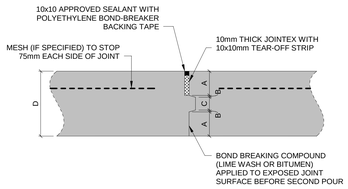
SLAB DEPTH (D)mm	(A)	(B)	(C)	(E)
100	37	3	20	10
125	47	3	25	13
150	56	4	30	15
175	66	4	35	18
200	75	5	40	20
225	85	5	45	23
250	94	6	50	25

APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748



CJ1 SEALED KEYED CONSTRUCTION JOINT

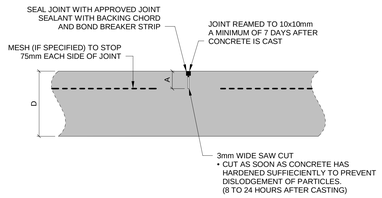
B-DE-0015-01 | SCALE 1 : 5

SLAB DEPTH (D)mm	(A)mm
100	25
125	35
150	40
175	45
200	50
225	55
250	65

APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM

PROSTRUCT 748

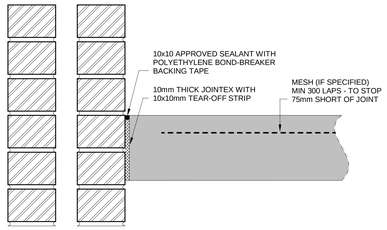


SJ1 SEALED SAW CUT JOINT

B-DE-0015-01 | SCALE 1 : 5

APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748



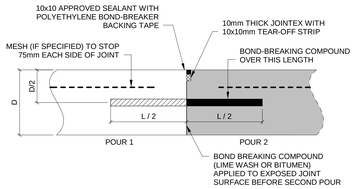
IJ1 SEALED ISOLATION JOINT - COLUMNS & WALLS

B-DE-0015-01 | SCALE 1 : 5

SLAB DEPTH (D)mm	LENGTH (L)	DIAMETER (Ø)
100	300	R16
125	300	R16
150	350	R20
175	350	R25
200	350	R25
225	450	R32
250	450	R32

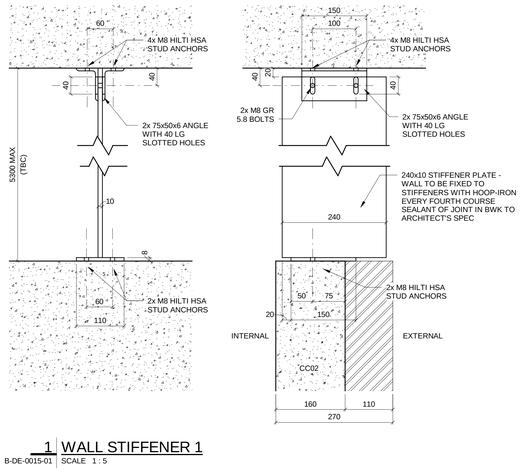
APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748



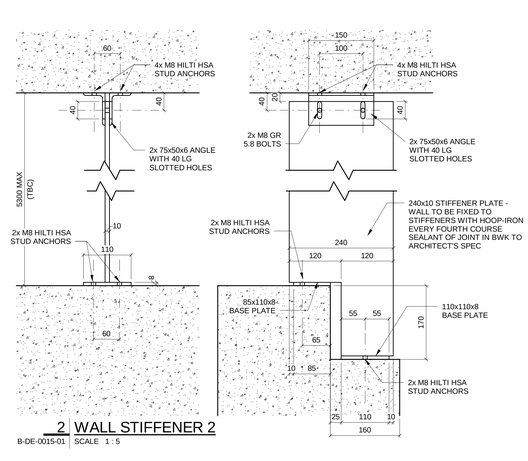
CJ2 SEALED DOWELED CONSTRUCTION JOINT

B-DE-0015-01 | SCALE N.T.S



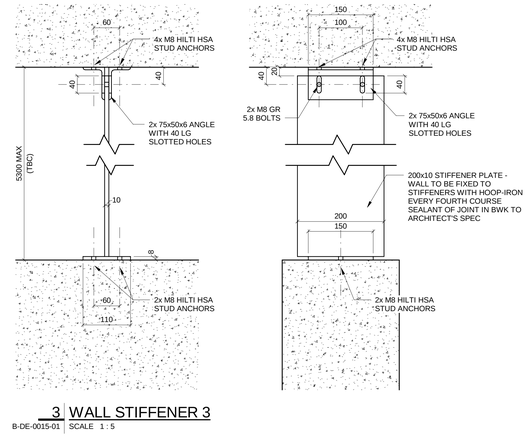
1 WALL STIFFENER 1

B-DE-0015-01 | SCALE 1 : 5



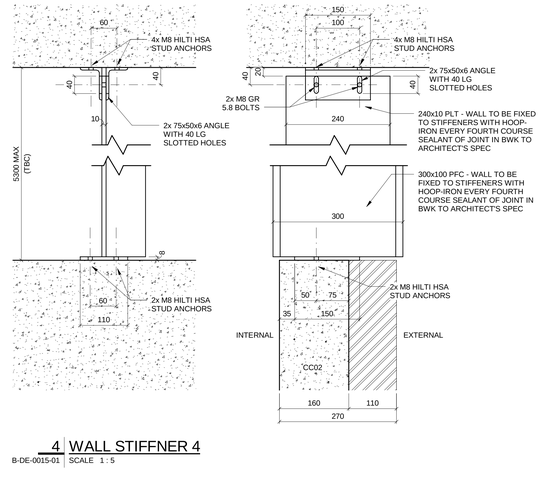
2 WALL STIFFENER 2

B-DE-0015-01 | SCALE 1 : 5



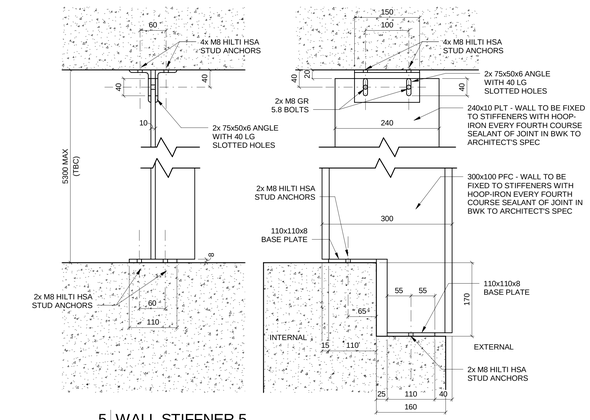
3 WALL STIFFENER 3

B-DE-0015-01 | SCALE 1 : 5



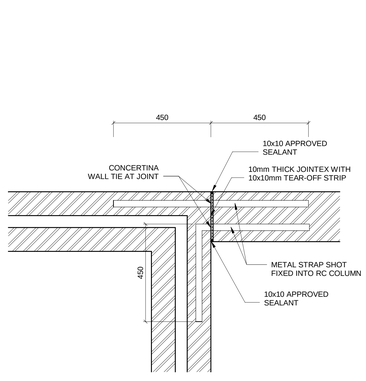
4 WALL STIFFNER 4

B-DE-0015-01 | SCALE 1 : 5



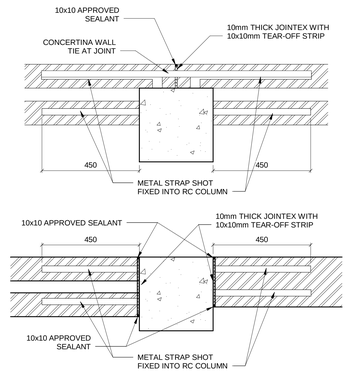
5 WALL STIFFNER 5

B-DE-0015-01 | SCALE 1 : 5



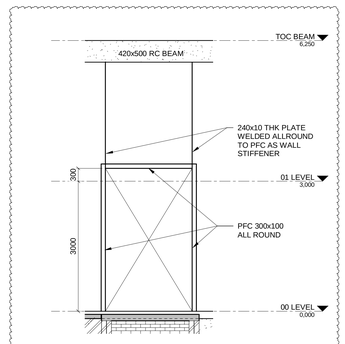
6 BRICKWALL EXPANSION JOINT (EJ1)

B-DE-0015-01 | SCALE 1 : 10



7 RC COLUMN / BRICKWALL JOINT

B-DE-0015-01 | SCALE 1 : 10



8 WALL STIFFENER 4 & 5

B-DE-0015-01 | SCALE 1 : 50 | 02

MASTER
03-07-2020

NOTES

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2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD/APPD	DATE
02	DOOR SIZE AMENDED	A H	HVW / SWM	01-07-20
01	NOTES REVISED	CVH	HVW / SWM	21-06-18
00	ISSUED FOR CONSTRUCTION	DA	HVW / SWM	14-06-18

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	AH		01 07 20
CHECKED	HVW		01 07 20
DESIGNED	IG		01 07 20
CHECKED	SW M		01 07 20

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		01 07 20
REG. NUMBER	20090106	

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
TYPICAL DETAILS - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A 1 9 2 4 7 0 1	2	5 1 0	B	D E	0 0 1 5	0 1	02	AE

SCALE: AS SHOWN

SLAB DEPTH (D)mm	(A)	(B)	(C)	(E)
100	37	3	20	10
125	47	3	25	13
150	56	4	30	15
175	66	4	35	18
200	75	5	40	20
225	85	5	45	23
250	94	6	50	25

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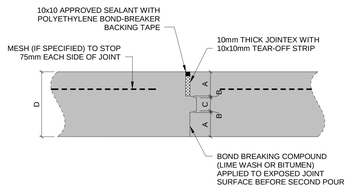
- DURAKOL GHM
- PROSTRUCT 748



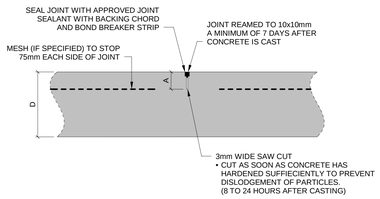
CJ1 | SEALED KEYED CONSTRUCTION JOINT

B-DE-0016-01 | SCALE 1 : 5

SLAB DEPTH (D)mm	(A)mm
100	25
125	35
150	40
175	45
200	50
225	55
250	65

APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748

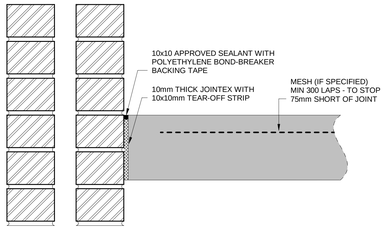


SJ1 | SEALED SAW CUT JOINT

B-DE-0016-01 | SCALE 1 : 5

APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748



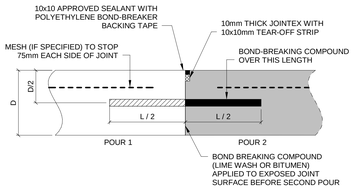
IJ1 | SEALED ISOLATION JOINT - COLUMNS & WALLS

B-DE-0016-01 | SCALE 1 : 5

SLAB DEPTH (D)mm	LENGTH (L)	DIAMETER (Ø)
100	300	R16
125	300	R16
150	350	R20
175	350	R25
200	350	R25
225	450	R32
250	450	R32

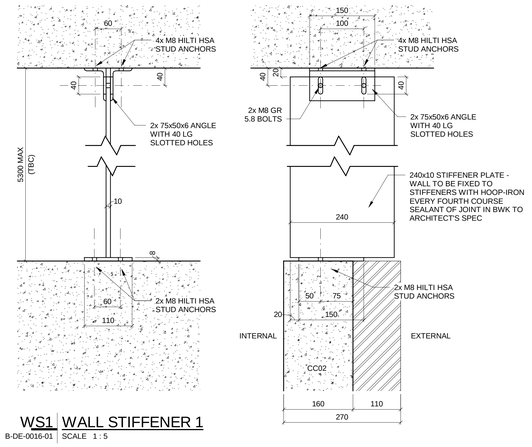
APPROVED JOINT SEALANTS:

- SIKAFLEX 11FC+ or PRO-3
- DURAKOL GHM
- PROSTRUCT 748



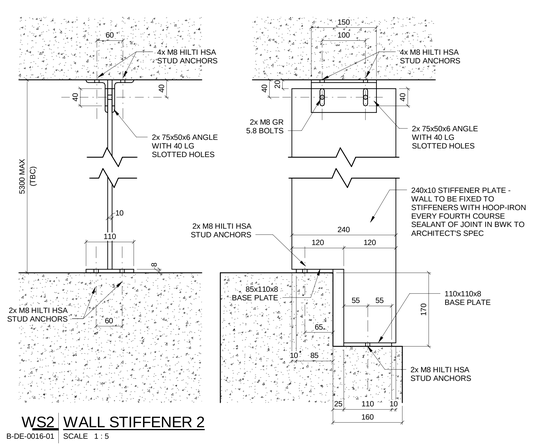
CJ2 | SEALED DOWELED CONSTRUCTION JOINT

B-DE-0016-01 | SCALE N.T.S



WS1 | WALL STIFFENER 1

B-DE-0016-01 | SCALE 1 : 5



WS2 | WALL STIFFENER 2

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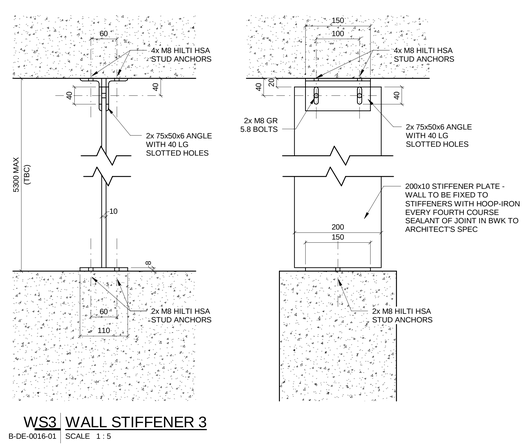
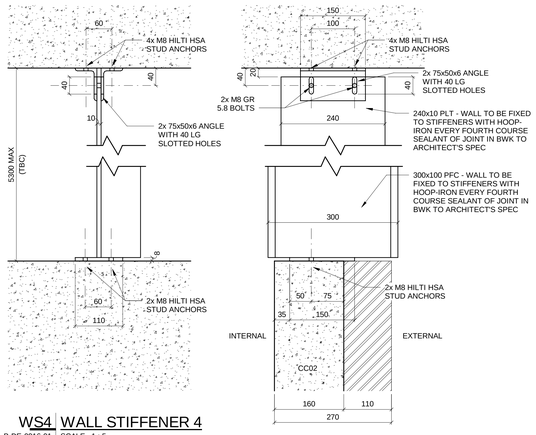


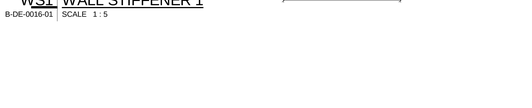
WS3 | WALL STIFFENER 3

B-DE-0016-01 | SCALE 1 : 5



WS4 | WALL STIFFENER 4

B-DE-0016-01 | SCALE 1 : 5



WS5 | WALL STIFFENER 5

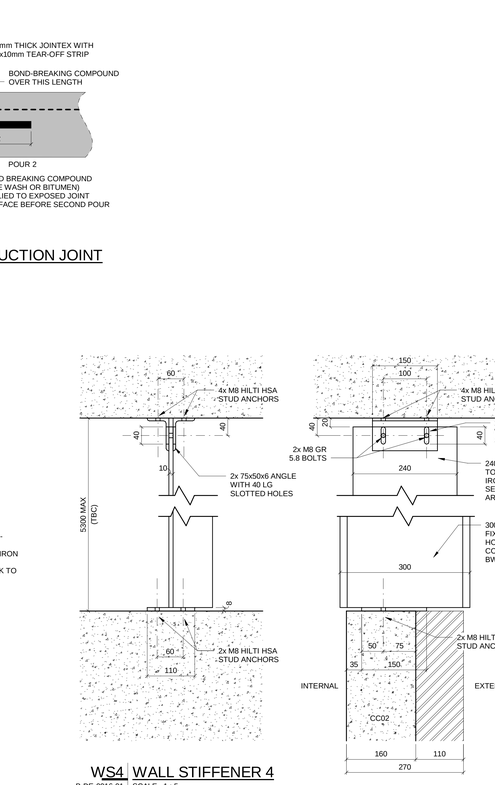
B-DE-0016-01 | SCALE 1 : 5

CBJ | RC COLUMN / BRICKWALL JOINT

B-DE-0016-01 | SCALE 1 : 10

EJ1 | BRICKWALL EXPANSION JOINT (EJ1)

B-DE-0016-01 | SCALE 1 : 10



WS4&5 | WALL STIFFENER 4 & 5

B-DE-0016-01 | SCALE 1 : 50

02

MASTER
03-07-2020

NOTES

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WATERSIDE PLACE, SOUTH GATE
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CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
02	DOOR SIZE AMENDED	AH	HVW	SWM	01-07-20
01	NOTES REVISED	CVH	HVW	SWM	21-06-18
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-18

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	AH		01 07 20
CHECKED	HVW		01 07 20
DESIGNED	I G		01 07 20
CHECKED	SW M		01 07 20

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	01 07 20
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000905/06
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8001
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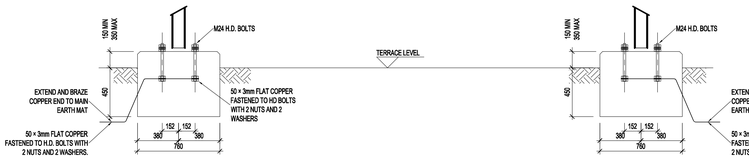
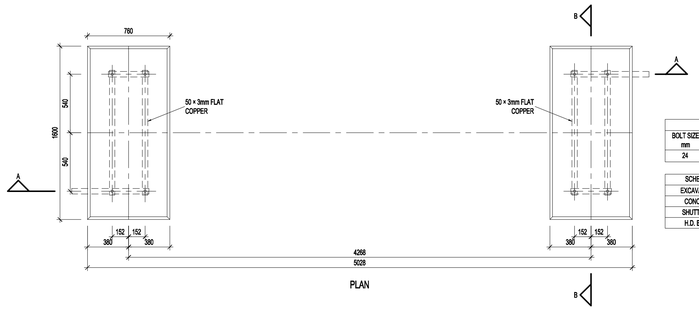
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
TYPICAL DETAILS - SHEET 1

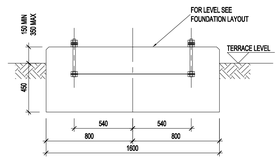
PROJECT NUMBER				OD		FBS			DIS	TYPE		DRAWING NO.			SHEET		REV	ID
A	1	9	2	4	7	0	1	2	5	1	0	B	D	E	0	0	1	6	0	1	02	AE



SECTION A-A



PLAN



SECTION B-B

CONSTRUCTION NOTES:

1. CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH AT 28 DAYS, 25MPA.
3. CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS , 15MPA.
4. ALL TOP EDGES OF FOUNDATION TO HAVE 25mm CHAMFER.
5. FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD AASHTO.
7. GROUT UNDER SUPPORT BASE PLATE.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
9. ONLY STEEL SHUTTERING MAY BE USED.
10. ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 75mm ABOVE FINISHED FOUNDATION LEVEL.
12. NON OXIDE IS TO BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
13. FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 2 × 3m TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
14. NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP TO BELOW 4 DEG CELICIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE nm
24	4.8	3	350	8	32	32	14.16	359-407

SCHEDULE OF QUANTITIES @ 150mm	
EXCAVATIONS	1.09m³
CONCRETE	1.46m³
SHUTTERING	2.36m²
H.D. BOLTS	20.25kg

BEARING CAPACITY	
FOUNDATION	150kPA

GEOTECH REPORT TO CONFIRM BEARING CAPACITY

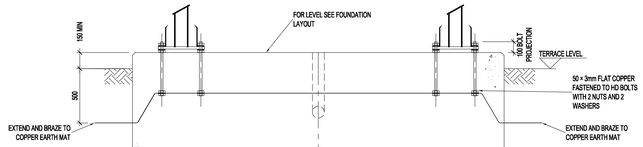
THREADED ROD (H.D. BOLT)

MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg

8 OFF

132kV ISOLATOR - LATTICE SUPPORT FOUNDATION DETAILS

SCALE 1:20



SECTION A-A

NOTES :

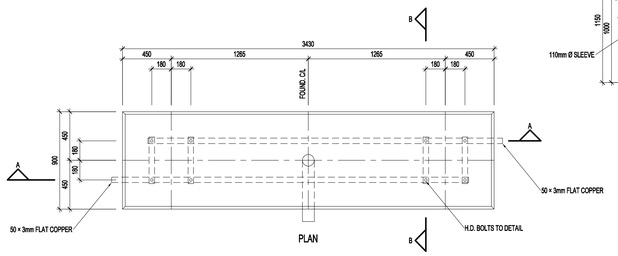
1. CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH AT 28 DAYS, 25MPA.
3. CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS , 15MPA.
4. ALL TOP EDGES OF FOUNDATION TO HAVE 25mm CHAMFER.
5. FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD AASHTO.
7. GROUT UNDER SUPPORT BASE PLATE.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
9. ONLY STEEL SHUTTERING MAY BE USED.
10. ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 150mm ABOVE FINISHED FOUNDATION LEVEL.
12. NON OXIDE IS TO BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
13. REINFORCING TO HAVE A MIN CONCRETE COVER OF 50mm.
14. ALL REINFORCING SPLICED TO HAVE A LAPPED LENGTH OF 42 × DIAMETER OF REINFORCING BAR.
15. ALL REINFORCING BARS TO BE MEASURED AND BENT IN ACCORDANCE TO SANS 1478.
16. IF THE FOUNDATION HEIGHT IS TO BE LIFTED, THE REINFORCING (MK1 AND MK2) MUST BE ADJUSTED ACCORDINGLY.
17. FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 2 × 3m TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
18. NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP TO BELOW 4 DEG CELICIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE nm
24	4.8	3	500	8	32	32	18.42	359-407

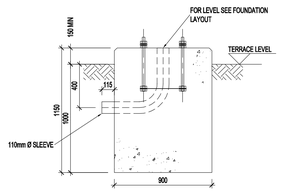
SCHEDULE OF QUANTITIES	
EXCAVATIONS	3.09m³
CONCRETE	3.55m³
SHUTTERING	2.17m²
FLAT COPPER	20.25kg
CLASS 6 uPVC SLEEVE 110mm Ø	

BEARING CAPACITY	
FOUNDATION	150kPA

GEOTECH REPORT TO CONFIRM BEARING CAPACITY



PLAN



SECTION B-B

SCHEDULE OF QUANTITIES	
EXCAVATIONS	3.09m³
CONCRETE	3.55m³
SHUTTERING	2.17m²
FLAT COPPER	20.25kg

BEARING CAPACITY	
FOUNDATION	150kPA

GEOTECH REPORT TO CONFIRM BEARING CAPACITY

THREADED ROD (H.D. BOLT)

MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg

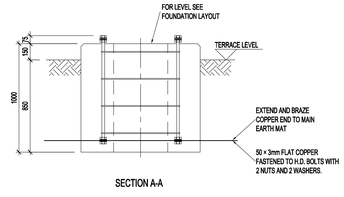
8 OFF

132kV CIRCUIT BREAKER - TUBULAR SUPPORT FOUNDATION DETAILS

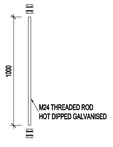
SCALE 1:20

NOTES:

1. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200 SPECIFICATION
2. CONCRETE STRENGTH TO BE 25MPA, AT 28 DAYS
3. 50MM BLINDING LAYER TO BE CAST UNDER ALL FOUNDATIONS, 15MPA AT 28DAYS
4. NO CONCRETE MAY BE POURED IF THE TEMPERATURE IS EXPECTED TO FALL UNDER 4 DEGREES CELSIUS WITHIN 8 HOURS OF POURING.
5. ALL TOP EDGES OF FOUNDATION TO HAVE A 25MM CHAMFER
6. FOR THE HEIGHT OF THE FOUNDATION SEE FOUNDATION LAYOUT
7. THE MATERIAL UNDERNEATH ALL FOUNDATIONS SHALL BE MOISTENED AND COMPACTED WITH A MECHANICAL PLATE COMPACTOR OR HAND COMPACTOR NOT LESS THAN 25KG IN WEIGHT. THE SOIL SHALL BE COMPACTED UNTIL NO FURTHER SETTLEMENT OCCURS.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATIONS TO EXTEND 100MM BELOW TERRACE LEVEL
9. ONLY STEEL SHUTTERING MAY BE USED
10. ONLY STEEL TEMPLATES MAY BE USED FOR SETTING H.D. BOLTS. DO NOT WELD TO BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 75MM ABOVE FINISHED FOUNDATION LEVEL UNLESS OTHERWISE SHOWN.
12. ALL H.D. BOLTS AND NUTS SHALL CONFORM WITH SABS 135, GRADE 4.8
13. COVER TO REINFORCEMENT SHALL BE 50MM, TO BOTTOM, TOP AND SIDES WHERE FOUNDATIONS ARE REINFORCED.
14. ALL EARTHING TO CONFORM WITH NOTES ON SUBSTATION EARTHING DRAWING.



SECTION A-A

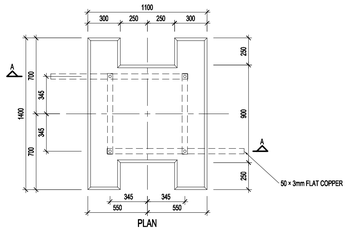


THREADED ROD (H.D. BOLT)

REINFORCEMENT SCHEDULE FOUNDATION							
MK	TYPE & SIZE	QTY	LENGTH (m)		MASS kg	SHAPE CODE	BENDING & REMARKS
			CUT (m)	TOTAL (m)			
3	R8	4	3.15	12.6	4.98	60	722 / 722

BOLT SCHEDULE						
BOLTS SIZE mm	PITCH mm	LENGTH mm	QTY	MASS kg	MILD STEEL BOLTS, GRADE	TORQUE nm
24	3	1000	4	15.92	4.8	300

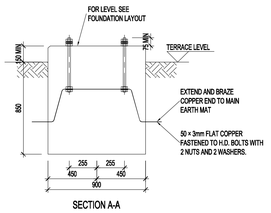
SCHEDULE OF QUANTITIES @ 150mm	
EXCAVATIONS	1.31m³
CONCRETE	1.29m³
SHUTTERING	1.38m²
50 × 3mm FLAT COPPER	20.25kg



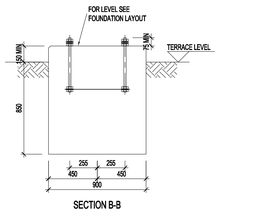
PLAN

MV CABLE END SUPPORT FOUNDATION DETAILS

SCALE 1:20

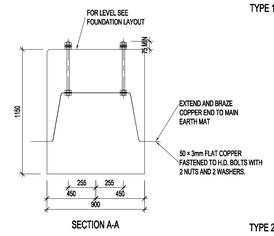


SECTION A-A

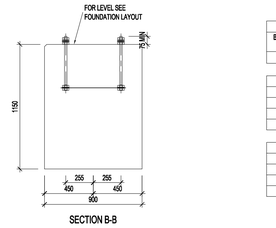


SECTION B-B

TYPE 1

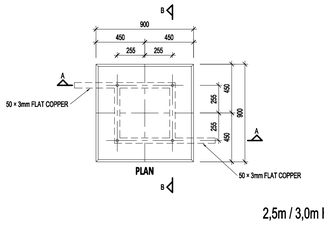


SECTION A-A

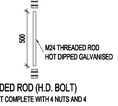


SECTION B-B

TYPE 2



PLAN



THREADED ROD (H.D. BOLT)

MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg

4 OFF

CONSTRUCTION NOTES:

1. CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH AT 28 DAYS, 25MPA.
3. CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS , 15MPA.
4. ALL TOP EDGES OF FOUNDATION TO HAVE 25mm CHAMFER.
5. FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD AASHTO.
7. GROUT UNDER SUPPORT BASE PLATE.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
9. ONLY STEEL SHUTTERING MAY BE USED.
10. ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 75mm ABOVE FINISHED FOUNDATION LEVEL.
12. NON OXIDE IS TO BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
13. FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 2 × 3m TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
14. NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP TO BELOW 4 DEG CELICIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE nm
24	4.8	3	500	8	16	16	14.16	359-407

SCHEDULE OF QUANTITIES - TYPE 1	
EXCAVATIONS	0.70m³
CONCRETE	0.81m³
SHUTTERING	3.60m²
FLAT COPPER	20.25kg

SCHEDULE OF QUANTITIES - TYPE 2	
EXCAVATIONS	0.70m³
CONCRETE	0.93m³
SHUTTERING	4.14m²
FLAT COPPER	20.25kg

BEARING CAPACITY	
FOUNDATION	150kPA

GEOTECH REPORT TO CONFIRM BEARING CAPACITY

MASTER

03-07-2020

AECOM

01

2,5m / 3,0m HIGH MEDIUM EQUIPMENT SUPPORT FOUNDATION DETAILS

SCALE 1:20

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM

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CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
01	MEDIUM EQUIPMENT PLINTH FOUNDATION AMENDED	A H	C K	S WM	2020-07-01
00	ISSUED FOR CONSTRUCTION	A H	C K	S WM	2018-06-14

REVISIONS

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CONTRACTOR / CONSULTANT					
TITLE	NAME	SIGN	DATE		
DRAWN	A H		20	07	01
CHECKED	C K		20	07	01
DESIGNED	C K		20	07	01
CHECKED	SW M		20	07	01

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH			
NAME	SW MARAIS	DATE	
SIGNATURE		20	07 01
REG. NUMBER	20090108		
SCALE :	AS SHOWN	A0	

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
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8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
EQUIPMENT FOUNDATION DETAILS

PROJECT NUMBER				OD	FBS		DIS	TYPE	DRAWING NO.		SHEET	REV	ID
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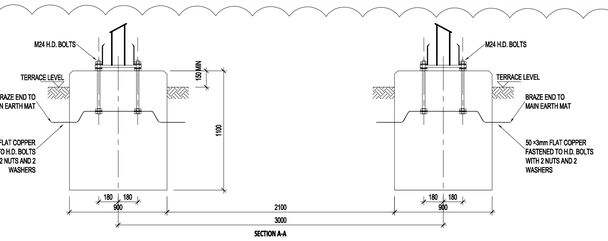
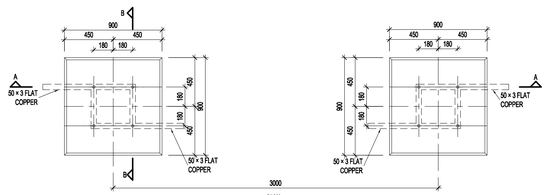
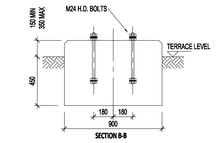


SECTION A-A



PLAN



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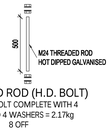
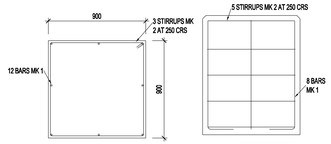


THREADED ROD (H.D. BOLT)
MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg
8 OFF



REINFORCING DETAILS

REINFORCING DETAILS

NOTES :

1. CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH AT 28 DAYS, 25MPA.
3. CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS , 15MPA.
4. ALL TOP EDGES OF FOUNDATION TO HAVE 25-35mm CHAMFER.
5. FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD AASHTO.
7. GROUT UNDER SUPPORT BASE PLATE.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
9. ONLY STEEL SHUTTERING MAY BE USED.
10. ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 150mm ABOVE FINISHED FOUNDATION LEVEL.
12. NON OXIDE IS TO BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
13. REINFORCING TO HAVE A MIN CONCRETE COVER OF 50mm.
14. ALL REINFORCING SPLICED TO HAVE A LAPPED LENGTH OF 42 × DIAMETER OF REINFORCING BAR.
15. ALL REINFORCING BARS TO BE MEASURED AND BENT IN ACCORDANCE TO SANS 1478.
16. IF THE FOUNDATION HEIGHT IS TO BE LIFTED, THE REINFORCING (MK1 AND MK2) MUST BE ADJUSTED ACCORDINGLY.
17. FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 2 × 3m TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
18. NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP TO BELOW 4 DEG CELICIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE nm
24	4.8	3	500	8	32	32	16.42	359-407

REINFORCING SCHEDULE @ 150mm						
MK	TYPE & SIZE	No REQUIRED TOTAL PER ITEM	CUTTING LENGTH	TOTAL LENGTH (m)	WEIGHT (kg)	BENDING REMARKS
1	Y16	16	1150	17.76	28.06	150 / 1000
2	Y10	10	3350	33.30	22.06	800 (ALL SIDES)

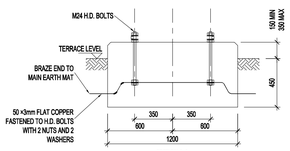
SCHEDULE OF QUANTITIES @ 150mm	
EXCAVATIONS	0.73m³
CONCRETE	0.97m³
SHUTTERING	1.8m²
50 x 3mm FLAT COPPER	20.25kg

BEARING CAPACITY	
FOUNDATION	150KPA

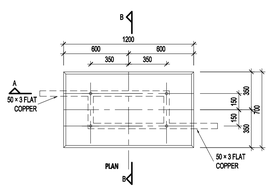
TWIN TUBULAR BUSBAR - 132kV TUBULAR SUPPORT FOUNDATION DETAILS

SCALE 1:20

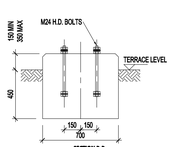
01



SECTION A-A



PLAN



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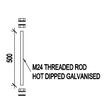

THREADED ROD (H.D. BOLT)
MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg
8 OFF

NOTES :

1. CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH AT 28 DAYS, 25MPA.
3. CONCRETE STRENGTH FOR BLINDING LAYER AT 28 DAYS , 15MPA.
4. ALL TOP EDGES OF FOUNDATION TO HAVE 25-35mm CHAMFER.
5. FOR HEIGHT OF FOUNDATION SEE FOUNDATION LAYOUT.
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD AASHTO.
7. GROUT UNDER SUPPORT BASE PLATE.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATION TO EXTEND TO 100mm BELOW GROUND LEVEL.
9. ONLY STEEL SHUTTERING MAY BE USED.
10. ONLY STEEL TEMPLATE MAY BE USED FOR SETTING H.D. BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 150mm ABOVE FINISHED FOUNDATION LEVEL.
12. NON OXIDE IS TO BE USED ON ALL EARTH CONNECTIONS TO H.D. BOLTS.
13. REINFORCING TO HAVE A MIN CONCRETE COVER OF 50mm.
14. ALL REINFORCING SPLICED TO HAVE A LAPPED LENGTH OF 42 × DIAMETER OF REINFORCING BAR.
15. ALL REINFORCING BARS TO BE MEASURED AND BENT IN ACCORDANCE TO SANS 1478.
16. IF THE FOUNDATION HEIGHT IS TO BE LIFTED, THE REINFORCING (MK1 AND MK2) MUST BE ADJUSTED ACCORDINGLY.
17. FOR PRICING THE AVERAGE LENGTH OF 15m FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 2 × 3m TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
18. NO CONCRETE TO BE POURED WHERE THE AIR TEMPERATURE WILL DROP TO BELOW 4 DEG CELICIUS IN 8 HOURS AFTER POURING OF CONCRETE UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.

HD BOLT SCHEDULE								
BOLT SIZE mm	MILD STEEL GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	TOTAL MASS kg	TORQUE nm
24	4.8	3	500	4	16	16	9.21	390

SCHEDULE OF QUANTITIES @ 150mm	
EXCAVATIONS	0.38m³
CONCRETE	0.50m³
SHUTTERING	0.95m²
50 x 3mm FLAT COPPER	20.25kg

BEARING CAPACITY	
FOUNDATION	150KPA

YARD AC DISTRIBUTION BOARD SUPPORT FOUNDATION

SCALE 1:20

MASTER
03-07-2020
AECOM

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.

AECOM
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TYGER WATERFRONT
CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
01	TUBULAR SUPPORT FOUNDATION AMENDED	A H	C K	S W M	2020-07-01
00	ISSUED FOR CONSTRUCTION	A H	C K	S W M	2018-06-14

REVISIONS

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CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		20 07 01
CHECKED	C K		20 07 01
DESIGNED	C K		20 07 01
CHECKED	SW M		20 07 01

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	20 07 01
REG. NUMBER	20090106
SCALE :	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVI'S KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
EQUIPMENT FOUNDATION DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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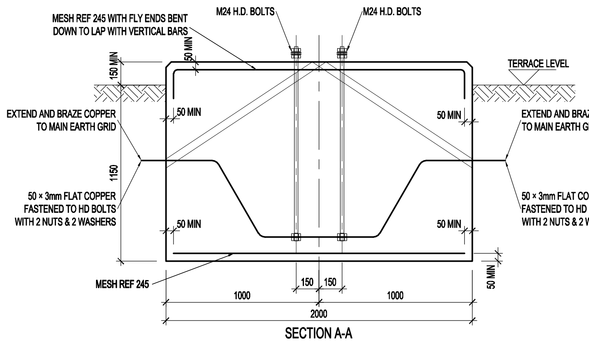
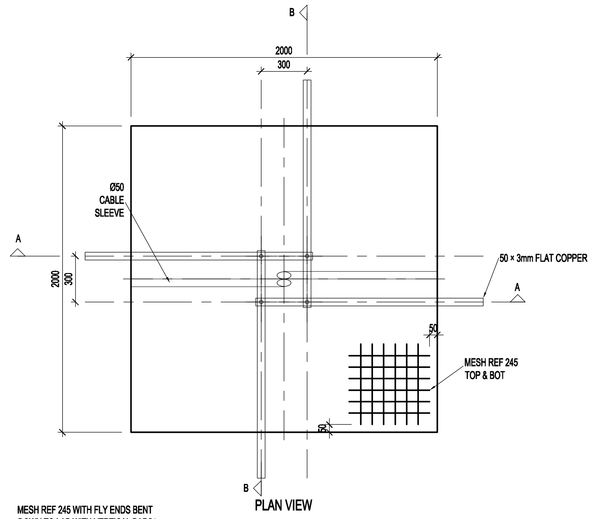
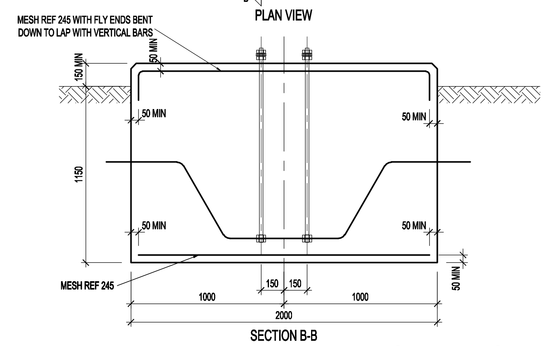


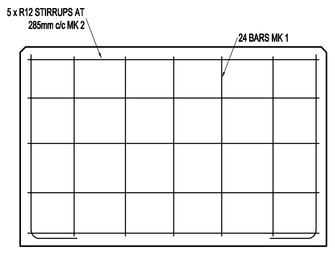
SECTION A-A



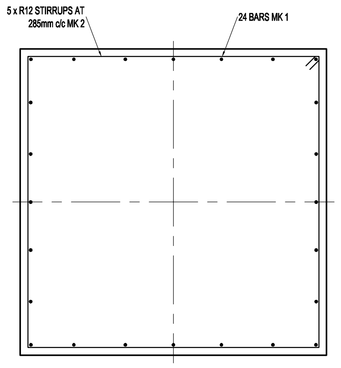
PLAN VIEW



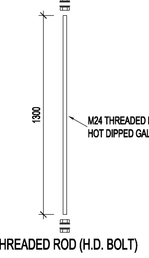
SECTION B-B



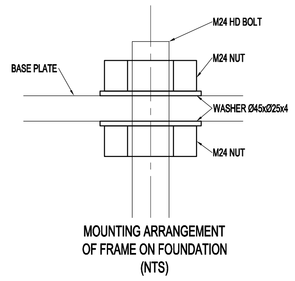
REINFORCING DETAILS
SECTION



REINFORCING DETAILS
PLAN



THREADED ROD (H.D. BOLT)



MOUNTING ARRANGEMENT OF FRAME ON FOUNDATION (NTS)

CONSTRUCTION NOTES:

1. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200.
2. CONCRETE STRENGTH TO BE 25MPA, AT 28 DAYS
3. 50mm BLINDING LAYER TO BE CAST UNDER ALL FOUNDATIONS, 15MPA AT 28DAYS
4. ALL TOP EDGES OF FOUNDATION TO HAVE A 25mm 35mm CHAMFER
5. FOR THE HEIGHT OF THE FOUNDATION SEE FOUNDATION LAYOUT
6. COMPACTION OF THE BOTTOM OF FOUNDATIONS SHALL BE COMPACTED TO 93% MOD. AASHTO.
7. DO NOT GROUT UNDER SUPPORT BASE PLATE
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATIONS TO EXTEND 100MM BELOW TERRACE LEVEL
9. ONLY STEEL SHUTTERING MAY BE USED
10. ONLY STEEL TEMPLATES MAY BE USED FOR SETTING H.D. BOLTS. DO NOT WELD TO BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 100mm ABOVE FINISHED FOUNDATION LEVEL UNLESS OTHERWISE SHOWN.
12. ALL H.D. BOLTS AND NUTS SHALL CONFORM WITH SABS 1700.
13. NON ORDE IS TO BE USED ON ALL EARTH CONNECTIONS TO HD BOLTS
14. COVER TO REINFORCEMENT SHALL BE 50MM, TO BOTTOM, TOP AND SIDES WHERE FOUNDATIONS ARE REINFORCED.
15. ALL REINFORCING SPLICED TO HAVE A LAPPED LENGTH OF 42 x DIAMETER OF REINFORCING BAR.
16. ALL REINFORCING BARS TO BE MEASURED & BENT IN ACCORDANCE WITH SANS 1478.
17. FOR PRICING THE AVERAGE LENGTH OF 15M FLAT COPPER INCLUDES THE COPPER BETWEEN FOUNDATION AND MAIN EARTH GRID AND 4 x 3M TAILS. FLAT COPPER TO HAVE A MINIMUM DEPTH OF 500mm.
18. NO CONCRETE MAY BE POURED IF THE TEMPERATURE IS EXPECTED TO FALL UNDER 4 DEGREES CELSIUS WITHIN 8 HOURS OF POURING UNLESS A SUITABLE APPROVED ADDITIVE IS ADDED TO THE CONCRETE MIX.
19. ALL EARTHING TO CONFORM WITH D-DT-5240.
20. THIS FOUNDATION IS ONLY FOR SOIL TYPE 1 AND TYPE 2

MESH REINFORCEMENT SCHEDULE			
MESH REF.	kg/m²	TOTAL m²	TOTAL kg
245	2.45	7.22	17.69

BOLT SCHEDULE								
BOLTS SIZE mm	MILD STEEL BOLTS, GRADE	PITCH mm	LENGTH mm	NO OFF HD BOLTS	NO OFF NUTS	NO OFF WASHERS	MASS kg	TORQUE Nm
24	4.8	3	1300	4	16	16	22.18	359-407

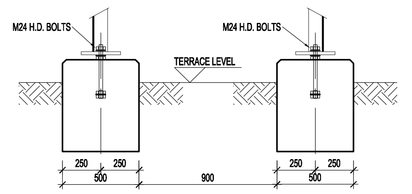
REINFORCEMENT SCHEDULE FOUNDATION							
MK	TYPE & SIZE	QTY	LENGTH (m) CUT LENGTH	LENGTH (m) TOTAL (m)	MASS kg	SHAPE CODE	BENDING & REMARKS
1	Y16	24	1460	35.54	55.36	37	300 / 1200
2	R12	5	7710	38.55	34.23	60	1900 / 1900

SCHEDULE OF QUANTITIES	
EXCAVATIONS	4.60m³
CONCRETE	5.20m³
SHUTTERING	2.0m²
50 × 3mm FLAT COPPER	28.96kg

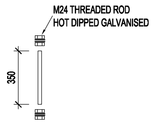
BEARING CAPACITY	
FOUNDATION = 150 KPA	SOIL TYPE 1 & 2

STANDARD LIGHTNING / LIGHTING MAST FOR SUBSTATIONS (21m) FOUNDATION DETAILS

SCALE 1:20



SECTION A-A



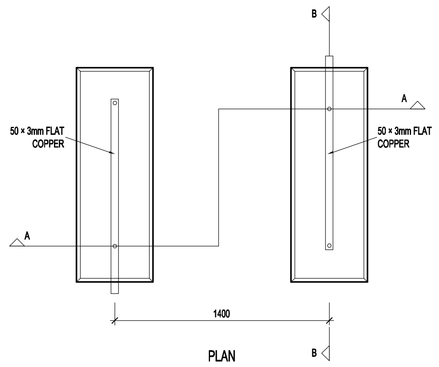
THREADED ROD (H.D. BOLT)

CONSTRUCTION NOTES:

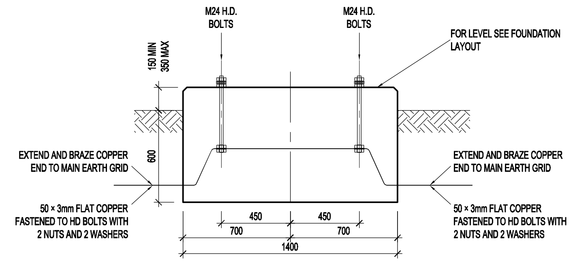
1. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SANS 1200 SPECIFICATION
2. CONCRETE STRENGTH TO BE 25MPA, AT 28 DAYS
3. 50MM BLINDING LAYER TO BE CAST UNDER ALL FOUNDATIONS, 15MPA AT 28DAYS
4. NO CONCRETE MAY BE POURED IF THE TEMPERATURE IS EXPECTED TO FALL UNDER 4 DEGREES CELSIUS WITHIN 8 HOURS OF POURING.
5. ALL TOP EDGES OF FOUNDATION TO HAVE A 25mm CHAMFER
6. FOR THE HEIGHT OF THE FOUNDATION SEE FOUNDATION LAYOUT
7. THE MATERIAL UNDERNEATH ALL FOUNDATIONS SHALL BE MOISTENED AND COMPACTED WITH A MECHANICAL PLATE COMPACTOR OR HAND COMPACTOR NOT LESS THAN 25kg IN WEIGHT. THE SOIL SHALL BE COMPACTED UNTIL NO FURTHER SETTLEMENT OCCURS.
8. OFF SHUTTER FINISH TO UPPER SIDES OF FOUNDATIONS TO EXTEND 100MM BELOW TERRACE LEVEL
9. ONLY STEEL SHUTTERING MAY BE USED
10. ONLY STEEL TEMPLATES MAY BE USED FOR SETTING H.D. BOLTS. DO NOT WELD TO BOLTS.
11. H.D. BOLTS AND NUTS TO PROTRUDE 75mm ABOVE FINISHED FOUNDATION LEVEL UNLESS OTHERWISE SHOWN.
12. ALL H.D. BOLTS AND NUTS SHALL CONFORM WITH SABS 135, GRADE 4.8
13. COVER TO REINFORCEMENT SHALL BE 50MM, TO BOTTOM, TOP AND SIDES WHERE FOUNDATIONS ARE REINFORCED.
14. ALL EARTHING TO CONFORM WITH NOTES ON SUBSTATION EARTHING DRAWING.

BOLT SCHEDULE						
BOLTS SIZE mm	PITCH mm	LENGTH mm	QTY	MASS kg	MILD STEEL BOLTS, GRADE	TORQUE nm
24	3	350	4	5.96	4.8	300

SCHEDULE OF QUANTITIES @ 150mm	
EXCAVATIONS	0.84m³
CONCRETE	1.05m³
SHUTTERING	1.90m²
50 × 3mm FLAT COPPER	20.25kg



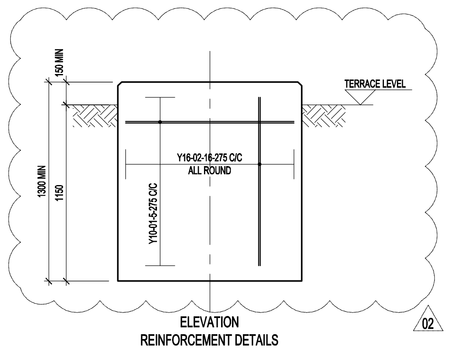
PLAN



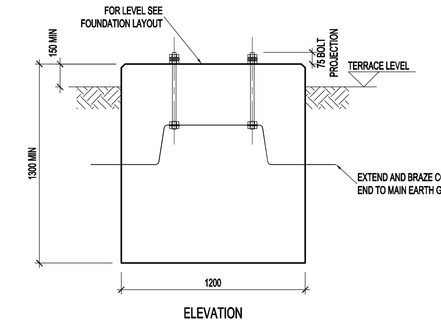
SECTION B-B

NECRT - AUX. TRFR LATTICE SUPPORT FOUNDATION DETAILS

SCALE 1:20



ELEVATION
REINFORCEMENT DETAILS



ELEVATION

INSTRUCTIONS:

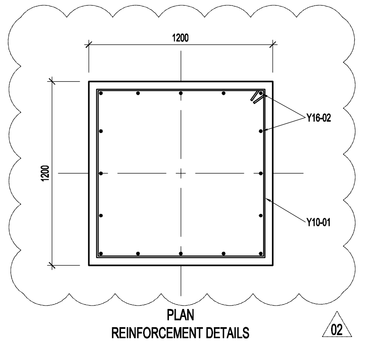
1. CONCRETE WORK TO BE DONE IN ACCORDANCE WITH SANS 1200 SPEC.
2. CONCRETE MIX TO BE 25MPa.
3. CONCRETE COVER REINFORCEMENT TO BE 50mm.
4. DEPTH OF FOUNDATION TO BE INCRECED AND/OR REINFORCEMENT ADDED IF SITE CONDITIONS MAKE THIS NECESSARY.
5. ALL TOP EDGES OF CONCRETE ABOVE G.L. TO HAVE 25mm CHAMFER AT 45°.
6. GROUT REQUIRED UNDER BASE PLATE ONLY.
7. H.D. BOLTS COMPLETE WITH NUTS AND WASHERS TO BE SUPPLIED CIVIL CONTRACTOR.
8. ALL H.D. BOLTS AND NUTS TO CONFORM TO SABS 135 STRENGTH GRADE 4.8.
9. STEEL TEMPLATE TO BE USED FOR SETTING H.D. BOLTS.
10. FORMWORK TO UPPER SIDES OF FOUNDATION TO AT LEAST 100mm BELOW GROUND LEVEL.
11. ALL WELDING AND SYMBOLS TO CONFORM TO SANS 10044 PART 1 TO PART 5.
12. THE UNDER SIDE OF ALL FOUNDATIONS WILL BE MOISTENED AND COMPACTED WITH A MECHANICAL PLATE COMPACTOR NO LESS THAN 25kg IN WEIGHT. THE SOIL WILL BE COMPACTED UNTIL NO FURTHER SETTLEMENT OCCURS.
13. NB - WHEN FOUNDATION IS NOT 150mm ABOVE GROUND LEVEL 'SCHEDULE OF QUANTITIES' WILL NOT BE AS SPECIFIED.

REINFORCEMENT SCHEDULE						
MK	TYPE SIZE	No. OFF	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg	SHAPE
01	Y10	5	4600	23.000	14.19	1100 / 1100
02	Y16	16	1420	22.720	35.90	150 / 1200 / 150

02

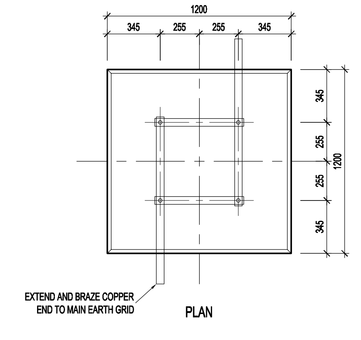
SCHEDULE OF QUANTITIES	
EXCAVATIONS	0.648m³
CONCRETE	0.864m³
SHUTTERING	1.44m²
H.D. BOLTS	7.12kg

SCHEDULE OF BOLTS			
BOLTS SIZE mm	PITCH mm	MILD STEEL BOLTS, GRADE	TORQUE nm
24	3	4.8	300

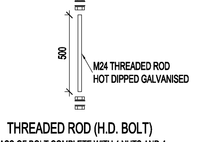


PLAN
REINFORCEMENT DETAILS

02



PLAN



THREADED ROD (H.D. BOLT)
MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg
4 OFF

FIRE BARRIER SUPPORT FOUNDATION DETAILS

SCALE 1:20

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
02	FOUNDATION REBAR DETAILS REVISED	A H	C K	SW M	2022-01-26
01	FOUNDATION DETAILS REVISED	A H	C K	SW M	2021-07-26
00	ISSUED FOR CONSTRUCTION	A H	H W	SW M	2019-06-14

REVISIONS

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CONTRACTOR / CONSULTANT					
TITLE	NAME	SIGN	DATE		
DRAWN	A H		22	01	26
CHECKED	C K		22	01	26
DESIGNED	C K		22	01	26
CHECKED	SW M		22	01	26

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH	
NAME	SW MARAIS
DATE	22 01 26
SIGNATURE	
REG. NUMBER	20090106
SCALE :	1:100

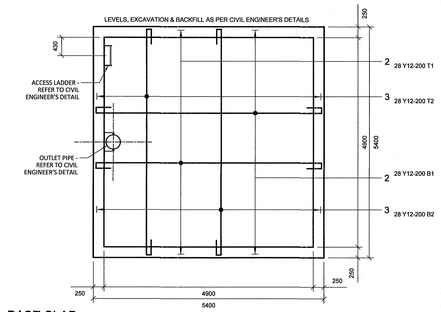
Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

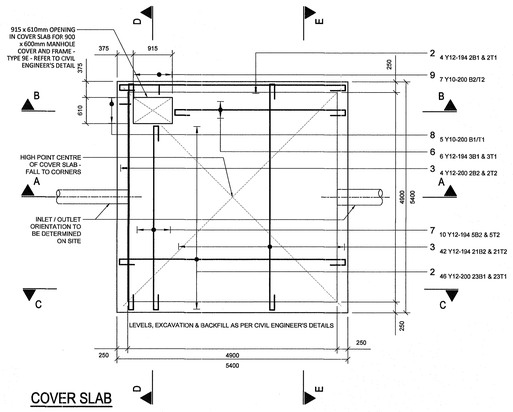
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
EQUIPMENT FOUNDATION DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1 - 2 - 5 1 0 - B - DE - 0 0 2 2 - 0 1 - 0 2 - AE								

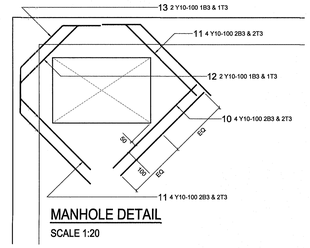
A0



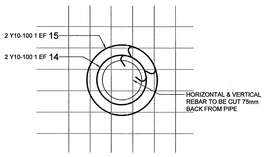
BASE SLAB
SCALE 1:50



COVER SLAB
SCALE 1:50



MANHOLE DETAIL
SCALE 1:20



PIPE DETAIL
SCALE 1:20

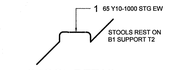
CONSTRUCTION NOTES:
1. ALL CONCRETE WORK SHALL COMPLY WITH SANS 1200 G. MINIMUM 28 DAYS COMPRESSION STRENGTH SHALL BE 30MPa. NOMINAL AGGREGATE SIZE SHALL BE 20-25mm.
2. ALL REINFORCEMENT SHALL COMPLY WITH SANS 920. ALL BARS SHALL BE NEATLY BENT COLD IN COMPLIANCE WITH SANS 82 AND SHALL BE ACCURATELY FIXED AND SECURELY WIRED IN THE SHAPE AND POSITION SHOWN ON THE DRAWINGS. PRIOR TO CASTING, THE STEEL FIXING SHALL BE CHECKED BY THE ENGINEER. ALL REINFORCING TO BE PROPERLY FIXED TOGETHER AND LAP LENGTHS AS PER SANS 920.
3. COVER TO BE MINIMUM 40mm.
4. ALL VISIBLE CORNERS TO HAVE A 20×20mm CHAMFER.
5. THE FINISH OF ALL EXPOSED SURFACES OF CONCRETE SHALL HAVE A SMOOTH 'OFF-SHUTTER FINISH' FREE OF ALL BLEMISHES, HONEYCOMBING AND IRREGULARITIES.
6. PLEASE NOTE THIS DESIGN - NO VEHICLES PERMITTED ON SLAB AND THIS DRAINAGE DAM TO BE BARRICADED.

DESIGN NOTES:
1. THE OUTLET PIPE SHALL BE EXTENDED UNTIL THE INVERT LEVEL INTERSECTS THE NATURAL GROUND LEVEL AT WITCH POINT A HEADWALL SHALL BE CONSTRUCTED.
2. WHERE THE DAM IS LOCATED IN A LOW LYING OR FLAT TOPOGRAPHICAL AREA AND NO DRAINAGE IS POSSIBLE FORM THE OUTLET PIPE, THE OUTLET PIPE SHALL BE REMOVED FROM THE DESIGN. INSTRUCTIONS SHALL BE GIVEN TO THE LOCAL MAINTENANCE DEPOT TO ROUTINELY INSPECT THE DAM AND WHEN NECESSARY PUMP IT EMPTY.

