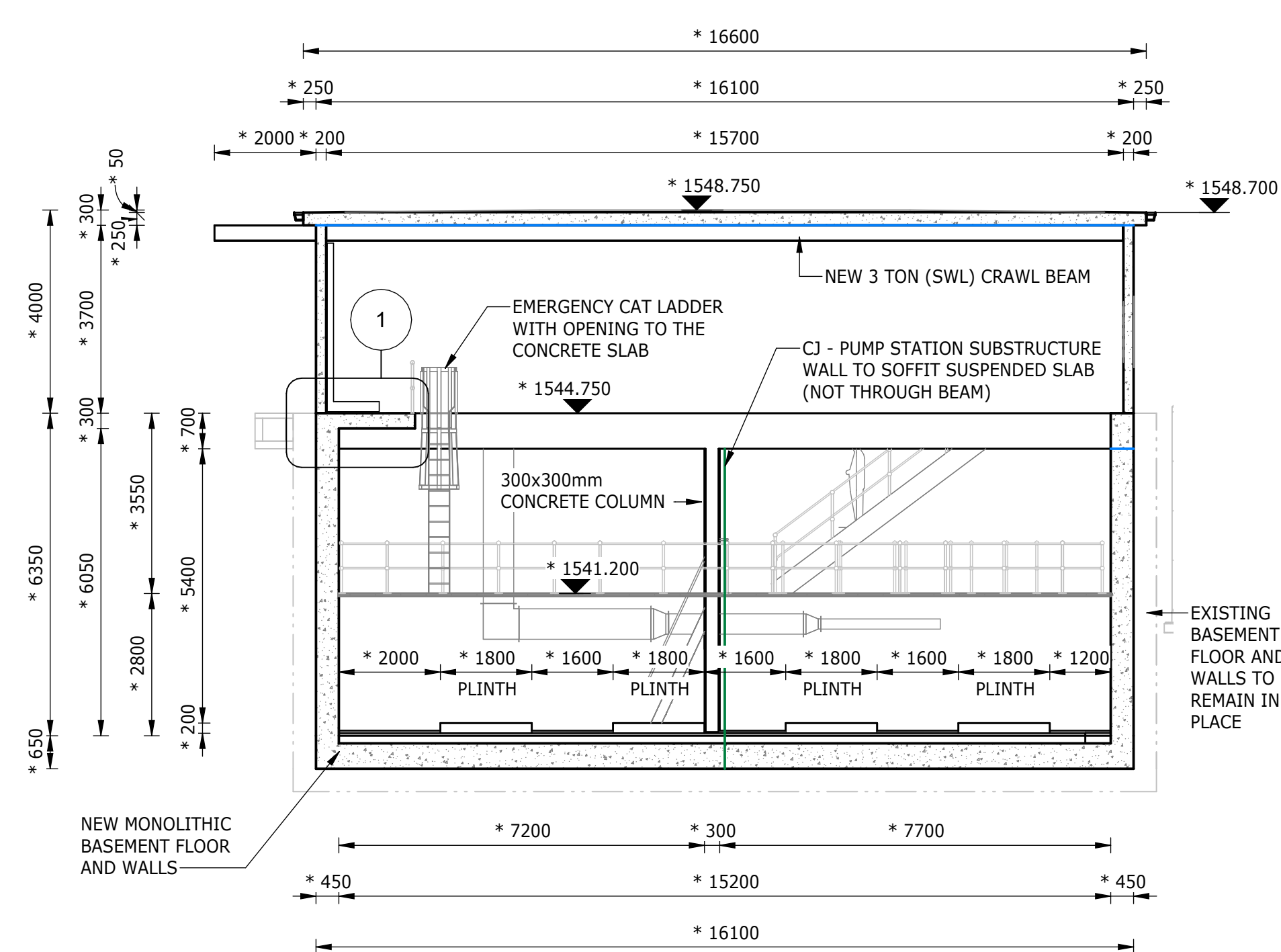
PLAN VIEW - ROOF - LEVEL 1548.750
1 : 100

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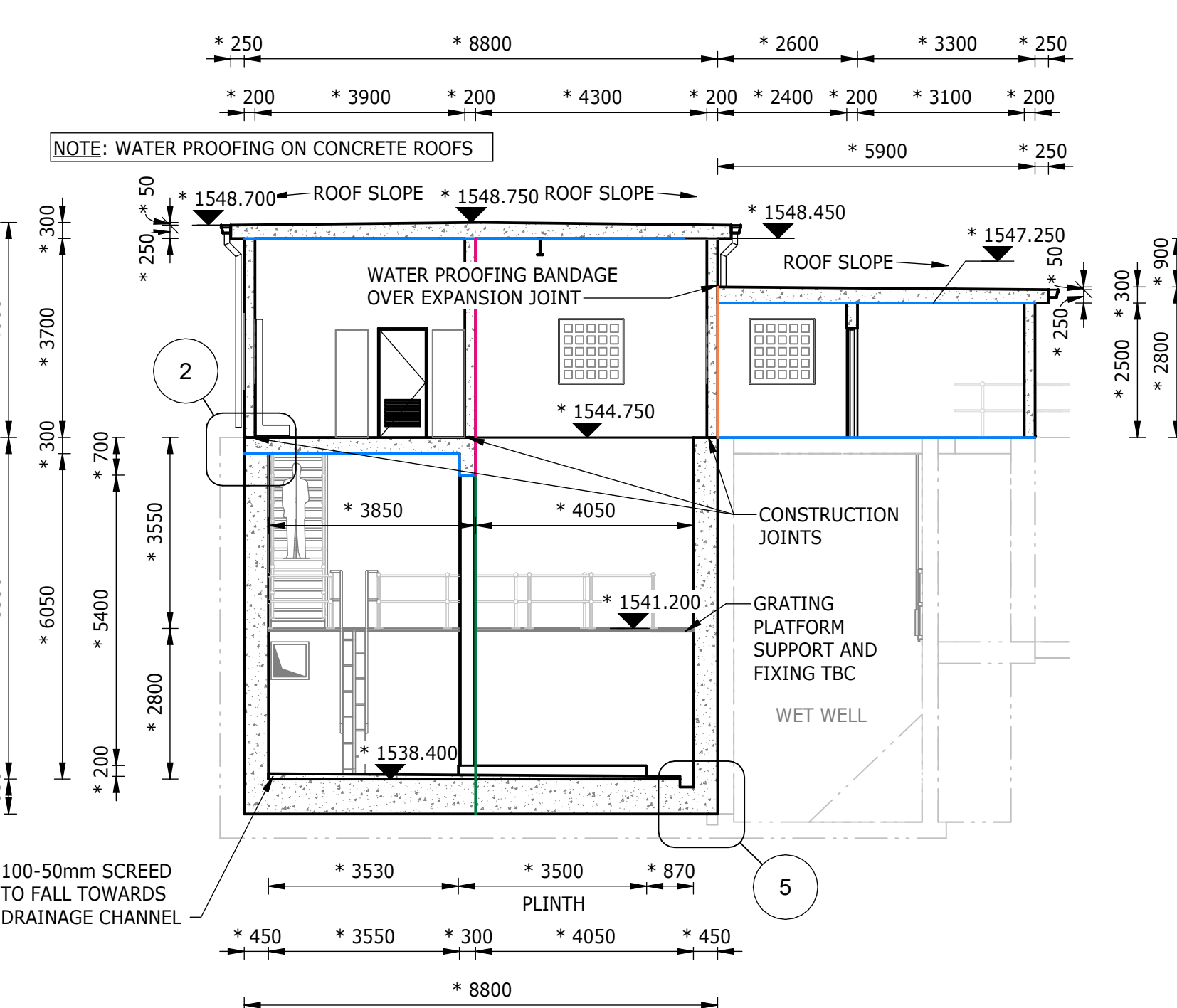
DOOR LEGEND			
No	OPENING WIDTH	OPENING HEIGHT	QTY
D01	*1600	*3500	1
D02	*1400	*2100	2

LEGEND:			
—	= CJ - CONTRACTION JOINT NEW RC SUBSTRUCTURE		
—	= CJ1 - CONTRACTION JOINT NEW RC SUPERSTRUCTURE		
—	= SJ - SLIP JOINT		
—	= IJ - ISOLATION JOINT		

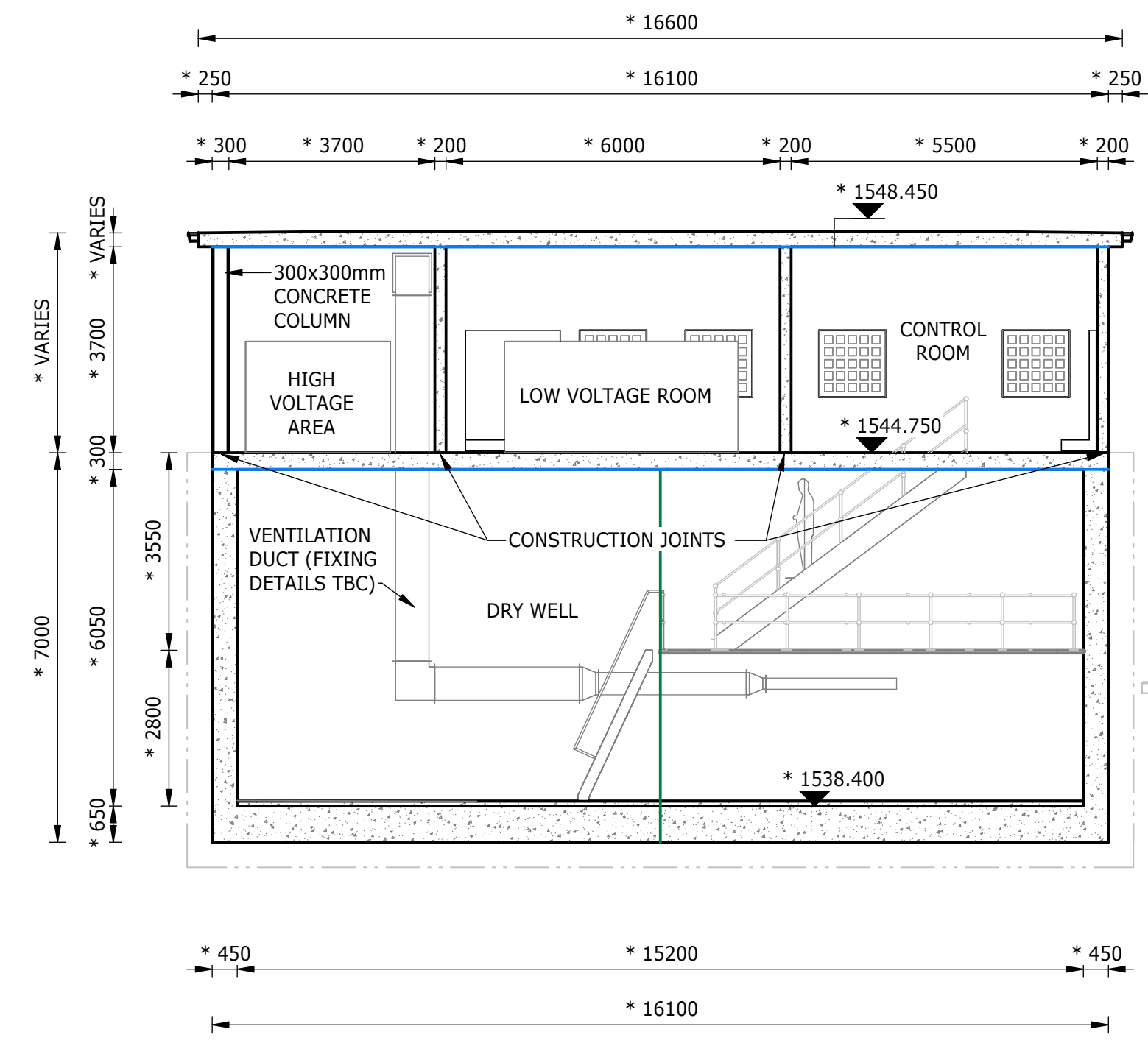
PIPEWORK NOT SHOWN FOR CLARITY, SEE DRAWING BW1400-RHD-C1-02-D-M-0241 FOR PIPEWORK GENERAL LAYOUT AND SECTIONS



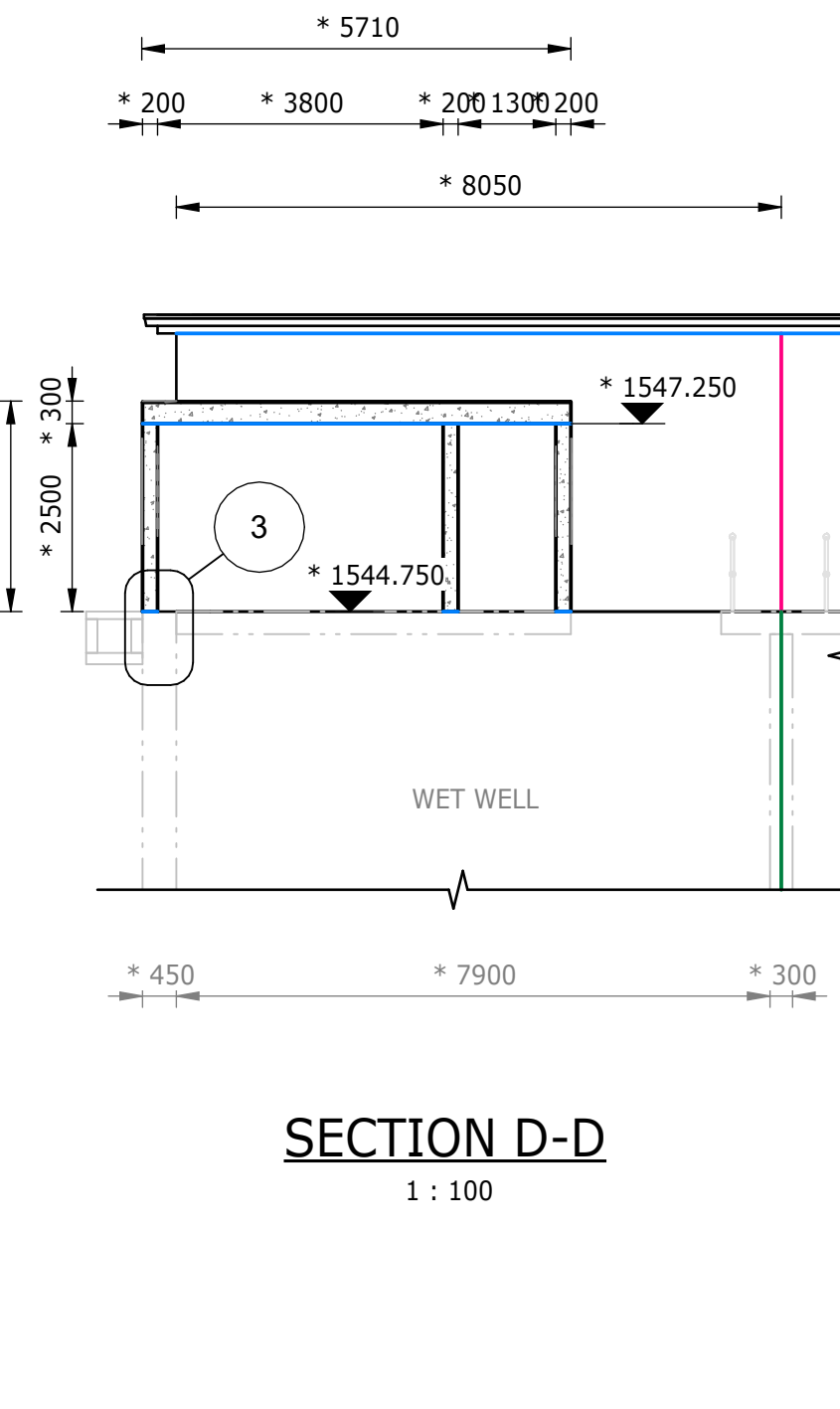
SECTION A-A
1 : 100



SECTION B-B
1 : 100

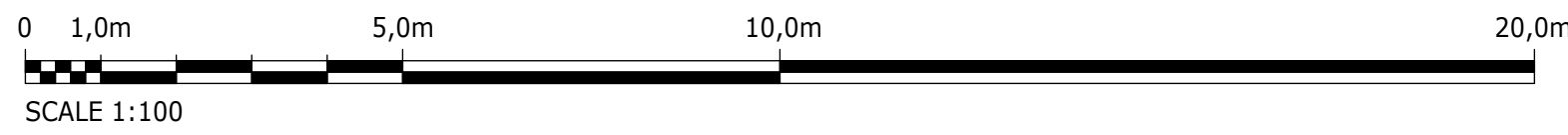


SECTION C-C
1 : 100

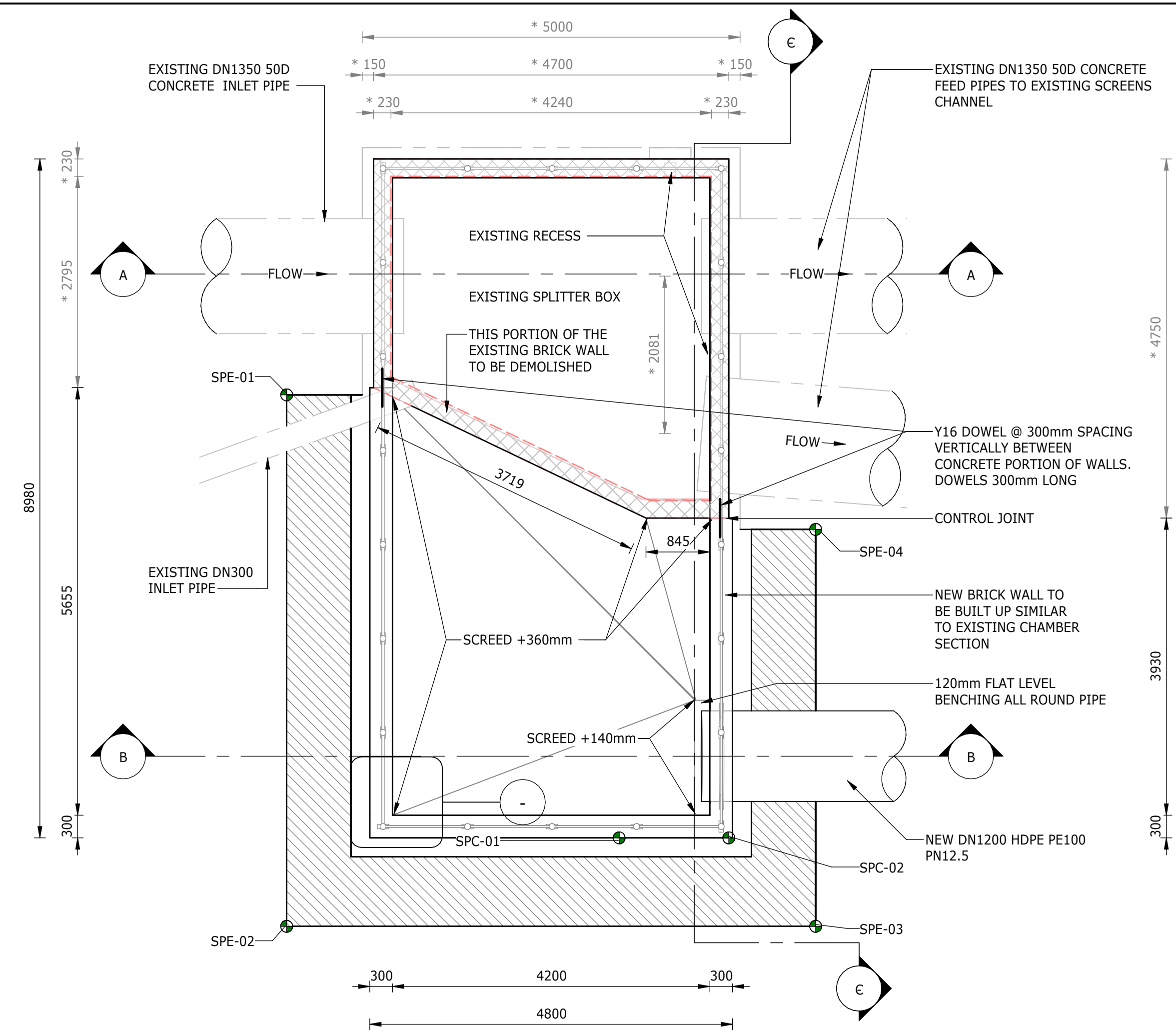


SECTION D-D
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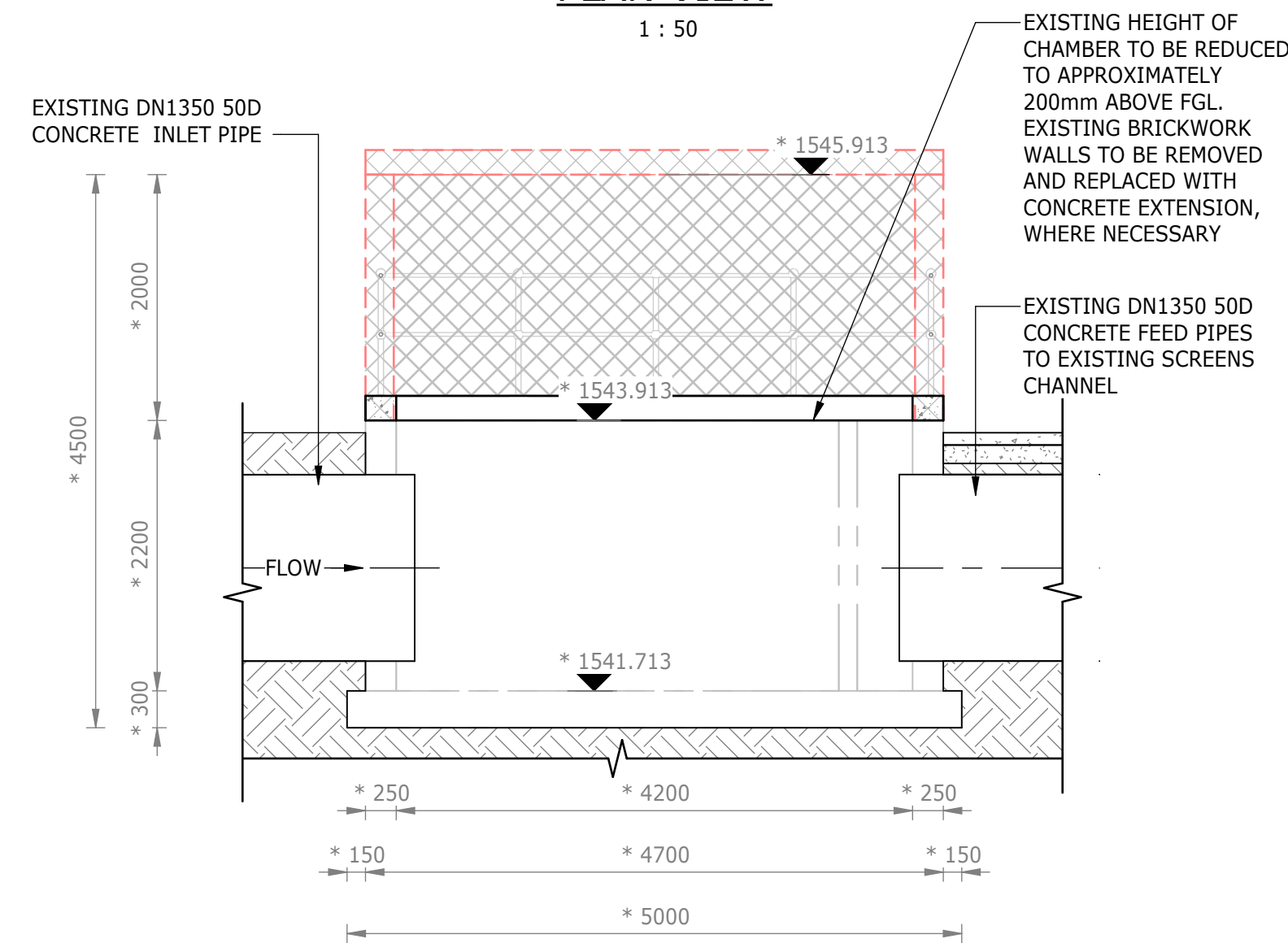
DEPARTMENT	APPROVED	DESIGNATION	DATE



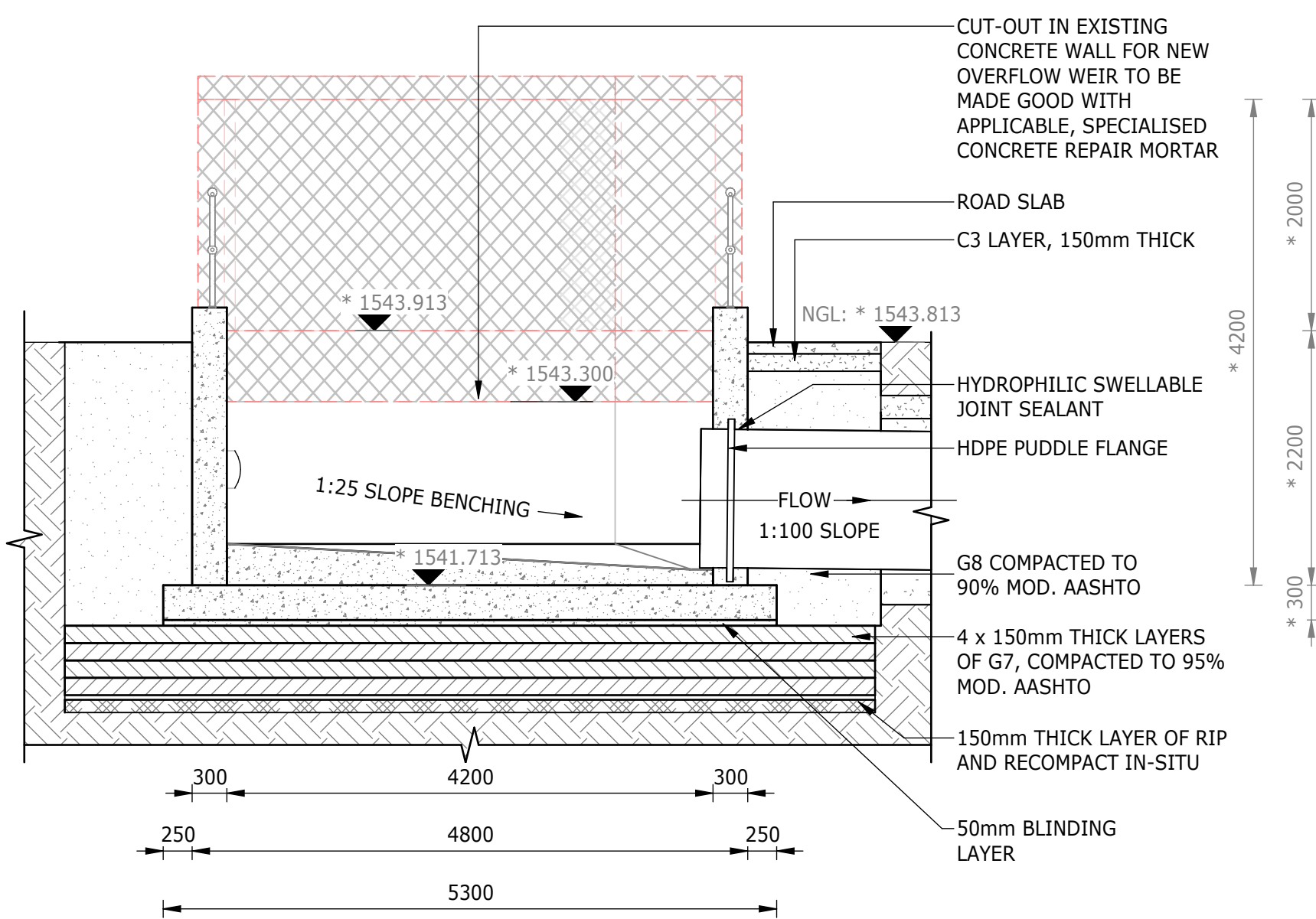
CONSULTING ENGINEERS		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.							
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	SURVEYED			TURBINE HALL 65 NTEMI PILISO 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 NEW SUBSTRUCTURE AND SUPERSTRUCTURE GENERAL ARRANGEMENT AND SECTIONS	AS SHOWN			C01	ISSUED FOR RE-TENDER	D. PHOGOLE	JULY 26	JW NUMBER			
		DESIGNED	L. NAICKER								JW14466R-RHD-C1-02-D-C-0206								
		DRAWN	N. O'GORMAN								CONSULTANT'S NUMBER								
		CHECKED	L. NAICKER								BW1400-RHD-C1-02-D-C-0206								
		SERVICES CHECKED									FILE No								
				GEOTECHNICAL INVESTIGATION				DATE						C01					
				SERVITUDES															
				APPROVED	DITHOLO PHOGOLE														
				Pr. Eng.No.	20060098														
				DATE															



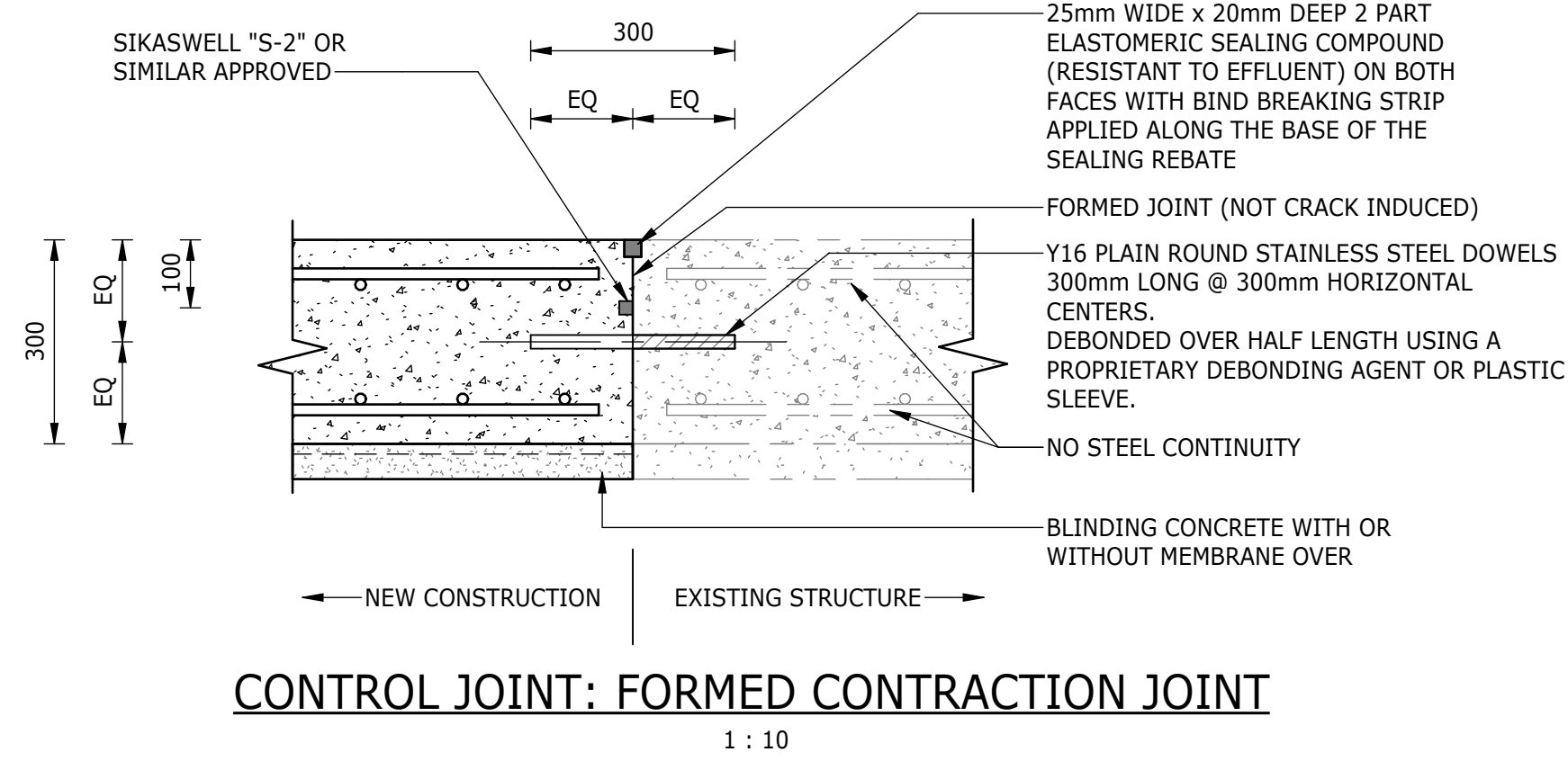
PLAN VIEW
1 : 50



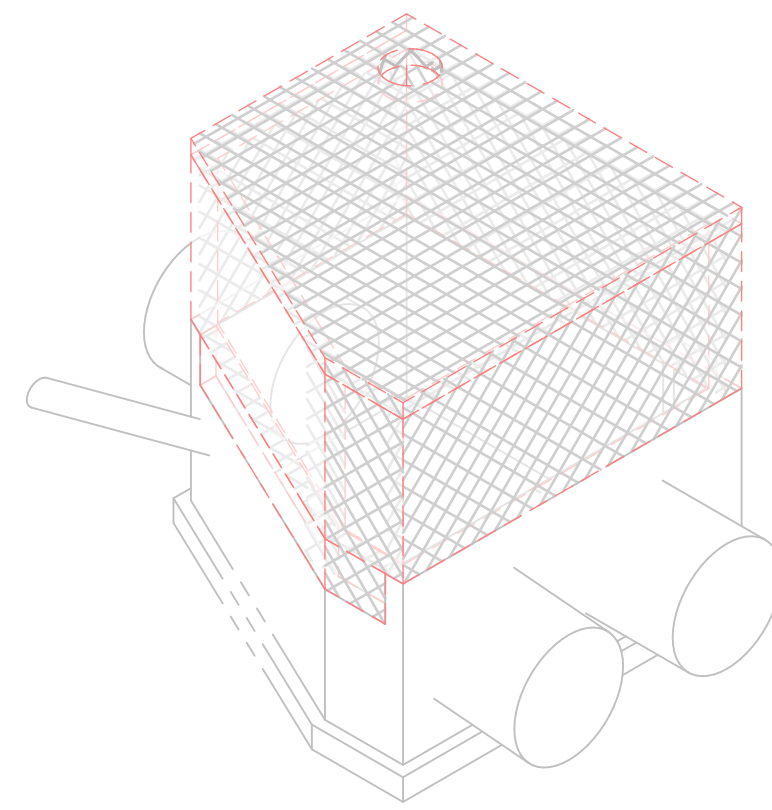
SECTION A-A
1 : 50



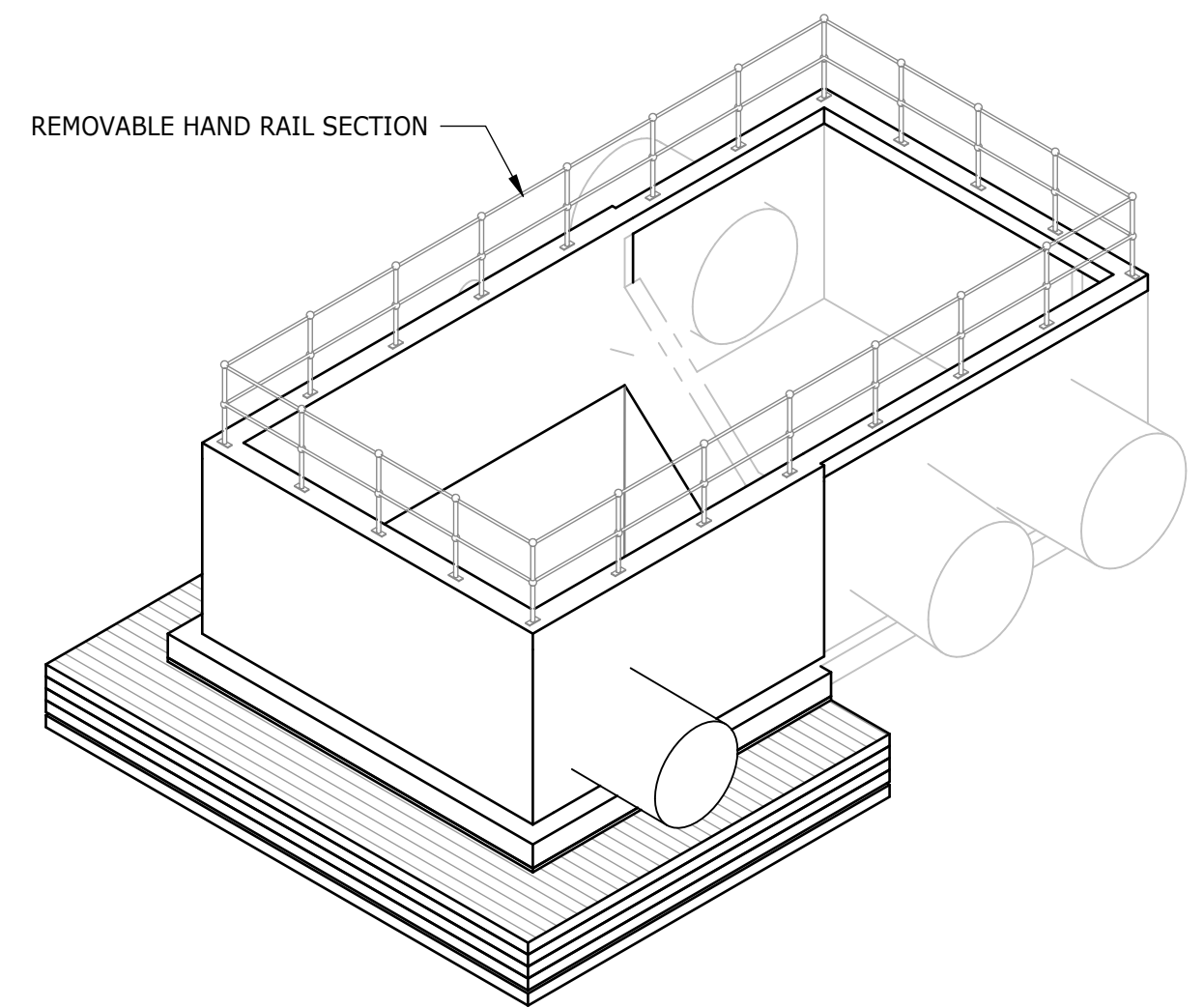
SECTION B-B
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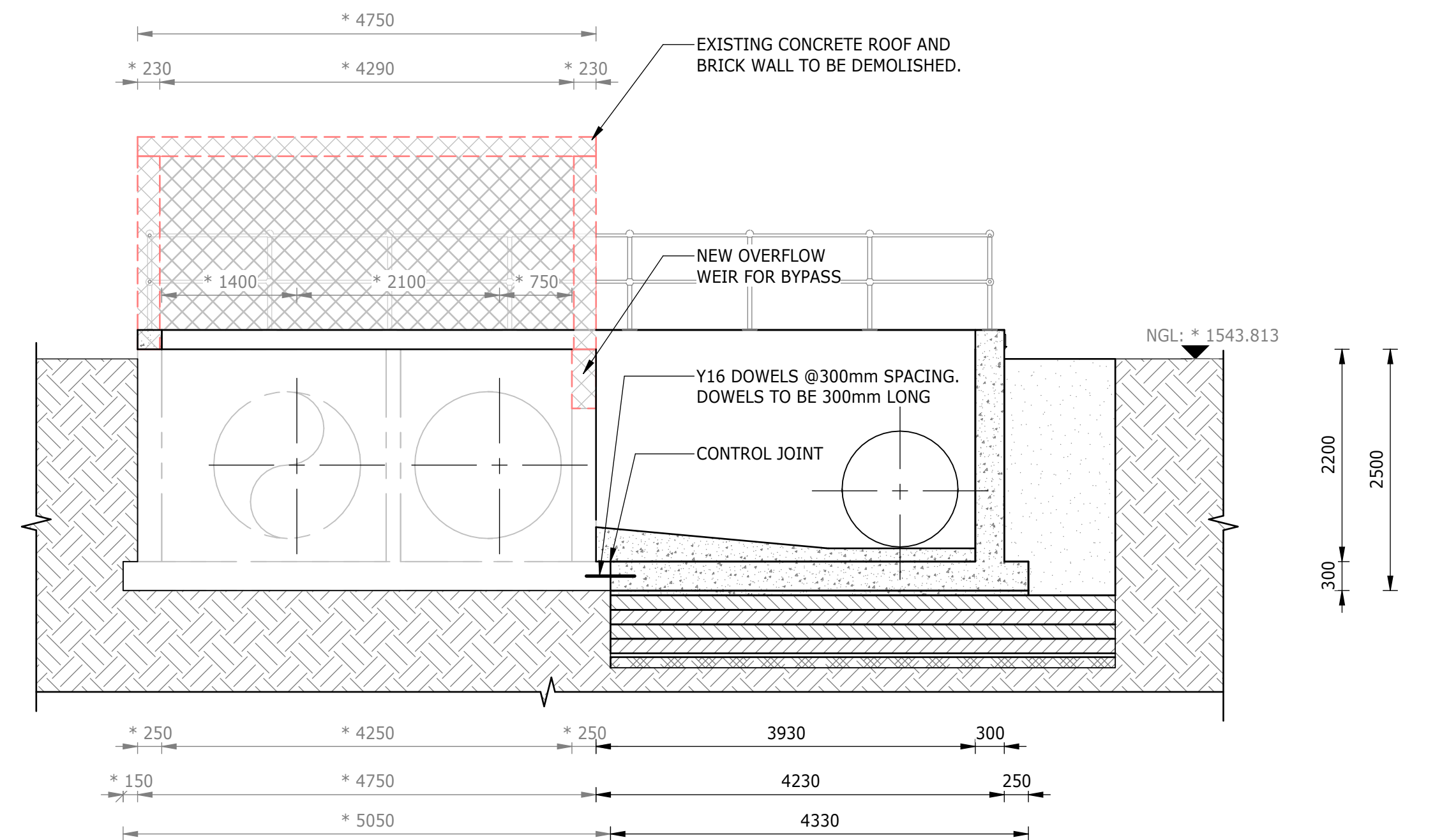
CONTROL JOINT: FORMED CONTRACTION JOINT
1 : 10



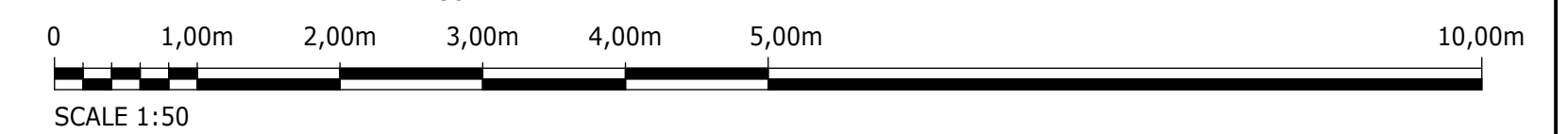
TYPICAL ISOMETRIC VIEW OF DEMOLITION WORK



TYPICAL ISOMETRIC VIEW OF EXTENSION



SECTION C-C
1 : 50



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

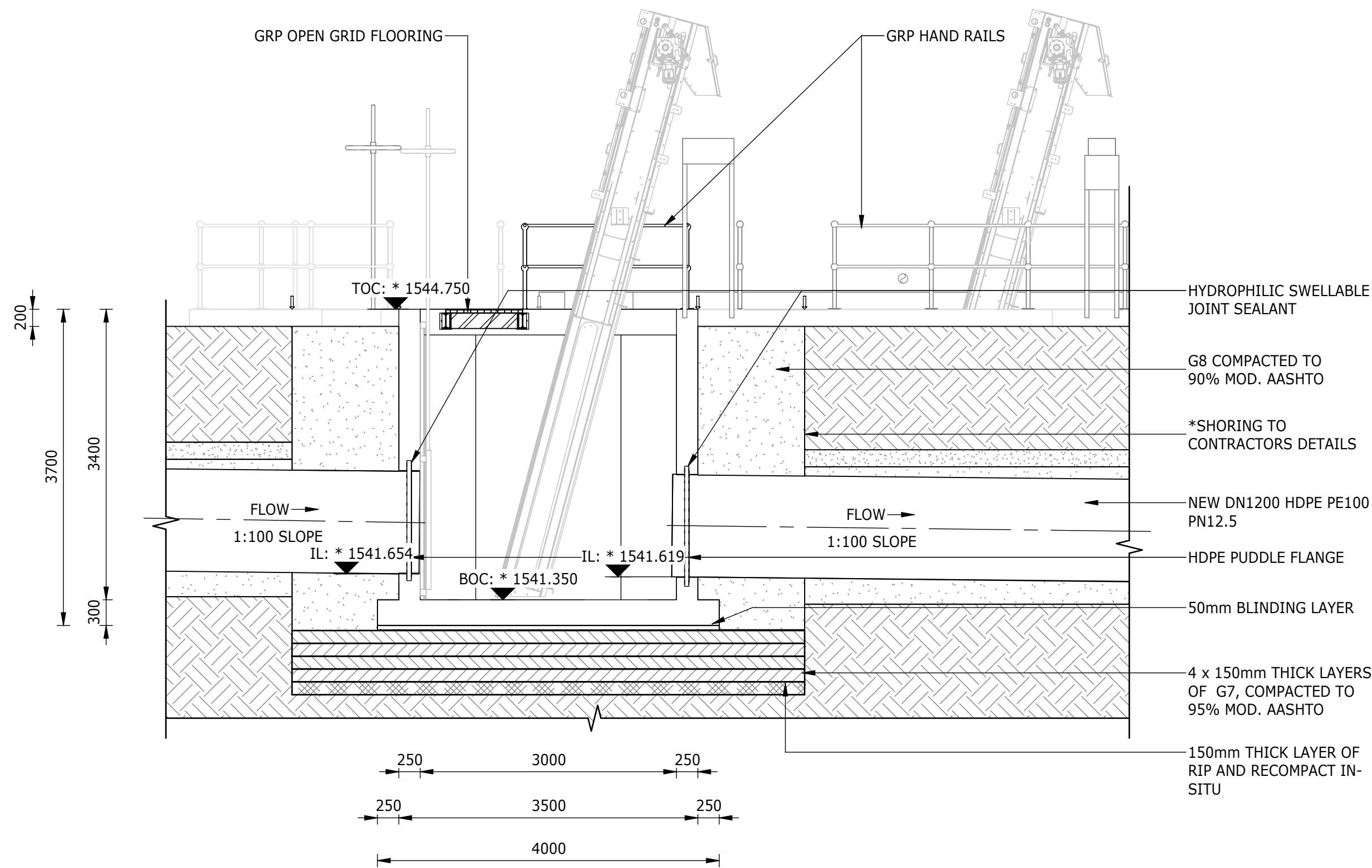
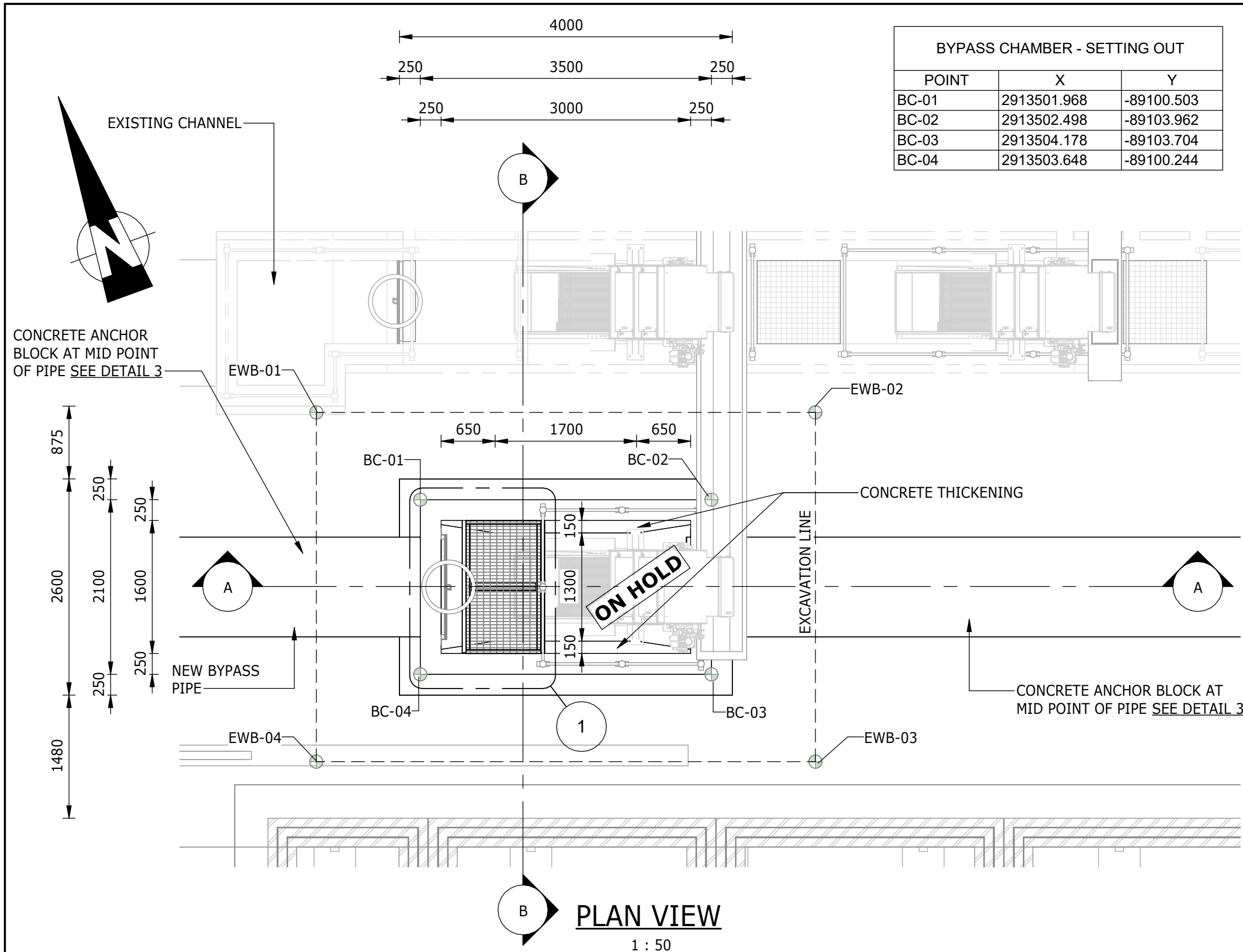
CITY OF JOHANNESBURG

OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
VAN WYKSURST PUMP STATION
EXISTING SPLITTER BOX EXTENSION
GENERAL ARRANGEMENT, SECTIONS & EARTHWORKS

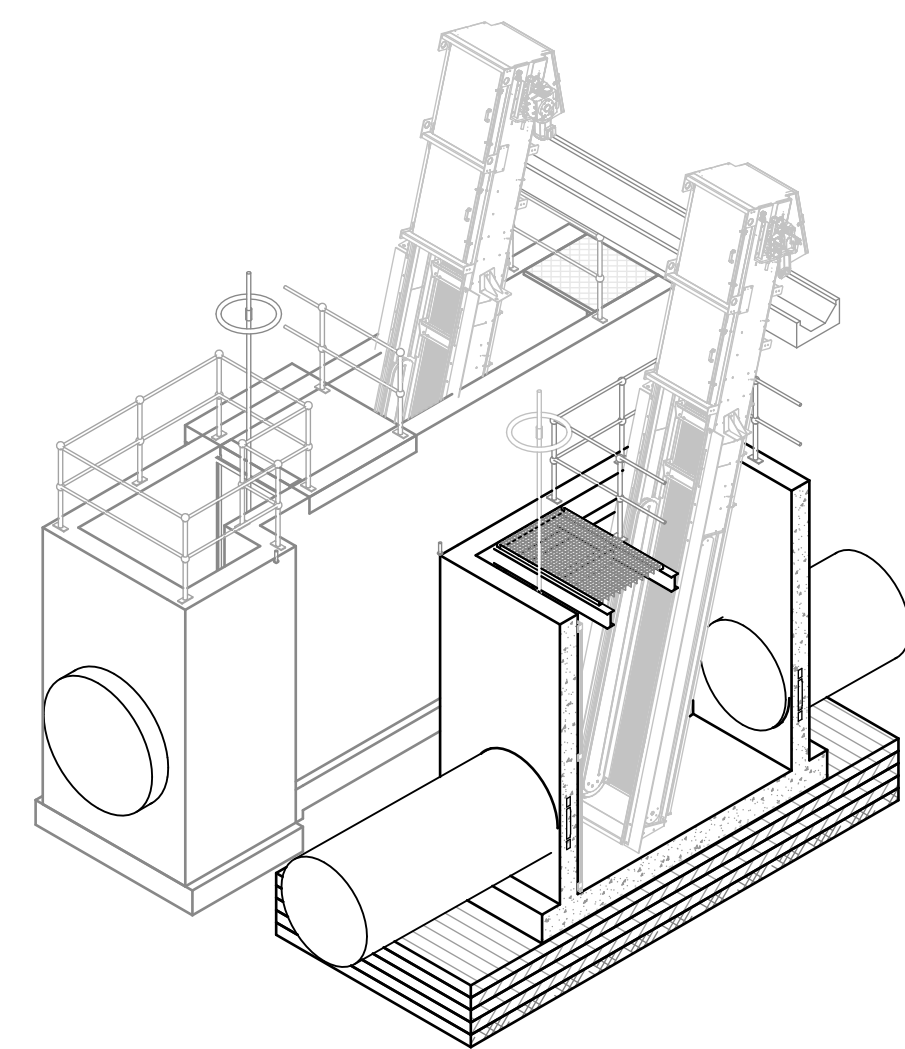
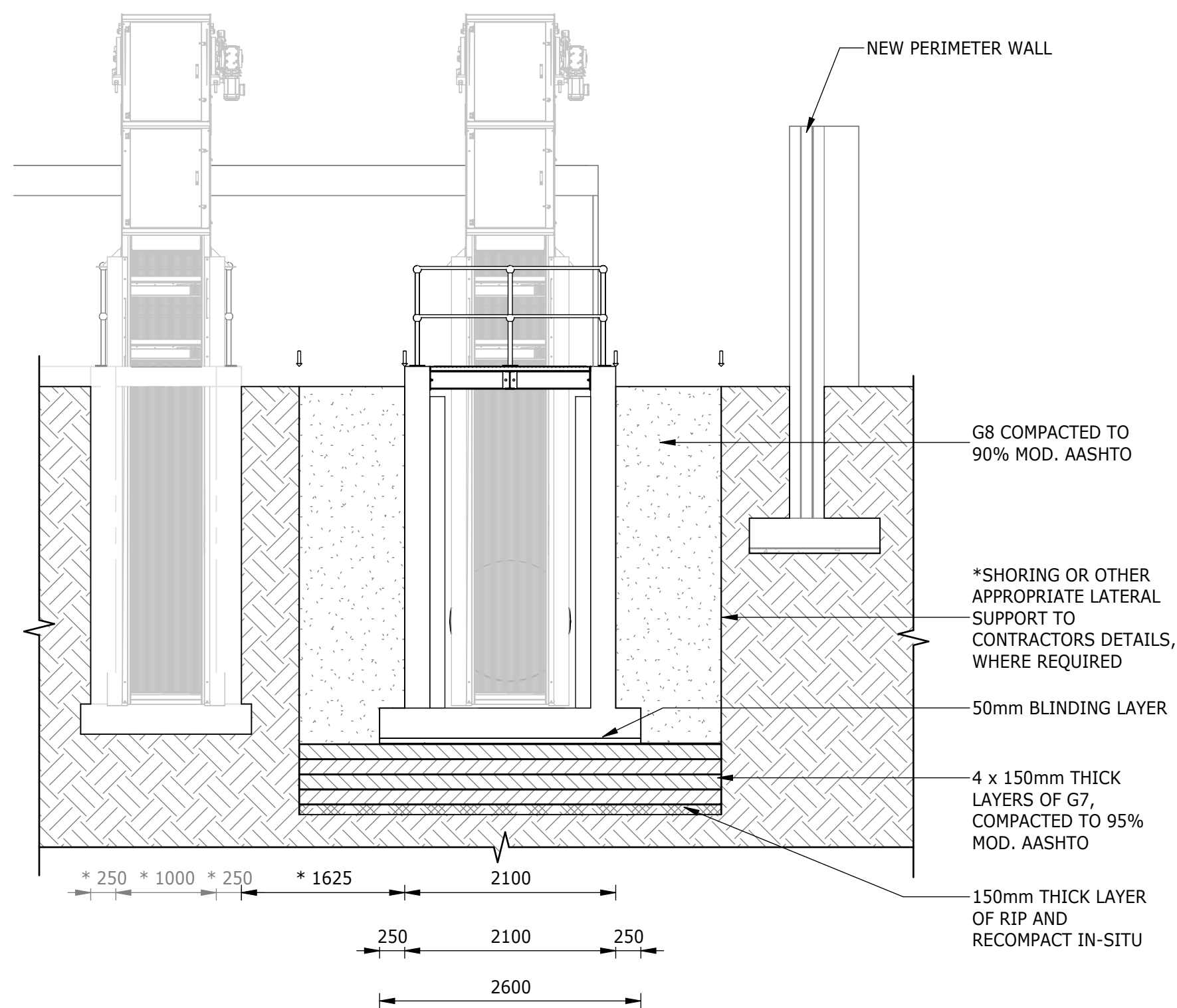
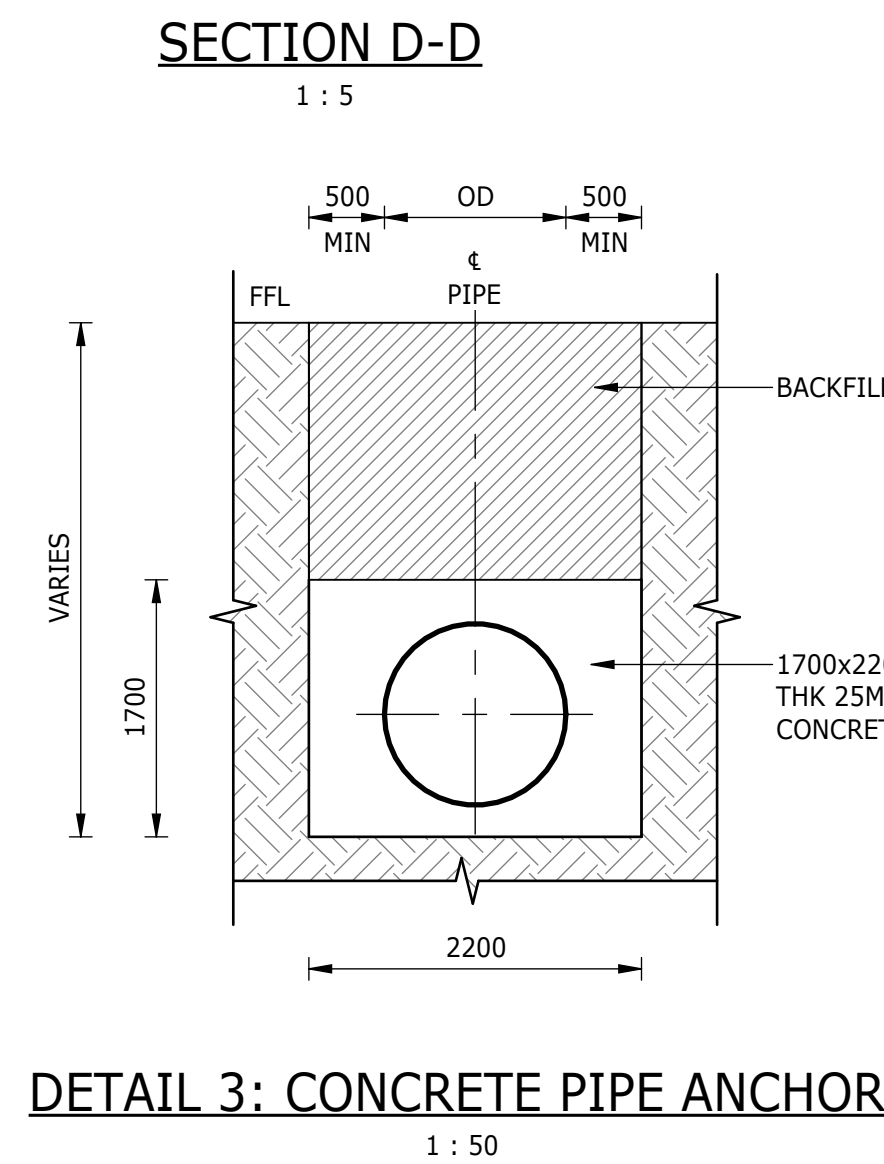
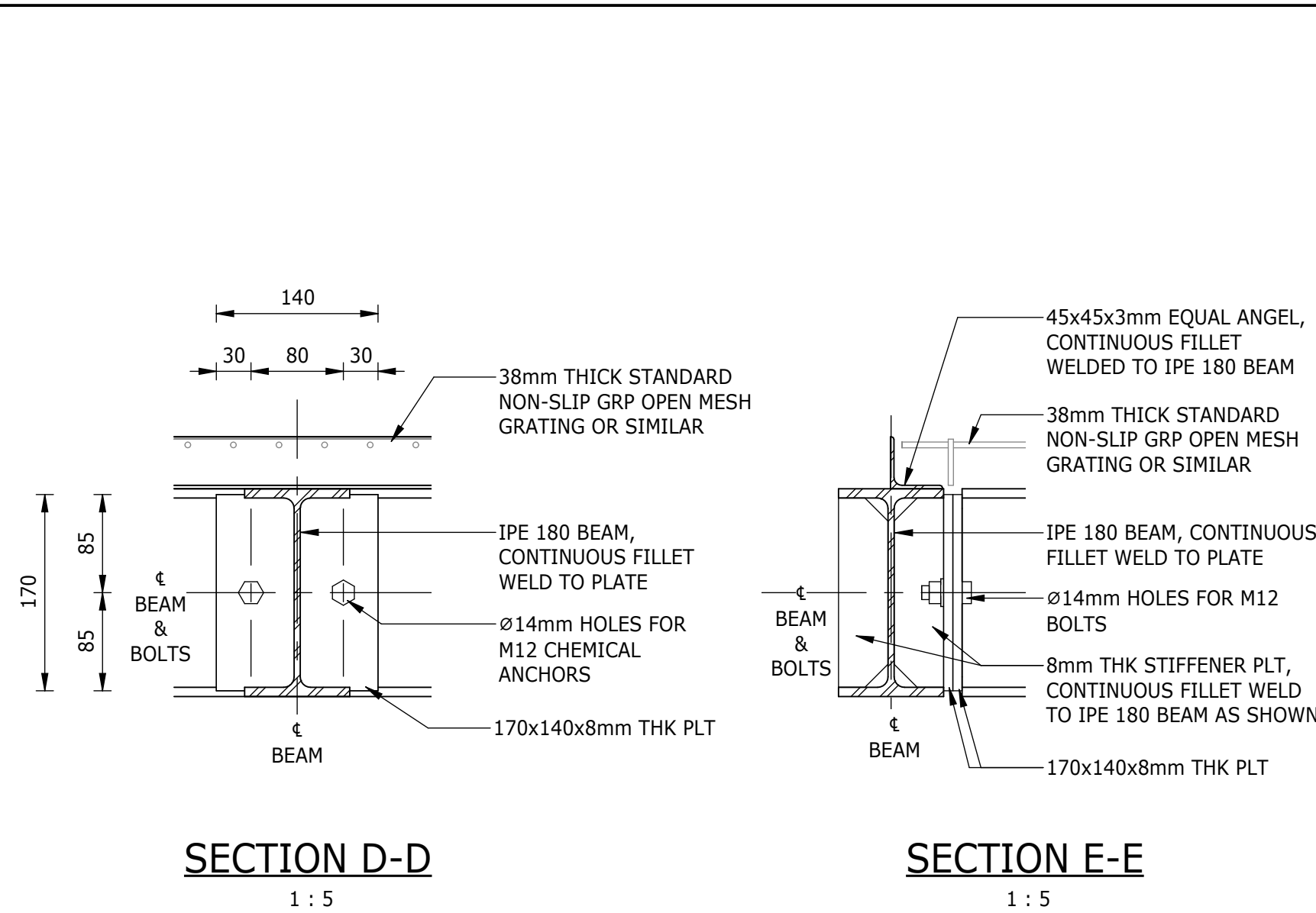
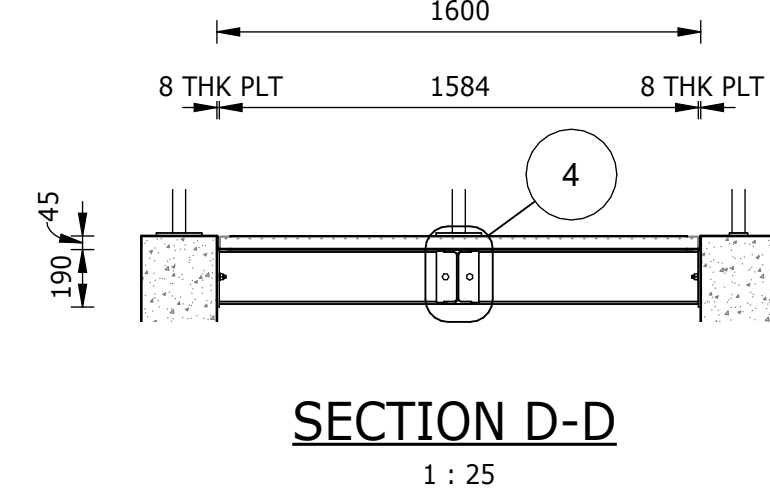
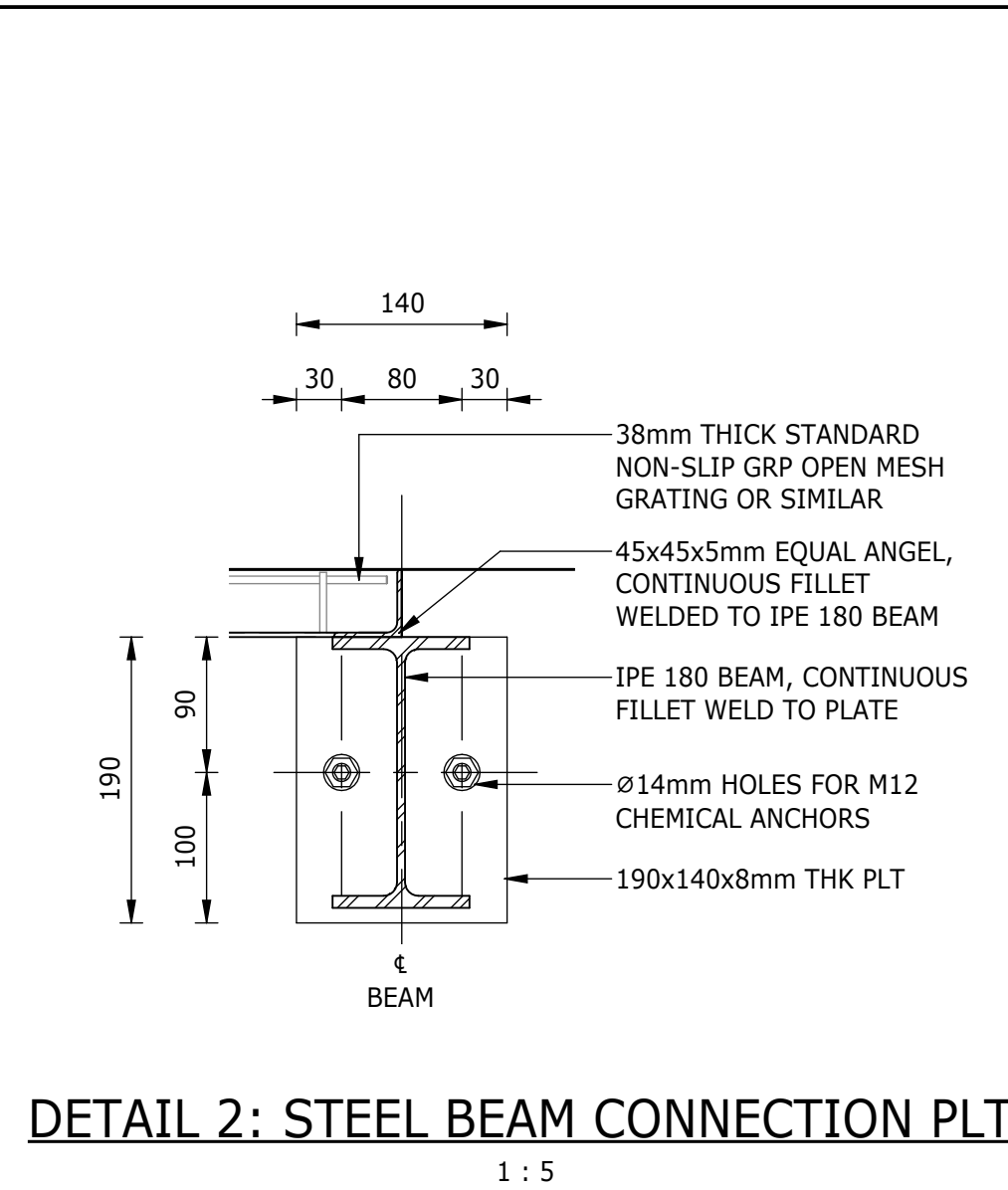
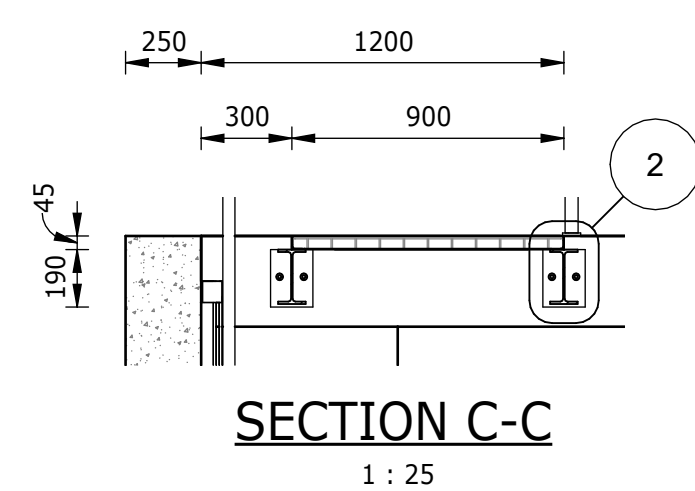
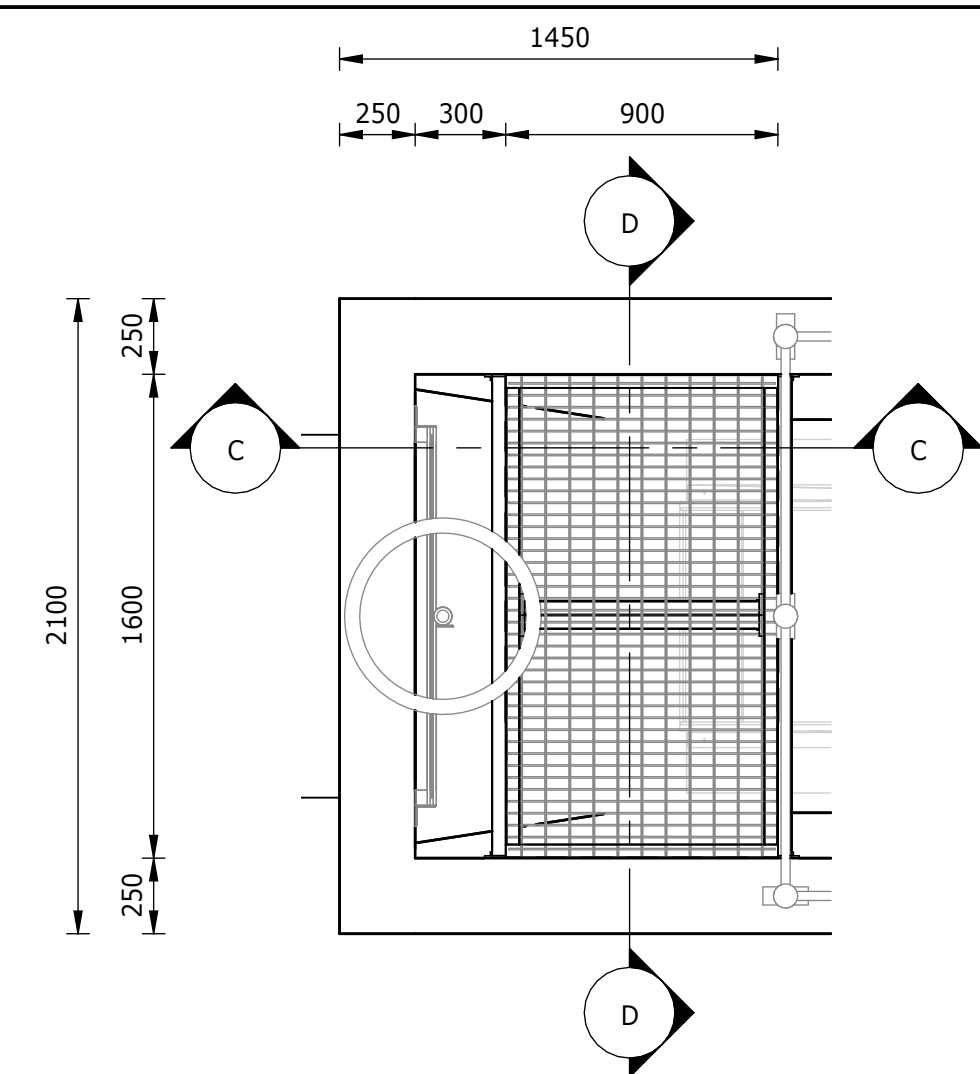
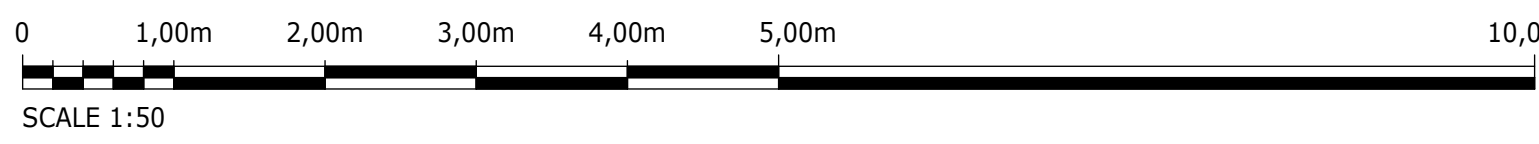
DESIGN
MANAGER

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-C1-03-D-C-0301
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-03-D-C-0301
				FILE No
				C02



DEPARTMENT	APPROVED	DESIGNATION	DATE

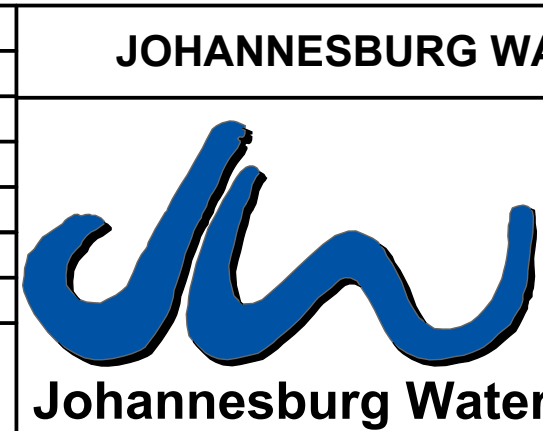


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 11. "ON HOLD" ITEMS ARE SUBJECT TO FINAL DETAIL DESIGN BASED ON EQUIPMENT REQUIREMENTS TO BE PROVIDED BY THE CONTRACTOR."



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	

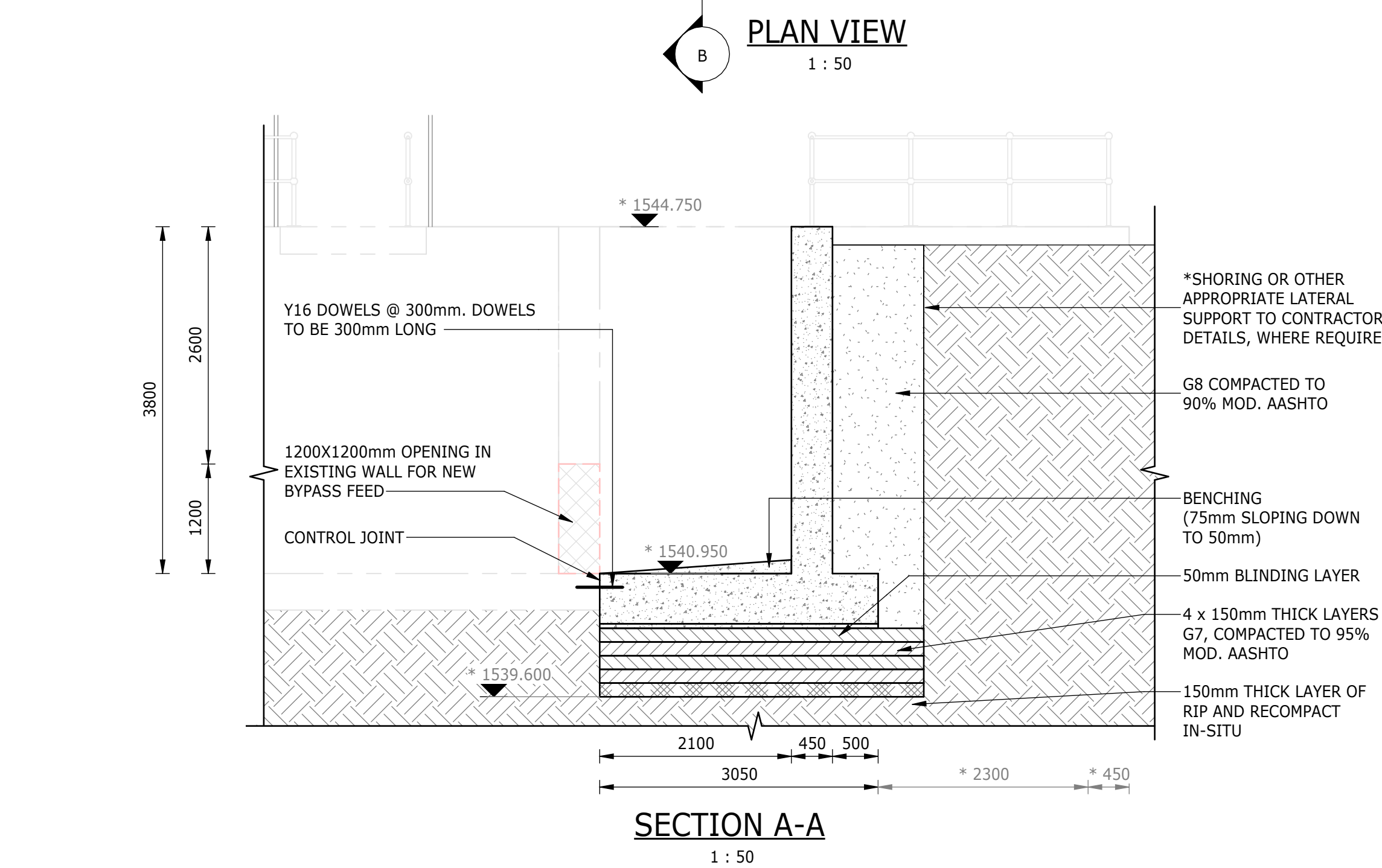
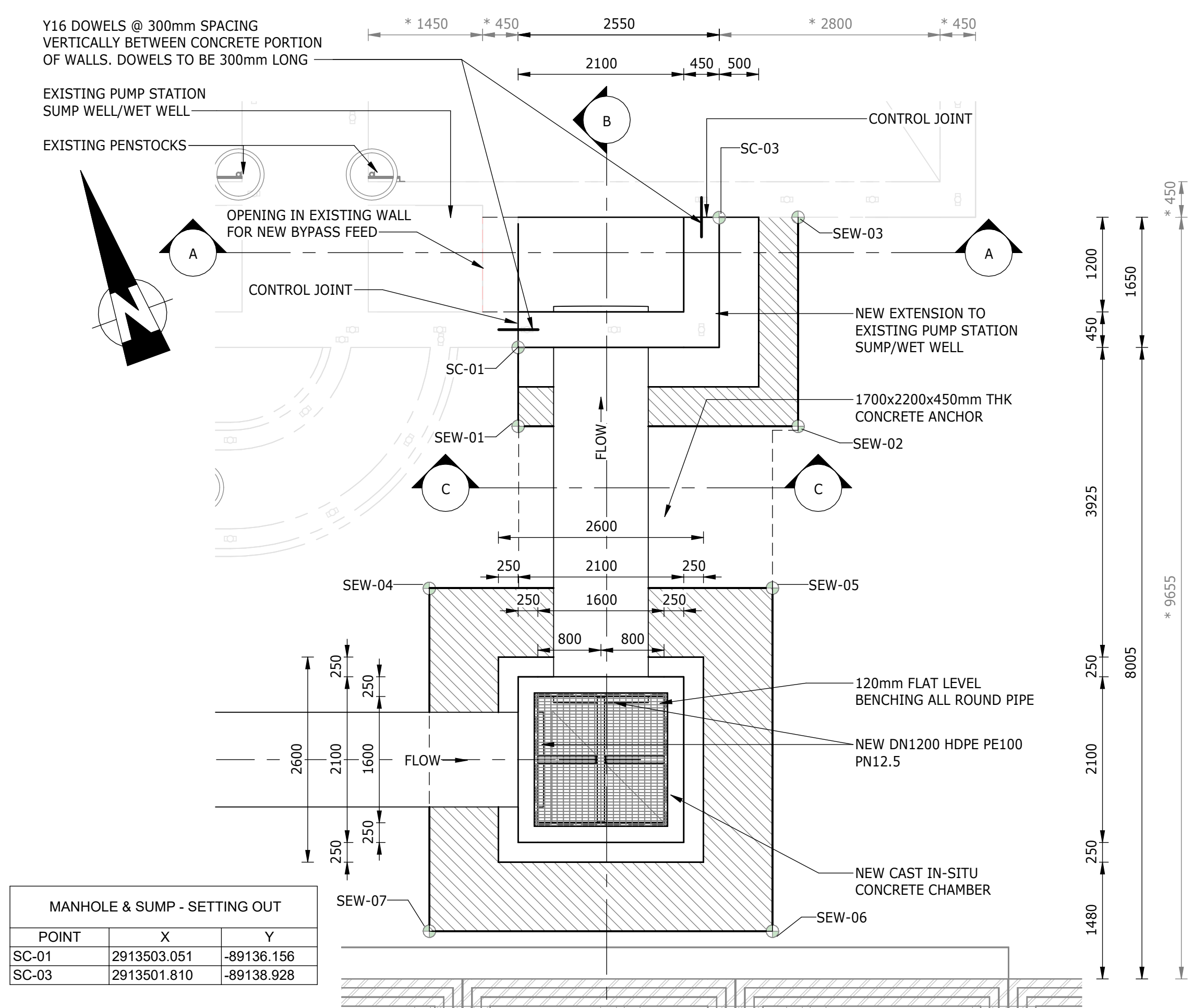


TURBINE HALL
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001
TEL: (011) 688-1400
FAX: (011) 688-1529

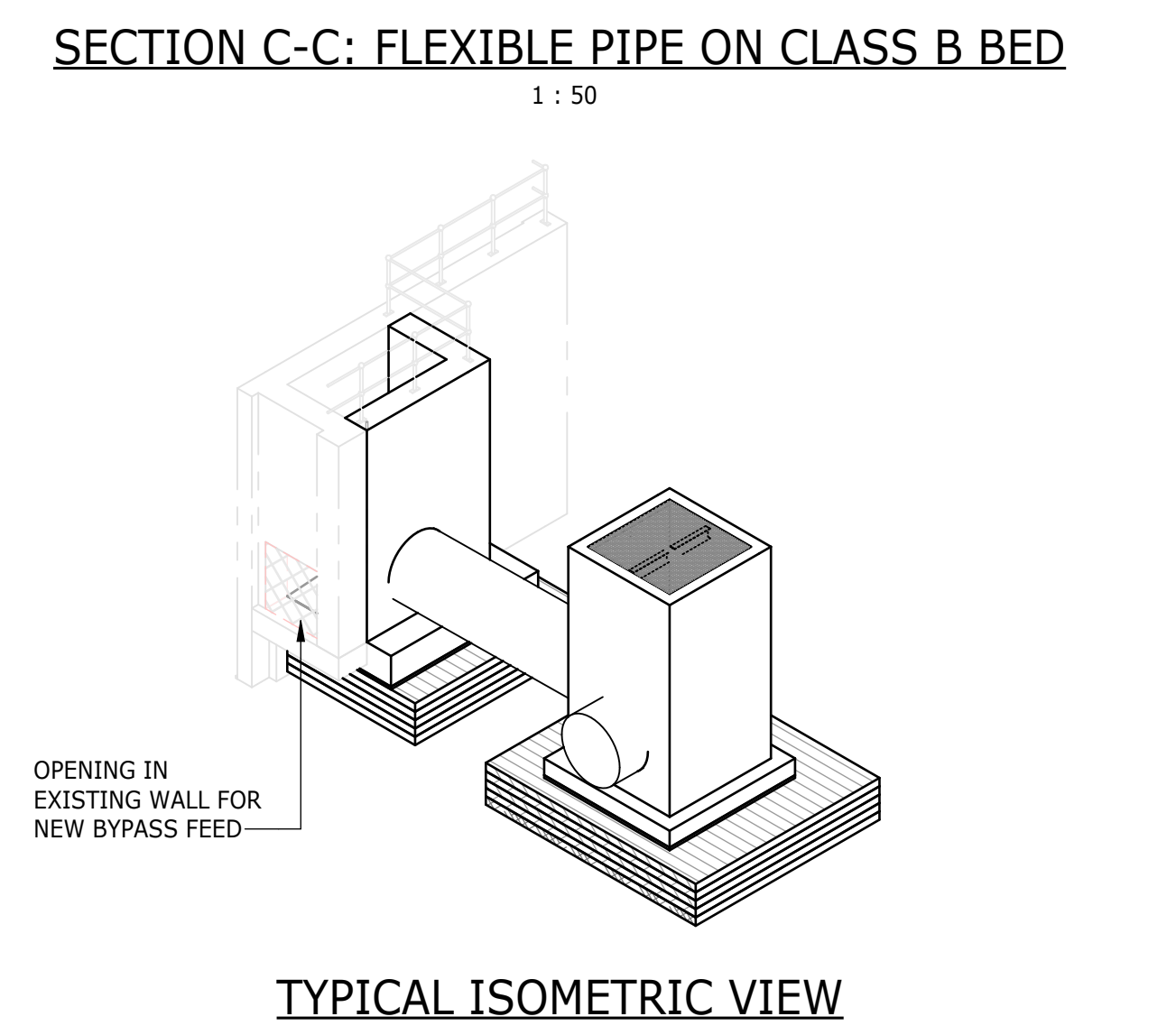
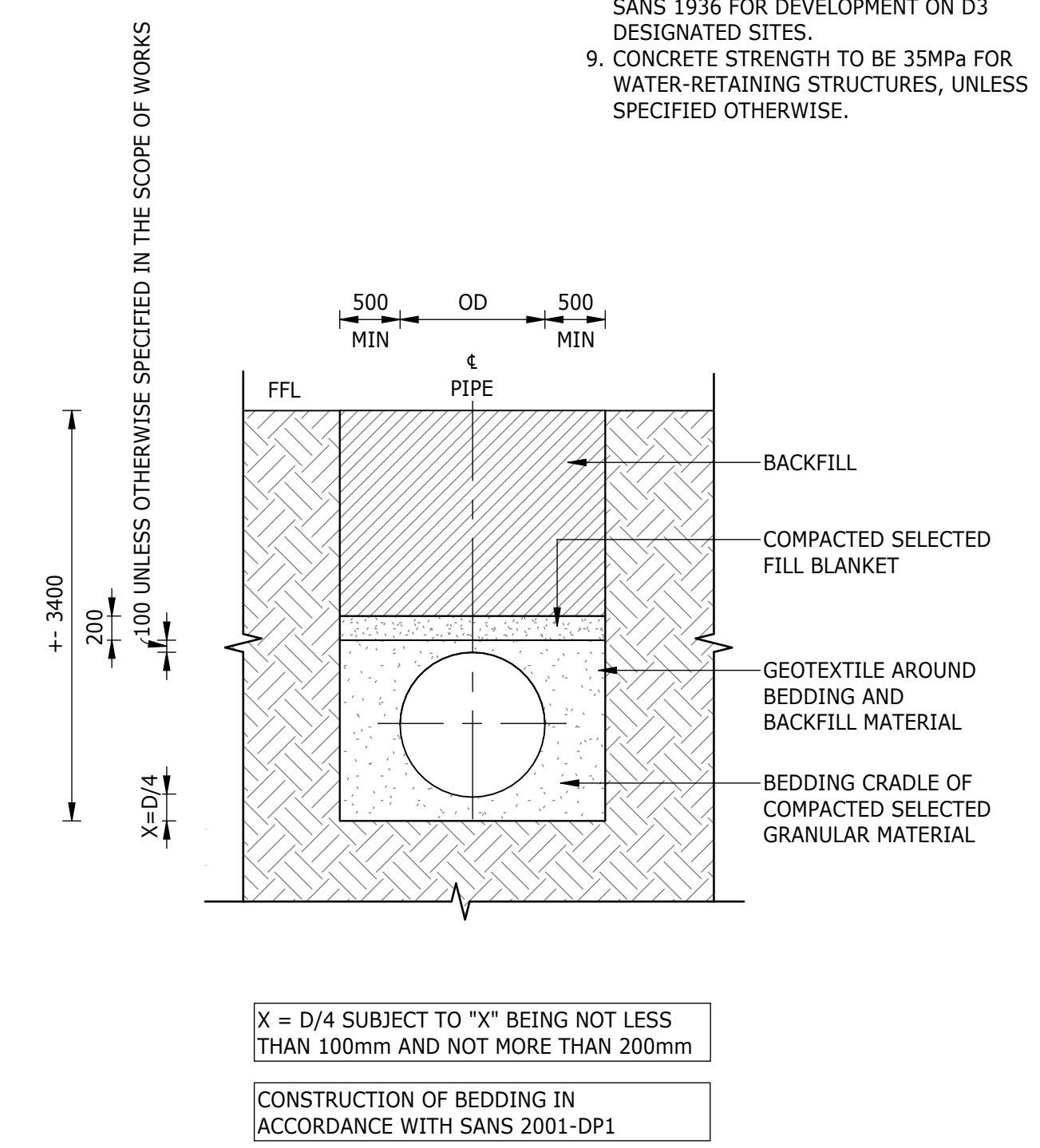
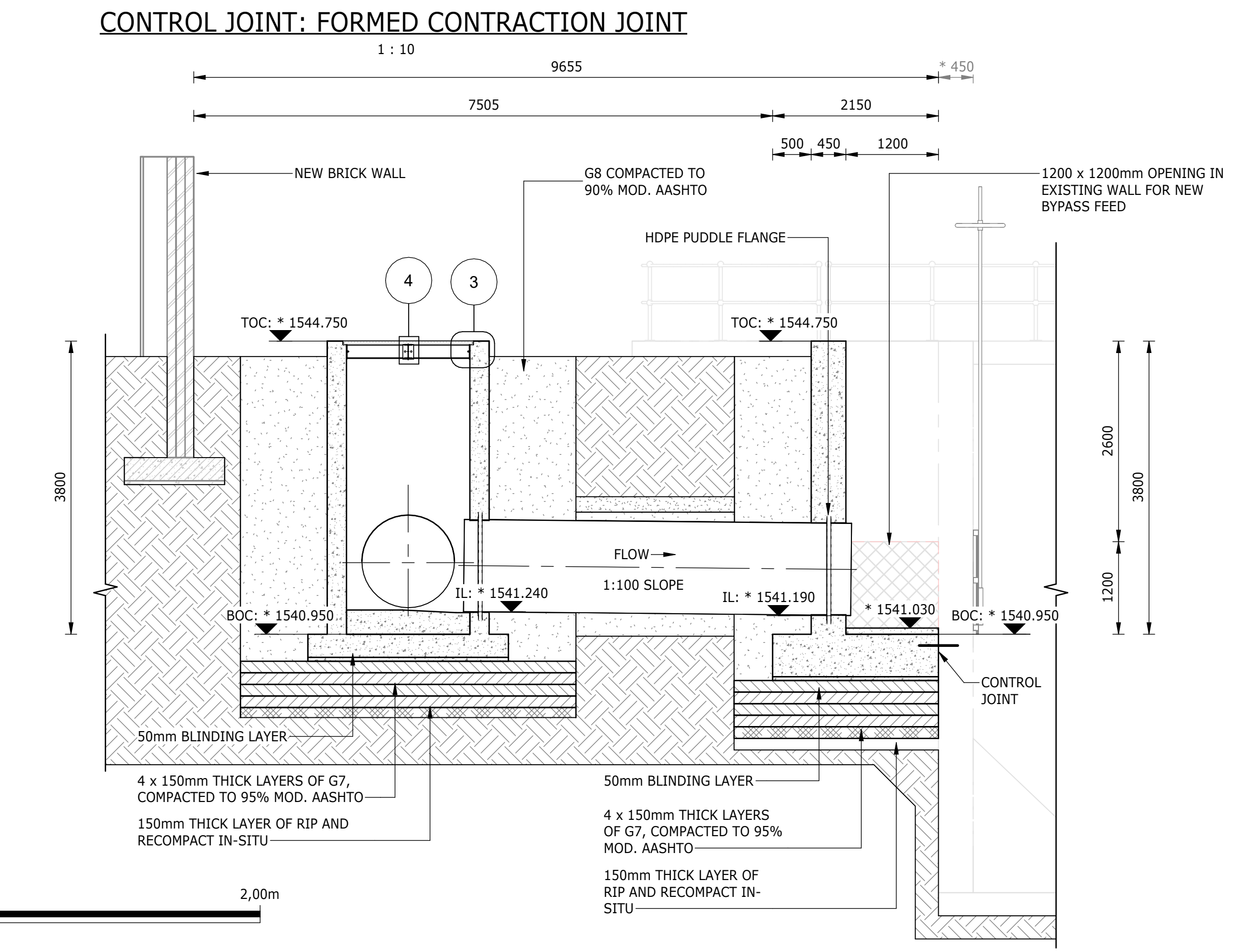
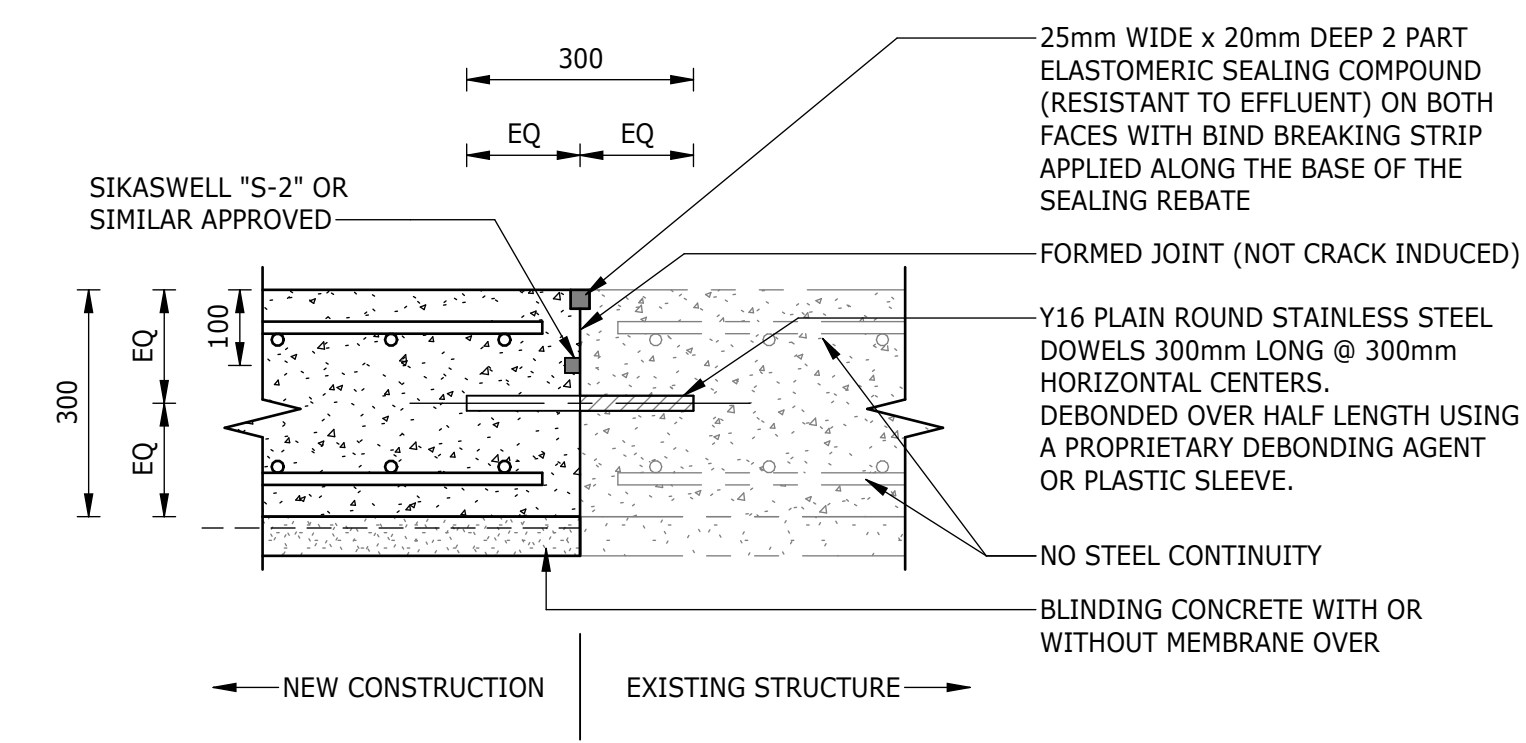
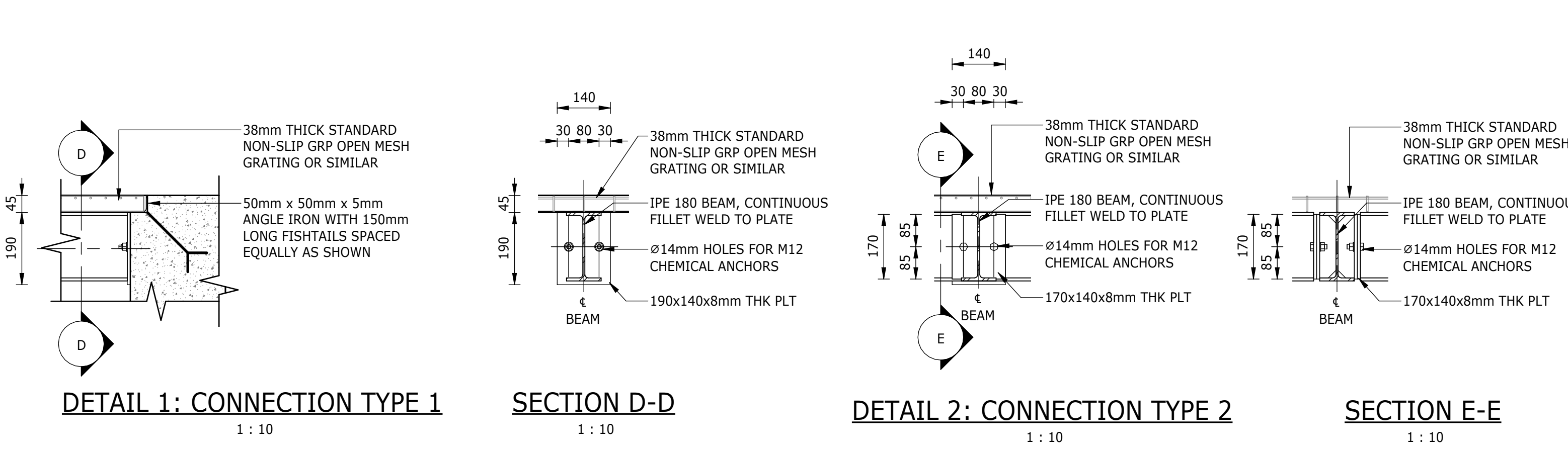
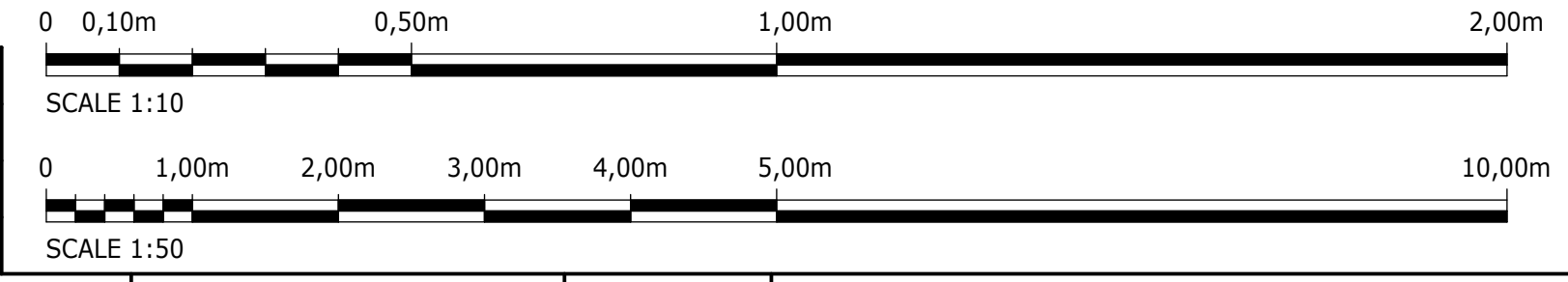
CITY OF JOHANNESBURG
OLIFANTSVLEI WWTW: VAN WYKSURST PUMP STATION
INFRASTRUCTURE RENEWAL PLAN
VAN WYKSURST PUMP STATION
BYPASS CHAMBER
GENERAL ARRANGEMENT, SECTIONS & EARTHWORKS