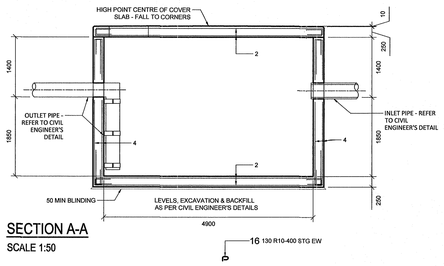
WORKED EXAMPLE FOR HOLDING DAM AND AUTO WATER SIPHON POSITION:

STEP 1: GIVEN: A) TRANSFORMER OIL QUANTITY 12000 L =12M
B) AVAILABLE AREA FOR HOLDING DAM = 3m×3m
VOLUME (V) = LENGTH (L) × BREADTH (B) × DEPTH (D)
STEP 2: SINCE: C) "Y" = MEASURED AT 0.45m
THUS: D = V/L×V = 12/3×3 = 1.33m
AND: "X" = 1.20
THUS: "X" = 1.2 × 1.33 = 1.595m

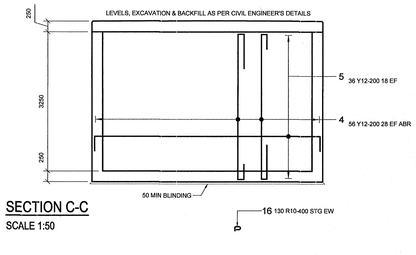
STEP 3: TO OBTAIN OUTLET PIPE POSITION
DIMENSION "X" = 1.595m AND DIMENSION "H" = 1.595 - 2.04m
STEP 4: HOLDING DAM = 3m LONG × 3m WIDE × 2.04m DEEP
OUTLET PIPE POSITION 'X' = 1.595m 'Y' = 0.45m



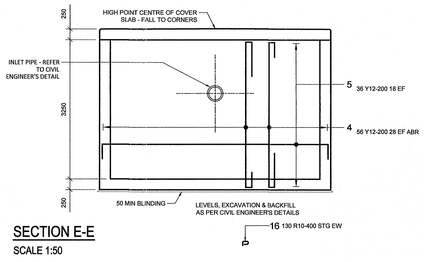
STOOL DETAIL
SCALE 1:20



SECTION A-A
SCALE 1:50



SECTION C-C
SCALE 1:50

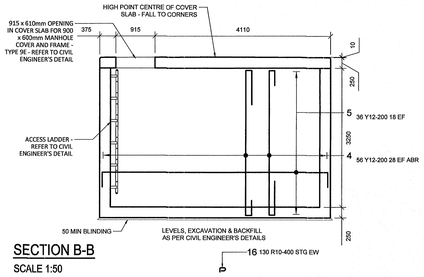


SECTION E-E
SCALE 1:50

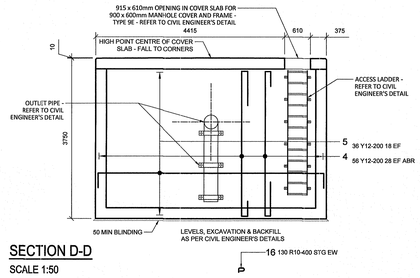
MEMBER		MARK	TYPE		NUMBER		LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	REV
NAME	NUM		R Grade250	Y Grade450	ELEMENT	TOTAL								
OIL DAM	1	1		10	65	65	1040	99	300	300	100			
		2		12	106	106	8180	55	350	140	5290	140	350	
		3		12	102	102	8110	55	350	120	5290	120	350	
		4		12	224	224	4700	55	800	140	3590	140	350	
		5		12	144	144	5930	38	350	5290	350			
		6		12	6	6	4860	55	350	140	4000	140	350	
		7		12	10	10	5120	55	350	120	4310	120	350	
		8		10	3	3	1170	49	210	760	160	160		
		9		10	5	5	910	74	240	110				
		10		10	4	4	1100	20	1100					
		11		10	8	8	1150	62	220	160	940			
		12		10	2	2	1170	49	210	760	160	160		
		13		10	2	2	1200	49	350	350	560	260	260	
		14		10	4	4	2020	99	300	450				
		15		10	4	4	2630	99	300	650				
		16	10		650	650	300	85	100	140	80	100		

BAR WEIGHT SUMMARY		
Grade250	R 10	R 12
TOTAL LENGTH (m)	227.50	
TOTAL WEIGHT (kg)	140.37	
Grade450	Y 10	Y 12
TOTAL LENGTH (m)	116.91	3282.20
TOTAL WEIGHT (kg)	71.76	2898.83

POSITION	LENGTH	A (mm)	B (mm)	C (mm)	Symbol (mm)
1	1040	300	300	100	mm
14	2020	300	450		mm² as²
15	2630	300	650		mm² as²



SECTION B-B
SCALE 1:50



SECTION D-D
SCALE 1:50

MASTER
15 JUN 2018
AECOM TRANSNET

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.
4. CONCRETE GRADE STRENGTH TO BE 30MPa/19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.
6. COVER TO REINFORCEMENT TO BE 50 MIN.
7. ALL EXPOSED HORIZONTAL CONCRETE SURFACES TO BE WOOD FLOATED.
8. ALL HD BOLTS, NUTS & WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
9. HD BOLT POSITIONS MUST BE ALIGNED FOR CASTING TO A TOLERANCE OF ±2mm AS PER SANS 1200 G.6 GRADE II & SURVEYED & ACCEPTED BY STRUCTURAL STEEL CONTRACTOR IN WRITING PRIOR TO CASTING OF CONCRETE.
10. REFER TO EARTHING ARRANGEMENT DETAIL DRAWINGS FOR EARTHING REQUIREMENTS OF FOUNDATION AND STEEL WORK.
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15. STRUCTURES SHALL BE ERECTED, ALIGNED , SQUARED, PLUMBED & LEVELED TO AN ACCURACY SPECIFIED IN SANS 1200 H 6.2.2.c 2 - CLASS II
16. WEEDKILLER SHALL BE APPLIED BEFORE & AFTER COMPLETION OF YARD STONE SURFACING.

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	H W	S W M	14-06-2018

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CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	S W M		14 06 18

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20060106	

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
165 LVS KRIGE DRIVE, PLATTEKLOOF,
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TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
EQUIPMENT FOUNDATION DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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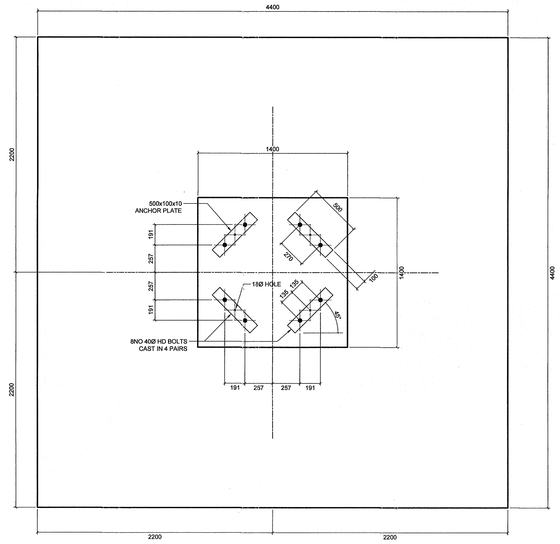
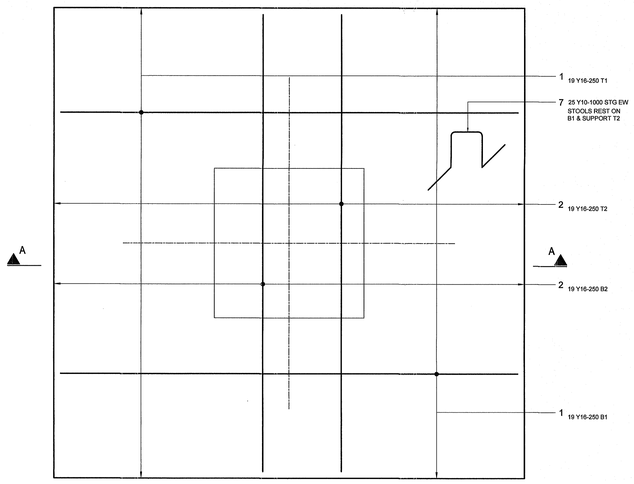
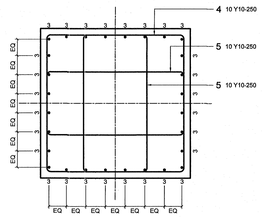


GANTRY FOUNDATION
PLAN
SCALE 1:20



GANTRY FOUNDATION
BASE REBAR
SCALE 1:20



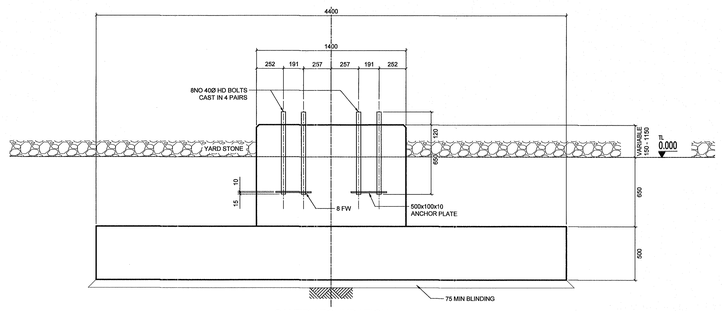
GANTRY FOUNDATION
COLUMN REBAR
SCALE 1:20

MEMBER		MARK	TYPE	NUMBER		LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	REV
NAME	NUM		Y	ELEMENT	TOTAL						
			Grade450								
COLFDN	1	1	16	38	38	4990	39	390	4290	390	
		2	16	38	38	4930	39	360	4260	360	
		3	20	28	28	5	64	350	0	600	
		4	10	20	20	5470	60	1290	4000		
		5	10	20	20	3910	60	1290	600		
		7	16	25	25	1920	69	300	300	340	

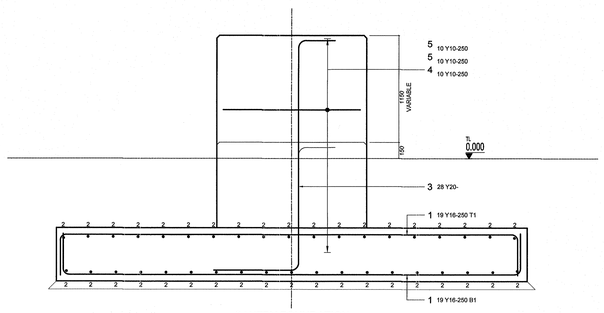
BAR WEIGHT SUMMARY			
Grade450	Y 10	Y 16	Y 20
TOTAL LENGTH (m)	169.10	376.06	90.16
TOTAL WEIGHT (kg)	104.33	595.60	222.70

COLUMN HEIGHT VARIES 150 TO 1150 ABOVE TERRACE LEVEL (TL) AS DETERMINED ON SITE, COLUMN REBAR DETAILED TO THE MAXIMUM HEIGHT FOR COSTING PURPOSES

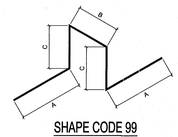
TO DETERMINE DIM - B & L
B= 500+650+VARIABLE PLINTH HEIGHT-130 = 1020+VARIABLE PLINTH HEIGHT
L= B+300+750



GANTRY FOUNDATION
ELEVATION
SCALE 1:20



GANTRY FOUNDATION
SECTION A-A
SCALE 1:20



SHAPE CODE 99
SCALE 1:10

CONSTRUCTION NOTES:

1. ALL CONCRETE WORK SHALL COMPLY WITH SANS 1200 D. MINIMUM 28 DAYS COMPRESSION STRENGTH SHALL BE 30MPa. NOMINAL AGGREGATE SIZE SHALL BE 20-25mm.
2. ALL REINFORCEMENT SHALL COMPLY WITH SANS 920. ALL BARS SHALL BE NEATLY BENT COLD IN COMPLIANCE WITH SANS 82 AND SHALL BE ACCURATELY FIXED AND SECURELY WIRED IN THE SHAPE AND POSITION SHOWN ON THE DRAWINGS. PRIOR TO CASTING, THE STEEL FIXING SHALL BE CHECKED BY THE ENGINEER. ALL REINFORCING TO BE PROPERLY FIXED TOGETHER AND LAP LENGTHS AS PER SANS 920.
3. COVER TO BE MINIMUM 40mm.
4. ALL VISIBLE CORNERS TO HAVE A 25x25mm CHAMFER.
5. THE FINISH OF ALL EXPOSED SURFACES OF CONCRETE SHALL HAVE A SMOOTH 'OFF-SHUTTER FINISH' FREE OF ALL BLEMISHES, HONEYCOMBING AND IRREGULARITIES.
6. FOUNDATIONS TO BE FOUNDED ON MATERIAL HAVING MINIMUM GROUND BEARING CAPACITY OF 150 KPa
7. IN ALL CASES, COMPETENCY OF FOUNDING MATERIAL MUST BE ESTABLISHED BY A QUALIFIED GEOTECHNICAL ENGINEER
8. STEEL TEMPLATE TO BE USED FOR SETTING OUT OF HD BOLTS
9. HD BOLTS TO BE SUPPLIED BY CIVIL CONTRACTOR COMPLETE WITH NUTS & WASHERS & TO BE HOT DIPPED GALVANISED TO SABS 763 & CLEARLY MARKED WITH DIAMETER, GRADE & BASE TYPE - THREAD OF NUTS TO BE OVER CUT TO SABS ISO 1461 TO ALLOW FOR THE THICKNESS OF GALVANISING ANY DAMAGE TO THE GALVERNING SURFACE SHALL BE REPAIRED WITH AN APPROVED ZINK-METAL SPRAY OR INORGANIC ZINK-RICH-PAINT COMPLYING WITH SABS 926 APPLICATION TO SUPPLIERS SPECIFICATIONS
10. CONCRETE FINISH: TOP OF FOUNDATION WOOD FLOAT FINISH
    SIDES SMOOTH OFF SHUTTER FINISH

MASTER
15 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	H VW	SW M	14-06-2018

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TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
				DRAWN	A H		14 06 18
				CHECKED	C K		14 06 18
				DESIGNED	C K		14 06 18
				CHECKED	SW M		14 06 18
OPERATING DIVISIONS							
TITLE	NAME	SIGN	DATE				
				PR.ENG. / PR.TECH./PR. ARCH			
				NAME	SW MARAIS		DATE
				SIGNATURE			14 06 18
				REG. NUMBER	20090106		
				SCALE :	1:50 1:20		A0

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163 UYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
COLUMN 132 / C
FOUNDATION DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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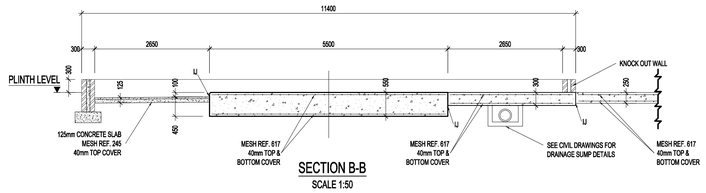

SECTION B-B
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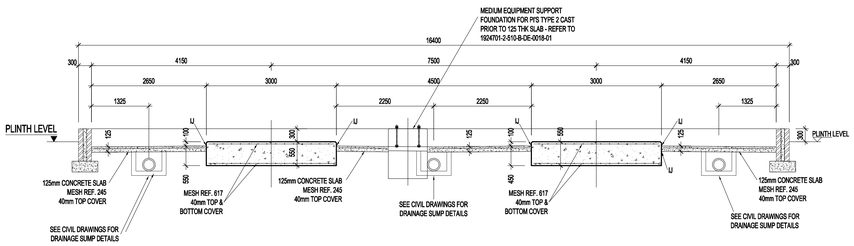

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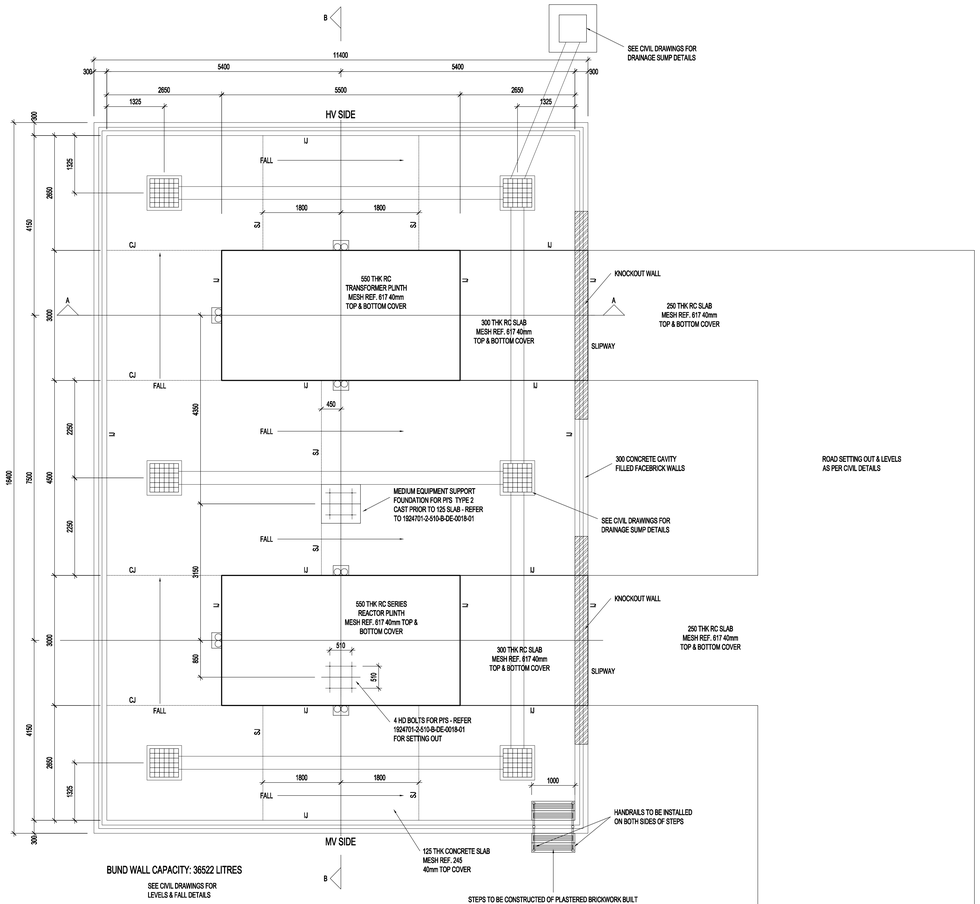
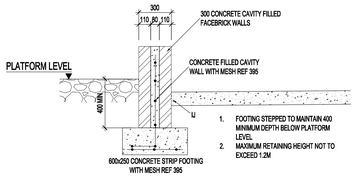


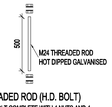
PLAN

40MVA (DESIGNED TO 80MVA) TRANSFORMER AND SERIES REACTOR PLINTH (SIDE ENTRANCE DETAILS)
SCALE 1:50



TYPICAL BUND WALL SECTION
SCALE 1:20

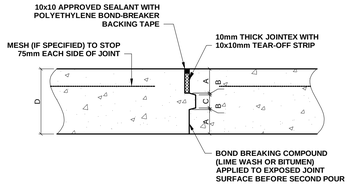
SCHEDULE OF BOLTS			
BOLTS SIZE mm	PITCH mm	MILD STEEL BOLTS, GRADE	TORQUE nm
24	3	4.6	300



THREADED ROD (H.D. BOLT)
MASS OF BOLT COMPLETE WITH 4 NUTS AND 4 WASHERS = 2.17kg
4 OFF

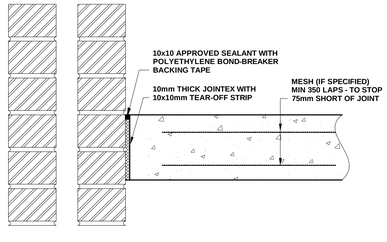
SLAB DEPTH (D)mm	(A)	(B)	(C)	(E)
100	37	3	20	10
125	47	3	25	13
150	56	4	30	15
175	66	4	35	18
200	75	5	40	20
225	85	5	45	23
250	94	6	50	25

APPROVED JOINT SEALANT:
- SIKAFLEX PRO-3



SEALED KEYED CONSTRUCTION JOINT - CJ
SCALE 1:5

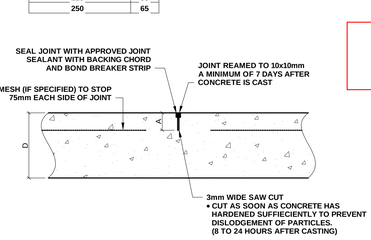
APPROVED JOINT SEALANT:
- SIKAFLEX PRO-3



SEALED ISOLATION JOINT - IJ
SCALE 1:5

SLAB DEPTH (D)mm	(A)mm
100	25
125	35
150	40
175	45
200	50
225	55
250	65

APPROVED JOINT SEALANT:
- SIKAFLEX PRO-3



SEALED SAW CUT JOINT - SJ
SCALE 1:5

MASTER
03-07-2020
AECOM

NOTES:
ALL CONCRETE WORK SHALL COMPLY WITH SANS 1200 GA. MINIMUM 28 DAYS COMPRESSION STRENGTH SHALL BE 20MPa. NOMINAL AGGREGATE SIZE SHALL BE 19mm.

THE REINFORCING MESH (ref 617) MUST BE PLACED 50mm FROM THE TOP AND 50mm FROM THE BOTTOM OF THE SCREED.

THE REINFORCING MESH (ref 617) SHALL BE PLACED IN THE TOP AND BOTTOM OF THE PLINTH AND RUNWAY SLABS WITH A COVER OF 40mm. WHERE THE GROUND CONDITIONS ARE POOR, A 50mm THICK MASS CONCRETE BLINDING LAYER SHALL BE CAST PRIOR TO THE MESH BEING PLACED. ALL REINFORCING OVERLAPS SHALL HAVE A LAP OF 350mm. THE SUB-GRADE MATERIAL UNDER THE TRANSFORMER PLINTH AND SLIPWAY SHALL BE COMPACTED TO 90% OF MOD AASHTO MAXIMUM DENSITY.

ALL CONSTRUCTION (CJ) EXPANSION JOINTS AND CABLE ENTRY POINTS SHALL BE SEALED USING EXPANDABLE INSERTS OR COMPOUND SYSTEM. SEALING SHALL HAVE A MINIMUM 2 HOUR FIRE RATING IN ACCORDANCE WITH SANS 10177. RECOMMENDED SYSTEM ARE CSD SYSTEMS FROM MERIDIAN TECHNOLOGIES AND INTUMIX FROM P & H PROTECTIVE PLASTER SYSTEMS.

BUND WALLS TO BE CONSTRUCTED FROM FACEBRICK COMPLYING WITH SANS 227 AND APPROVED BY AECOM. ALL JOINTS SHALL BE CONSTRUCTED WITH 10mm THICK MORTAR (1:4) CEMENT: SAND, RAKED FINISH. ALL JOINTS TO BE IN STRAIGHT HORIZONTAL AND VERTICAL LINES. WALLS TO BE CAPPED WITH A ROLL COURSE.

STAIR TREADS TO BE RIBBED FOR GRIP.

PLASTER TO BE 1:4 (CEMENT : SAND), MIN 15mm THICK, SMOOTH FINISH.

LEVEL OF TOP OF PLINTH TO RELATE TO THE CENTRE OF ADJACENT ROAD LEVEL FOR EACH SITE.

GRATINGS TO BE HOT DIP GALVANISED TO SANS 121.

| | 160mm Ø PVC SLEEVE FOR CABLES. SLEEVE TO BE CORKED AFTER.
✳ | CABLES ARE LAID. FINAL POSITION TO BE DETERMINED ON SITE.

TRANSFORMER PLINTH AND SLIPWAY DESIGN: TABLE A					
MVA RATING	MASS tons	PLINTH slab thickness	MESH TYPE top & bottom	SLIPWAY slab thickness	MESH TYPE
40	45-110	550	617	300 & 250	617

NB:
TRANSFORMER MASS TO BE CHECKED FOR EACH INSTALLATION AS EXCEPTIONS TO THE ABOVE CATEGORIES MAY OCCUR.

SLIPWAY DIMENSIONS:
SLIPWAY DIMENSION C TO BE DETERMINED BY THE SITE LAYOUT, REFER TO SUBSTATION LAYOUT DRAWINGS.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES
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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
02	PLINTH DETAILS AMENDED	A H	C K	SW M	2020-07-01
01	DRAWING REVISED	A H	C K	SW M	2018-06-19
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	2018-06-14

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DRAWN	A H		20 07 01
CHECKED	C K		20 07 01
DESIGNED	C K		20 07 01
CHECKED	SW M		20 07 01

OPERATING DIVISIONS	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	20 07 01
REG. NUMBER	20090108
SCALE :	AS SHOWN

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163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
40MVA TRANSFORMER PLINTH

PROJECT NUMBER											OD	FBS	DIS	TYPE	DRAWING NO.				SHEET	REV	ID
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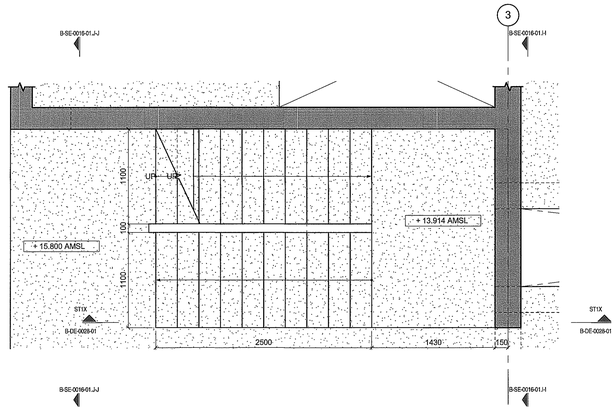
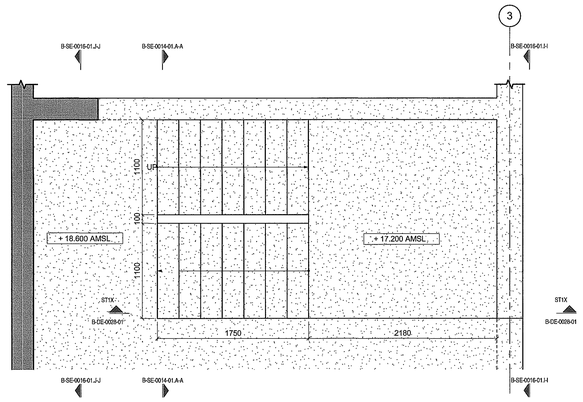
A0



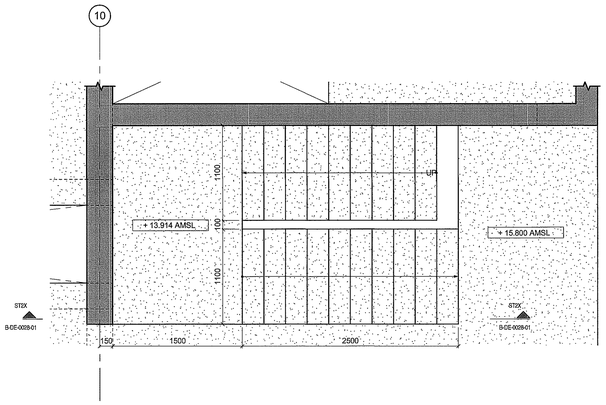
ST1-1 | STAIR LAYOUT

ST1X/ B-DE-0028-01 | SCALE 1 : 25



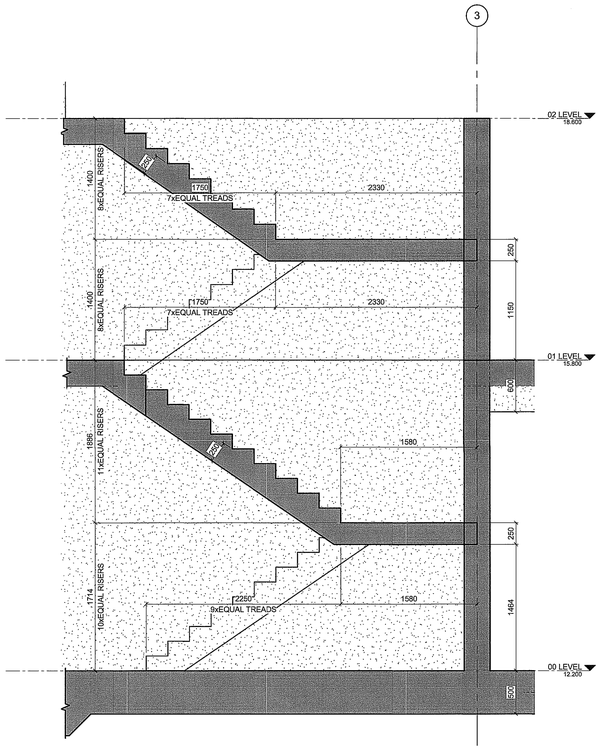
ST1-2 | STAIR LAYOUT

ST1X/ B-DE-0028-01 | SCALE 1 : 25



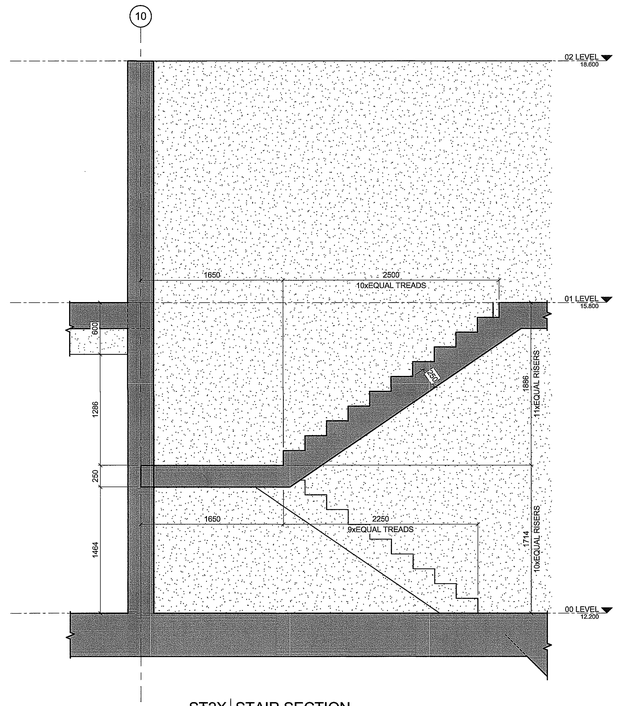
ST2-1 | STAIR LAYOUT

ST1X/ B-DE-0028-01 | SCALE 1 : 25



ST1X | STAIR SECTION

ST1-1/ B-DE-0028-01 | SCALE 1 : 25



ST2X | STAIR SECTION

ST2-1/ B-DE-0028-01 | SCALE 1 : 25

0 1

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION & DRAWINGS. AWAITING DETAILS OF FINAL OFFERED STRIP LIGHTS TO BE INSTALLED RECESSED IN STAIRS

MASTER
27 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	APPD	DATE
0 1	NOTE ADDED	A H			27-06-18
0 0	ISSUED FOR CONSTRUCTION	O A	H.vW	SW M	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	O.A		27 06 18
CHECKED	H.vW		27 06 18
DESIGNED	I.G		27 06 18
CHECKED	SW.M		27 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW.MARAIS	DATE
SIGNATURE		27 06 18
REG. NUMBER	20090105	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000900/06
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163 LYN KRIGE DRIVE, PLATTEKLOOF,
8031
TEL: 021 940 1999
FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
STAIR LAYOUT & DETAILS

PROJECT NUMBER								OO	FBS			DIS	TYPE	DRAWING NO.			SHEET		REV	ID
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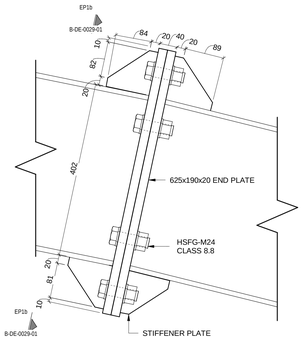
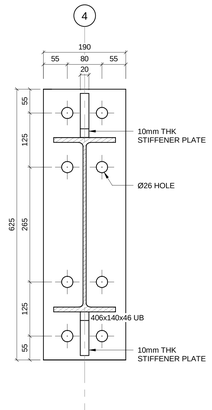


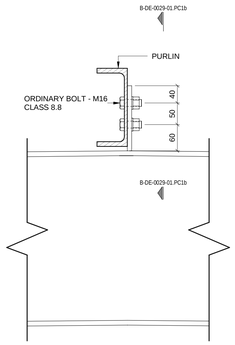
EP1a | END PLATE FRONT VIEW

H-H/ B-SE-0016-01 | SCALE 1 : 5



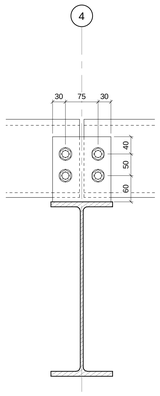
EP1b | END PLATE DETAIL

EP1a/ B-DE-0029-01 | SCALE 1 : 5



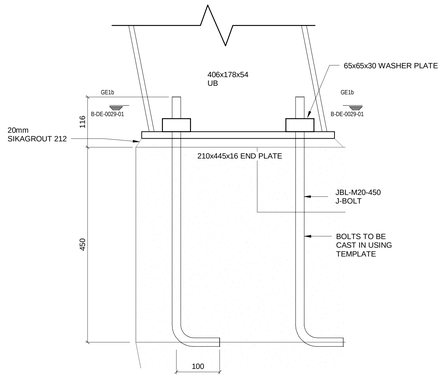
PC1a | PURLINS FIXING DETAIL SECTION

H-H/ B-SE-0016-01 | SCALE 1 : 5



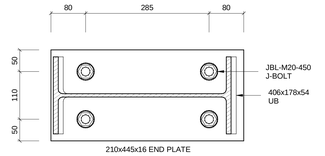
PC1b | PURLINS FIXING DETAIL ELEVATION

PC1a/ B-DE-0029-01 | SCALE 1 : 5



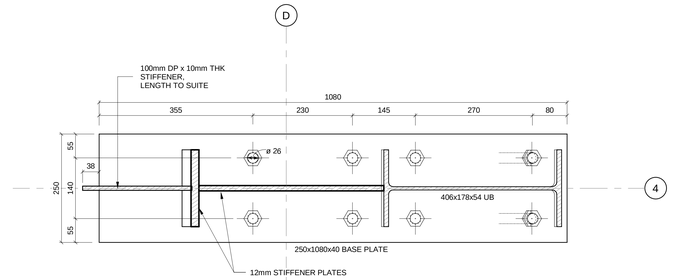
GE1a | GABLE END FIXING PLATE ELEVATION

J-J/ B-SE-0016-01 | SCALE 1 : 5



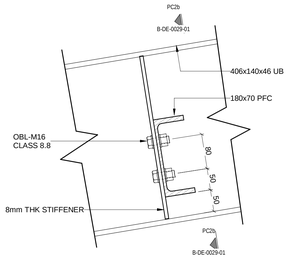
GE1b | GABLE END FIXING PLATE

GE1a/ B-DE-0029-01 | SCALE 1 : 5



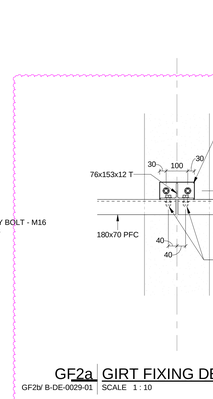
BP1a | BASE PLATE DETAIL

BP1b/ B-DE-0029-01 | SCALE 1 : 5



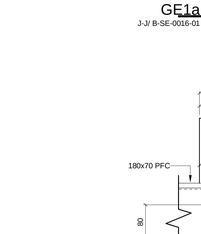
PC2a | PURLINS FIXING ELEVATION CHILLER ROOM

J-J/ B-SE-0016-01 | SCALE 1 : 5



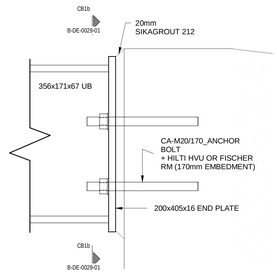
GC1b | GIRT FIXING DETAIL TOP

GC1a/ B-DE-0029-01 | SCALE 1 : 5



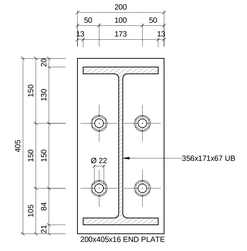
PC2b | PURLIN FIXING SECTION CHILLER ROOM

PC2a/ B-DE-0029-01 | SCALE 1 : 5



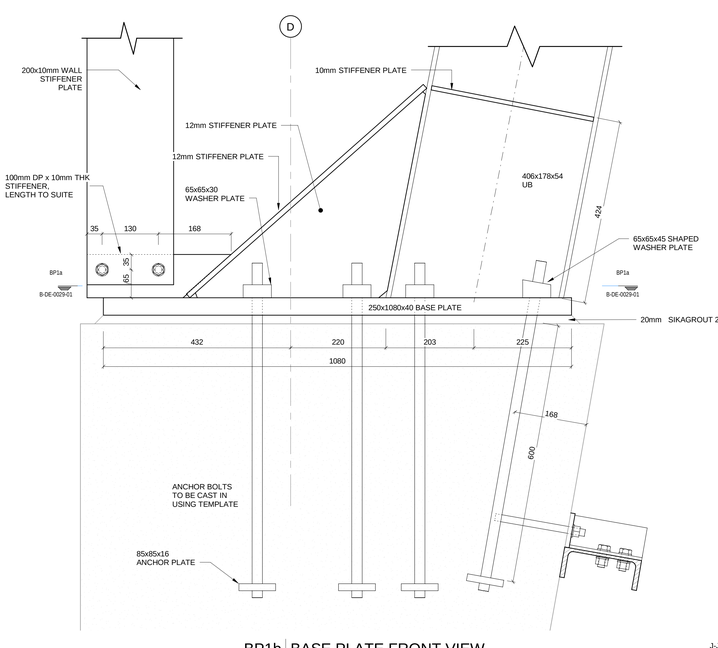
CB1a | CRAWL BEAM END PLATE ELEVATION

XR01/ B-SE-0016-01 | SCALE 1 : 5



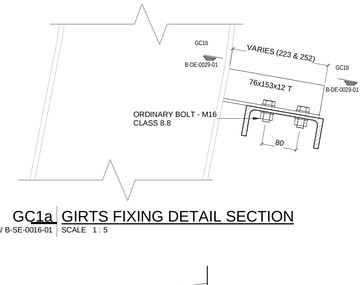
CB1b | CRAWL BEAM END PLATE

CB1a/ B-DE-0029-01 | SCALE 1 : 5



BP1b | BASE PLATE FRONT VIEW

H-H/ B-SE-0016-01 | SCALE 1 : 5



GC1a | GIRTS FIXING DETAIL SECTION

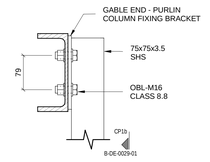
H-H/ B-SE-0016-01 | SCALE 1 : 5

GF2a | GIRT FIXING DETAIL 2a

GF2b/ B-DE-0029-01 | SCALE 1 : 10

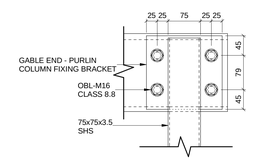
GF2b | GIRT FIXING DETAIL 2b

SCALE 1 : 10



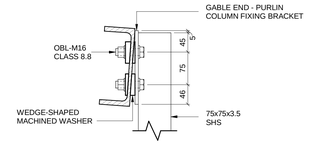
CP1a | GABLE BEAM PURLING FIXING

XR01/ B-SE-0016-01 | SCALE 1 : 5



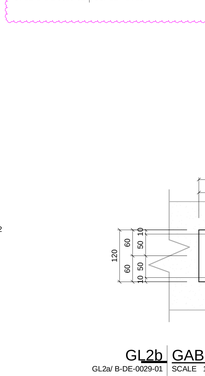
CP1b | GABLE BEAM FIXING

CP1a/ B-DE-0029-01 | SCALE 1 : 5



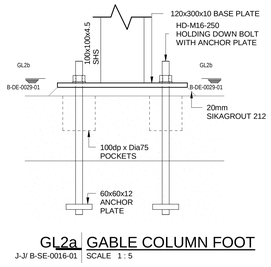
CP1c | GABLE PURLIN ANGLED

XR01/ B-SE-0016-01 | SCALE 1 : 5



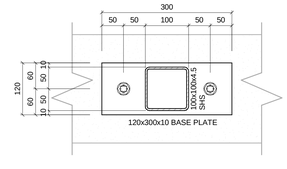
GL1a | GABLE COLUMN CONNECTION

J-J/ B-SE-0016-01 | SCALE 1 : 5



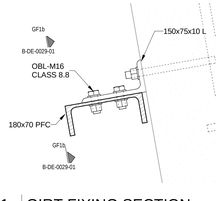
GL2a | GABLE COLUMN FOOT

J-J/ B-SE-0016-01 | SCALE 1 : 5



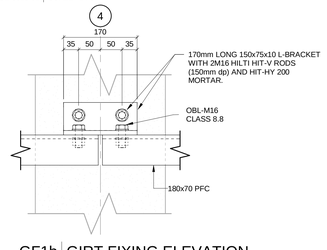
GL2b | GABLE COLUMN FOOT PLAN

GL2a/ B-DE-0029-01 | SCALE 1 : 5



GF1a | GIRT FIXING SECTION

SCALE 1 : 5



GF1b | GIRT FIXING ELEVATION

GF1a/ B-DE-0029-01 | SCALE 1 : 5

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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MASTER
27-07-2023
AECOM
TRANSNET

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TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	CONNECTION DETAILS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.2	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.1	BOLT DETAILS REVISED	JDW	CK	SW M	27-06-18
0.0	ISSUED FOR CONSTRUCTION	O A	H.W	SW M	14-06-18

REVISIONS

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CONTRACTOR/CONSULTANT	NAME	SIGN	DATE
DRAWN	J DW		24 07 23
CHECKED	C K		24 07 23
DESIGNED	C K		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	24 07 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
ROOF DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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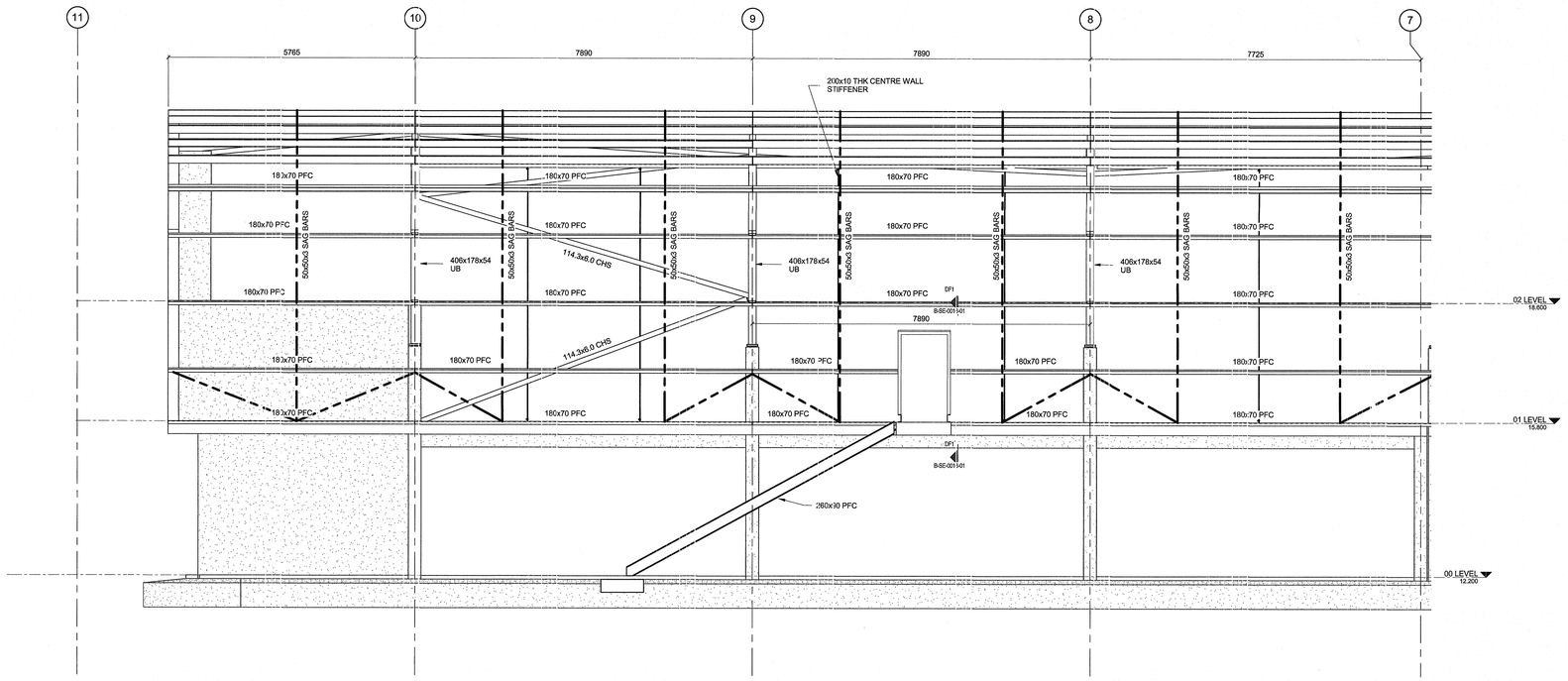
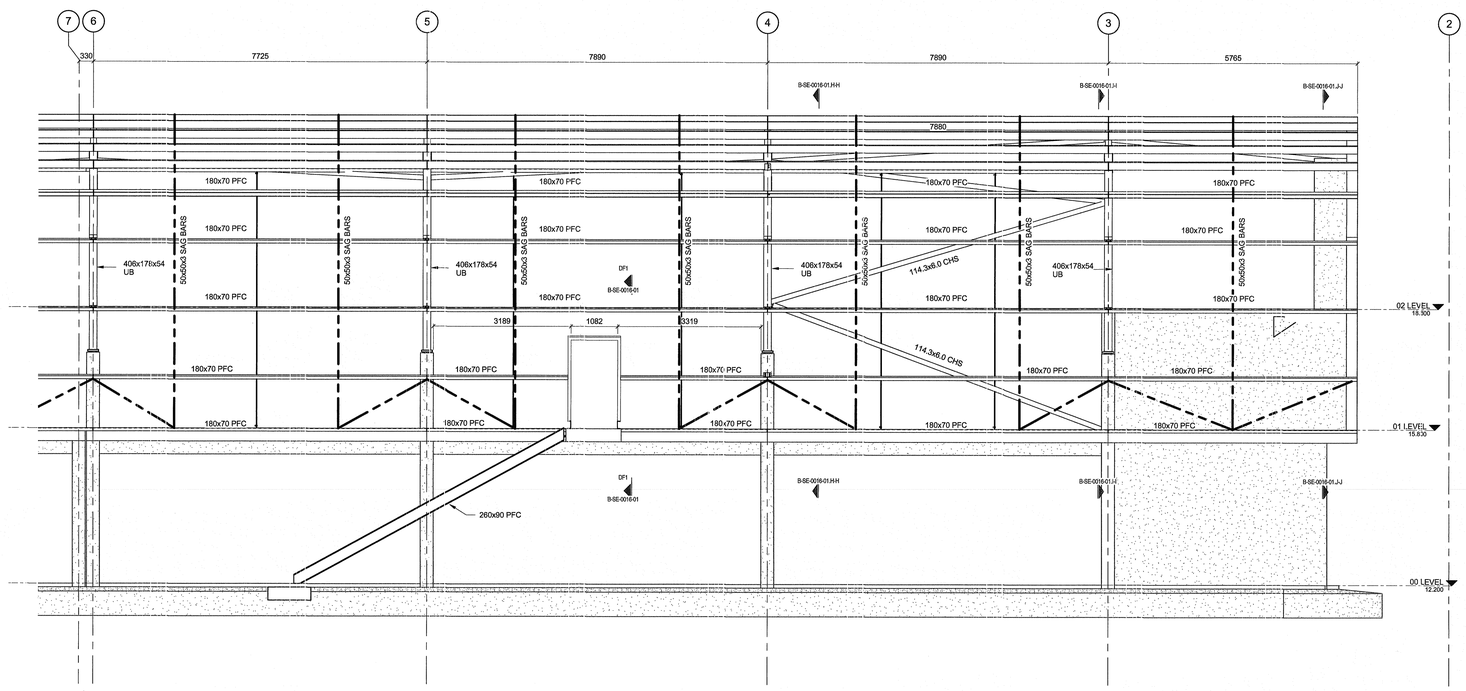
A



REW1 | ROOF EAST ELEVATION - PART 1
SCALE 1 : 50



REW2 | ROOF EAST ELEVATION - PART 2
SCALE 1 : 50

MASTER
15 JUN 2018
AECOM
TRANSNET

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.0	ISSUED FOR CONSTRUCTION	O.A	H.vW	SW.M	14-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	O.A		14 06 18
CHECKED	H.vW		14 06 18
DESIGNED	I.G		14 06 18
CHECKED	SW.M		14 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
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TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL.: 021 940 1900
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
ROOF ELEVATIONS

PROJECT NUMBER								OD		FBS			DIS	TYPE	DRAWING NO.				SHEET		REV	
1	9	2	4	7	0	1	2	5	1	0	B		D	E	0	0	3	0	0	1	0	0

NOTES:

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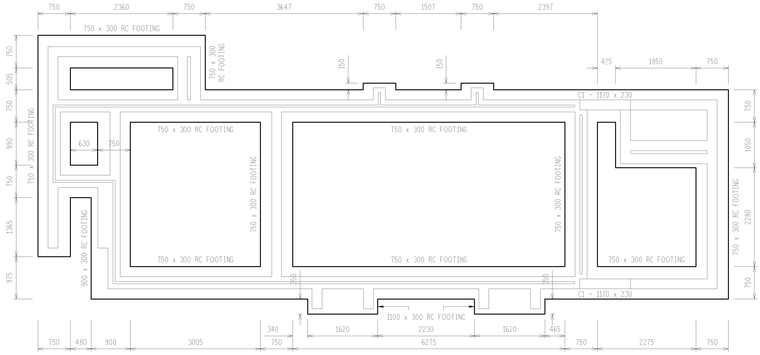
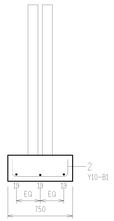
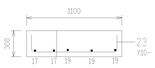
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON SITE & NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. REFER TO EARTHING ARRANGEMENT DETAIL DRAWINGS FOR EARTHING REQUIREMENTS OF FOUNDATION & STEELWORK.
4. ALL EXCAVATIONS & FOUNDING LEVELS SHALL BE INSPECTED & APPROVED BY ENGINEER PRIOR TO CASTING OF CONCRETE.
5. ALL CONCRETE FOUNDATIONS SHALL BE CAST ON BLINDING.
6. CONCRETE GRADE STRENGTH: 30MPa / 19mm STONE.
7. ALL EXPOSED CONCRETE EDGES SHALL HAVE 25 x 25mm CHAMFER ALL ROUND.
8. COVER TO REINFORCEMENT SHALL BE 50mm M.N.
9. ALL EXPOSED HORIZONTAL CONCRETE SURFACES SHALL BE WOOD FLOATED.



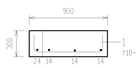
FOUNDATION LAYOUT
SCALE 1 : 50



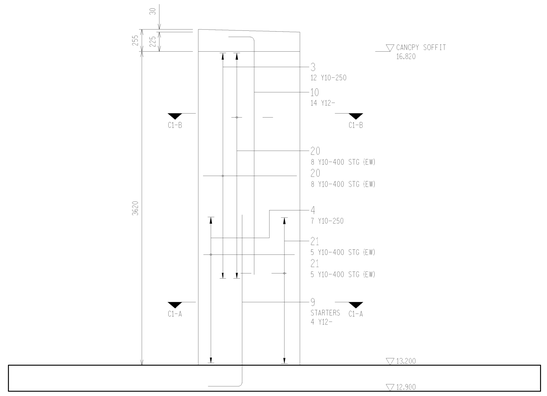
SECTION A-A
SCALE 1 : 25



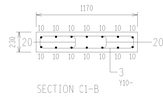
SECTION B-B
SCALE 1 : 25



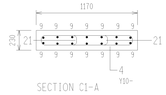
SECTION C-C
SCALE 1 : 25



COLUMN C1 - 230 x 170
(1 OFF)
SCALE 1 : 25



SECTION C1-B
SCALE 1 : 25



SECTION C1-A
SCALE 1 : 25

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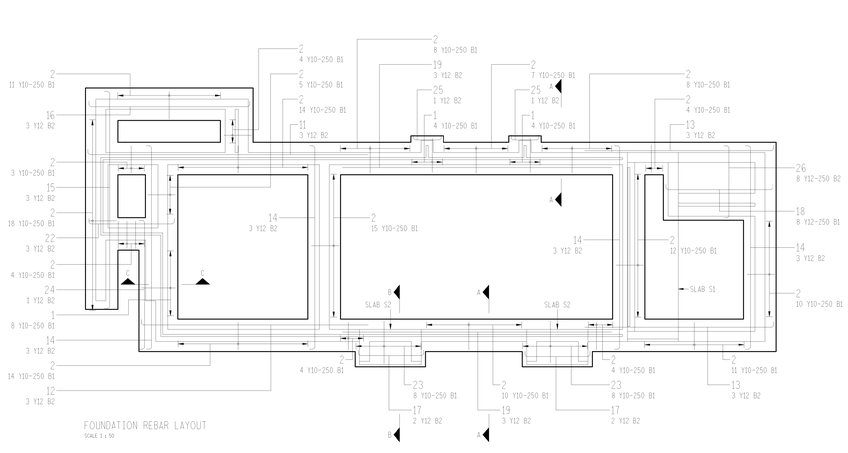
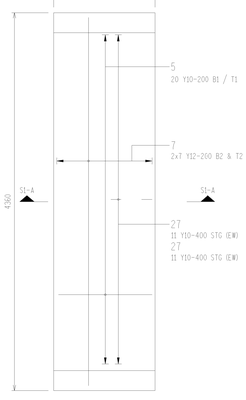
		9	12	14	28	1970	37	400	1600		
		10	12	14	28	3420	37	300	3150		
		20	10	16	32	350	35	150			
		21	10	10	20	320	35	120			
RSF-01	1	1	10	16	16	1150	38	200	800	200	
		2	10	166	166	1000	38	200	650	200	
		11	12	3	3	6580	34	6480			
		12	12	3	3	5350	34	5240			
		13	12	6	6	4490	34	4380			
		14	12	12	12	4900	35	4710			
		15	12	3	3	5220	35	5020			
		16	12	3	3	3910	35	3710			
		17	12	4	4	1710	35	1510			
		18	12	8	8	2680	35	2480			
		19	12	6	6	6230	20	6230			
		22	12	3	3	2180	35	1980			
		23	10	16	16	1350	38	200	1000	200	
		24	12	1	1	3190	35	2990			
S1	1	5	10	20	20	2700	74	1090	140		
		7	12	14	14	4510	38	160	4260	160	
		27	10	22	22	340	35	140			
S2	2	6	10	5	10	3050	74	1340	90		
		8	10	16	32	920	35	720			

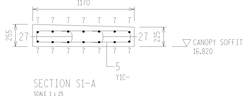
BAR WEIGHT SUMMARY		
Grade450	Y 10	Y 12
TOTAL LENGTH (m)	446.66	438.47
TOTAL WEIGHT (kg)	275.59	389.33



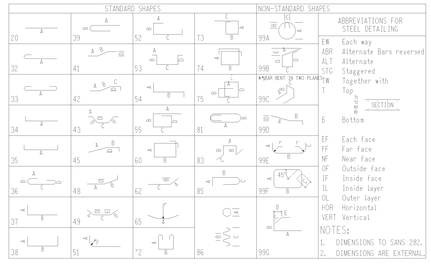
FOUNDATION REBAR LAYOUT
SCALE 1 : 50

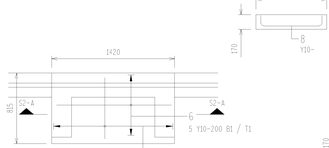


SLAB S1
(1 OFF)
SCALE 1 : 25

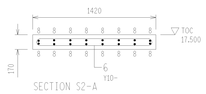


SECTION S1-A
SCALE 1 : 25





SLAB S2
(2 OFF)
SCALE 1 : 25



SECTION S2-A
SCALE 1 : 25

MASTER
01-09-2021
AECOM

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.

2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY YARIATIONS BEFORE CONSTRUCTION.

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	KS	OK	SM	2021-08-31

REVISIONS

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CONTRACTOR / CONSULTANT					
TITLE	NAME	SIGN	DATE		
DRAWN	KS		'21	08	31
CHECKED	DD		'21	08	31
DESIGNED	SM		'21	08	31
CHECKED	CK		'21	08	31
OPERATING DIVISIONS					
TITLE	NAME	SIGN	DATE		

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
-	-		- - -
-	-		- - -
-	-		- - -
-	-		- - -
-	-		- - -
-	-		- - -
-	-		- - -
PR.ENG. / PR.TECH.PR. ARCH			
NAME	S MARAIS		DATE
SIGNATURE			'21 08 31
REG. NUMBER	20090106		
SCALE :	-		A0

Transnet Capital Projects
TRANSNET PTE (TRADING AS TRANSNET CAPITAL PROJECTS) REG NO. 1990/000308/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1099
FAX: 086 677 2455

TRANSNET

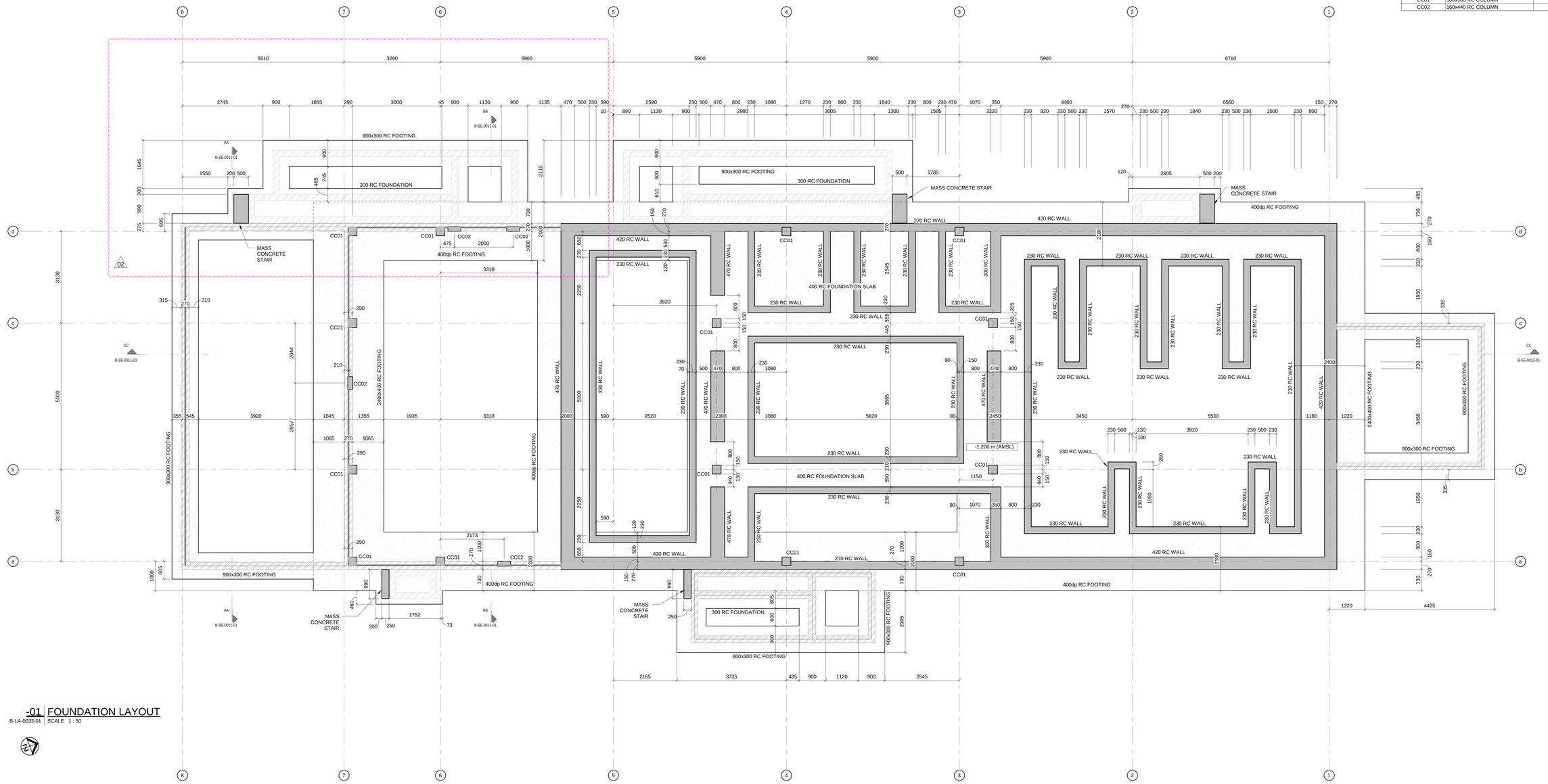
TRANSNET FREIGHT RAIL

YSTERVARK SUBSTATION

RELAY HOUSE BUILDING
FOUNDATION & STEEL REINFORCING LAYOUT

PROJECT NUMBER								OO	FBS			DIS	TYPE		DRAWING NO.			SHEET		REV	ID
1	9	2	4	7	0	1	2	-	5	1	0	-	B	D	E	-	0	0	3	1	0	1	-	0	0	AE

COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	26
CC02	160x440 RC COLUMN	4



-01 FOUNDATION LAYOUT

B-LA-0033-01 SCALE 1 : 50

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION AND DRAWINGS. AWAITING DETAILS ON FINAL OFFERED MV AND LV ELECTRICAL EQUIPMENT DIMENSIONS AND WEIGHTS

MASTER
23-11-2021

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS				
NO	DESCRIPTION	BY	CHKD/APPD	DATE
02	PLINTHS ADDED - DIMS ADDED/AMENDED	A H	C K / SWM	17-11-21
01	HOLD POINT ADDED	C.H	HVW / SWM	21-06-10
00	ISSUED FOR CONSTRUCTION	O A	HVW / SWM	14-06-10

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		17 / 11 / 21
CHECKED	C K		17 / 11 / 21
DESIGNED	C K		17 / 11 / 21
CHECKED	SW M		17 / 11 / 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	17 / 11 / 21
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000900/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
FOUNDATION LAYOUT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	LA	0033	01	02	AE

A1

COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	26
CC02	160x440 RC COLUMN	4

TYPICAL BRICKWORK SUPPORT DETAIL OVER TRENCHES (TB1):
RC LINTELS WITH 4 COURSES BRICKFORCE OVER TRENCH TO SUPPORT BRICKWORK ABOVE. LINTELS SUPPORTED AT COLUMNS WITH HOT-DIPPED GALVANAIZED 150x150x10 ANGLE (300mm LONG), USING 2M16 HILTI HIT-V RODS (DOWELED MIN 120mm dp) WITH HILTI HIT-HY 200 TO SUPPLIERS SPECIFCATIONS.

TYPICAL SLAB DETAIL OVER TRENCHES AT DOORS (TB2):
• 150 RC SLABS CAST INTO TRENCH WALLS

TYPICAL BEAM DETAILS OVER DOORS & WINDOWS:

1. RC LINTEL OVER OPENING FOR INTERNAL SKIN
4NO 5.6mm RODS (3.2M LONG) OVER DOOR OPENINGS WITH 4 COURSES BRICKFORCE DIRECTLY OVER RODS
CRIMP WIRE TIES @ 220 c/cs AS PER FIG 27 OF SANS 10400K-S

2. RC LINTEL OVER OPENING FOR INTERNAL SKIN
4NO 5.6mm RODS (2.2M LONG) OVER DOOR & WINDOW/LOUVRES OPENINGS WITH 4 COURSES BRICKFORCE DIRECTLY OVER RODS
CRIMP WIRE TIES @ 220 c/cs AS PER FIG 27 OF SANS 10400K-S
CAVITY FILL WITH 15MPa CONCRETE 340 DP OVER OPENING 440 BEYOND REVEAL

* FINAL PLINTH SIZE SHALL BE CONFIRMED BY THE CONTRACTOR, BASED ON THE CONTRACTOR'S FINAL, ACCEPTED PUMP SELECTION

REFER TO CIVIL ENGINEER'S DRAWING FOR DETAIL OF FLOOR DRAIN

700x280 CAVITY FILLED PIERS WITH 3Y12 REBAR AND FILLED WITH 15MPa x 9mm CONCRETE

SCREED TO FALL AROUND PLINTHS TO ARCHITECT'S SPEC

01BCS
B-ED-0035-01

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION AND DRAWINGS. AWAITING DETAILS ON FINAL OFFERED MV AND LV ELECTRICAL EQUIPMENT DIMENSIONS AND WEIGHTS

00 | 00 LEVEL
B-LA-0034-01 | SCALE 1 : 50

MASTER
23-11-2021

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
02	PLINTHS ADDED - DIMS ADDED/AMENDED	A H	C K	SWM	17-11-21
01	HOLD POINT ADDED & STEEL POSTS ADDED	C.H	H/W	SWM	21-06-18
00	ISSUED FOR CONSTRUCTION	D.A	H/W	SWM	14-06-18

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	C K		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

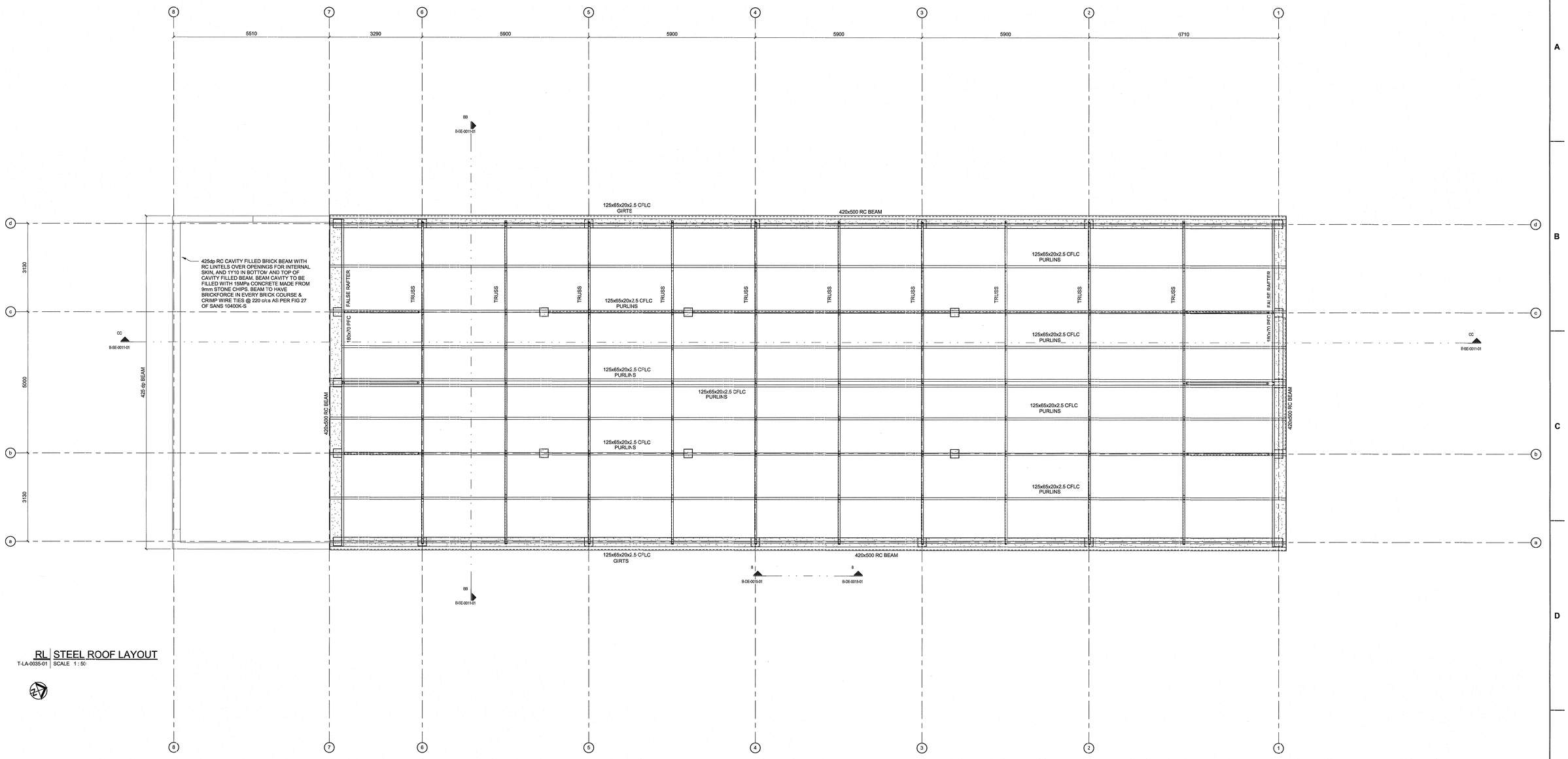
PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	17 11 21
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LWS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2655

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
SURFACE BED LAYOUT

PROJECT NUMBER										OD	FBS		DIS	TYPE	DRAWING NO.			SHEET		REV	ID
A	1	9	2	4	7	0	1	2	5	1	0	B	L	A	0	0	3	4	0	1	02	AE



RL | STEEL ROOF LAYOUT

T-LA-0035-01 | SCALE 1 : 50

MASTER

15 JUN 2018

AECOM TRANSNET

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
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AECOM

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TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.0	ISSUED FOR CONSTRUCTION	OA	HVW	SWM	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	O A		14 06 18
CHECKED	HVW		14 06 18
DESIGNED	IG		14 06 18
CHECKED	SWM		14 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A0

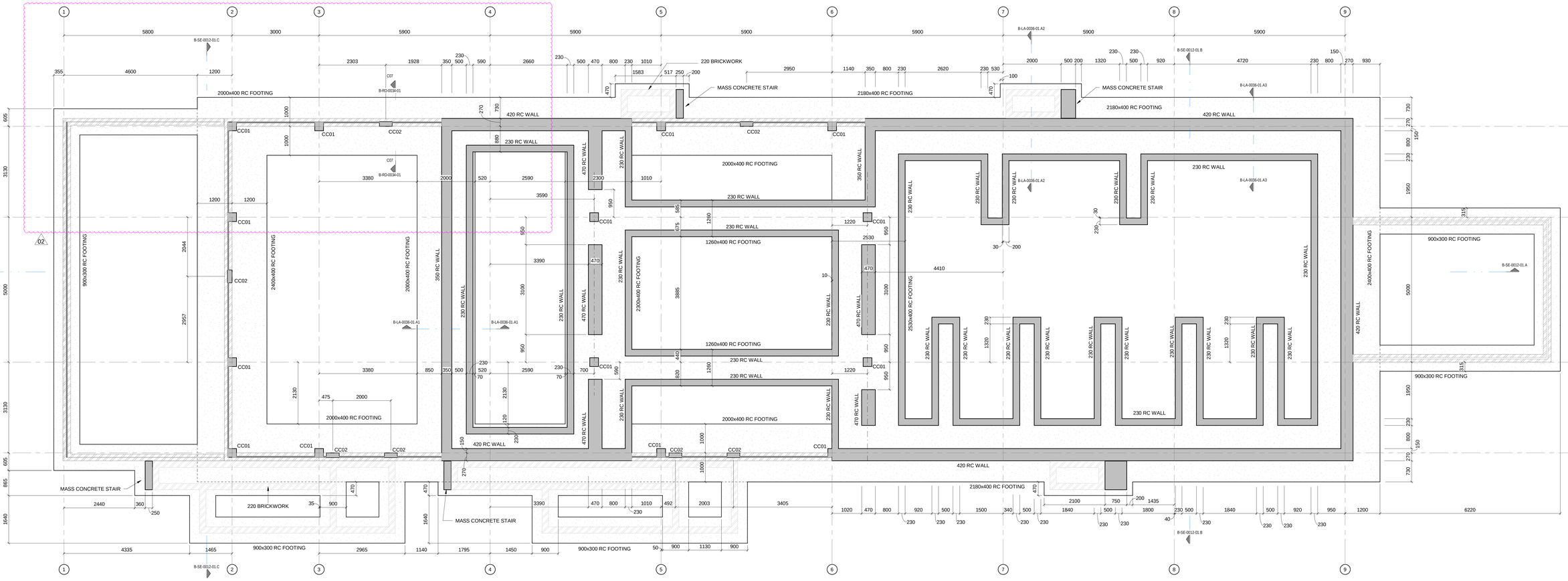
Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO.: 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK, 163 UYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL.: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
STEEL ROOF

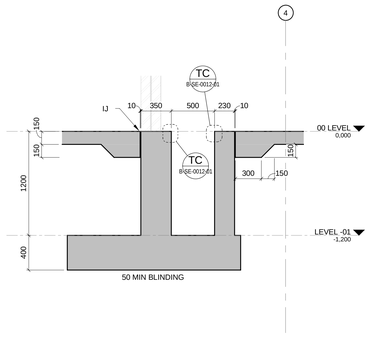
PROJECT NUMBER							OO	FBS			DIS	TYPE	DRAWING NO.			SHEET		REV	IC
1	9	2	4	7	0	1	2	5	1	0	B	L A	0	0	3	5	0	1	0 0 AE

COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	28
CC02	160x440 RC COLUMN	7



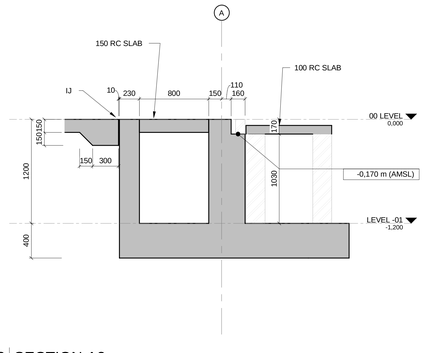
-01 FOUNDATION LAYOUT

B-LA-0036-01 | SCALE 1 : 50



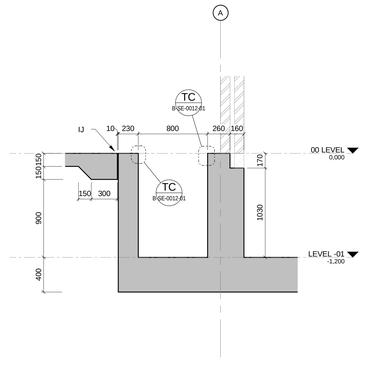
A1 SECTION A1

B-LA-0036-01 | SCALE 1 : 25



A2 SECTION A2

B-LA-0036-01 | SCALE 1 : 25



A3 SECTION A3

B-LA-0036-01 | SCALE 1 : 25

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION AND DRAWINGS. AWAITING DETAILS ON FINAL OFFERED MV AND LV ELECTRICAL EQUIPMENT DIMENTIONS AND WEIGHTS.

MASTER

23-11-2021

AECOM TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHK	APPD	DATE
02	PUNTHS ADDED - DIMS ADDED/AMENDED	A H	C K	SWM	17-11-21
01	HOLD POINT ADDED	C/H	C K	SWM	21-06-19
00	ISSUED FOR CONSTRUCTION	A H	C K	SWM	14-06-19

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TITLE	NAME	SIGN	DATE	
DRAWN	A H		17	11 21
CHECKED	C K		17	11 21
DESIGNED	I G		17	11 21
CHECKED	SW M		17	11 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	17 11 21
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT BULK POWER UPGRADE: SUBSTATION N FOUNDATION LAYOUT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A 1 9 2 4 7 0 1	2	5 1 0	B	L A	0 0 3 6	0 1	02	AE

TYPICAL BEAM DETAILS OVER DOORS & WINDOWS:

1. RC LINTEL OVER OPENING FOR INTERNAL SKIN
4NO 5.6mm RODS (3.2M LONG) OVER DOOR OPENINGS WITH 4 COURSES BRICKFORCE DIRECTLY OVER RODS
CRIMP WIRE TIES @ 220 c/cs AS PER FIG 27 OF SANS 10400K-S

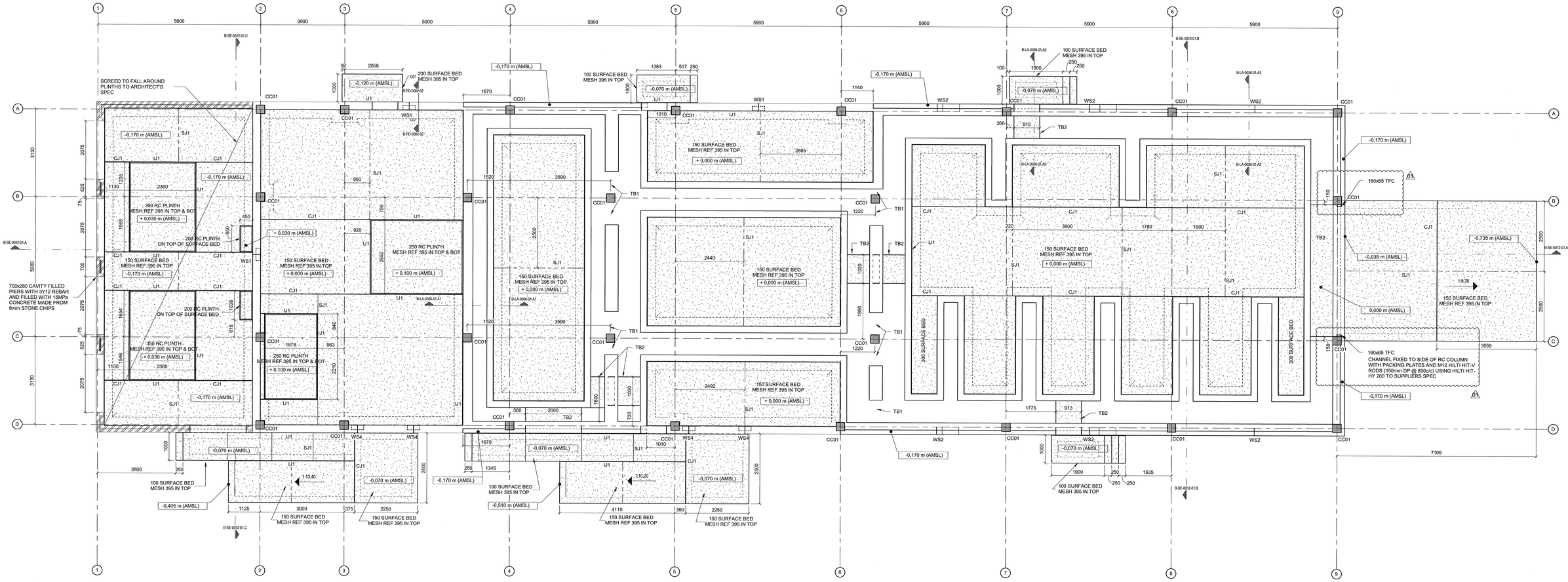
2. RC LINTEL OVER OPENING FOR INTERNAL SKIN
4NO 5.6mm RODS (2.2M LONG) OVER DOOR & WINDOW/LOUVRES OPENINGS WITH 4 COURSES BRICKFORCE DIRECTLY OVER RODS
CRIMP WIRE TIES @ 220 c/cs AS PER FIG 27 OF SANS 10400K-S
CAVITY FILL WITH 15MPa CONCRETE 340 DP OVER OPENING 440 BEYOND REVEAL

COLUMN SCHEDULE

TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	28
CC02	160x440 RC COLUMN	7

TYPICAL BRICKWORK SUPPORT DETAIL OVER TRENCHES (TB1):
RC LINTELS WITH 4 COURSES BRICKFORCE OVER TRENCH TO SUPPORT BRICKWORK ABOVE. LINTELS SUPPORTED AT COLUMNS WITH HOT-DIPPED GALVANISED 150x150x10 ANGLE (300mm LONG), USING 2M16 HILTI HIT-V RODS (DOWELED MIN 120mm dp) WITH HILTI HIT-HY 200 TO SUPPLIERS SPECIFCATIONS.

TYPICAL SLAB DETAIL OVER TRENCHES AT DOORS (TB2):
• 150 RC SLABS CAST INTO TRENCH WALLS



00 SURFACE BED LAYOUT

B-LA-0037-01 | SCALE 1 : 50

MASTER
22 JUN 2018
AECOM TRANSNET

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK'D	APP'D	DATE
01	HOLD POINT ADDED & STEEL POSTS ADDED	CVH	HVW	SWM	21-06-18
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

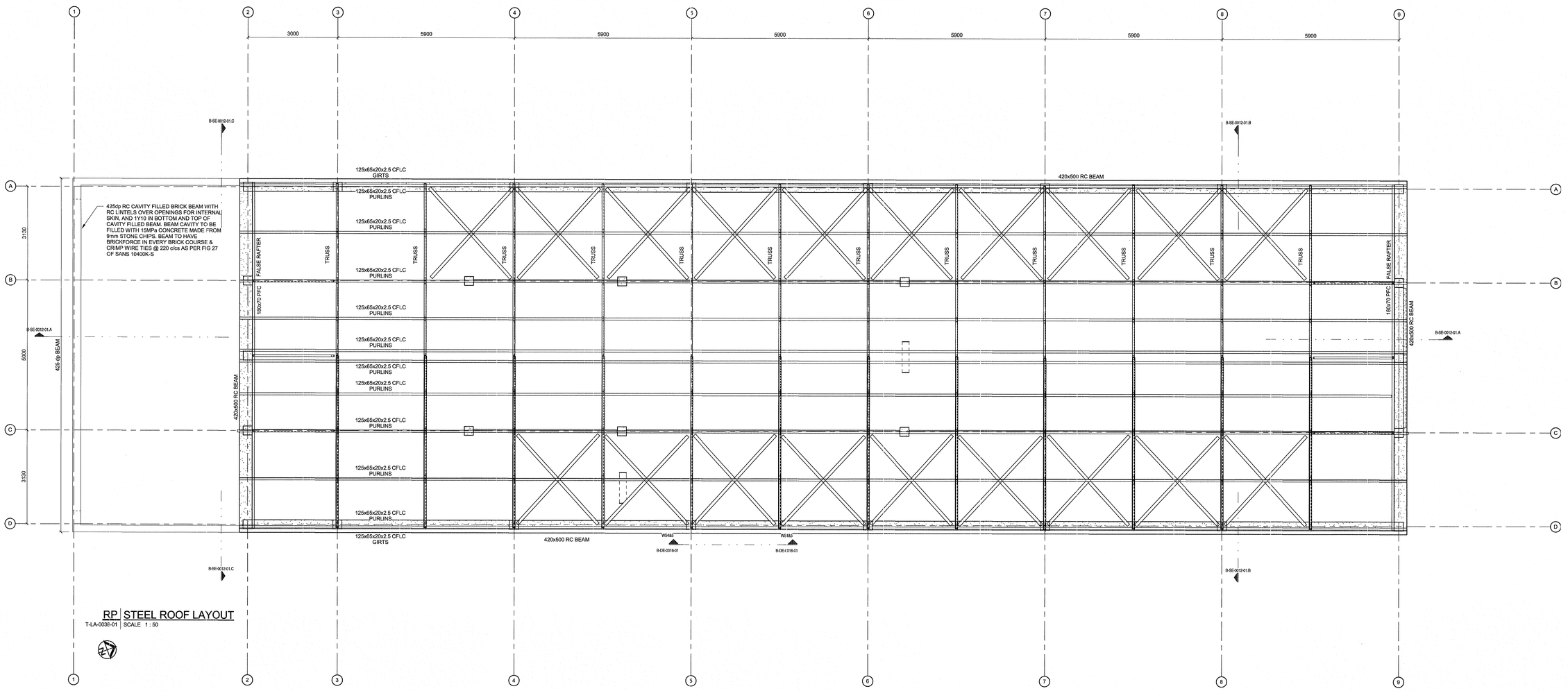
TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	CVH		21 06 18
CHECKED	HVW		21 06 18
DESIGNED	I G		21 06 18
CHECKED	SWM		21 06 18
PR.ENG./PR.TECH./PR.ARCH			
NAME	SW MARAIS		DATE
SIGNATURE			21 06 18
REG. NUMBER	20090106		
SCALE:	AS SHOWN		

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906
TABLE BAY BUILDING, TYGERBERG PARK,
163 LYTS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1000
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
SURFACE BED LAYOUT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A 1 9 2 4 7 0 1	2	5 1 0	B	L A	0 0 3 7	0 1	01	AE



RP | STEEL ROOF LAYOUT

T-LA-0038-01 | SCALE 1 : 50

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	AH		14 06 18
CHECKED	HVW		14 06 18
DESIGNED	IG		14 06 18
CHECKED	SWM		14 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	14 06 18
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LWS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

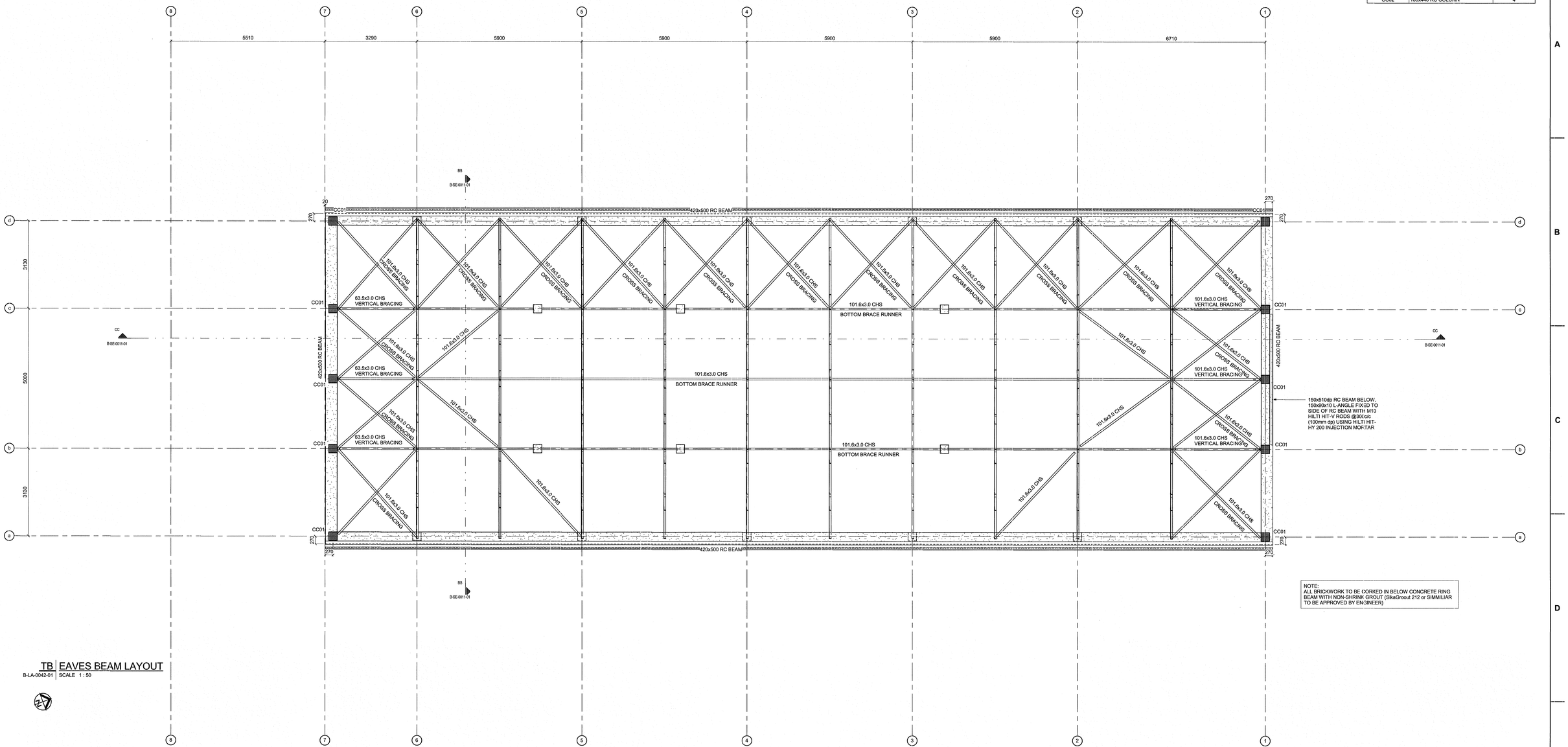
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
STEEL ROOF LAYOUT

PROJECT NUMBER							OO	FBS			DIS	TYPE	DRAWING NO.				SHEET		REV	IC
1	9	2	4	7	0	1	2	5	1	0	B	L	A	0	0	3	8	0	1	00	AE

A

MASTER
15 JUN 2018
AECOM
TRANSNET

COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	26
CC02	160x440 RC COLUMN	4



NOTE:
ALL BRICKWORK TO BE CORKED IN BELOW CONCRETE RING BEAM WITH NON-SHRINK GROUT (SikaGrout 212 or SIMMILIAR TO BE APPROVED BY ENGINEER)

TB | EAVES BEAM LAYOUT

B-LA-0042-01 | SCALE 1 : 50

MASTER
15 JUN 2018
AECOM TRANSNET

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS					
NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.0	ISSUED FOR CONSTRUCTION	OA	HVW	SWM	14-06-18

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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	O A		14 06 18
CHECKED	H/W		14 06 18
DESIGNED	I G		14 06 18
CHECKED	S W M		14 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	EM MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090105	
SCALE:	AS SHOWN	A0

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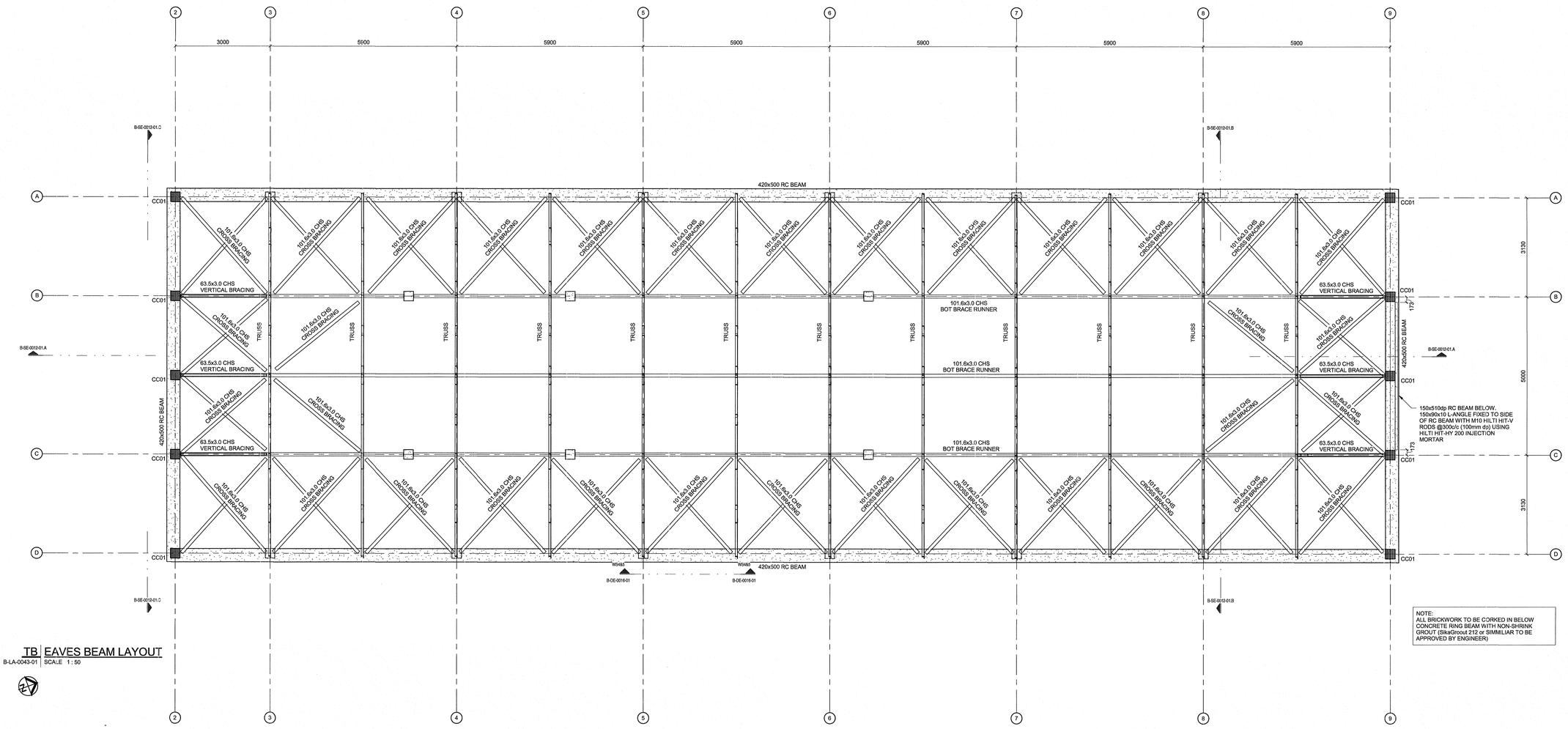
TABLE BAY BUILDING, TYGERBERG PARK, 163 LYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
EAVES BEAM LAYOUT

PROJECT NUMBER	OD		FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	IC
1 9 2 4 7 0 1	2		5 1 0	B	L A	0 0 4 2	0 1	0 0	AE

COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
CC01	300x300 RC COLUMN	28
CC02	160x440 RC COLUMN	7



NOTE:
ALL BRICKWORK TO BE CORKED IN BELOW CONCRETE RING BEAM WITH NON-SHRINK GROUT (SikaGrout 212 or SIMMILIAR TO BE APPROVED BY ENGINEER)

TB | EAVES BEAM LAYOUT

B-LA-0043-01 | SCALE 1 : 50

MASTER
15 JUN 2018
AECOM TRANSNET

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
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NO	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-18

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TITLE	NAME	SIGN			DATE

OPERATING DIVISIONS					
TITLE	NAME	SIGN			DATE

TRANSNET CAPITAL PROJECTS					
TITLE	NAME	SIGN			DATE
DRAWN	AH		14	06	18
CHECKED	HVW		14	06	18
DESIGNED	IG		14	06	18
CHECKED	SWM		14	06	18

PR.ENG./PR.TECH./PR.ARCH		
NAME	ING MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1960/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL.: 021 940 1909
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
EAVES BEAM LAYOUT

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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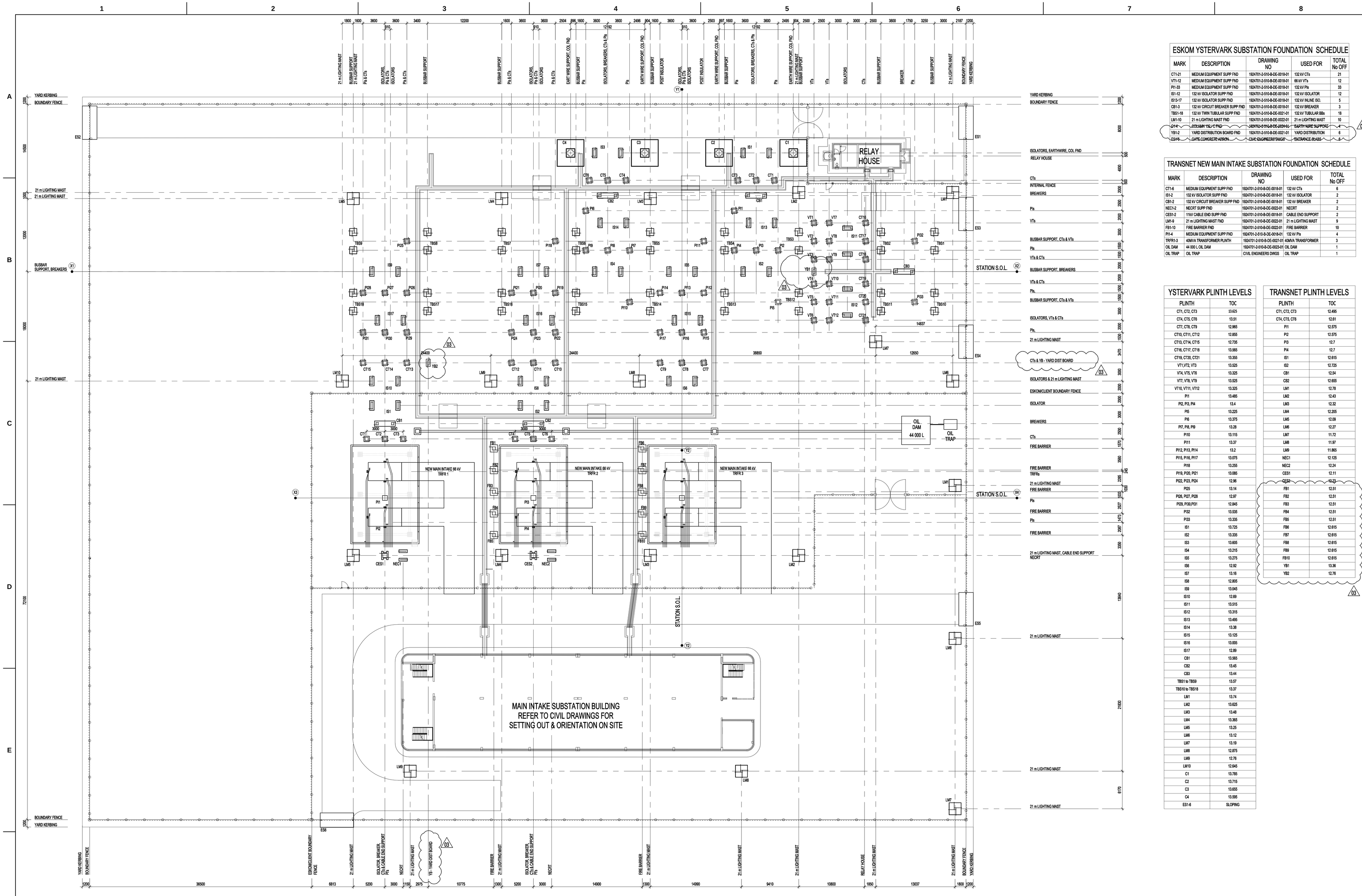

ESKOM YSTERVARK SUBSTATION FOUNDATION SCHEDULE

MARK	DESCRIPTION	DRAWING NO	USED FOR	TOTAL No OFF
CT1-21	MEDIUM EQUIPMENT SUPP FND	1924701-2-510-B-DE-0018-01	132 kV CTs	21
VT1-12	MEDIUM EQUIPMENT SUPP FND	1924701-2-510-B-DE-0018-01	66 kV VTs	12
PI1-33	MEDIUM EQUIPMENT SUPP FND	1924701-2-510-B-DE-0018-01	132 kV PIs	33
IS1-12	132 kV ISOLATOR SUPP FND	1924701-2-510-B-DE-0018-01	132 kV ISOLATOR	12
IS13-17	132 kV ISOLATOR SUPP FND	1924701-2-510-B-DE-0018-01	132 kV INLINE ISO.	5
CB1-3	132 kV CIRCUIT BREAKER SUPP FND	1924701-2-510-B-DE-0018-01	132 kV BREAKER	3
TBS1-18	132 kV TWIN TUBULAR SUPP FND	1924701-2-510-B-DE-0021-01	132 kV TUBULAR BBs	18
LM1-10	21 m LIGHTING MAST FND	1924701-2-510-B-DE-0022-01	21 m LIGHTING MAST	10
CT1-6	ZOSIMPYSL/CTFND	1924701-2-510-B-DE-0026-01	EARTHWIRE SUPPORT	4
YB1-2	YARD DISTRIBUTION BOARD FND	1924701-2-510-B-DE-0021-01	YARD DISTRIBUTION	6
ES1-8	GATE CONCRETE APRON	CIVIL ENGINEERS DWGS	ENTRANCE SLABS	8

03

TRANSNET NEW MAIN INTAKE SUBSTATION FOUNDATION SCHEDULE

MARK	DESCRIPTION	DRAWING NO	USED FOR	TOTAL No OFF
CT1-6	MEDIUM EQUIPMENT SUPP FND	1924701-2-510-B-DE-0018-01	132 kV CTs	6
IS1-2	132 kV ISOLATOR SUPP FND	1924701-2-510-B-DE-0018-01	132 kV ISOLATOR	2
CB1-2	132 kV CIRCUIT BREAKER SUPP FND	1924701-2-510-B-DE-0018-01	132 kV BREAKER	2
NEC1-2	NECRT SUPP FND	1924701-2-510-B-DE-0022-01	NECRT	2
CES1-2	11kV CABLE END SUPP FND	1924701-2-510-B-DE-0018-01	CABLE END SUPPORT	2
LM1-9	21 m LIGHTING MAST FND	1924701-2-510-B-DE-0022-01	21 m LIGHTING MAST	9
FB1-10	FIRE BARRIER FND	1924701-2-510-B-DE-0022-01	FIRE BARRIER	10
PI1-4	MEDIUM EQUIPMENT SUPP FND	1924701-2-510-B-DE-0018-01	132 kV PIs	4
TRFR1-3	40MVA TRANSFORMER PLINTH	1924701-2-510-B-DE-0027-01	40MVA TRANSFORMER	3
OIL DAM	44 000 L OIL DAM	1924701-2-510-B-DE-0023-01	OIL DAM	1
OIL TRAP	OIL TRAP	CIVIL ENGINEERS DWGS	OIL TRAP	1

YSTERVARK PLINTH LEVELS

PLINTH	TOC
CT1, CT2, CT3	13.625
CT4, CT5, CT6	13.51
CT7, CT8, CT9	12.965
CT10, CT11, CT12	12.855
CT13, CT14, CT15	12.735
CT16, CT17, CT18	13.565
CT19, CT20, CT21	13.355
VT1,VT2, VT3	13.525
VT4, VT5, VT6	13.325
VT7, VT8, VT9	13.525
VT10, VT11, VT12	13.325
PI1	13.485
PI2, PI3, PI4	13.4
PI5	13.225
PI6	13.375
PI7, PI8, PI9	13.28
PI10	13.115
PI11	13.37
PI12, PI13, PI14	13.2
PI15, PI16, PI17	13.075
PI18	13.255
PI19, PI20, PI21	13.085
PI22, PI23, PI24	12.96
PI25	13.14
PI26, PI27, PI28	12.97
PI29, PI30,PI31	12.845
PI32	13.535
PI33	13.335
IS1	13.725
IS2	13.335
IS3	13.605
IS4	13.215
IS5	13.275
IS6	12.92
IS7	13.16
IS8	12.805
IS9	13.045
IS10	12.69
IS11	13.515
IS12	13.315
IS13	13.495
IS14	13.38
IS15	13.125
IS16	13.005
IS17	12.89
CB1	13.565
CB2	13.45
CB3	13.44
TBS1 to TBS9	13.57
TBS10 to TBS18	13.37
LM1	13.74
LM2	13.625
LM3	13.48
LM4	13.365
LM5	13.25
LM6	13.12
LM7	13.19
LM8	12.875
LM9	12.76
LM10	12.645
C1	13.785
C2	13.715
C3	13.655
C4	13.595
ES1-8	SLOPING

TRANSNET PLINTH LEVELS

PLINTH	TOC
CT1, CT2, CT3	12.495
CT4, CT5, CT6	12.61
PI1	12.575
PI2	12.575
PI3	12.7
PI4	12.7
IS1	12.615
IS2	12.725
CB1	12.54
CB2	12.655
LM1	12.78
LM2	12.43
LM3	12.32
LM4	12.205
LM5	12.09
LM6	12.27
LM7	11.72
LM8	11.97
LM9	11.865
NEC1	12.125
NEC2	12.24
CES1	12.11
CES2	12.23
FB1	12.51
FB2	12.51
FB3	12.51
FB4	12.51
FB5	12.51
FB6	12.615
FB7	12.615
FB8	12.615
FB9	12.615
FB10	12.615
YB1	13.36
YB2	12.76

03

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.
4. CONCRETE GRADE STRENGTH TO BE 30MPa/19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.
6. COVER TO REINFORCEMENT TO BE 50 MIN.
7. ALL EXPOSED HORIZONTAL CONCRETE SURFACES TO BE WOOD FLOATED.
8. ALL HD BOLTS, NUTS & WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
9. HD BOLT POSITIONS MUST BE ALIGNED FOR CASTING TO A TOLERANCE OF ±2mm AS PER SANS 1200 G.6 GRADE 6 & SURVEYED & ACCEPTED BY STRUCTURAL STEEL CONTRACTOR IN WRITING PRIOR TO CASTING OF CONCRETE.
10. REFER TO EARTHING ARRANGEMENT DETAIL DRAWINGS FOR EARTHING REQUIREMENTS OF FOUNDATION AND STEEL WORK.
11. HANDRAIL / BALUSTRADE: MENTIS MILD STEEL BALL TYPE - STANCHIONS 42.9 OD - SPACING 1000 - HANDRAIL 34.1Ø - GALVANISED TO SANS 121 - TOP MOUNTED 1000 HIGH.
12. ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED WITH 135 MICRON FINAL DRY THICKNESS TO SANS 121 & ESKOM STANDARDS AFTER WELDING & DRILLING.
13. A COMPLETE SET OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION COMMENCES. SHOP DRAWINGS WILL ONLY BE CHECKED FOR COMPLIANCE WITH DESIGN INTENT. NO DIMENSIONAL CHECKS WILL BE DONE. COMMENTS ON SHOP DRAWINGS
14. ALL SHOP SPLICES ARE TO BE INDICATED ON DRAWINGS.
15. STRUCTURES SHALL BE ERECTED, ALIGNED , SQUARED, PLUMBED & LEVELED TO AN ACCURACY SPECIFIED IN SANS 1200 H 6.2.c-2 - CLASS II.
16. WEEDKILLER SHALL BE APPLIED BEFORE & AFTER COMPLETION OF YARD STONE SURFACING.

AECOM

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REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
03	YARD DIST BOARD FOUND ADDED - PLINTH LEVELS AMENDED	A H	C K	SW M	2022-01-14
02	LIGHTING MAST POSITION AMENDED - PLINTH LEVELS AMENDED	A H	SW M	SW M	2021-04-28
01	LIGHTING MAST POSITION AMENDED - PLINTH LEVELS ADDED	A H	SW M	SW M	2020-07-01
00	ISSUED FOR CONSTRUCTION	A H	SW M	SW M	2018-06-14

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TITLE	NAME	SIGN	DATE	
DRAWN	A H		22	01 14
CHECKED	C K		22	01 14
DESIGNED	C K		22	01 14
CHECKED	SW M		22	01 14

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		22 01 14
REG. NUMBER	20090106	
SCALE :	1:200	A0

Transnet Capital Projects
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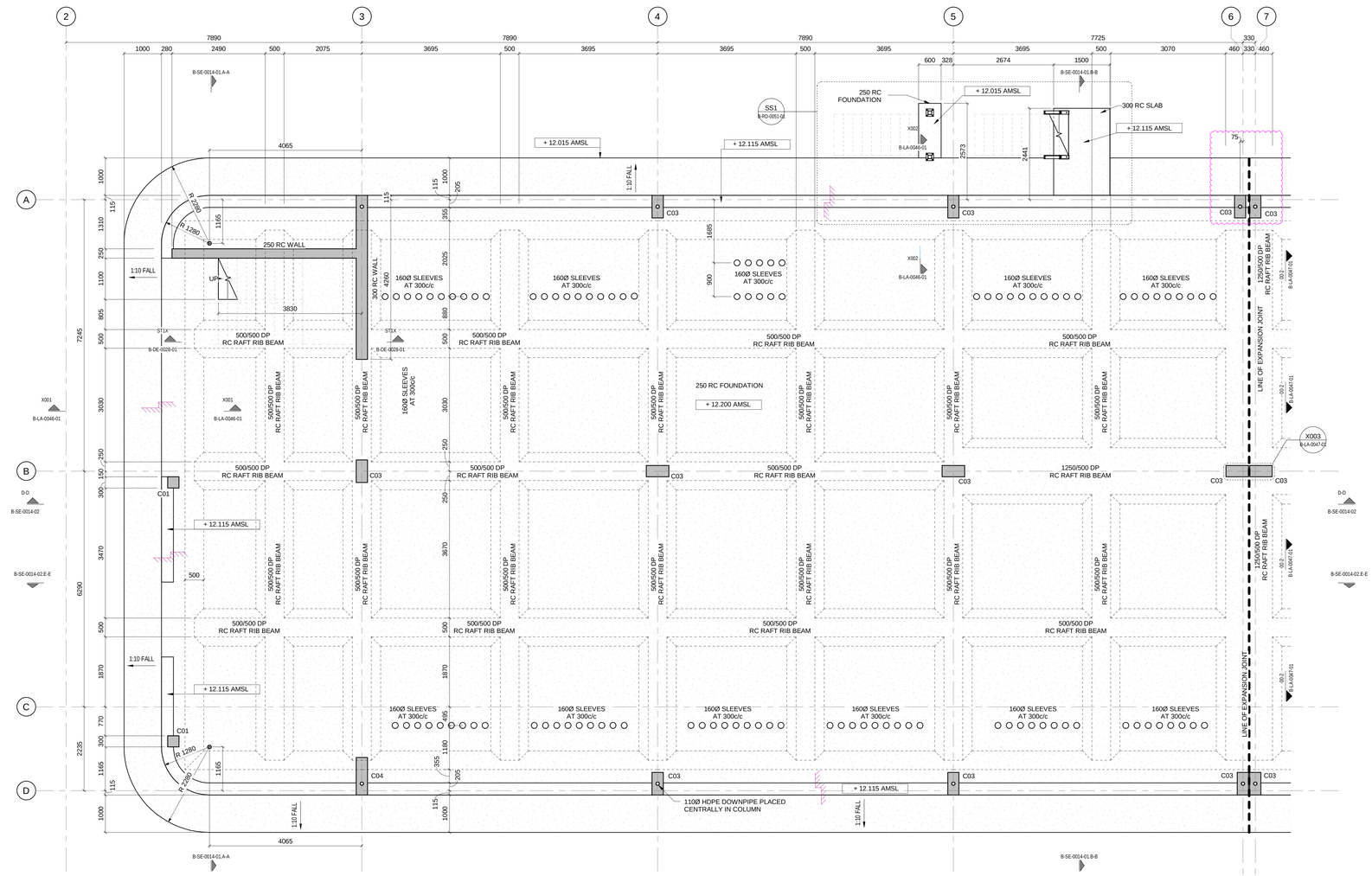
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVIS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

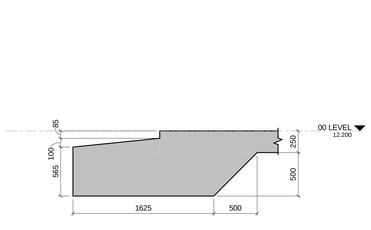
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
GENERAL ARRANGEMENT
FOUNDATIONS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701-2-510-B-LA-0045-01	03	AE						

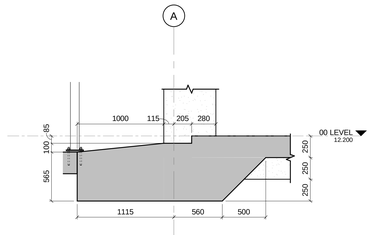
COLUMN SCHEDULE		
TYPE MARK	**TYPE**	**NO. OFF**
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	12
C06	300x1300/300x1775 SHAPED RC COLUMN	1
C07	420x900/420x1209 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6



00 LEVEL - PART 1
SCALE 1 : 50



X001 DETAIL SECTION
00-1/ B-LA-0046-01 SCALE 1 : 25



X002 DETAIL SECTION
00-1/ B-LA-0046-01 SCALE 1 : 25

MASTER
09-06-2023

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
03	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	C K	SW M	07-06-23
02	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
01	STEEL STAIRS WITH FOUNDATIONS ADDED - RAFT BEAM SECTION WIDENED	A H	C K	SW M	27-06-18
00	ISSUED FOR CONSTRUCTION	O A	H W	SW M	14-06-18

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CHECKED	H.W	PP	07 / 06 / 23
DESIGNED	I G	PP	07 / 06 / 23
CHECKED	SW M		07 / 06 / 23

OPERATING DIVISIONS			
TITLE	**NAME**	**SIGN**	**DATE**

TRANSNET CAPITAL PROJECTS			
TITLE	**NAME**	**SIGN**	**DATE**

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	07 / 06 / 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - LAYOUT PART 1

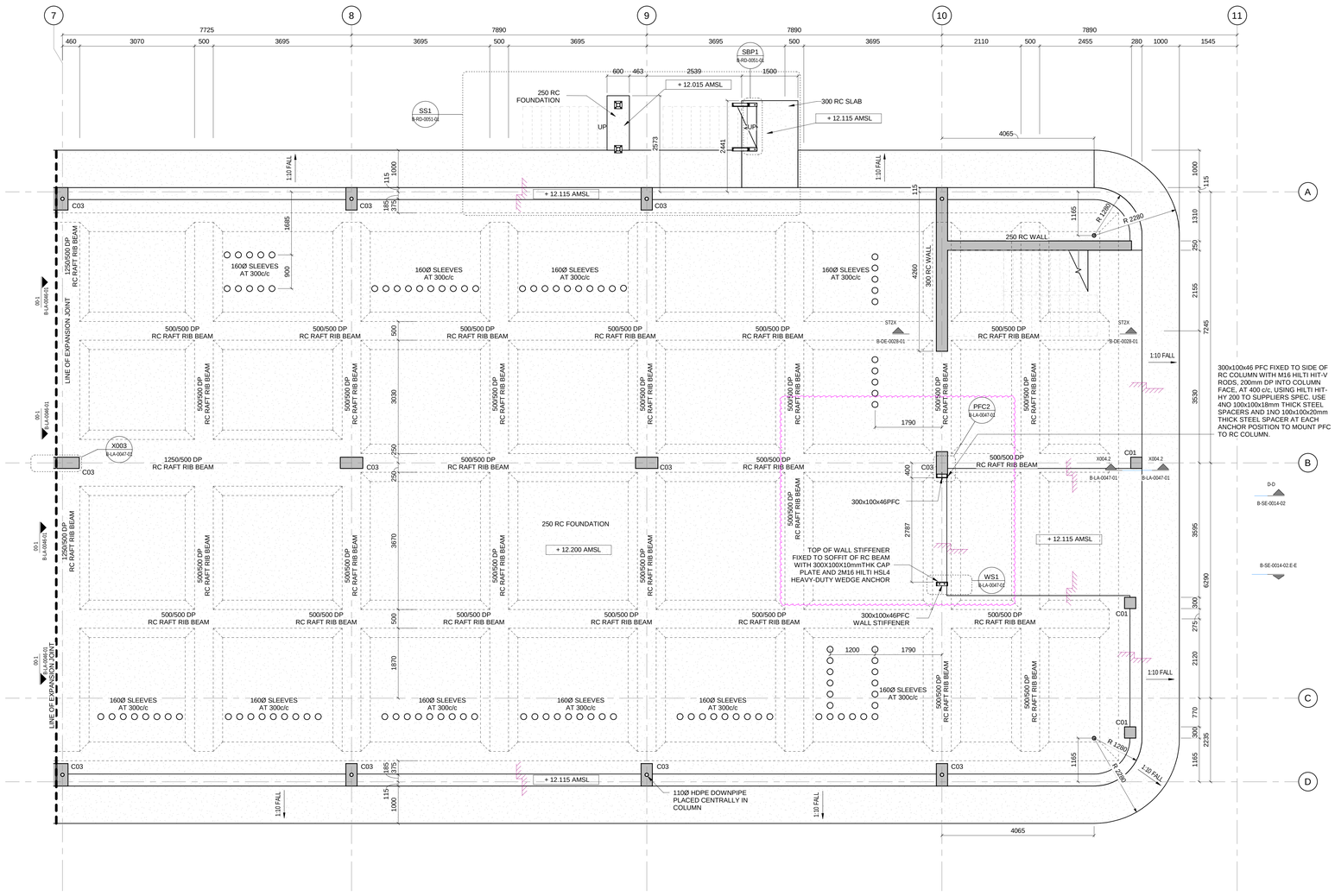
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
192470	12	510	B	LA	0046	01	03	AE

A

COLUMN SCHEDULE		
TYPE MARK	**TYPE**	**NO. OFF**
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	13
C06	300x1300/300x1775 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6

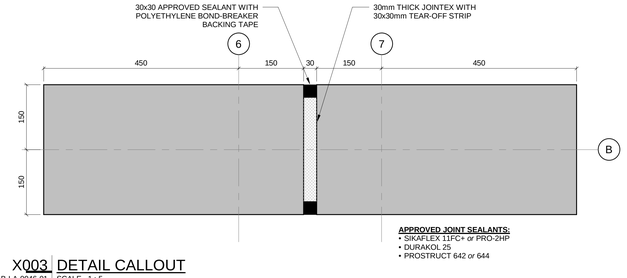
NOTE:

- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O



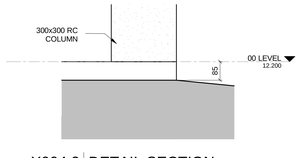
00 LEVEL - PART 2

SCALE 1 : 50



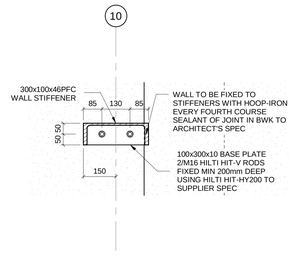
X003 DETAIL CALLOUT

00-1/ B-LA-0046-01 | SCALE 1 : 5



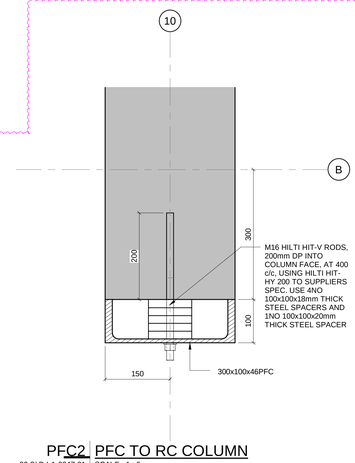
X004.2 DETAIL SECTION

00-2/ B-LA-0047-01 | SCALE 1 : 10



WS1 WALL STIFFENER BASE PLATE 1

00-2/ B-LA-0047-01 | SCALE 1 : 10



PFC2 PFC TO RC COLUMN

00-2/ B-LA-0047-01 | SCALE 1 : 5

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
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MASTER

12-04-2023

AECOM

AECOM

CAPE TOWN OFFICE
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TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
03	WALL STIFFENERS ADDED/AMENDED	A H	J DW	S W M	29-03-23
02	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	S W M	01-07-20
01	STEEL STAIRS WITH FOUNDATIONS ADDED - RAFT BEAM SECTION WIDENED	A H	C K	S W M	27-06-18
00	ISSUED FOR CONSTRUCTION	O A	H.W	S W M	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	**NAME**	**SIGN**	**DATE**
DRAWN	A H		29 03 23
CHECKED	H.W	PP	29 03 23
DESIGNED	I G	PP	29 03 23
CHECKED	S W M		29 03 23

OPERATING DIVISIONS			
TITLE	**NAME**	**SIGN**	**DATE**

TRANSNET CAPITAL PROJECTS			
TITLE	**NAME**	**SIGN**	**DATE**

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	29 03 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - LAYOUT PART 2

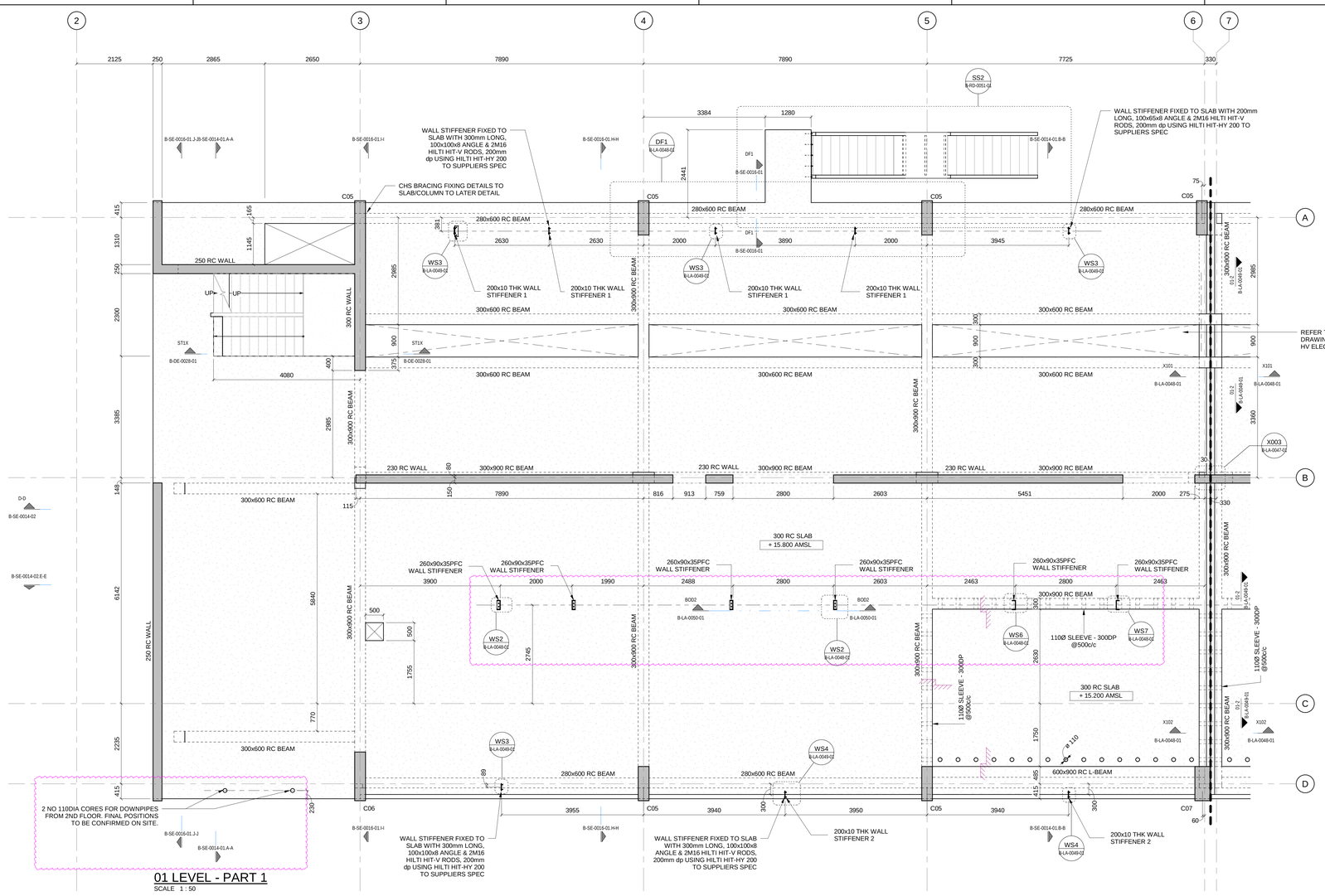
PROJECT NUMBER										OD	FBS	DIS	TYPE	DRAWING NO.				SHEET	REV	ID
1	9	2	4	7	0	1	2	5	1	0	B	L	A	0	0	4	7	0	1	03	AE

A1

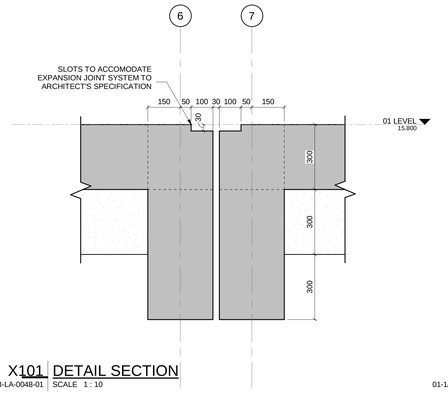
COLUMN SCHEDULE		
TYPE MARK	TYPE	NO. OFF
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	12
C06	300x1300/300x1775 SHAPED RC COLUMN	1
C07	420x900/420x1209 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6

NOTE:

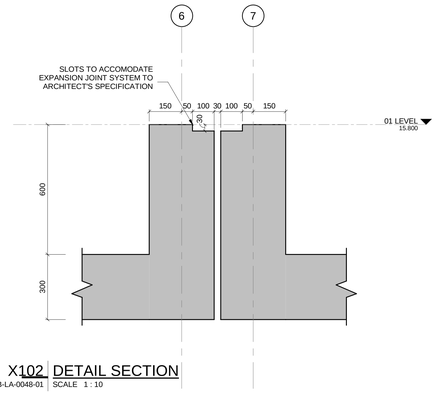
- THE SIZE AND POSITION OF SLAB OPENING FOR SWITCHGEAR CABLING TO BE FINALISED UPON RECEIPT OF MV SWITCH GEAR SHOP DRAWINGS
- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O.
- ALL STRUCTURAL STEEL ELEMENTS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES. INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.