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-C1-03-D-C-0302
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-03-D-C-0302
				FILE No
				C02

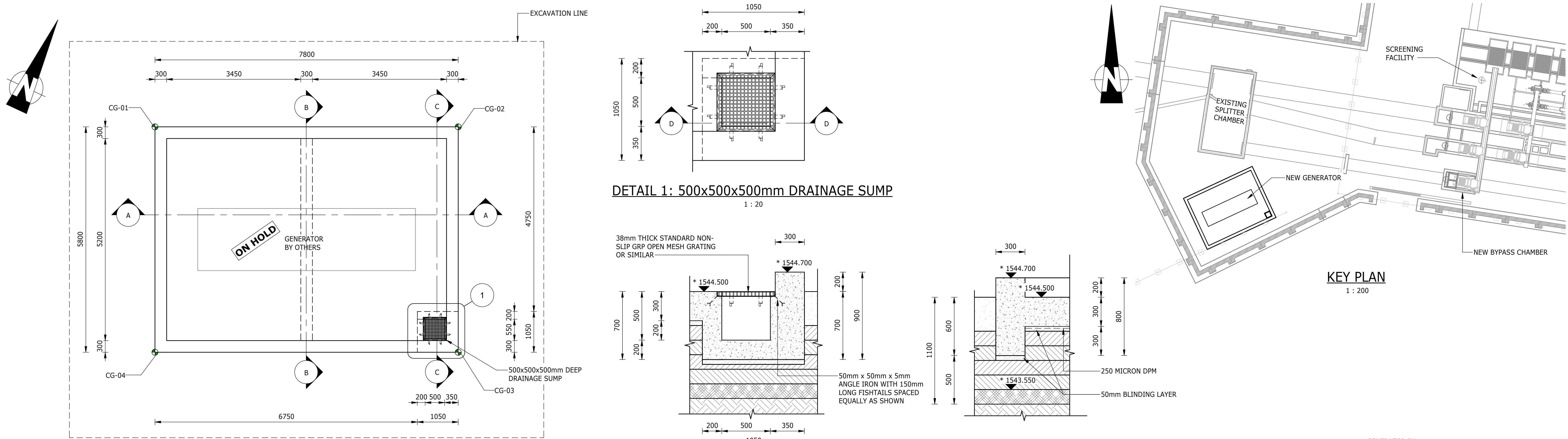


DEPARTMENT	APPROVED	DESIGNATION	DATE



- 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.
 - CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
 - SHORING OR OTHER APPROPRIATE LATERAL SUPPORT TO CONTRACTORS DETAILS, WHERE REQUIRED.
 - CONSTRUCTION TO BE IN ACCORDANCE WITH ALL RELEVANT CLAUSES AS PER SANS 1936 FOR DEVELOPMENT ON D3 DESIGNATED SITES.
 - CONCRETE STRENGTH TO BE 35MPa FOR WATER-RETAINING STRUCTURES, UNLESS SPECIFIED OTHERWISE.

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		 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 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																			
						DATE						C02							



PLAN VIEW

1 : 50

SECTION D-D

1 : 20

DETAIL 2: ENLARGED VIEW ON SLAB EDGE

1 : 20

TYPICAL ISOMETRIC VIEW

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. CONCRETE EDGES TO HAVE A 25x25mm CHAMFER.
7. GENERATOR SIZE AND CLEARANCE REQUIREMENTS DEPENDENT ON FINAL EQUIPMENT APPROVAL DURING CONSTRUCTION.
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 AND BLINDING TO BE 15MPa.
10. "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

SECTION A-A

1 : 50

SECTION B-B

1 : 50

SECTION C-C

1 : 50

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
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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
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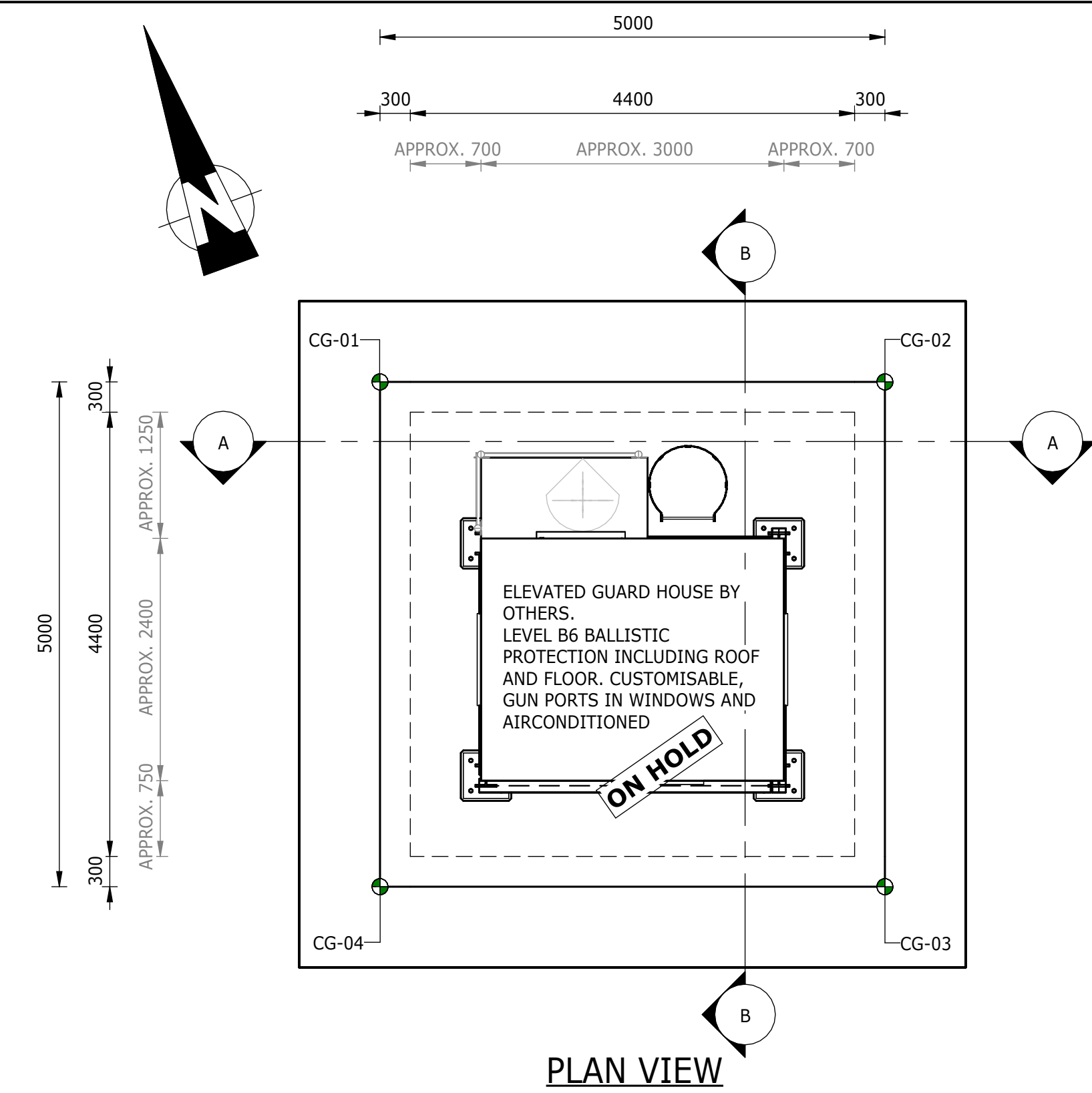
CITY OF JOHANNESBURG

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

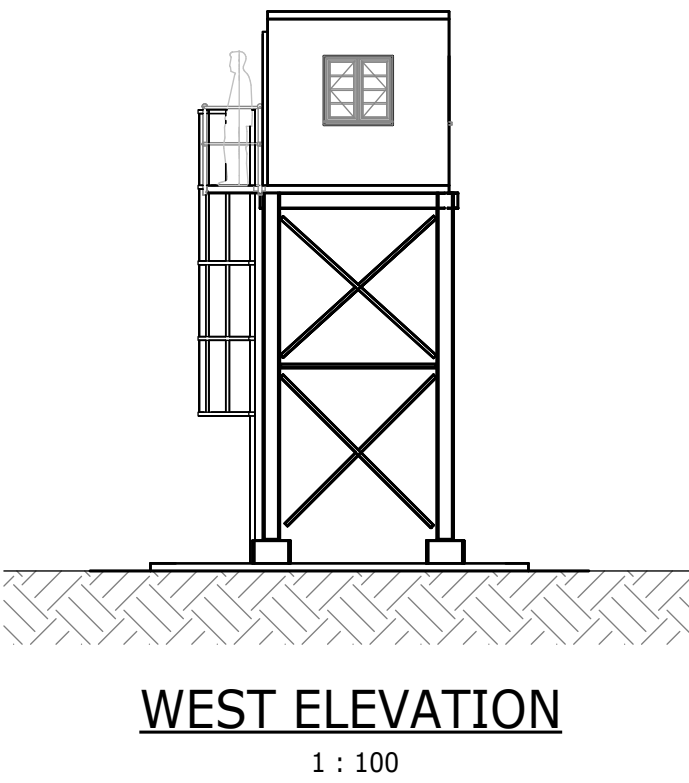
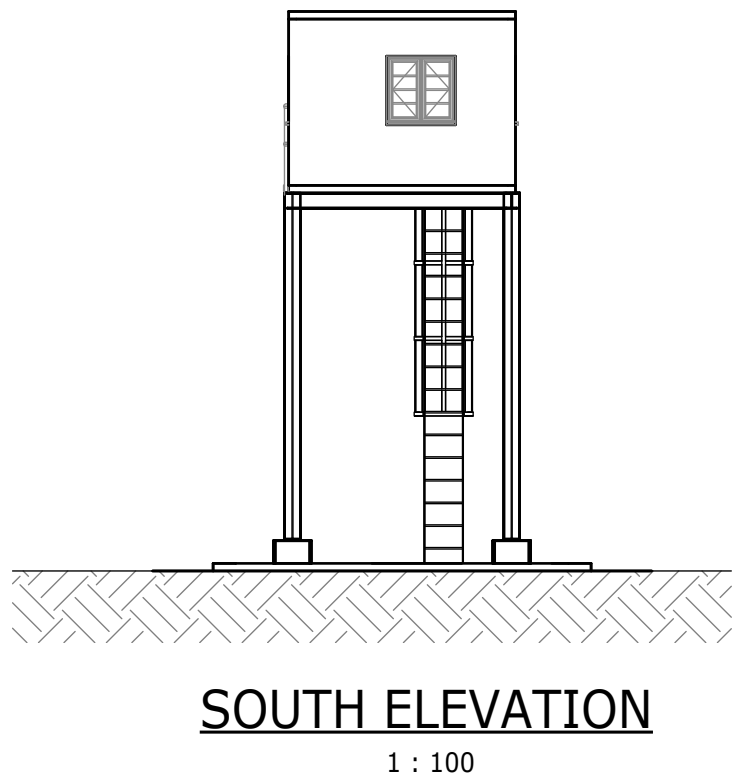
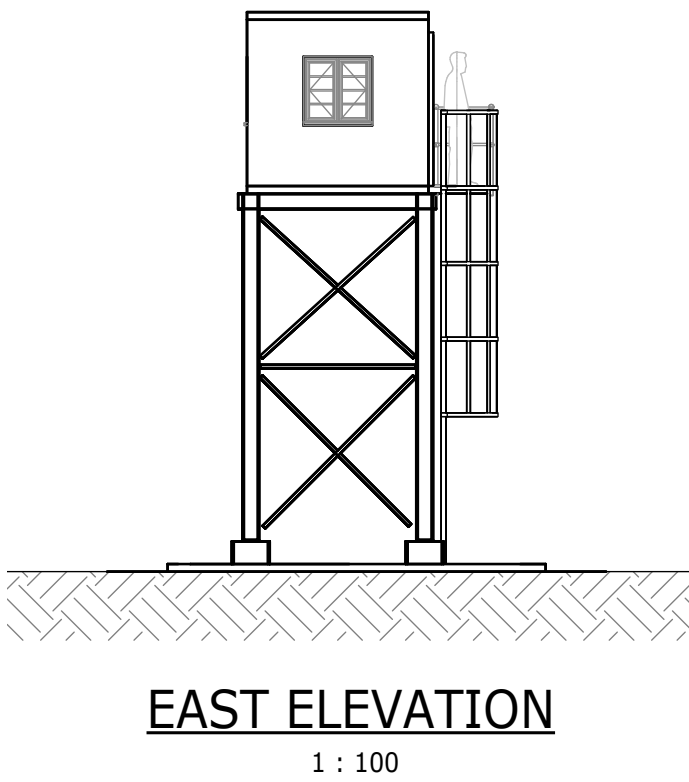
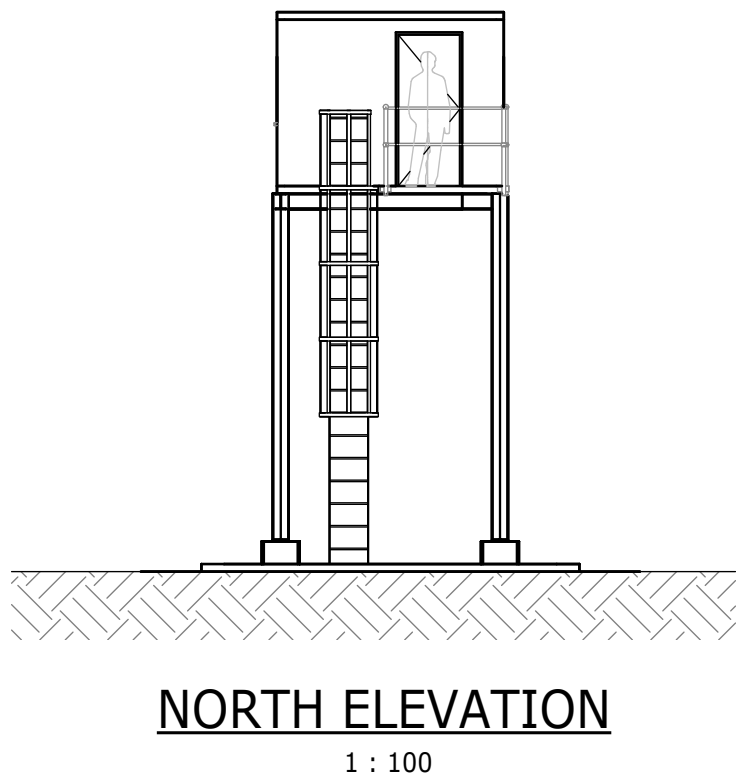
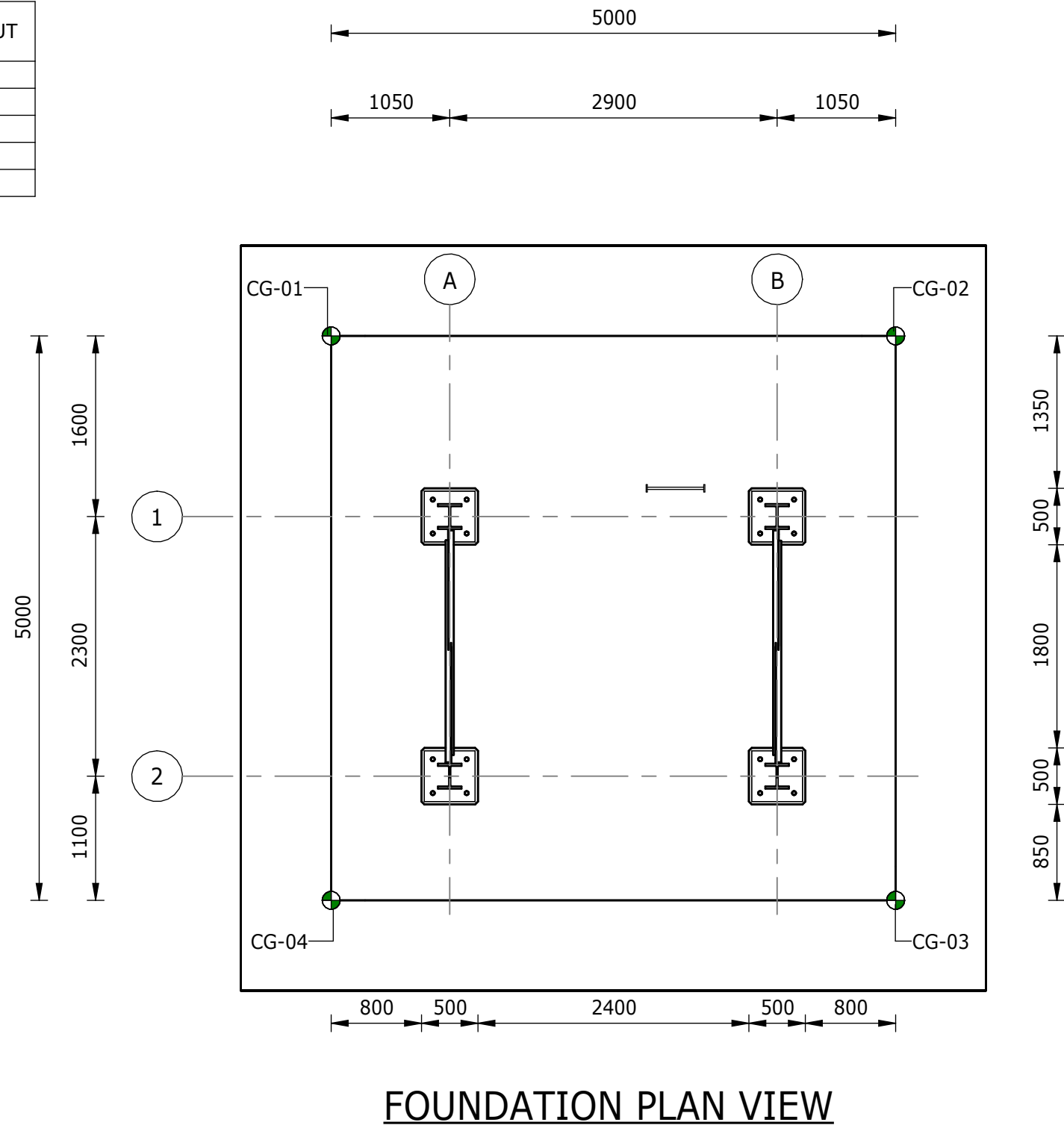
DESIGN MANAGER

DATE

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

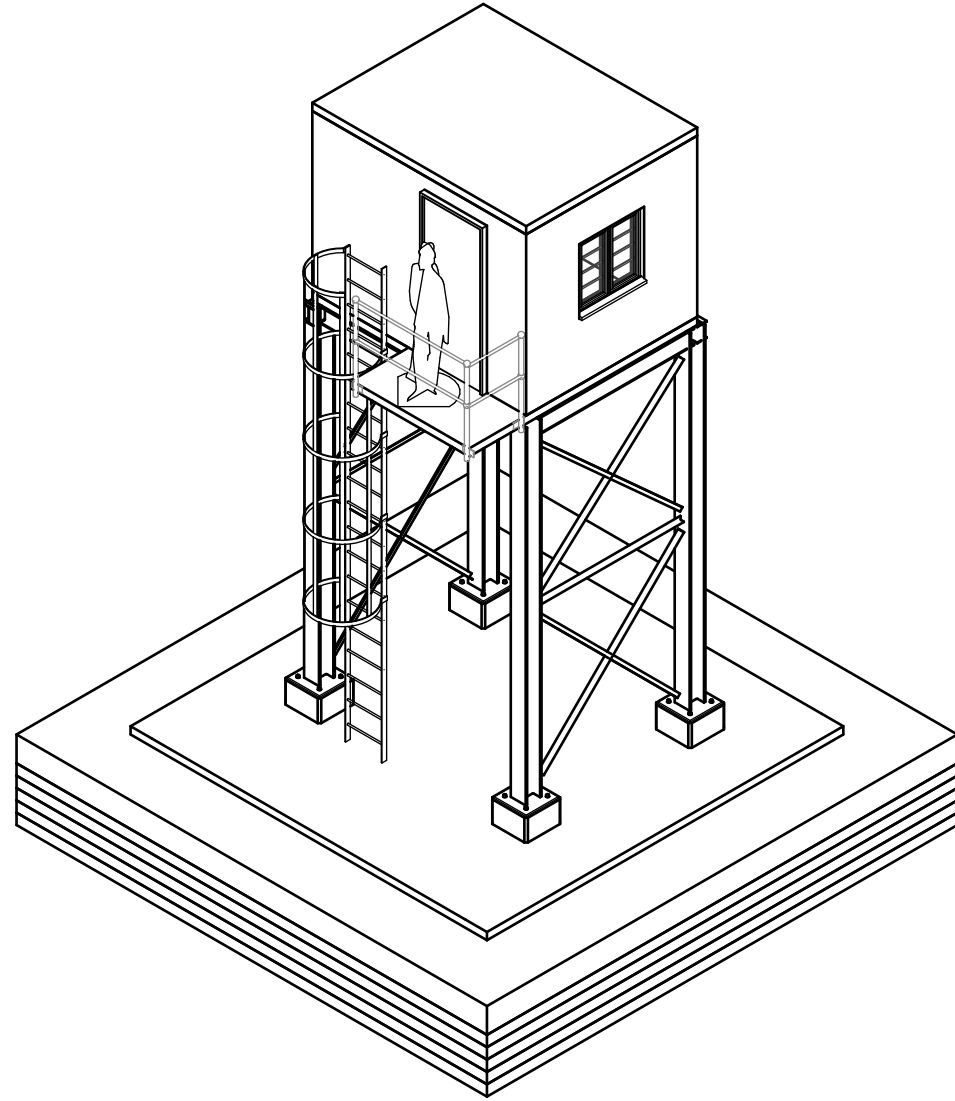
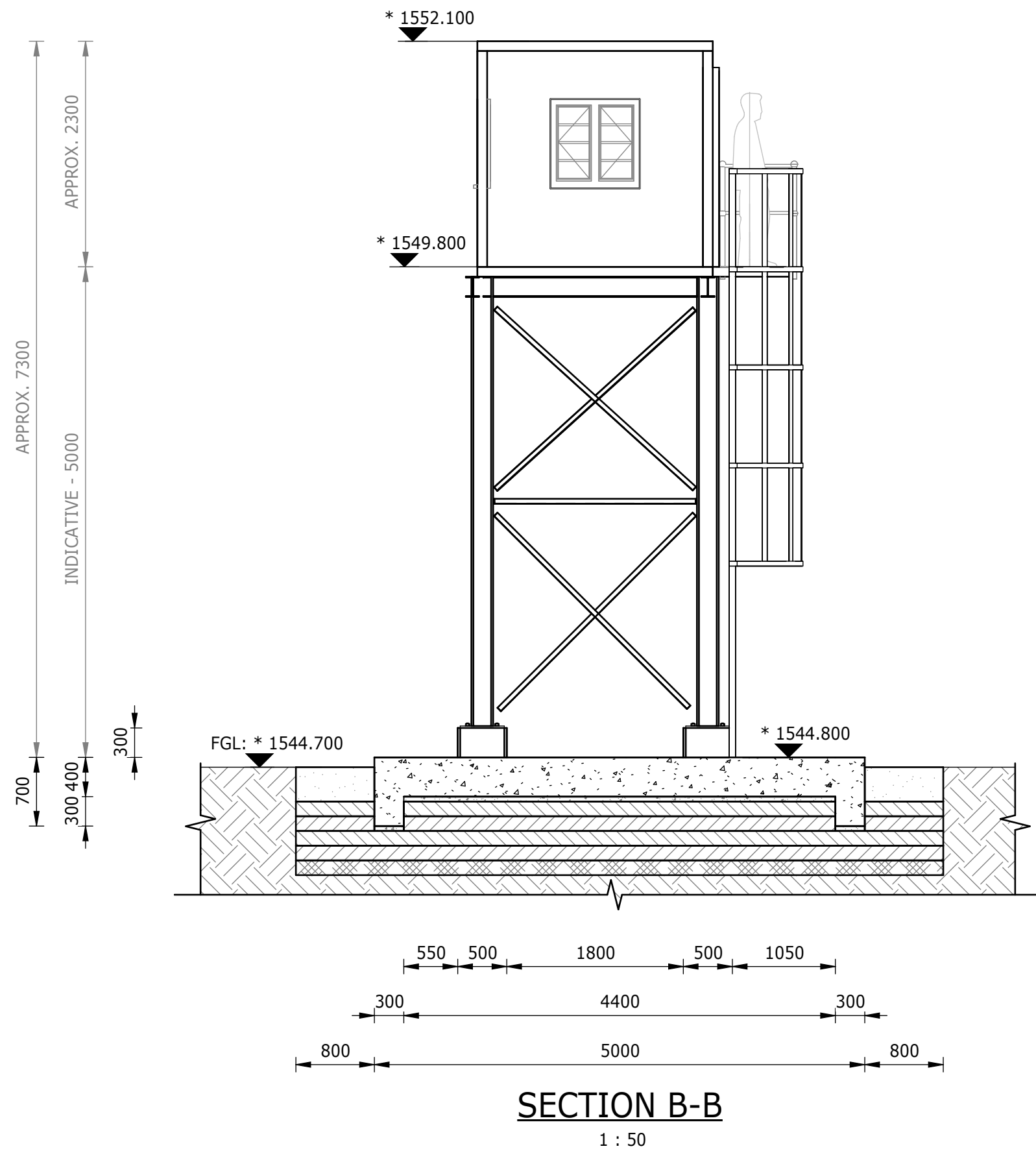
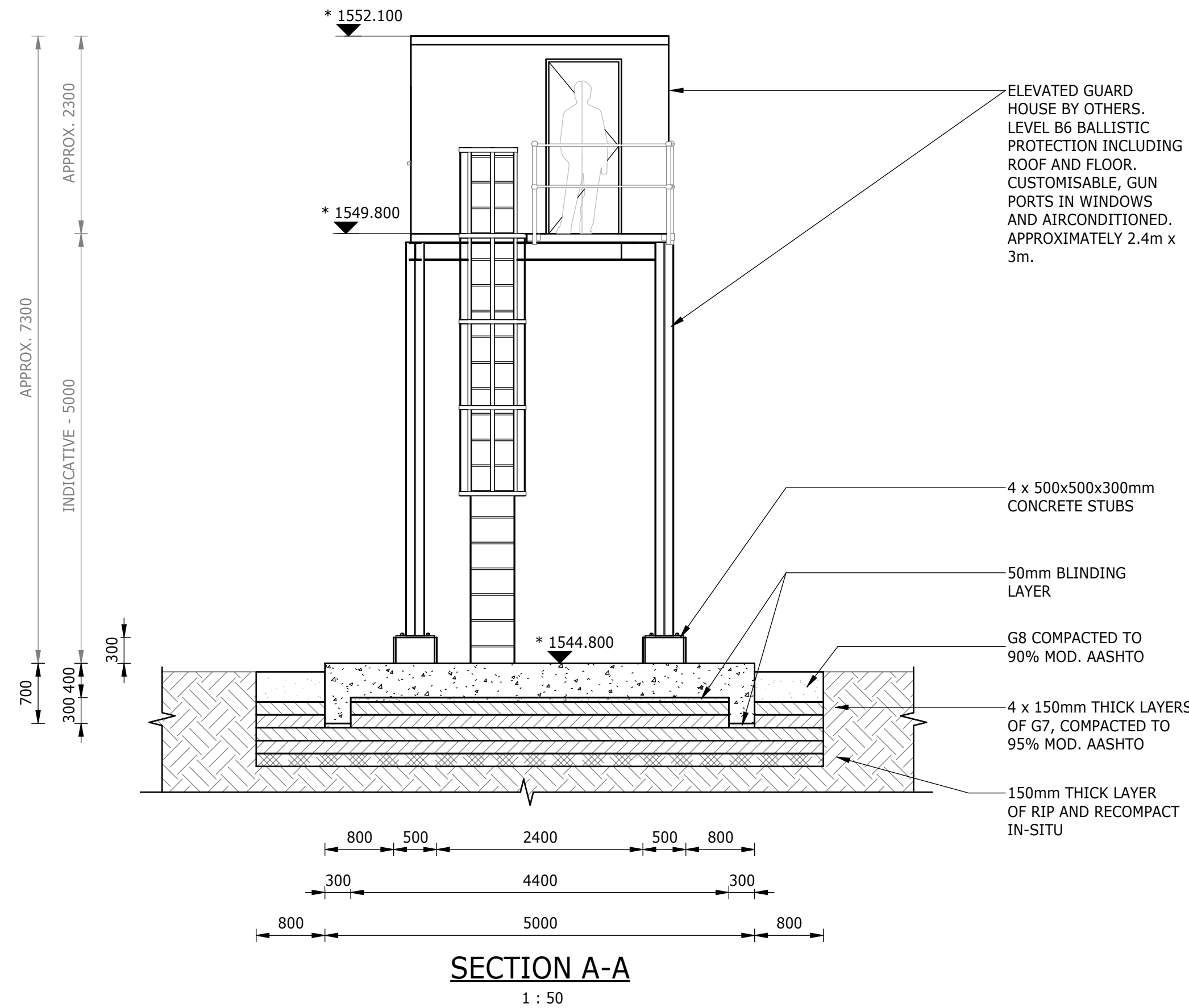


ELEVATED GUARD HOUSE - SETTING OUT		
POINT	X	Y
CG-01	2913505.440	-89144.438
CG-02	2913506.203	-89149.380
CG-03	2913511.145	-89148.616
CG-04	2913510.381	-89143.675



NOTES:

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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. 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

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

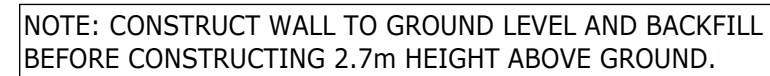
INFRASTRUCTURE RENEWAL PLAN

VAN WYKSURST PUMP STATION
ELEVATED GUARD HOUSE
GENERAL ARRANGEMENT AND SECTIONS

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-C1-05-D-C-0501
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-05-D-C-0501
				FILE No
				C02



NOTE: CONSTRUCT WALL TO GROUND LEVEL AND BACKFILL BEFORE CONSTRUCTING 2.7m HEIGHT ABOVE GROUND.

OUTSIDE FACE

INSIDE FACE

NGL

1700 MESH HEIGHT

1000 MIN (TYP)

1 ∇ 1.25

4200

2700

1200

300

555

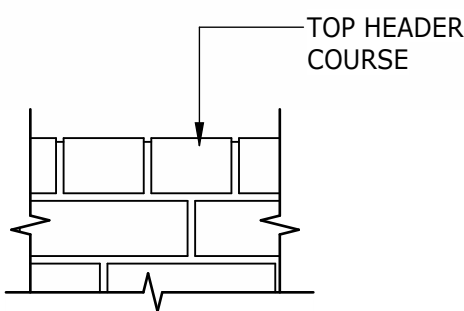
345

400

1300

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.

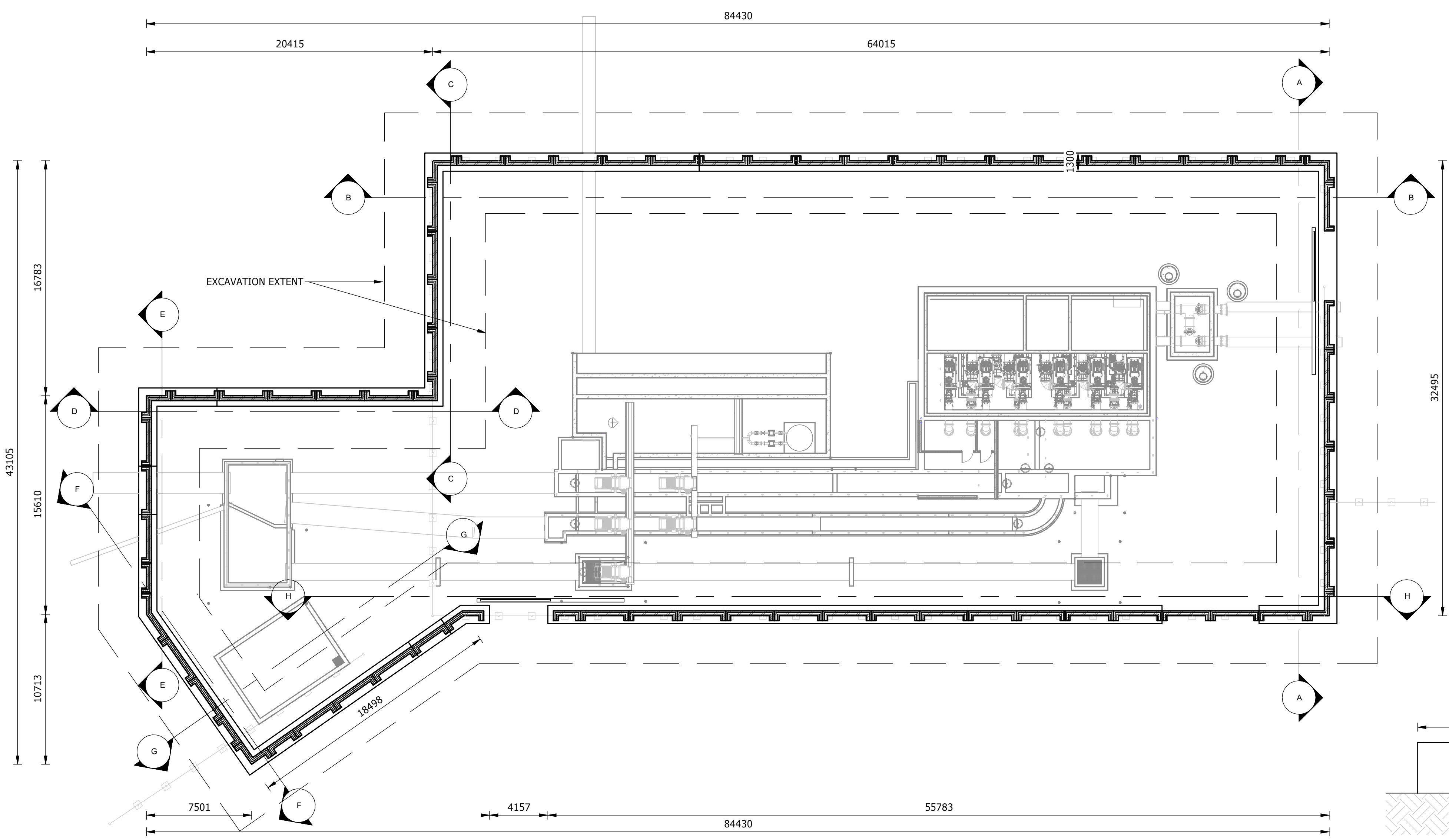


X = FACE BRICK TO START MIN OF 3 COURSE BELOW GROUND

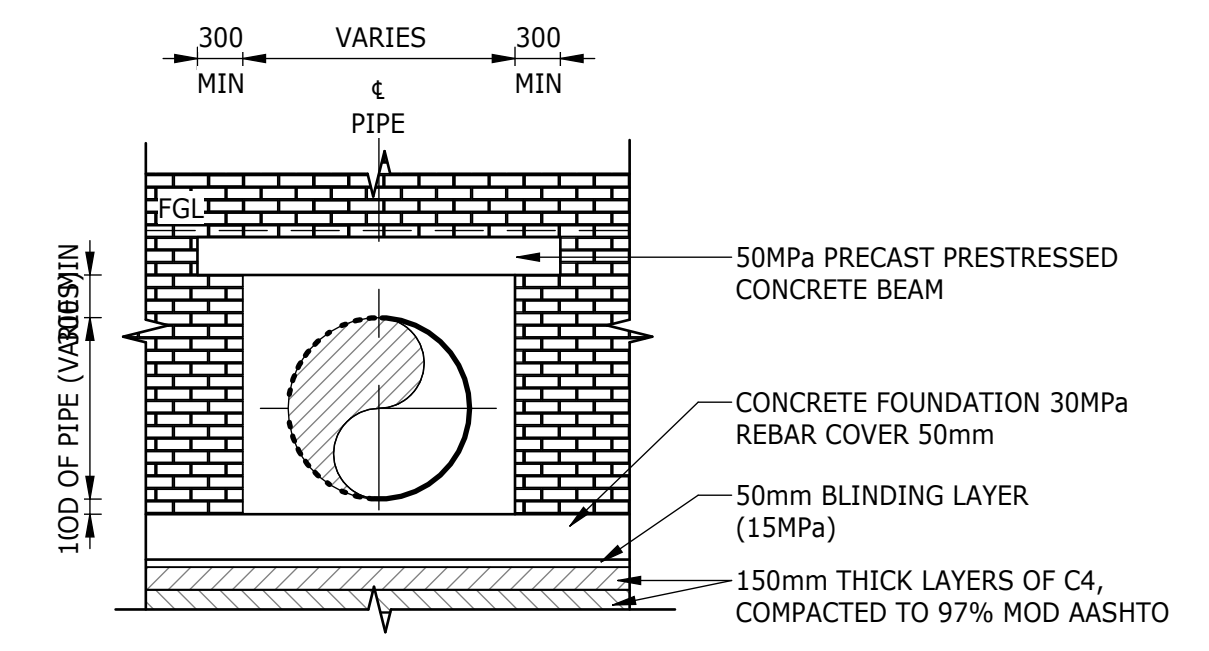
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ISOMETRIC VIEW

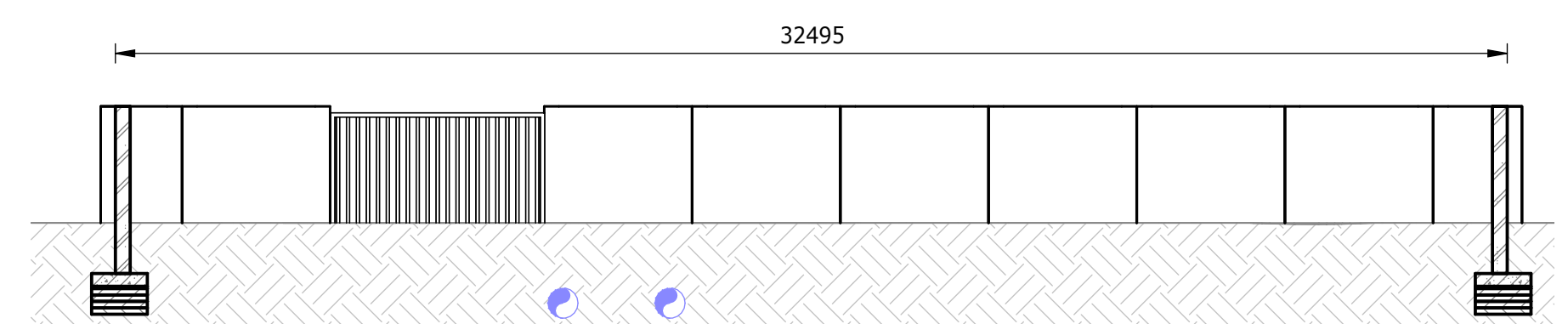
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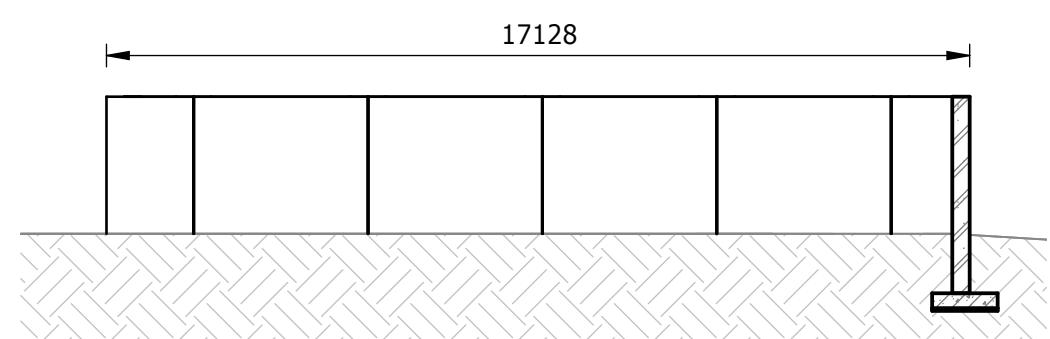
PLAN VIEW
1 : 200



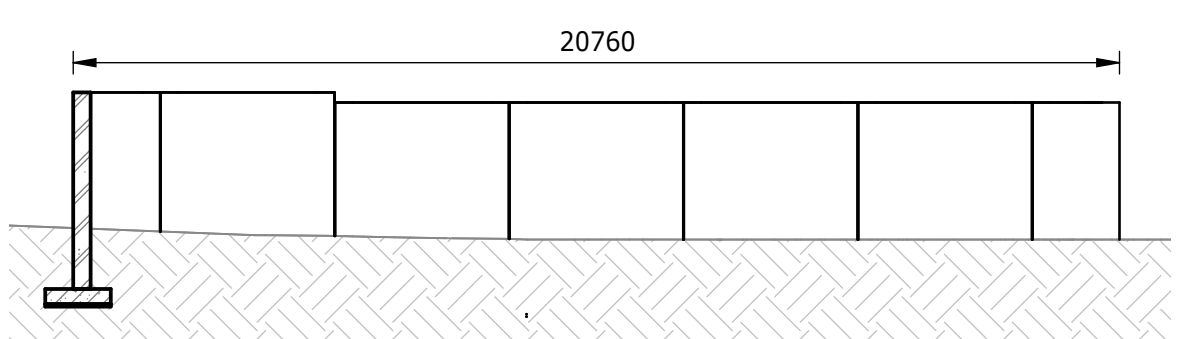
TYPICAL PIPE CROSSING THROUGH WALL DETAIL
1 : 50