01 LEVEL - PART 1
SCALE 1 : 50



X101 DETAIL SECTION
01-1/ B-LA-0048-01 SCALE 1 : 10



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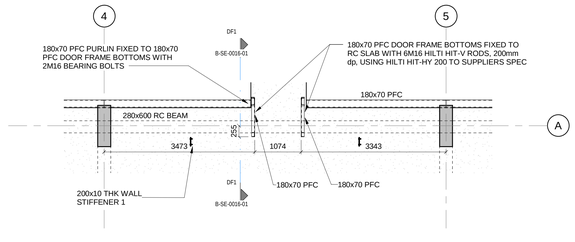
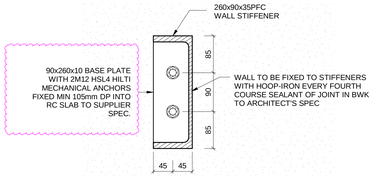
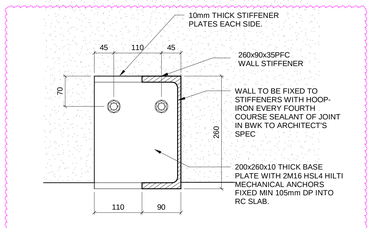


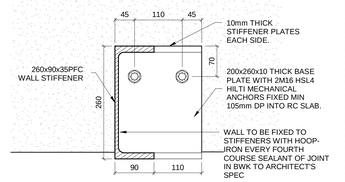
DF1 EXTERNAL DOOR FRAME 1
01-1/ B-LA-0048-01 SCALE 1 : 50



WS2 WALL STIFFENER BASE PLATE 2
01-1/ B-LA-0048-01 SCALE 1 : 5



WS6 WALL STIFFENER BASE PLATE 6
01-1/ B-LA-0048-01 SCALE 1 : 5



WS7 WALL STIFFENER BASE PLATE 7
01-1/ B-LA-0048-01 SCALE 1 : 5

MASTER
27-07-2023

DRAWING NO. / REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
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CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	DAPPD	DATE
0.5	CONNECTION DETAILS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.4	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	J DW	SW M	07-06-23
0.3	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.2	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
0.1	SLAB & STEEL STAIRS REVISED - BEAMS & OPENINGS MOVED - NOTES ADDED	A H	C K	SW M	27-06-18
0.0	ISSUED FOR CONSTRUCTION	O A	H.W	SW M	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		24 / 07 / 23
CHECKED	H.W		24 / 07 / 23
DESIGNED	I G		24 / 07 / 23
CHECKED	SW M		24 / 07 / 23

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS DATE
SIGNATURE	24 / 07 / 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT BULK POWER UPGRADE: MAIN INTAKE SUBSTATION LEVEL 01 - LAYOUT PART 1

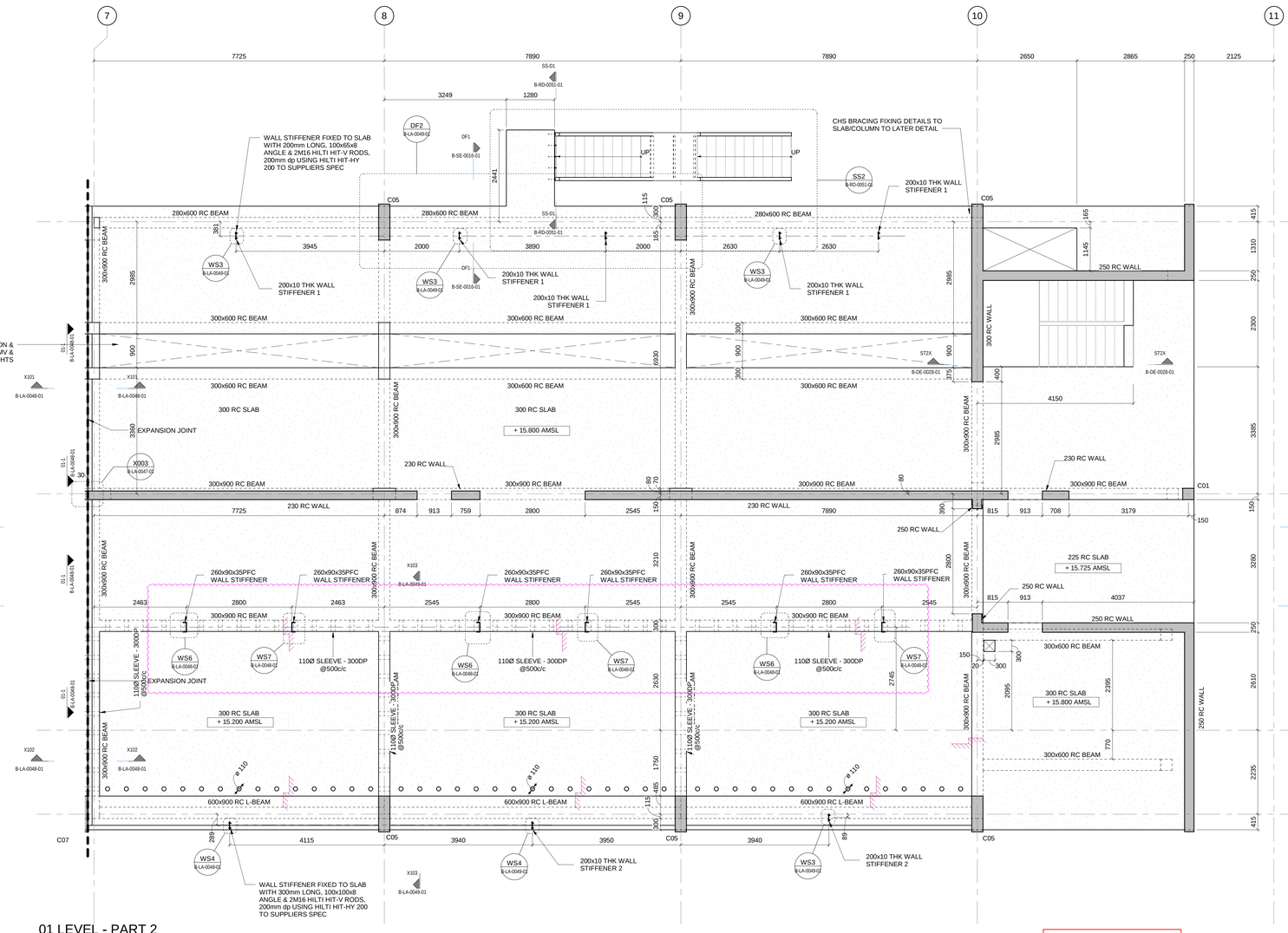
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	LA	0048	01	05	AE

SCALE: A1

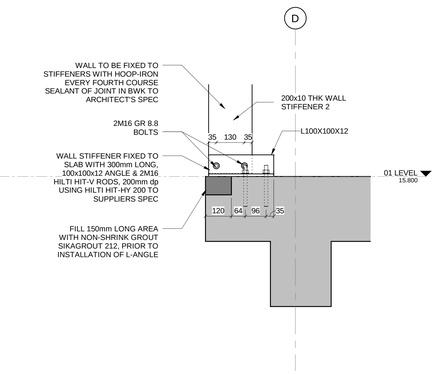
COLUMN SCHEDULE		
TYPE MARK	**TYPE**	**NO. OFF**
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	12
C06	300x1300/300x1775 SHAPED RC COLUMN	1
C07	420x900/420x1209 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6

NOTE:

- THE SIZE AND POSITION OF SLAB OPENING FOR SWITCHGEAR CABLING TO BE FINALISED UPON RECEIPT OF MV SWITCH GEAR SHOP DRAWINGS
- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O.
- ALL STRUCTURAL STEEL ELEMENTS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES. INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.

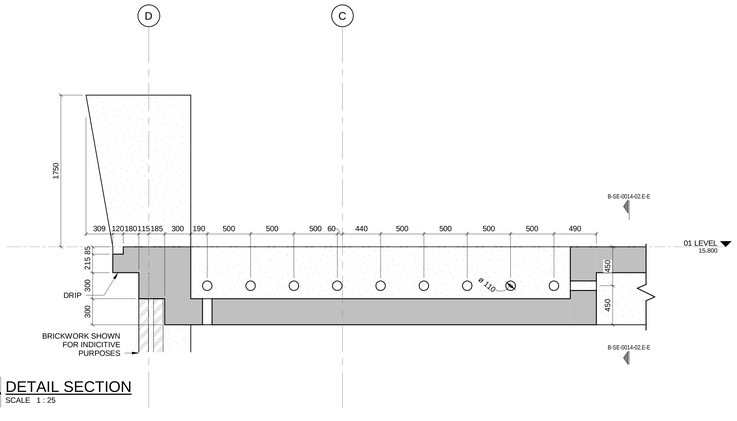


01 LEVEL - PART 2
SCALE 1 : 50

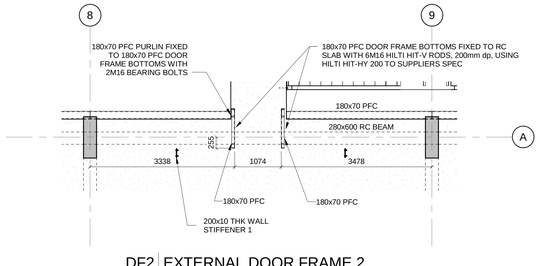


WS4-S | WALL STIFFENER BASE PLATE 4 SECTION
WS4/ B-LA-0049-01 | SCALE 1 : 10

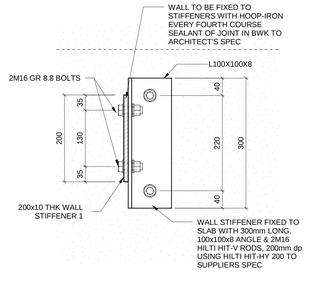
MASTER
27-07-2023



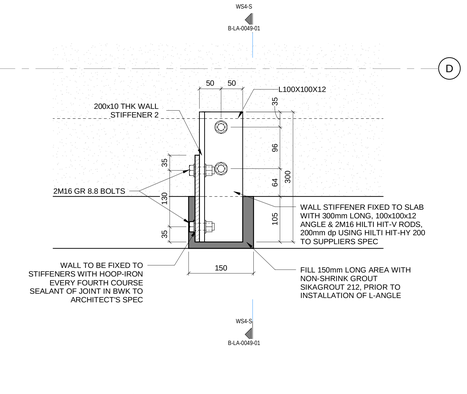
X103 | DETAIL SECTION
REW1/ B-DE-0030-01 | SCALE 1 : 25



DF2 | EXTERNAL DOOR FRAME 2
01-2/ B-LA-0049-01 | SCALE 1 : 50



WS3 | WALL STIFFENER BASE PLATE 3
01-1/ B-LA-0048-01 | SCALE 1 : 5



WS4 | WALL STIFFENER BASE PLATE 4
01-1/ B-LA-0048-01 | SCALE 1 : 5

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

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WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.5	CONNECTION DETAILS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	S W M	24-07-23
0.4	WALL STIFFENERS ADDED/AMENDED	A H	J DW	S W M	29-03-23
0.3	OPENINGS FOR SERVICES ADDED/AMENDED	A H	C K	S W M	09-09-22
0.2	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	S W M	01-07-20
0.1	SLAB & STEEL STAIRS REVISED - BEAMS & OPENINGS MOVED - STEEL COLUMNS CHANGED TO RC COLUMNS - NOTES ADDED	A H	C K	S W M	27-06-19
0.0	ISSUED FOR CONSTRUCTION	O A	H W	S W M	14-06-19

REVISIONS

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CONTRACTOR/CONSULTANT				
TITLE	**NAME**	**SIGN**	**DATE**	
DRAWN	A H		24	07 23
CHECKED	C K		24	07 23
DESIGNED	I G		24	07 23
CHECKED	S W M		24	07 23

OPERATING DIVISIONS			
TITLE	**NAME**	**SIGN**	**DATE**

TRANSNET CAPITAL PROJECTS			
TITLE	**NAME**	**SIGN**	**DATE**

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	24 07 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
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163 LVS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2655

PORT OF SALDANHA

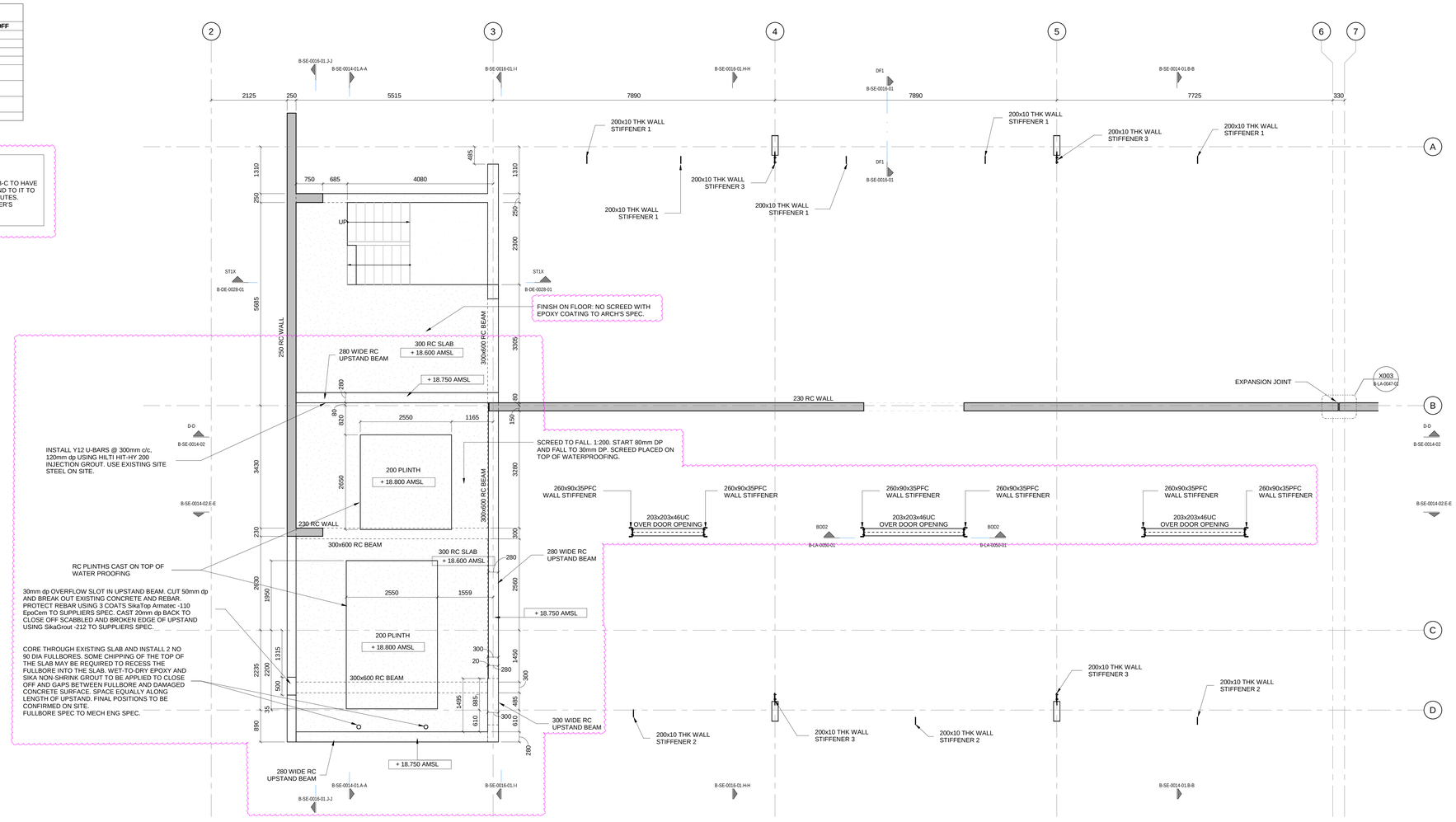
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - LAYOUT PART 2

PROJECT NUMBER					OD	FBS	DIS	TYPE	DRAWING NO.				SHEET	REV	ID
A	1	9	2	4	7	0	1	2	5	1	0	B	L A	0 0 4 9				0 1	0 5	AE

COLUMN SCHEDULE		
TYPE MARK	**TYPE**	**NO. OFF**
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	12
C06	300x1300/300x1775 SHAPED RC COLUMN	1
C07	420x900/420x1209 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6

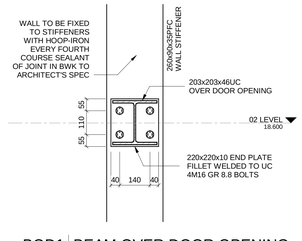
NOTE:

- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O.
- ALL STRUCTURAL STEEL ELEMENTS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES. INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.



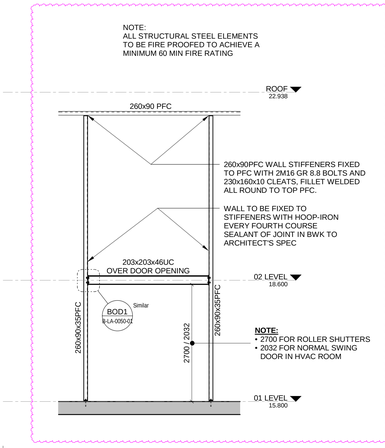
02 LEVEL - PART 1

SCALE 1 : 50



BOD1 | BEAM OVER DOOR OPENING

REW2/ B-DE-0030-01 | SCALE 1 : 10



BOD2 | TYPICAL WALL STIFFENERS AT DOOR OPENING

01-1/ B-LA-0048-01 | SCALE 1 : 50

MASTER

27-07-2023

AECOM

TRANSNET

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.2	PLINTH DETAILS AND UPSTANDS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.1	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.0	ISSUED FOR CONSTRUCTION	O A	H W	SW M	14-06-22

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CONTRACTOR/CONSULTANT					
TITLE	**NAME**	**SIGN**	**DATE**		
DRAWN	A H		24	07	23
CHECKED	H vW		24	07	23
DESIGNED	I G		24	07	23
CHECKED	SW M		24	07	23

OPERATING DIVISIONS					
TITLE	**NAME**	**SIGN**	**DATE**		

TRANSNET CAPITAL PROJECTS					
TITLE	**NAME**	**SIGN**	**DATE**		

PR.ENG./PR.TECH./PR.ARCH					
NAME	SW MARAIS		**DATE**		
SIGNATURE			24	07	23
REG. NUMBER	20090106				
SCALE:	AS SHOWN		**A**		

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000900/06
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163 UYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

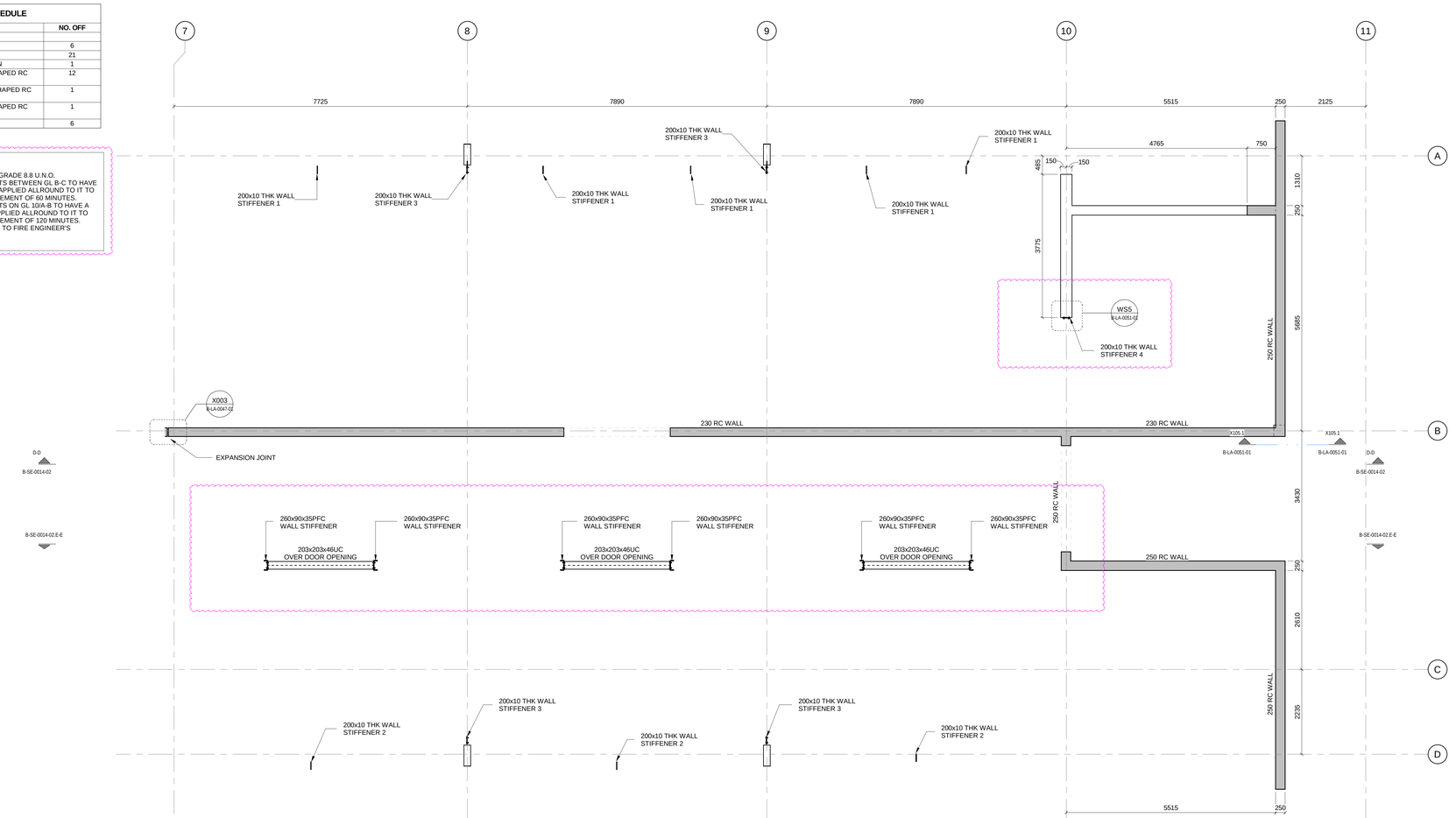
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 02 - LAYOUT PART 1

PROJECT NUMBER								OD	FBS		DIS	TYPE	DRAWING NO.				SHEET		REV	ID
1	9	2	4	7	0	1	2	5	1	0	B	L A	0	0	5	0	0	1	0 2	AE

COLUMN SCHEDULE		
TYPE MARK	**TYPE**	**NO. OFF**
C01	300x300 RC COLUMN	6
C03	300x600 RC COLUMN	21
C04	300x1000 RC COLUMN	1
C05	300x900/300x1209 SHAPED RC COLUMN	12
C06	300x1300/300x1775 SHAPED RC COLUMN	1
C07	420x900/420x1209 SHAPED RC COLUMN	1
SC02	100x100x4.0 SHS	6

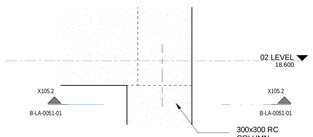
NOTE:

- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O.
- ALL STRUCTURAL STEEL ELEMENTS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES.
- ALL STRUCTURAL STEEL ELEMENTS ON GL 10/A-B TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 120 MINUTES.
- INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.



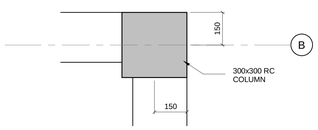
02 LEVEL - PART 2

SCALE 1 : 50



X105.1 DETAIL SECTION

02-02/ B-LA-0051-01 | SCALE 1 : 10

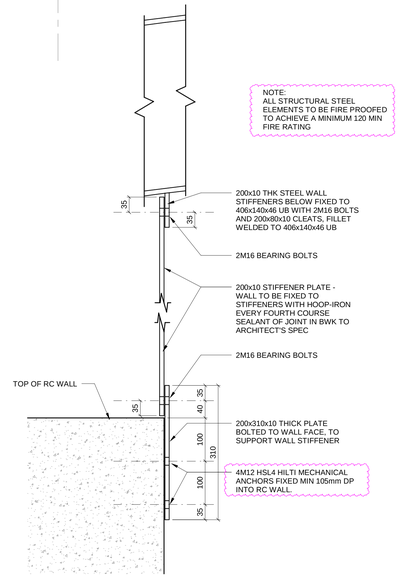


X105.2 DETAIL SECTION

X105.1/ B-LA-0051-01 | SCALE 1 : 10

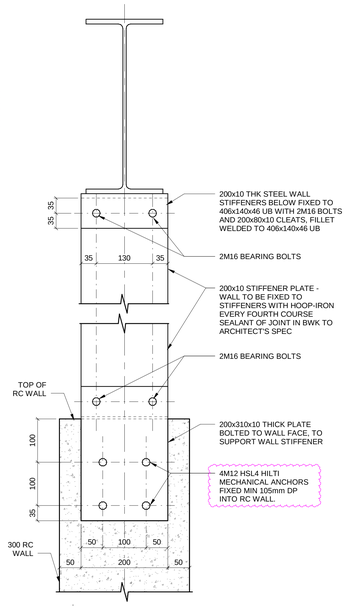
MASTER

27-07-2023



WS5 WALL STIFFENER DETAIL 5

02-1/ B-LA-0050-01 | SCALE 1 : 5



WS5-S WALL STIFFENER SECTION 5

SCALE 1 : 5

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
2. **THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.**

AECOM

CAPE TOWN OFFICE
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TYGER WATERFRONT
CARL CRONJE DRIVE

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	CONNECTION DETAILS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	S W M	24-07-23
0.2	WALL STIFFENERS ADDED/AMENDED	A H	J DW	S W M	29-03-23
0.1	STEEL COLUMNS CHANGED TO RC COLUMNS - WING WALL ADDED	A H	C K	S W M	27-06-18
0.0	ISSUED FOR CONSTRUCTION	O A	H.W	S W M	14-06-18

REVISIONS

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TITLE	**NAME**	**SIGN**	**DATE**	
DRAWN	A H		24	07 23
CHECKED	H.W		24	07 23
DESIGNED	I G		24	07 23
CHECKED	SW M		24	07 23

OPERATING DIVISIONS			
TITLE	**NAME**	**SIGN**	**DATE**

TRANSNET CAPITAL PROJECTS			
TITLE	**NAME**	**SIGN**	**DATE**

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	**DATE**
SIGNATURE		24 07 23
REG. NUMBER	20090106	
SCALE:	AS SHOWN	**A**

Transnet Capital Projects
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163 LVS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

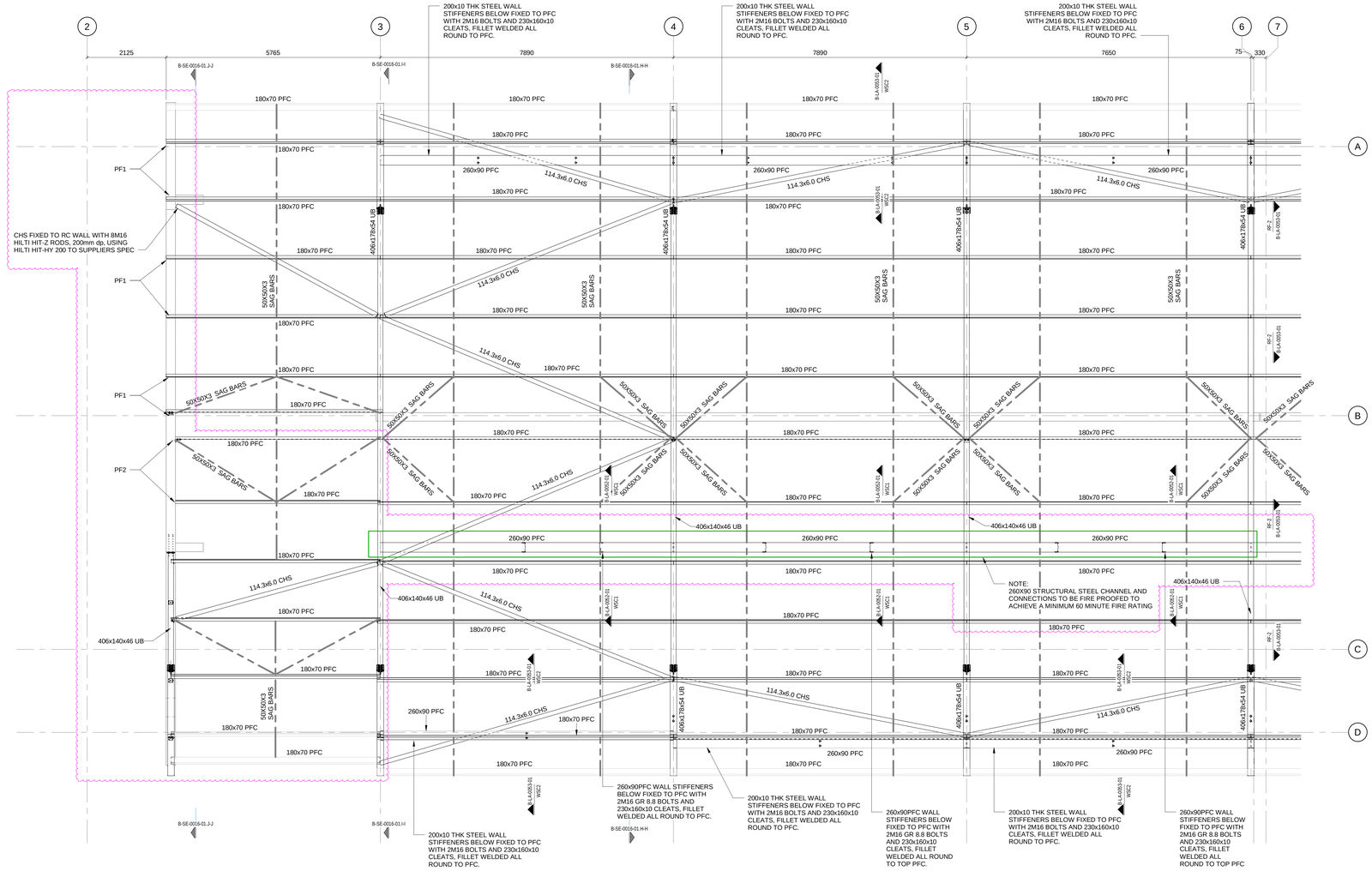
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 02 - LAYOUT PART 2

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	LA	00510	01	03	AE

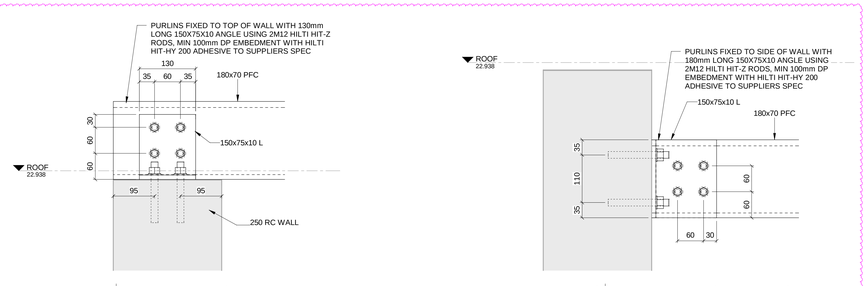
NOTE:

- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O
- 260X90 STRUCTURAL STEEL CHANNEL AND CONNECTIONS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES. INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.



RF-1 ROOF PLAN - PART 1

BOD2/ B-LA-0050-01 | SCALE 1 : 50



PF1 PURLIN FIXING DETAIL 1

SCALE 1 : 5

PF2 PURLIN FIXING DETAIL 2

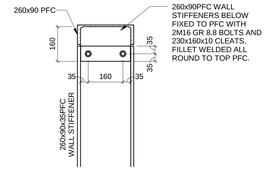
SCALE 1 : 5

MASTER

27-07-2023

AECOM

TRANSNET



WSC1 WALL STIFFENER CONNECTION PLATE 1

SCALE 1 : 10

NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
2. **THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.**

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM

CAPE TOWN OFFICE
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TYGER WATERFRONT
CARL CRONJE DRIVE

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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	ROOF LAYOUT UPDATED TO SUITE NEW PLANTROOM REQUIREMENTS, CONNECTION DETAILS ADDED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.2	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	J DW	SW M	07-06-23
0.1	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.0	ISSUED FOR CONSTRUCTION	O A	H W	SW M	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		24 07 23
CHECKED	H vW		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		24 07 23
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
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163 LYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

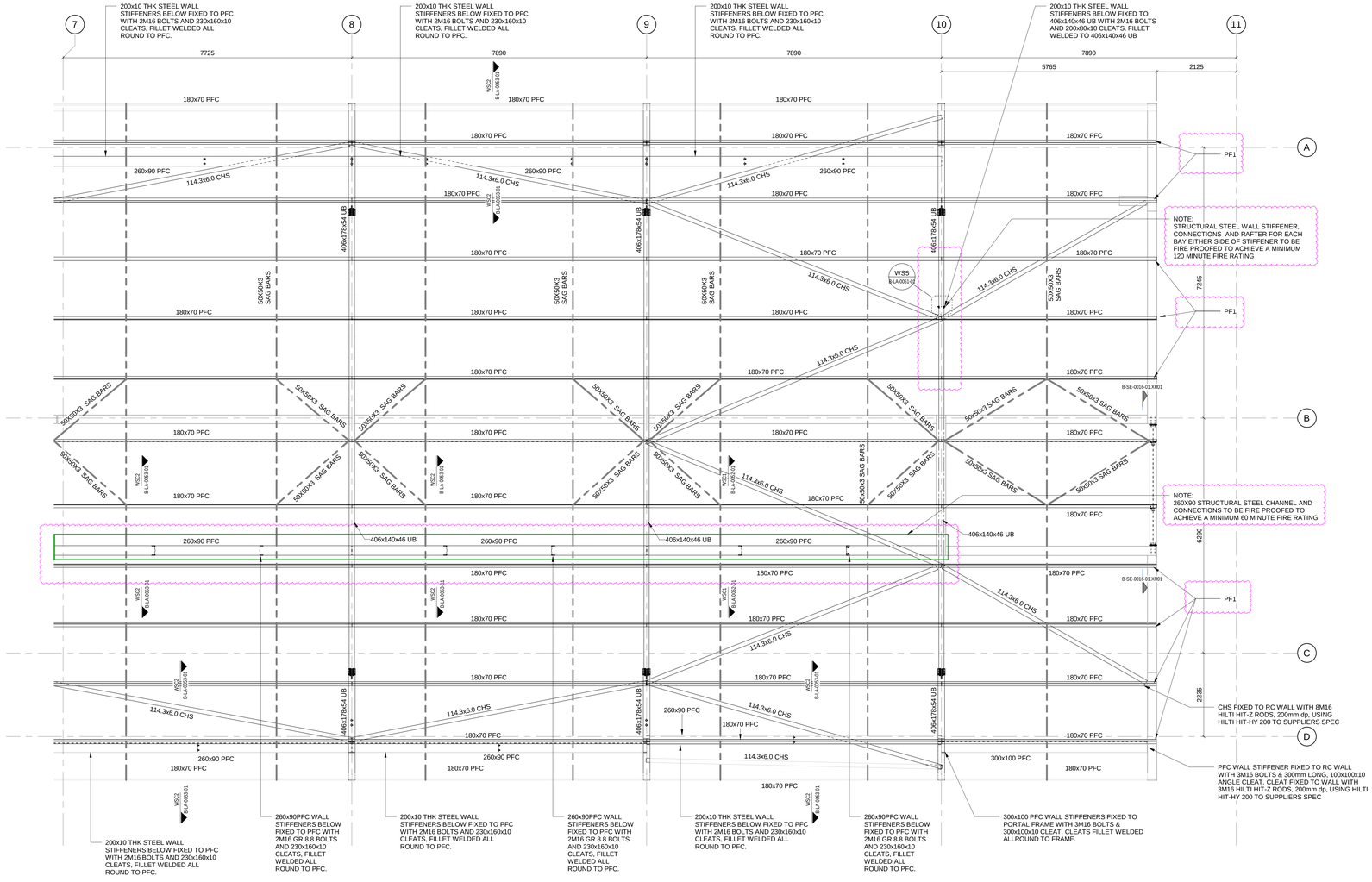
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
ROOF LAYOUT PART 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701 2	5	1 0	B	L A	0 0 5 2	0 1	0 3	AE

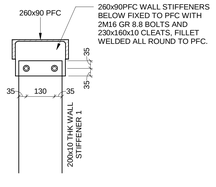
NOTE:

- ALL BOLTS AND ANCHORS TO BE GRADE 8.8 U.N.O
- 260X90 STRUCTURAL STEEL CHANNEL AND CONNECTIONS BETWEEN GL B-C TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 60 MINUTES.
- ALL STRUCTURAL STEEL ELEMENTS BETWEEN GL 10/A-B TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 120 MINUTES.
- ALL STRUCTURAL STEEL ELEMENTS ON GL 10/A-B TO HAVE A INTUMESCENT PAINT COATING APPLIED ALLROUND TO IT TO ACHIEVE A MINIMUM FIRE REQUIREMENT OF 120 MINUTES.
- INTUMESCENT PAINT ACCORDING TO FIRE ENGINEER'S SPECIFICATION.



RE-2 | ROOF PLAN - PART 2

BOD2/ B-LA-0050-01 | SCALE 1 : 50



WSC2 | WALL STIFFENER CONNECTION PLATE 2

SCALE 1 : 10

MASTER

27-07-2023

AECOM

TRANSNET

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM

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TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.2	ROOF LAYOUT UPDATED TO SUITE NEW PLANTROOM REQUIREMENTS, CONNECTION DETAILS ADDED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.1	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.0	ISSUED FOR CONSTRUCTION	O A	H.VW	SW M	14-06-18

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CHECKED	H vW		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		24 07 23
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

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8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
ROOF LAYOUT PART 2

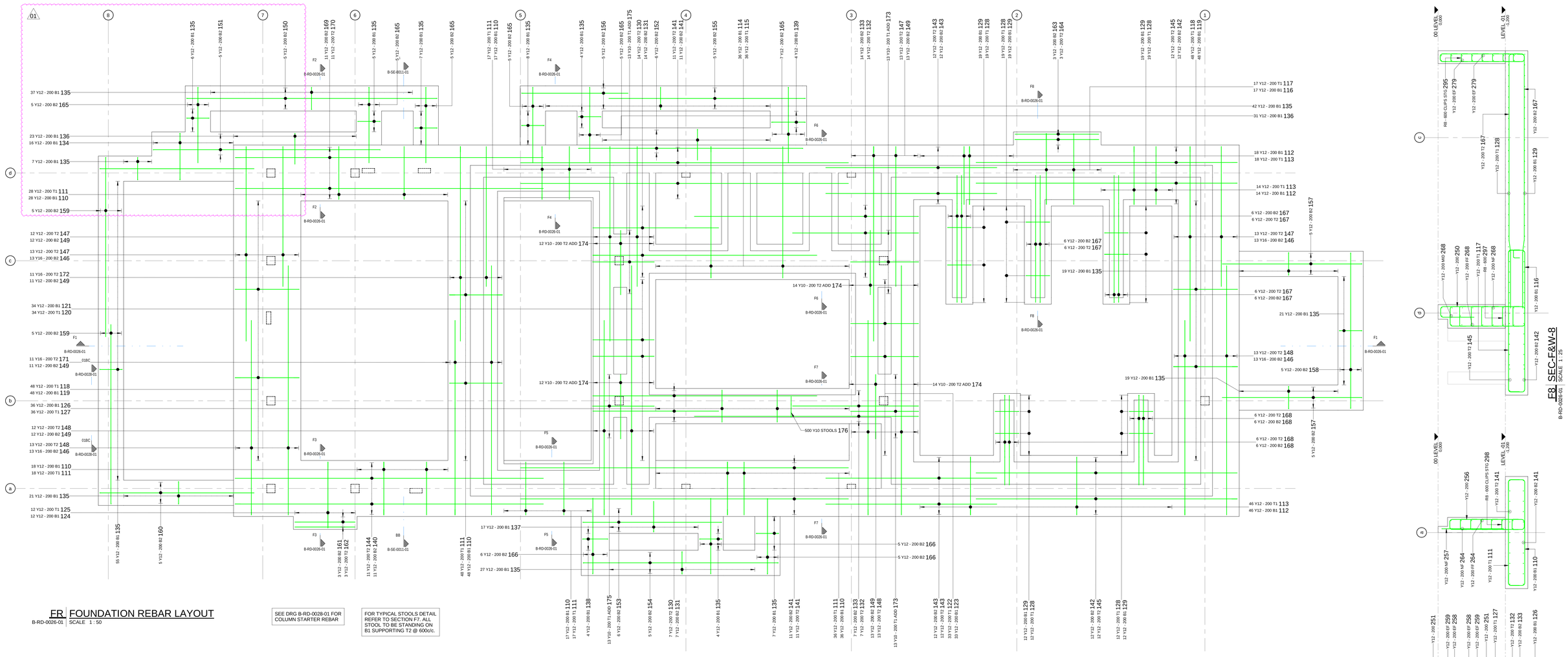
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	LA	0053	01	02	AE

FR | FOUNDATION REBAR LAYOUT

B-RD-0026-01 | SCALE 1 : 50

SEE DRG B-RD-0028-01 FOR COLUMN STARTER REBAR

FOR TYPICAL STOOLS DETAIL REFER TO SECTION F7, ALL STOOL TO BE STANDING ON B1 SUPPORTING T2 @ 600c/c.



F1 | SECTION

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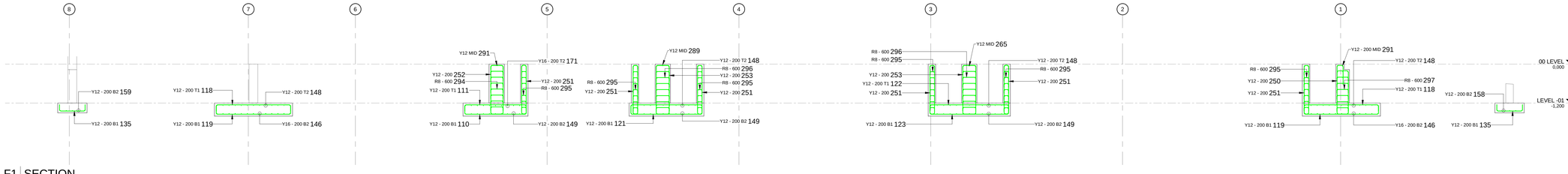

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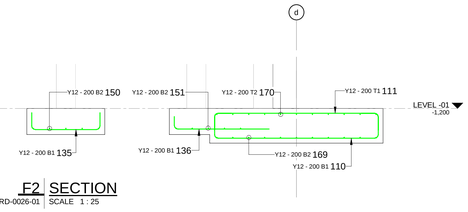

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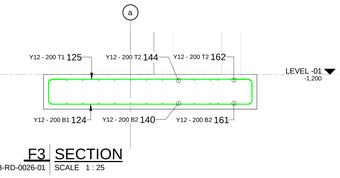

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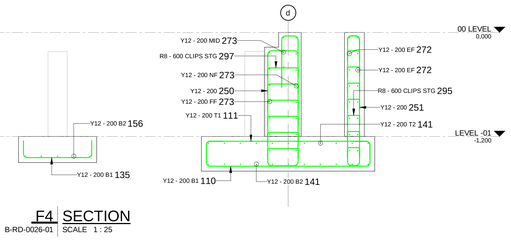
B-RD-0026-01 | SCALE 1 : 25



F5 | SECTION

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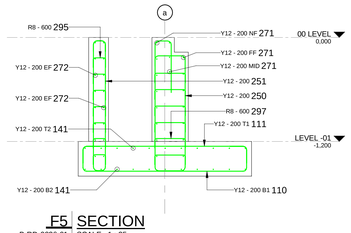

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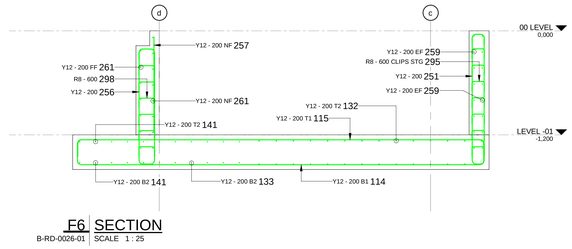

F8 | SECTION

B-RD-0026-01 | SCALE 1 : 25

F7 | SECTION

B-RD-0026-01 | SCALE 1 : 25

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

MASTER

23-11-2021

AECOM

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CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	REBAR SCHEDULE & TAGS ADDED / AMENDED	A H	C K	SWM	17-11-21
00	ISSUED FOR CONSTRUCTION	A H	C K	SWM	21-06-10

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CHECKED	C K		17 | 11 | 21
DESIGNED	C K		17 | 11 | 21
CHECKED	SW M		17 | 11 | 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH			
NAME	SW MARAIS		DATE
SIGNATURE			17 | 11 | 21
REG. NUMBER	20090010		
SCALE:	AS SHOWN		A

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163 LVS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
FOUNDATION REBAR LAYOUT

PROJECT NUMBER							OD	FBS	DIS	TYPE	DRAWING NO.			SHEET	REV	ID
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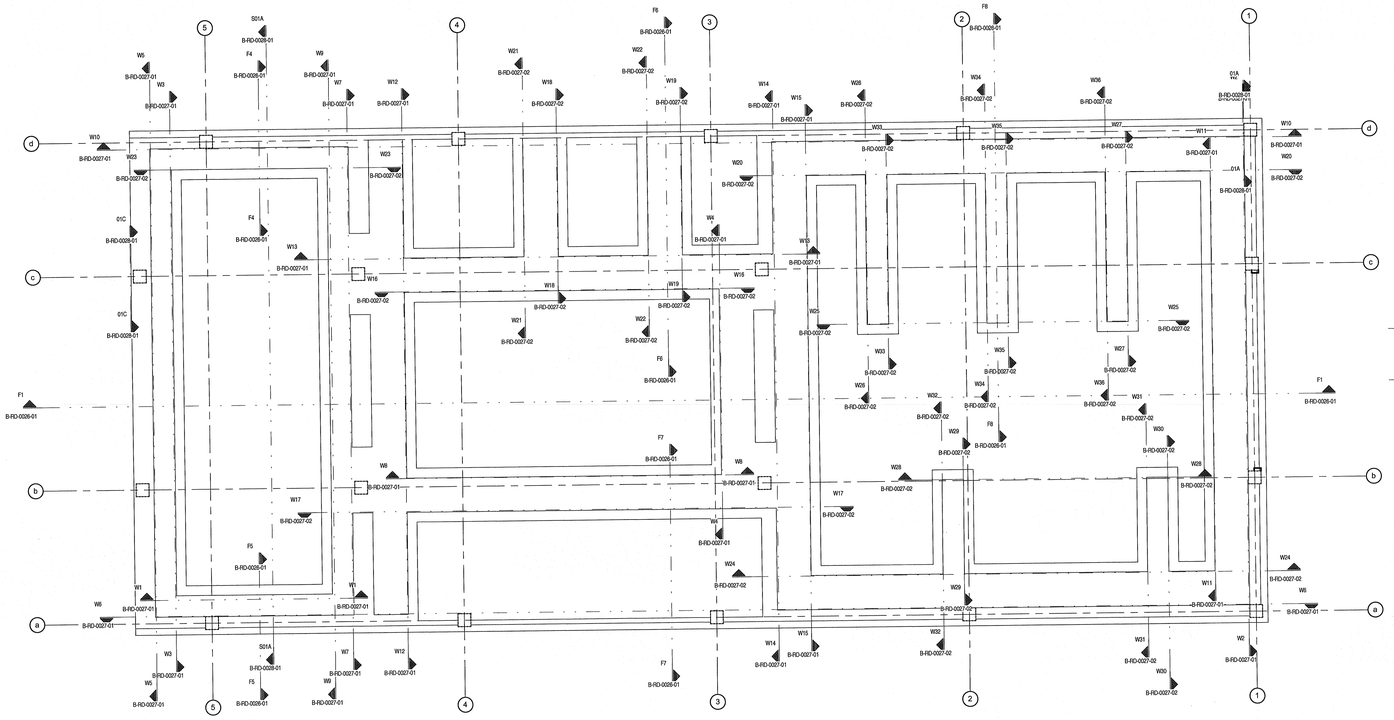
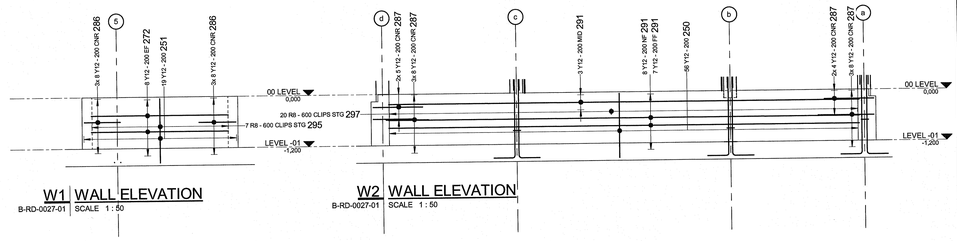
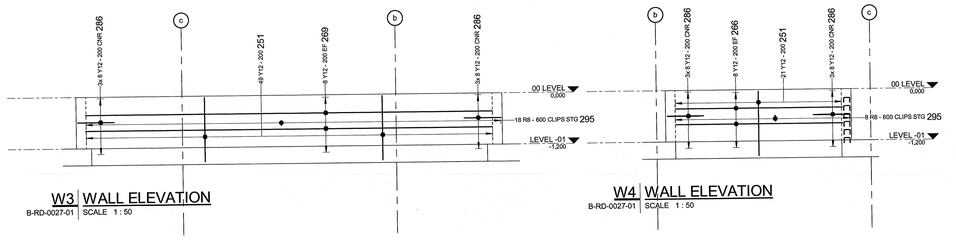


TWR | TRENCH WALL REBAR LAYOUT
B-RD-0027-01 | SCALE 1 : 50



W1 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50

W2 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50



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B-RD-0027-01 | SCALE 1 : 50

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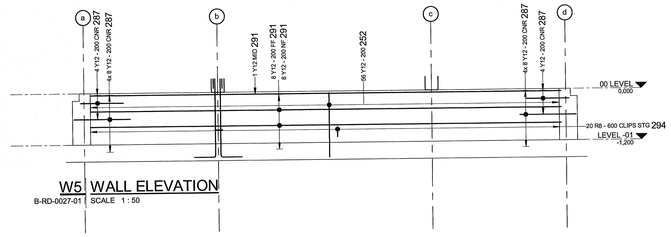
B-RD-0027-01 | SCALE 1 : 50



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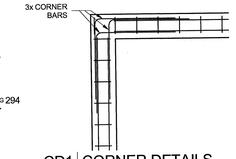
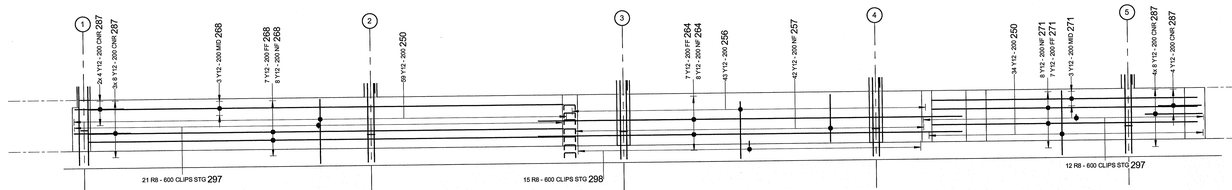
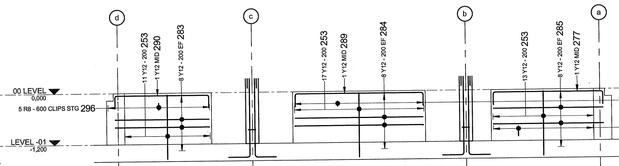
B-RD-0027-01 | SCALE 1 : 50



CD1 | CORNER DETAILS
B-RD-0027-01 | SCALE 1 : 20



W6 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50



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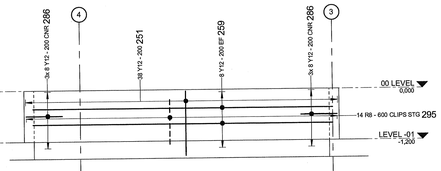
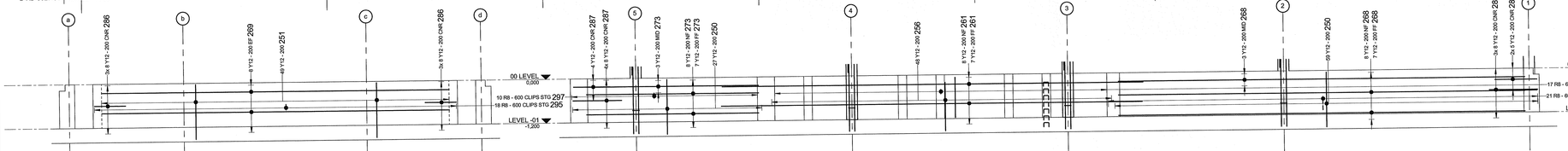
B-RD-0027-01 | SCALE 1 : 50

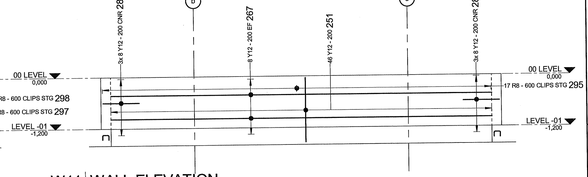


W8 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50



W9 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50

W10 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50



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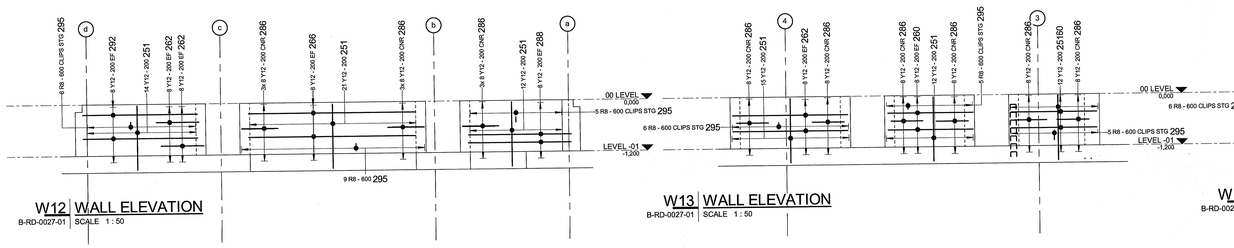
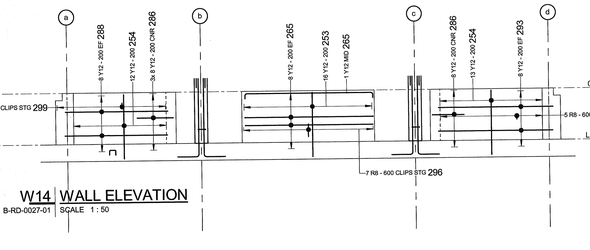
B-RD-0027-01 | SCALE 1 : 50



W12 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50

W13 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50



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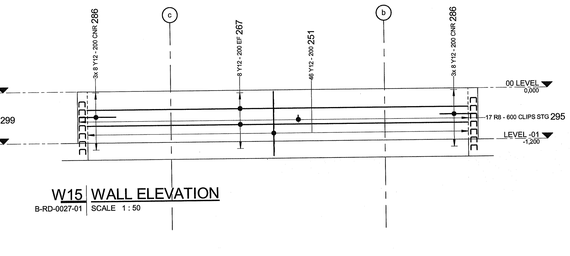
B-RD-0027-01 | SCALE 1 : 50



W15 | WALL ELEVATION
B-RD-0027-01 | SCALE 1 : 50

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE

NOTES

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MASTER
22 JUN 2018
AECOM TRANSNET

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	SWM	SWM	21-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE
DRAWN	A H		21 06 18
CHECKED	C K		21 06 18
DESIGNED	C K		21 06 18
CHECKED	SW M		21 06 18

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		21 06 18
REG. NUMBER	2009010	
SCALE:	AS SHOWN	

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) - REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
TRENCH WALL REBAR LAYOUT - SHEET 1

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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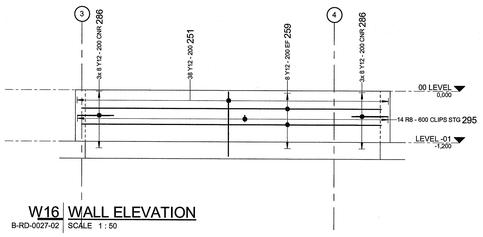

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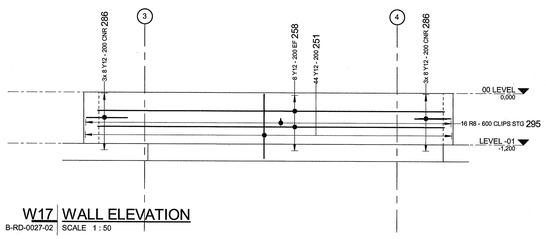
B-RD-0027-02 | SCALE 1 : 50



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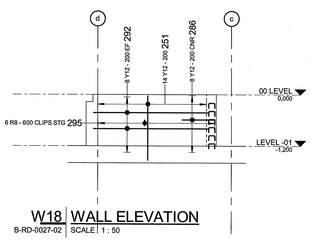

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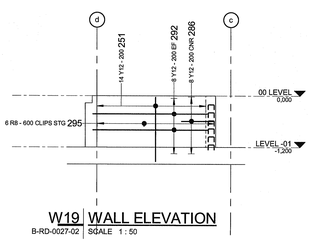

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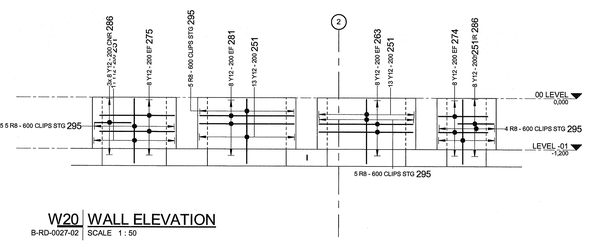

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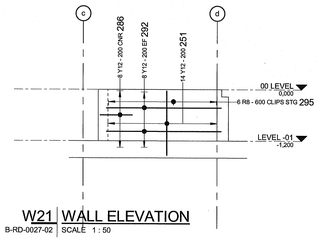

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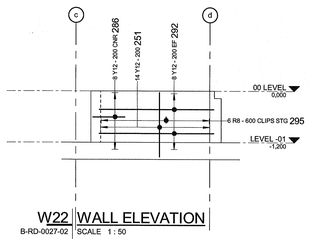

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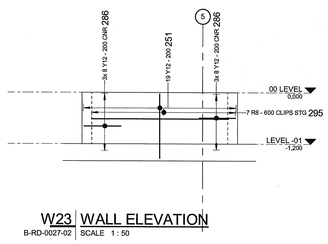

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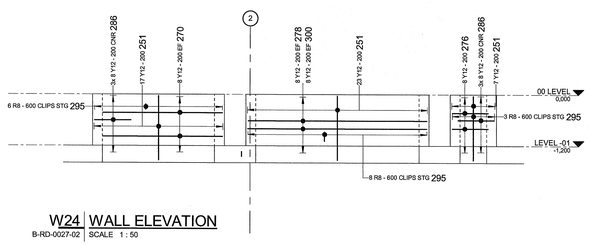

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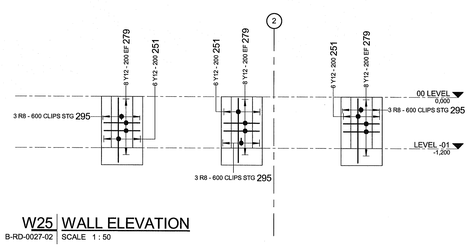

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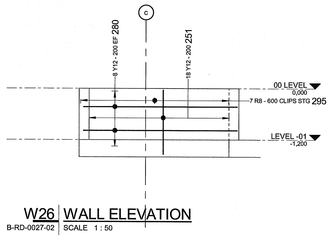

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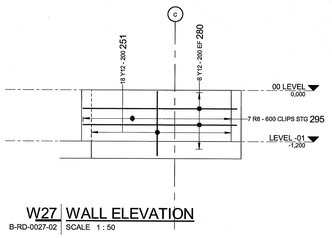

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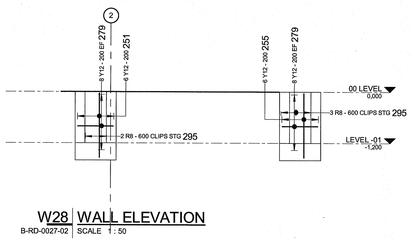

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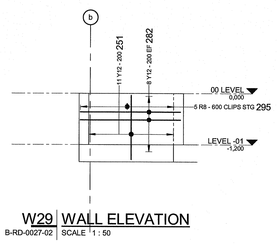

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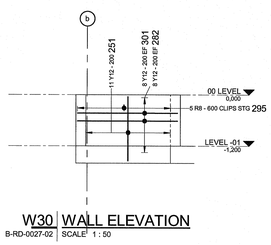

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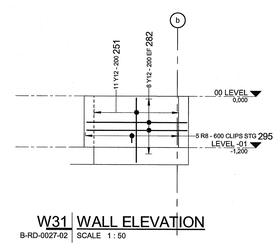

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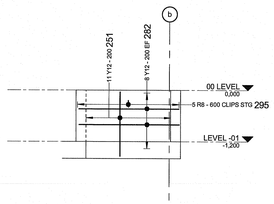

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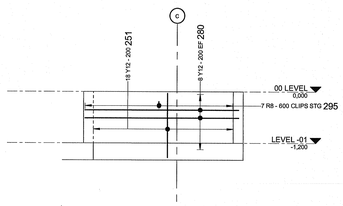

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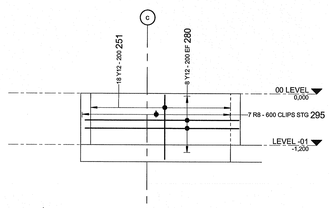

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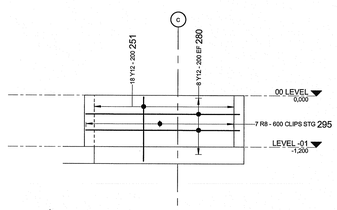
B-RD-0027-02 | SCALE 1 : 50



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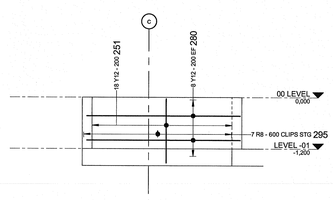

W36 | WALL ELEVATION
B-RD-0027-02 | SCALE 1 : 50

MASTER
22 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
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REG. No. 1966/006828/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	SWM	SWM	21-06-18

REVISIONS

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CONTRACTOR/CONSULTANT			
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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		21 06 18
CHECKED	C K		21 06 18
DESIGNED	C K		21 06 18
CHECKED	SW M		21 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		21 06 18
REG. NUMBER	2009010	
SCALE:	AS SHOWN	A0

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1898
FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
TRENCH WALL REBAR LAYOUT - SHEET 2

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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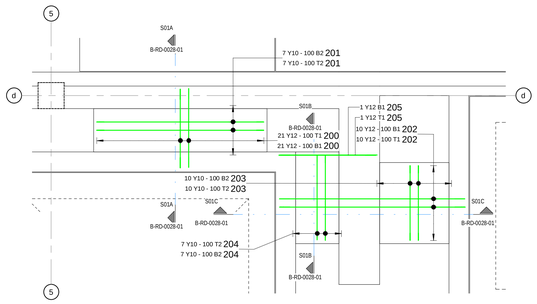
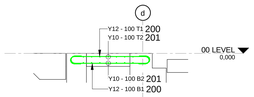
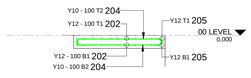


S01 | GROUND FLOOR SLAB 1 REBAR
B-RD-0028-01 | SCALE 1 : 25



S01A | SLAB SEC
B-RD-0028-01 | SCALE 1 : 25



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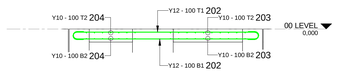
B-RD-0028-01 | SCALE 1 : 25



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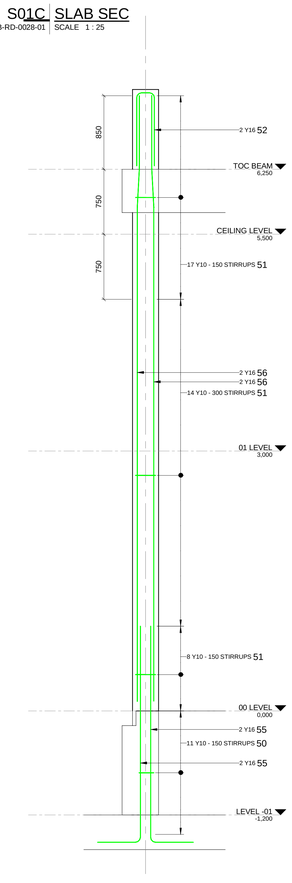
B-RD-0028-01 | SCALE 1 : 25



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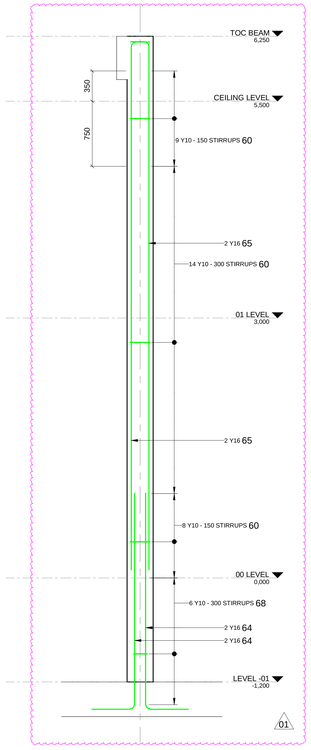

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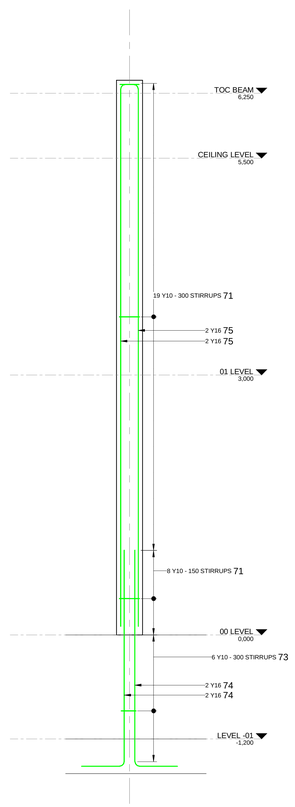

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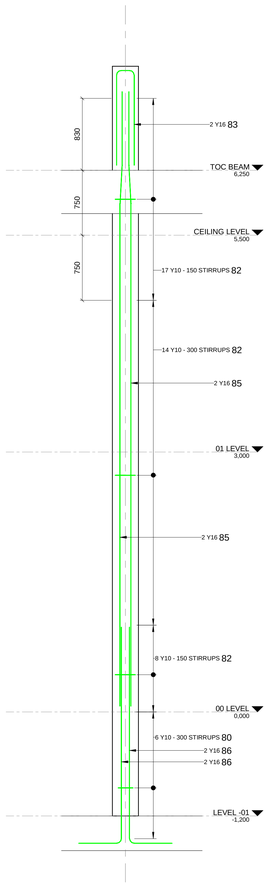

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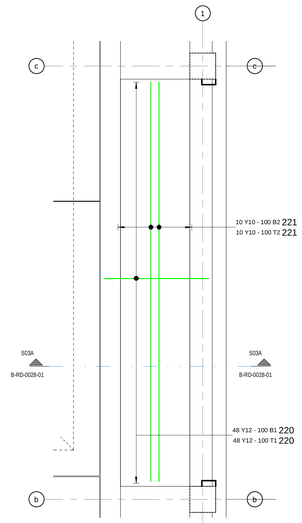
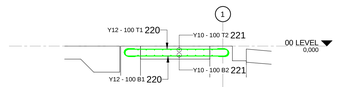


S03 | GROUND FLOOR SLAB 3 REBAR
B-RD-0028-01 | SCALE 1 : 25



S03A | SLAB SEC
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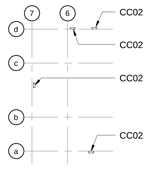
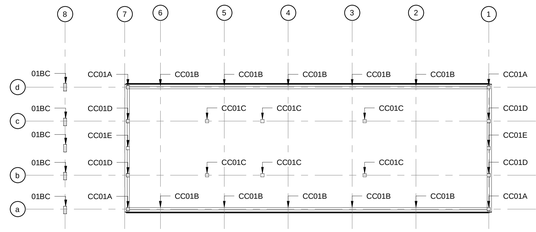


-1CKP | LEVEL -01 COLUMNS KEYPLAN
B-RD-0028-01 | SCALE 1 : 200



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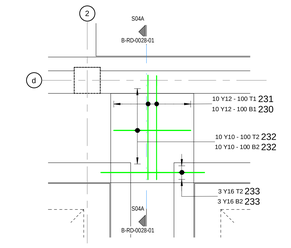

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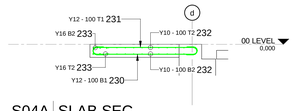

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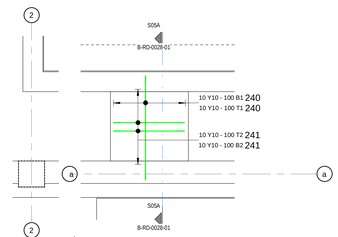
B-RD-0028-01 | SCALE 1 : 25



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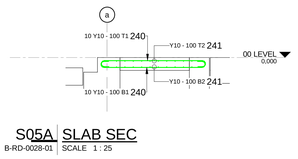
B-RD-0028-01 | SCALE 1 : 25



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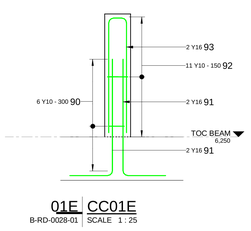

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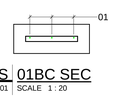

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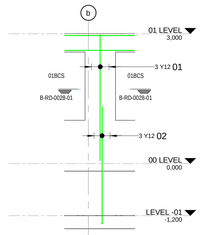

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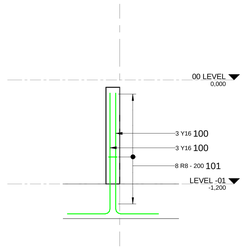

02 | CC02
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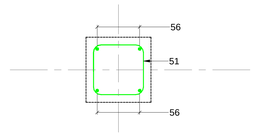

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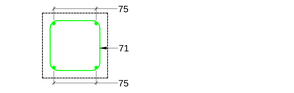

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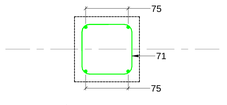

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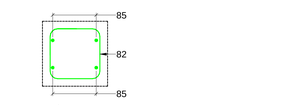

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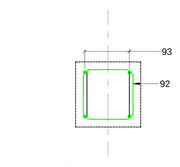

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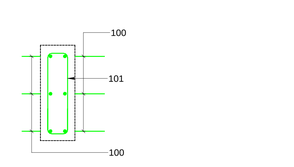

02S | CC02 SEC
B-RD-0028-01 | SCALE 1 : 10

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
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MASTER
23-11-2021
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REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	REBAR SCHEDULE & TAGS ADDED / AMENDED	A H	C K	SWM	17-11-21
00	ISSUED FOR CONSTRUCTION	A H	C K	SWM	21-06-18

REVISIONS

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	C K		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		17 11 21

REG. NUMBER 20090310
SCALE: AS SHOWN

Transnet Capital Projects
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8001
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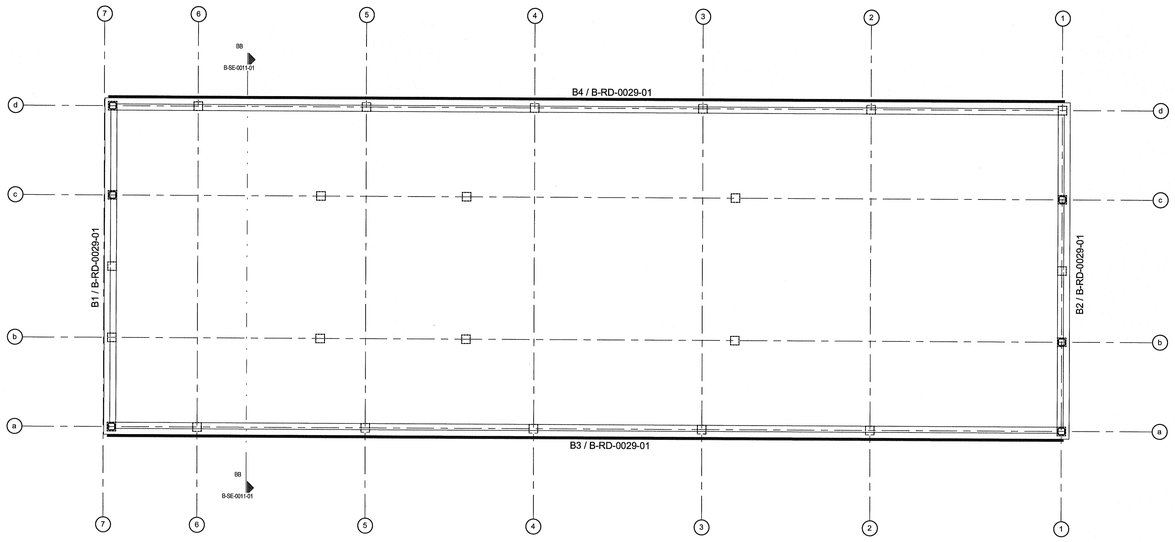
FAX: 086 677 2455

PORT OF SALDANHA

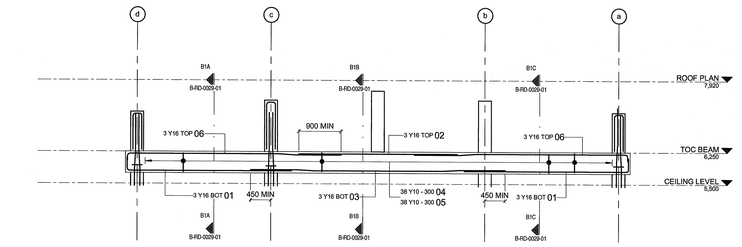
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
GROUND FLOOR SLABS & COLUMN REBAR LAYOUTS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	R D	0 0 2 8	0 1	01	AE

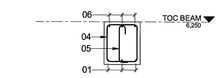
A



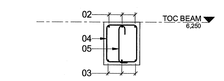
EB1 | EAVES BEAM REBAR KEYPLAN
B-RD-0029-01 | SCALE 1 : 75



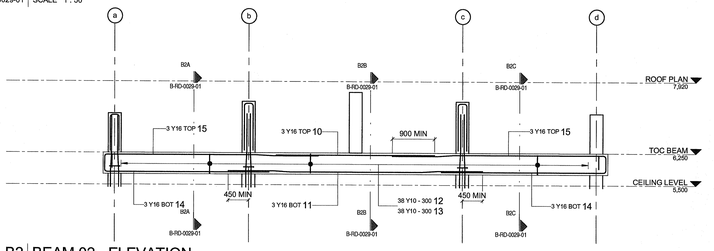
B1 | BEAM 01 - ELEVATION
B-RD-0029-01 | SCALE 1 : 50



B1A | SECTION
B-RD-0029-01 | SCALE 1 : 25



B1B | SECTION
B-RD-0029-01 | SCALE 1 : 25



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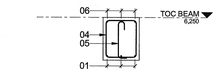

B1C | SECTION
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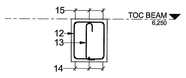

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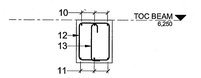
B-RD-0029-01 | SCALE 1 : 25



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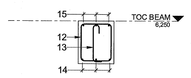
B-RD-0029-01 | SCALE 1 : 25



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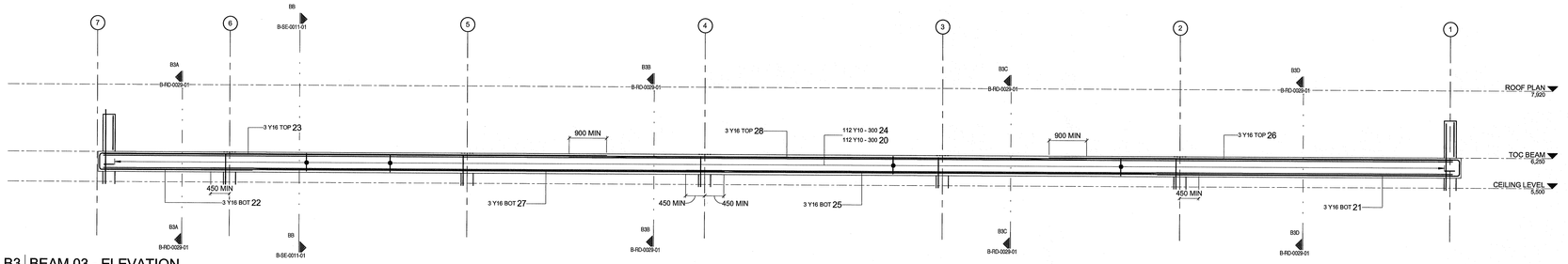

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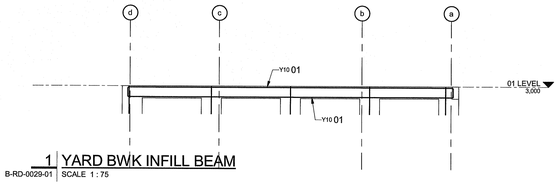
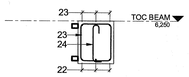


1 | YARD BWK INFILL BEAM
B-RD-0029-01 | SCALE 1 : 75



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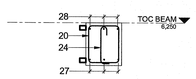

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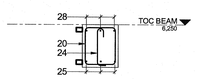

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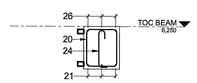
B-RD-0028-01 | SCALE 1 : 25



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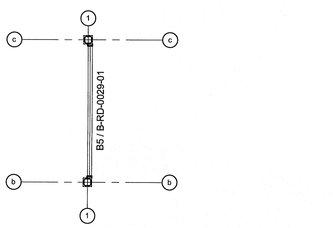

EB2 | LOWER EAVES BEAM REBAR LAYOUT
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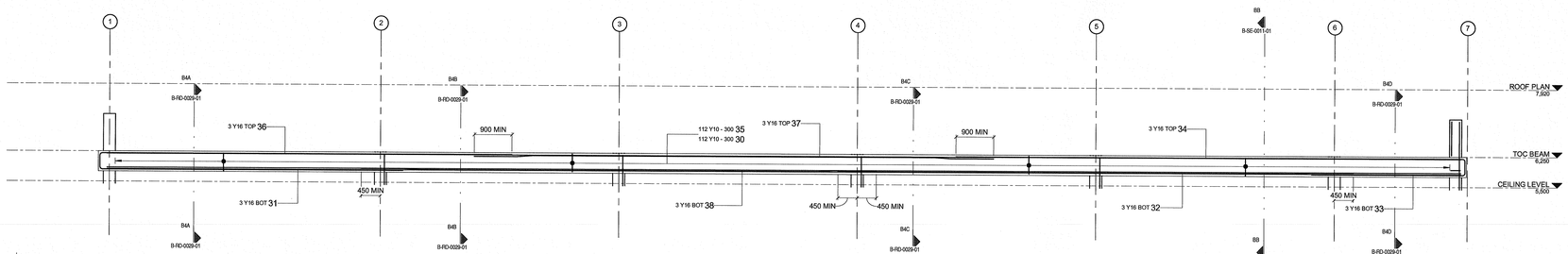

B4 | BEAM 04 - ELEVATION
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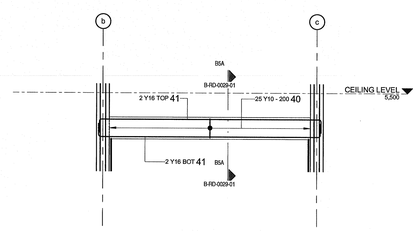
B5A | SECTION
B-RD-0029-01 | SCALE 1 : 25



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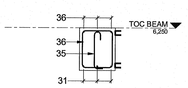

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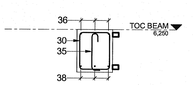

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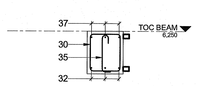
B-RD-0029-01 | SCALE 1 : 25



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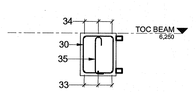

B4D | SECTION
B-RD-0029-01 | SCALE 1 : 25

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

MASTER
22 JUN 2018
AECOM TRANSNET

AECOM
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHK	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	SWM	SWM	21-05-18

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		18 06 19
CHECKED	C K		18 06 19
DESIGNED	C K		18 06 19
CHECKED	SW M		18 06 19

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		21 06 18

REG. NUMBER 2009010

SCALE: AS SHOWN A0

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000906/06
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8001
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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
EAVES BEAM REBAR LAYOUT

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	R D	0 0 2 9	0 1	00	AE

REBAR COLUMN SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
CC01A	4	50	Y10	11	44	850	60	180	180	0	0	0
CC01A	4	51	Y10	39	156	1090	60	240	240	0	0	0
CC01A	4	52	Y16	2	8	1840	38	850	220	850	0	0
CC01A	4	55	Y16	4	16	2960	37	2500	500	0	0	0
CC01A	4	56	Y16	4	16	6990	41	850	440	5700	40	0
CC01B	10	60	Y10	31	310	1090	60	240	240	0	0	0
CC01B	10	64	Y16	4	40	2960	37	2500	500	0	0	0
CC01B	10	65	Y16	4	40	6280	37	6100	220	0	0	0
CC01B	10	68	Y10	6	60	830	60	180	170	0	0	0
CC01C	6	71	Y10	27	162	1090	60	240	240	0	0	0
CC01C	6	73	Y10	6	36	850	60	180	180	0	0	0
CC01C	6	74	Y16	4	24	2960	37	2500	500	0	0	0
CC01C	6	75	Y16	4	24	6440	37	6260	220	0	0	0
CC01D	4	80	Y10	6	24	850	60	180	180	0	0	0
CC01D	4	82	Y10	39	156	1090	60	240	240	0	0	0
CC01D	4	83	Y16	2	8	2340	38	1100	220	1100	0	0
CC01D	4	85	Y16	4	16	7090	41	850	440	5800	40	0
CC01D	4	86	Y16	4	16	2960	37	2500	500	0	0	0
CC01E	2	90	Y10	6	12	850	60	180	180	0	0	0
CC01E	2	91	Y16	4	8	1810	37	1350	500	0	0	0
CC01E	2	92	Y10	11	22	1090	60	240	240	0	0	0
CC01E	2	93	Y16	2	4	2800	38	1330	220	1330	0	0
CC02	4	100	Y16	6	24	1860	37	1400	500	0	0	0
CC02	4	101	R8	8	32	1200	74	380	100	0	0	0

REBAR COLUMN WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
CC02	R8	15 kg
	Y10	633 kg
	Y16	1608 kg
TOTAL		2257 kg

REBAR BRICKWORK COLUMN SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
01BC	5	01	Y12	3	15	2920	37	2900	50	0	0	0
01BC	5	02	Y12	3	15	2970	37	300	2700	0	0	0

REBAR BRICKWORK COLUMN WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
01BC	Y12	78 kg
TOTAL		78 kg

REBAR FOUNDATION SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
FOUNDATION		110	Y12	0	164	2780	55	200	300	1900	300	200
FOUNDATION		111	Y12	0	164	2240	38	200	1900	200	0	0
FOUNDATION		112	Y12	0	78	2960	55	200	300	2080	300	200
FOUNDATION		113	Y12	0	78	2420	38	200	2080	200	0	0
FOUNDATION		114	Y12	0	36	5580	55	200	300	4700	300	200
FOUNDATION		115	Y12	0	36	5040	38	200	4700	200	0	0
FOUNDATION		116	Y12	0	17	3420	55	200	300	2540	300	200
FOUNDATION		117	Y12	0	17	2880	38	200	2540	200	0	0
FOUNDATION		118	Y12	0	96	2640	38	200	2300	200	0	0
FOUNDATION		119	Y12	0	96	3180	55	200	300	2300	300	200
FOUNDATION		120	Y12	0	34	2540	38	200	2200	200	0	0
FOUNDATION		121	Y12	0	34	3080	55	200	300	2200	300	200
FOUNDATION		122	Y12	0	33	2770	38	200	2430	200	0	0
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FOUNDATION		124	Y12	0	12	3240	55	200	300	2360	300	200
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FOUNDATION		126	Y12	0	36	2640	55	200	300	1160	300	200
FOUNDATION		127	Y12	0	36	1500	38	200	1160	200	0	0
FOUNDATION		128	Y12	0	81	1200	38	200	860	200	0	0
FOUNDATION		129	Y12	0	81	1740	55	200	300	860	300	200
FOUNDATION		130	Y12	0	21	4670	37	200	4500	0	0	0
FOUNDATION		131	Y12	0	21	8410	38	200	270	8000	0	0
FOUNDATION		132	Y12	0	21	8170	37	200	8000	0	0	0
FOUNDATION		133	Y12	0	21	4910	38	200	270	4500	0	0
FOUNDATION		134	Y12	0	16	2000	38	200	1660	200	0	0
FOUNDATION		135	Y12	0	289	1140	38	200	800	200	0	0
FOUNDATION		136	Y12	0	54	1220	37	1100	150	0	0	0
FOUNDATION		137	Y12	0	17	1220	37	150	1100	0	0	0
FOUNDATION		138	Y12	0	4	1240	38	200	900	200	0	0
FOUNDATION		139	Y12	0	4	1500	38	180	1200	180	0	0
FOUNDATION		140	Y12	0	11	11410	38	200	270	11000	0	0
FOUNDATION		141	Y12	0	44	11700	20	11700	0	0	0	0
FOUNDATION		142	Y12	0	24	9730	38	200	270	9320	0	0
FOUNDATION		143	Y12	0	48	6100	20	6100	0	0	0	0
FOUNDATION		144	Y12	0	11	11170	37	11000	200	0	0	0
FOUNDATION		145	Y12	0	24	9490	37	9320	200	0	0	0
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FOUNDATION		147	Y12	0	51	5170	37	200	5000	0	0	0
FOUNDATION		148	Y12	0	51	9070	37	200	8900	0	0	0
FOUNDATION		149	Y12	0	72	7360	38	6950	270	200	0	0
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FOUNDATION		151	Y12	0	5	8330	38	150	8095	150	0	0
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FOUNDATION		157	Y12	0	10	5100	37	150	4980	0	0	0
FOUNDATION		158	Y12	0	5	5790	38	150	5550	150	0	0
FOUNDATION		159	Y12	0	10	6520	37	6400	150	0	0	0
FOUNDATION		160	Y12	0	10	5640	37	5500	170	0	0	0
FOUNDATION		161	Y12	0	3	2980	55	200	270	2160	270	200
FOUNDATION		162	Y12	0	3	2500	38	200	2160	200	0	0
FOUNDATION		163	Y12	0	3	3820	55	200	270	3000	270	200
FOUNDATION		164	Y12	0	3	3340	38	200	3000	200	0	0
FOUNDATION		165	Y12	0	32	2820	37	2700	150	0	0	0
FOUNDATION		166	Y12	0	16	2820	37	150	2700	0	0	0
FOUNDATION		167	Y12	0	36	4640	42	1000	210	3330	40	0
FOUNDATION		168	Y12	0	24	3310	42	1000	210	2000	40	0
FOUNDATION		169	Y12	0	11	11390	38	190	270	10990	0	0
FOUNDATION		170	Y12	0	11	11160	37	10990	200	0	0	0
FOUNDATION		171	Y16	0	11	9060	37	200	8900	0	0	0
FOUNDATION		172	Y16	0	11	5160	37	200	5000	0	0	0
FOUNDATION		173	Y10	0	26	2430	20	2430	0	0	0	0
FOUNDATION		174	Y10	0	52	2300	20	2300	0	0	0	0
FOUNDATION		175	Y10	0	26	2200	20	2200	0	0	0	0
FOUNDATION		176	Y10	0	500	1330	83	300	250	300	300	0

REBAR FOUNDATION WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
FOUNDATION	Y10	558 kg
FOUNDATION	Y12	7129 kg
FOUNDATION	Y16	849 kg
TOTAL		8536 kg

REBAR BEAM SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
BEAM 01	1	01	Y16	6	6	4130	37	320	3850	0	0	0
BEAM 01	1	02	Y16	3	3	3700	20	3700	0	0	0	0
BEAM 01	1	03	Y16	3	3	5950	43	1050	400	3050	40	1050
BEAM 01	1	04	Y10	38	38	1730	60	440	360	0	0	0
BEAM 01	1	05	Y10	38	38	640	85	100	440	80	100	0
BEAM 01	1	06	Y16	6	6	5120	42	1050	400	3550	40	0
BEAM 02	1	10	Y16	3	3	3700	20	3700	0	0	0	0
BEAM 02	1	11	Y16	3	3	5950	43	1050	400	3050	40	1050
BEAM 02	1	12	Y10	38	38	1730	60	440	360	0	0	0
BEAM 02	1	13	Y10	38	38	640	85	100	440	80	100	0
BEAM 02	1	14	Y16	6	6	4130	37	320	3850	0	0	0
BEAM 02	1	15	Y16	6	6	5120	42	1050	400	3550	40	0
BEAM 03	1	20	Y10	112	112	1730	60	360	440	0	0	0
BEAM 03	1	21	Y16	3	3	7780	37	7500	320	0	0	0
BEAM 03	1	22	Y16	3	3	4080	37	3800	320	0	0	0
BEAM 03	1	23	Y16	3	3	12680	37	12600	320	0	0	0
BEAM 03	1	24	Y10	112	112	640	85	100	440	80	100	0
BEAM 03	1	25	Y16	3	3	12750	43	1050	400	9850	40	1050
BEAM 03	1	26	Y16	3	3	10480	37	10200	320	0	0	0
BEAM 03	1	27	Y16	3	3	12750	41	11300	400	1050	40	0
BEAM 03	1	28	Y16	3	3	12850	43	1050	400	9950	40	1050
BEAM 04	1	30	Y10	112	112	1730	60	360	440	0	0	0
BEAM 04	1	31	Y16	3	3	7780	37	7500	320	0	0	0
BEAM 04	1	32	Y16	3	3	12750	41	11300	400	1050	40	0
BEAM 04	1	33	Y16	3	3	4080	37	3800	320	0	0	0
BEAM 04	1	34	Y16	3	3	12680	37	12600	320	0	0	0
BEAM 04	1	35	Y10	112	112	640	85	100	440	80	100	0
BEAM 04	1	36	Y16	3	3	10480	37	10200	320	0	0	0
BEAM 04	1	37	Y16	3	3	12850	43	1050	400	9950	40	1050
BEAM 04	1	38	Y16	3	3	12750	43	1050	400	9850	40	1050
BEAM 05	1	40	Y10	25	25	1270	74	450	90	0	0	0
BEAM 05	1	41	Y16	4	4	5760	38	320	5200	320	0	0
YARD BWK INFILL BEAM	1	01	Y10	2	2	11770	38	200	11425	200	0	0

REBAR BEAM WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
	Y10	472 kg
	Y16	1000 kg
TOTAL		1472 kg

REBAR TRENCH WALL SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
TRENCH WALL		250	Y12	0	235	4320	75	600	200	1510	360	1340
TRENCH WALL		251	Y12	0	779	3550	74	1510	150	0	0	0
TRENCH WALL		252	Y12	0	56	4270	74	1510	390	0	0	0
TRENCH WALL		253	Y12	0	57	4330	74	1510	410	0	0	0
TRENCH WALL		254	Y12	0	25	3910	74	1510	270	0	0	0
TRENCH WALL		255	Y12	0	6	3490	74	1510	130	0	0	0
TRENCH WALL		256	Y12	0	91	3330	74	1340	190	0	0	0
TRENCH WALL		257	Y12	0	89	1100	20	1100	0	0	0	0
TRENCH WALL		258	Y12	0	16	8100	20	8100	0	0	0	0
TRENCH WALL		259	Y12	0	32	7000	20	7000	0	0	0	0
TRENCH WALL		260	Y12	0	32	3940	38	1000	2000	1000	0	0
TRENCH WALL		261	Y12	0	15	11500	20	11500	0	0	0	0
TRENCH WALL		262	Y12	0	16	4640	38	1000	2700	1000	0	0
TRENCH WALL		263	Y12	0	16	2940	38	400	2200	400	0	0
TRENCH WALL		264	Y12	0	15	9900	20	9900	0	0	0	0
TRENCH WALL		265	Y12	0	17	3200	35	3000	0	0	0	0
TRENCH WALL		266	Y12	0	32	3900	20	3900	0	0	0	0
TRENCH WALL		267	Y12	0	32	8900	20	8900	0	0	0	0
TRENCH WALL		268	Y12	0	36	11100	20	11100	0	0	0	0
TRENCH WALL		269	Y12	0	32	9500	20	9500	0	0	0	0
TRENCH WALL		270	Y12	0	16	3170	37	2800	400	0	0	0
TRENCH WALL		271	Y12	0	18	6200	20	6200	0	0	0	0
TRENCH WALL		272	Y12	0	32	3200	20	3200	0	0	0	0
TRENCH WALL		273	Y12	0	18	4700	20	4700	0	0	0	0
TRENCH WALL		274	Y12	0	16	1520	37	1150	400	0	0	0
TRENCH WALL		275	Y12	0	16	2120	37	400	1750	0	0	0
TRENCH WALL		276	Y12	0	16	1210	37	400	840	0	0	0
TRENCH WALL		277	Y12	0	1	3110	38	300	2570	300	0	0
TRENCH WALL		278	Y12	0	8	4940	38	400	4200	400	0	0
TRENCH WALL		279	Y12	0	80	1580	38	400	840	400	0	0
TRENCH WALL		280	Y12	0	96	4340	54	400	3600	400	0	0
TRENCH WALL		281	Y12	0	16	2960	38	400	2220	400	0	0
TRENCH WALL		282	Y12	0	56	3090	54	400	2350	400	0	0
TRENCH WALL		283	Y12	0	16	2740	54	200	2200	400	0	0
TRENCH WALL		284	Y12	0	16	3340	38	200	3000	200	0	0
TRENCH WALL		285	Y12	0	16	3110	54	200	2570	400	0	0
TRENCH WALL		286	Y12	0	384	1470	37	750	750	0	0	0
TRENCH WALL		287	Y12	0	138	1970	37	1000	1000	0	0	0
TRENCH WALL		288	Y12	0	32	3020	37	650	2400	0	0	0
TRENCH WALL		289	Y12	0	1	3540	38	300	3000	300	0	0
TRENCH WALL		290	Y12	0	1	2740	38	300	2200	300	0	0
TRENCH WALL		291	Y12	0	35	11000	20	11000	0	0	0	0
TRENCH WALL		292	Y12	0	80	3300	37	2680	650	0	0	0
TRENCH WALL		293	Y12	0	16	3300	37	650	2680	0	0	0
TRENCH WALL		294	R8	0	140	590	35	390	0	0	0	0
TRENCH WALL		295	R8	0	2178	350	35	150	0	0	0	0
TRENCH WALL		296	R8	0	168	610	35	410	0	0	0	0
TRENCH WALL		297	R8	0	503	560	35	360	0	0	0	0
TRENCH WALL		298	R8	0	192	390	35	190	0	0	0	0
TRENCH WALL		299	R8	0	77	470	35	270	0	0	0	0
TRENCH WALL		300	Y12	0	8	4930	38	400	4190	400	0	0
TRENCH WALL		301	Y12	0	8	3090	54	285	2350	515	0	0

REBAR TRENCH WALL WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
TRENCH WALL	R8	529 kg
TRENCH WALL	Y12	8844 kg
TOTAL		9372 kg

01

REBAR SLAB SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
SLAB 1		200	Y12	0	42	1240	33	920	0	0	0	0
SLAB 1		201	Y10	0	14	2180	33	1940	0	0	0	0
SLAB 1		202	Y12	0	20	2470	33	2150	0	0	0	0
SLAB 1		203	Y10	0	20	1120	33	875	0	0	0	0
SLAB 1		204	Y10	0	14	1230	33	990	0	0	0	0
SLAB 1		205	Y12	0	2	1450	33	1130	0	0	0	0
SLAB 2		210	Y12	0	20	2770	33	2450	0	0	0	0
SLAB 2		211	Y10	0	40	1110	33	870	0	0	0	0
SLAB 3		220	Y12	0	96	1530	33	1210	0	0	0	0
SLAB 3		221	Y10	0	20	4860	33	4620	0	0	0	0
SLAB 4		230	Y12	0	10	1540	33	1215	0	0	0	0
SLAB 4		231	Y12	0	10	1530	33	1210	0	0	0	0
SLAB 4		232	Y10	0	20	1140	33	900	0	0	0	0
SLAB 4		233	Y16	0	6	1610	33	1210	0	0	0	0
SLAB 5		240	Y10	0	20	1450	33	1210	0	0	0	0
SLAB 5		241	Y10	0	20	1070	33	830	0	0	0	0

REBAR SLAB WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
	Y10	176 kg
	Y12	300 kg
SLAB 4	Y16	15 kg
TOTAL		490 kg

MASTER

23-11-2021

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NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
2. **THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.**

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

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TYGER WATERFRONT
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TEL: +27 (0)21 950 7500
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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	REBAR SCHEDULE & TAGS ADDED / AMENDED	A H	C K	SWM	17-11-21
00	ISSUED FOR CONSTRUCTION	A H	C K	SWM	22-06-20

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	C K		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		17 11 21
REG. NUMBER	2009010	
SCALE:	AS SHOWN	A

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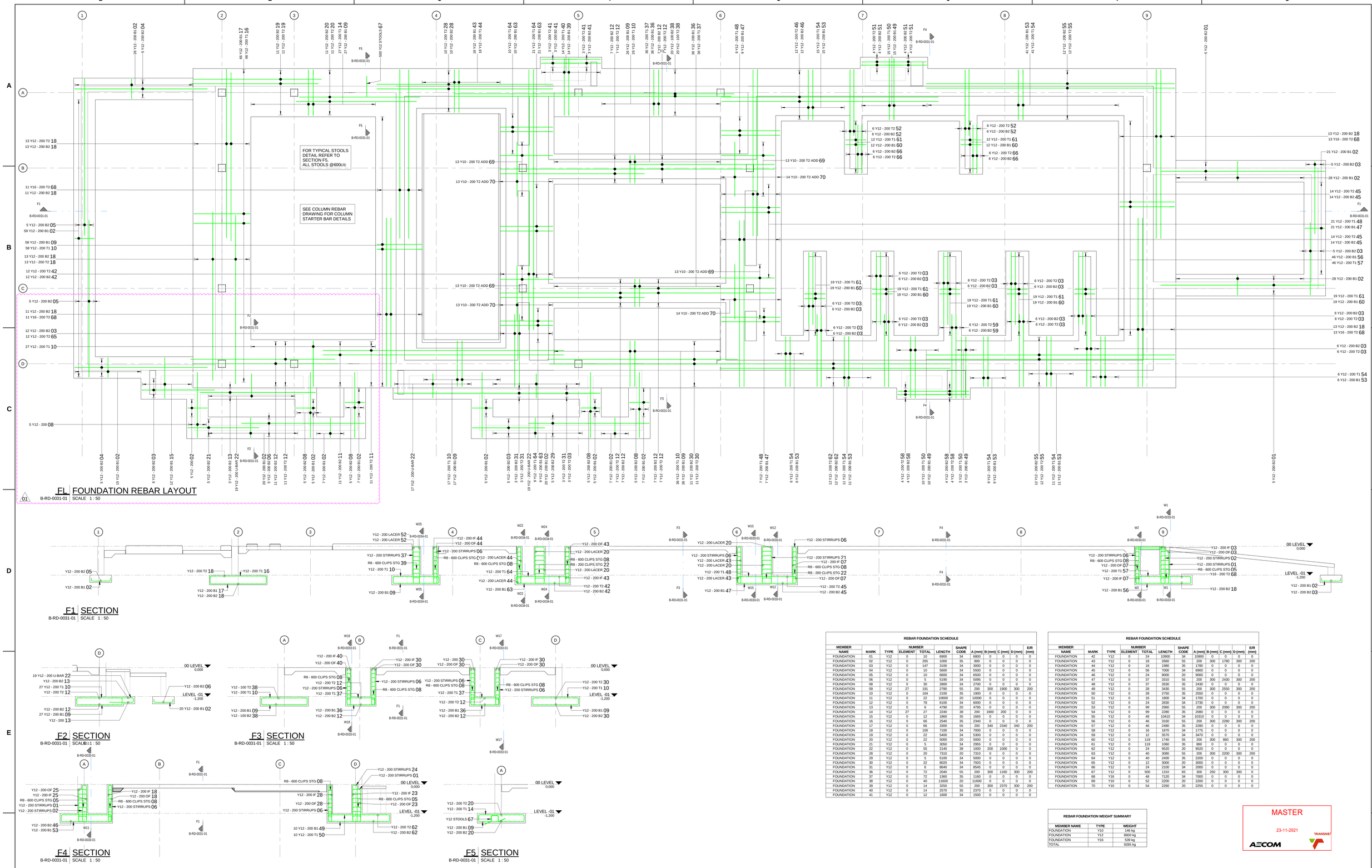
FAX: 086 677 3455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
REBAR SCHEDULE

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	RD	0030	01	01	AE



FL FOUNDATION REBAR LAYOUT

01 B-RD-0031-01 SCALE 1 : 50

F1 SECTION

B-RD-0031-01 SCALE 1 : 50

F2 SECTION

B-RD-0031-01 SCALE 1 : 50

F3 SECTION

B-RD-0031-01 SCALE 1 : 50

F4 SECTION

B-RD-0031-01 SCALE 1 : 50

F5 SECTION

B-RD-0031-01 SCALE 1 : 50

REBAR FOUNDATION SCHEDULE

MEMBER NAME	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
FOUNDATION	01	Y12	0	10	6900	34	6800	0	0	0	0
FOUNDATION	02	Y12	0	265	1000	35	800	0	0	0	0
FOUNDATION	03	Y12	0	147	3100	34	3000	0	0	0	0
FOUNDATION	04	Y12	0	10	5600	34	5500	0	0	0	0
FOUNDATION	05	Y12	0	10	6600	34	6500	0	0	0	0
FOUNDATION	06	Y12	0	5	5190	34	5095	0	0	0	0
FOUNDATION	08	Y12	0	30	2800	34	2700	0	0	0	0
FOUNDATION	09	Y12	27	191	2780	55	200	300	1900	300	200
FOUNDATION	10	Y12	0	164	2100	35	1900	0	0	0	0
FOUNDATION	11	Y12	0	22	10000	20	10000	0	0	0	0
FOUNDATION	12	Y12	0	78	6100	34	6000	0	0	0	0
FOUNDATION	13	Y12	0	6	4790	20	4795	0	0	0	0
FOUNDATION	14	Y12	27	27	2240	38	200	1900	200	0	0
FOUNDATION	15	Y12	0	12	1860	35	1665	0	0	0	0
FOUNDATION	16	Y12	0	66	2540	35	2340	0	0	0	0
FOUNDATION	17	Y12	0	66	3300	55	200	340	2340	340	200
FOUNDATION	18	Y12	0	100	7100	34	7000	0	0	0	0
FOUNDATION	19	Y12	0	22	5400	34	5300	0	0	0	0
FOUNDATION	20	Y12	0	22	5000	20	5000	0	0	0	0
FOUNDATION	21	Y12	0	5	3050	34	2955	0	0	0	0
FOUNDATION	22	Y12	0	55	2140	38	1000	200	1000	0	0
FOUNDATION	28	Y12	0	20	7310	20	7310	0	0	0	0
FOUNDATION	29	Y12	0	5	5100	34	5000	0	0	0	0
FOUNDATION	30	Y12	0	22	8020	34	7920	0	0	0	0
FOUNDATION	31	Y12	0	6	8640	34	8545	0	0	0	0
FOUNDATION	36	Y12	0	72	2040	55	200	300	1160	300	200
FOUNDATION	37	Y12	0	72	1360	35	1160	0	0	0	0
FOUNDATION	38	Y12	0	40	11600	20	11600	0	0	0	0
FOUNDATION	39	Y12	0	14	3250	55	200	300	2370	300	200
FOUNDATION	40	Y12	0	14	2570	35	2370	0	0	0	0
FOUNDATION	41	Y12	0	12	1600	34	1500	0	0	0	0

REBAR FOUNDATION SCHEDULE

MEMBER NAME	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
FOUNDATION	42	Y12	0	24	10900	34	10800	0	0	0	0
FOUNDATION	43	Y12	0	18	2660	55	200	300	1780	300	200
FOUNDATION	44	Y12	0	18	1980	35	1780	0	0	0	0
FOUNDATION	45	Y12	0	56	7000	34	6900	0	0	0	0
FOUNDATION	46	Y12	0	24	9000	20	9000	0	0	0	0
FOUNDATION	47	Y12	0	37	3310	55	200	300	2430	300	200
FOUNDATION	48	Y12	0	37	2630	35	2430	0	0	0	0
FOUNDATION	49	Y12	0	28	3430	55	200	300	2550	300	200
FOUNDATION	50	Y12	0	28	2750	35	2550	0	0	0	0
FOUNDATION	51	Y12	0	16	1920	34	1700	0	0	0	0
FOUNDATION	52	Y12	0	24	2830	34	2730	0	0	0	0
FOUNDATION	53	Y12	0	99	2960	55	200	300	2080	300	200
FOUNDATION	54	Y12	0	99	2280	35	2080	0	0	0	0
FOUNDATION	55	Y12	0	48	10410	34	10310	0	0	0	0
FOUNDATION	56	Y12	0	46	3160	55	200	300	2280	300	200
FOUNDATION	57	Y12	0	46	2480	35	2280	0	0	0	0
FOUNDATION	58	Y12	0	16	1870	34	1775	0	0	0	0
FOUNDATION	59	Y12	0	12	3570	34	3470	0	0	0	0
FOUNDATION	60	Y12	0	119	1740	55	200	860	300	200	
FOUNDATION	61	Y12	0	119	1090	35	860	0	0	0	0
FOUNDATION	62	Y12	0	24	9520	20	9520	0	0	0	0
FOUNDATION	63	Y12	0	40	3080	55	200	300	2200	300	200
FOUNDATION	64	Y12	0	40	2400	35	2200	0	0	0	0
FOUNDATION	65	Y12	0	12	3000	20	3000	0	0	0	0
FOUNDATION	66	Y12	0	24	2100	34	2000	0	0	0	0
FOUNDATION	67	Y12	0	500	1310	83	300	250	300	300	0
FOUNDATION	68	Y16	0	48	7120	34	7000	0	0	0	0
FOUNDATION	69	Y10	0	52	2200	20	2200	0	0	0	0
FOUNDATION	70	Y10	0	54	2260	20	2255	0	0	0	0

REBAR FOUNDATION WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
FOUNDATION	Y10	140 kg
FOUNDATION	Y12	8600 kg
FOUNDATION	Y16	539 kg
TOTAL		9285 kg

MASTER
23-11-2021

NOTES

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DRAWING NO. | REFERENCE

REFERENCE DRAWINGS

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TYGER WATERFRONT
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	DAPPD	DATE
01	REBAR TAGS ADDED / AMENDED	A H	CK	SWM	17-11-21
00	REBAR ISSUED FOR CONSTRUCTION	C eH	CK	SWM	22-06-18

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CONTRACTOR/CONSULTANT	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	C K		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	DATE
SIGNATURE	17 11 21
REG. NUMBER	
SCALE:	A