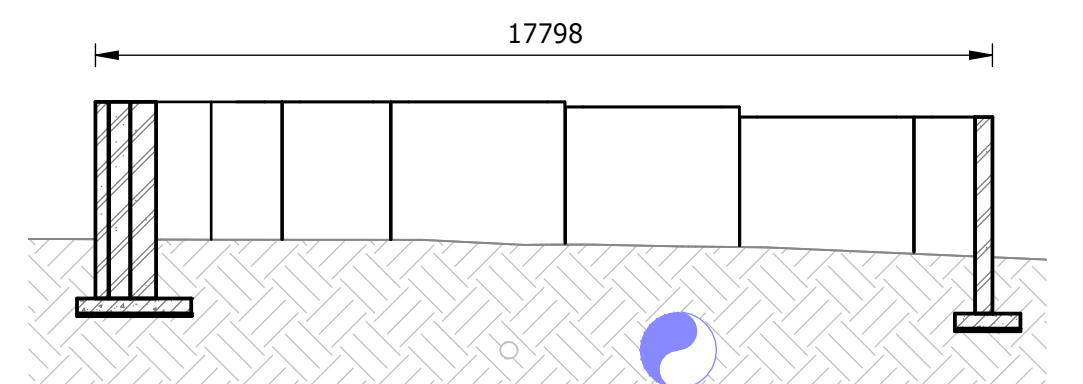
SECTION A-A
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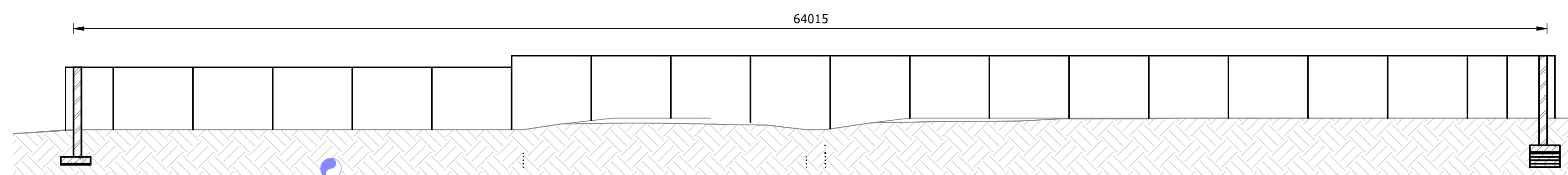
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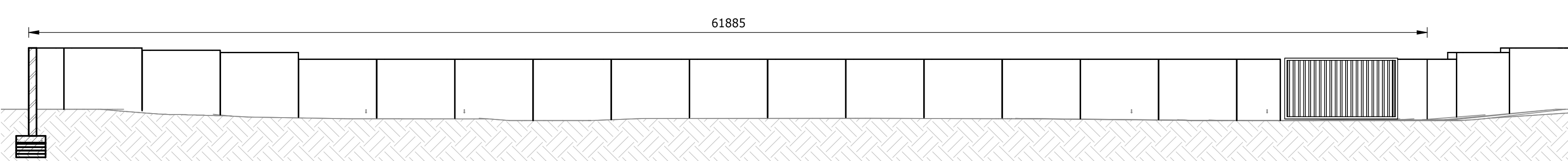
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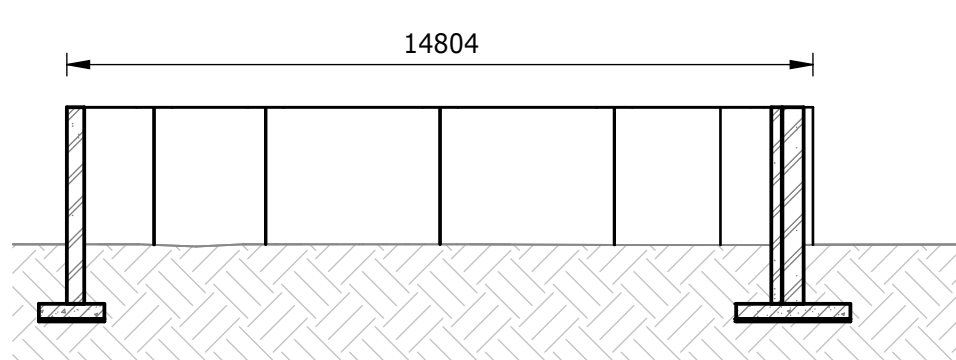
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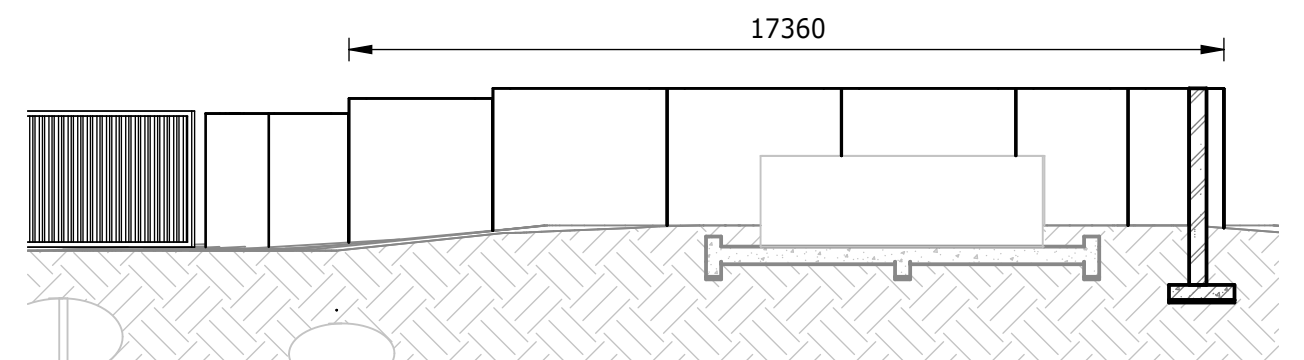
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SECTION H-H
1 : 150

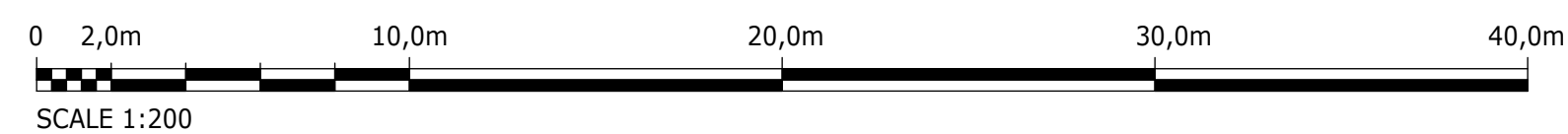


SECTION F-F
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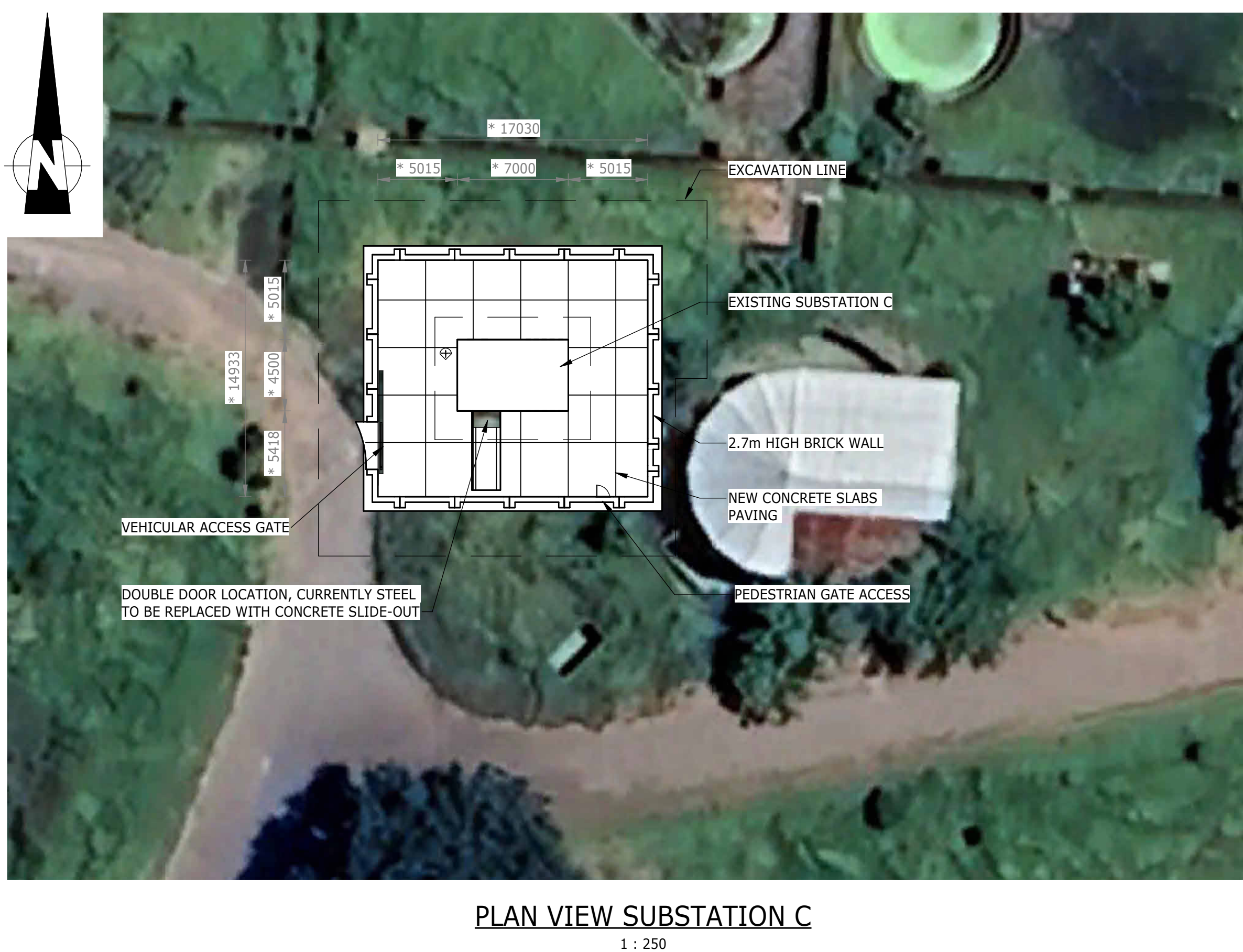


SECTION G-G
1 : 150

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 INFRASTRUCTURES RENEWAL PLAN VAN WYKSrust PUMP STATION PERIMETER WALL SECTIONS			AS SHOWN	P01			ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER				
		DESIGNED	L. NAICKER				C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-06-D-C-0602								
		DRAWN	N. O'GORMAN									CONSULTANT'S NUMBER								
		CHECKED	L. NAICKER									BW1400-RHD-C1-06-D-C-0602								
		SERVICES CHECKED										FILE No								
		GEOTECHNICAL INVESTIGATION																		
		SERVITUDES																		
		APPROVED DITHOLO PHOGOLE																		
		Pr. Eng.No. 20060098																		
		DATE																		



NOTES:

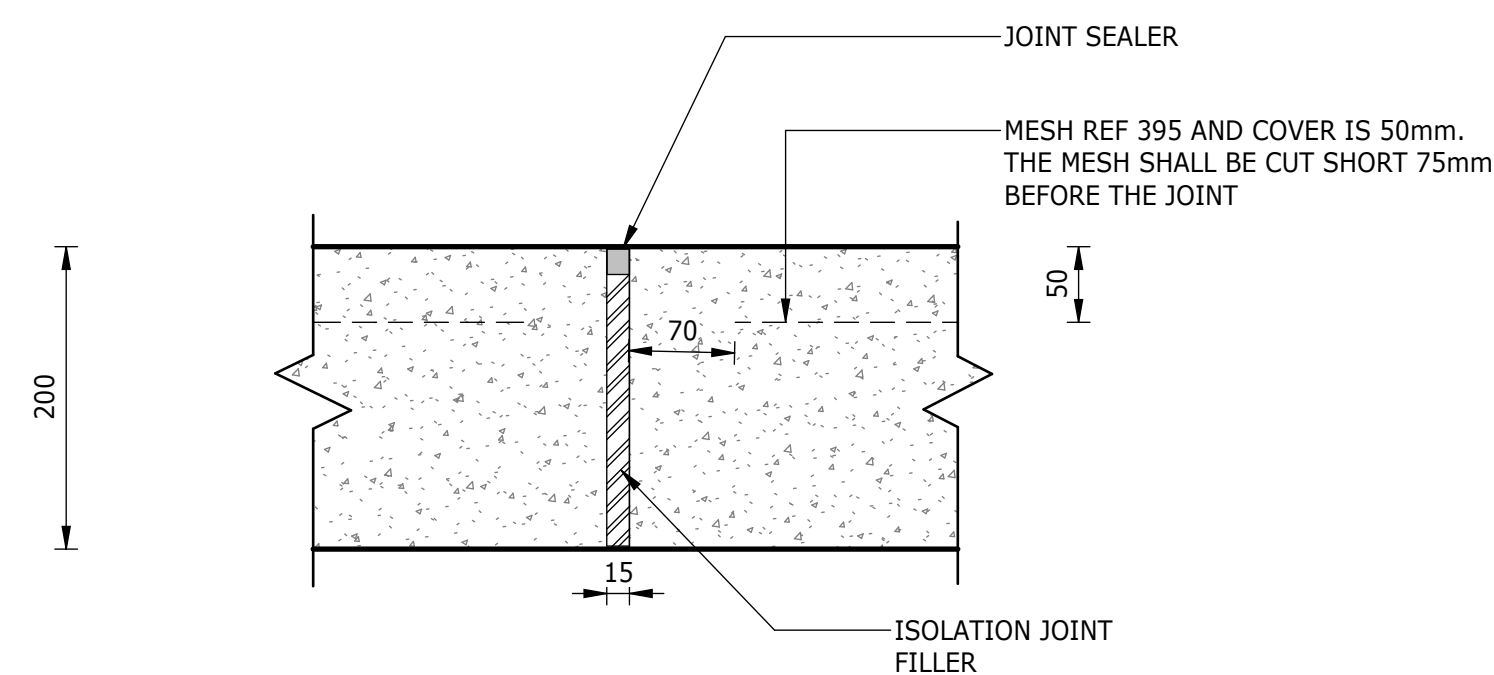
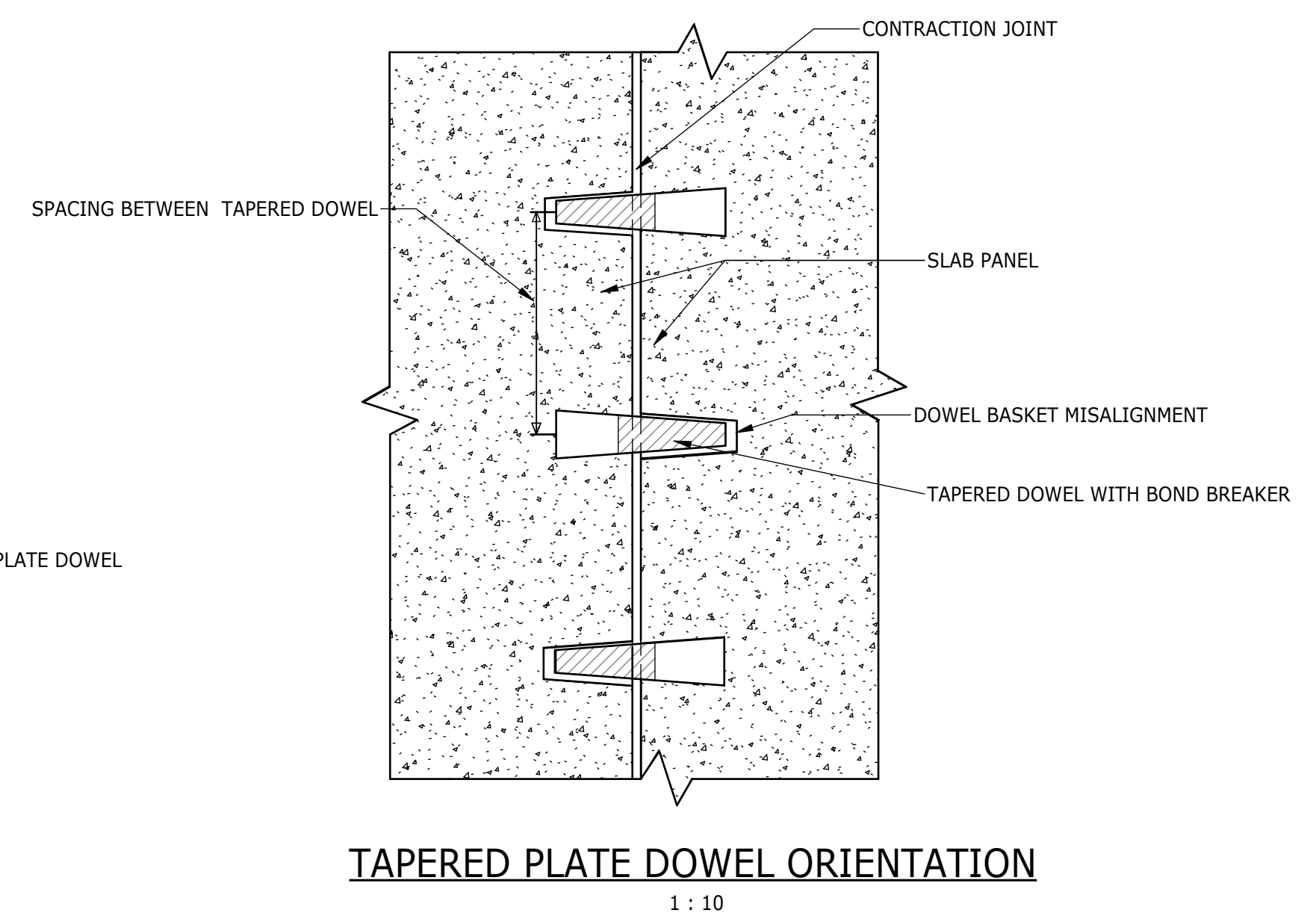
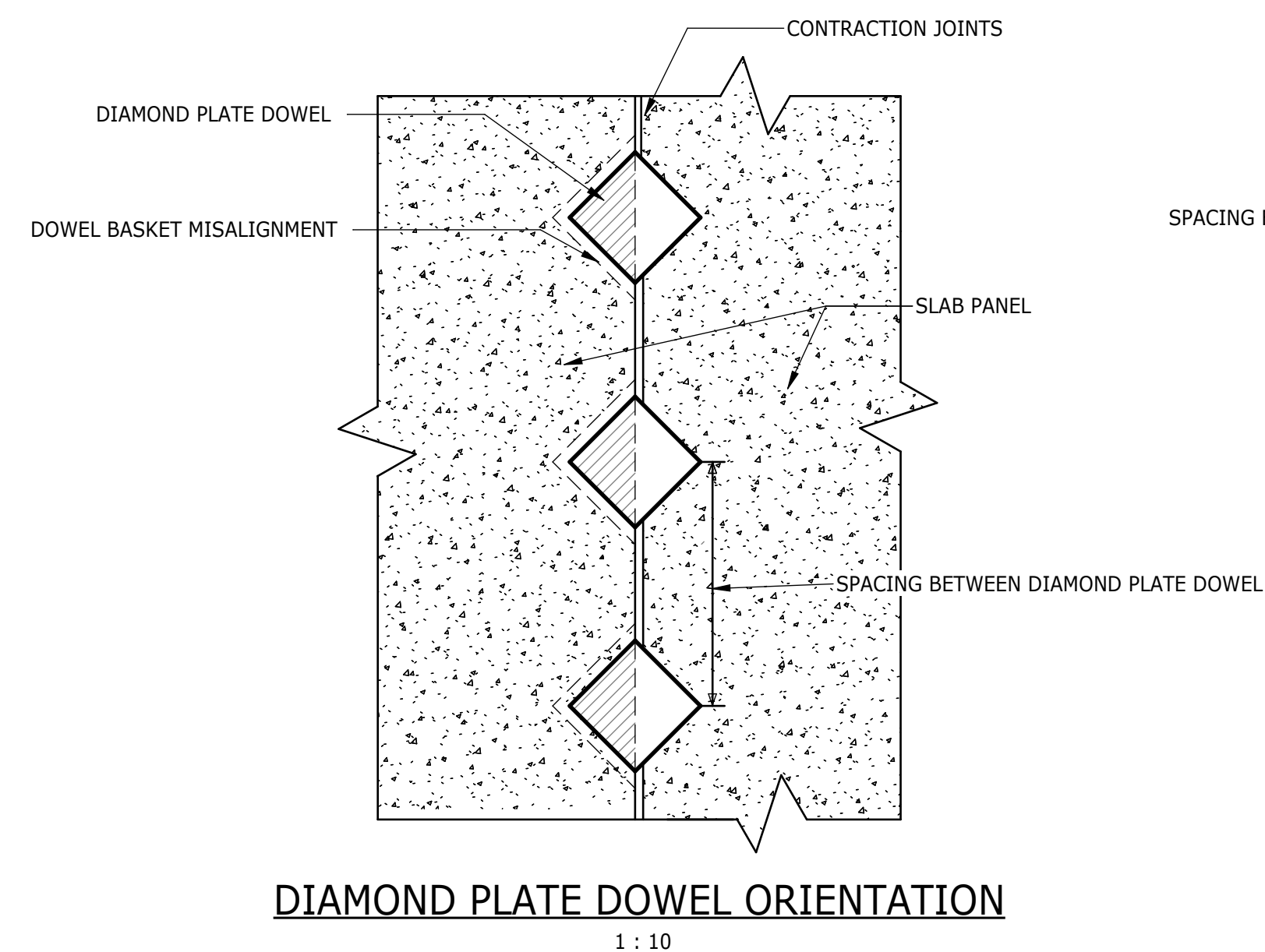
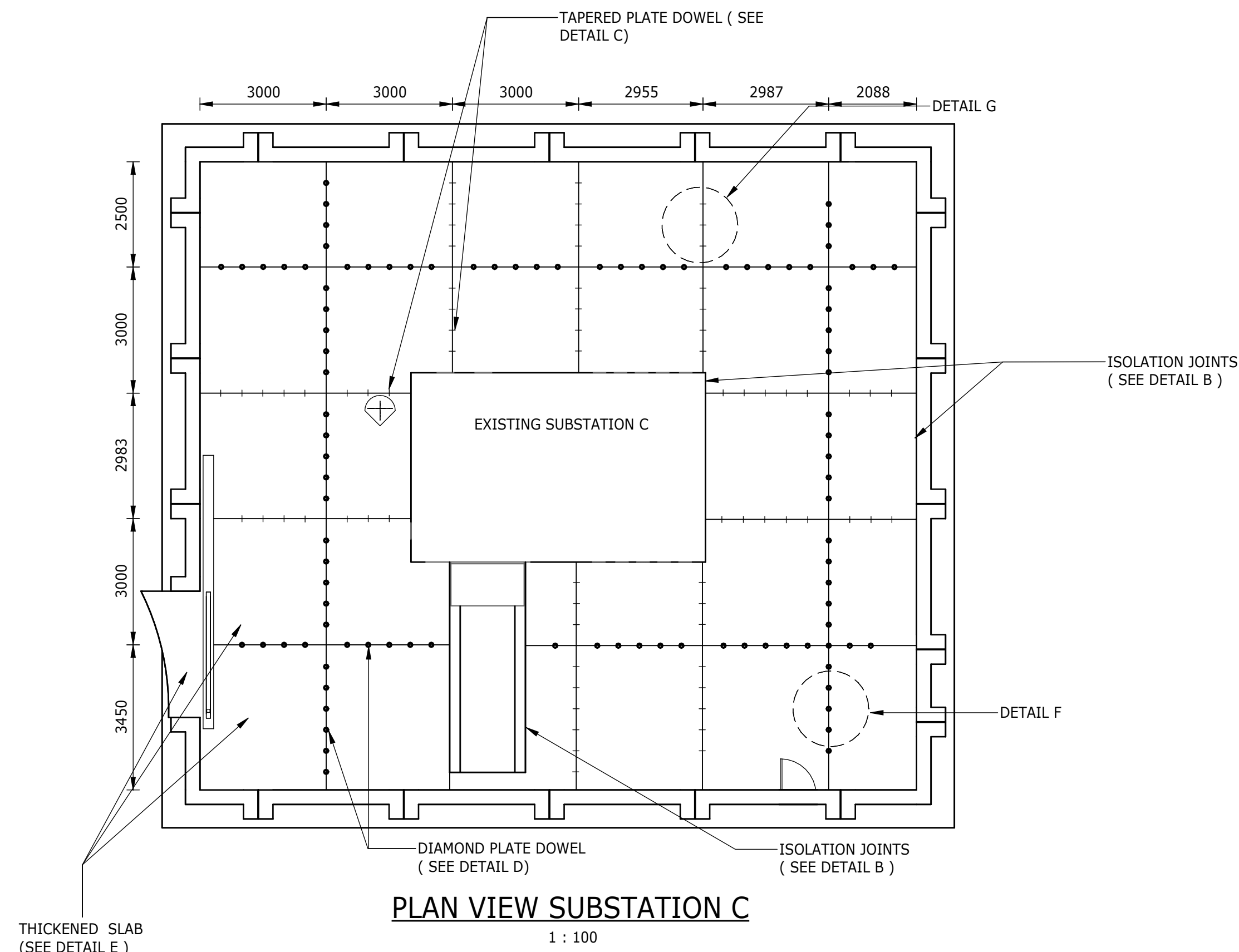
1. ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. SETTING-OUT DETAILS TO BE CONFIRMED ONCE THE ENGINEER IS IN RECEIPT OF THE CONTRACTORS SURVEYS (BOTH GPR AND TOPOGRAPHICAL).
3. CONSTRUCTION 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-1001 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

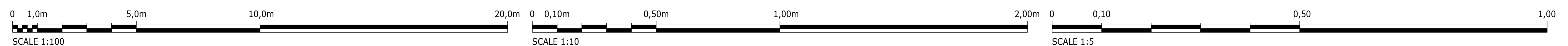
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	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	L. NAICKER		TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN GENERAL LAYOUT OF SUBSTATION C				AS SHOWN	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25
		C02	ISSUED FOR RE-TENDER					D. PHOGOLE	FEB 25		JW14466R-RHD-C1-07-D-C-0701			
											CONSULTANT'S NUMBER			
											BW1400-RHD-C1-07-D-C-0701			
											FILE No			
											C02			
		APPROVED	DITHOLO PHOGOLE					DATE						
		Pr. Eng.No.	20060098											
		DATE												



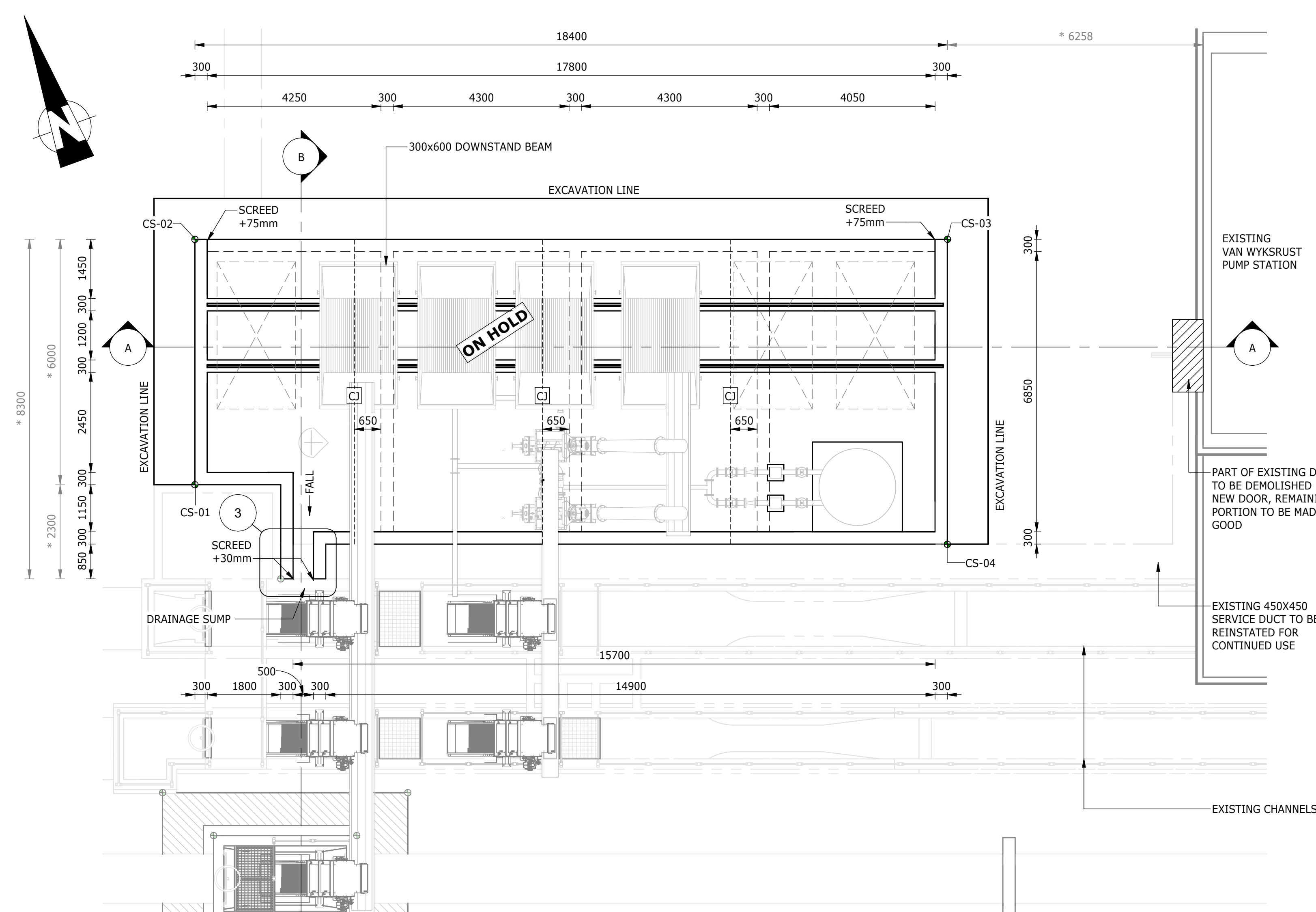
UNDOWELED EXPANSION JOINT ADJACENT TO THE GATE SLAB AND INSIDE SLAB

- 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. • - 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 "T" TAPERED PLATE DOWEL 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 CONCRETE 7102 (F) OF COLTO FOR DOWELS. EDGES SHALL BE SAWN AND TRIMMED SMOOTH.

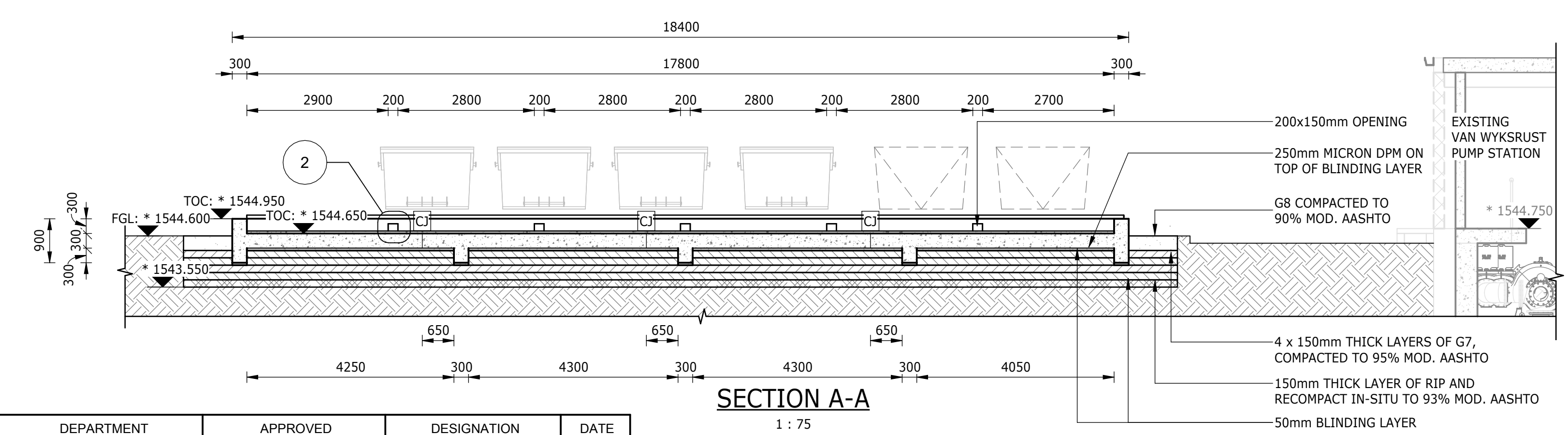
DEPARTMENT	APPROVED	DESIGNATION	DATE



CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 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. MOETI	 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 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																	
DATE		APPROVED DITHOLO PHOGOLE Pr. Eng.No. 20060098 DATE										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

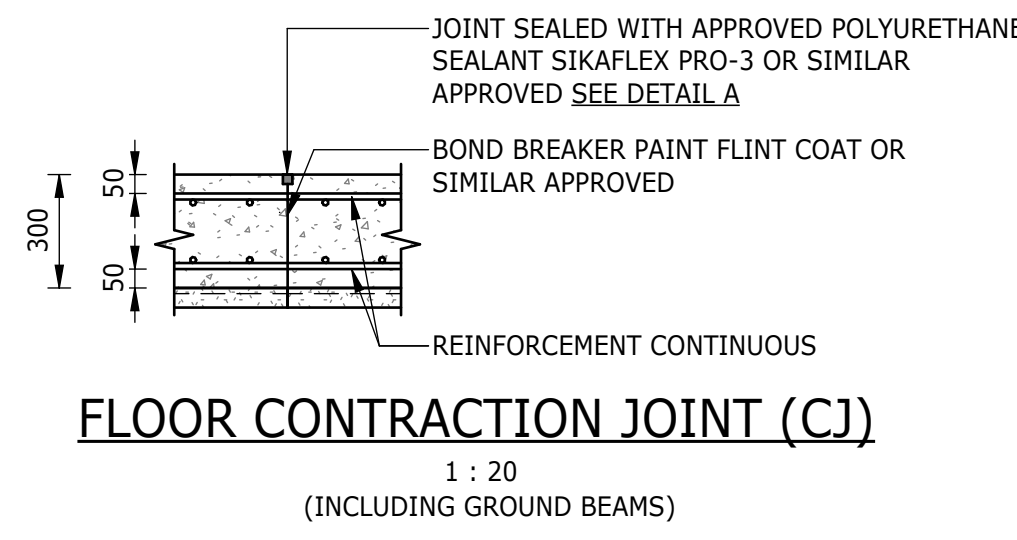
VAN WYKSRUST PUMP STATION

SCREENINGS SLAB

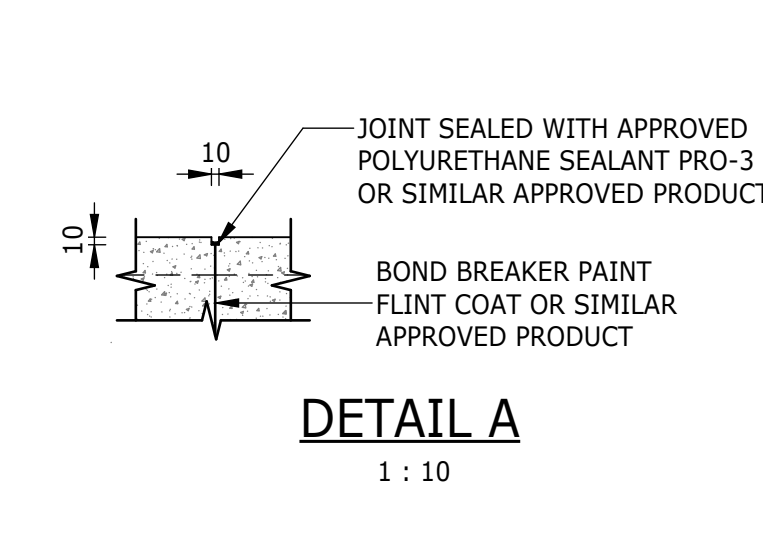
GENERAL ARRANGEMENT, DETAILS & EARTHWORKS

DESIGN MANAGER

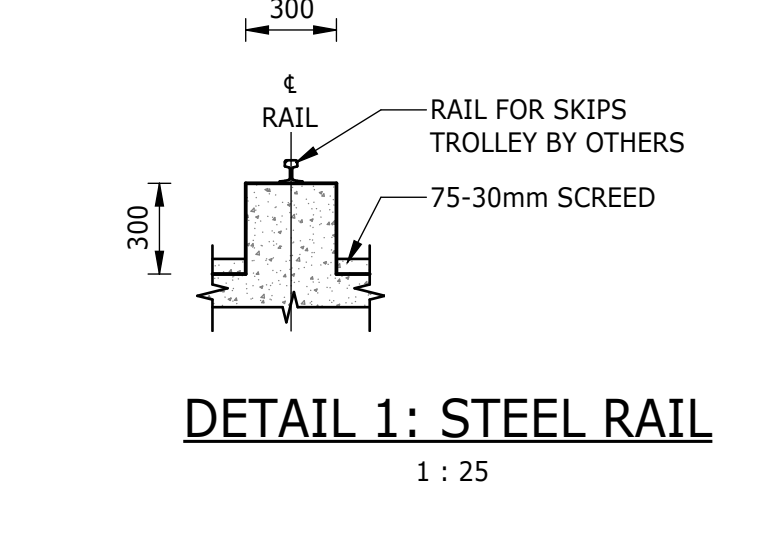
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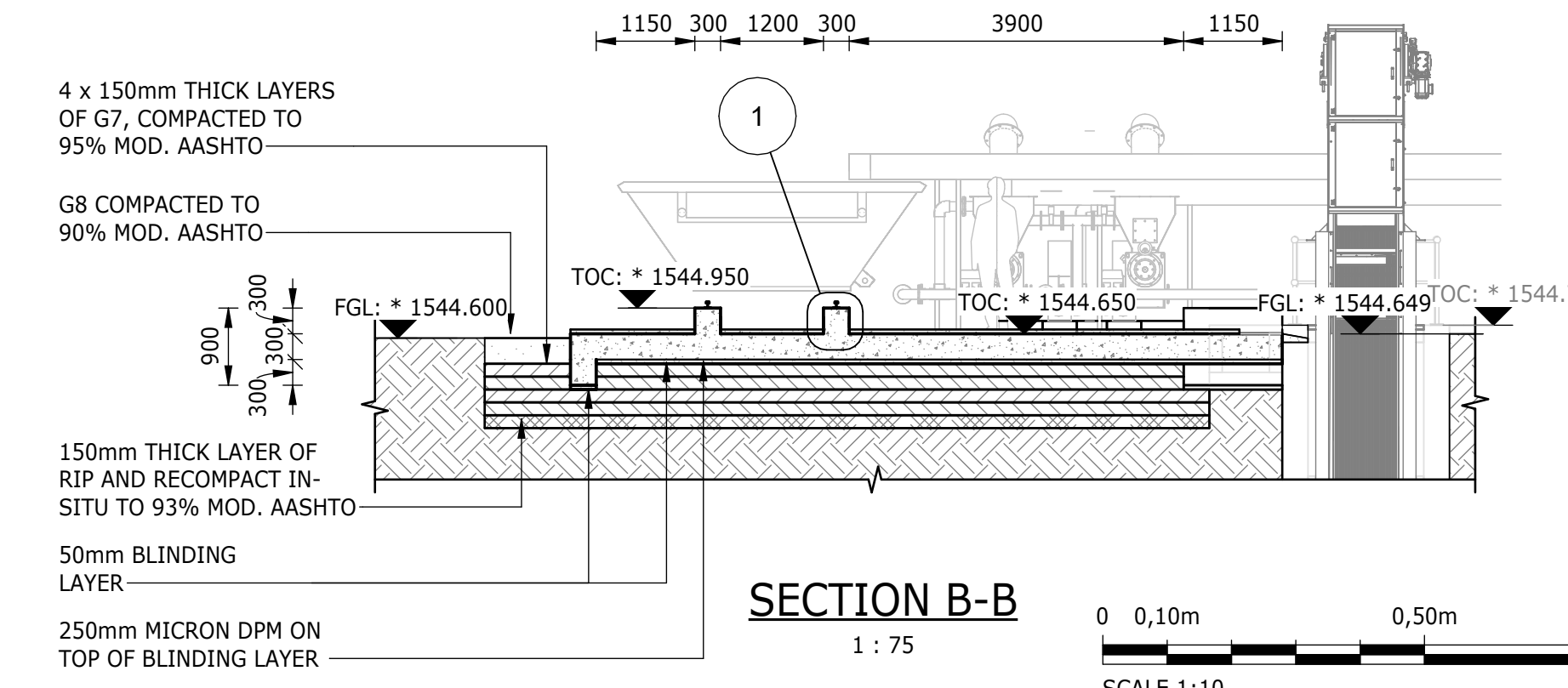
DETAIL 3: DRAINAGE CATCHMENT
1 : 25



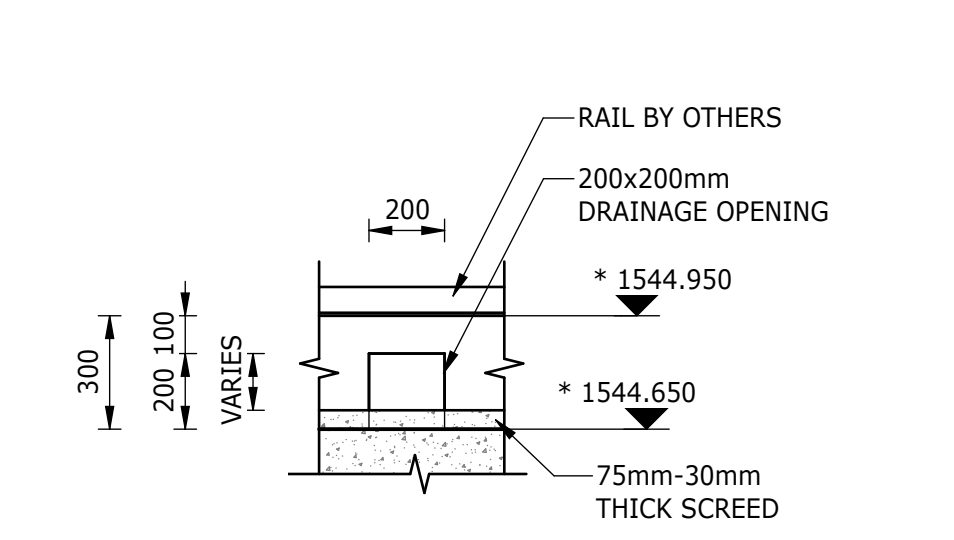
DETAIL A
1 : 10



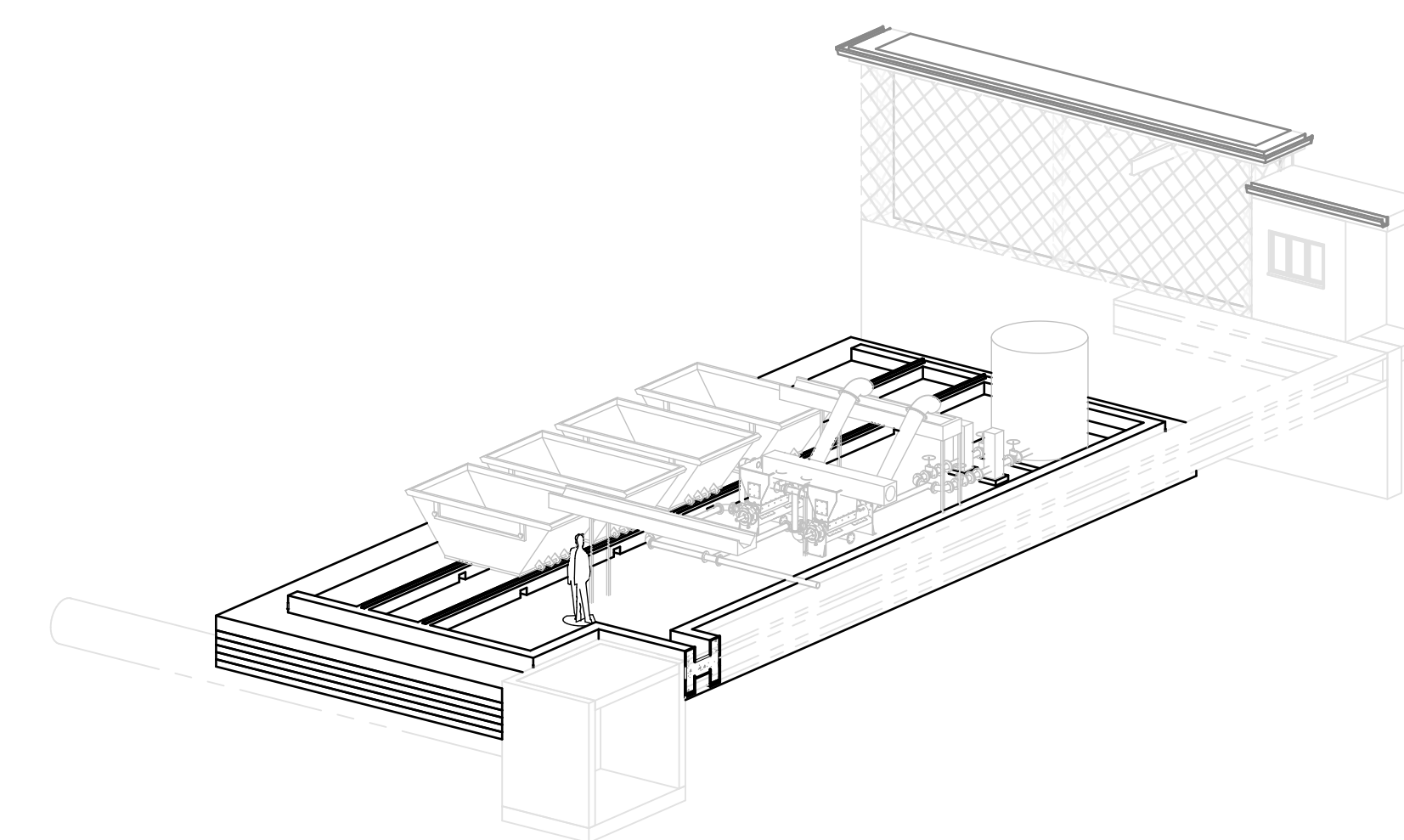
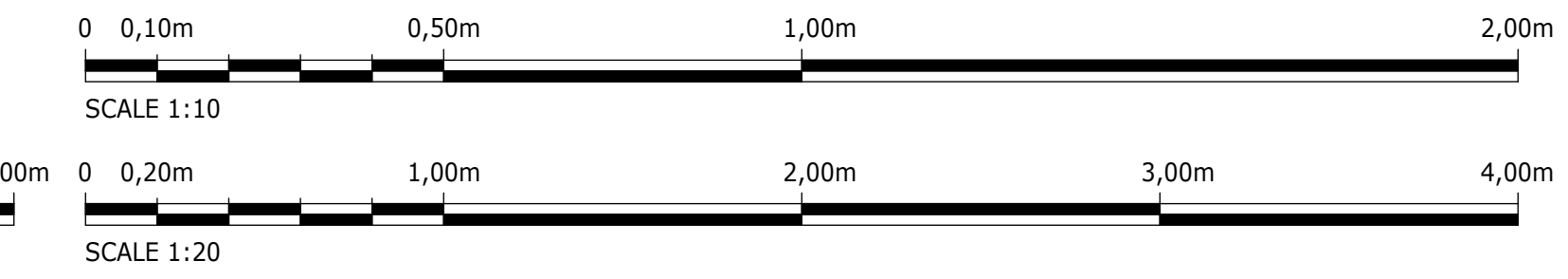
DETAIL 1: STEEL RAIL
1 : 25



SECTION B-B
1 : 75



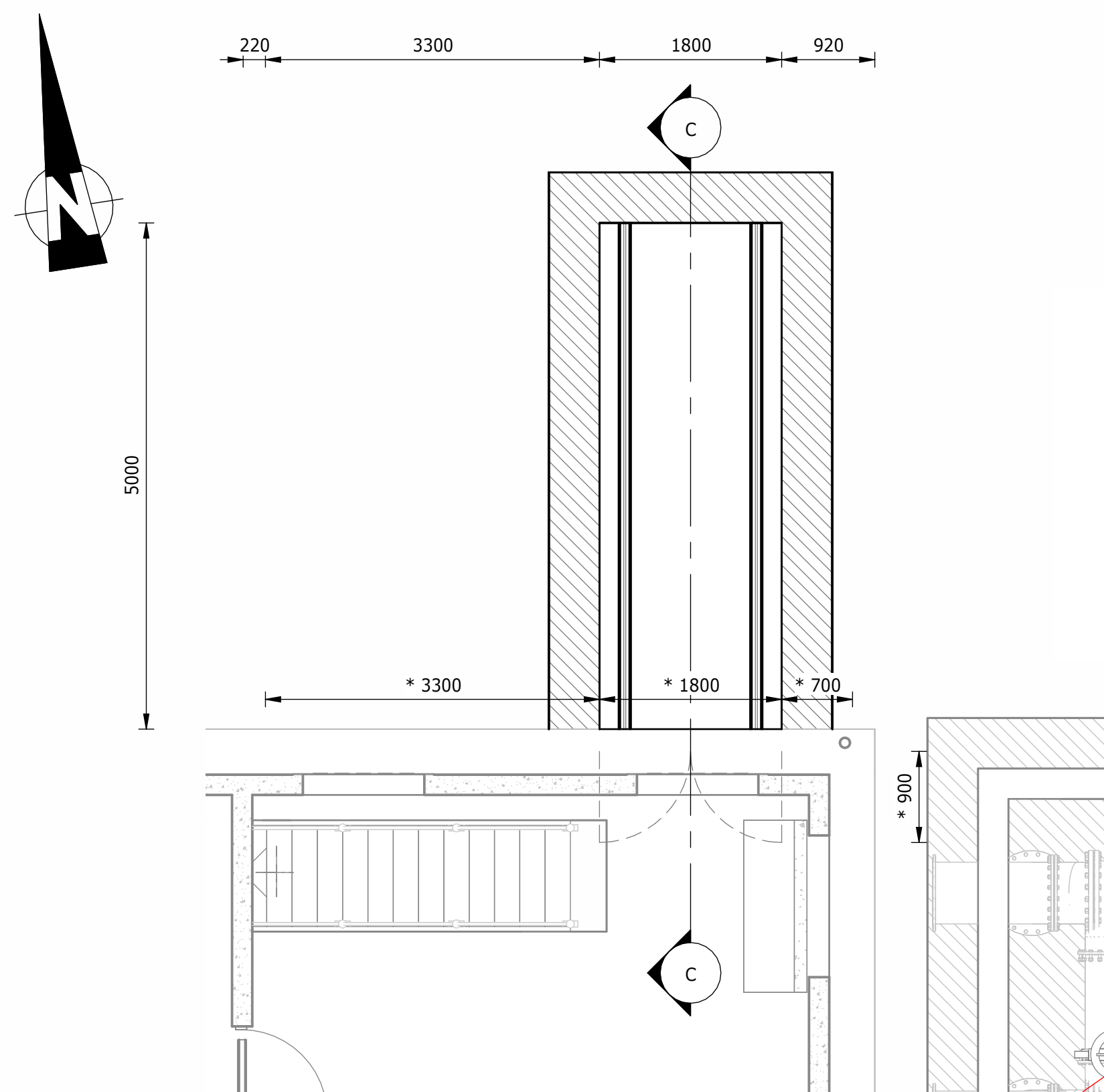
DETAIL 2: DRAINAGE OPENING
1 : 20



TYPICAL ISOMETRIC VIEW

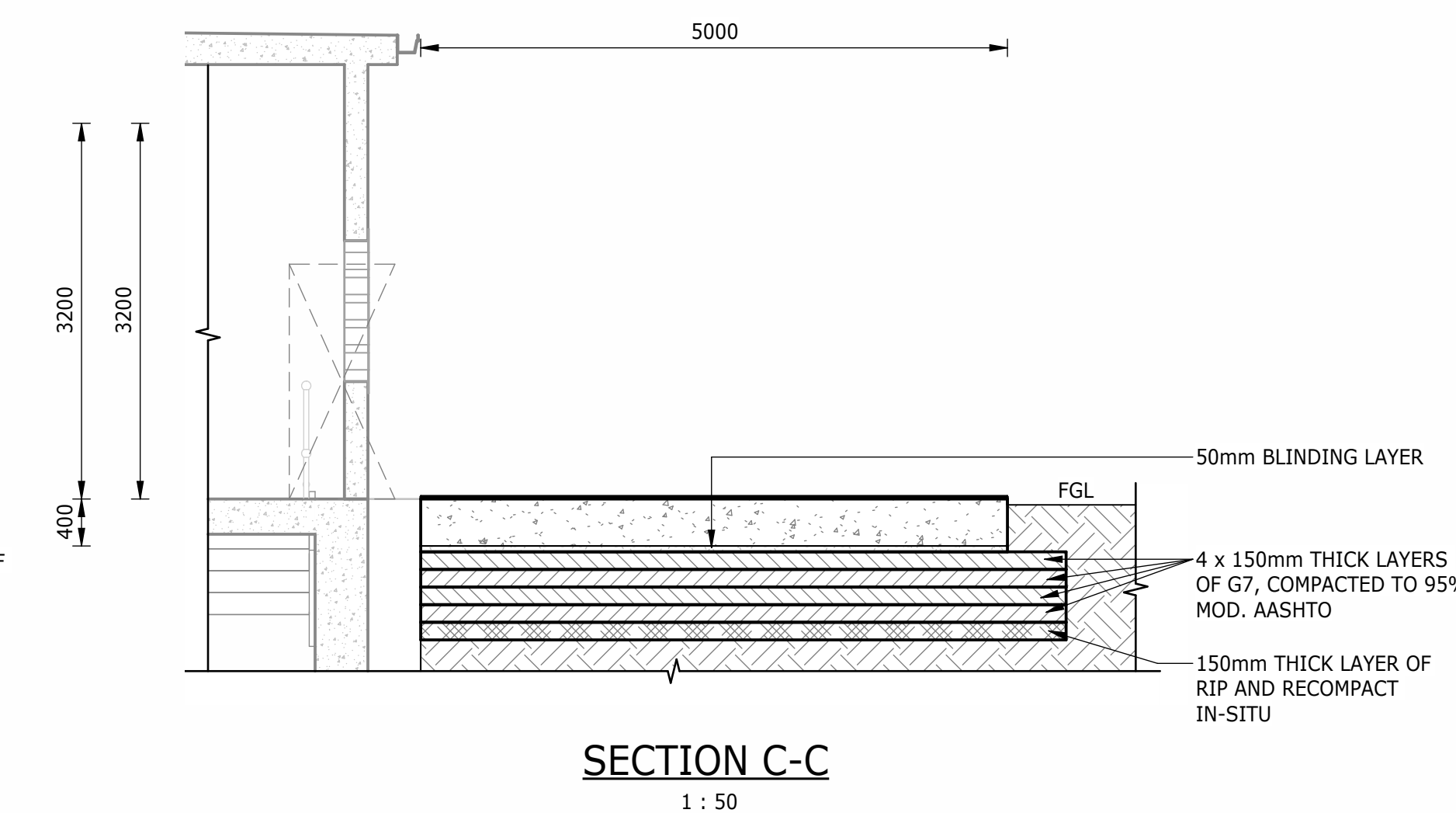
- NOTES:**
- ALL DIMENSIONS AND LEVELS CONTAINING * ARE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - BOTTOM OF BASE FOUNDATION TO BE INSPECTED FOR GROUND CONDITION BEFORE CONCRETE IS POURED.
 - EXISTING GROUND LEVELS TO BE 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



A 3D perspective view of a building with a flat roof and a ramp. The roof is shown with a grid pattern, and the ramp is shown with a series of steps. The building is colored in shades of gray and green.