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
FOUNDATION REBAR LAYOUT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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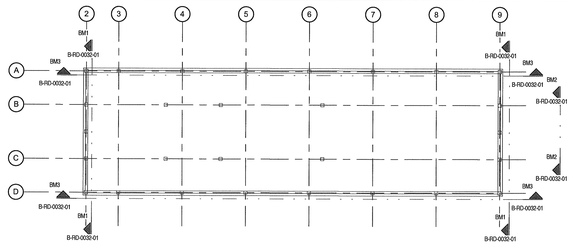
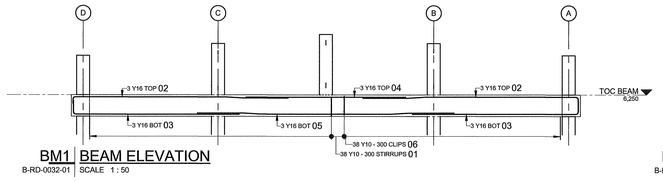
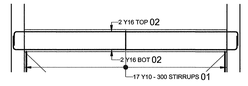


RB | ROOF BEAMS KEYPLAN
B-RD-0032-01 | SCALE 1 : 200

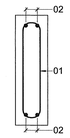


BM1 | BEAM ELEVATION
B-RD-0032-01 | SCALE 1 : 50

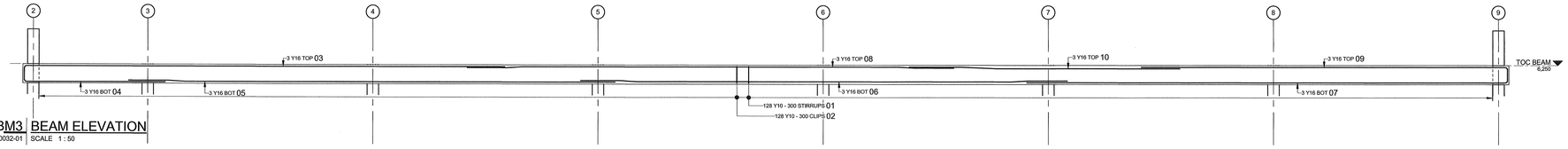
BM1S | SECTION
B-RD-0032-01 | SCALE 1 : 25



BM2 | BEAM ELEVATION
B-RD-0032-01 | SCALE 1 : 50



BM2S | SECTION
B-RD-0032-01 | SCALE 1 : 10



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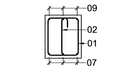


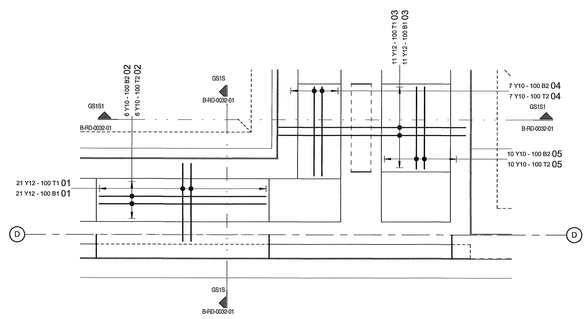
BM3S | SECTION
B-RD-0032-01 | SCALE 1 : 25

REBAR BEAMS SCHEDULE

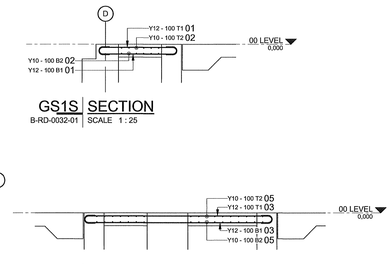
MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
BEAM 01	2	01	Y10	38	76	1730	60	440	360	0	0	0
BEAM 01	2	02	Y16	6	12	5120	42	1050	400	3550	40	0
BEAM 01	2	03	Y16	6	12	4130	37	320	3850	0	0	0
BEAM 01	2	04	Y16	3	6	3700	20	3700	0	0	0	0
BEAM 01	2	05	Y16	3	6	5950	43	1050	400	3050	40	1050
BEAM 01	2	06	Y10	38	76	640	85	100	440	80	100	0
BEAM 02	1	01	Y10	17	17	1270	74	450	90	0	0	0
BEAM 02	1	02	Y16	4	4	5760	38	320	5200	320	0	0
BEAM 03	2	01	Y10	128	256	1730	60	360	440	0	0	0
BEAM 03	2	02	Y10	128	256	650	85	100	440	75	110	0
BEAM 03	2	03	Y16	3	6	12880	37	320	12950	0	0	0
BEAM 03	2	04	Y16	3	6	3980	37	320	3700	0	0	0
BEAM 03	2	05	Y16	3	6	12750	41	11275	455	1025	45	0
BEAM 03	2	06	Y16	3	6	12750	43	1025	455	9795	45	1025
BEAM 03	2	07	Y16	3	6	12870	37	310	12600	0	0	0
BEAM 03	2	08	Y16	3	6	12750	43	1025	430	9850	40	1025
BEAM 03	2	09	Y16	3	6	9870	37	310	9600	0	0	0
BEAM 03	2	10	Y16	3	6	7090	41	4855	890	1345	55	0

REBAR BEAMS WEIGHT SUMMARY

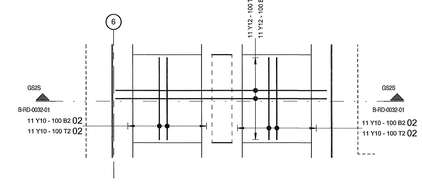
MEMBER NAME	TYPE	WEIGHT
	Y10	500 kg
	Y16	1107 kg
TOTAL		1607 kg



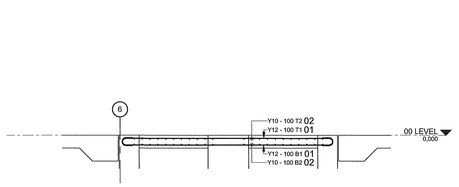
GS1 | GROUND FLOOR SLAB 1 REBAR
B-RD-0032-01 | SCALE 1 : 25



GS1S1 | SECTION
B-RD-0032-01 | SCALE 1 : 25



GS2 | GROUND FLOOR SLAB 2 REBAR
B-RD-0032-01 | SCALE 1 : 25



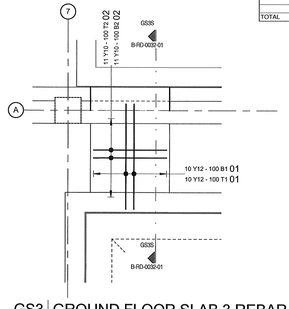
GS2S | SECTION
B-RD-0032-01 | SCALE 1 : 25

REBAR SLABS SCHEDULE

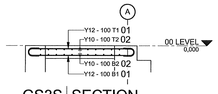
MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
SLAB 1	1	01	Y12	42	42	1230	33	910	0	0	0	0
SLAB 1	1	02	Y10	12	12	2180	33	1940	0	0	0	0
SLAB 1	1	03	Y12	22	22	2500	33	2180	0	0	0	0
SLAB 1	1	04	Y10	14	14	1280	33	1040	0	0	0	0
SLAB 1	1	05	Y10	20	20	1200	33	960	0	0	0	0
SLAB 2	1	01	Y12	22	22	2770	33	2450	0	0	0	0
SLAB 2	1	02	Y10	44	44	1200	33	960	0	0	0	0
SLAB 3	1	01	Y12	20	20	1550	33	1230	0	0	0	0
SLAB 3	1	02	Y10	22	22	1100	33	855	0	0	0	0
SLAB 4	1	01	Y12	22	22	1530	33	1210	0	0	0	0
SLAB 4	1	02	Y10	22	22	1080	33	855	0	0	0	0
SLAB 5	1	07	Y12	96	96	1550	33	1230	0	0	0	0
SLAB 5	1	11	Y10	22	22	4880	33	4640	0	0	0	0

REBAR SLABS WEIGHT SUMMARY

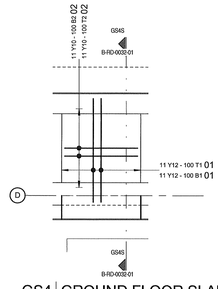
MEMBER NAME	TYPE	WEIGHT
	Y10	170 kg
	Y12	338 kg
TOTAL		509 kg



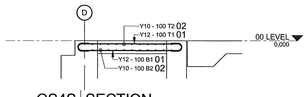
GS3 | GROUND FLOOR SLAB 3 REBAR
B-RD-0032-01 | SCALE 1 : 25



GS3S | SECTION
B-RD-0032-01 | SCALE 1 : 25



GS4 | GROUND FLOOR SLAB 4 REBAR
B-RD-0032-01 | SCALE 1 : 25



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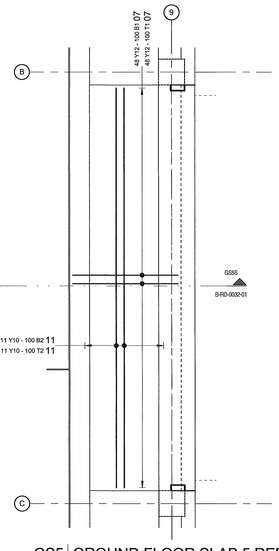
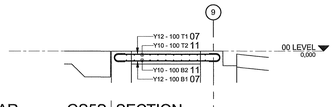
B-RD-0032-01 | SCALE 1 : 25



GS5 | GROUND FLOOR SLAB 5 REBAR
B-RD-0032-01 | SCALE 1 : 25



GS5S | SECTION
B-RD-0032-01 | SCALE 1 : 25

MASTER
22 JUN 2018
AECOM
TRANSNET

NOTES

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REFERENCE DRAWINGS

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TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/009628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
00	REBAR ISSUED FOR CONSTRUCTION	CVH	CK	SWM	22/06/18

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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	CVH		22 06 18
CHECKED	CK		22 06 18
DESIGNED	CK		22 06 18
CHECKED	SWM		22 06 18
PR.ENG./PR.TECH./PR.ARCH			
NAME	SW MARAIS		DATE
SIGNATURE			22 06 18
REG. NUMBER	PR ENG.		
SCALE:	A		

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8001
TEL: 021 940 1999
FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
EAVES BEAM & SLABS REBAR LAYOUT

PROJECT NUMBER	OO	FBS	OB	TYPE	DRAWING NO	SHEET	REV	ID
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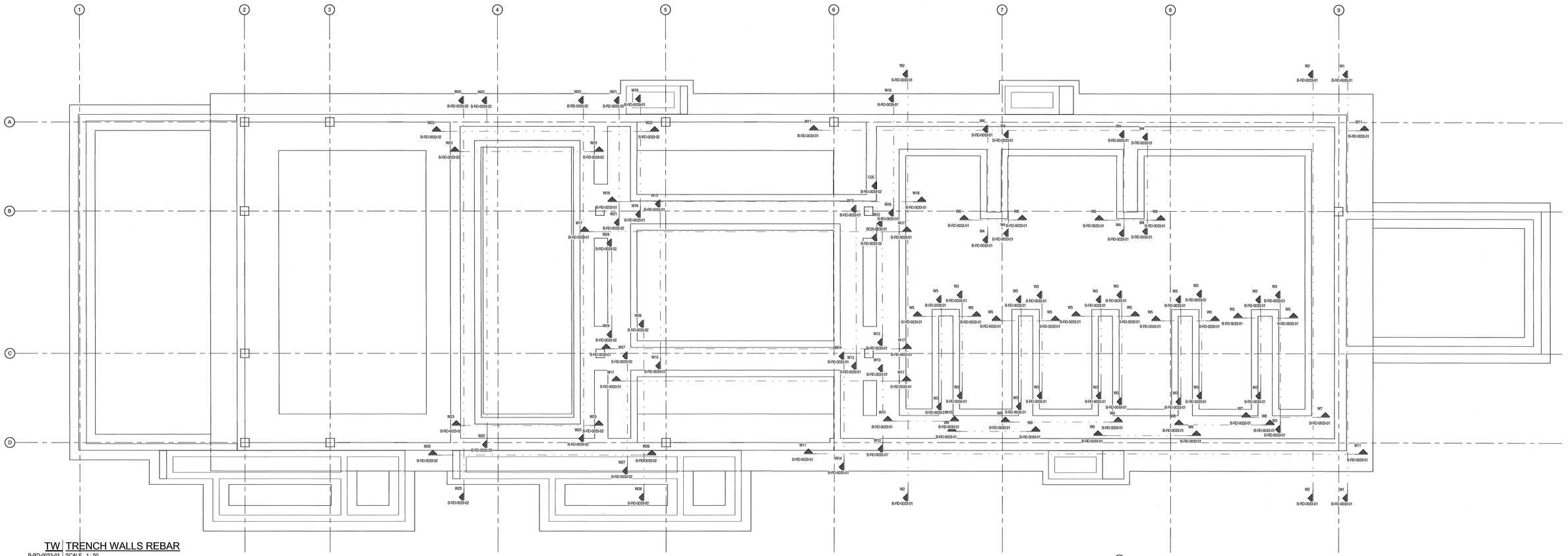

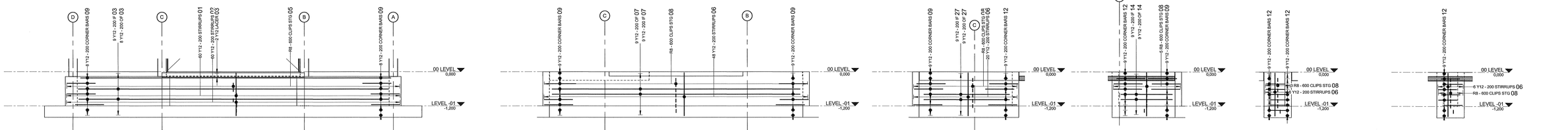

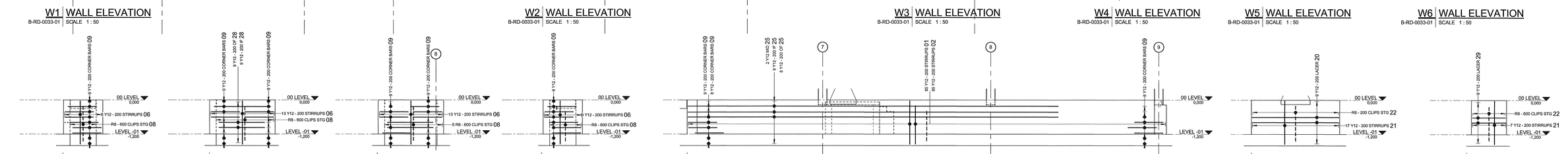

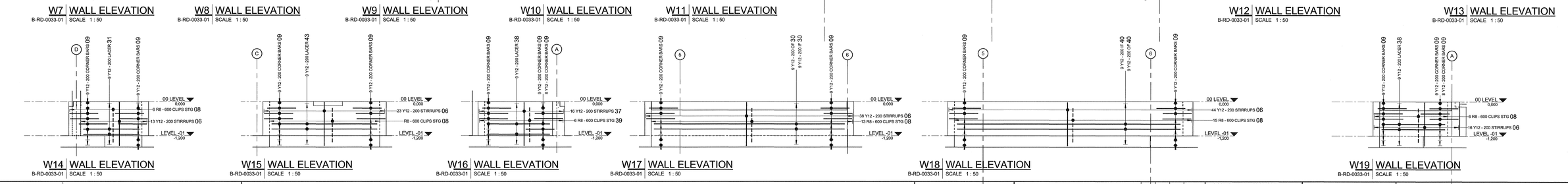

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REG. No. 1966/006828/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
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TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	C VH		22 06 18
CHECKED	C K		22 06 18
DESIGNED	C K		22 06 18
CHECKED	SW M		22 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	DATE
SIGNATURE	22 06 18
REG. NUMBER	
SCALE:	A

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8001
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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
TRENCH WALL REBAR LAYOUT - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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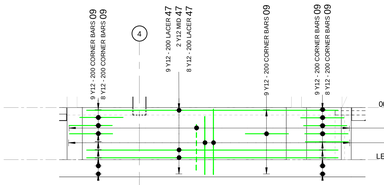
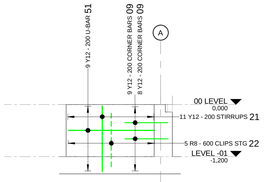


W20 WALL ELEVATION
B-RD-0034-01 | SCALE 1 : 50



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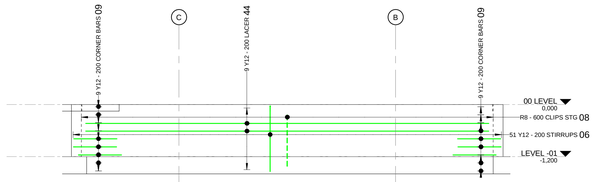

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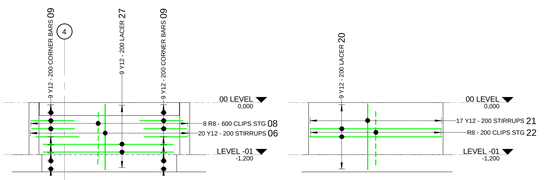

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W24 WALL ELEVATION
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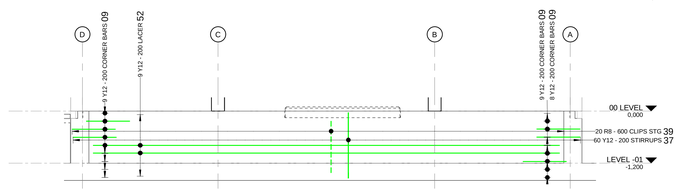

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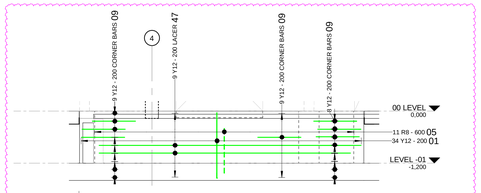

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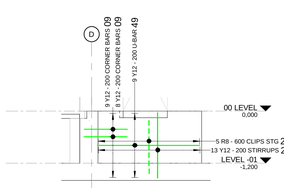

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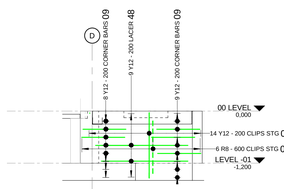

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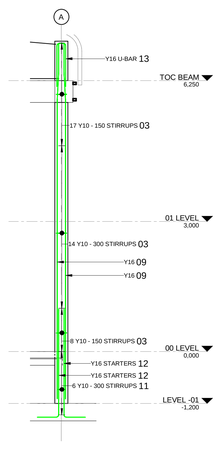

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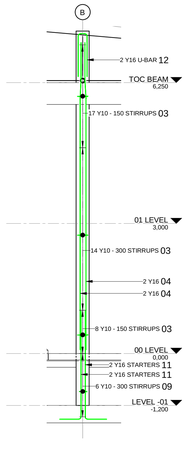

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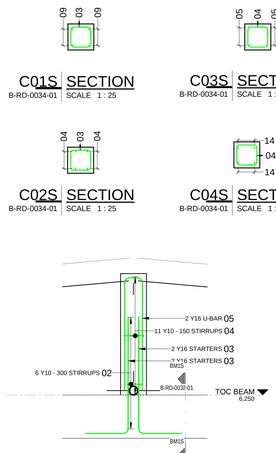

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C01S SECTION
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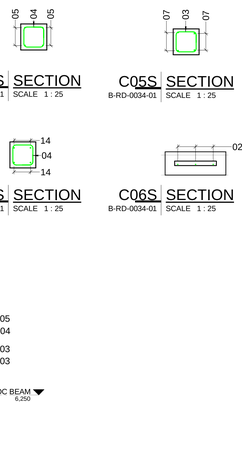

C03S SECTION
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C05S SECTION
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C02S SECTION
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C04S SECTION
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C06S SECTION
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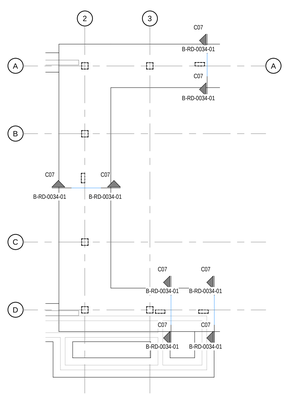

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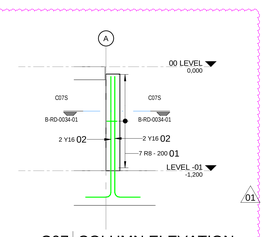

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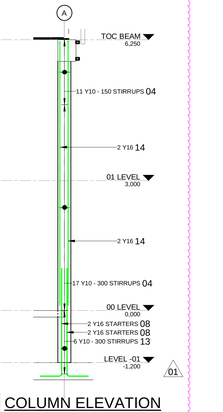
B-RD-0034-01 | SCALE 1 : 25

C07S SECTION
B-RD-0034-01 | SCALE 1 : 10



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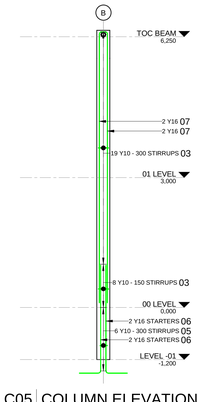
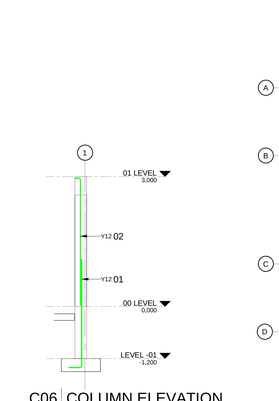
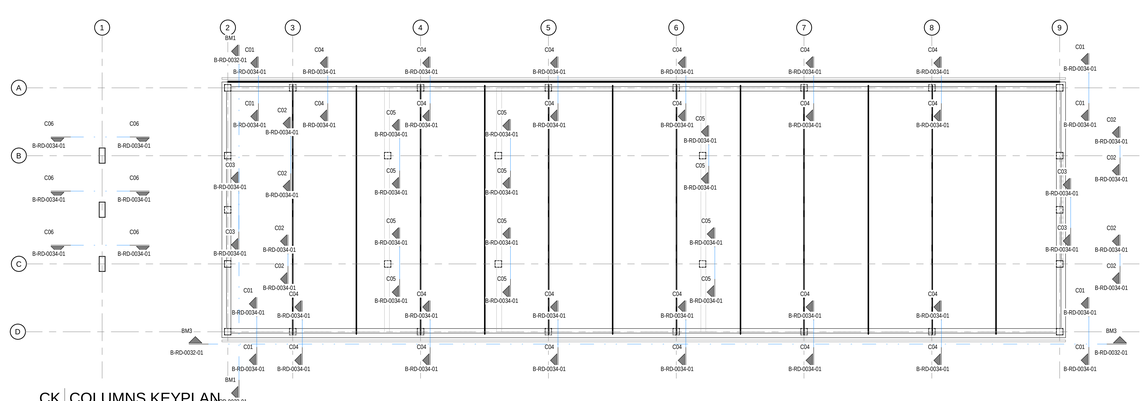


C05 COLUMN ELEVATION
B-RD-0034-01 | SCALE 1 : 50



C06 COLUMN ELEVATION
B-RD-0034-01 | SCALE 1 : 50



CK COLUMNS KEYPLAN
B-RD-0034-01 | SCALE 1 : 100

REBAR TRENCH WALL SCHEDULE

MEMBER				NUMBER			SHAPE					E/R
NAME	NUM	MARK	TYPE	ELEMENT	TOTAL	LENGTH	CODE	A (mm)	B (mm)	C (mm)	D (mm)	(mm)
TRENCH WALLS		01	Y12	0	304	3490	60	340	1350	0	0	0
TRENCH WALLS		02	Y12	0	145	3510	60	180	1520	0	0	0
TRENCH WALLS		03	Y12	0	19	10900	20	10900	0	0	0	0
TRENCH WALLS		05	R8	0	620	540	35	340	0	0	0	0
TRENCH WALLS		06	Y12	0	916	3450	60	150	1520	0	0	0
TRENCH WALLS		07	Y12	0	36	8700	20	8700	0	0	0	0
TRENCH WALLS		08	R8	0	2380	350	35	150	0	0	0	0
TRENCH WALLS		09	Y12	0	1037	1970	37	1000	1000	0	0	0
TRENCH WALLS		10	Y12	0	18	5500	20	5500	0	0	0	0
TRENCH WALLS		12	Y12	0	351	1620	37	1000	650	0	0	0
TRENCH WALLS		13	Y12	0	18	1520	37	1000	550	0	0	0
TRENCH WALLS		14	Y12	0	72	1800	20	1800	0	0	0	0
TRENCH WALLS		15	Y12	0	9	1610	37	1000	640	0	0	0
TRENCH WALLS		18	Y12	0	18	3620	20	3620	0	0	0	0
TRENCH WALLS		19	Y12	0	18	2400	20	2400	0	0	0	0
TRENCH WALLS		20	Y12	0	36	3240	35	3040	0	0	0	0
TRENCH WALLS		21	Y12	0	65	3930	60	390	1520	0	0	0
TRENCH WALLS		22	R8	0	329	990	35	390	0	0	0	0
TRENCH WALLS		23	Y12	0	34	9000	20	9000	0	0	0	0
TRENCH WALLS		24	Y12	0	125	3550	60	200	1520	0	0	0
TRENCH WALLS		25	Y12	0	21	13000	20	13000	0	0	0	0
TRENCH WALLS		27	Y12	0	216	3000	20	3000	0	0	0	0
TRENCH WALLS		28	Y12	0	72	1600	20	1600	0	0	0	0
TRENCH WALLS		29	Y12	0	18	1370	35	1170	0	0	0	0
TRENCH WALLS		30	Y12	0	54	6700	20	6700	0	0	0	0
TRENCH WALLS		31	Y12	0	18	1960	20	1955	0	0	0	0
TRENCH WALLS		35	Y12	0	9	1970	37	1000	1000	0	0	0
TRENCH WALLS		37	Y12	0	76	3690	60	270	1520	0	0	0
TRENCH WALLS		38	Y12	0	36	2200	20	2200	0	0	0	0
TRENCH WALLS		39	R8	0	182	470	35	270	0	0	0	0
TRENCH WALLS		40	Y12	0	18	7850	20	7845	0	0	0	0
TRENCH WALLS		43	Y12	0	36	3700	20	3700	0	0	0	0
TRENCH WALLS		44	Y12	0	36	9300	20	9300	0	0	0	0
TRENCH WALLS		46	R8	0	2	6480	20	6480	0	0	0	0
TRENCH WALLS		47	Y12	0	37	5800	20	5800	0	0	0	0
TRENCH WALLS		48	Y12	0	18	2000	20	2000	0	0	0	0
TRENCH WALLS		49	Y12	0	9	5030	38	2360	365	2360	0	0
TRENCH WALLS		50	Y12	0	34	3510	60	1520	180	0	0	0
TRENCH WALLS		51	Y12	0	9	4310	38	2000	365	2000	0	0
TRENCH WALLS		52	Y12	0	18	10760	20	10760	0	0	0	0

REBAR TRENCH WALLS WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
TRENCH WALLS	R8	576 kg
TRENCH WALLS	Y12	11058 kg
TOTAL		11634 kg

REBAR COLUMN SCHEDULE

MEMBER				NUMBER			SHAPE					E/R
NAME	NUM	MARK	TYPE	ELEMENT	TOTAL	LENGTH	CODE	A (mm)	B (mm)	C (mm)	D (mm)	(mm)
COL 01	4	03	Y10	39	156	1090	60	240	240	0	0	0
COL 01	4	09	Y16	4	16	8190	41	665	625	6900	50	0
COL 01	4	11	Y10	6	24	810	60	180	160	0	0	0
COL 01	4	12	Y16	4	16	2960	37	2500	500	0	0	0
COL 01	4	13	Y16	2	8	2140	38	1000	220	1000	0	0
COL 02	4	03	Y10	39	156	1090	60	240	240	0	0	0
COL 02	4	04	Y16	4	16	7090	41	850	440	5800	40	0
COL 02	4	09	Y10	6	24	850	60	180	180	0	0	0
COL 02	4	11	Y16	4	16	2960	37	2500	500	0	0	0
COL 02	4	12	Y16	2	8	2140	38	1000	220	1000	0	0
COL 03	2	02	Y10	6	12	850	60	180	180	0	0	0
COL 03	2	03	Y16	4	8	1810	37	1350	500	0	0	0
COL 03	2	04	Y10	11	22	1090	60	240	240	0	0	0
COL 03	2	05	Y16	2	4	2740	38	1300	220	1300	0	0
COL 04	12	04	Y10	28	336	1090	60	240	240	0	0	0
COL 04	12	08	Y16	4	48	2960	37	2500	500	0	0	0
COL 04	12	13	Y10	6	72	810	60	180	160	0	0	0
COL 04	12	14	Y16	4	48	6290	37	6100	230	0	0	0
COL 05	6	03	Y10	27	162	1090	60	240	240	0	0	0
COL 05	6	05	Y10	6	36	830	60	180	170	0	0	0
COL 05	6	06	Y16	4	24	2960	37	2500	500	0	0	0
COL 05	6	07	Y16	4	24	6380	34	6260	0	0	0	0
COL 06	3	01	Y12	3	9	2770	37	300	2500	0	0	0
COL 06	3	02	Y12	3	9	3040	34	2940	0	0	0	0
COL 07	4	01	R8	7	28	1100	60	90	380	0	0	0
COL 07	4	02	Y16	4	16	1660	37	300	1400	0	0	0

REBAR COLUMNS WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
COL 07	R8	12 kg
	Y10	644 kg
COL 06	Y12	46 kg
	Y16	1726 kg
TOTAL		2429 kg

MASTER
23-11-2021

NOTES

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

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TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	REBAR TAGS ADDED / AMENDED	A H	CK	SWM	17-11-21
00	REBAR ISSUED FOR CONSTRUCTION	C H	CK	SWM	22-09-10

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TITLE	NAME	SIGN	DATE
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CHECKED	C K		17 11 21
DESIGNED	C K		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	DATE
SIGNATURE	17 11 21
REG. NUMBER	
SCALE:	A

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163 LVS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
TRENCH WALLS CONTINUED & COLUMN REBAR - SHEET 2

PROJECT NUMBER				OD	FBS	DIS	TYPE	DRAWING NO.		SHEET		REV	ID
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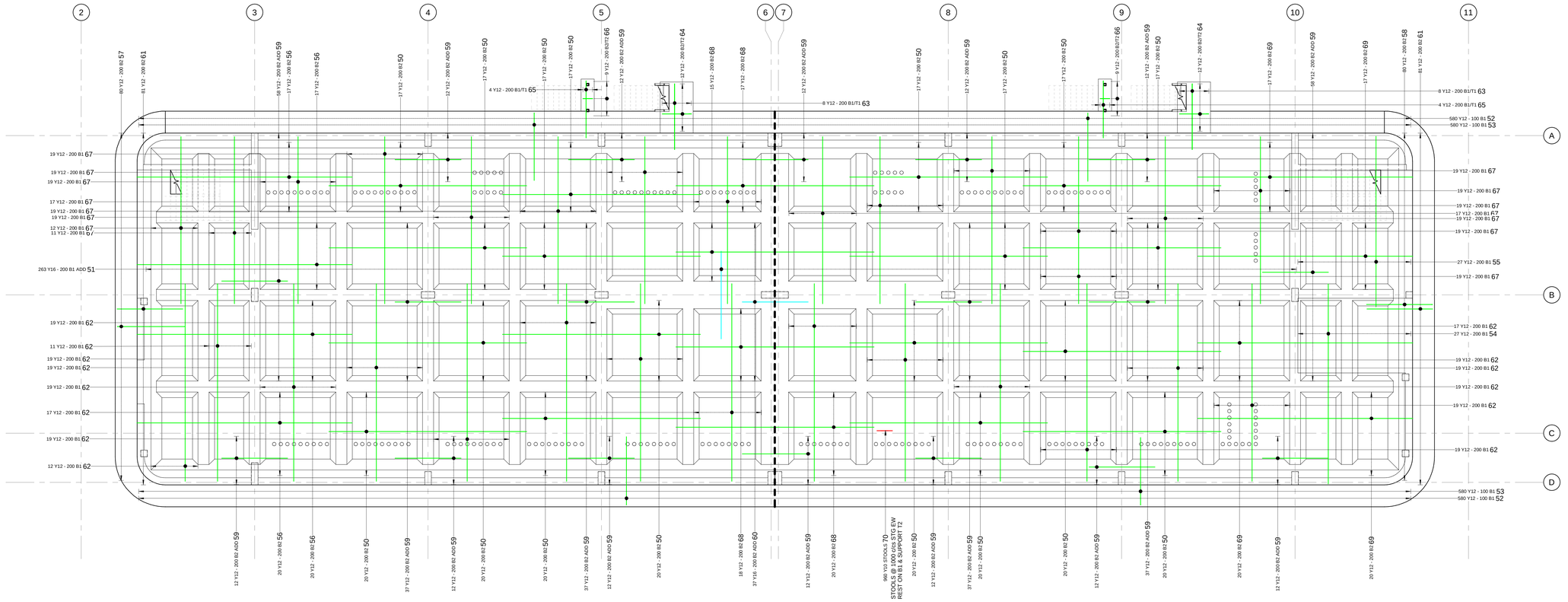

00 LEVEL RAFT SLAB BOT REBAR

SCALE 1 : 75

REBAR RAFT SLAB BOT SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
RAFT SLAB BOT	1	50	Y12	296	296	9000	20	9000	0	0	0	0
RAFT SLAB BOT	1	51	Y16	263	263	3990	20	3990	0	0	0	0
RAFT SLAB BOT	1	52	Y12	1160	1160	3440	42	950	860	1550	620	0
RAFT SLAB BOT	1	53	Y12	1160	1160	3440	48	2200	880	390	90	0
RAFT SLAB BOT	1	54	Y12	27	27	9090	20	9090	0	0	0	0
RAFT SLAB BOT	1	55	Y12	27	27	7760	20	7760	0	0	0	0
RAFT SLAB BOT	1	56	Y12	74	74	9800	20	9800	0	0	0	0
RAFT SLAB BOT	1	57	Y12	80	80	3410	42	1020	840	1470	600	0
RAFT SLAB BOT	1	58	Y12	80	80	3300	42	1020	730	1470	520	0
RAFT SLAB BOT	1	59	Y12	408	408	3000	20	3000	0	0	0	0
RAFT SLAB BOT	1	60	Y16	37	37	3000	20	3000	0	0	0	0
RAFT SLAB BOT	1	61	Y12	162	162	3330	48	2000	1000	360	100	0
RAFT SLAB BOT	1	62	Y12	247	247	8990	20	8990	0	0	0	0
RAFT SLAB BOT	1	63	Y12	16	16	6110	38	3000	175	3000	0	0
RAFT SLAB BOT	1	64	Y12	24	24	3170	74	1340	140	0	0	0
RAFT SLAB BOT	1	65	Y12	8	8	5260	38	2600	125	2600	0	0
RAFT SLAB BOT	1	66	Y12	18	18	1280	74	450	100	0	0	0
RAFT SLAB BOT	1	67	Y12	247	247	7600	20	7600	0	0	0	0
RAFT SLAB BOT	1	68	Y12	70	70	9020	20	9015	0	0	0	0
RAFT SLAB BOT	1	69	Y12	74	74	9790	20	9785	0	0	0	0
RAFT SLAB BOT	1	70	Y10	960	960	860	83	250	90	250	250	0

0 1

REBAR RAFT SLAB BOT WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
RAFT SLAB BOT	Y10	509 kg
RAFT SLAB BOT	Y12	17594 kg
RAFT SLAB BOT	Y16	1831 kg
TOTAL		19935 kg

MASTER

23-08-2021

AECOM

DRAWING NO. | REFERENCE

REFERENCE DRAWINGS

NOTES

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REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0 1	SCHEDULE REVISED AS PER FEQ 80 RESPONSE	A H	C K	S W M	21-08-21
0 0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-19

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DESIGNED	C K		21 08 21
CHECKED	S W M		21 08 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		21 08 21
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - RAFT SLAB REBAR LAYOUT - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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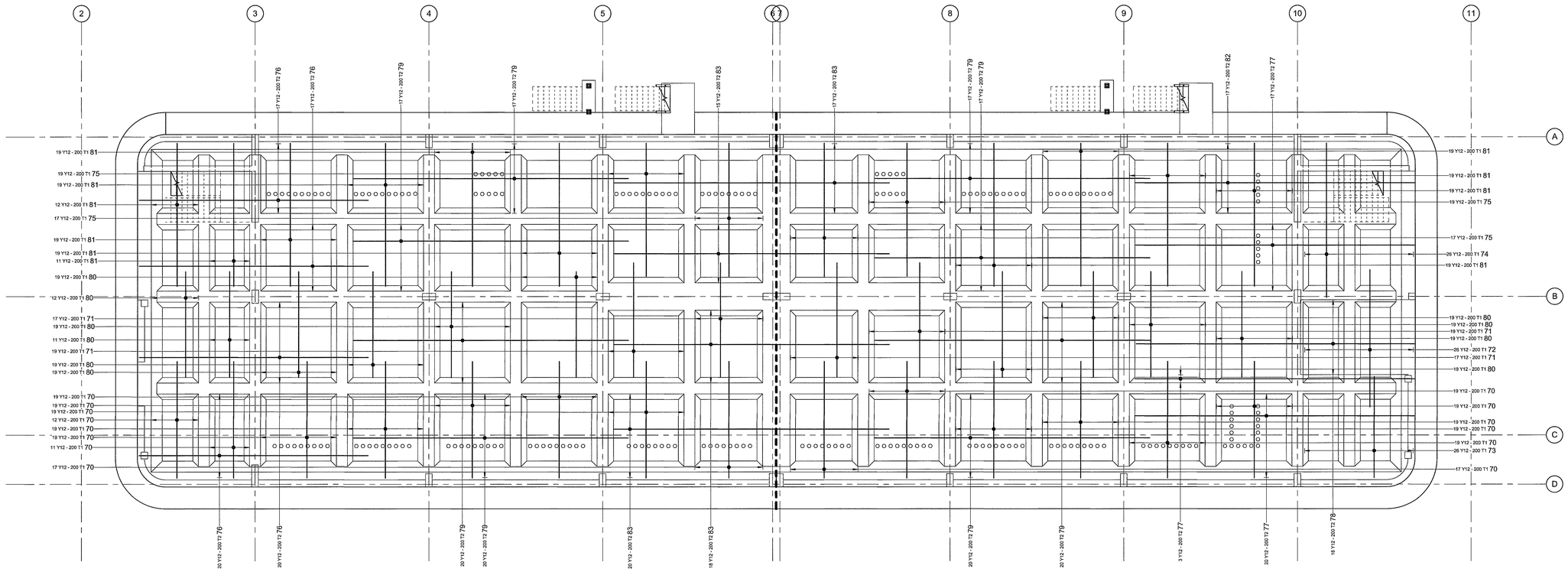

00 | 00 LEVEL RAFT SLAB TOP REBAR

SCALE 1 : 75

REBAR RAFT SLAB TOP SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
RAFT SLAB TOP		70	Y12	0	247	5470	37	5300	200	0	0	0
RAFT SLAB TOP		71	Y12	0	72	5200	20	5200	0	0	0	0
RAFT SLAB TOP		72	Y12	0	26	6240	43	1000	500	3350	90	990
RAFT SLAB TOP		73	Y12	0	26	5040	38	250	4900	250	0	0
RAFT SLAB TOP		74	Y12	0	26	7459	38	250	7010	230	0	0
RAFT SLAB TOP		75	Y12	0	72	6220	37	6050	200	0	0	0
RAFT SLAB TOP		76	Y12	0	74	10400	20	10400	0	0	0	0
RAFT SLAB TOP		77	Y12	0	40	12700	20	12700	0	0	0	0
RAFT SLAB TOP		78	Y12	0	18	12660	41	7030	530	5100	90	0
RAFT SLAB TOP		79	Y12	0	148	12500	20	12500	0	0	0	0
RAFT SLAB TOP		80	Y12	0	175	4800	20	4800	0	0	0	0
RAFT SLAB TOP		81	Y12	0	175	6070	37	6003	200	0	0	0
RAFT SLAB TOP		82	Y12	0	17	12650	20	12685	0	0	0	0
RAFT SLAB TOP		83	Y12	0	70	12520	20	12515	0	0	0	0

REBAR RAFT SLAB TOP WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
RAFT SLAB TOP	Y12	8093 kg
TOTAL		8093 kg

MASTER
27 JUN 2018
AECOM TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
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0.0	ISSUED FOR CONSTRUCTION	A.H	C.K	SW.M	27-06-18

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TITLE	NAME	SIGN	DATE

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TITLE	NAME	SIGN	DATE
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CHECKED	C.K		27 06 18
DESIGNED	C.K		27 06 18
CHECKED	SW.M		27 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	27 06 18
REG. NUMBER	20090106
SCALE:	AS SHOWN

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TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - RAFT SLAB REBAR LAYOUT - SHEET 2

PROJECT NUMBER								OD	FBS			DIS	TYPE	DRAWING NO.				SHEET		REV	ID
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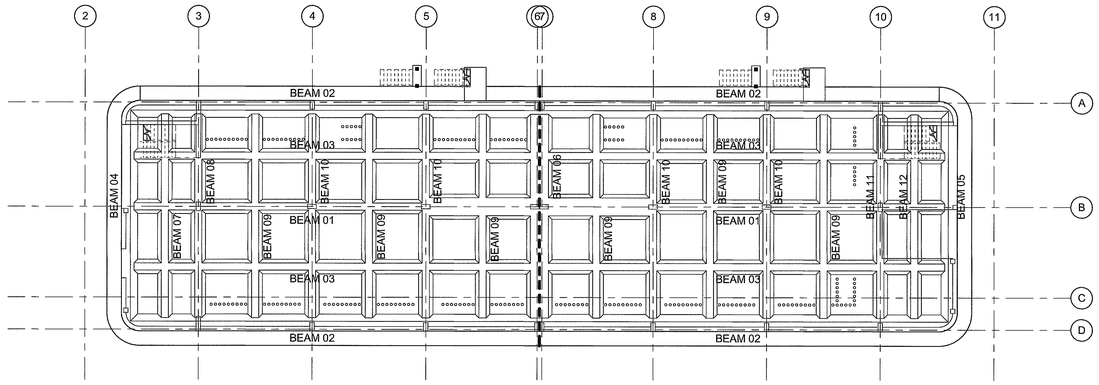
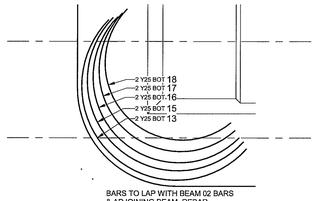
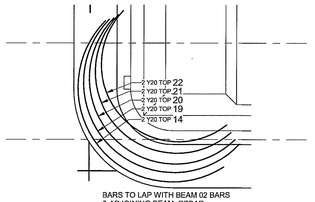


00 | 00 LEVEL RAFT BEAM REBAR KEYPLAN
SCALE 1 : 150



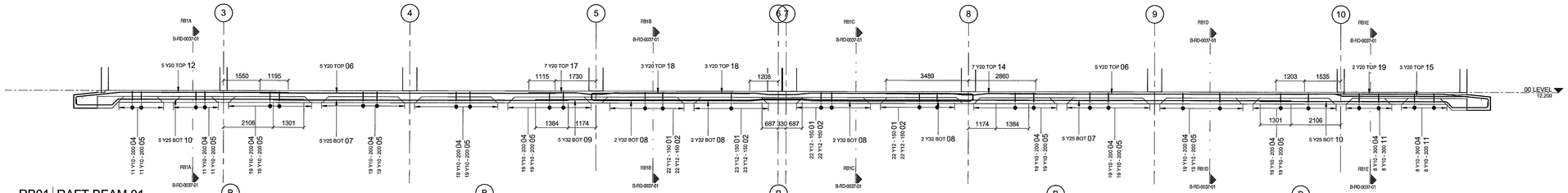
BARS TO LAP WITH BEAM 02 BARS & ADJOINING BEAM REBAR

RB2-B | RAFT BEAM 02 CORNER BARS BOT
SCALE 1 : 50

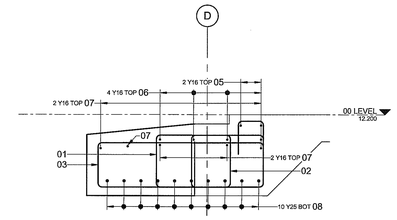


BARS TO LAP WITH BEAM 02 BARS & ADJOINING BEAM REBAR

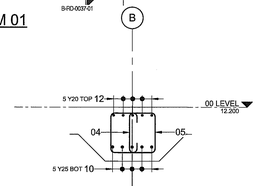
RB2-T | RAFT BEAM 02 CORNER BARS TOP
SCALE 1 : 50



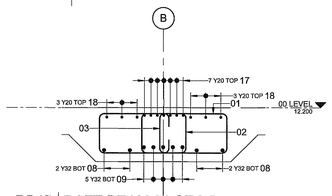
RB01 | RAFT BEAM 01
SCALE 1 : 75



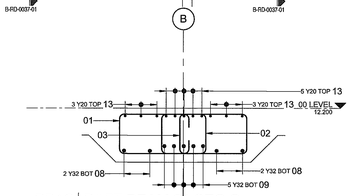
RB2A | RAFT BEAM 02 SEC A
SCALE 1 : 20



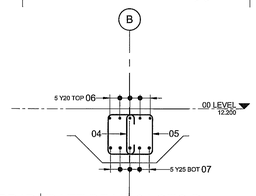
RB1A | RAFT BEAM 01 SEC A
SCALE 1 : 20



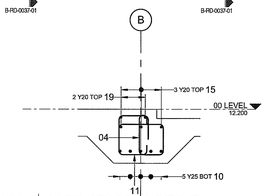
RB1B | RAFT BEAM 01 SEC B
SCALE 1 : 20



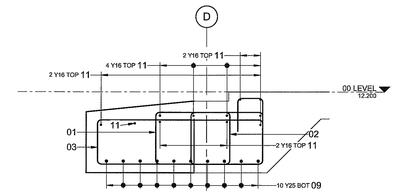
RB1C | RAFT BEAM 01 SEC C
SCALE 1 : 20



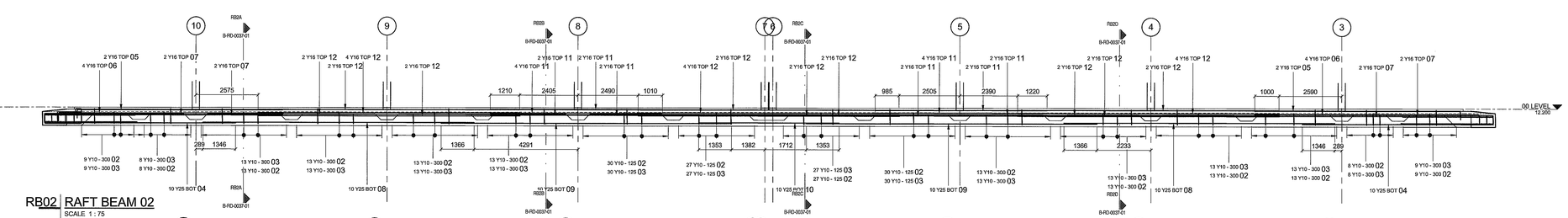
RB1D | RAFT BEAM 01 SEC D
SCALE 1 : 20



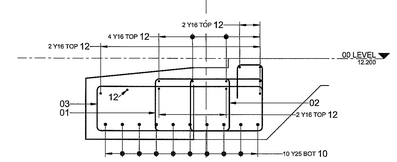
RB1E | RAFT BEAM 01 SEC E
SCALE 1 : 20



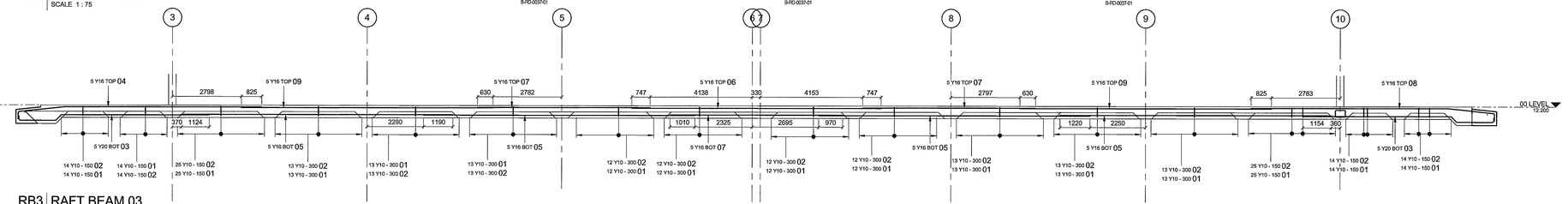
RB2B | RAFT BEAM 02 SEC B
SCALE 1 : 20



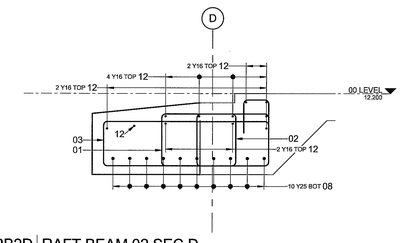
RB02 | RAFT BEAM 02
SCALE 1 : 75



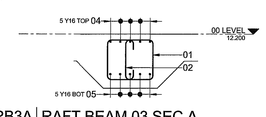
RB2C | RAFT BEAM 02 SEC C
SCALE 1 : 20



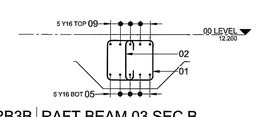
RB3 | RAFT BEAM 03
SCALE 1 : 75



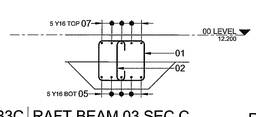
RB2D | RAFT BEAM 02 SEC D
SCALE 1 : 20



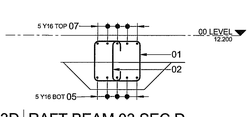
RB3A | RAFT BEAM 03 SEC A
SCALE 1 : 20



RB3B | RAFT BEAM 03 SEC B
SCALE 1 : 20



RB3C | RAFT BEAM 03 SEC C
SCALE 1 : 20



RB3D | RAFT BEAM 03 SEC D
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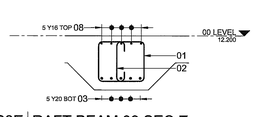

RB3E | RAFT BEAM 03 SEC E
SCALE 1 : 20

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27 JUN 2018
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DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

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REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		27 06 18
CHECKED	C K		27 06 18
DESIGNED	C K		27 06 18
CHECKED	S W M		27 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	SM MARAIS
SIGNATURE	
DATE	27 06 18
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
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8051
TEL: 021 940 1999
FAX: 086 677 2455

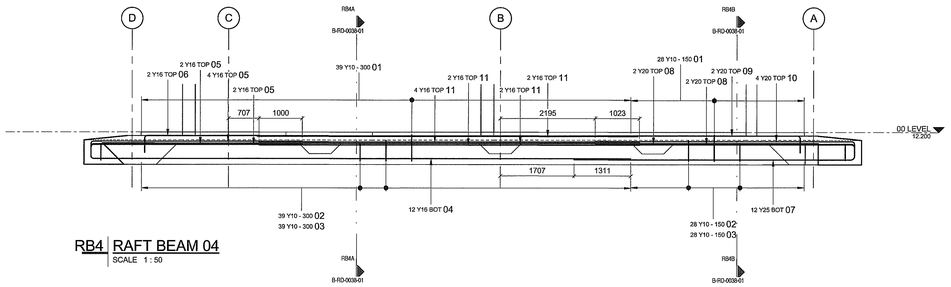
TRANSNET

PORT OF SALDANHA

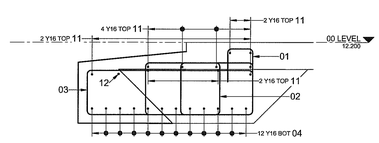
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - RAFT BEAM REBAR SHEET 1

PROJECT NUMBER	ODO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	R D	0 0 3 7	0 1	0 0	AE

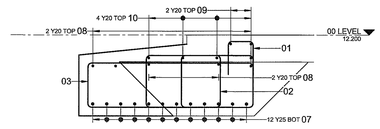
A



RB4 | RAFT BEAM 04
SCALE 1 : 50



RB4A | RAFT BEAM 04 SEC A
SCALE 1 : 20



RB4B | RAFT BEAM 04 SEC B
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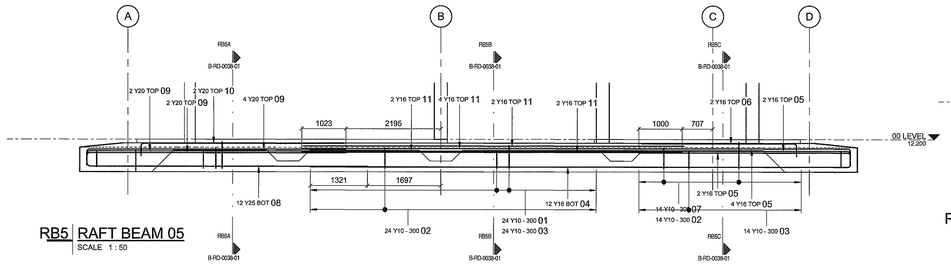
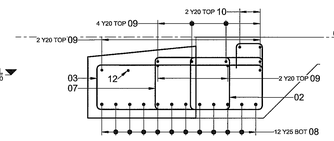
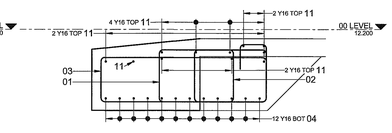


RB5 | RAFT BEAM 05
SCALE 1 : 50



RB5A | RAFT BEAM 05 SEC A
SCALE 1 : 20



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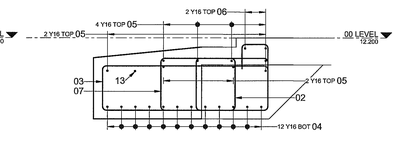

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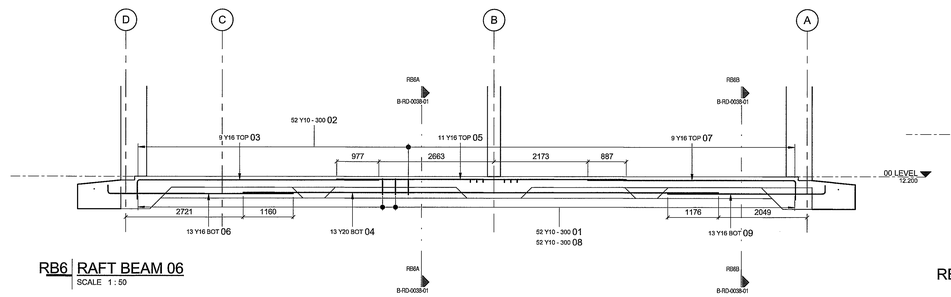

RB6 | RAFT BEAM 06
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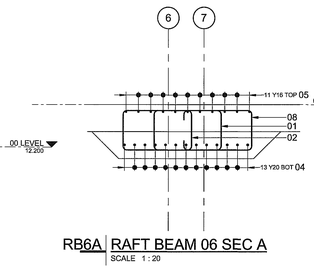
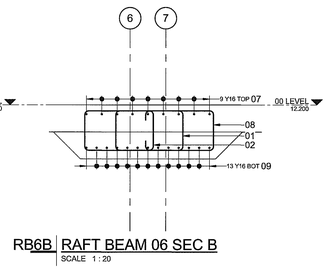


RB6A | RAFT BEAM 06 SEC A
SCALE 1 : 20



RB6B | RAFT BEAM 06 SEC B
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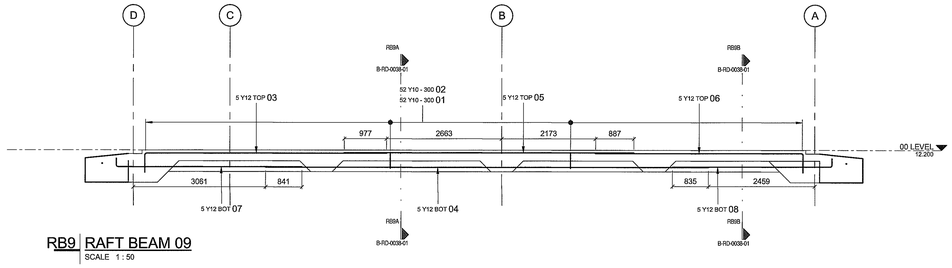

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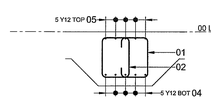
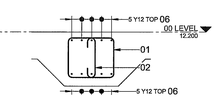


RB9A | RAFT BEAM 09 SEC A
SCALE 1 : 20



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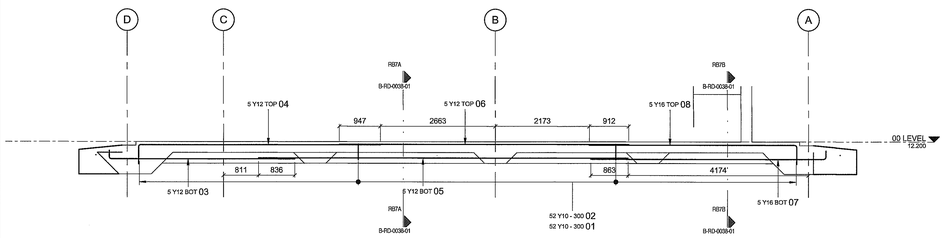

RB7 | RAFT BEAM 07
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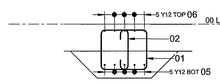
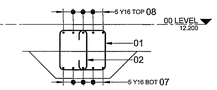