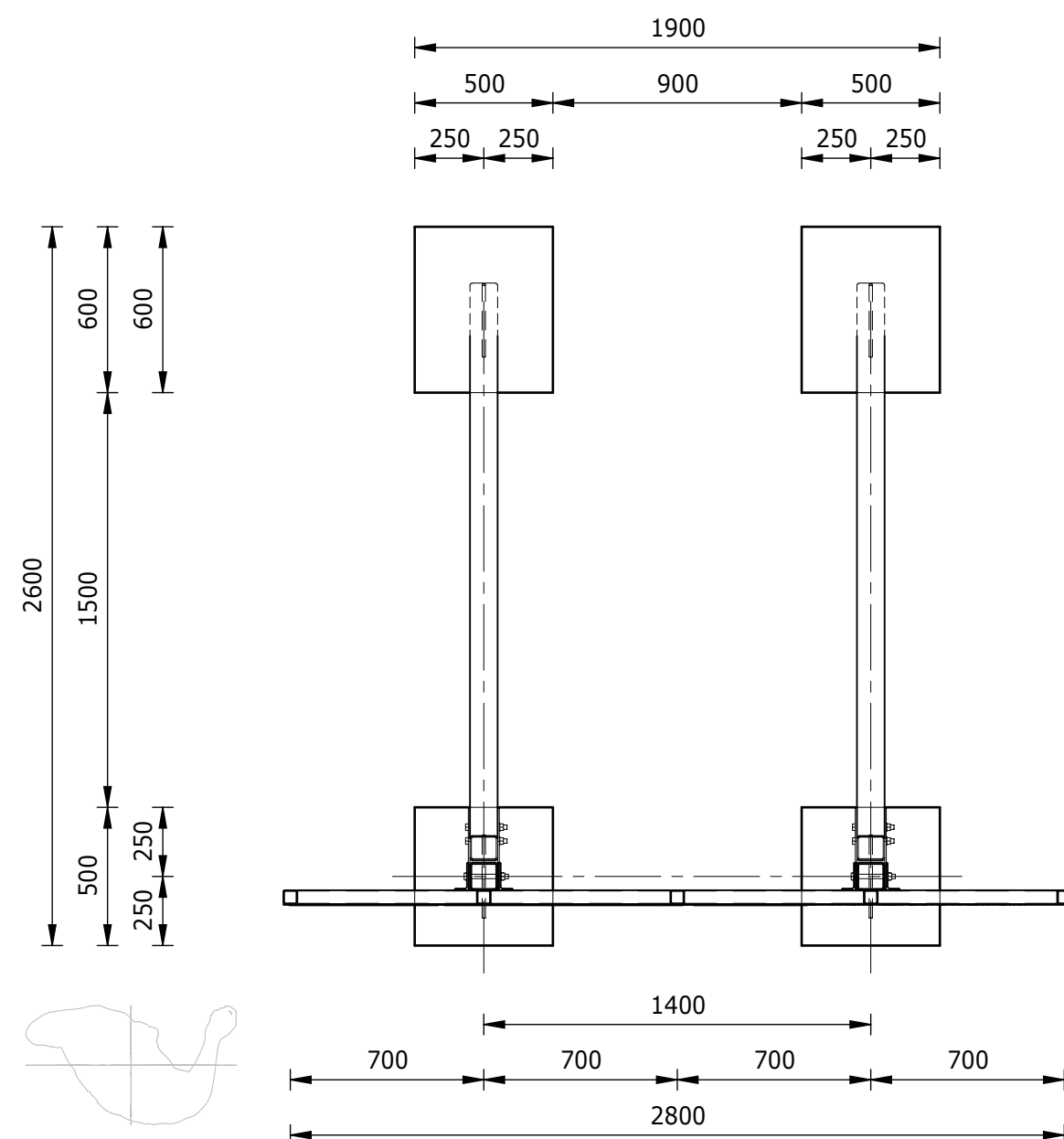
DRAWING OMITTED



0 1,00m 2,00m 3,00m 4,00m 5,00m 10,0

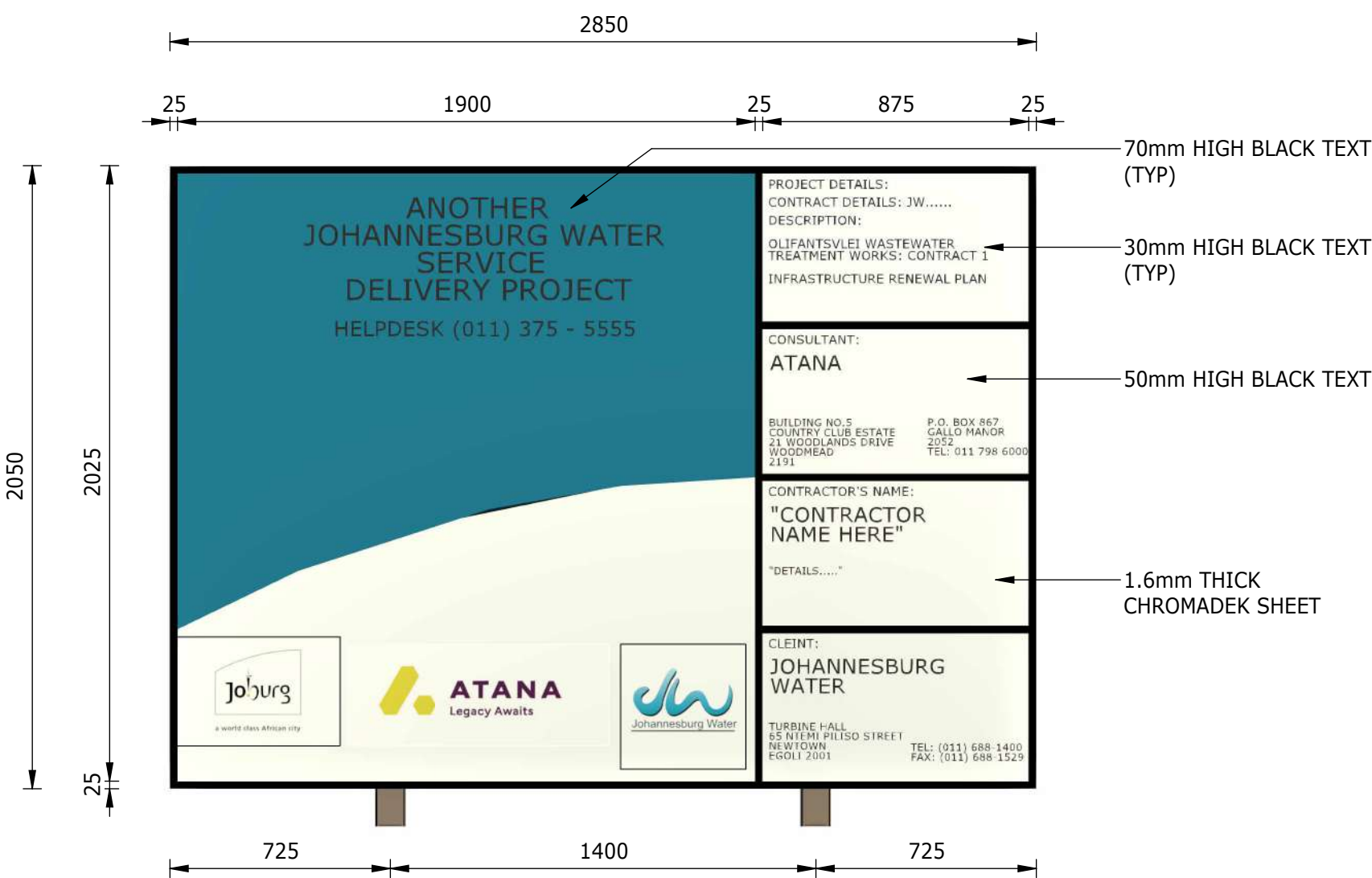
SCALE 1:50

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	A. MUJINGA	 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 CONCRETE DOOR AND SLAB GENERAL LAYOUT, SECTIONS AND DETAILS	AS SHOWN		C01	ISSUED FOR INFORMATION	D. PHOGOLE	FEB 25	JW NUMBER						
		C02	ISSUED FOR RE-TENDER					D. PHOGOLE	FEB 26	JW1446R-RHD-C1-10-D-C-1001									
										CONSULTANT'S NUMBER									
										BW1400-RHD-C1-10-D-C-1001									
										FILE No									
										C02									
		APPROVED	DITHOLO PHOGOLE					DATE											
		Pr. Eng.No.	20060098																
		DATE																	



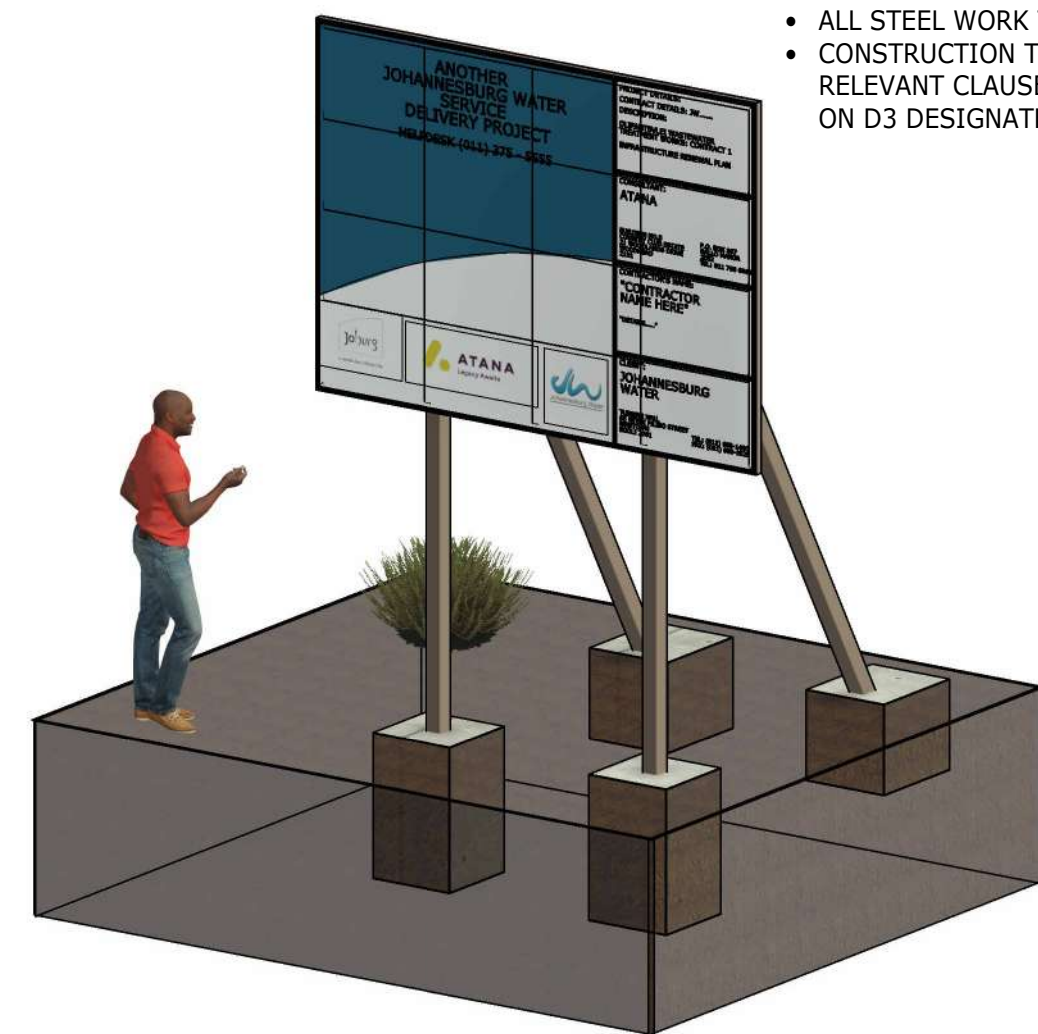
PLAN VIEW

1 : 25



ENLARGED VIEW - X

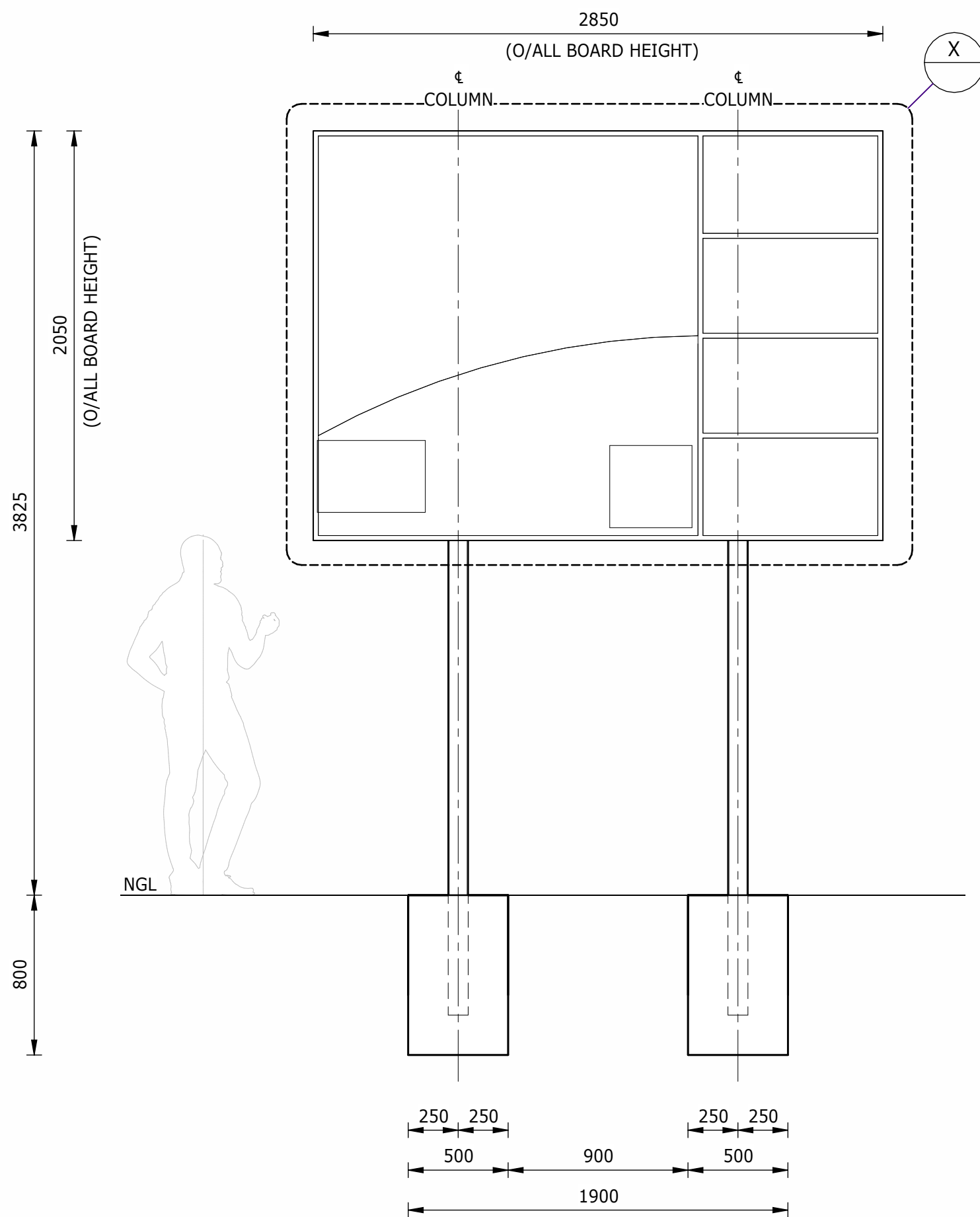
1 : 20



TYPICAL ISOMETRIC VIEW

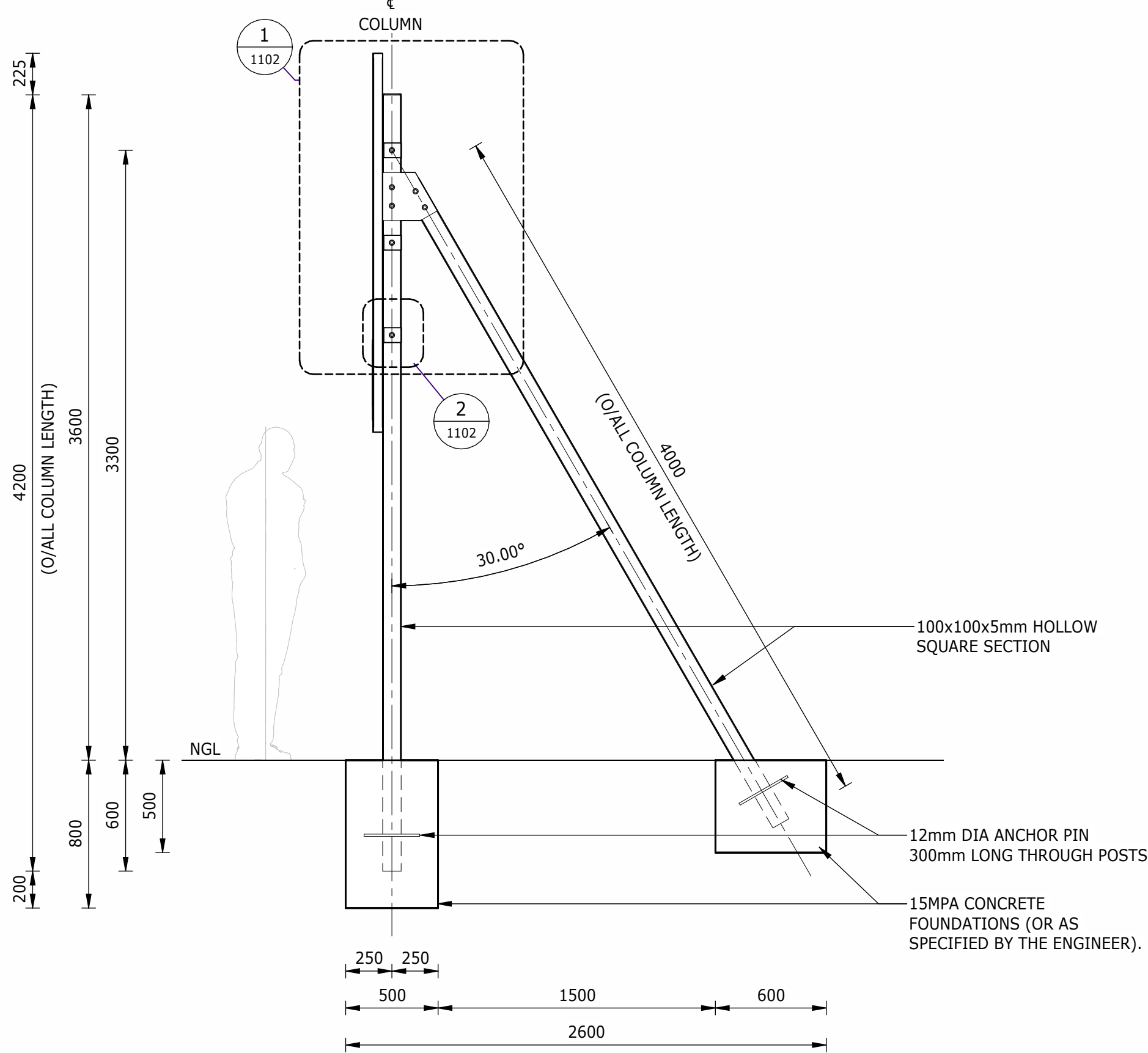
NOTES:

- 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.



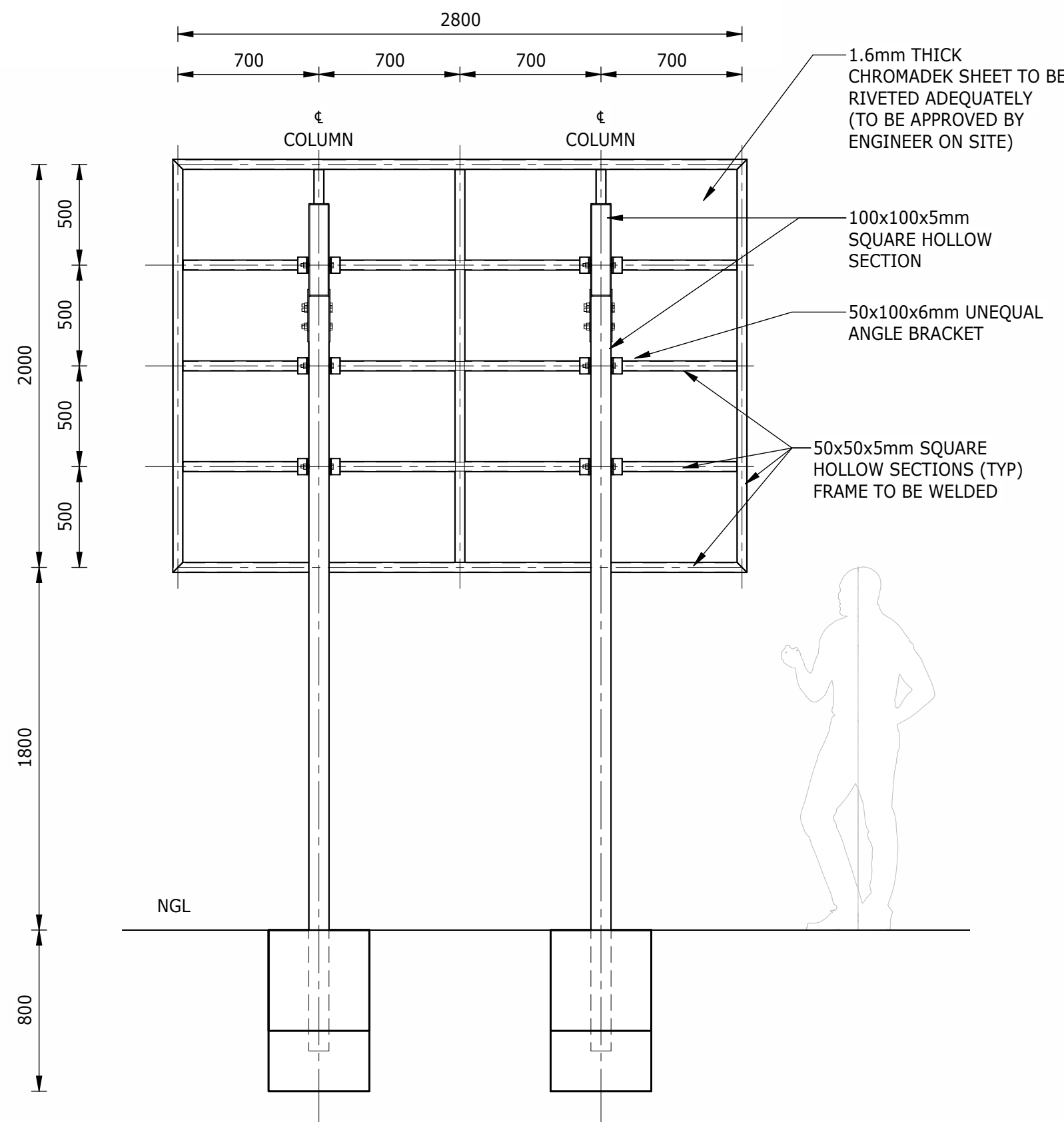
FRONT ELEVATION

1 : 25



SIDE ELEVATION

1 : 25



BACK ELEVATION

1 : 25



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
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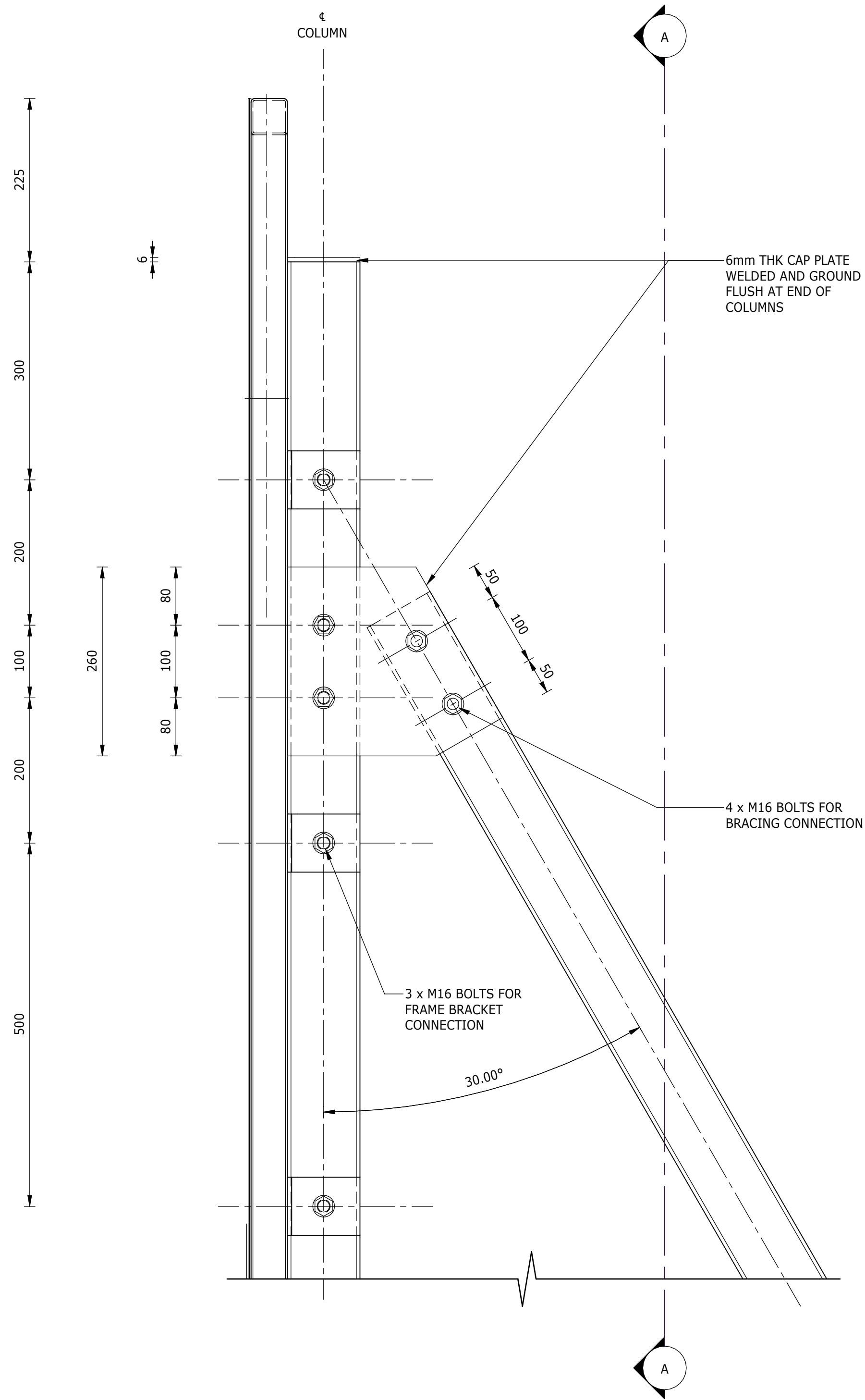
CITY OF JOHANNESBURG

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

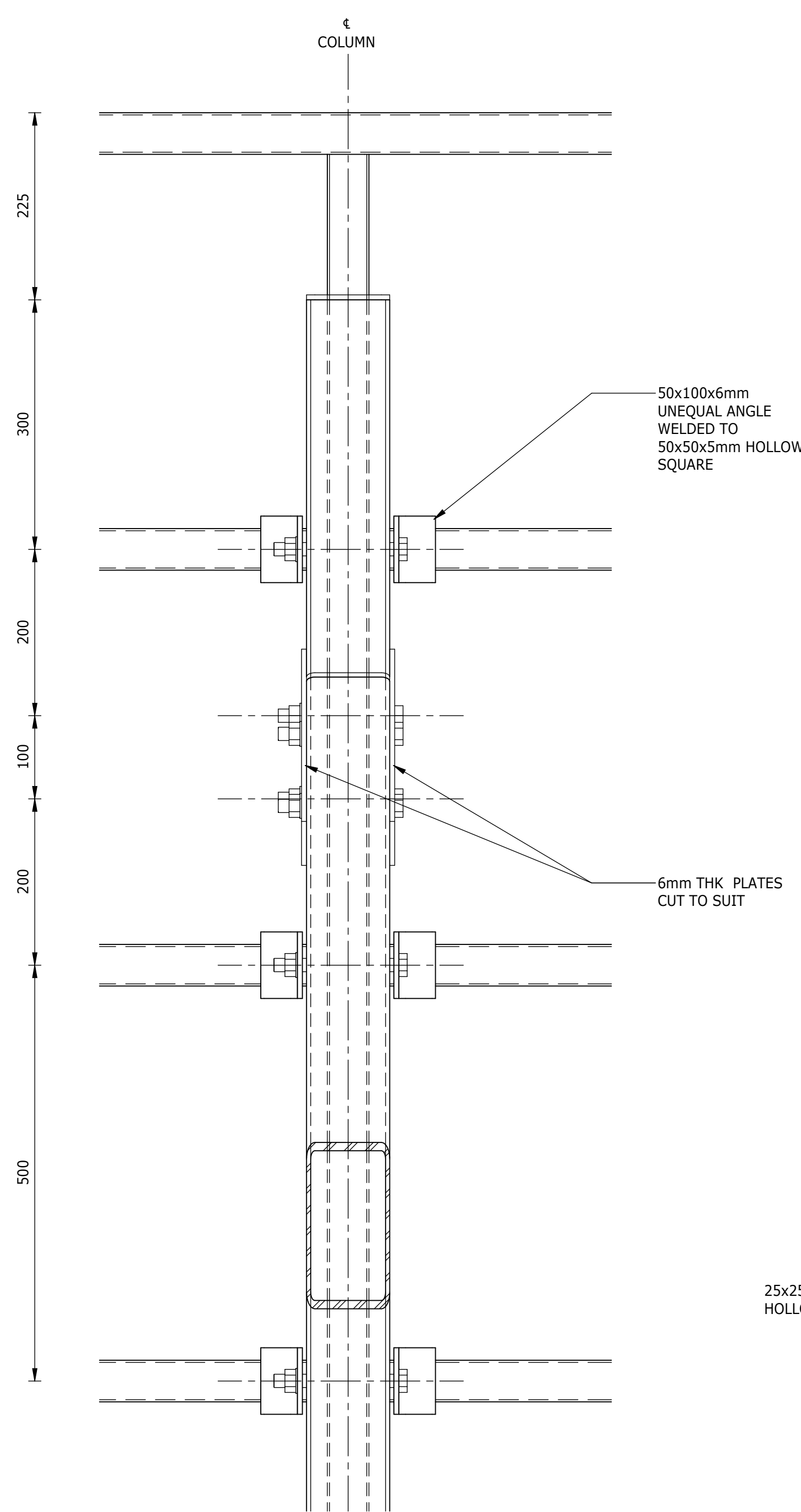
DESIGN MANAGER

DATE

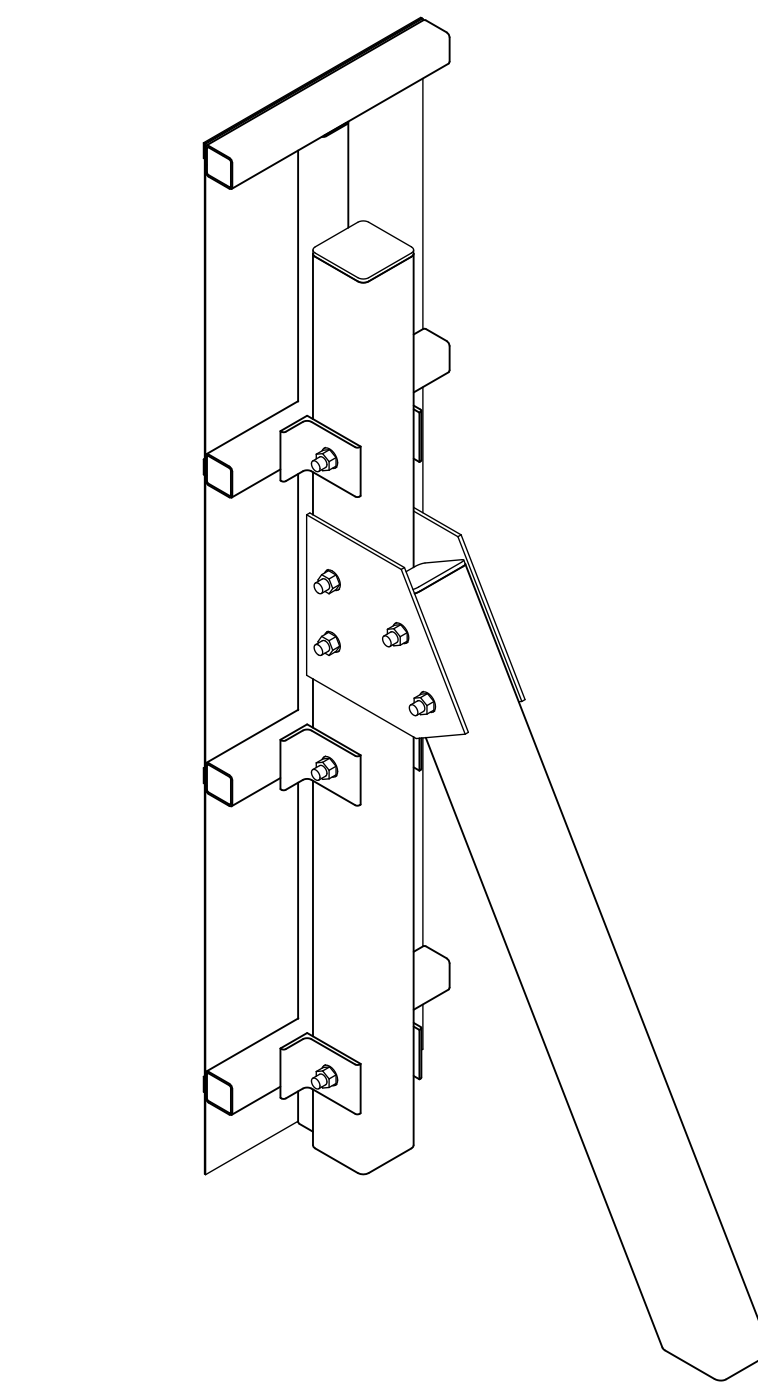
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AS SHOWN	C01 ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER
	C02 ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	JW14466R-RHD-C1-11-D-C-1101
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-11-D-C-1101
				FILE No
				C02



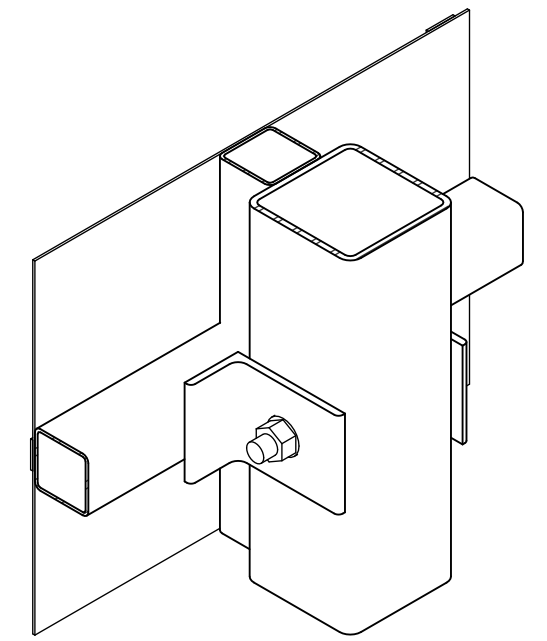
DETAIL 1: BRACING CONNECTION
1 : 5
(2 - SETS REQUIRED AS SHOWN)



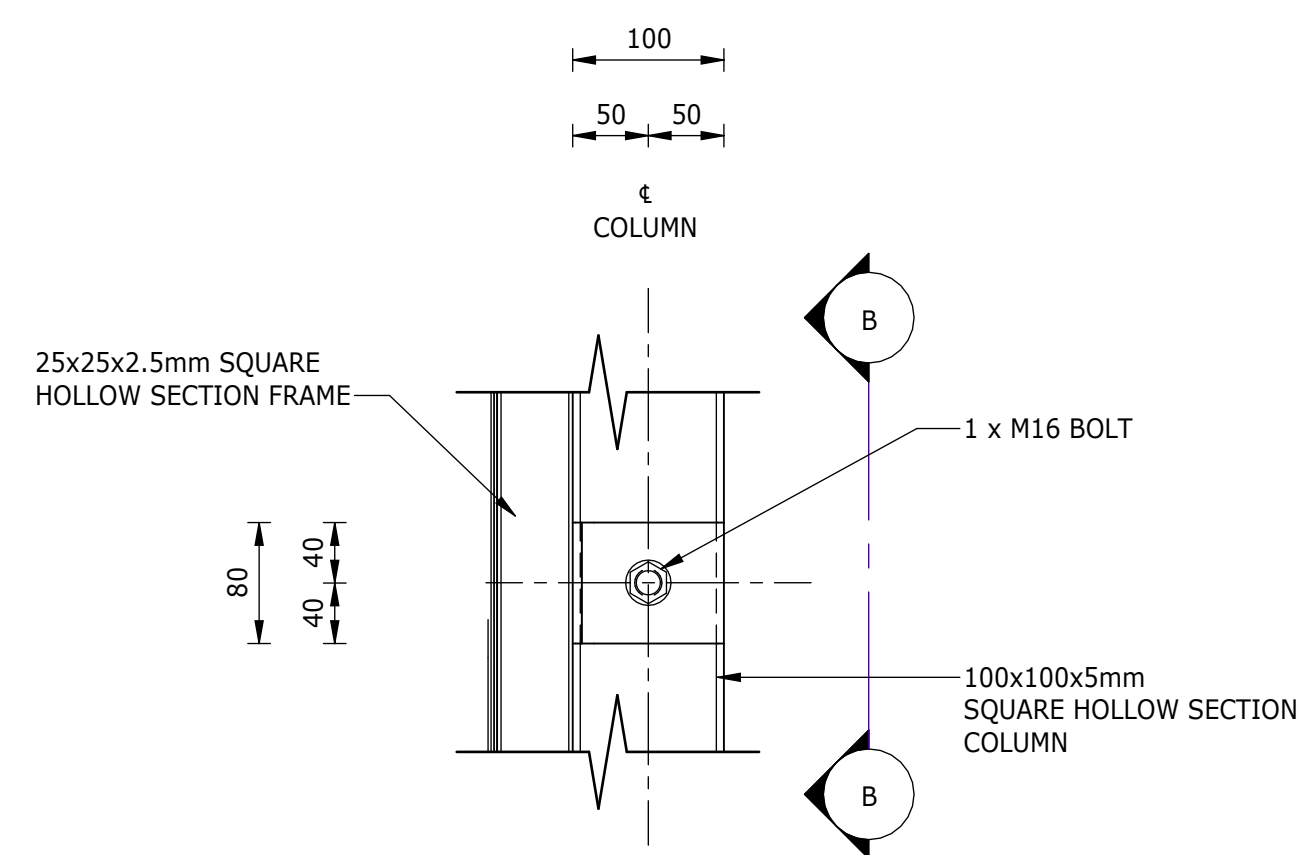
SECTION A-A
1 : 5



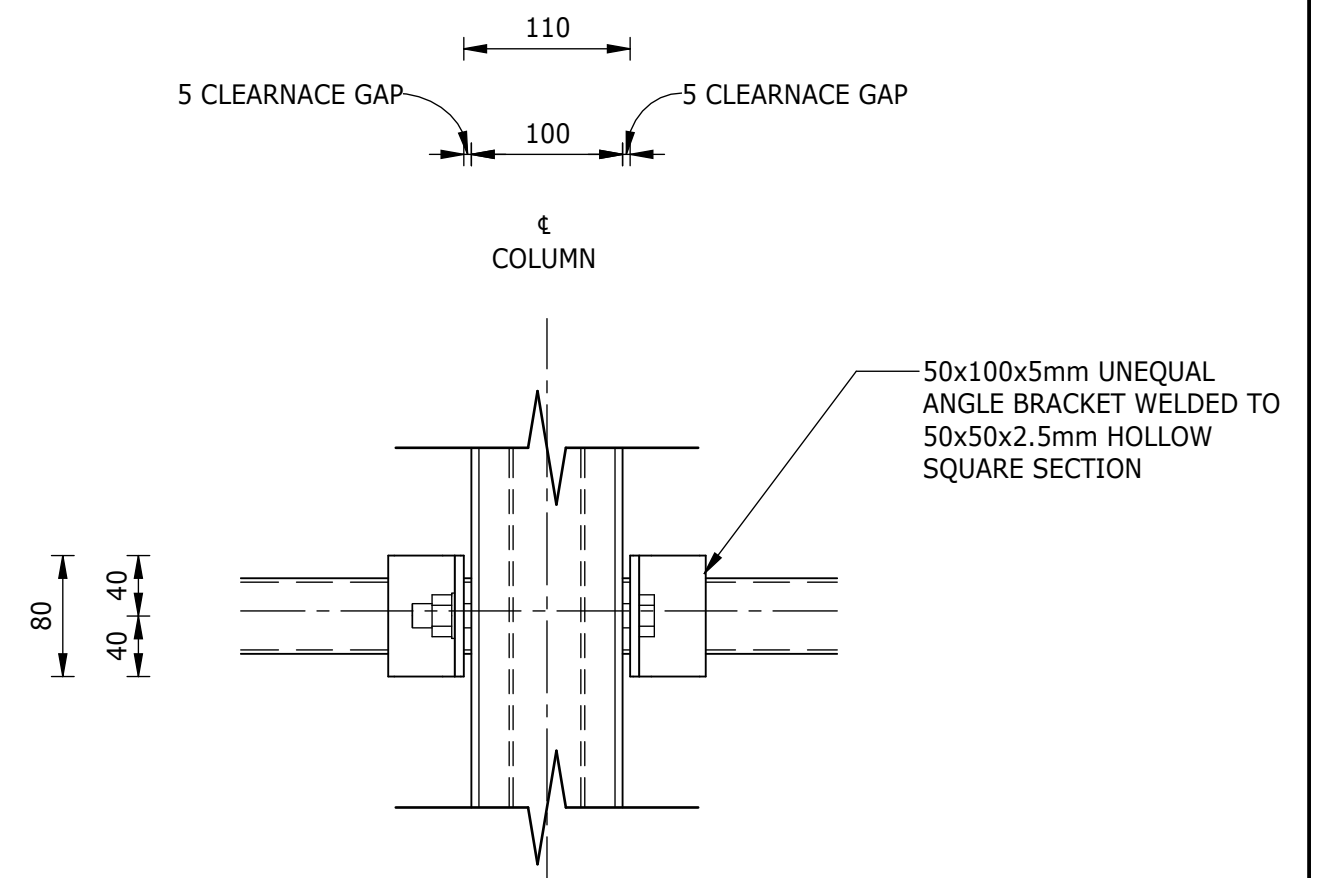
BRACING CONNECTION ISOMETRIC VIEW



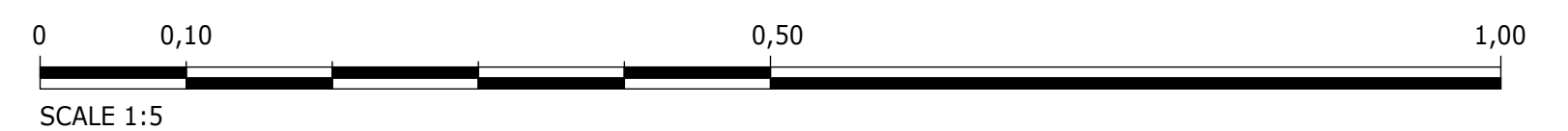
FRAME BRACKET CONNECTION ISOMETRIC VIEW



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
65 NTEMI PILISO STREET
NEWTOWN
JOHANNESBURG 2001

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

CITY OF JOHANNESBURG

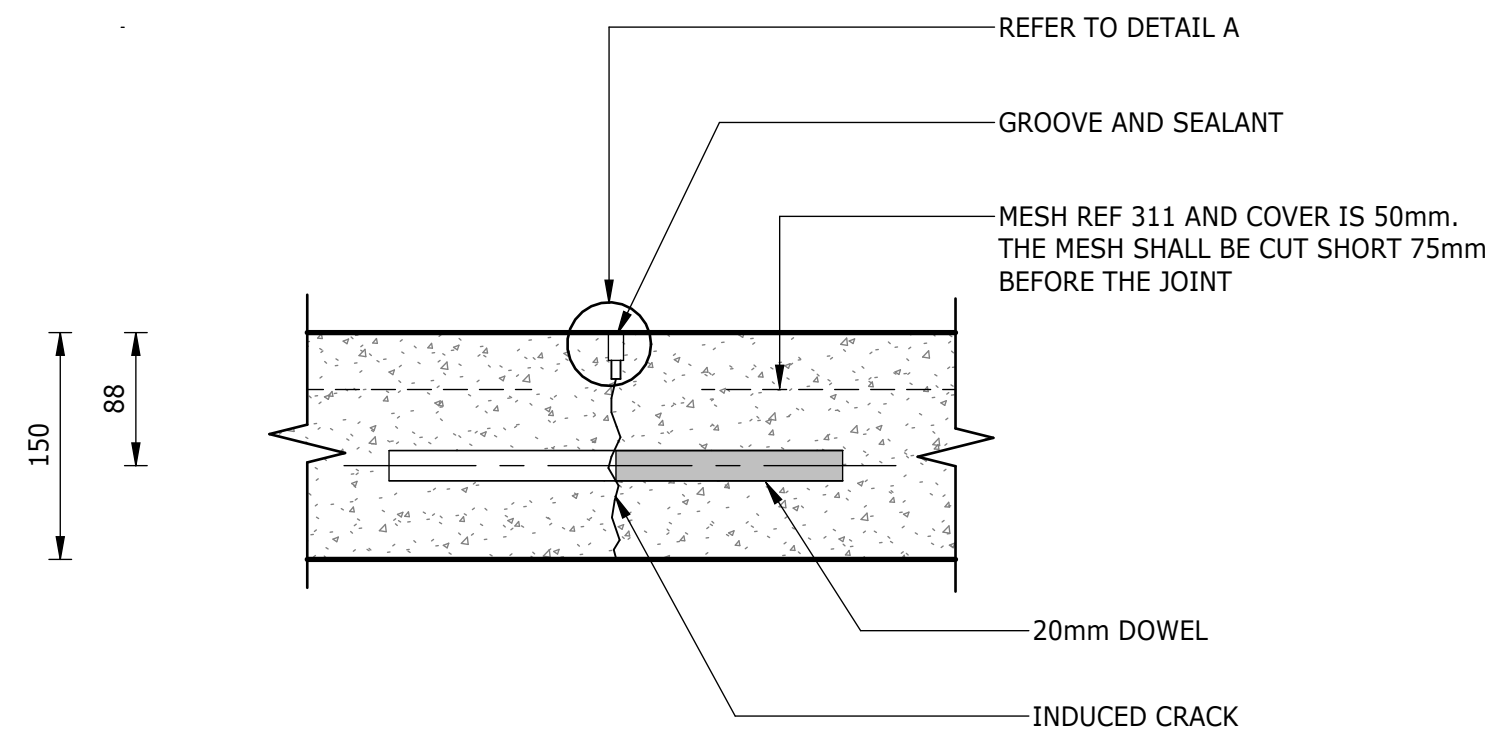
OLIFANTSVLEI WWTW: VAN WYKS Rust PUMP STATION

INFRASTRUCTURE RENEWAL PLAN

NAMEBOARD DETAILS

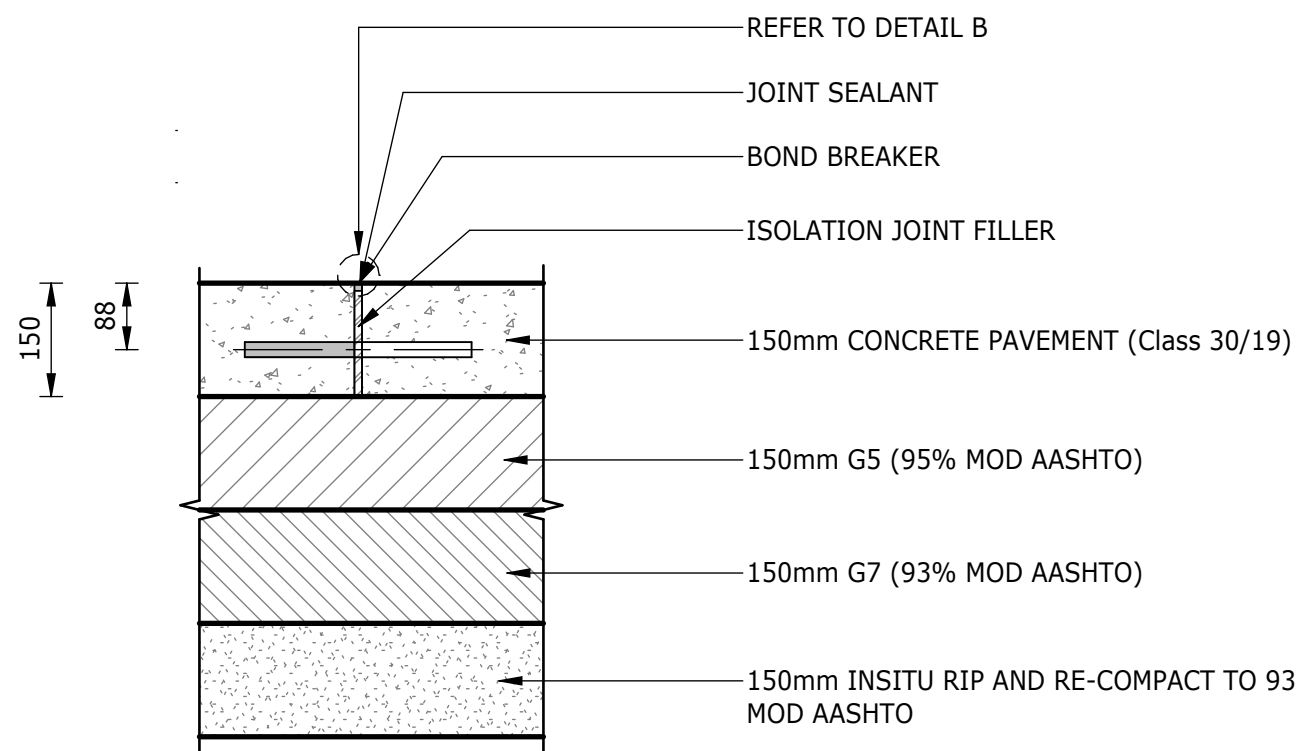
DESIGN MANAGER
DATE

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-1102
				CONSULTANT'S NUMBER
				BW1400-RHD-C1-11-D-C-1102
				FILE No
				C02

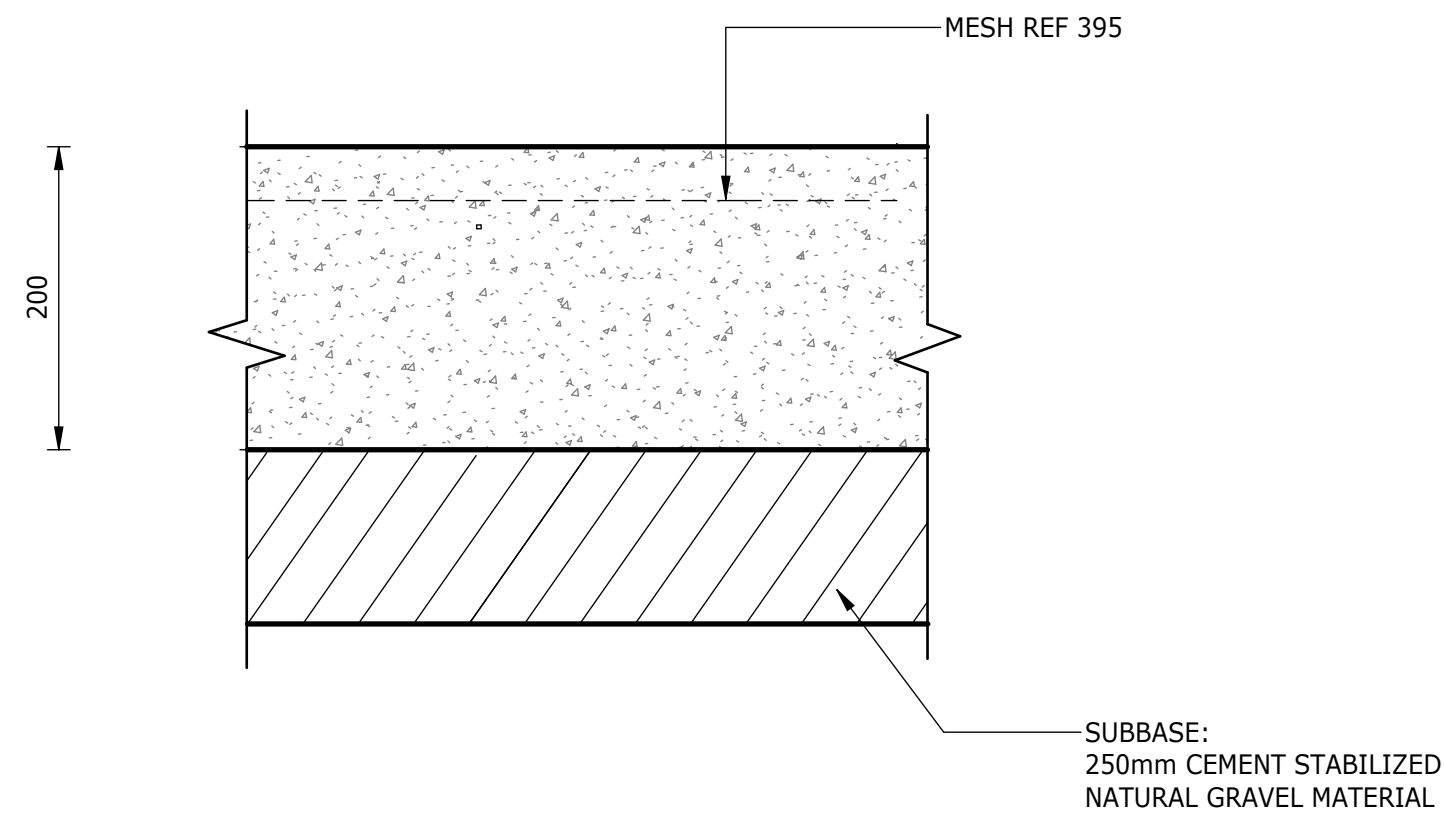


TAPERED PLATE DOWELED TRANSVERSE CONTRACTION JOINT
1 : 5

MATERIAL REQUIREMENTS										
LAYER No.	DESCRIPTION	THICKNESS mm	TRH14 MATERIAL TYPE	COLTO OF SPECIFICATION	COMPACTION (% OF MOD. AASHTO)	P.I. (MAX)	Min CBR AT % MOD. AASHTO	Min UCS (MPa) AT % MOD. AASHTO	Min ITS (kPa) AT % MOD. AASHTO	COMMENTS
1	CONCRETE PAVEMENT (35MPa), MESH TYPE 311	150	CP	7100	-	-	-	-	-	CONCRETE PROPERTIES AS REF SECTION 7103 OF COLTO SPECIFICATION
2	NATURAL GRAVEL LAYER (IMPORTED)	150	C3	3400	97	10	45 @ 95	-	-	
3	FILL LAYER	VARIES (MIN:150mm)	G7	3400	93	12	15 @ 93	-	-	
4	RIP AND RE-COMPACT EXISTING LAYER	150	MIN: G9	3400	93	12	7 @ 93	-	-	

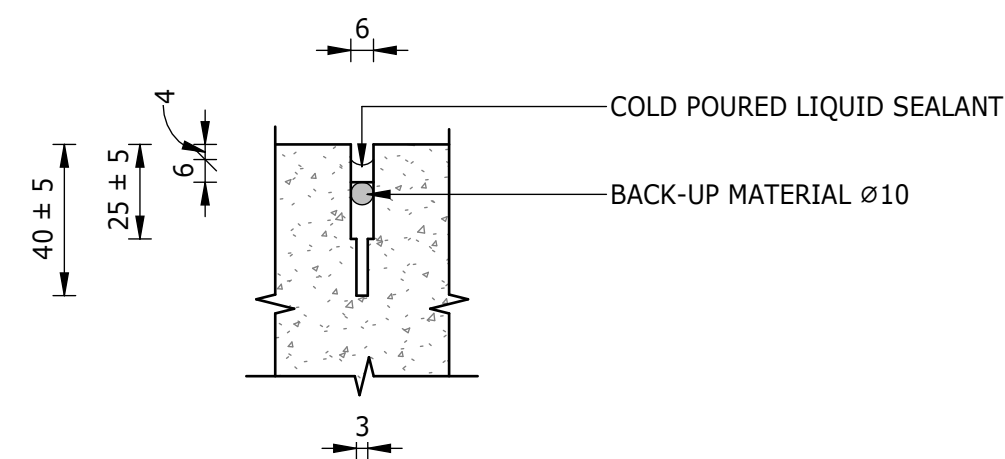


PAVEMENT DETAILS		
STEEL BASE	DIAMOND PLATE DOWEL	TAPERED PLATE DOWEL
TYPE		
SLAB THICKNESS (mm)	150	150
THICKNESS (mm)	20	15
L = LENGTH (mm)	115	300
S = SPACING (mm)	500	500



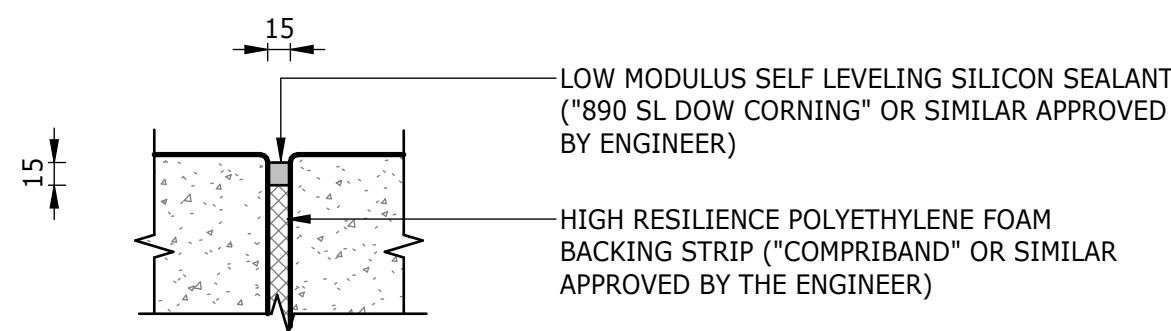
DETAIL OF THICKENED SLAB
1 : 5

CONSTRUCTION JOINTS WITH DIAMOND PLATE DOWELS AND CONCRETE PAVEMENT LAYERWORKS
1 : 10

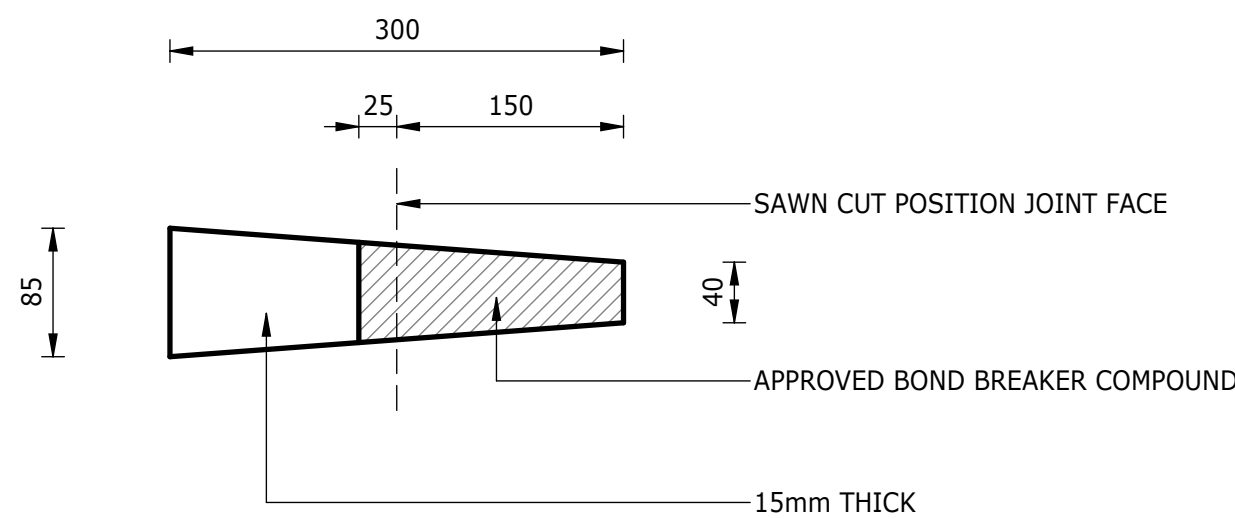


STAGE 1: CUT WIDTH + 3, CUT DEPTH = 60 ± 5.
STAGE 2: CUT WIDTH + 6, CUT DEPTH = 35 ± 5.
STAGE 3: CUTTING OF JOINTS TO WIDTHS 6mm or AS INSTRUCTED BY THE ENGINEER. INSTALLATION OF JOINT PRIMER TO JOINT FACES. INSTALLATION OF BACK-UP MATERIAL. INSTALLATION OF LIQUID SEALANT.

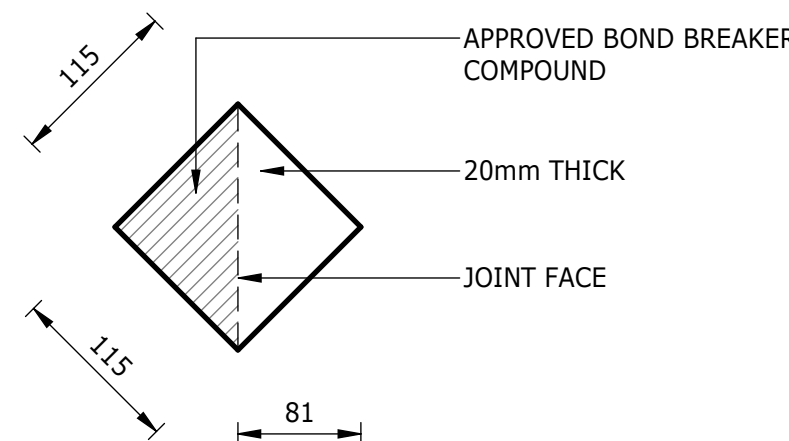
DETAIL A: GROVE AND SEALANT
1 : 2



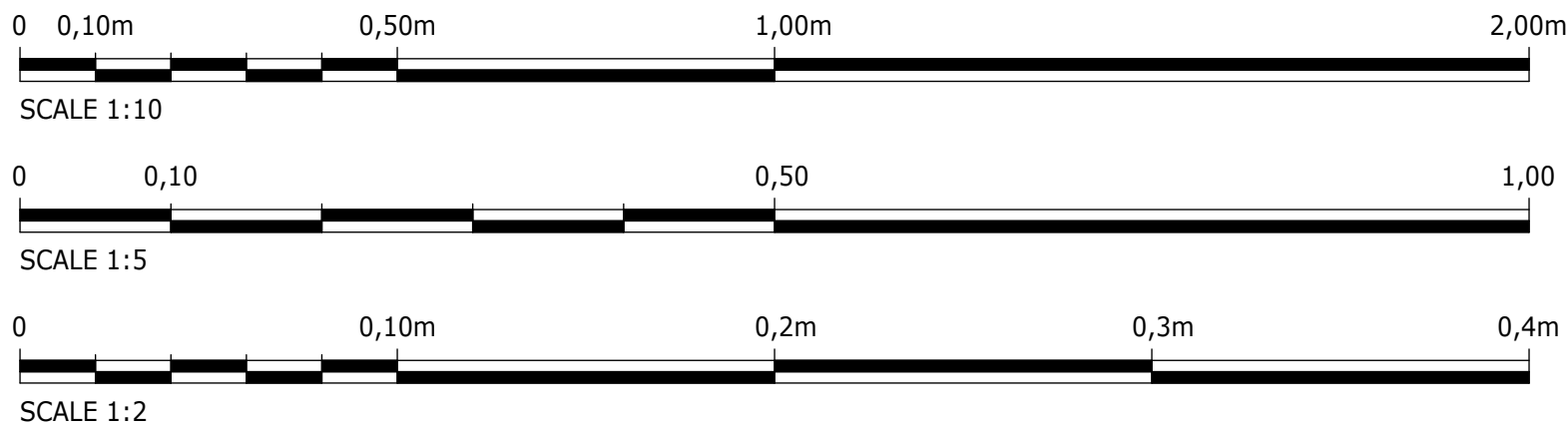
DETAIL B: ISOLATION JOINT
1 : 5



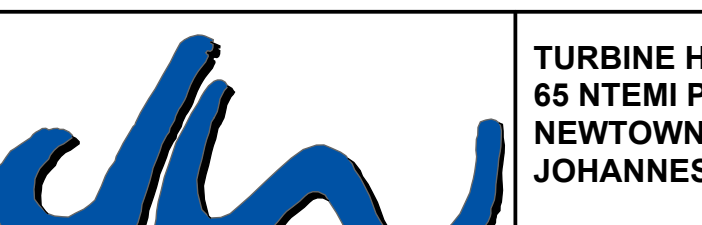
DETAIL C: TAPERED PLATE DOWEL
1 : 5

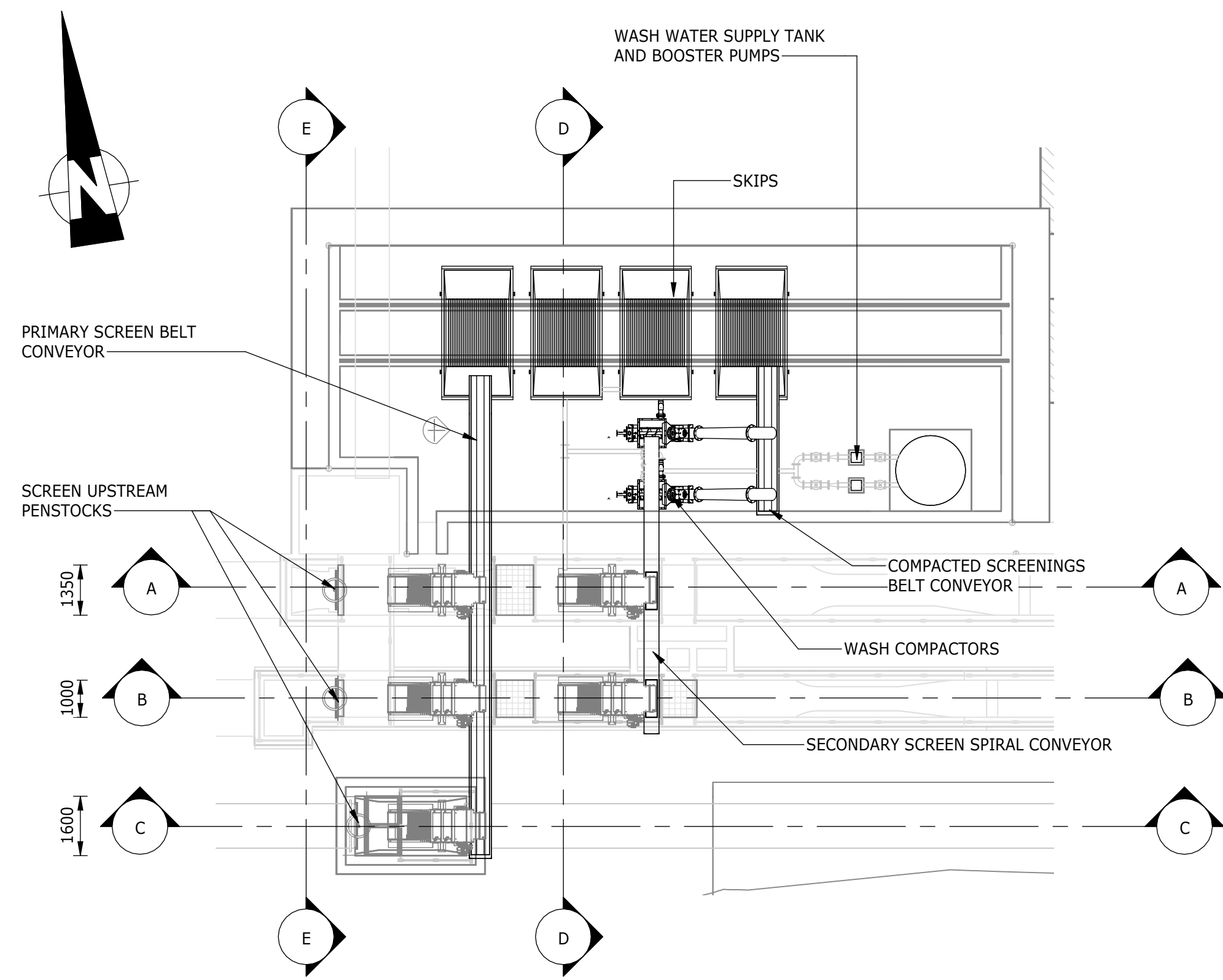


DETAIL D: DIAMOND PLATE DOWEL
1 : 5

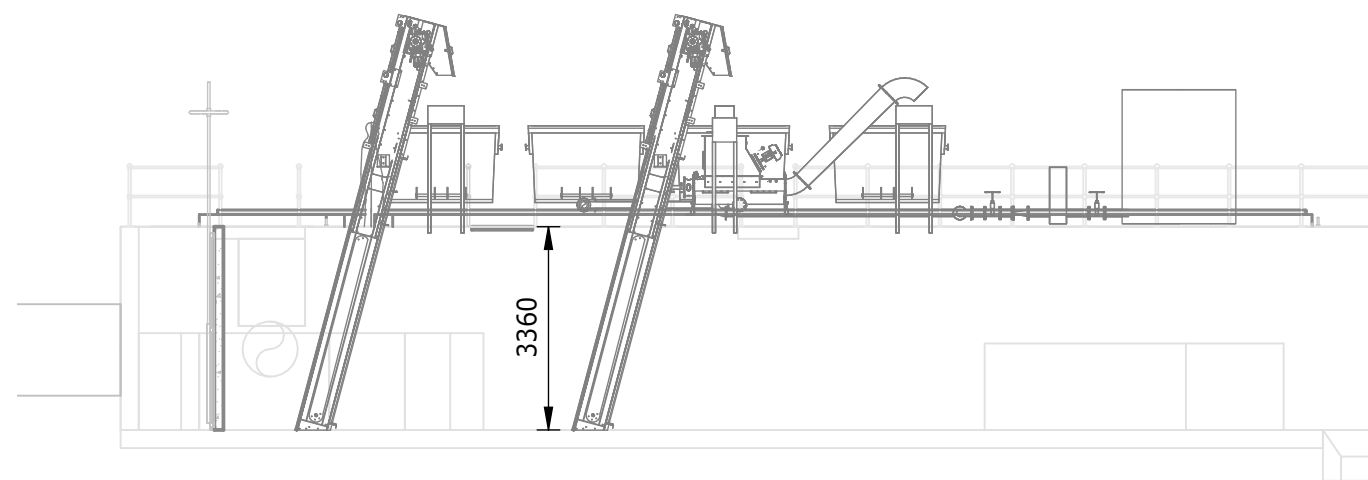


DEPARTMENT	APPROVED	DESIGNATION	DATE

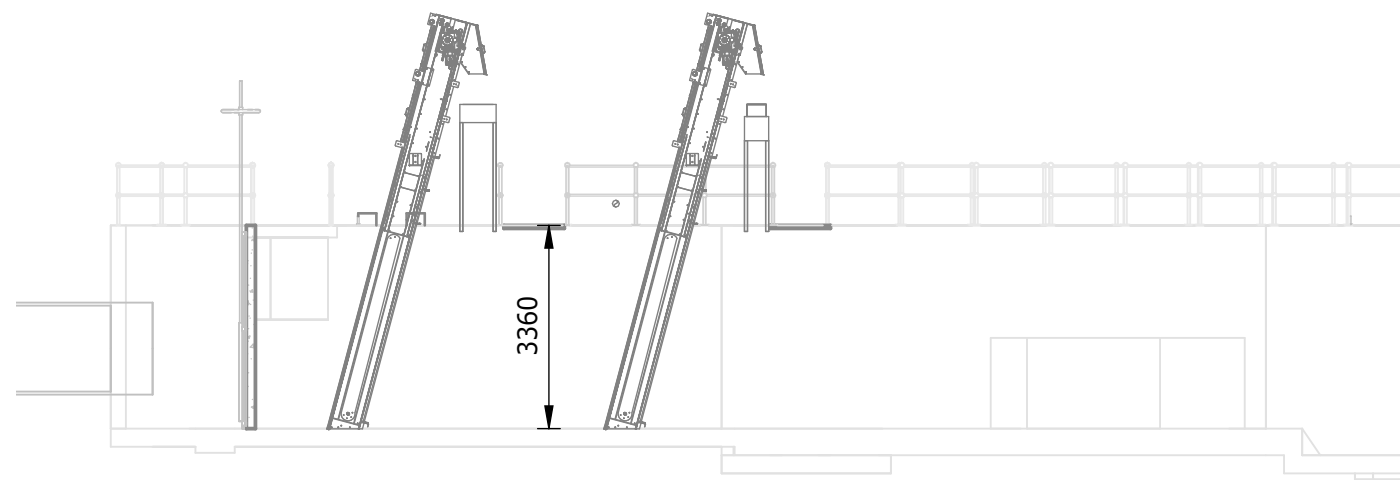
CONSULTING ENGINEERS			SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.									
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	T. MOETI			TURBINE 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 TYPICAL PAVEMENT DETAILS	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-C1-12-D-C-1201								
		CHECKED	L. NAICKER									CONSULTANT'S NUMBER												
		SERVICES CHECKED										BW1400-RHD-C1-12-D-C-1201												
		GEOTECHNICAL INVESTIGATION										FILE No												
		SERVITUDES										C02												
		APPROVED	DITHOLO PHOGOLE										DATE											
		Pr. Eng.No.	20060098																					
		DATE																						



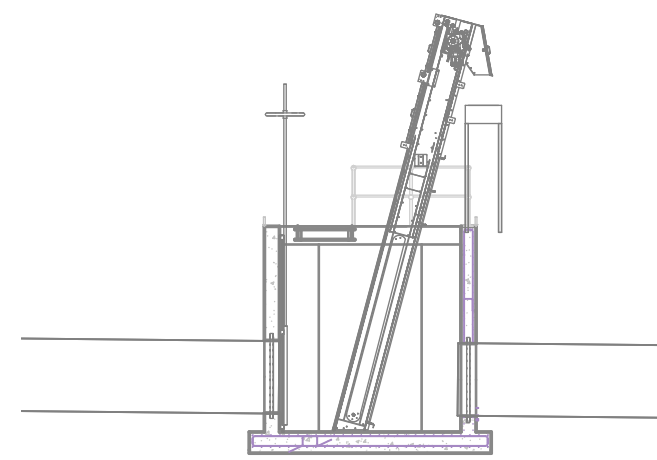
SITE LAYOUT
1 : 125



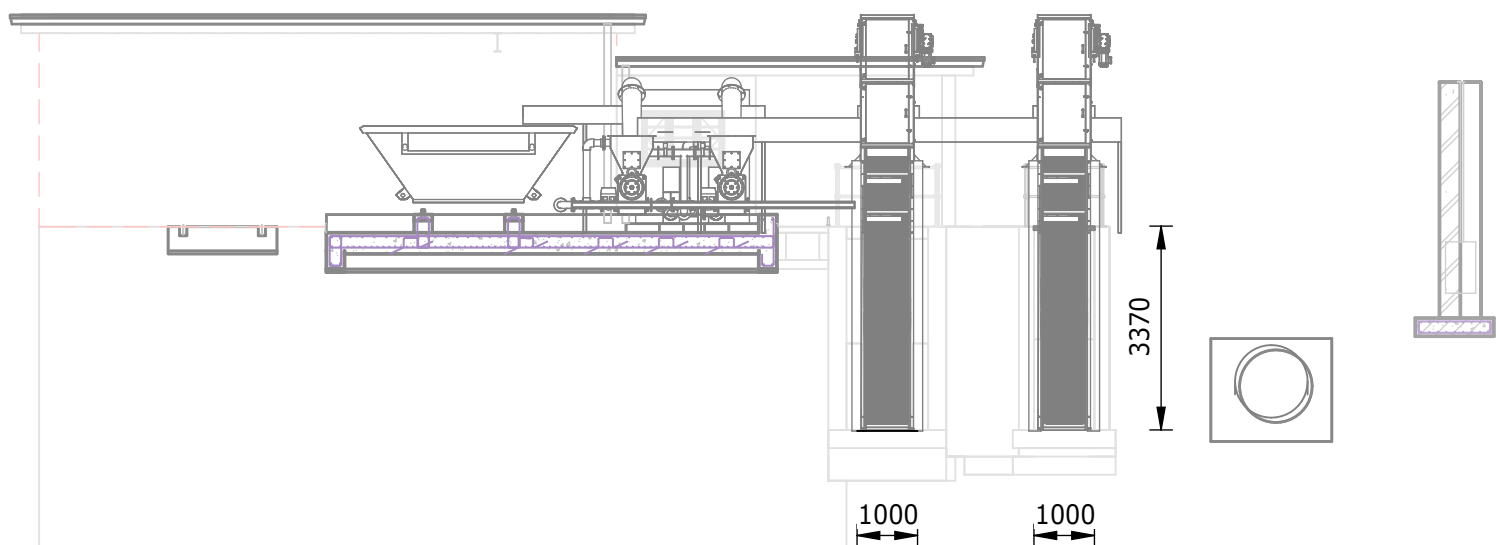
SECTION A-A
1 : 125



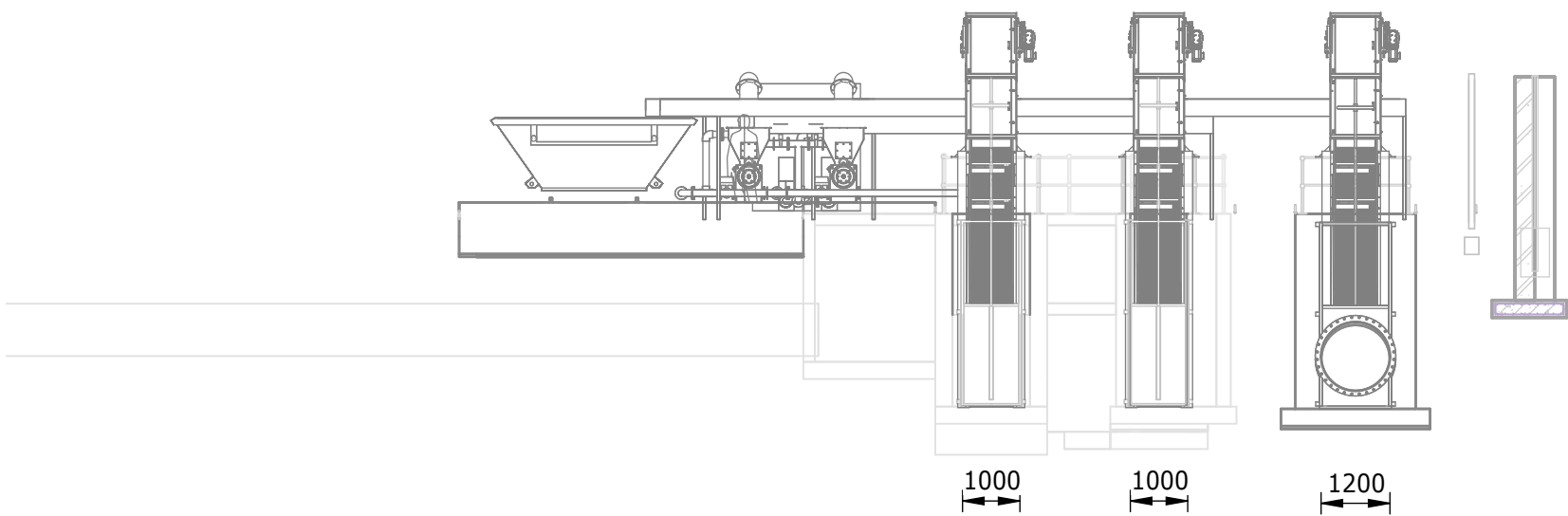
SECTION B-B
1 : 125



SECTION C-C
1 : 125

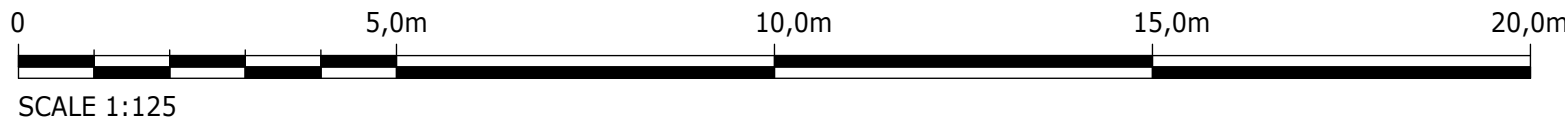


SECTION D-D
1 : 125

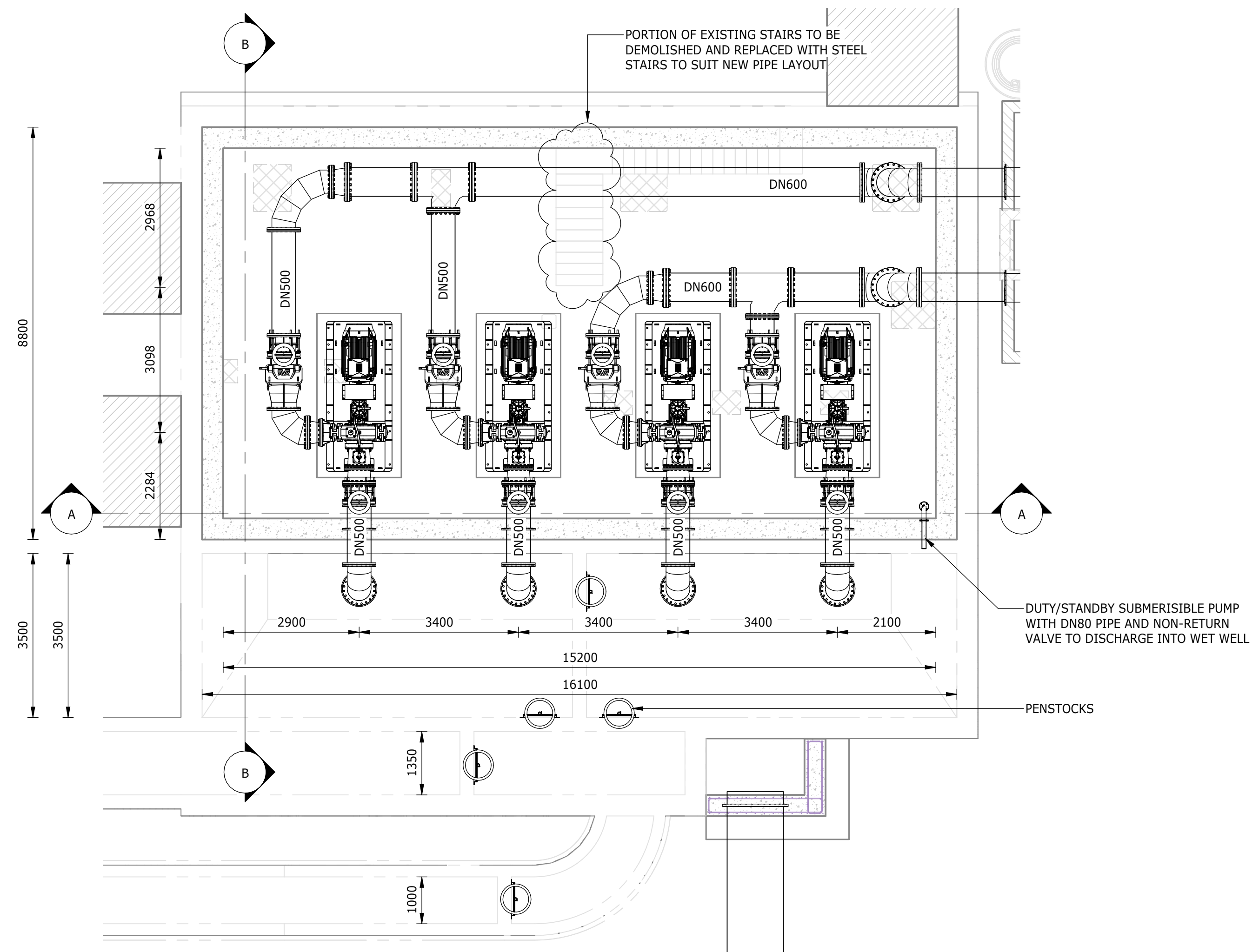


SECTION E-E
1 : 125

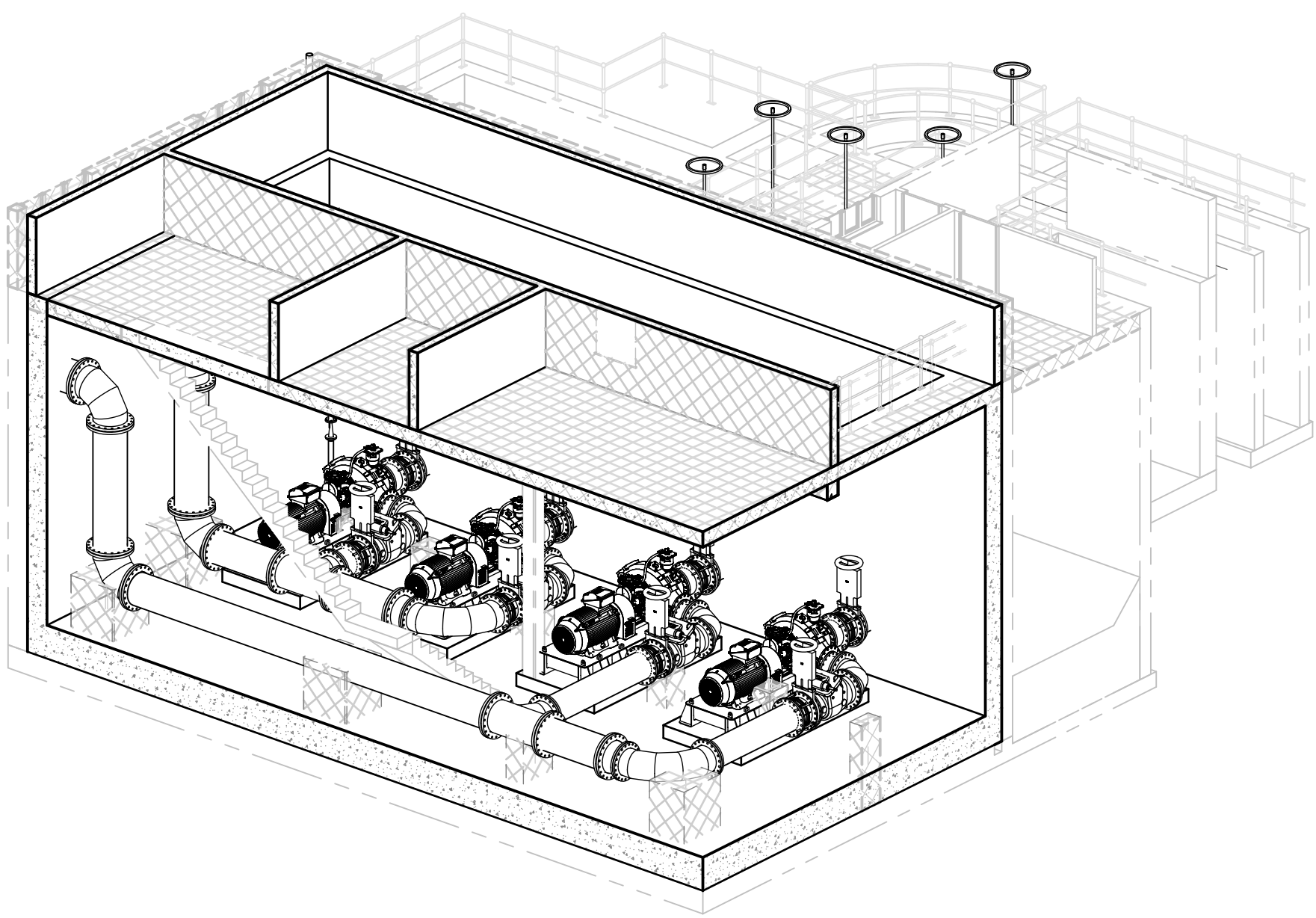
DEPARTMENT	APPROVED	DESIGNATION	DATE



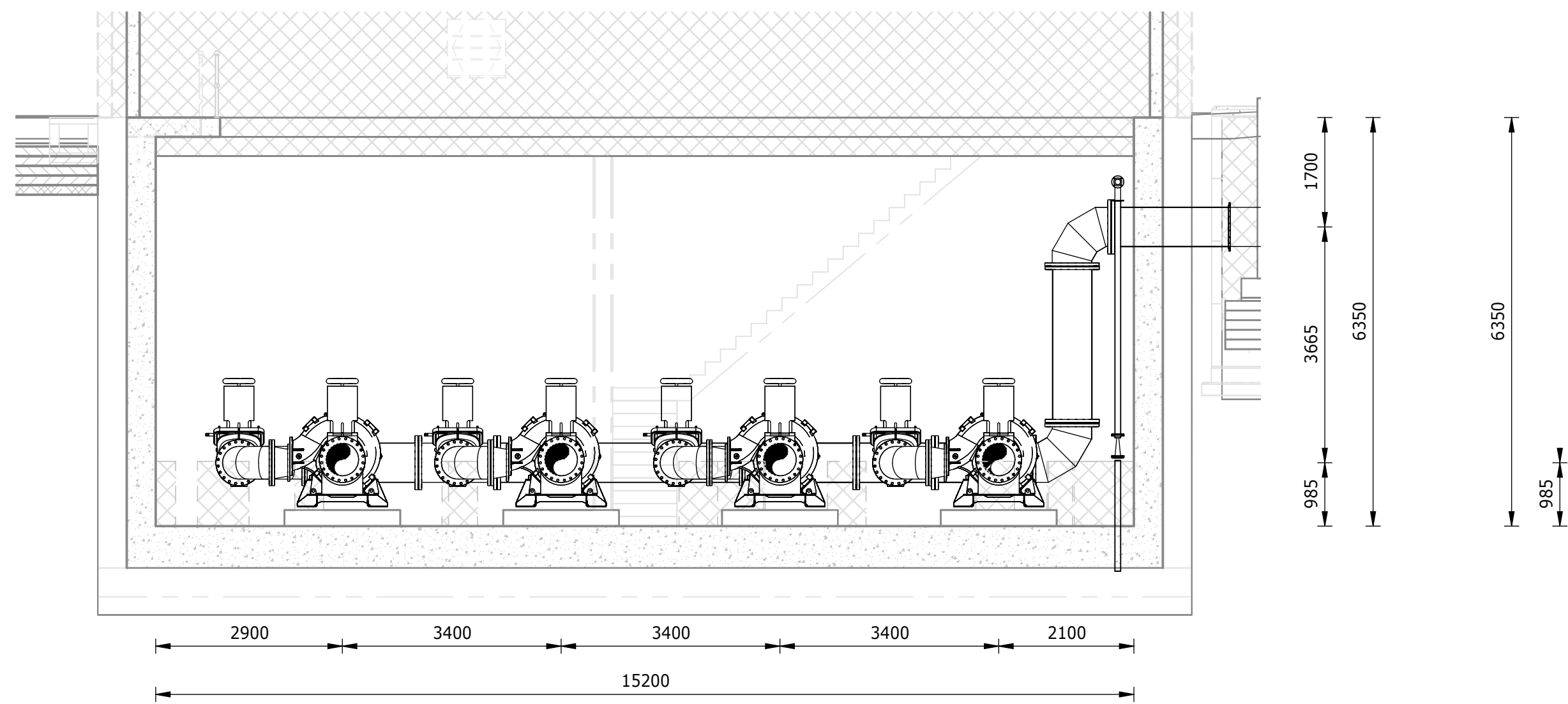
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.					
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	E. NAIDOO	 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 SCREENINGS CHANNEL MECHANICAL 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-M-0141						
		CHECKED	E. NAIDOO					CONSULTANT'S NUMBER											
		SERVICES CHECKED						BW1400-RHD-C1-01-D-M-0141											
		GEOTECHNICAL INVESTIGATION						FILE No											
		SERVITUDES								C02									
		APPROVED	DITHOLO PHOGOLE																
		Pr. Eng.No.	20060098																
		DATE																	