RB7A | RAFT BEAM 07 SEC A
SCALE 1 : 20



RB7B | RAFT BEAM 07 SEC B
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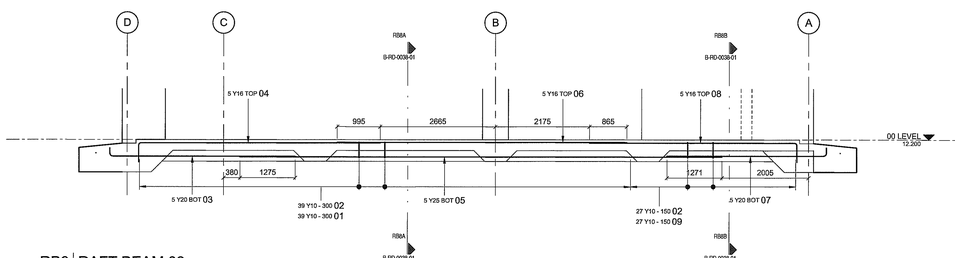
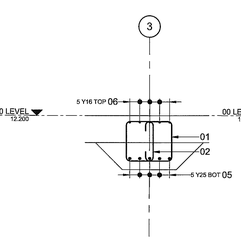
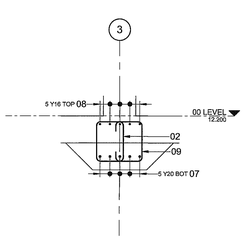


RB8 | RAFT BEAM 08
SCALE 1 : 50



RB8A | RAFT BEAM 08 SEC A
SCALE 1 : 20



RB8B | RAFT BEAM 08 SEC B
SCALE 1 : 20

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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

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TYGER WATERFRONT
CARL CRONJE DRIVE

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHK	APPD	DATE
0 0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-18

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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		27 06 18
CHECKED	C K		27 06 18
DESIGNED	C K		27 06 18
CHECKED	S W M		27 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MANAS DATE
SIGNATURE	27 06 18
REG. NUMBER	20090106
SCALE:	AS SHOWN A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LYS KRIGE DRIVE, PLATTEKLOOF,
7001
TEL: 021 940 1999
FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - RAFT BEAM REBAR SHEET 2

PROJECT NUMBER							OD	FBS		DIS	TYPE	DRAWING NO.				SHEET		REV	ID
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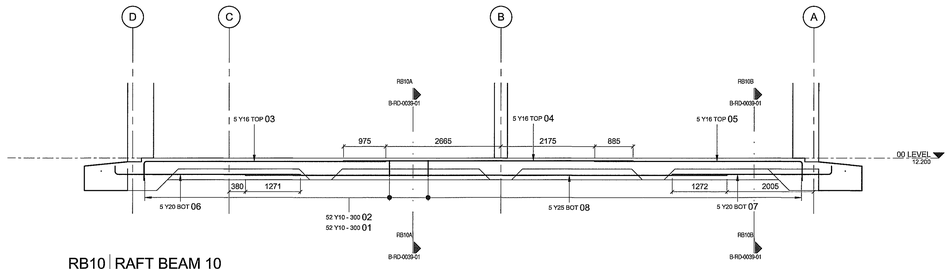
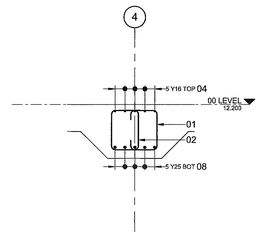
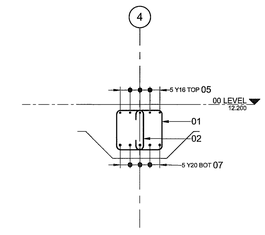


RB10 | RAFT BEAM 10
SCALE 1 : 50



RB10A | RAFT BEAM 10 SEC A
SCALE 1 : 20



RB10B | RAFT BEAM 10 SEC B
SCALE 1 : 20

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RAFT BEAM 01	1	02	Y12	89	89	1700	60	375	420	0	0	0
RAFT BEAM 01	1	03	Y12	89	89	700	33	375	0	0	0	0
RAFT BEAM 01	1	04	Y10	190	190	620	33	375	0	0	0	0
RAFT BEAM 01	1	05	Y10	174	174	1720	60	375	420	0	0	0
RAFT BEAM 01	1	06	Y20	10	10	12500	20	12500	0	0	0	0
RAFT BEAM 01	1	07	Y25	10	10	12500	20	12500	0	0	0	0
RAFT BEAM 01	1	08	Y32	8	8	9160	42	1700	500	6740	70	0
RAFT BEAM 01	1	09	Y32	10	10	11300	41	9100	500	1700	70	0
RAFT BEAM 01	1	10	Y25	10	10	9930	42	7900	350	1530	270	0
RAFT BEAM 01	1	11	Y10	16	16	1982	75	220	280	370	420	290
RAFT BEAM 01	1	12	Y20	5	5	9280	48	300	1920	7100	1910	0
RAFT BEAM 01	1	13	Y20	11	11	8560	43	4915	600	1150	80	1700
RAFT BEAM 01	1	14	Y20	7	7	5690	43	2015	600	500	80	1950
RAFT BEAM 01	1	15	Y20	3	3	8100	41	2485	320	5300	110	0
RAFT BEAM 01	1	16	Y20	4	4	3900	37	3700	200	0	0	0
RAFT BEAM 01	1	17	Y20	7	7	9360	43	2000	600	500	80	5650
RAFT BEAM 01	1	18	Y20	6	6	6910	37	6715	250	0	0	0
RAFT BEAM 01	1	19	Y20	2	2	9260	48	300	1920	7080	1910	0
RAFT BEAM 02	2	01	Y10	252	504	3540	75	310	240	620	1000	490
RAFT BEAM 02	2	02	Y10	252	504	1855	60	490	370	0	0	0
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RAFT BEAM 02	2	05	Y16	4	8	8810	37	8500	350	0	0	0
RAFT BEAM 02	2	06	Y16	8	16	9610	37	9300	350	0	0	0
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RAFT BEAM 02	2	08	Y25	20	40	11200	20	11200	0	0	0	0
RAFT BEAM 02	2	09	Y25	20	40	12000	20	12000	0	0	0	0
RAFT BEAM 02	2	10	Y25	10	20	5800	20	5800	0	0	0	0
RAFT BEAM 02	2	11	Y16	22	44	7100	20	7100	0	0	0	0
RAFT BEAM 02	2	12	Y16	33	66	10800	20	10800	0	0	0	0
RAFT BEAM 02	2	13	Y25	4	8	6950	65	6950	0	0	0	2175
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RAFT BEAM 02	2	16	Y25	4	8	6200	65	6200	0	0	0	1975
RAFT BEAM 02	2	17	Y25	4	8	5800	65	5800	0	0	0	1875
RAFT BEAM 02	2	18	Y25	4	8	5400	65	5400	0	0	0	1775
RAFT BEAM 02	2	19	Y20	4	8	6600	65	6600	0	0	0	2080
RAFT BEAM 02	2	20	Y20	4	8	6200	65	6200	0	0	0	1980
RAFT BEAM 02	2	21	Y20	4	8	5800	65	5800	0	0	0	1880
RAFT BEAM 02	2	22	Y20	4	8	5400	65	5400	0	0	0	1780
RAFT BEAM 03	2	01	Y10	232	464	1740	60	375	430	0	0	0
RAFT BEAM 03	2	02	Y10	232	464	620	33	375	0	0	0	0
RAFT BEAM 03	2	03	Y20	10	20	7970	42	6000	330	1520	250	0
RAFT BEAM 03	2	04	Y16	5	10	10170	48	8000	1900	300	200	0
RAFT BEAM 03	2	05	Y16	20	40	11000	20	11000	0	0	0	0
RAFT BEAM 03	2	06	Y16	5	10	10120	20	10115	0	0	0	0
RAFT BEAM 03	2	07	Y16	15	30	7000	20	7000	0	0	0	0
RAFT BEAM 03	2	08	Y16	5	10	10160	48	7985	1900	300	200	0
RAFT BEAM 03	2	09	Y16	10	20	10200	20	10200	0	0	0	0
RAFT BEAM 04	1	01	Y10	67	67	3540	75	310	240	620	1000	490
RAFT BEAM 04	1	02	Y10	67	67	1855	60	490	370	0	0	0
RAFT BEAM 04	1	03	Y10	67	67	4050	60	420	1540	0	0	0
RAFT BEAM 04	1	04	Y16	12	12	12760	37	12500	300	0	0	0
RAFT BEAM 04	1	05	Y16	9	9	5160	37	4900	300	0	0	0
RAFT BEAM 04	1	06	Y16	2	2	3960	37	3600	400	0	0	0
RAFT BEAM 04	1	07	Y25	12	12	6770	37	6500	330	0	0	0
RAFT BEAM 04	1	08	Y20	5	5	6250	37	6000	300	0	0	0
RAFT BEAM 04	1	09	Y20	2	2	5060	37	4710	400	0	0	0
RAFT BEAM 04	1	10	Y20	4	4	6260	37	6010	300	0	0	0
RAFT BEAM 04	1	11	Y16	10	10	8800	20	8800	0	0	0	0
RAFT BEAM 04	1	12	Y16	1	1	8810	20	8810	0	0	0	0
RAFT BEAM 05	1	01	Y10	24	24	3400	75	230	250	540	1000	490
RAFT BEAM 05	1	02	Y10	68	68	1850	60	490	370	0	0	0
RAFT BEAM 05	1	03	Y10	68	68	4050	60	420	1540	0	0	0
RAFT BEAM 05	1	04	Y16	12	12	12760	37	12500	300	0	0	0
RAFT BEAM 05	1	05	Y16	8	8	5160	37	4900	300	0	0	0
RAFT BEAM 05	1	06	Y16	2	2	3860	37	3600	300	0	0	0
RAFT BEAM 05	1	07	Y10	44	44	3570	75	230	250	620	1000	490
RAFT BEAM 05	1	08	Y25	12	12	6780	37	6510	330	0	0	0
RAFT BEAM 05	1	09	Y20	8	8	6260	37	6010	300	0	0	0
RAFT BEAM 05	1	10	Y20	2	2	4960	37	4710	300	0	0	0
RAFT BEAM 05	1	11	Y16	11	11	8800	20	8800	0	0	0	0
RAFT BEAM 05	1	12	Y20	1	1	6260	37	6005	295	0	0	0
RAFT BEAM 05	1	13	Y16	1	1	5160	37	4905	295	0	0	0
RAFT BEAM 06	1	01	Y10	52	52	2140	60	375	630	0	0	0
RAFT BEAM 06	1	02	Y10	52	52	620	33	375	0	0	0	0
RAFT BEAM 06	1	03	Y16	9	9	6010	37	5660	450	0	0	0
RAFT BEAM 06	1	04	Y20	13	13	11000	20	11000	0	0	0	0
RAFT BEAM 06	1	05	Y16	11	11	6700	20	6700	0	0	0	0
RAFT BEAM 06	1	06	Y16	13	13	4460	37	4300	200	0	0	0
RAFT BEAM 06	1	07	Y16	9	9	5220	37	4810	450	0	0	0
RAFT BEAM 06	1	08	Y10	52	52	3280	60	375	1200	0	0	0
RAFT BEAM 06	1	09	Y16	13	13	3810	37	3650	200	0	0	0
RAFT BEAM 07	1	01	Y10	52	52	1740	60	375	430	0	0	0
RAFT BEAM 07	1	02	Y10	52	52	620	33	375	0	0	0	0
RAFT BEAM 07	1	03	Y12	5	5	4470	37	4300	200	0	0	0
RAFT BEAM 07	1	04	Y12	5	5	6020	37	5600	450	0	0	0
RAFT BEAM 07	1	05	Y12	5	5	8590	20	8550	0	0	0	0
RAFT BEAM 07	1	06	Y12	5	5	6720	20	6695	0	0	0	0
RAFT BEAM 07	1	07	Y16	5	5	5510	37	5450	200	0	0	0
RAFT BEAM 07	1	08	Y16	5	5	5320	37	4810	450	0	0	0
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RAFT BEAM 08	1	04	Y16	5	5	6010	37	5600	450	0	0	0
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RAFT BEAM 08	1	06	Y16	5	5	6700	20	6700	0	0	0	0
RAFT BEAM 08	1	07	Y20	5	5	3850	37	3700	200	0	0	0
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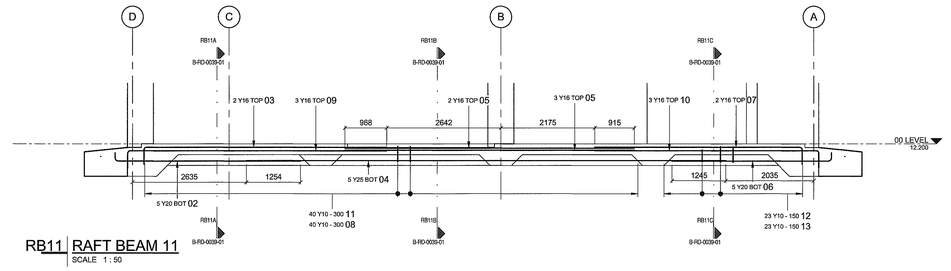
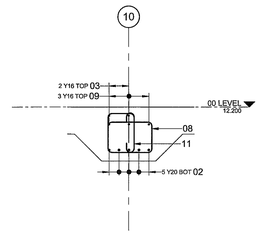
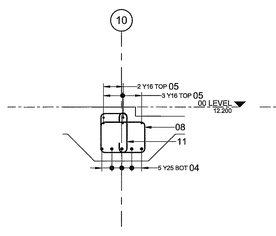
RAFT BEAM 08	1	09	Y10	27	27	2140	74	375	430	0	0	0
RAFT BEAM 09	6	01	Y10	52	312	1740	60	375	430	0	0	0
RAFT BEAM 09	6	02	Y10	52	312	620	33	375	0	0	0	0
RAFT BEAM 09	6	03	Y12	5	30	5020	37	5600	450	0	0	0
RAFT BEAM 09	6	04	Y12	5	30	10250	20	10250	0	0	0	0
RAFT BEAM 09	6	05	Y12	5	30	6700	20	6700	0	0	0	0
RAFT BEAM 09	6	06	Y12	5	30	5230	37	4810	450	0	0	0
RAFT BEAM 09	6	07	Y12	5	30	4470	37	4300	200	0	0	0
RAFT BEAM 09	6	08	Y12	5	30	3870	37	3700	200	0	0	0
RAFT BEAM 10	4	01	Y10	52	208	1740	60	375	430	0	0	0
RAFT BEAM 10	4	02	Y10	52	208	620	33	375	0	0	0	0
RAFT BEAM 10	4	03	Y16	5	20	6910	37	5600	450	0	0	0
RAFT BEAM 10	4	04	Y16	5	20	6700	20	6700	0	0	0	0
RAFT BEAM 10	4	05	Y16	5	20	5220	37	4810	450	0	0	0
RAFT BEAM 10	4	06	Y20	5	20	4460	37	4300	200	0	0	0
RAFT BEAM 10	4	07	Y20	5	20	3850	37	3700	200	0	0	0
RAFT BEAM 10	4	08	Y25	5	20	11150	20	11150	0	0	0	0
RAFT BEAM 11	1	01	Y10	23	23	610	33	370	0	0	0	0
RAFT BEAM 11	1	02	Y20	5	5	4460	37	4300	200	0	0	0
RAFT BEAM 11	1	03	Y16	2	2	5960	37	5600	400	0	0	0
RAFT BEAM 11	1	04	Y25	5	5	11160	20	11103	0	0	0	0
RAFT BEAM 11	1	05	Y16	5	5	6700	20	6700	0	0	0	0
RAFT BEAM 11	1	06	Y20	5	5	3850	37	3700	200	0	0	0
RAFT BEAM 11	1	07	Y16	2	2	5170	37	4810	400	0	0	0
RAFT BEAM 11	1	08	Y10	40	40	1970	75	250	250	370	415	290
RAFT BEAM 11	1	09	Y16	3	3	6360	37	6020	400	0	0	0
RAFT BEAM 11	1	10	Y16	3	3	5560	37	5200	400	0	0	0
RAFT BEAM 11	1	11	Y10	40	40	620	33	375	0	0	0	0
RAFT BEAM 11	1	12	Y10	23	23	1370	60	370	250	0	0	0
RAFT BEAM 11	1	13	Y10	23	23	1520	60	285	410	0	0	0
RAFT BEAM 12	1	01	Y10	52	52	1570	60	290	430	0	0	0
RAFT BEAM 12	1	02	Y10	52	52	930	33	290	0	0	0	0
RAFT BEAM 12	1	03	Y12	5	5	4470	37	4300	200	0	0	0
RAFT BEAM 12	1	04	Y12	5	5	6720	37	6300	450	0	0	0
RAFT BEAM 12	1	05	Y12	5	5	10250	20	10250	0	0	0	0
RAFT BEAM 12	1	06	Y12	5	5	6700	20	6700	0	0	0	0
RAFT BEAM 12	1	07	Y16	5	5	3860	37	3700	200	0	0	0
RAFT BEAM 12	1	08	Y16	5	5	5610	37	5200	450	0	0	0



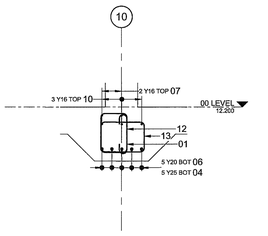
RB11 | RAFT BEAM 11
SCALE 1 : 50



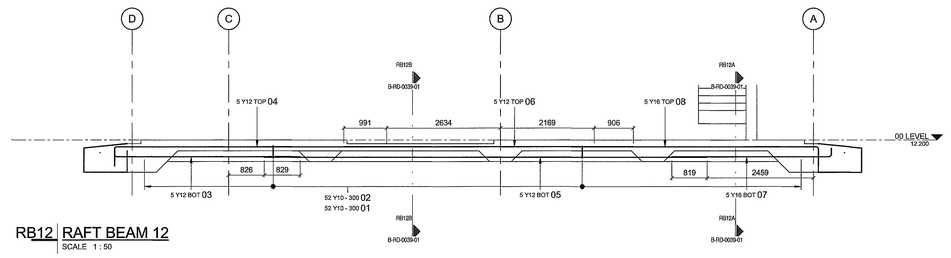
RB11A | RAFT BEAM 11 SEC A
SCALE 1 : 20



RB11B | RAFT BEAM 11 SEC B
SCALE 1 : 20



RB11C | RAFT BEAM 11 SEC C
SCALE 1 : 20



RB12 | RAFT BEAM 12
SCALE 1 : 50

RB12A | RAFT BEAM 12 SEC A
SCALE 1 : 20

RB12B | RAFT BEAM 12 SEC B
SCALE 1 : 20

REBAR RAFT BEAM WEIGHT SUMMARY		
MEMBER NAME	TYPE	WEIGHT
	Y10	6016 kg
	Y12	1655 kg
	Y16	6539 kg
	Y20	3459 kg
	Y25	9023 kg
RAFT BEAM 01	Y32	1176 kg
TOTAL		27870 kg

MASTER
27 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

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REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHK	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-18

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		27 06 18
CHECKED	C K		27 06 18
DESIGNED	C K		27 06 18
CHECKED	SW M		27 06 18

PR.ENG./PR.TECH./PR.ARCH	
NAME	W MARAIS
DATE	
SIGNATURE	
	27 06 18
REG. NUMBER	20090106
SCALE:	AS SHOWN

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TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 00 - RAFT BEAM REBAR SHEET 3

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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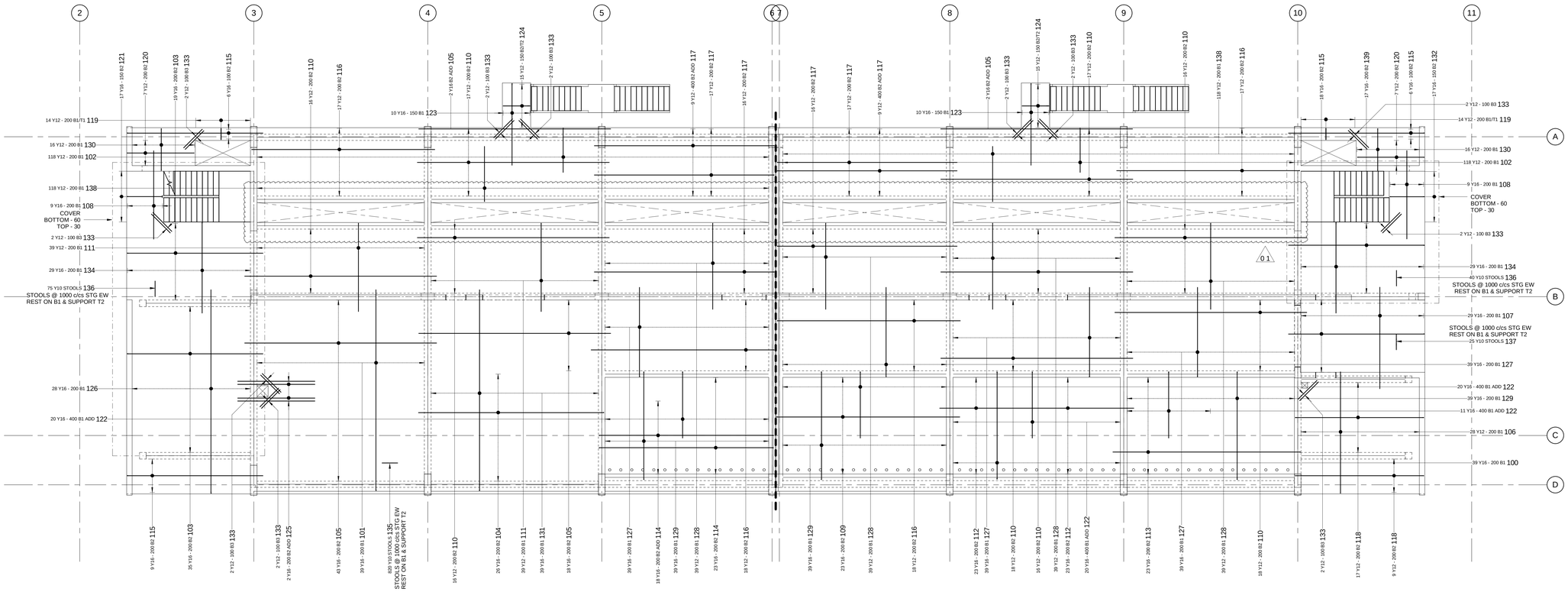
A



01 LEVEL SLAB BOT REBAR

SCALE 1 : 75

REBAR LEVEL 01 SLAB BOT SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
SLAB 01 BOT	1	100	Y16	39	39	5480	38	350	4860	350	0	0
SLAB 01 BOT	1	101	Y16	39	39	9300	37	9100	240	0	0	0
SLAB 01 BOT	1	102	Y12	236	236	2190	37	2000	220	0	0	0
SLAB 01 BOT	1	103	Y16	54	54	6290	37	6150	180	0	0	0
SLAB 01 BOT	1	104	Y16	26	26	8550	37	8400	190	0	0	0
SLAB 01 BOT	1	105	Y16	63	63	8700	20	8700	0	0	0	0
SLAB 01 BOT	1	106	Y12	28	28	5690	37	5500	220	0	0	0
SLAB 01 BOT	1	107	Y16	29	29	4800	20	4800	0	0	0	0
SLAB 01 BOT	1	108	Y16	18	18	4000	20	4000	0	0	0	0
SLAB 01 BOT	1	109	Y16	23	23	8450	37	8300	190	0	0	0
SLAB 01 BOT	1	110	Y12	134	134	8700	20	8700	0	0	0	0
SLAB 01 BOT	1	111	Y12	78	78	4190	37	220	4000	0	0	0
SLAB 01 BOT	1	112	Y16	23	23	8800	20	8800	0	0	0	0
SLAB 01 BOT	1	113	Y16	23	23	8650	37	8500	190	0	0	0
SLAB 01 BOT	1	114	Y16	41	41	8200	38	190	7900	190	0	0
SLAB 01 BOT	1	115	Y16	39	39	6300	37	6150	190	0	0	0
SLAB 01 BOT	1	116	Y12	70	70	8460	37	8300	190	0	0	0
SLAB 01 BOT	1	117	Y12	84	84	8310	37	8150	190	0	0	0
SLAB 01 BOT	1	118	Y12	26	26	6150	38	190	5830	190	0	0
SLAB 01 BOT	1	119	Y12	28	28	1840	74	520	240	0	0	0
SLAB 01 BOT	1	120	Y12	14	14	3350	38	190	3030	190	0	0
SLAB 01 BOT	1	121	Y16	17	17	1880	38	180	1600	180	0	0
SLAB 01 BOT	1	122	Y16	71	71	3310	37	3000	350	0	0	0
SLAB 01 BOT	1	123	Y16	20	20	3850	37	3700	190	0	0	0
SLAB 01 BOT	1	124	Y12	30	30	3150	74	1220	210	0	0	0
SLAB 01 BOT	1	125	Y16	4	4	3500	20	3500	0	0	0	0
SLAB 01 BOT	1	126	Y16	28	28	9400	37	9220	220	0	0	0
SLAB 01 BOT	1	127	Y16	156	156	4230	37	4050	220	0	0	0
SLAB 01 BOT	1	128	Y12	156	156	4090	37	3900	220	0	0	0
SLAB 01 BOT	1	129	Y16	117	117	5500	38	350	4880	350	0	0
SLAB 01 BOT	1	130	Y12	32	32	2280	38	220	1900	220	0	0
SLAB 01 BOT	1	131	Y16	39	39	9280	37	9100	220	0	0	0
SLAB 01 BOT	1	132	Y16	17	17	1820	38	180	1550	180	0	0
SLAB 01 BOT	1	133	Y12	22	22	1200	20	1200	0	0	0	0
SLAB 01 BOT	1	134	Y16	58	58	4270	37	4100	210	0	0	0
SLAB 01 BOT	1	135	Y10	820	820	1060	83	250	190	250	250	0
SLAB 01 BOT	1	136	Y10	115	115	1000	83	250	160	250	250	0
SLAB 01 BOT	1	137	Y10	25	25	920	83	250	120	250	250	0
SLAB 01 BOT	1	138	Y12	236	236	2690	37	2500	220	0	0	0
SLAB 01 BOT	1	139	Y16	17	17	6310	37	6150	195	0	0	0

REBAR LEVEL 01 SLAB BOT WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
SLAB 01 BOT	Y10	621 kg
SLAB 01 BOT	Y12	4602 kg
SLAB 01 BOT	Y16	9063 kg
TOTAL		14286 kg

01

MASTER
03-07-2020

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

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CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-18

REVISIONS

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CONTRACTOR/CONSULTANT	NAME	SIGN	DATE
DRAWN	A H		01 / 07 / 20
CHECKED	C K		01 / 07 / 20
DESIGNED	C K		01 / 07 / 20
CHECKED	SW M		01 / 07 / 20

OPERATING DIVISIONS	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	01 / 07 / 20
REG. NUMBER	20090106
SCALE:	AS SHOWN

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - SLAB REBAR LAYOUT - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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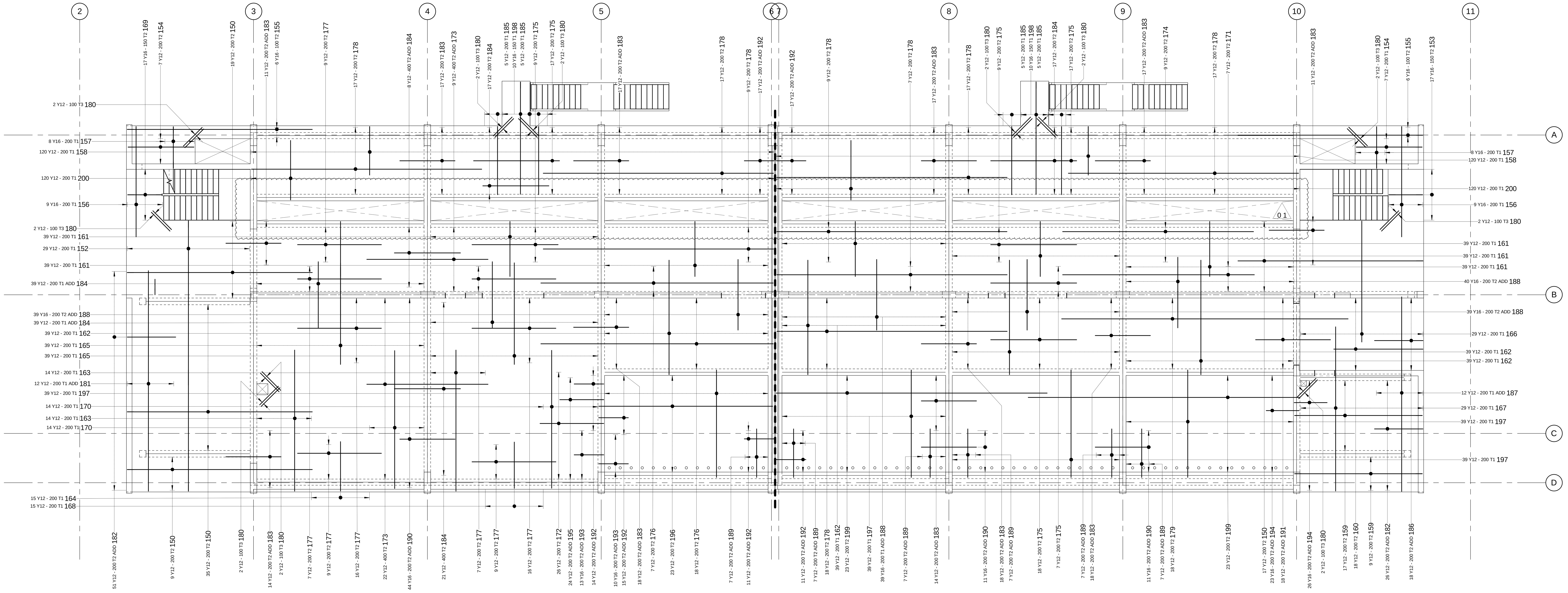
A1



01 LEVEL SLAB TOP REBAR

SCALE 1 : 75

REBAR LEVEL 01 SLAB TOP SCHEDULE

MEMBER				NUMBER			SHAPE					E/R
NAME	NUM	MARK	TYPE	ELEMENT	TOTAL	LENGTH	CODE	A (mm)	B (mm)	C (mm)	D (mm)	(mm)
SLAB 01 TOP	1	150	Y12	80	80	8850	38	8400	210	300	0	0
SLAB 01 TOP	1	151	Y12	29	29	5980	38	5500	240	300	0	0
SLAB 01 TOP	1	152	Y12	29	29	7930	38	7450	240	300	0	0
SLAB 01 TOP	1	153	Y16	17	17	2410	55	300	210	1550	210	300
SLAB 01 TOP	1	154	Y12	14	14	3900	55	300	210	3000	210	300
SLAB 01 TOP	1	155	Y16	12	12	8830	38	8400	210	300	0	0
SLAB 01 TOP	1	156	Y16	18	18	5460	38	5000	240	300	0	0
SLAB 01 TOP	1	157	Y16	16	16	2820	55	300	240	1900	240	300
SLAB 01 TOP	1	158	Y12	240	240	2680	38	2200	240	300	0	0
SLAB 01 TOP	1	159	Y12	26	26	6700	55	300	210	5800	210	300
SLAB 01 TOP	1	160	Y12	18	18	4170	37	155	4050	0	0	0
SLAB 01 TOP	1	161	Y12	234	234	2660	37	190	2500	0	0	0
SLAB 01 TOP	1	162	Y12	156	156	5360	37	190	5200	0	0	0
SLAB 01 TOP	1	163	Y12	28	28	6590	37	220	6400	0	0	0
SLAB 01 TOP	1	164	Y12	15	15	2440	37	220	2250	0	0	0
SLAB 01 TOP	1	165	Y12	78	78	4600	20	4600	0	0	0	0
SLAB 01 TOP	1	166	Y12	29	29	5590	42	2240	500	2750	80	0
SLAB 01 TOP	1	167	Y12	29	29	7550	42	2320	500	4630	80	0
SLAB 01 TOP	1	168	Y12	15	15	2290	37	220	2100	0	0	0
SLAB 01 TOP	1	169	Y16	17	17	2460	55	300	210	1600	210	300
SLAB 01 TOP	1	170	Y12	28	28	6440	37	220	6250	0	0	0
SLAB 01 TOP	1	171	Y12	7	7	8700	20	8700	0	0	0	0
SLAB 01 TOP	1	172	Y12	26	26	3020	37	150	2900	0	0	0
SLAB 01 TOP	1	173	Y12	31	31	5500	20	5500	0	0	0	0
SLAB 01 TOP	1	174	Y12	9	9	8660	20	8660	0	0	0	0
SLAB 01 TOP	1	175	Y12	77	77	3900	20	3900	0	0	0	0
SLAB 01 TOP	1	176	Y12	25	25	10710	37	10550	190	0	0	0
SLAB 01 TOP	1	177	Y12	73	73	3800	20	3800	0	0	0	0
SLAB 01 TOP	1	178	Y12	111	111	10610	37	10450	190	0	0	0
SLAB 01 TOP	1	179	Y12	18	18	13000	41	10000	500	2500	80	0
SLAB 01 TOP	1	180	Y12	22	22	1200	20	1200	0	0	0	0
SLAB 01 TOP	1	181	Y12	12	12	10190	37	220	10000	0	0	0
SLAB 01 TOP	1	182	Y12	77	77	2380	37	210	2200	0	0	0
SLAB 01 TOP	1	183	Y12	211	211	2500	20	2500	0	0	0	0
SLAB 01 TOP	1	184	Y12	141	141	3000	20	3000	0	0	0	0
SLAB 01 TOP	1	185	Y12	20	20	3570	38	3090	240	300	0	0
SLAB 01 TOP	1	186	Y12	18	18	2310	37	140	2200	0	0	0
SLAB 01 TOP	1	187	Y12	12	12	8930	42	3680	520	4630	80	0
SLAB 01 TOP	1	188	Y16	157	157	3200	20	3200	0	0	0	0
SLAB 01 TOP	1	189	Y12	42	42	2390	37	220	2200	0	0	0
SLAB 01 TOP	1	190	Y16	66	66	2500	20	2500	0	0	0	0
SLAB 01 TOP	1	191	Y12	18	18	3400	41	1200	500	1700	80	0
SLAB 01 TOP	1	192	Y12	85	85	1470	37	1350	150	0	0	0
SLAB 01 TOP	1	193	Y16	23	23	1460	37	1350	150	0	0	0
SLAB 01 TOP	1	194	Y16	49	49	1610	37	1500	150	0	0	0
SLAB 01 TOP	1	195	Y12	24	24	2120	37	2000	150	0	0	0
SLAB 01 TOP	1	196	Y12	23	23	8220	38	190	7900	190	0	0
SLAB 01 TOP	1	197	Y12	156	156	5200	38	190	4880	190	0	0
SLAB 01 TOP	1	198	Y16	20	20	5540	38	300	220	5100	0	0
SLAB 01 TOP	1	199	Y12	46	46	12460	37	12300	190	0	0	0
SLAB 01 TOP	1	200	Y12	240	240	3180	38	2700	240	305	0	0

REBAR LEVEL 01 SLAB TOP WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
SLAB 01 TOP	Y12	10223 kg
SLAB 01 TOP	Y16	1930 kg
TOTAL		12153 kg

0 1

MASTER

01-07-2020

AECOM

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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AECOM

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TYGER WATERFRONT
CARL CRONJE DRIVE

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FAX: +27 (0)21 950 7502
REG. NO. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0 1	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
0 0	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-18

REVISIONS

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		01 07 20
CHECKED	C K		01 07 20
DESIGNED	C K		01 07 20
CHECKED	SW M		01 07 20

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME SW MARAIS DATE
SIGNATURE 01 07 20
REG. NUMBER 20090106
SCALE: AS SHOWN A

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000900/06
TABLE BAY BUILDING, TYGERBERG PARK,
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8001
TEL: 021 940 1999
FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - SLAB REBAR LAYOUT -SHEET 2

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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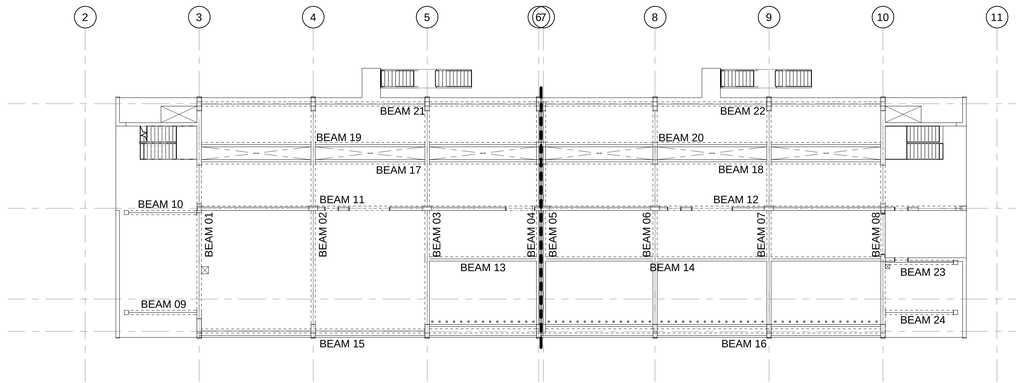
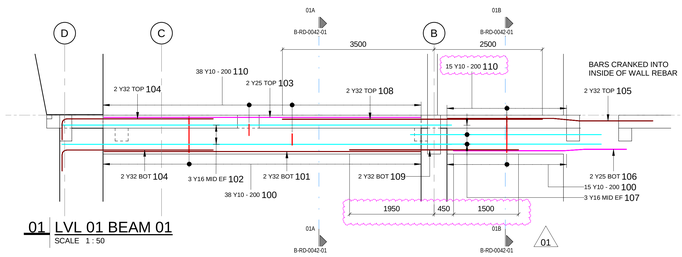


01 LEVEL BEAM REBAR KEYPLAN
SCALE 1 : 150



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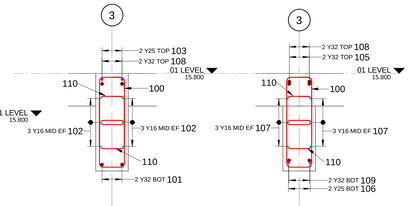
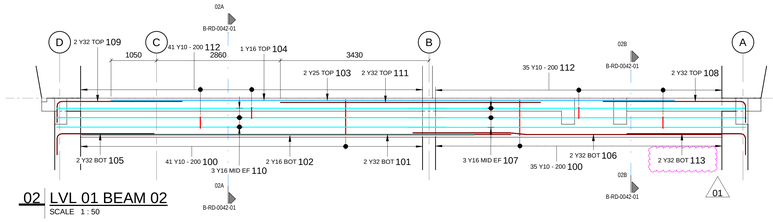


01A LVL 01 BEAM 01 SEC A
SCALE 1 : 20

01B LVL 01 BEAM 01 SEC B
SCALE 1 : 20



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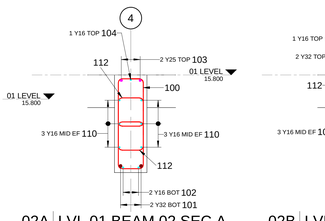

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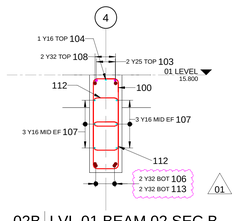

02B LVL 01 BEAM 02 SEC B
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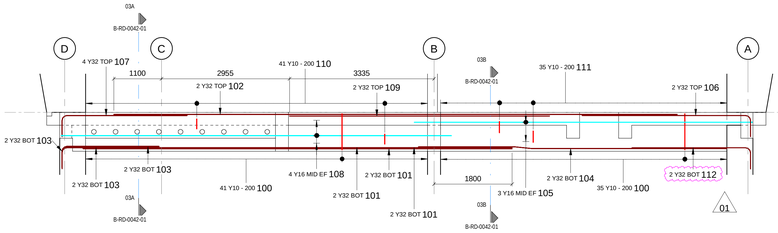

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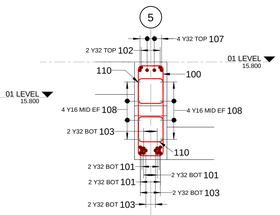

03A LVL 01 BEAM 03 SEC A
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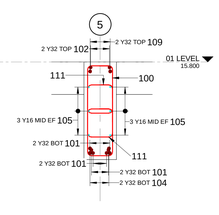

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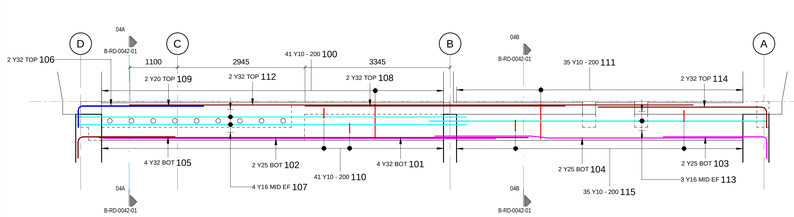

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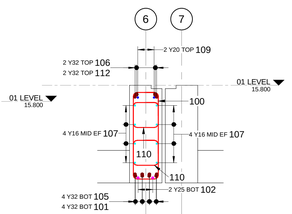

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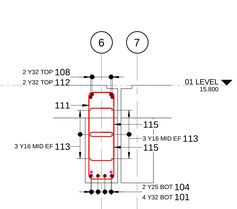

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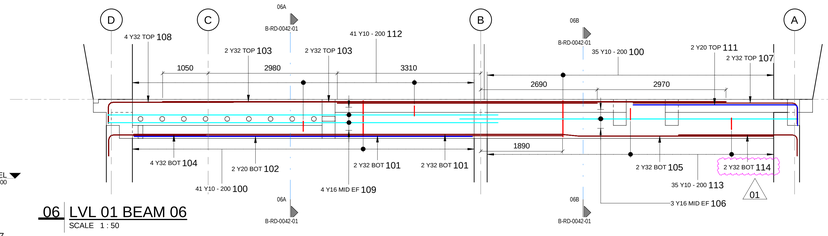

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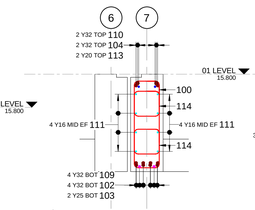

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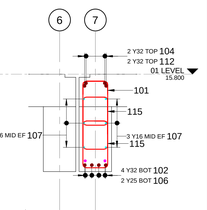

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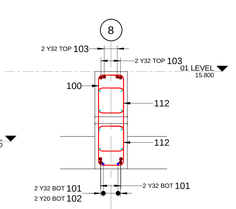

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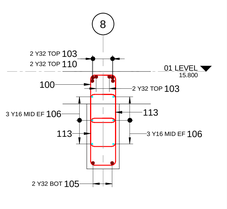

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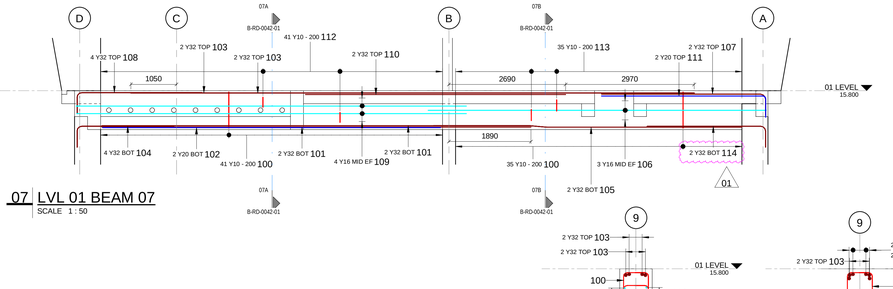

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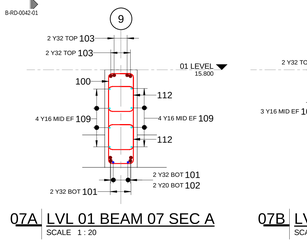

07A LVL 01 BEAM 07 SEC A
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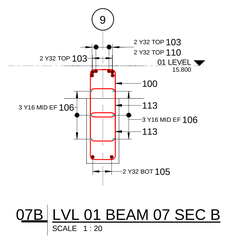

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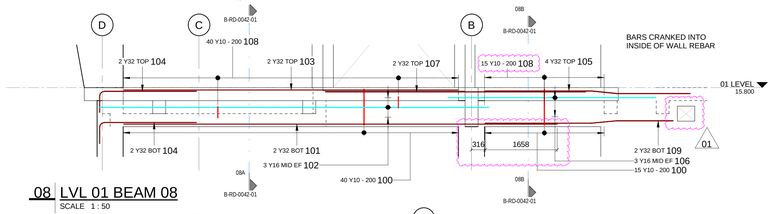

08 LVL 01 BEAM 08
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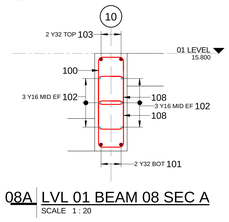

08A LVL 01 BEAM 08 SEC A
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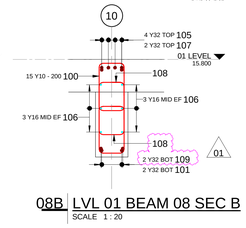

08B LVL 01 BEAM 08 SEC B
SCALE 1 : 20

DRAWING NO. | **REFERENCE**

REFERENCE DRAWINGS

NOTES

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TYGER WATERFRONT
CARL CRONJE DRIVE

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
01	BEAM REBAR TAGS AMENDED	A H	C K	SW M	24-11-21
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-19

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		24 | 11 | 21
CHECKED	C K		24 | 11 | 21
DESIGNED	C K		24 | 11 | 21
CHECKED	SW M		24 | 11 | 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		24 | 11 | 21
REG. NUMBER	20090106	

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906
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8001
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FAX: 086 677 2455

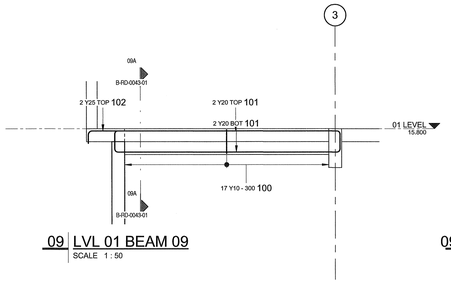
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - BEAM REBAR - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	RD	0042	01	01	AE

SCALE: AS SHOWN

A



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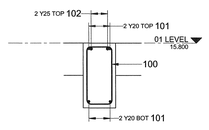

09A | LVL 01 BEAM 09 SEC A
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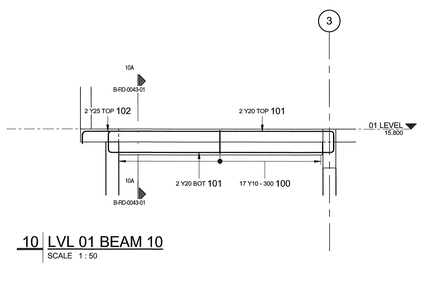

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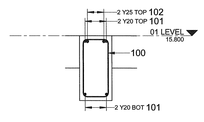

10A | LVL 01 BEAM 10 SEC A
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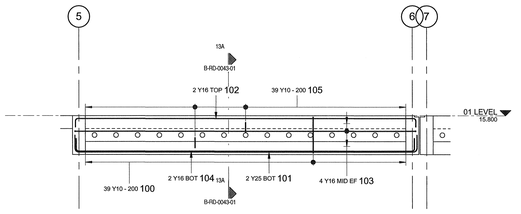

13 | LVL 01 BEAM 13
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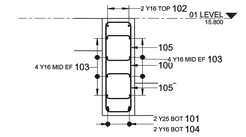

13A | LVL 01 BEAM 13 SEC SEC A
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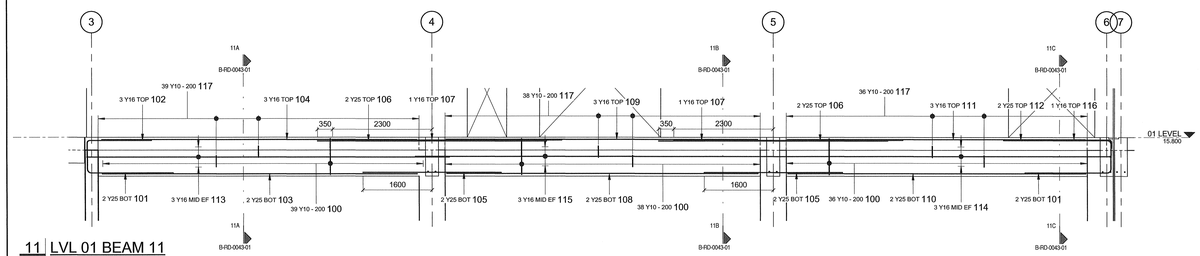

11 | LVL 01 BEAM 11
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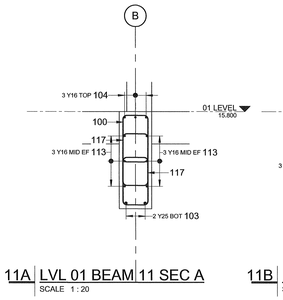

11A | LVL 01 BEAM 11 SEC A
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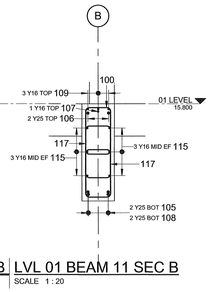

11B | LVL 01 BEAM 11 SEC B
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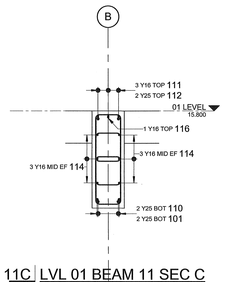

11C | LVL 01 BEAM 11 SEC C
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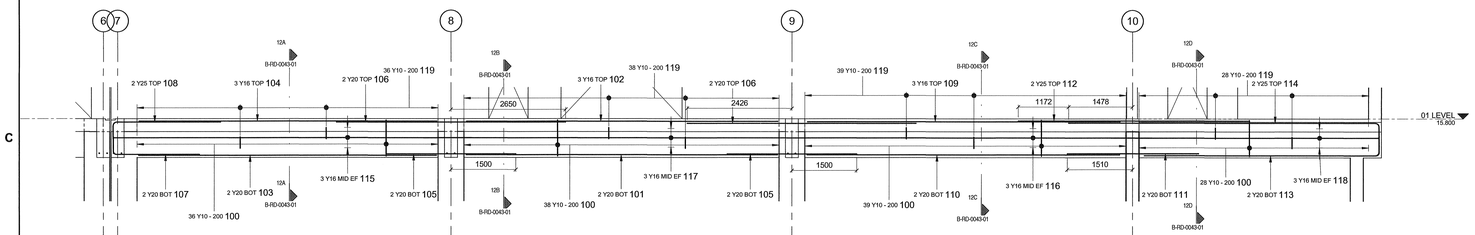

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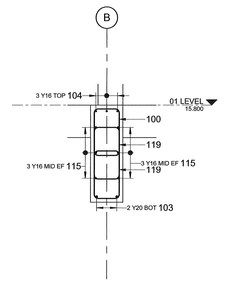
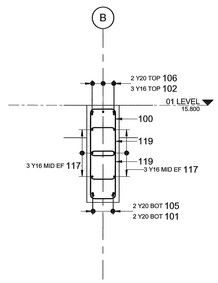


12A | LVL 01 BEAM 12 SEC A
SCALE 1 : 20



12B | LVL 01 BEAM 12 SEC B
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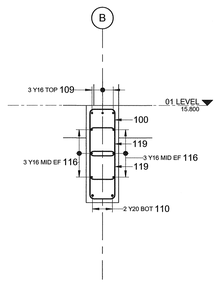

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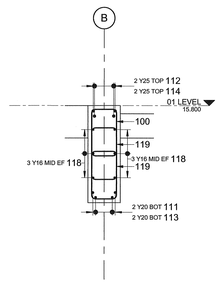
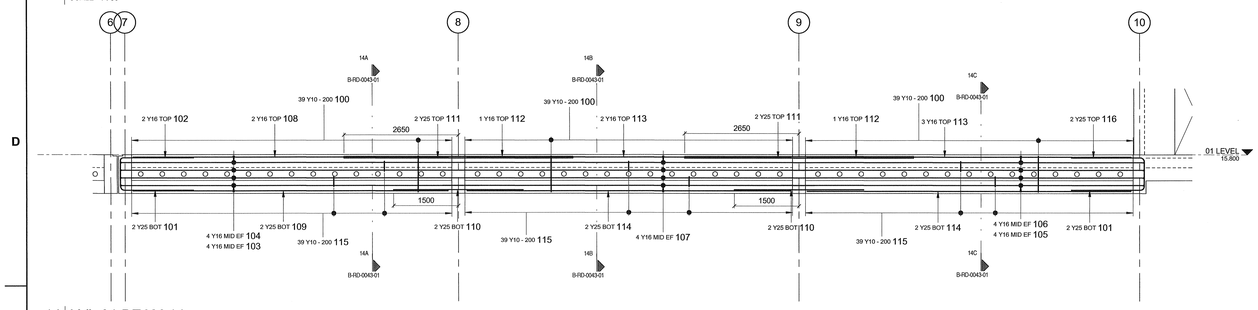
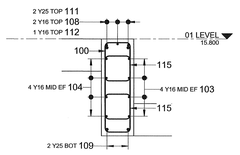


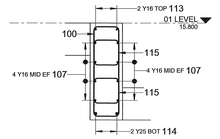
12D | LVL 01 BEAM 12 SEC D
SCALE 1 : 20



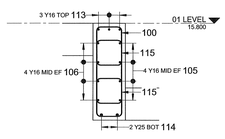
14 | LVL 01 BEAM 14
SCALE 1 : 50



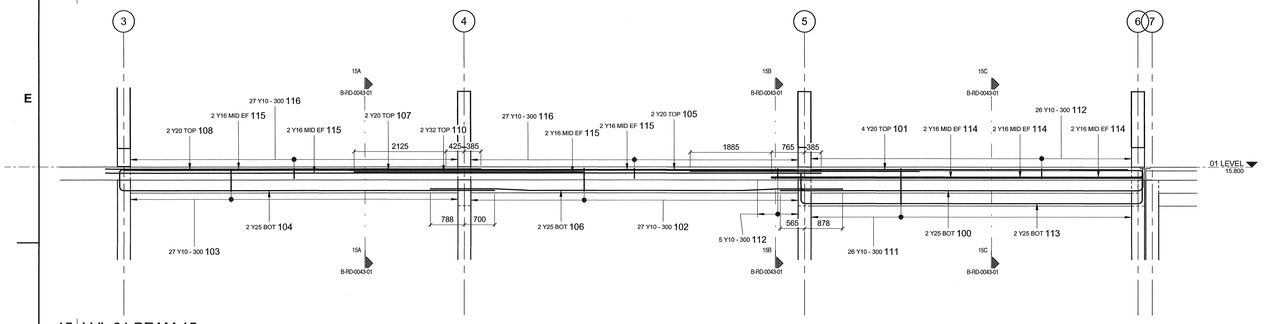
14A | LVL 01 BEAM 14 SEC A
SCALE 1 : 20



14B | LVL 01 BEAM 14 SEC B
SCALE 1 : 20



14C | LVL 01 BEAM 14 SEC C
SCALE 1 : 20



15 | LVL 01 BEAM 15
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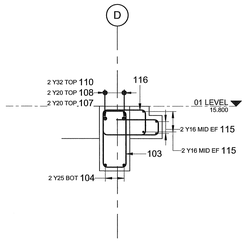

15A | LVL 01 BEAM 15 SEC A
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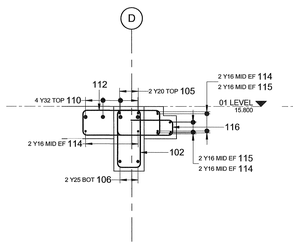

15B | LVL 01 BEAM 15 SEC B
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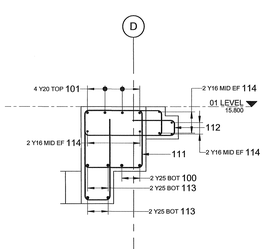

15C | LVL 01 BEAM 15 SEC C
SCALE 1 : 20

MASTER
27 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

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FAX: +27 (0)21 950 7502
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REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		27 06 18
CHECKED	C K		27 06 18
DESIGNED	C K		27 06 18
CHECKED	S W M		27 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		27 06 18
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) - REG. NO. 1990/000900/06
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TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - BAM REBAR - SHEET 2

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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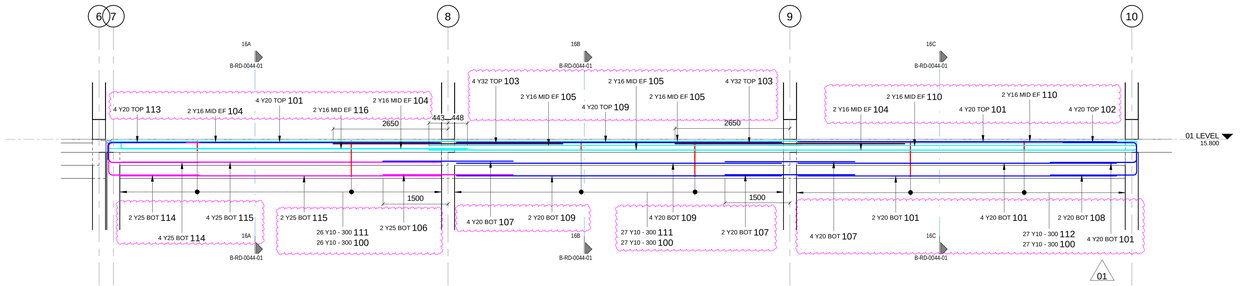