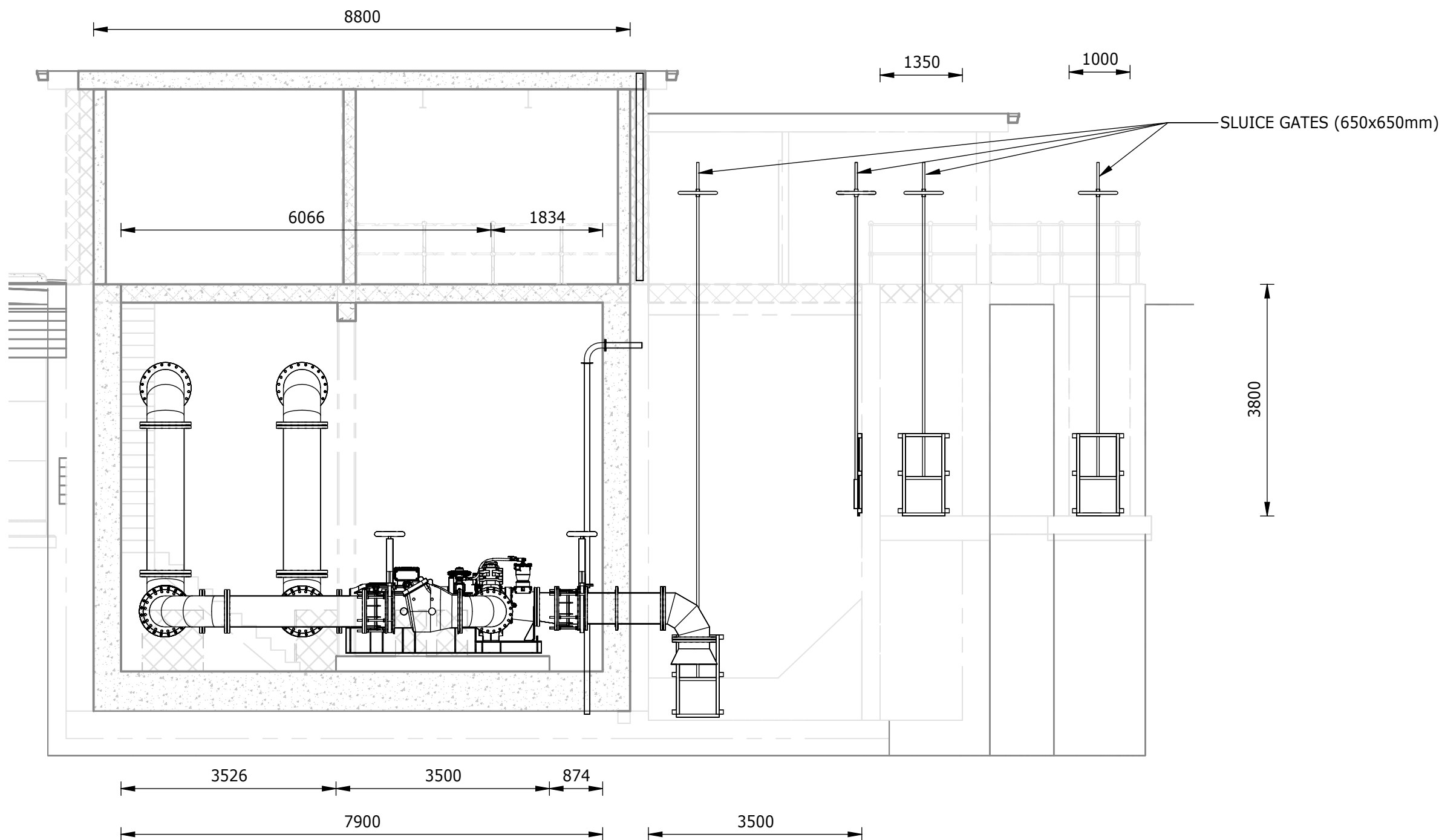
PLAN VIEW ON PUMPS
1 : 75



TYPICAL ISOMETRIC VIEW



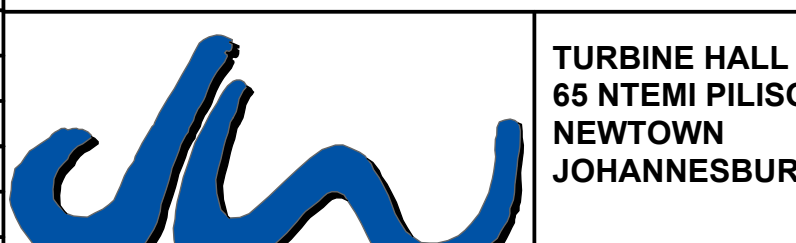
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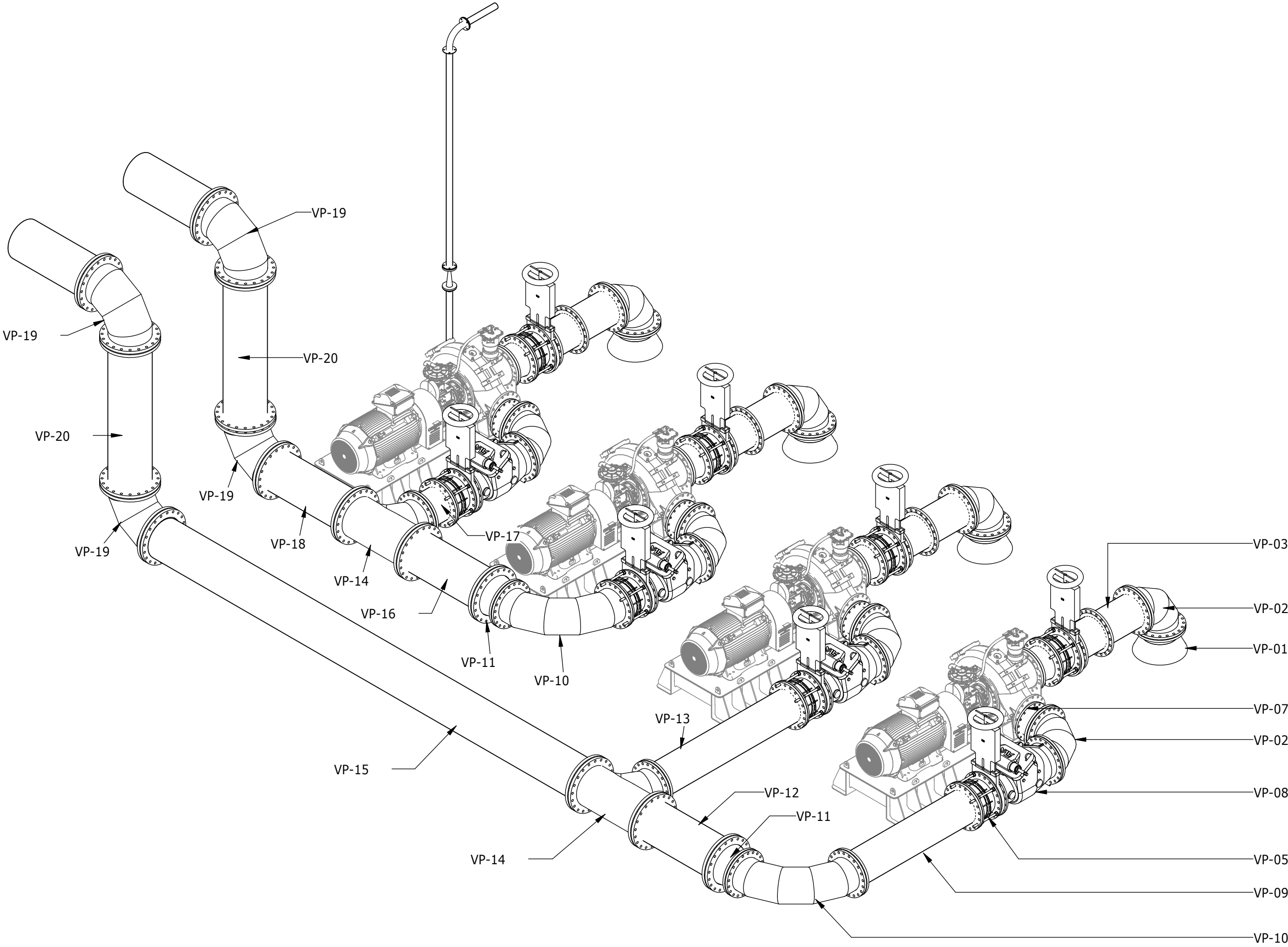
SECTION B-B
1 : 75

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 WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION GENERAL ARRANGEMENT AND SECTIONS			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-0241						
		DRAWN	N. O'GORMAN				CONSULTANT'S NUMBER											
		CHECKED	L. NAICKER				BW1400-RHD-C1-02-D-M-0241											
		SERVICES CHECKED					FILE No											
		GEOTECHNICAL INVESTIGATION																
		SERVITUDES																
		APPROVED	DITHOLO PHOGOLE															
		Pr. Eng.No.	20060098															
		DATE																
						DATE						C02						

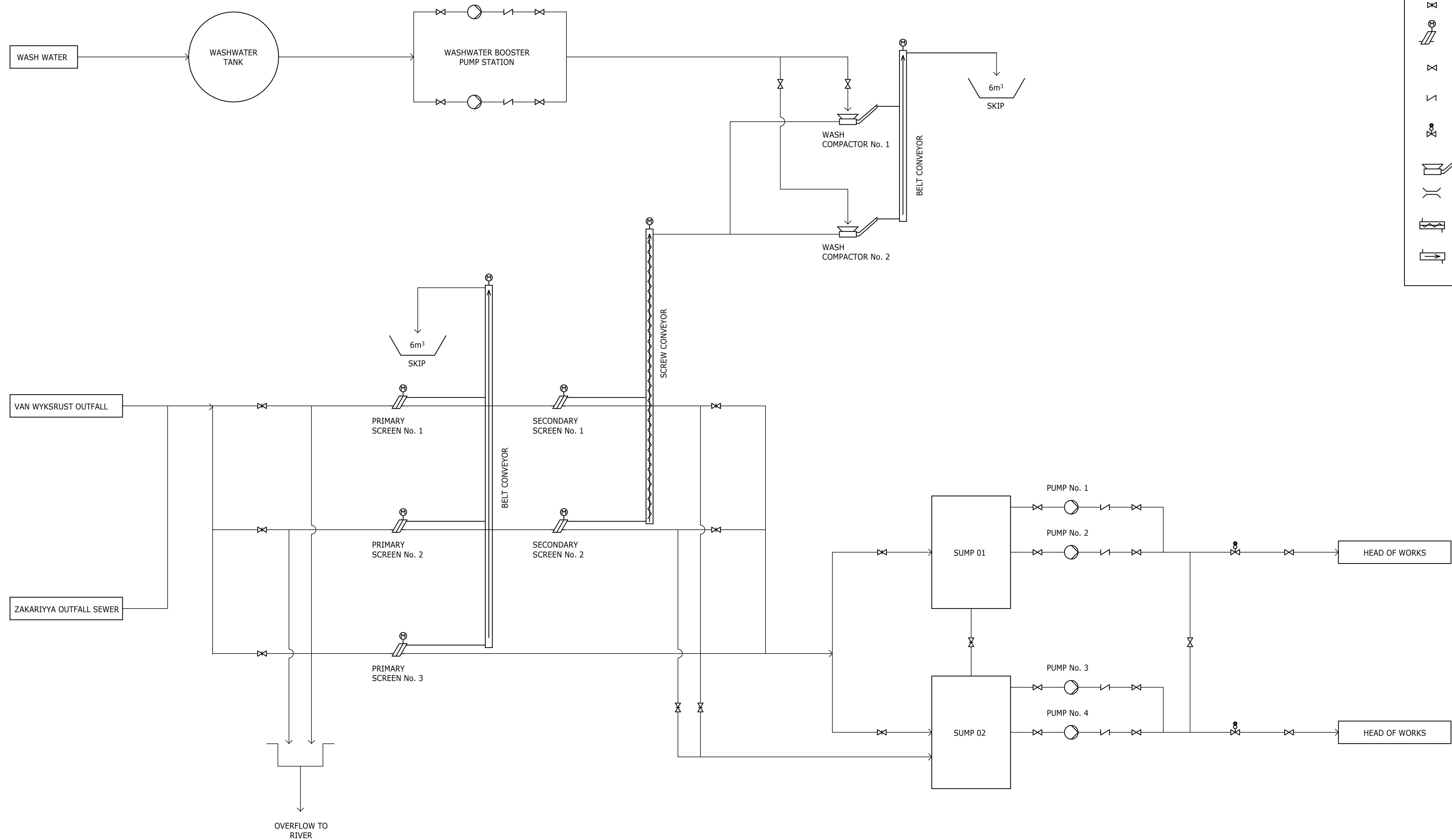
VAN WYKSRUST PUMP STATION PIPE SCHDULE				
ITEM No	DESCRIPTION	MATERIAL	PIPE ENDS	QTY
VP-01	DN500 BELL MOUTH	SANS 719, GRADE B, 8mm	FLANGE ONE SIDE, SANS 1123 1000/3	4
VP-02	DN500 90 DEG SHORT RADIUS BEND	SANS 719, GRADE B, 8mm	FLANGE BOTH SIDE, SANS 1123 1000/3	8
VP-03	DN500 PUDDLE PIPE, 1680mm LONG	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		 Johannesburg Water	TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529			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				DATE															
		APPROVED	DITHOLO PHOGOLE																		
		Pr. Eng.No.	20060098																		



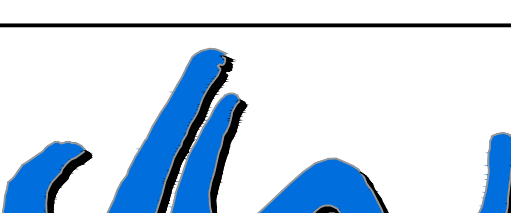
DEPARTMENT	APPROVED	DESIGNATION	DATE

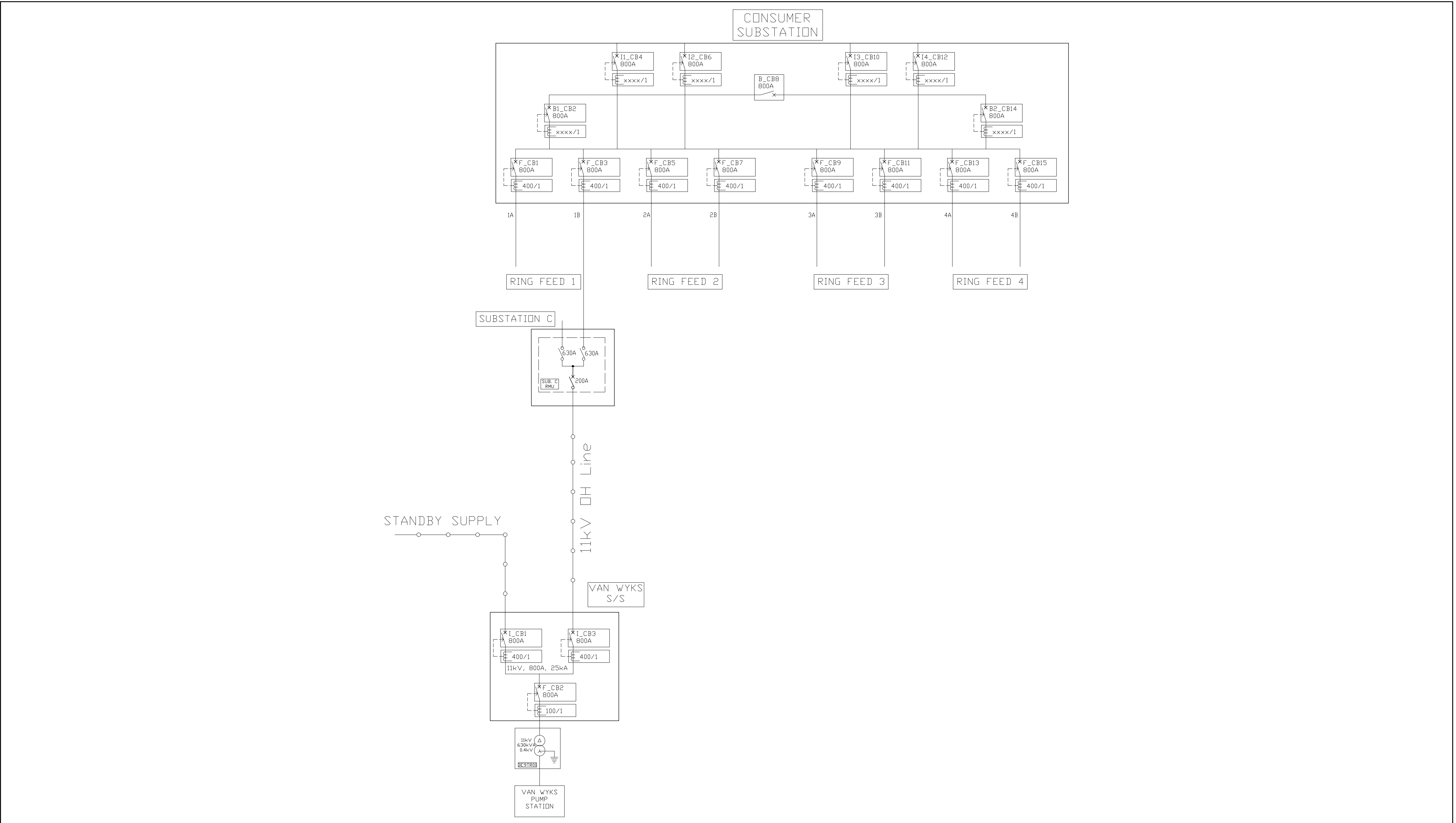
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.						
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 11 798 6000	DESIGNED	T. 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 INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION PROCESS FLOW DIAGRAM				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-0243					
		CHECKED	E. NAIDOO								CONSULTANT'S NUMBER									
		SERVICES CHECKED									BW1400-RHD-C1-02-D-M-0243									
		GEOTECHNICAL INVESTIGATION									FILE No									
		SERVITUDES																		
		APPROVED									DITHOLO PHOGOLE									
		Pr. Eng.No.									20060098									
		DATE											C02							

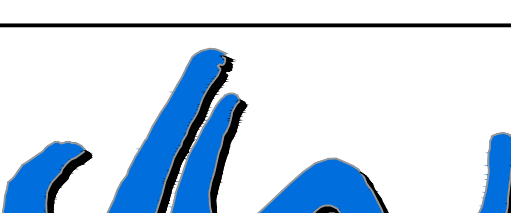


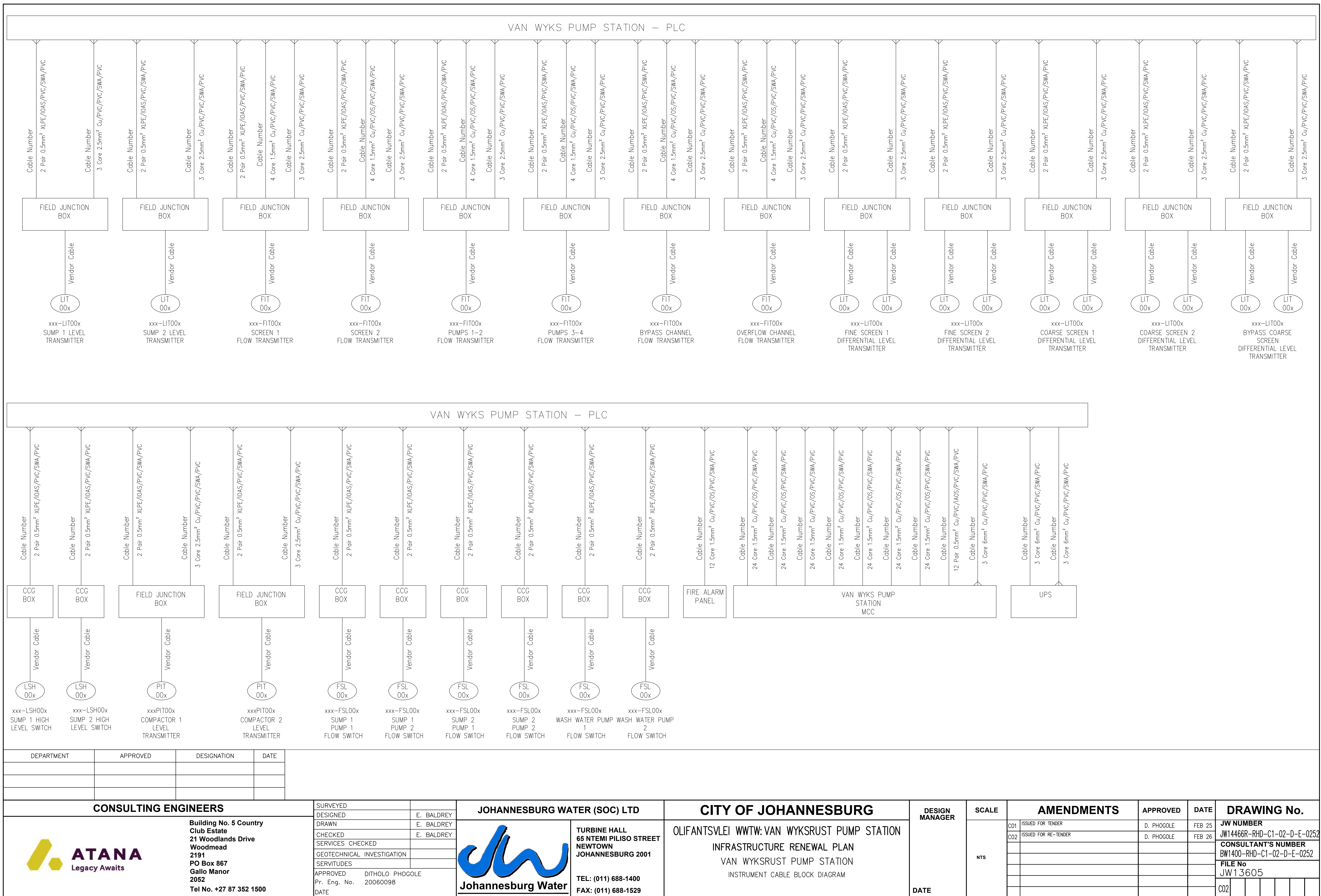
DEPARTMENT		APPROVED		DESIGNATION		DATE																													
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.					
ATANA Legacy Awaits Building No. 5 Country Club Estate 21 Woodlands 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		CONSULTANT'S NUMBER	
								CHECKED		E. BALDREY																								FILE No	
								SERVICES CHECKED																										JW 13605	
								GEOTECHNICAL INVESTIGATION																											
								SERVITUDES																											
								APPROVED		DITHOLO PHOGOLE																									
Pr. Eng. No.		20060098																																	
DATE																		C02																	

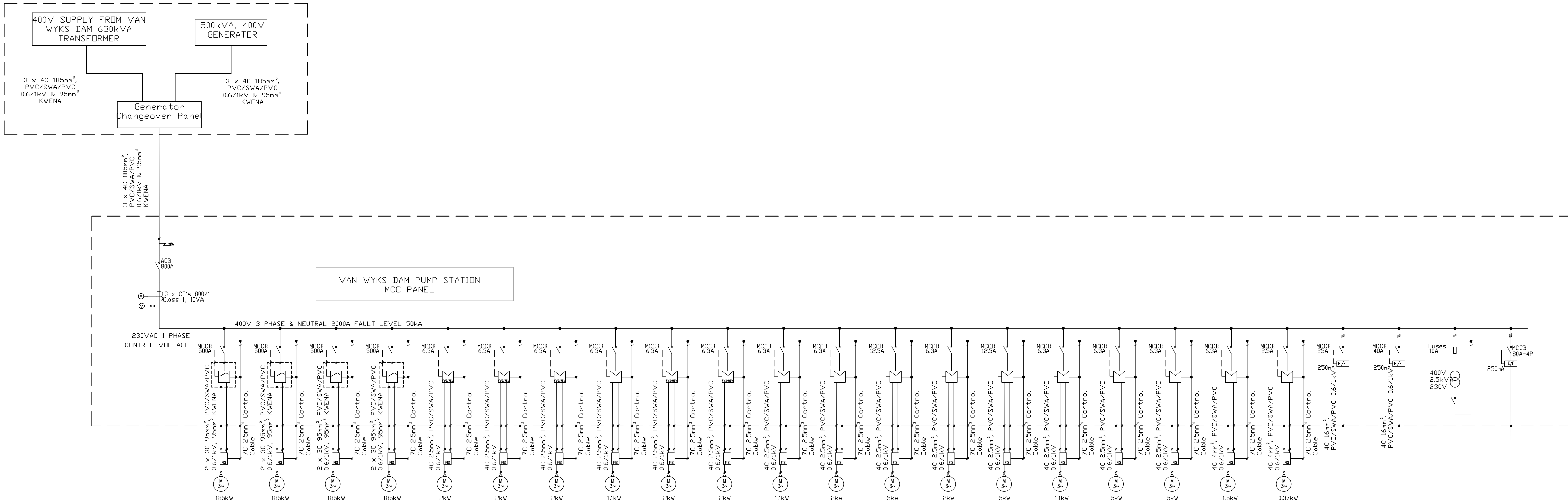


DEPARTMENT		APPROVED		DESIGNATION		DATE																													
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.					
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 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 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							
																												BW1400-RHD-C1-00-D-E-0052							
																												FILE No							
																												JW 13605							
																		C02																	

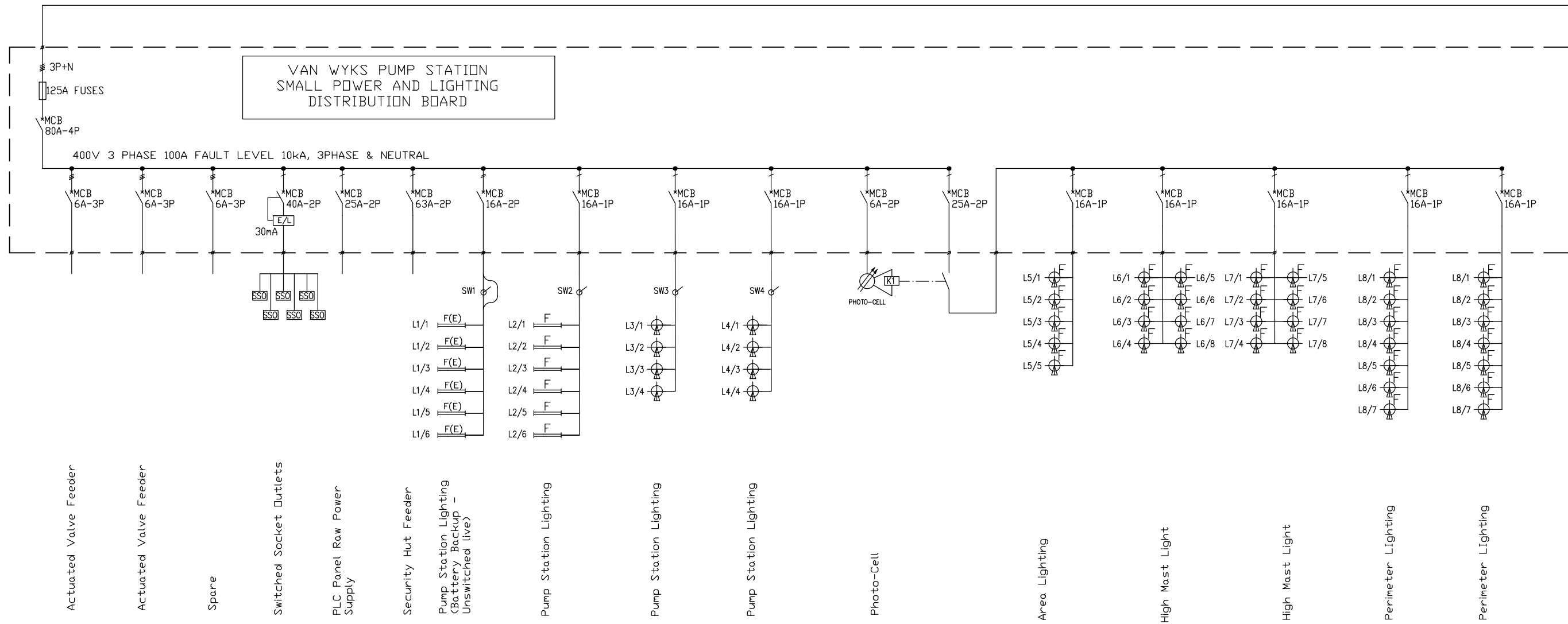


DEPARTMENT		APPROVED		DESIGNATION		DATE																																	
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.									
 Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 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 WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN ELECTRICAL MEDIUM VOLTAGE RETICULATION VAN WYKS RUST PUMP STATION MV SINGLE LINE DIAGRAM				DATE		NTS		C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER JW14466R-RHD-C1-02-D-E-0251			
								C02		ISSUED FOR RE-TENDER																		D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0251							
																																FILE No JW13605							
								APPROVED		DITHOLO PHOGOLE																													
								Pr. Eng. No.		20060098																													
DATE																																							





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 Drive	Fine Screen Drive	Fine Screen 2 Drive	Screen Press	Screen Press Washer	Screen Press	Screen Press Washer	Fine Screens Discharge Conveyor 2	Wash Water Pump 1	Wash Water Pump 2	Pump Station Pump 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	

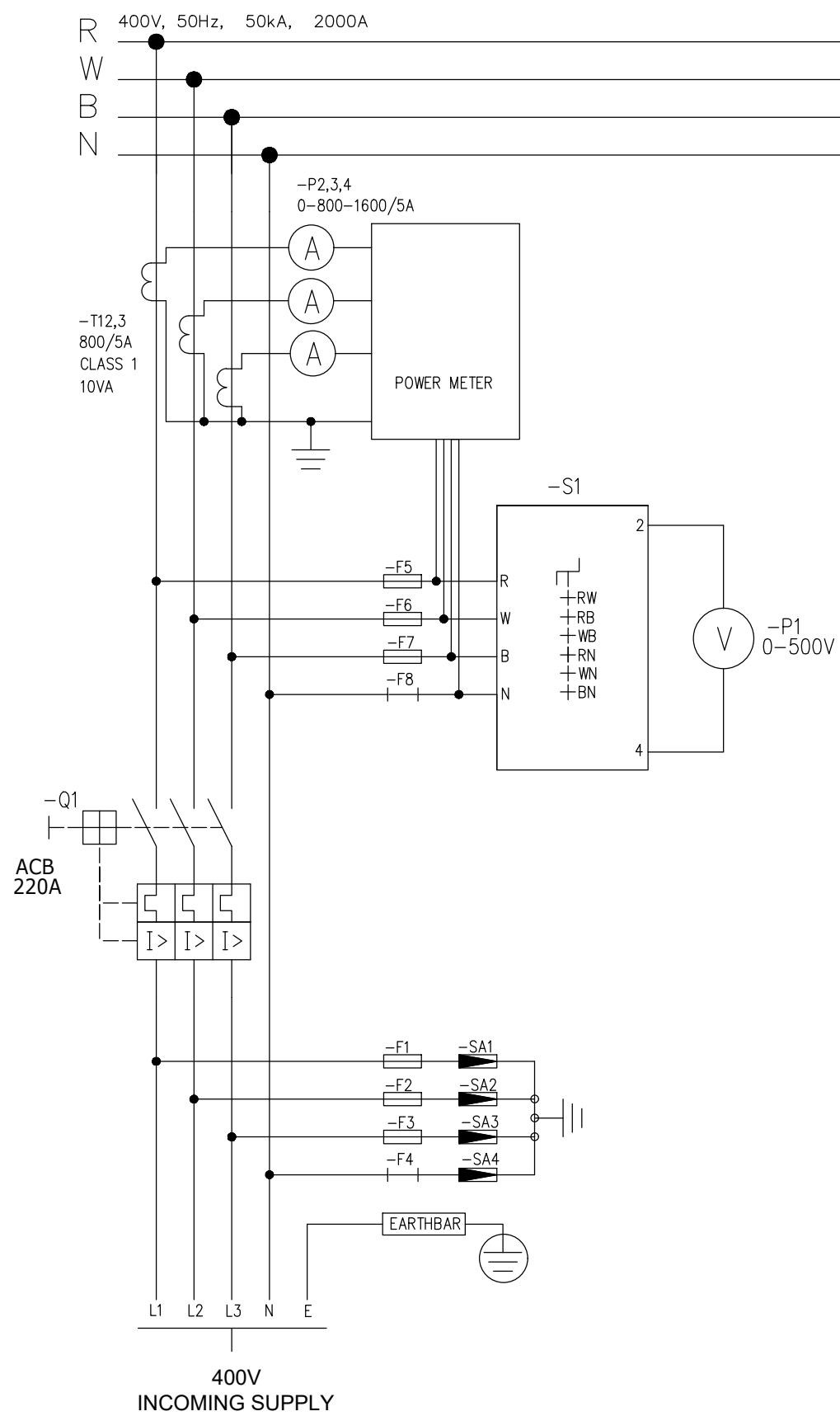


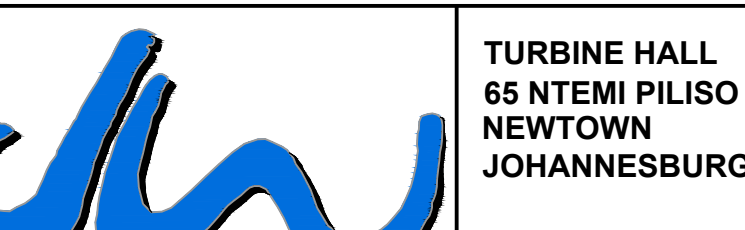
KEY PLAN	
	CIRCUIT BREAKER WITH EARTH FAULT
	DIRECT ON LINE STARTER
	VARIABLE SPEED DRIVE
	STAR/DELTA STARTER
	SOFT STARTER
	FIELD ISOLATOR STATION
	EMERGENCY STOP STATION
	3 PHASE MOTOR
	TRANSFORMER
	FIELD STATION E-STOP & STOP/START
	CURRENT TRANSFORMER
	AMMETER
	VOLTMETER
	SURGE ARRESTOR
	1200mm 2x25W 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

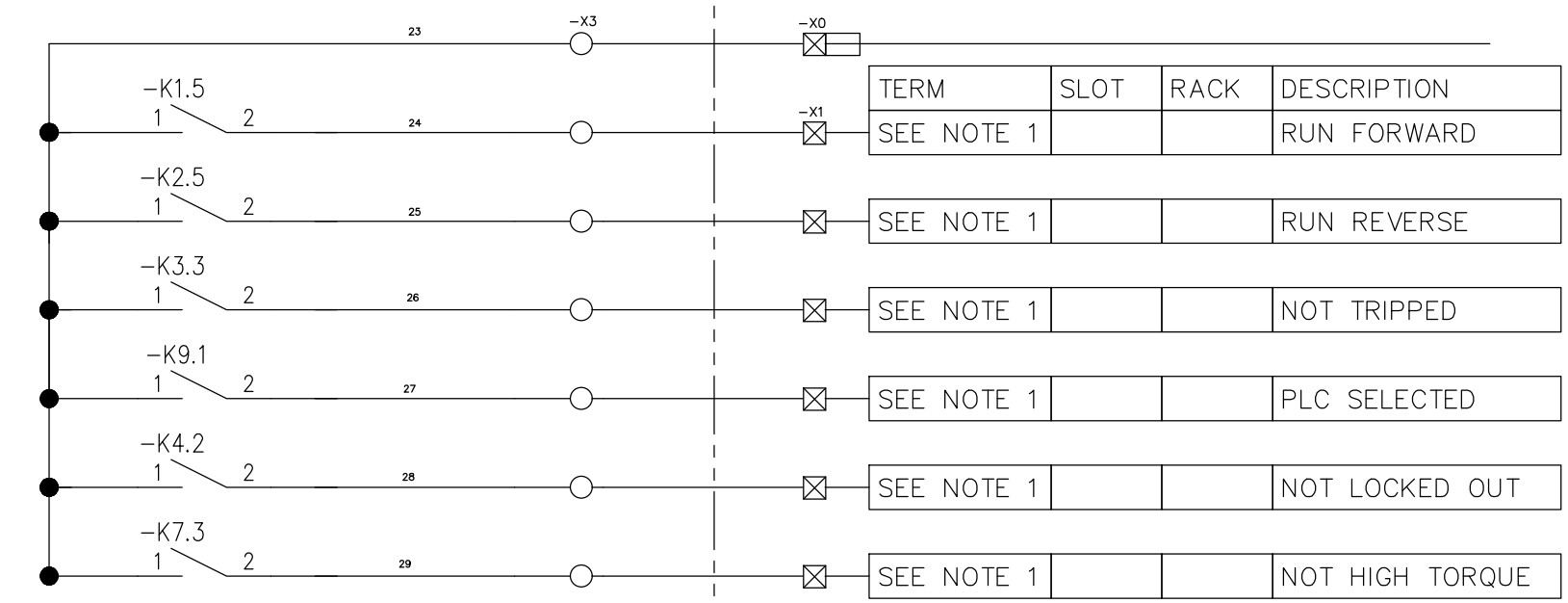
DEPARTMENT		APPROVED		DESIGNATION		DATE																													
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.					
 ATANA Legacy Awaits Building No. 5 Country Club Estate 21 Woodlands 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 WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKS RUST PUMP STATION MOTOR CONTROL CENTRE SINGLE LINE DIAGRAM				DATE		NTS		C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW NUMBER			
								C02		ISSUED FOR RE-TENDER														D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER							
																												BW1400-RHD-C1-02-D-E-0253							
																												FILE No							
																												JW13605							
								DRAWN		E. BALDREY																									
								CHECKED		E. BALDREY																									
								SERVICES CHECKED																											
GEOTECHNICAL INVESTIGATION																																			
SERVITUDES																																			
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		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						
		DRAWN	E. BALDREY										
		CHECKED	E. BALDREY										
		SERVICES CHECKED											
		GEOTECHNICAL INVESTIGATION											
		SERVITUDES											
		APPROVED DITHOLO PHOGOOLE Pr. Eng. No. 20060098											
		DATE											
C01	ISSUED FOR TENDER	D. PHOGOOLE	FEB 25	JW NUMBER									
C02	ISSUED FOR RE-TENDER	D. PHOGOOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0254									
				CONSULTANT'S NUMBER									
				BW1400-RHD-C1-02-D-E-0254									
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C02													

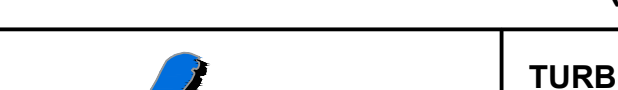
TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.



DIGITAL OUTPUT CARD

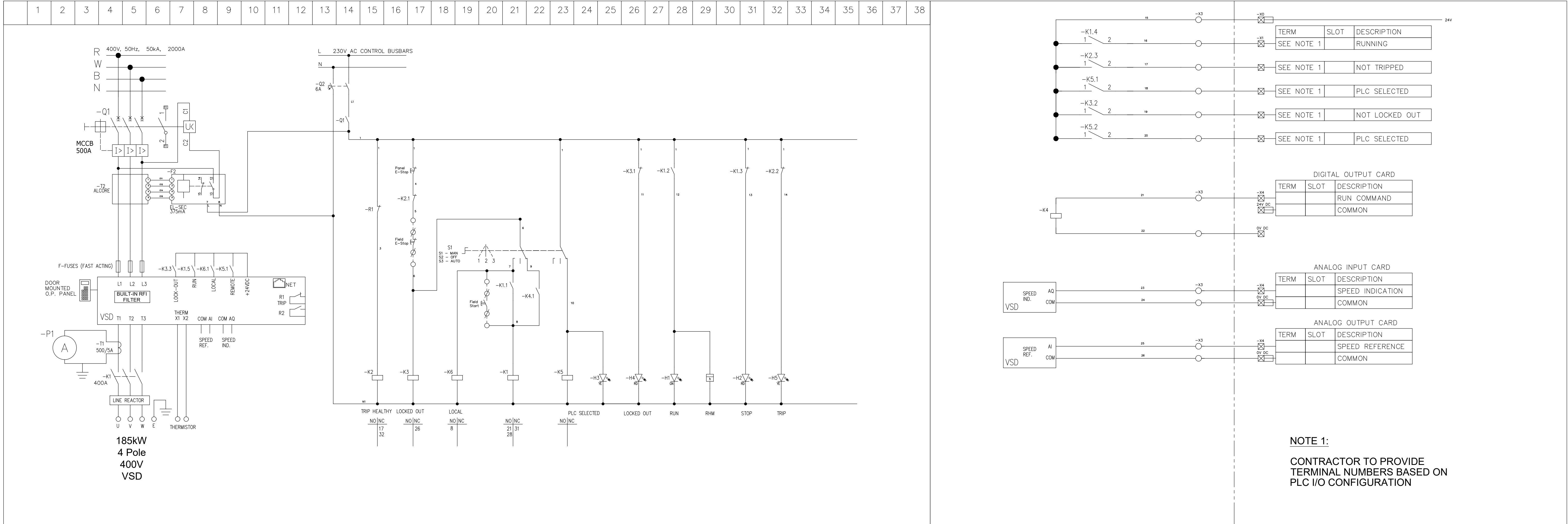
TERM	SLOT	RACK	DESCRIPTION
			START FORWARD
			COMMON
			START REVERSE
			COMMON
			TORQUE RESET
			COMMON

DEPARTMENT	APPROVED	DESIGNATION	DATE

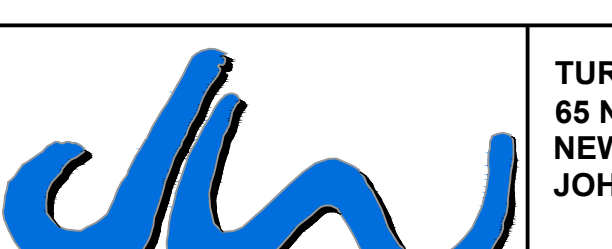
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED	DATE	DRAWING No.										
ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	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 SCREEN FORWARD/REVERSE DOL STARTER (Sht 2 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-0255					
		CHECKED	E. BALDREY											CONSULTANT'S NUMBER									
		SERVICES CHECKED												BW1400-RHD-C1-02-D-E-0255									
		GEOTECHNICAL INVESTIGATION												FILE No									
		SERVITUDES												JW13605									
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Pr. Eng. No.	20060098																						
DATE								C02															

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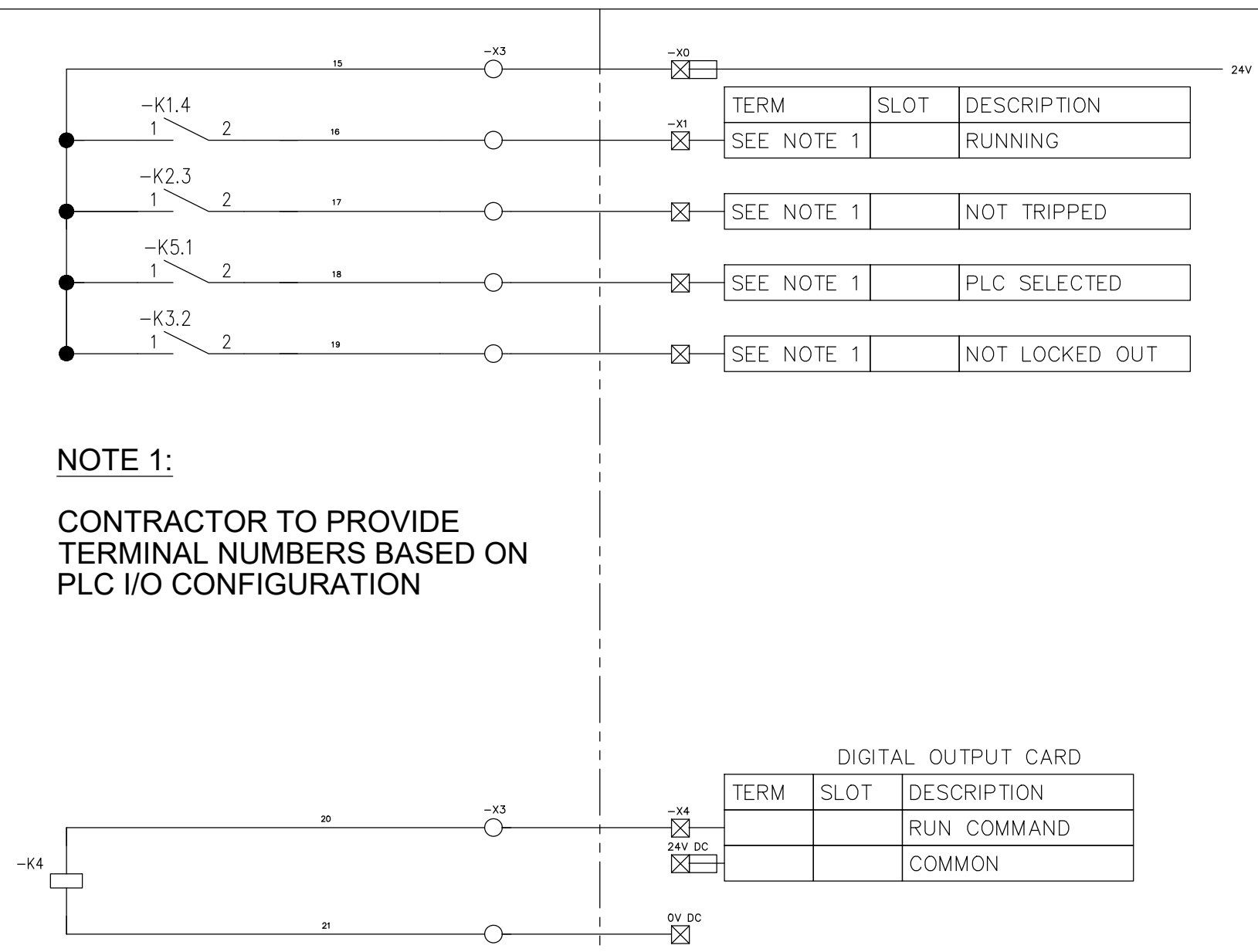
TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.

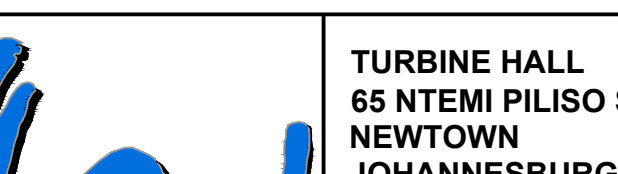


DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS		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	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 MAIN PUMP VSD STARTER (Sht 3 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-0256					
		DRAWN	E. BALDREY								CONSULTANT'S NUMBER					
		CHECKED	E. BALDREY								BW1400-RHD-C1-02-D-E-0256					
		SERVICES CHECKED									FILE No					
		GEOTECHNICAL INVESTIGATION									JW13605					
		SERVITUDES									C02					
		APPROVED	DITHOLO PHOGOLE													
		Pr. Eng. No.	20060098													
		DATE														

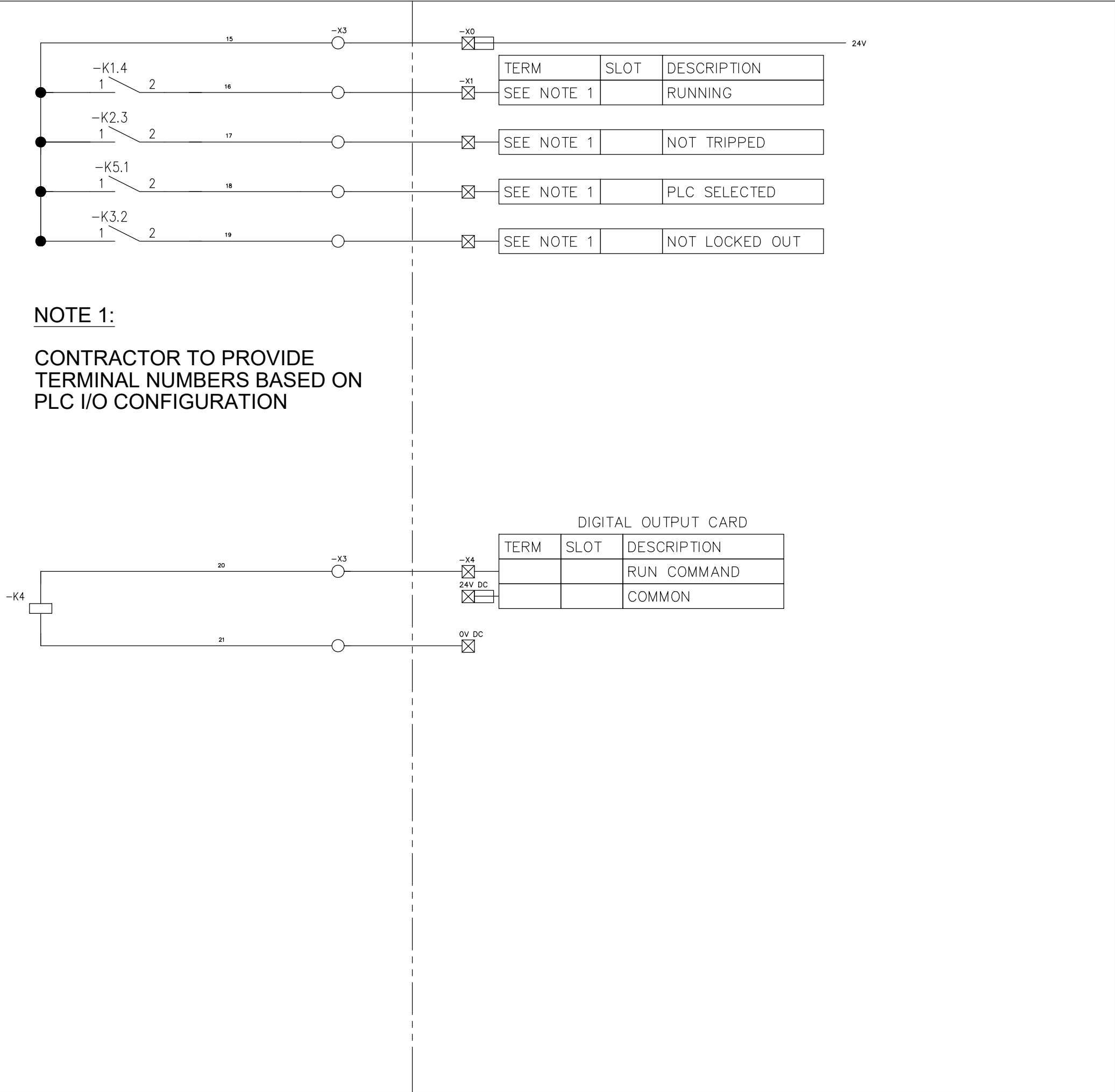
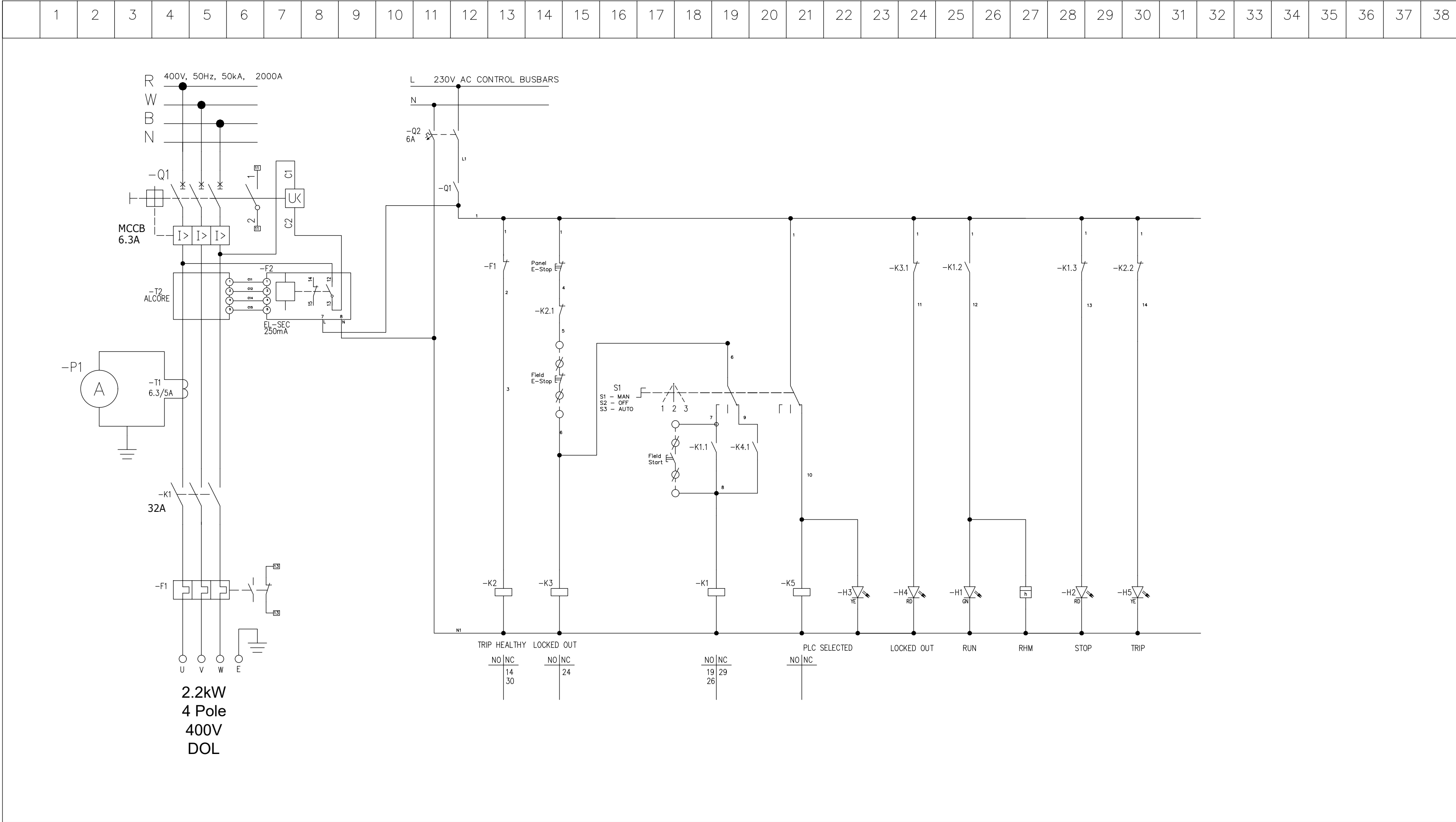
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CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo 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 WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION MCC SCHEMATIC DIAGRAM SCREENING CONVEYOR DOL STARTER (Sht 4 of 11)	DATE			NTS	C01			
		C02	ISSUED FOR RE-TENDER					D. PHOGOLE	FEB 26		C02			

NOTES:

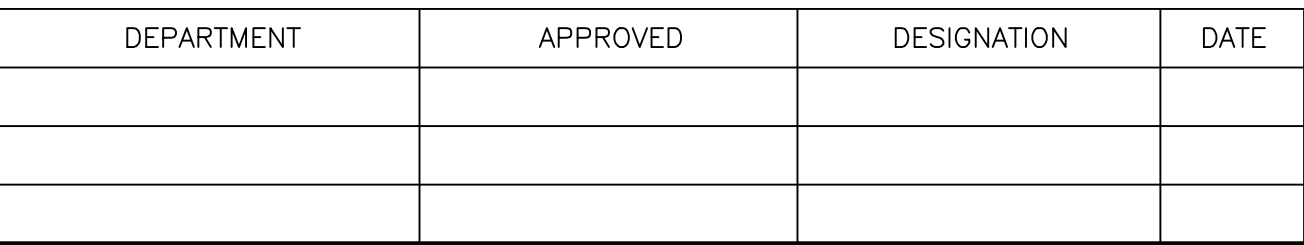
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DEPARTMENT	APPROVED	DESIGNATION	DATE

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 DOL STARTER (Sht 5 of 11)			NTS	C01			ISSUED FOR TENDER	D. PHOGOLE
		C02	ISSUED FOR RE-TENDER				D. PHOGOLE	FEB 26		JW14466R-RHD-C1-02-D-E-0258				
										CONSULTANT'S NUMBER				
										BW1400-RHD-C1-02-D-E-0258				
										FILE No				
										JW13605				
										C02				

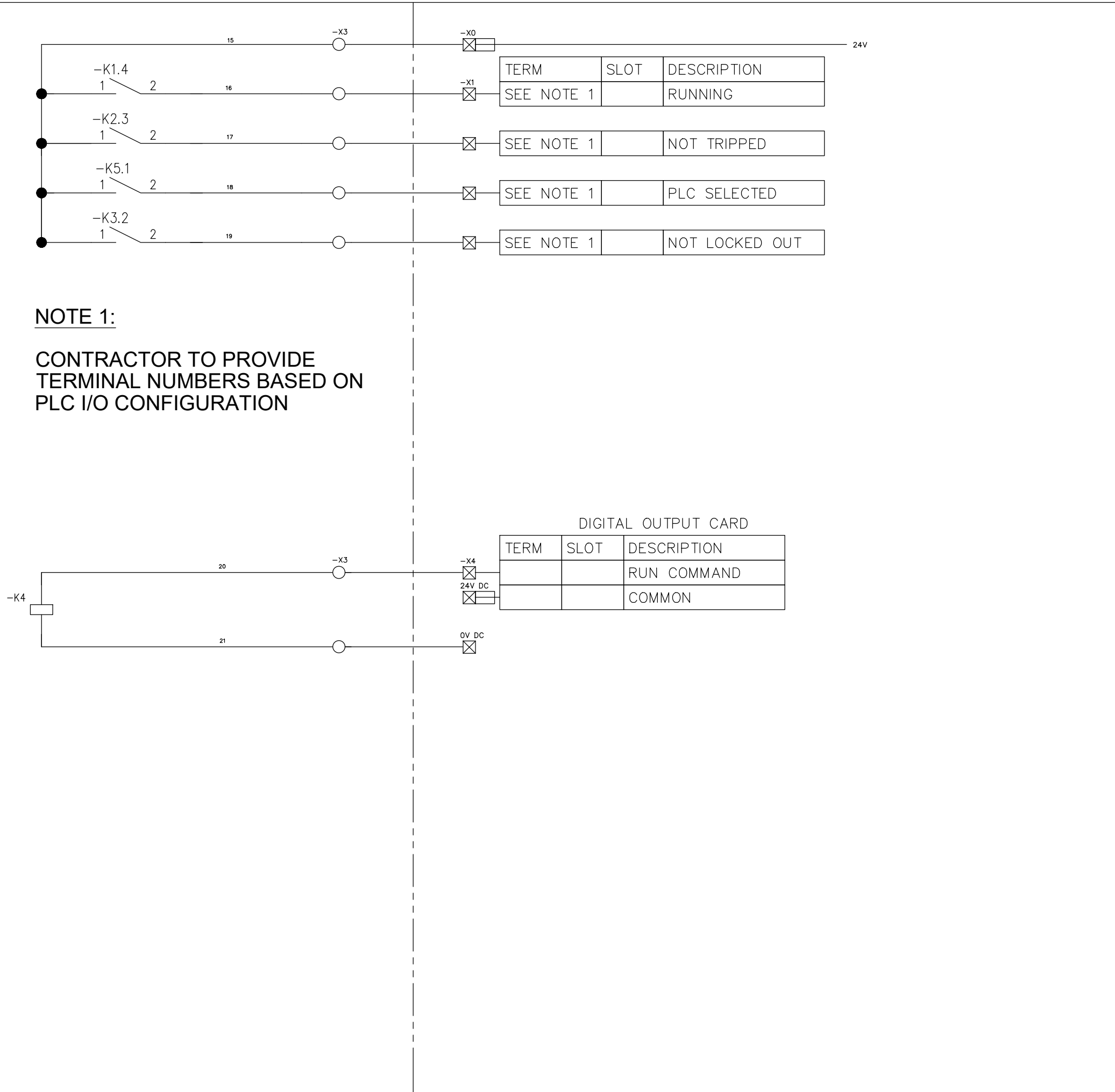
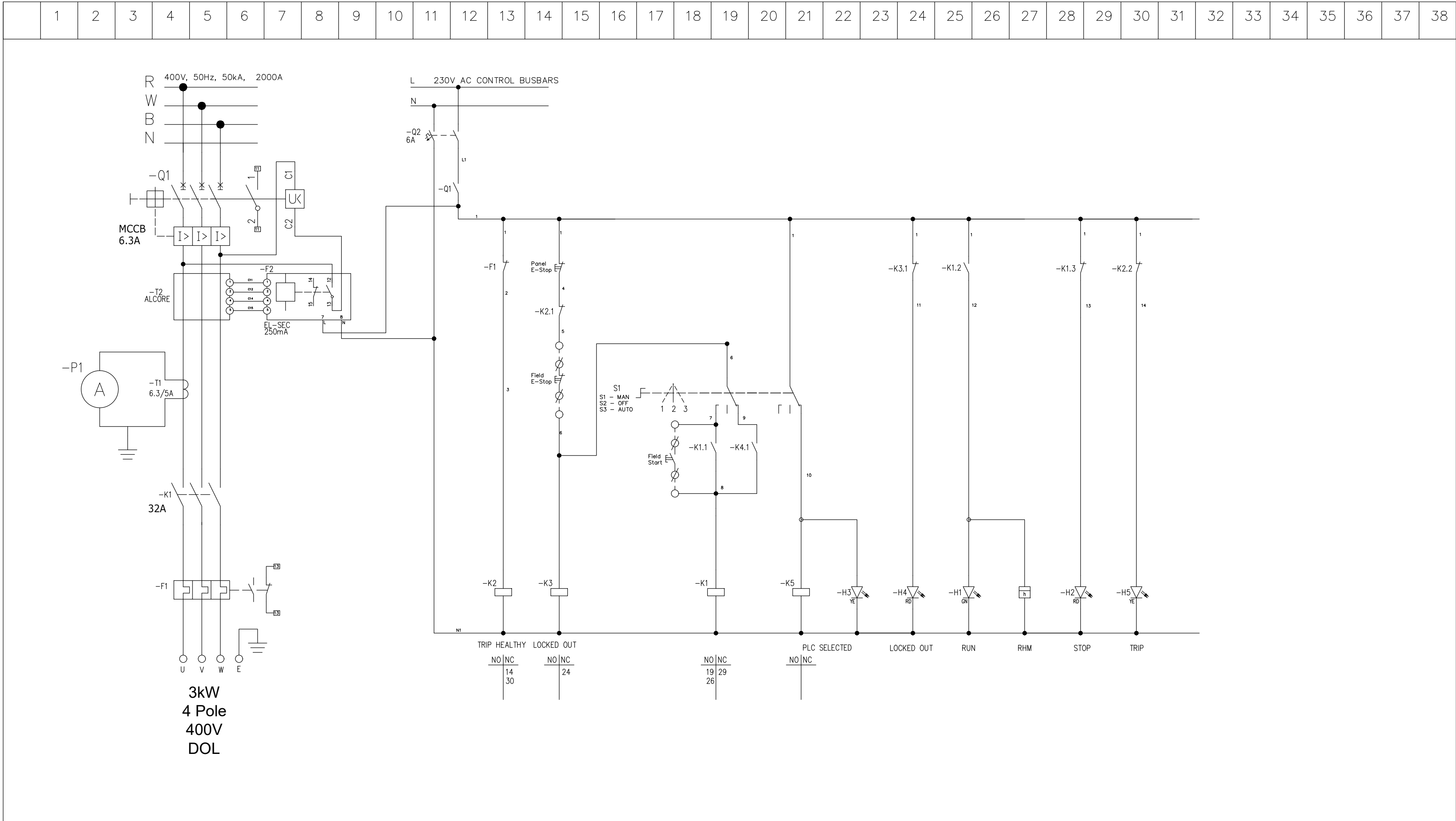
TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF DETAILED MCC SCHEMATICS, TO BE ISSUED TO THE CLIENT FOR APPROVAL, PRIOR TO PANEL MANUFACTURE.



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		CONSULTING ENGINEERS		SURVEYED DESIGNED DRAWN CHECKED SERVICES CHECKED GEOTECHNICAL INVESTIGATION SERVITUDES APPROVED Pr. Eng. No. DATE E. BALDREY E. BALDREY E. BALDREY DITHOLO PHOGOLE 20060098		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		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
		NTS	C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER JW14466R-RHD-C1-02-D-E-02 CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0259 FILE No JW13605 C02											
C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26														
				OLIFANTSVLEI WWTW: VAN WYKSRUST PUMP STATION		DATE												
				INFRASTRUCTURE RENEWAL PLAN VAN WYKSRUST PUMP STATION MCC SCHEMATIC DIAGRAM SCREENING PRESS WASHER DOL STARTER (Sht 6 of 11)														

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.



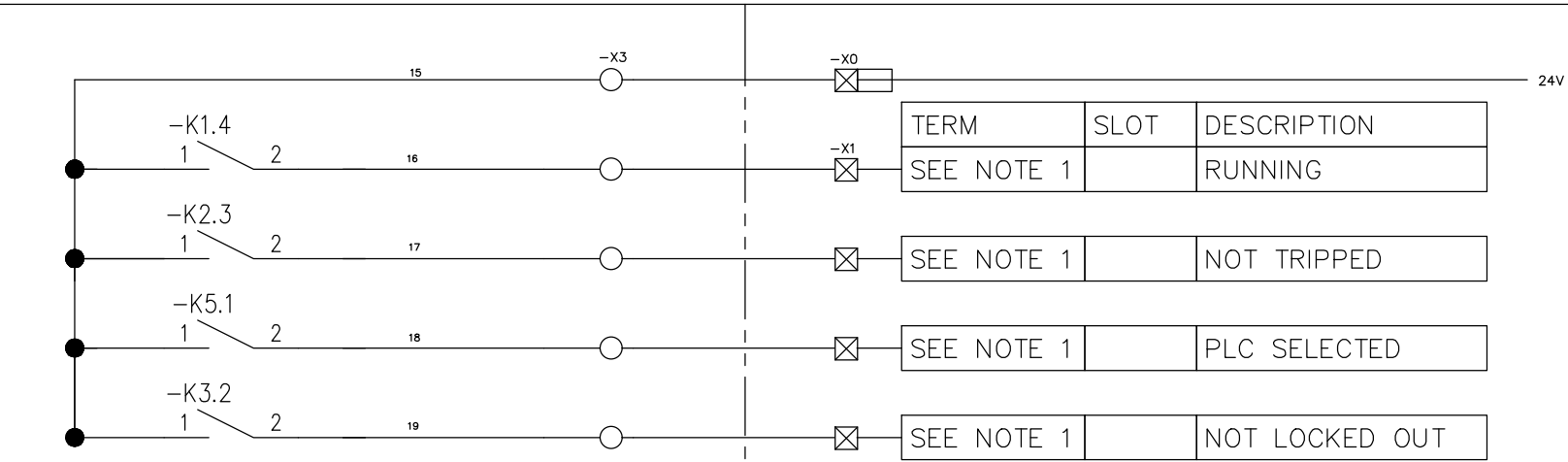
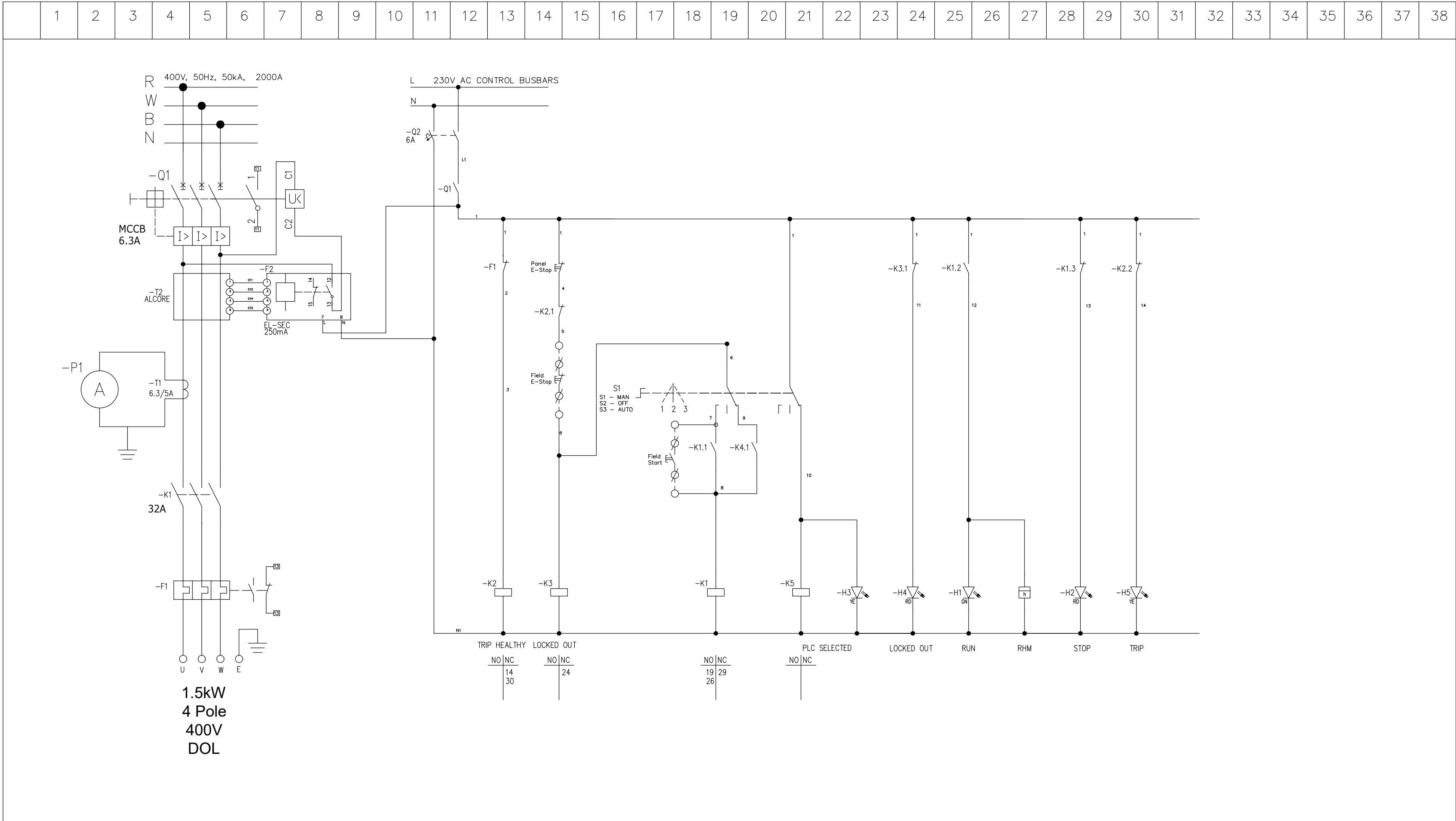
NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION

DEPARTMENT	APPROVED	DESIGNATION	DATE

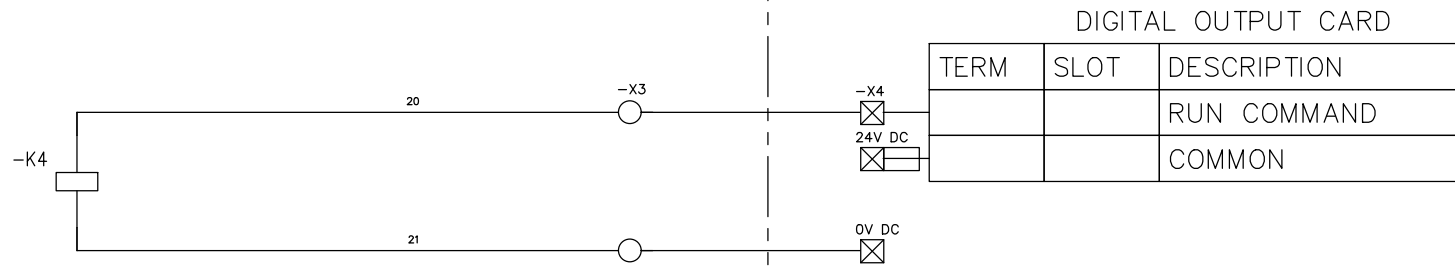
CONSULTING ENGINEERS			JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.
	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	SURVEYED			TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001 TEL: (011) 688-1400 FAX: (011) 688-1529	OLIFANTSVLEI WWTW: VAN WYKSrust PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSrust PUMP STATION MCC SCHEMATIC DIAGRAM WASH WATER PUMP DOL STARTER (Sht 7 of 11)			NTS	C01			
		DESIGNED	E. BALDREY				C02	ISSUED FOR RE-TENDER		D. PHOGOLE	FEB 26	JW14466R-RHD-C1-02-D-E-0260	
		DRAWN	E. BALDREY									CONSULTANT'S NUMBER	
		CHECKED	E. BALDREY									BW1400-RHD-C1-02-D-E-0260	
		SERVICES CHECKED										FILE No	
		GEOTECHNICAL INVESTIGATION										JW13605	
		SERVITUDES										C02	
		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.



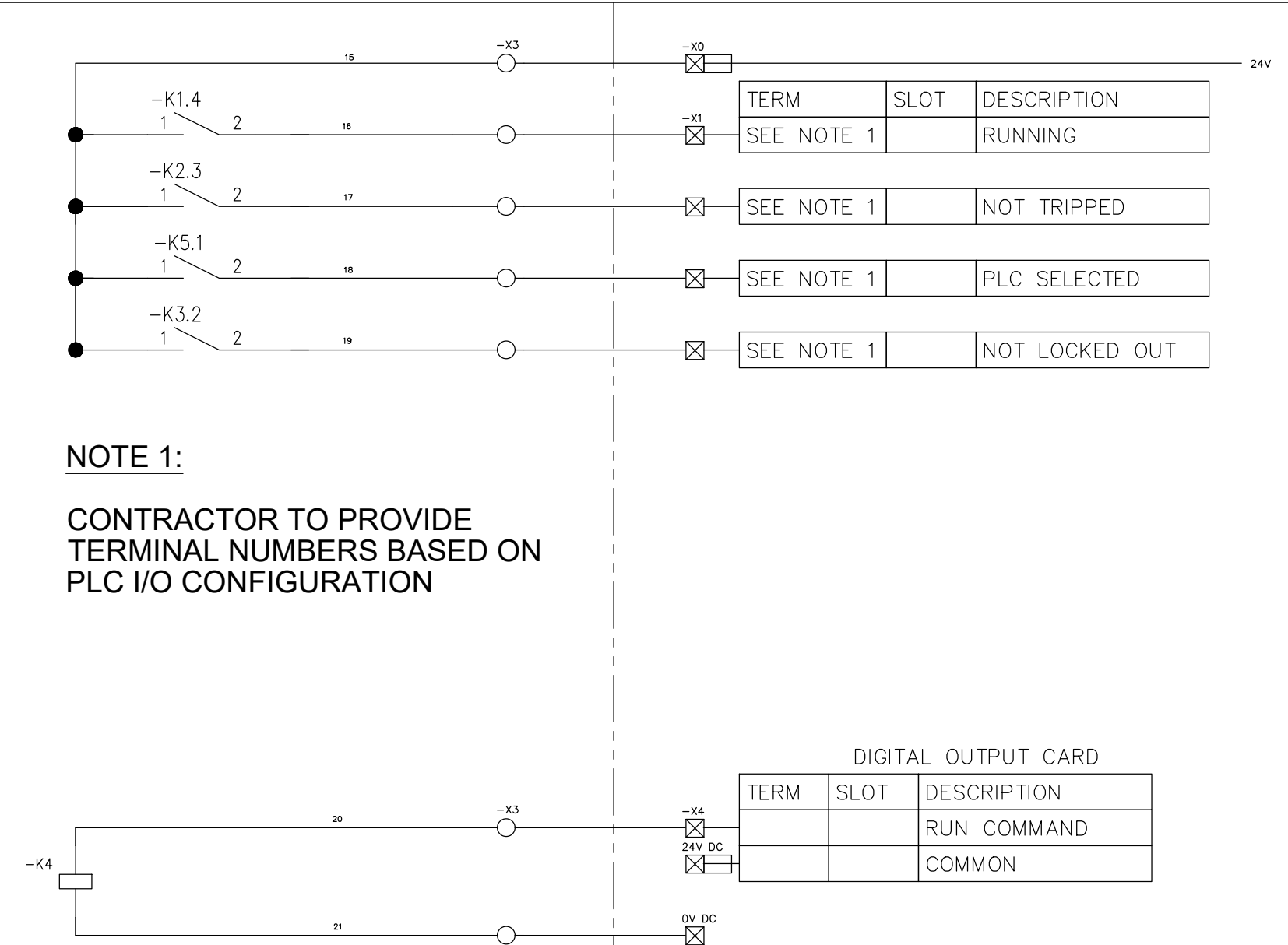
NOTE 1:
CONTRACTOR TO PROVIDE
TERMINAL NUMBERS BASED ON
PLC I/O CONFIGURATION



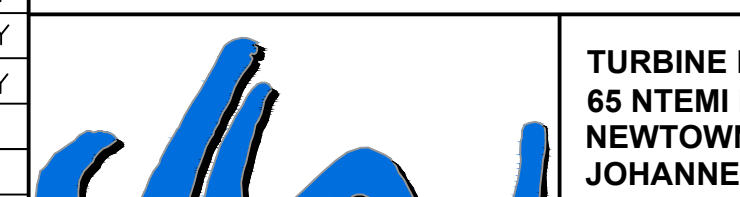
DEPARTMENT	APPROVED	DESIGNATION	DATE

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 WYKSURST PUMP STATION INFRASTRUCTURE RENEWAL PLAN VAN WYKSURST PUMP STATION MCC SCHEMATIC DIAGRAM PUMP STATION SUMP PUMP DOL STARTER (Sht 8 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-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									C02													
		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.



DEPARTMENT	APPROVED	DESIGNATION	DATE

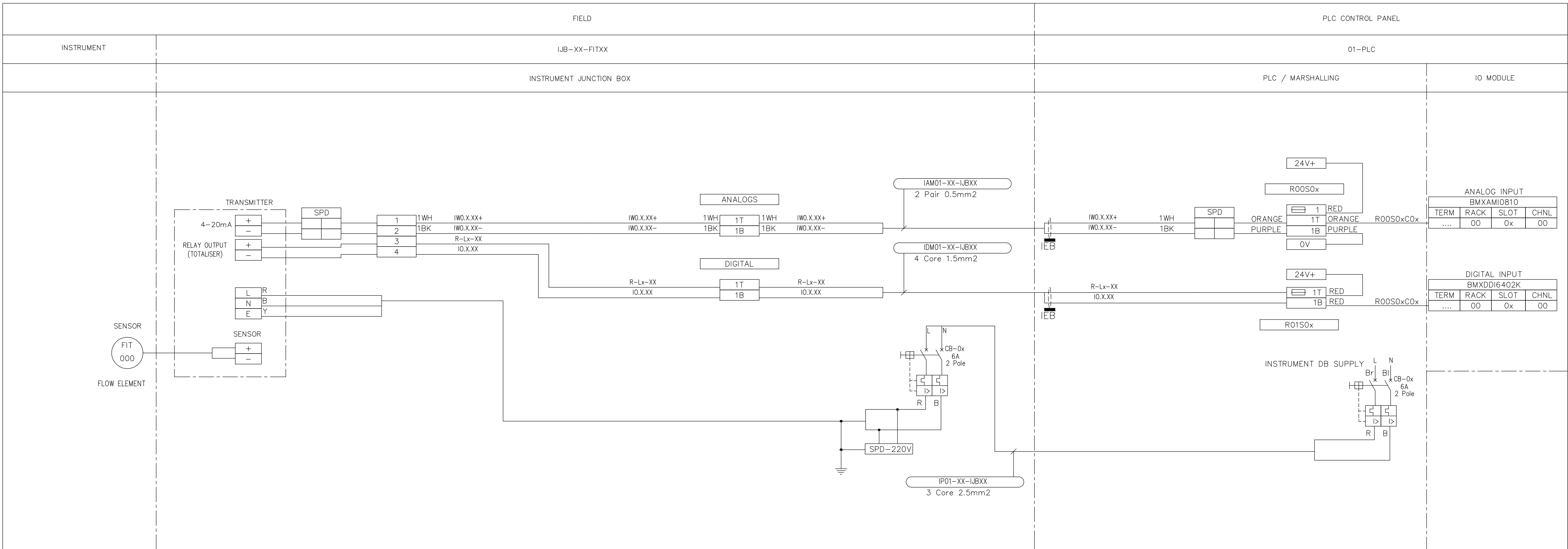
CONSULTING ENGINEERS		SURVEYED		JOHANNESBURG WATER (SOC) LTD		CITY OF JOHANNESBURG		DESIGN MANAGER	SCALE	AMENDMENTS		APPROVED	DATE	DRAWING No.				
 ATANA Legacy Awaits	Building No. 5 Country Club Estate 21 Woodlands Drive Woodmead 2191 PO Box 867 Gallo Manor 2052 Tel No. +27 87 352 1500	DESIGNED	E. BALDREY	 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)				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-0262						
		CONSULTANT'S NUMBER																
		BW1400-RHD-C1-02-D-E-0262																
		FILE No																
		JW13605																
		C02																
DATE		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.

[illegible]

NOTES:

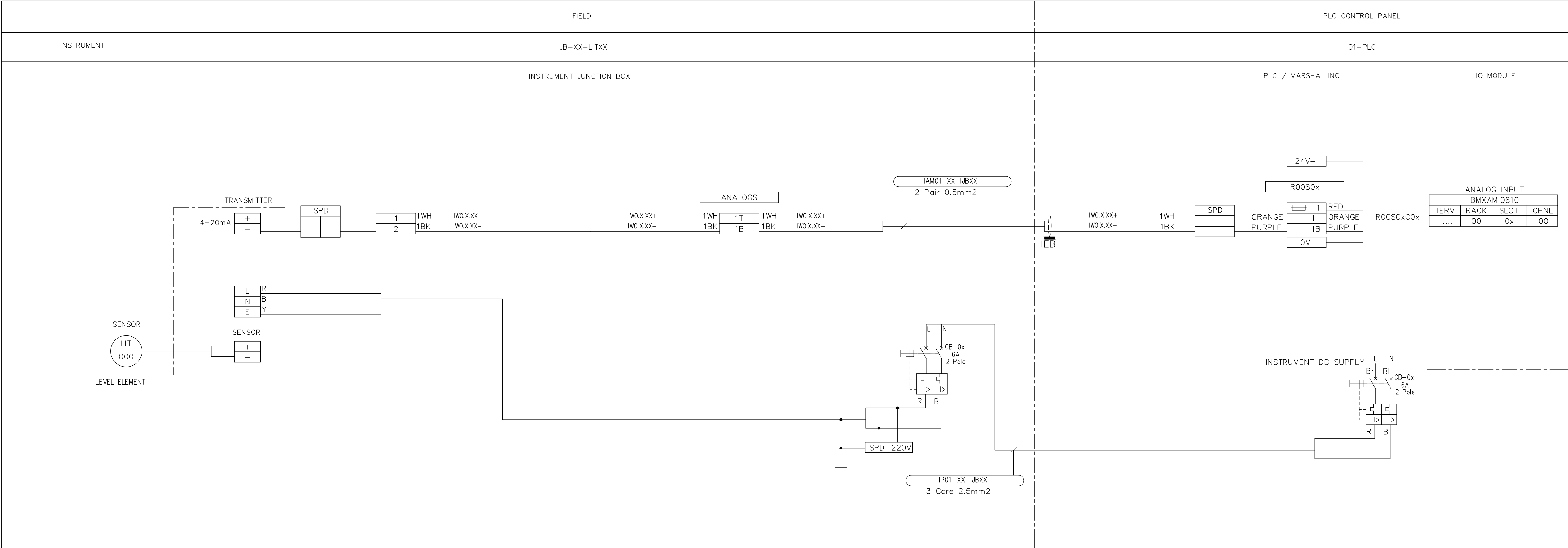
TYPICAL DRAWINGS, THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF INSTRUMENT LOOP DRAWINGS, TO BE ISSUED TO THE CLIENT FOR APPROVAL PRIOR TO INSTALLATION.



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				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 TYPICAL INSTRUMENT LOOP DIAGRAMS FLOW TRANSMITTER (Sht 1 of 5)				C01	ISSUED FOR TENDER	D. PHOGOLE	FEB 25	JW NUMBER JW14466R-RHD-C1-02-D-E-0265							
					DRAWN	E. BALDREY									C02	ISSUED FOR RE-TENDER	D. PHOGOLE	FEB 26	CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0265							
					CHECKED	E. BALDREY													FILE No JW 13605							
					SERVICES CHECKED																					
					GEOTECHNICAL INVESTIGATION																					
					SERVITUDES																					
					APPROVED	DITHOLO PHOGOLE																				
					Pr. Eng. No.	20060098																				
DATE																										

NOTES:

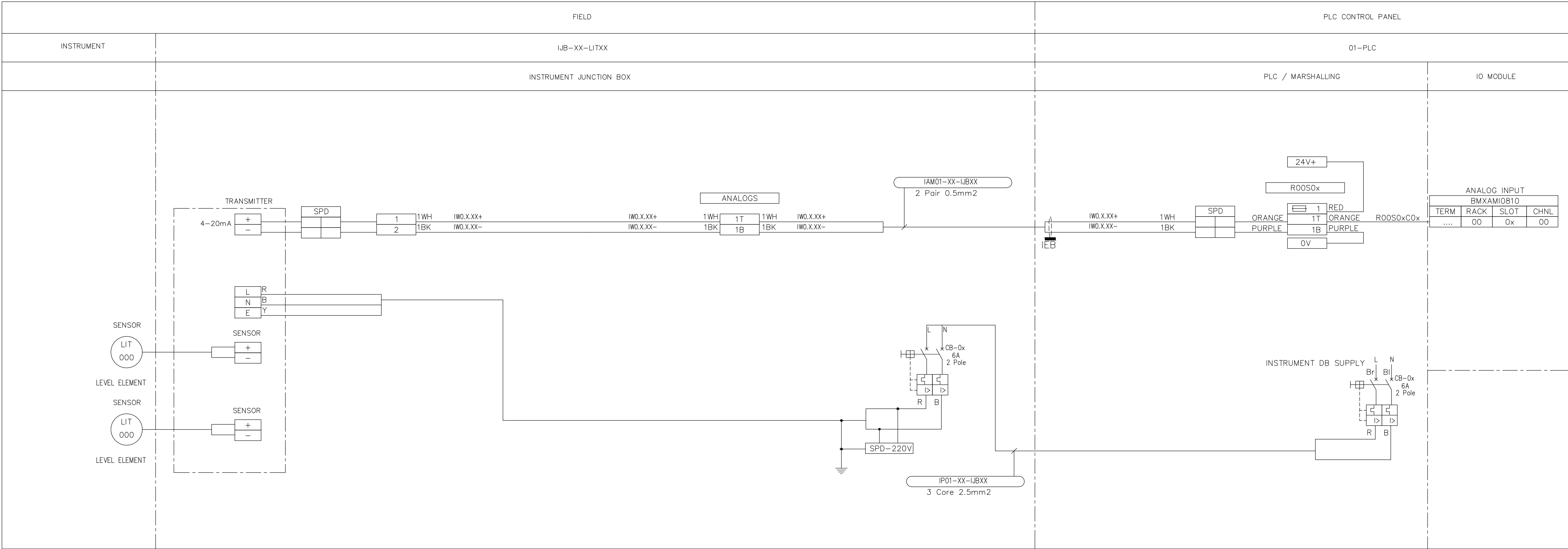
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DEPARTMENT		APPROVED		DESIGNATION		DATE																																			
CONSULTING ENGINEERS								SURVEYED				JOHANNESBURG WATER (SOC) LTD				CITY OF JOHANNESBURG				DESIGN MANAGER		SCALE		AMENDMENTS		APPROVED		DATE		DRAWING No.											
 Building 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 TEL: (011) 688-1400 FAX: (011) 688-1529		OLIFANTSVLEI WWTW: VAN WYKS RUST PUMP STATION INFRASTRUCTURE RENEWAL PLAN TYPICAL INSTRUMENT LOOP DIAGRAMS LEVEL TRANSMITTER (Sht 2 of 5)																		JW NUMBER									
								DRAWN		E. BALDREY																						C01		ISSUED FOR TENDER		D. PHOGOLE		FEB 25		JW14466-RHD-C1-02-D-E-0266	
								CHECKED		E. BALDREY																						C02		ISSUED FOR RE-TENDER		D. PHOGOLE		FEB 26		CONSULTANT'S NUMBER	
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								SERVITUDES																																JW13605	
APPROVED		DITHOLO PHOGOLE																																							
Pr. Eng. No.		20060098																																							
DATE																																									

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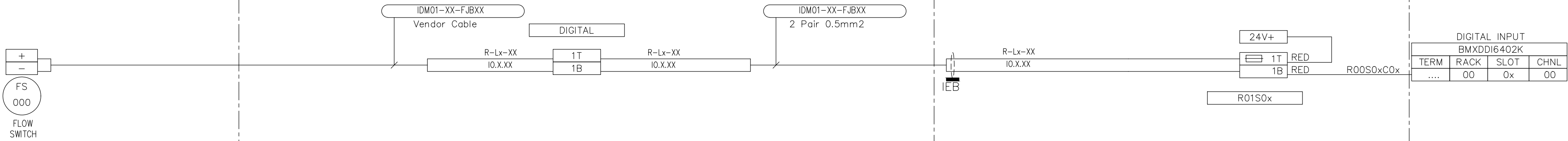
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DEPARTMENT	APPROVED	DESIGNATION	DATE

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	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 SCREEN DIFFERENTIAL LEVEL TRANSMITTER (Sht 3 of 5)							
		CHECKED	E. BALDREY										
		SERVICES CHECKED											
		GEOTECHNICAL INVESTIGATION											
		SERVITUDES											
		APPROVED	DITHOLO PHOGOLE										
				Pr. Eng. No.	20060098			DATE					
				DATE									

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.



CONSULTING ENGINEERS	
	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)

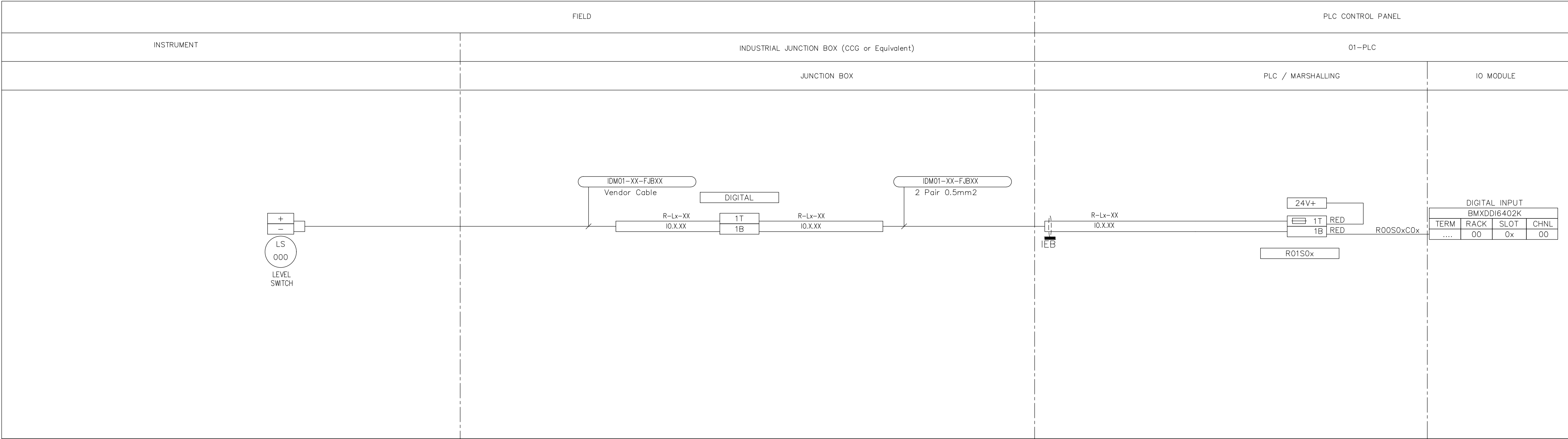
SCALE

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

DRAWING No.				
JW NUMBER				
JW114466-RHD-C1-02-D-E-0268				
CONSULTANT'S NUMBER				
BW1400-RHD-C1-02-D-E-0268				
FILE No				
JW13605				
C02				

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.							
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 LEVEL SWITCH (Sht 5 of 5)				DATE				C01		ISSUED FOR TENDER		D. PHOGOOLE		FEB 25		JW NUMBER JW14466-RHD-C1-02-D-E-0269					
								C02		ISSUED FOR RE-TENDER														D. PHOGOOLE		FEB 26		CONSULTANT'S NUMBER BW1400-RHD-C1-02-D-E-0269									
																												FILE No JW13605									
								APPROVED		DITHOLO PHOGOOLE																											
								Pr. Eng. No.		20060098																											
								DATE																													