16 LVL 01 BEAM 16
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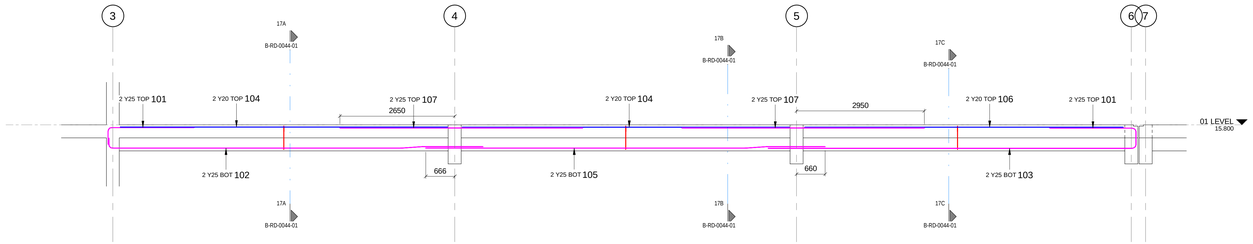

17 LVL 01 BEAM 17
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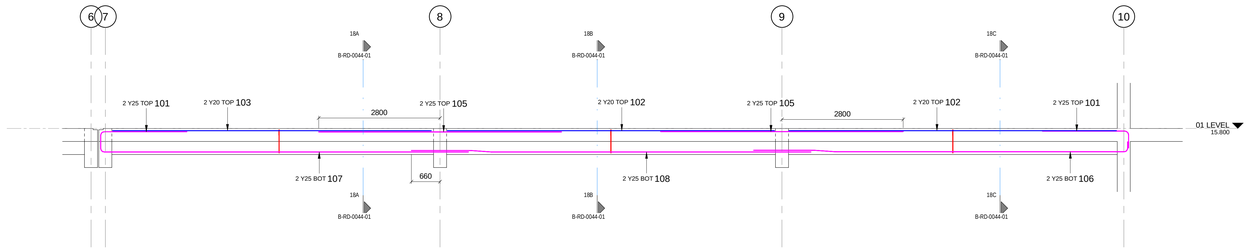

18 LVL 01 BEAM 18
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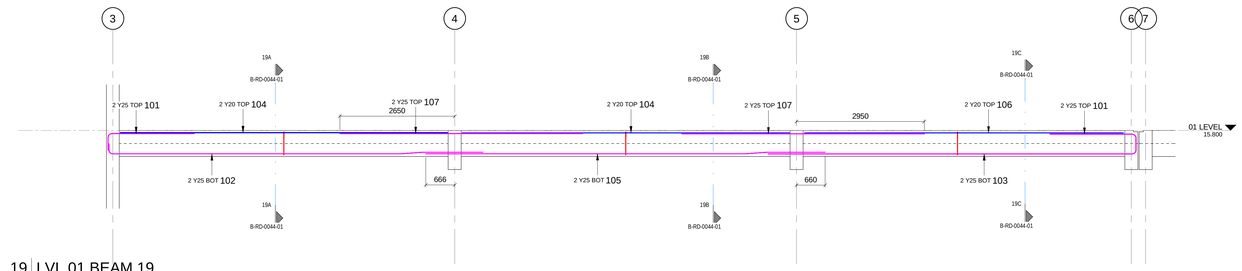

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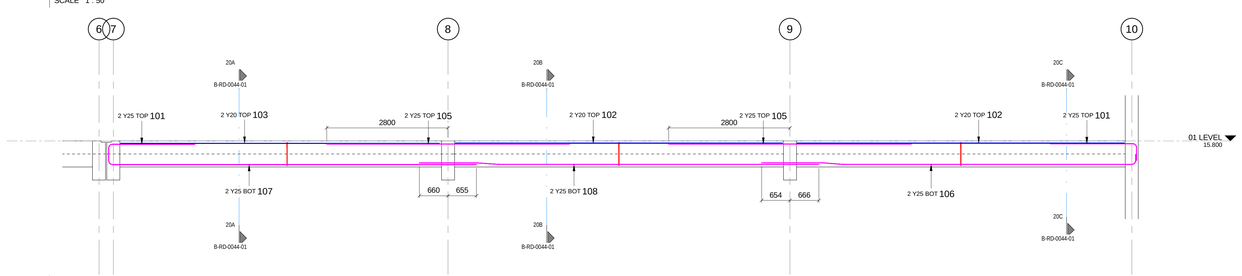

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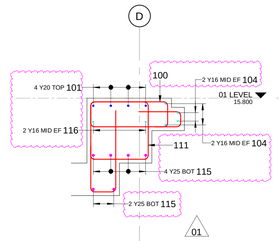
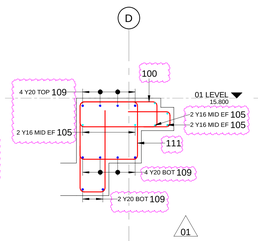


16A LVL 01 BEAM 16 SEC A
SCALE 1 : 20



16B LVL 01 BEAM 16 SEC B
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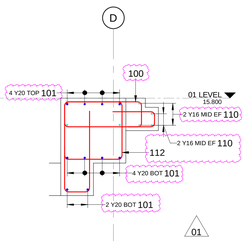
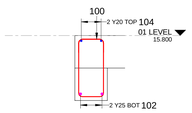


16C LVL 01 BEAM 16 SEC C
SCALE 1 : 20



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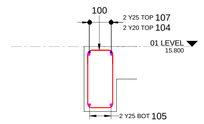
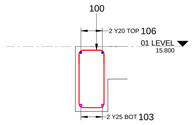


17B LVL 01 BEAM 17 SEC B
SCALE 1 : 20



17C LVL 01 BEAM 17 SEC C
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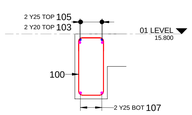

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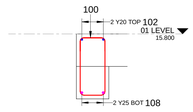

18B LVL 01 BEAM 18 SEC B
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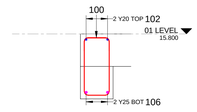
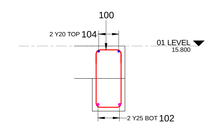


18C LVL 01 BEAM 18 SEC C
SCALE 1 : 20



19A LVL 01 BEAM 19 SEC A
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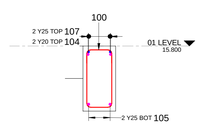

19B LVL 01 BEAM 19 SEC B
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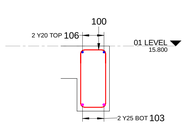

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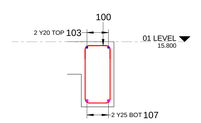

20A LVL 01 BEAM 20 SEC A
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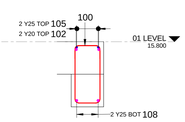

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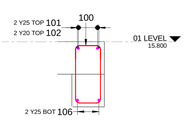

20C LVL 01 BEAM 20 SEC C
SCALE 1 : 20

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	APP'D	DATE
01	BEAM REBAR TAGS AMENDED	A H	C K	SW M	24-11-21
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-18

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CONTRACTOR/CONSULTANT					
TITLE	NAME	SIGN	DATE		
DRAWN	A H		24	11	21
CHECKED	C K		24	11	21
DESIGNED	C K		24	11	21
CHECKED	SW M		24	11	21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH			
NAME	SW MARAIS	DATE	
SIGNATURE		24	11 21
REG. NUMBER	20090106		
SCALE:	AS SHOWN		A

Transnet Capital Projects
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8001
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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 01 - BEAM REBAR - SHEET 3

PROJECT NUMBER							OD	FBS		DIS	TYPE	DRAWING NO.			SHEET		REV	ID
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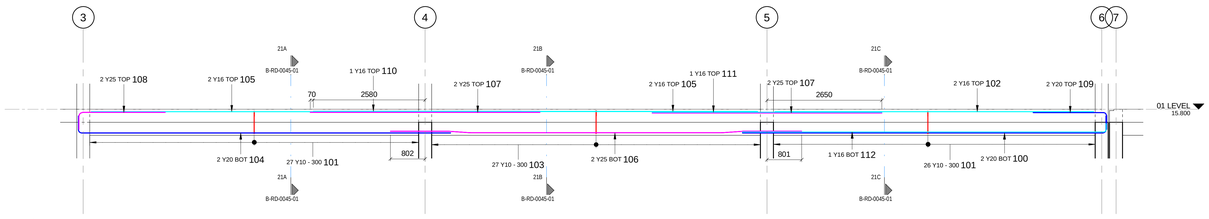
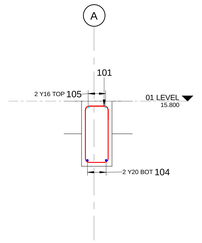


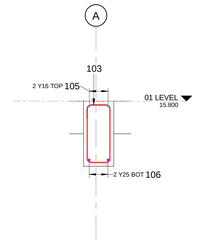
21 LVL 01 BEAM 21

SCALE 1 : 50



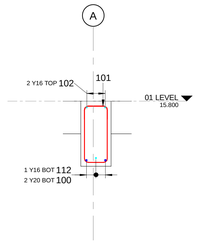
21A LVL 01 BEAM 21 SEC A

SCALE 1 : 20



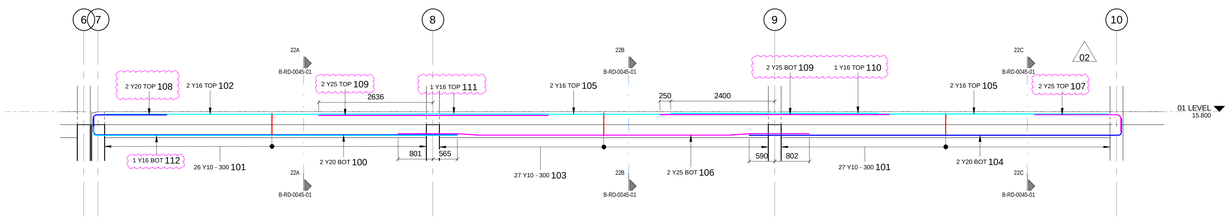
21B LVL 01 BEAM 21 SEC B

SCALE 1 : 20



21C LVL 01 BEAM 21 SEC C

SCALE 1 : 20



22 LVL 01 BEAM 22

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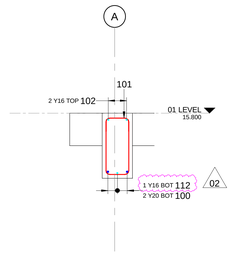

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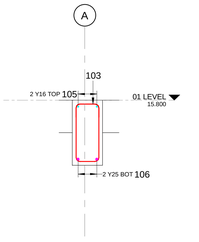

22B LVL 01 BEAM 22 SEC B

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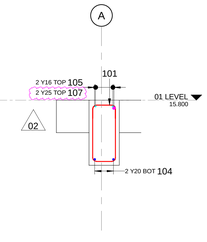

22C LVL 01 BEAM 22 SEC C

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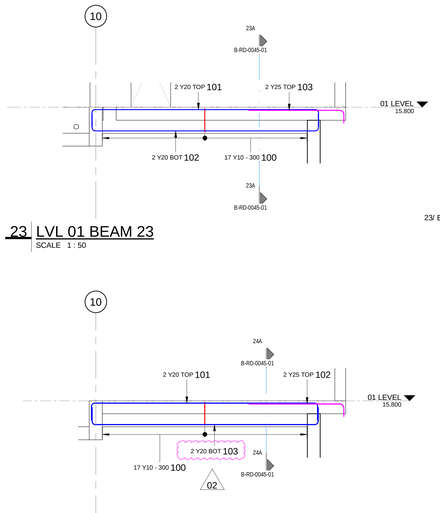

23 LVL 01 BEAM 23

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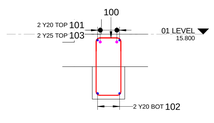
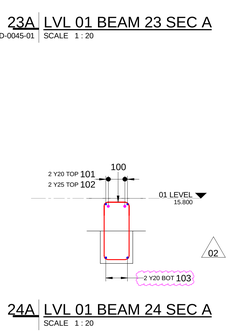


23A LVL 01 BEAM 23 SEC A

23/ B-RD-0045-01 SCALE 1 : 20

24 LVL 01 BEAM 24

SCALE 1 : 50



24A LVL 01 BEAM 24 SEC A

SCALE 1 : 20

REBAR LEVEL 01 BEAM SCHEDULE

MEMBER NAME	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LVL 01 BEAM 01	100	Y10	53	2290	60	840	240	0	0	0
LVL 01 BEAM 01	101	Y32	2	7300	20	7300	0	0	0	0
LVL 01 BEAM 01	102	Y16	6	9150	37	9000	190	0	0	0
LVL 01 BEAM 01	103	Y25	2	7300	20	7300	0	0	0	0
LVL 01 BEAM 01	104	Y32	4	3920	37	3500	500	0	0	0
LVL 01 BEAM 01	105	Y32	2	4740	41	2440	600	1700	90	0
LVL 01 BEAM 01	106	Y25	2	3990	41	2540	500	950	60	0
LVL 01 BEAM 01	107	Y16	6	4400	20	4400	0	0	0	0
LVL 01 BEAM 01	108	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 01	109	Y32	2	3900	20	3900	0	0	0	0
LVL 01 BEAM 01	110	Y10	106	1150	60	270	240	0	0	0
LVL 01 BEAM 02	100	Y10	76	2290	60	840	240	0	0	0
LVL 01 BEAM 02	101	Y32	2	9900	20	9900	0	0	0	0
LVL 01 BEAM 02	102	Y16	2	9050	20	9050	0	0	0	0
LVL 01 BEAM 02	103	Y25	2	13000	20	13000	0	0	0	0
LVL 01 BEAM 02	104	Y16	1	13000	20	13000	0	0	0	0
LVL 01 BEAM 02	105	Y32	2	2670	37	2250	500	0	0	0
LVL 01 BEAM 02	106	Y32	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 02	107	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 02	108	Y32	2	3720	37	3300	500	0	0	0
LVL 01 BEAM 02	109	Y32	2	3320	37	2900	500	0	0	0
LVL 01 BEAM 02	110	Y16	6	9150	37	190	9000	0	0	0
LVL 01 BEAM 02	111	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 02	112	Y10	152	1150	60	270	240	0	0	0
LVL 01 BEAM 02	113	Y32	2	3170	37	2750	500	0	0	0
LVL 01 BEAM 03	100	Y10	76	2290	60	840	240	0	0	0
LVL 01 BEAM 03	101	Y32	6	9900	20	9900	0	0	0	0
LVL 01 BEAM 03	102	Y32	2	13000	20	13000	0	0	0	0
LVL 01 BEAM 03	103	Y32	6	2670	37	2250	500	0	0	0
LVL 01 BEAM 03	104	Y32	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 03	105	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 03	106	Y32	2	4320	37	3900	500	0	0	0
LVL 01 BEAM 03	107	Y32	4	3320	37	2900	500	0	0	0
LVL 01 BEAM 03	108	Y16	8	9150	37	190	9000	0	0	0
LVL 01 BEAM 03	109	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 03	110	Y10	82	1090	60	240	240	0	0	0
LVL 01 BEAM 03	111	Y10	70	1150	60	270	240	0	0	0
LVL 01 BEAM 03	112	Y32	2	3170	37	2750	500	0	0	0
LVL 01 BEAM 04	100	Y10	41	2230	60	810	240	0	0	0
LVL 01 BEAM 04	101	Y32	4	9900	20	9900	0	0	0	0
LVL 01 BEAM 04	102	Y25	2	9050	20	9050	0	0	0	0
LVL 01 BEAM 04	103	Y25	2	2840	37	2400	500	0	0	0
LVL 01 BEAM 04	104	Y25	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 04	105	Y32	4	2670	37	2250	500	0	0	0
LVL 01 BEAM 04	106	Y32	2	3320	37	2900	500	0	0	0
LVL 01 BEAM 04	107	Y16	8	9150	37	190	9000	0	0	0
LVL 01 BEAM 04	108	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 04	109	Y20	2	3350	37	2900	500	0	0	0
LVL 01 BEAM 04	110	Y10	82	1090	60	240	240	0	0	0
LVL 01 BEAM 04	111	Y10	35	2440	74	810	240	0	0	0
LVL 01 BEAM 04	112	Y32	2	13000	20	13000	0	0	0	0
LVL 01 BEAM 04	113	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 04	114	Y32	2	4310	37	3900	490	0	0	0
LVL 01 BEAM 04	115	Y10	70	1150	60	270	240	0	0	0
LVL 01 BEAM 05	100	Y10	41	2230	60	810	240	0	0	0
LVL 01 BEAM 05	101	Y10	35	2440	74	810	240	0	0	0
LVL 01 BEAM 05	102	Y32	4	9900	20	9900	0	0	0	0
LVL 01 BEAM 05	103	Y25	2	9050	20	9050	0	0	0	0
LVL 01 BEAM 05	104	Y32	2	13000	20	13000	0	0	0	0
LVL 01 BEAM 05	105	Y25	2	2840	37	2400	500	0	0	0
LVL 01 BEAM 05	106	Y25	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 05	107	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 05	108	Y32	2	4320	37	3900	500	0	0	0
LVL 01 BEAM 05	109	Y32	4	2670	37	2250	500	0	0	0
LVL 01 BEAM 05	110	Y32	2	3320	37	2900	500	0	0	0
LVL 01 BEAM 05	111	Y16	8	9150	37	190	9000	0	0	0
LVL 01 BEAM 05	112	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 05	113	Y20	2	3350	37	2900	500	0	0	0
LVL 01 BEAM 05	114	Y10	82	1090	60	240	240	0	0	0
LVL 01 BEAM 05	115	Y10	70	1150	60	270	240	0	0	0
LVL 01 BEAM 06	100	Y10	76	2290	60	840	240	0	0	0
LVL 01 BEAM 06	101	Y32	4	9900	20	9900	0	0	0	0

REBAR LEVEL 01 BEAM SCHEDULE

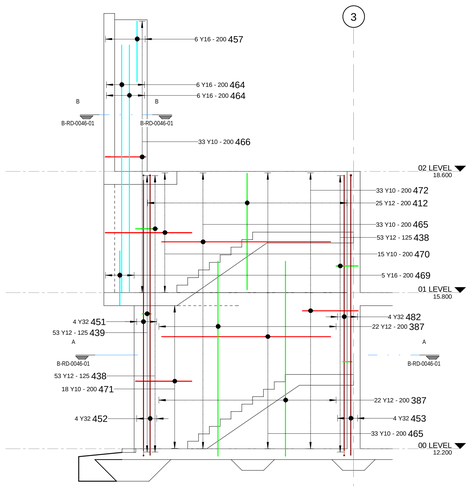
MEMBER NAME	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LVL 01 BEAM 06	102	Y20	2	7800	20	7800	0	0	0	0
LVL 01 BEAM 06	103	Y32	4	13000	20	13000	0	0	0	0
LVL 01 BEAM 06	104	Y32	4	2670	37	2250	500	0	0	0
LVL 01 BEAM 06	105	Y32	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 06	106	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 06	107	Y32	2	4220	37	3800	500	0	0	0
LVL 01 BEAM 06	108	Y32	4	3320	37	2900	500	0	0	0
LVL 01 BEAM 06	109	Y16	8	9150	37	190	9000	0	0	0
LVL 01 BEAM 06	110	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 06	111	Y20	2	4240	37	3800	490	0	0	0
LVL 01 BEAM 06	112	Y10	82	1090	60	240	240	0	0	0
LVL 01 BEAM 06	113	Y10	70	1150	60	270	240	0	0	0
LVL 01 BEAM 06	114	Y32	2	3170	37	2750	500	0	0	0
LVL 01 BEAM 07	100	Y10	76	2290	60	840	240	0	0	0
LVL 01 BEAM 07	101	Y32	4	9900	20	9900	0	0	0	0
LVL 01 BEAM 07	102	Y20	2	7800	20	7800	0	0	0	0
LVL 01 BEAM 07	103	Y32	4	13000	20	13000	0	0	0	0
LVL 01 BEAM 07	104	Y32	4	2670	37	2250	500	0	0	0
LVL 01 BEAM 07	105	Y32	2	7120	41	4500	400	2220	70	0
LVL 01 BEAM 07	106	Y16	6	7950	37	190	7800	0	0	0
LVL 01 BEAM 07	107	Y32	2	4220	37	3800	500	0	0	0
LVL 01 BEAM 07	108	Y32	4	3320	37	2900	500	0	0	0
LVL 01 BEAM 07	109	Y16	8	9150	37	190	9000	0	0	0
LVL 01 BEAM 07	110	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 07	111	Y20	2	4250	37	3800	500	0	0	0
LVL 01 BEAM 07	112	Y10	82	1090	60	240	240	0	0	0
LVL 01 BEAM 07	113	Y10	70	1150	60	270	240	0	0	0
LVL 01 BEAM 07	114	Y32	2	3170	37	2750	500	0	0	0
LVL 01 BEAM 08	100	Y10	55	2290	60	840	240	0	0	0
LVL 01 BEAM 08	101	Y32	2	10000	20	10000	0	0	0	0
LVL 01 BEAM 08	102	Y16	6	9150	37	9000	190	0	0	0
LVL 01 BEAM 08	103	Y32	2	7700	20	7700	0	0	0	0
LVL 01 BEAM 08	104	Y32	4	2670	37	2250	500	0	0	0
LVL 01 BEAM 08	105	Y32	4	4740	41	2440	600	1700	90	0
LVL 01 BEAM 08	106	Y16	6	4800	20	4800	0	0	0	0
LVL 01 BEAM 08	107	Y32	2	6000	20	6000	0	0	0	0
LVL 01 BEAM 08	108	Y10	110	1150	60	270	240	0	0	0
LVL 01 BEAM 08	109	Y32	2	4340	41	2440	600	1300	90	0
LVL 01 BEAM 09	100	Y10	17	2200	74	240	540	0	0	0
LVL 01 BEAM 09	101	Y20	4	5940	38	400	5240	400	0	0
LVL 01 BEAM 09	102	Y25	2	2440	37	300	2200	0	0	0
LVL 01 BEAM 10	100	Y10	17	2200	74	240	540	0	0	0
LVL 01 BEAM 10	101	Y20	4	5940	38	400	5240	400	0	0
LVL 01 BEAM 10	102	Y25	2	2440	37	300	2200	0	0	0
LVL 01 BEAM 11	100	Y10	113	2500	74	840	240	0	0	0
LVL 01 BEAM 11	101	Y25	4	2340	37	400	2000	0	0	0
LVL 01 BEAM 11	102	Y16	3	1860	37	400	1500	0	0	0
LVL 01 BEAM 11	103	Y25	2	7300	20	7300	0	0	0	0
LVL 01 BEAM 11	104	Y16	3	7300	20	7300	0	0	0	0
LVL 01 BEAM 11	105	Y25	4	3200	20	3200	0	0	0	0
LVL 01 BEAM 11	106	Y25	4	5300	20	5300	0	0	0	0
LVL 01 BEAM 11	107	Y16	3	5300	20	5300	0	0	0	0
LVL 01 BEAM 11	108	Y25	2	7200	20	7200	0	0	0	0
LVL 01 BEAM 11	109	Y16	3	7200	20	7200	0	0	0	0
LVL 01 BEAM 11	110	Y25	2	6900	20	6900	0	0	0	0
LVL 01 BEAM 11	111	Y16	3	6900	20	6900	0	0	0	0
LVL 01 BEAM 11	112	Y25	2	2840	37	400	2500	0	0	0
LVL 01 BEAM 11	113	Y16	6	8550	37	190	8400	0	0	0
LVL 01 BEAM 11	114	Y16	8	8400	37	190	8300	0	0	0
LVL 01 BEAM 11	115	Y16	6	8800	20	8800	0	0	0	0
LVL 01 BEAM 11	116	Y16	1	1660	37	1500	200	0	0	0
LVL 01 BEAM 11	117	Y10	226	1360	74	270	240	0	0	0
LVL 01 BEAM 12	100	Y10	141	2500	74	840	240	0	0	0
LVL 01 BEAM 12	101	Y20	2	7200	20	7200	0	0	0	0
LVL 01 BEAM 12	102	Y16	3	7200	20	7200	0	0	0	0
LVL 01 BEAM 12	103	Y20	2	6900	20	6900	0	0	0	0
LVL 01 BEAM 12	104	Y16	3	6900	20	6900	0	0	0	0
LVL 01 BEAM 12	105	Y32	2	3000	20	3000	0	0	0	0
LVL 01 BEAM 12	106	Y16	4	3000	20	3000	0	0	0	0
LVL 01 BEAM 12	107	Y20	4	5300	20	5300	0	0	0	0
LVL 01 BEAM 12	108	Y25	2	2840	37	400	2500	0	0	0

REBAR LEVEL 01 BEAM SCHEDULE

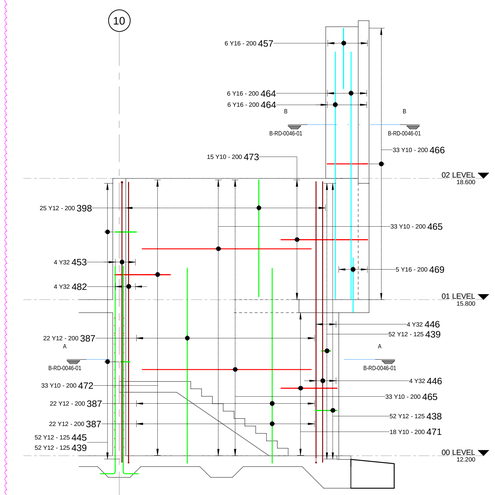
MEMBER NAME	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LVL 01 BEAM 12	109	Y16	3	7240	20	7240	0	0	0	0
LVL 01 BEAM 12	110	Y20	2	7240	20	7240	0	0	0	0
LVL 01 BEAM 12	111	Y20	2	3040	20	3040	0	0	0	0
LVL 01 BEAM 12	112	Y25	2	5340	20	5340	0	0	0	0
LVL 01 BEAM 12	113	Y20	2	5860	37	460	5450	0	0	0
LVL 01 BEAM 12	114	Y25	2	8250	38	7200	780	400	0	0
LVL 01 BEAM 12	115	Y16	6	8450	37	190	8300	0	0	0
LVL 01 BEAM 12	116	Y16	6	8800	20	8800	0	0	0	0
LVL 01 BEAM 12	117	Y16	6	8900	20	8900	0	0	0	0
LVL 01 BEAM 12	118	Y16	6	6350	37	190	6200	0	0	0
LVL 01 BEAM 12	119	Y10	282	1360	74	270	240	0	0	0
LVL 01 BEAM 13	100	Y10	39	2500	74	840	240	0	0	0
LVL 01 BEAM 13	101	Y25	2	8620	38	400	7950	400	0	0
LVL 01 BEAM 13	102	Y16	2	8220	38	200	7900	200	0	0
LVL 01 BEAM 13	103	Y16	8	8200	38	190	7900	190	0	0
LVL 01 BEAM 13	104	Y25	2	8370	38	200	7950	300	0	0
LVL 01 BEAM 13	105	Y10	78	1300	74	240	240	0	0	0
LVL 01 BEAM 14	100	Y10	117	2500	74	840	240	0	0	0
LVL 01 BEAM 14	101	Y25	4	2040	37	400	1700	0	0	0
LVL 01 BEAM 14	102	Y16	2	2040	37	400	1700	0	0	0
LVL 01 BEAM 14	103	Y16	4	8450	37	190	8300	0	0	0
LVL 01 BEAM 14	104	Y16	4	8450	37	8300	190	0	0	0
LVL 01 BEAM 14	105	Y16	4	8550	37	190	8400	0	0	0
LVL 01 BEAM 14	106	Y16	4	8550	37	8400	190	0	0	0
LVL 01 BEAM 14	107	Y16	8	8600	20	8600	0	0	0	0
LVL 01 BEAM 14	108	Y16	2	7300	20	7300	0	0	0	0
LVL 01 BEAM 14	109	Y25	2	7300	20	7300	0	0	0	0
LVL 01 BEAM 14	110	Y25	2	3000	20	3000	0	0	0	0
LVL 01 BEAM 14	111	Y25	4	5300	20	5300	0	0	0	0
LVL 01 BEAM 14	112	Y16	2	5300	20	5300	0	0	0	0
LVL 01 BEAM 14	113	Y16	5	7500	20	7500	0	0	0	0
LVL 01 BEAM 14	114	Y25	4	7500	20	7500	0	0	0	0
LVL 01 BEAM 14	115	Y10	234	1300	74	240	240	0	0	0
LVL 01 BEAM 14	116	Y25	2	2040	37	405	1700	0	0	0
LVL 01 BEAM 15	100	Y25	2	8740	37	8400	400	0	0	0
LVL 01 BEAM 15	101	Y20	4	7300	20	7300	0	0	0	0
LVL 01 BEAM 15	102	Y10	27	1840	74	540	220	0	0	0
LVL 01 BEAM 15	103	Y10	27	1820	74	530	220	0	0	0
LVL 01 BEAM 15	104	Y25	2	9040	37	8700	400	0	0	0
LVL 01 BEAM 15	105	Y20	2	7450	20	7450	0	0	0	0
LVL 01 BEAM 15	106	Y25	2	9560	43	1500	780	5000	60	1500
LVL 01 BEAM 15	107	Y20	2	5300	20	5300	0	0	0	0
LVL 01 BEAM 15	108	Y20	2	8150	37	7800	400	0	0	0
LVL 01 BEAM 15	109	Y20	4	2050	37	1700	400	0	0	0
LVL 01 BEAM 15	110	Y32	6	5300	20	5300	0	0	0	0
LVL 01 BEAM 15	111	Y10	26	3430	75	750	240	840	540	540
LVL 01 BEAM 15	112	Y10	31	2560	75	390	150	840	240	720
LVL 01 BEAM 15	113	Y25	4	8600	38	400	7930	400	0	0
LVL 01 BEAM 15	114	Y16	6	8750	37	190	8600	0	0	0
LVL 01 BEAM 15	115	Y16	8	8700	20	8700	0	0	0	0
LVL 01 BEAM 15	116	Y10	54	1920	75	390	150	520	240	400
LVL 01 BEAM 16	100	Y10	80	2560	75	390	150	840	240	720
LVL 01 BEAM 16	101	Y25	14	7350	20	7350	0	0	0	0
LVL 01 BEAM 16	102	Y20	4	2050	37	1700	400	0	0	0
LVL 01 BEAM 16	103	Y32	8	5300	20	5300	0	0	0	0
LVL 01 BEAM 16	104	Y16	6	8450	37	190	8300	0	0	0
LVL 01 BEAM 16	105	Y16	6	8600	20	8600	0	0	0	0
LVL 01 BEAM 16	106	Y25	2	3000	20	3000	0	0	0	0
LVL 01 BEAM 16	107	Y20	10	3000	20	3000	0	0	0	0
LVL 01 BEAM 16	108	Y20	6	2350	37	2000	400	0	0	0
LVL 01 BEAM 16	109	Y20	10	7500	20	7500	0	0	0	0
LVL 01 BEAM 16	110	Y16	4	8650	37	190	8500	0	0	0
LVL 01 BEAM 16	111	Y10	53	3430	75	755	240	840	540	540
LVL 01 BEAM 16	112	Y10	27	3430	75	750	240	840	540	540
LVL 01 BEAM 16	113	Y20	4	2150	37	1800	400	0	0	0
LVL 01 BEAM 16	114	Y25	10	2440	37	2100	400	0	0	0
LVL 01 BEAM 16	115	Y25	6	7400	20	7400	0	0	0	0
LVL 01 BEAM 16	116	Y16	2	8150	37	190	8000	0	0	0
LVL 01 BEAM 17	100	Y10	80	1900	74	540	240	0	0	0
LVL 01 BEAM 17	101	Y25	4	2340	37	2000	400	0	0	0
LVL 01 BEAM 17	102	Y25	2	8830	42	1400	500	6750	60	0
LVL 01 BEAM 17	103	Y25	2	8840	37	8500	400	0	0	0

REBAR LEVEL 01 BEAM SCHEDULE

MEMBER NAME	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LVL 01 BEAM 17	104	Y25	4	7550	20	7550	0	0	0	0
LVL 01 BEAM 17	105	Y25	2	9220	41	7370	500	1350	60	0
LVL 01 BEAM 17	106	Y20	2	7350	20	7350	0	0	0	0
LVL 01 BEAM 17	107	Y25	4	5600	20	5600	0	0	0	0
LVL 01 BEAM 18	100	Y10	80	1900	74	540	240	0	0	0
LVL 01 BEAM 18	101	Y25	4	2340	37	2000	400	0	0	0
LVL 01 BEAM 18	102	Y25	4	7550	20	7550	0	0	0	0
LVL 01 BEAM 18	103	Y20	2	7350	20	7350	0	0	0	0
LVL 01 BEAM 18	104	Y16	1	2000	20	2000	0	0	0	0
LVL 01 BEAM 18	105	Y25	4	5600	20	5600	0	0	0	0
LVL 01 BEAM 18	106	Y25	2	8830	42	1400	500	6750	60	0
LVL 01 BEAM 18	107	Y25	2	8840	37	8500	400	0	0	0
LVL 01 BEAM 18	108	Y25



W1 WALL 1
SCALE 1 : 50



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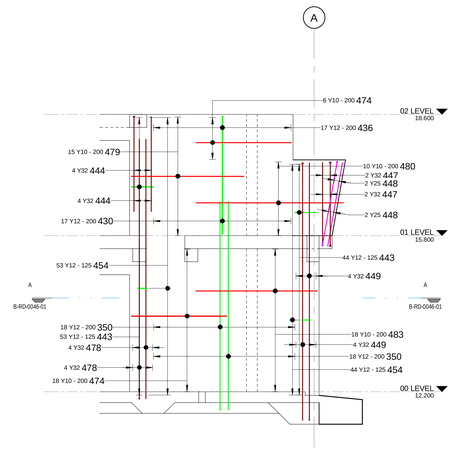
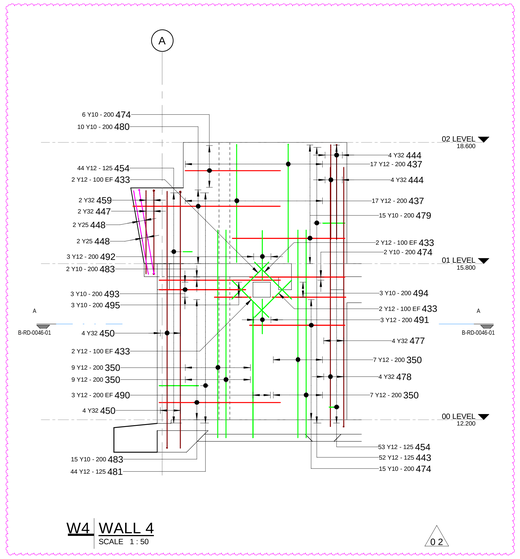
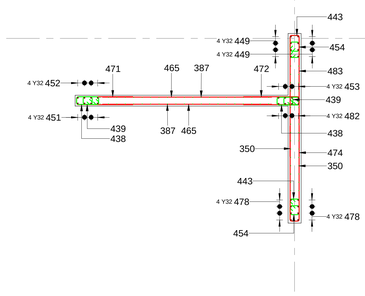
SCALE 1 : 50



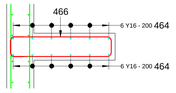
W3 WALL 3
SCALE 1 : 50



W4 WALL 4
SCALE 1 : 50

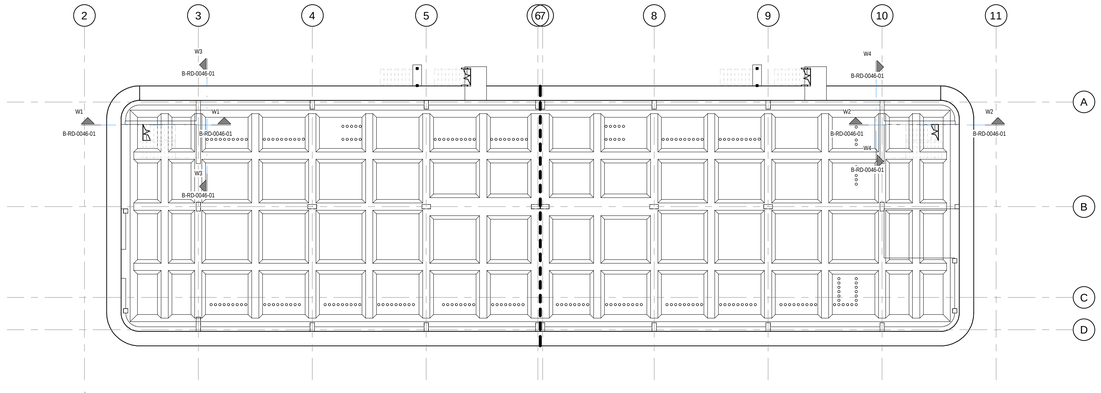


A HOR SEC A
SCALE 1 : 50

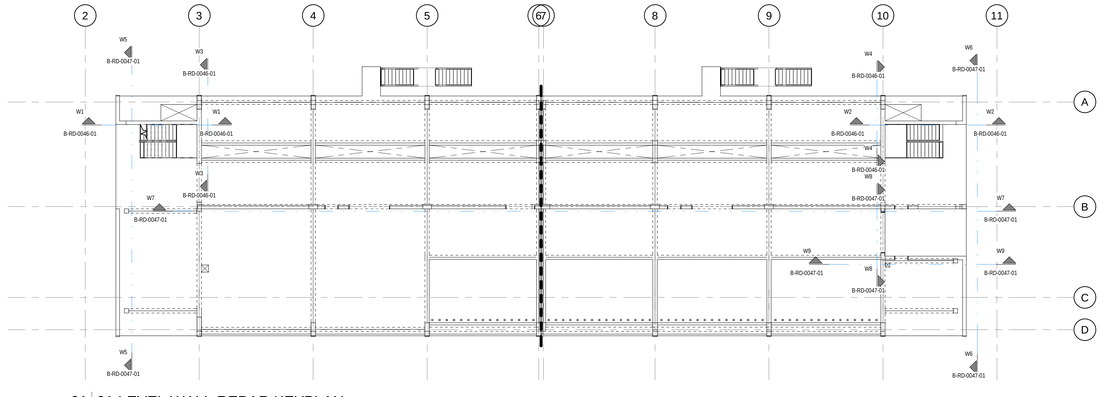


B HOR SEC B
SCALE 1 : 20

Y10 CLIPS PLACED AROUND VERTICAL BARS @ 400 c/cs STG EW
360 FOR 300 THK WALLS - BM 501
2260 FOR 250 THK WALLS - BM 500
2800 FOR 230 THK WALLS - BM 502



00 00 LEVEL WALL REBAR KEYPLAN
SCALE 1 : 150



01 01 LEVEL WALL REBAR KEYPLAN
SCALE 1 : 150

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.2	OPENINGS FOR SERVICES ADDED/AMENDED	A H	C K	S W M	09-09-21
0.1	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	S W M	01-07-21
0.0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-19

REVISIONS

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		06 09 21
CHECKED	C K		06 09 21
DESIGNED	C K		06 09 21
CHECKED	SW M		06 09 21

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		06 09 21
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

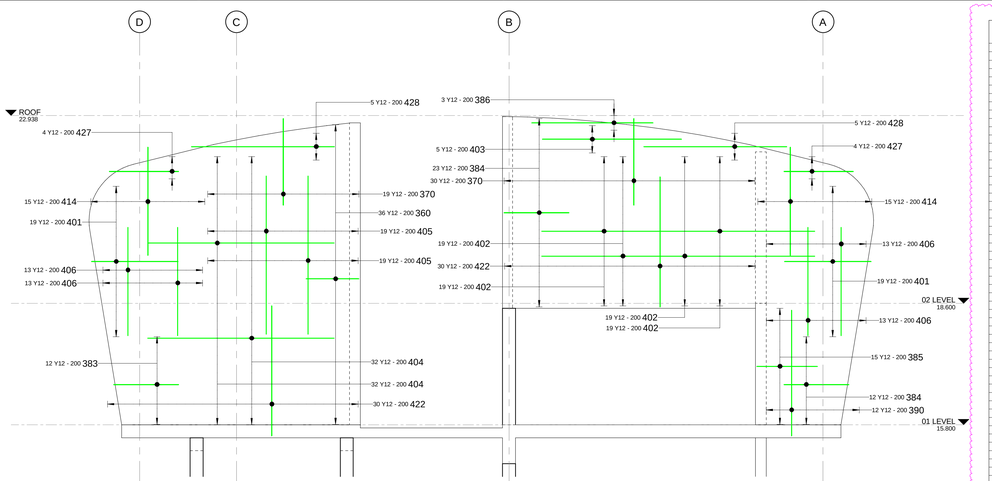
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
WALL REBAR LAYOUTS - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	R D	0 0 4 6	0 1	0 2	AE

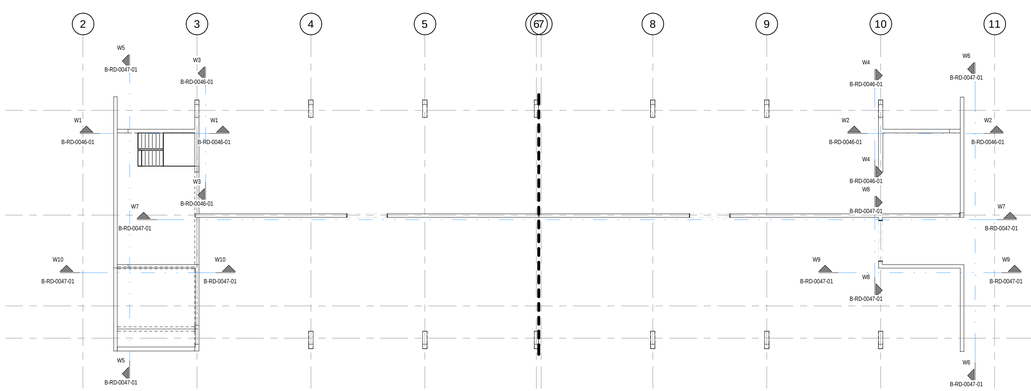
MASTER
10-09-2021

W5 WALL 5
SCALE 1 : 50

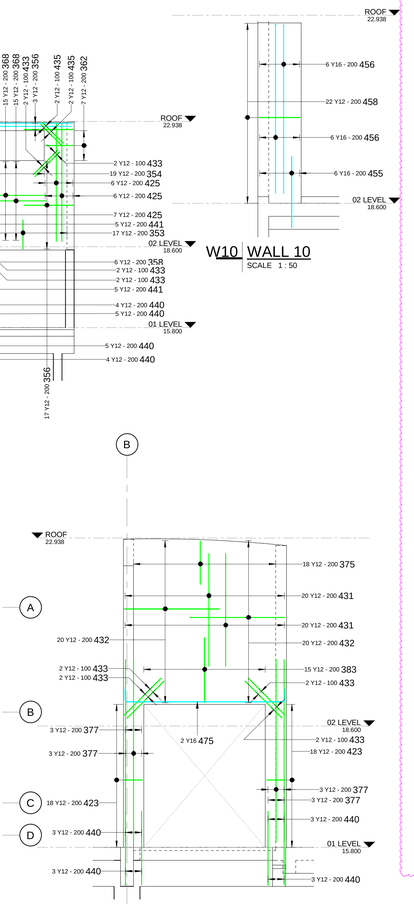


W6 WALL 6
SCALE 1 : 50

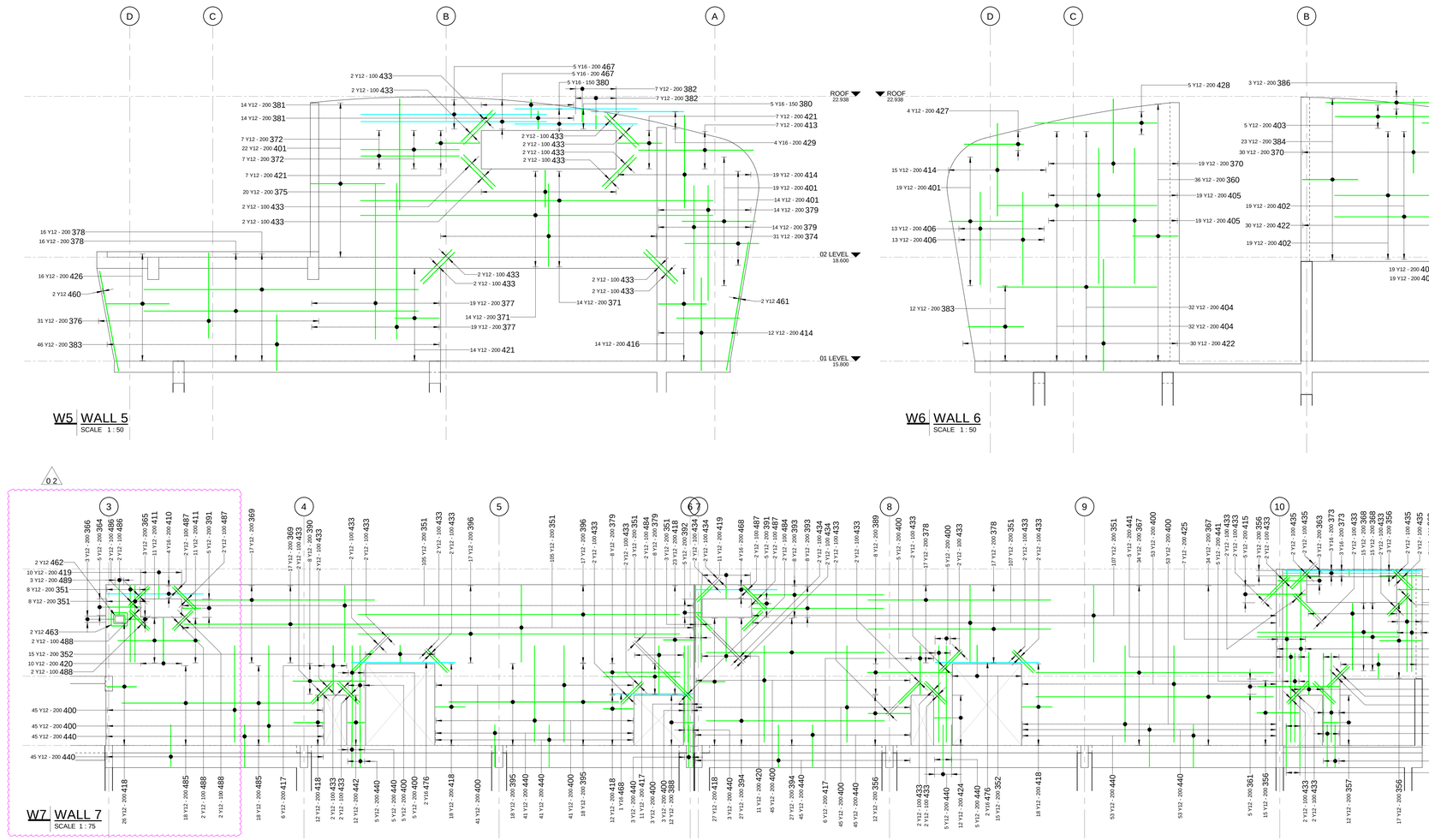
W9 WALL 9
SCALE 1 : 50



02 LEVEL WALL REBAR KEYPLAN
SCALE 1 : 150



W8 WALL 8
SCALE 1 : 50



W7 WALL 7
SCALE 1 : 75

W10 WALL 10
SCALE 1 : 50

REBAR WALL SCHEDULE

MEMBER NAME	NUM	MARK	NUMBER TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
WALL	1	390	Y12	68	68	5120	37	4800	350	0	0	0
WALL	1	351	Y12	446	446	3210	37	3100	140	0	0	0
WALL	1	352	Y12	30	30	1520	38	720	140	720	0	0
WALL	1	353	Y12	17	17	2080	38	1000	140	1000	0	0
WALL	1	354	Y12	19	19	5480	38	2700	140	2700	0	0
WALL	1	355	Y12	20	20	960	74	230	140	0	0	0
WALL	1	356	Y12	50	50	3510	38	1700	170	1700	0	0
WALL	1	357	Y12	12	12	1870	74	640	170	0	0	0
WALL	1	358	Y12	6	6	3480	38	1700	140	1700	0	0
WALL	1	359	Y12	12	12	2410	74	880	190	0	0	0
WALL	1	360	Y12	36	36	2500	38	1200	160	1200	0	0
WALL	1	361	Y12	5	5	6710	38	3300	170	3300	0	0
WALL	1	362	Y12	7	7	2530	74	970	170	0	0	0
WALL	1	363	Y12	3	3	2890	74	1150	170	0	0	0
WALL	1	364	Y12	5	5	3270	74	1340	170	0	0	0
WALL	1	365	Y12	3	3	1830	74	620	170	0	0	0
WALL	1	366	Y12	3	3	1190	74	300	170	0	0	0
WALL	1	367	Y12	68	68	9600	20	9600	0	0	0	0
WALL	1	368	Y12	30	30	5700	20	5700	0	0	0	0
WALL	1	369	Y12	34	34	7700	20	7700	0	0	0	0
WALL	1	370	Y12	49	49	4100	38	2000	160	2000	0	0
WALL	1	371	Y12	28	28	9500	20	9500	0	0	0	0
WALL	1	372	Y12	14	14	2650	20	2650	0	0	0	0
WALL	1	373	Y16	6	6	5500	20	5500	0	0	0	0
WALL	1	374	Y12	31	31	4580	38	2240	160	2240	0	0
WALL	1	375	Y12	38	38	2100	38	1000	160	1000	0	0
WALL	1	376	Y12	31	31	4700	38	2300	160	2300	0	0
WALL	1	377	Y12	50	50	4200	20	4200	0	0	0	0
WALL	1	378	Y12	66	66	7400	20	7400	0	0	0	0
WALL	1	379	Y12	44	44	3100	20	3100	0	0	0	0
WALL	1	380	Y16	10	10	3300	20	3300	0	0	0	0
WALL	1	381	Y12	28	28	1590	74	500	170	0	0	0
WALL	1	382	Y12	14	14	1350	74	380	170	0	0	0
WALL	1	383	Y12	73	73	3100	38	1500	160	1500	0	0
WALL	1	384	Y12	35	35	3130	38	1500	190	1500	0	0
WALL	1	385	Y12	15	15	2930	38	1400	190	1400	0	0
WALL	1	386	Y12	3	3	5730	38	2800	190	2800	0	0
WALL	1	387	Y12	88	88	4870	37	4500	400	0	0	0
WALL	1	388	Y12	12	12	1310	74	360	170	0	0	0
WALL	1	389	Y12	8	8	6880	38	3400	140	3400	0	0
WALL	1	390	Y12	20	20	5900	38	2900	160	2900	0	0
WALL	1	391	Y12	10	10	1580	38	750	140	750	0	0
WALL	1	392	Y12	5	5	980	74	240	140	0	0	0
WALL	1	393	Y12	16	16	5300	0	5300	0	0	0	0
WALL	1	394	Y12	54	54	7200	20	7200	0	0	0	0
WALL	1	395	Y12	36	36	6850	20	6850	0	0	0	0
WALL	1	396	Y12	34	34	13000	20	13000	0	0	0	0
WALL	1	397	Y12	54	54	2370	37	2000	400	0	0	0
WALL	1	398	Y12	25	25	5500	38	2700	160	2700	0	0
WALL	1	399	Y12	31	31	5300	38	2600	160	2600	0	0
WALL	1	400	Y12	448	448	3900	20	3900	0	0	0	0
WALL	1	401	Y12	93	93	4130	38	2000	190	2000	0	0
WALL	1	402	Y12	38	38	6300	20	6300	0	0	0	0
WALL	1	403	Y12	10	10	3210	20	3205	0	0	0	0
WALL	1	404	Y12	64	64	4300	20	4300	0	0	0	0
WALL	1	405	Y12	38	38	3650	20	3650	0	0	0	0
WALL	1	406	Y12	52	52	2500	20	2500	0	0	0	0
WALL	1	407	Y12	52	52	4700	20	4700	0	0	0	0
WALL	1	408	Y12	24	24	2900	20	2900	0	0	0	0
WALL	1	409	Y12	6	6	6000	38	2950	160	2950	0	0
WALL	1	410	Y16	4	4	7890	38	3900	170	3900	0	0
WALL	1	411	Y12	22	22	3300	20	3300	0	0	0	0
WALL	1	412	Y12	25	25	5480	38	2690	160	2690	0	0
WALL	1	413	Y12	7	7	6330	38	3100	190	3100	0	0
WALL	1	414	Y12	61	61	5100	38	2500	160	2500	0	0
WALL	1	415	Y12	5	5	4110	38	2000	170	2000	0	0
WALL	1	416	Y12	14	14	2730	38	1300	190	1300	0	0
WALL	1	417	Y12	23	23	4020	38	1970	140	1970	0	0
WALL	1	418	Y12	136	136	2530	38	1200	170	1200	0	0
WALL	1	419	Y12	21	21	1540	74	520	140	0	0	0
WALL	1	420	Y12	21	21	3580	38	1750	190	1750	0	0
WALL	1	421	Y12	114	114	2530	38	1200	190	1200	0	0
WALL	1	422	Y12	84	84	6100	38	3000	160	3000	0	0
WALL	1	423	Y12	36	36	1510	74	430	190	0	0	0
WALL	1	424	Y12	12	12	1950	74	680	170	0	0	0
WALL	1	425	Y12	26	26	4210	37	4100	140	0	0	0
WALL	1	426	Y12	30	30	3530	38	1700	190	1700	0	0
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WALL	1	429	Y16	4	4	5110	38	2500	190	2500	0	0
WALL	1	430	Y12	17	17	2860	37	2700	170	0	0	0
WALL	1	431	Y12	40	40	2600	20	2600	0	0	0	0
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WALL	1	433	Y12	116	116	1200	20	1200	0	0	0	0
WALL	1	434	Y12	8	8	850	20	850	0	0	0	0
WALL	1	435	Y12	8	8	1000	20	1000	0	0	0	0
WALL	1	436	Y12	17	17	2900	37	2720	210	0	0	0
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WALL	1	438	Y12	158	158	1560	99A	190	520	0	0	0
WALL	1	439	Y12	210	210	960	99A	190	220	0	0	0
WALL	1	440	Y12	424	424	1810	37	1700	140	0	0	0
WALL	1	441	Y12	20	20	3600	20	3600	0	0	0	0
WALL	1	442	Y12	12	12	1970	74	680	170	0	0	0
WALL	1	443	Y12	149	149	1620	99A	220	520	0	0	0
WALL	1	444	Y32	16	16	2470	37	2200	350	0	0	0
WALL	1	445	Y12	52	52	1540	99A	190	510	0	0	0
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WALL	1	453	Y32	8	8	7140	54	200	6500	600	0	0
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WALL	1	458	Y12	22	22	3240	74	170	940	0	0	0
WALL	1	459	Y32	2	2	2270	38	250	1950	235	0	0
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WALL	1	467	Y16	10	10	5000	20	5000	0	0	0	0
WALL	1	468	Y16	5	5	9690	38	3300	170	3300	0	0
WALL	1	469	Y16	10	10	2580	38	1250	160	1250	0	0
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WALL	1	492	Y12	3	3	2440	38	1150	200	1150	0	0
WALL	1	493	Y10	3	3	4170	38	2000	220	2000	0	0
WALL	1	494	Y10	3	3	3570	38	1700	220	1700	0	0
WALL	1	495	Y10	3	3	1870	38	850	220	850	0	0
WALL CLIPS	1	500	Y10	2260	2260	400	85	120	190	60	100	0
WALL CLIPS	1	501	Y10	360	360	430	85	120	220	60	100	0
WALL CLIPS	1	502	Y10	2800	2800	380	85	120	170	60	100	0

REBAR WALL WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
	Y10	2438 kg
WALL	Y12	14711 kg
WALL	Y16	777 kg
WALL	Y25	74 kg
WALL	Y32	3139 kg
TOTAL		21138 kg

Y10 WALL CLIPS PLACED AROUND VERTICAL BARS @ 400 c/cs STG EW
360 FOR 300 THK WALLS - BM 501
2260 FOR 250 THK WALLS - BM 500
2800 FOR 230 THK WALLS - BM 502

0.2

MASTER
10-09-2021

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO. | REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.2	OPENINGS FOR SERVICES ADDED/AMENDED	A H	C K	S W M	09-09-21
0.1	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	S W M	01-07-20
0.0	ISSUED FOR CONSTRUCTION	A H	C K	S W M	27-06-18

REVISIONS

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		06 09 21
CHECKED	C K		06 09 21
DESIGNED	C K		06 09 21
CHECKED	S W M		06 09 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		06 09 21
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
WALL REBAR LAYOUTS - SHEET 2

PROJECT NUMBER					OD	FBS	DIS	TYPE	DRAWING NO.			SHEET		REV	ID
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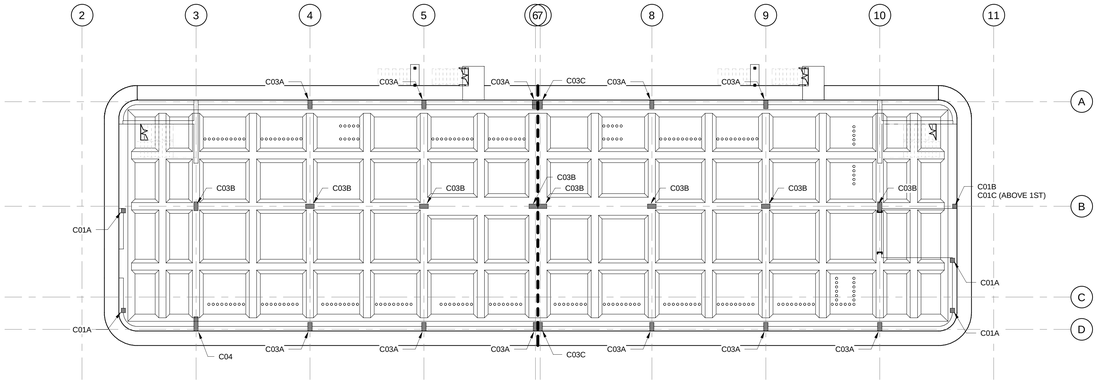
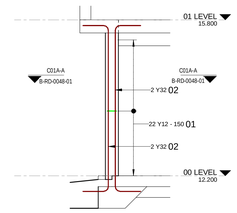
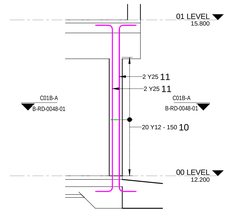


00 | 00 LEVEL COLUMN REBAR KEYPLAN
SCALE 1 : 150



C01A | COL C01A
SCALE 1 : 50



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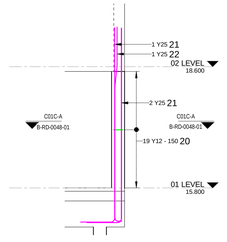

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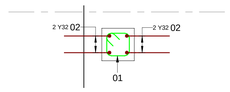
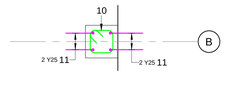


C01A-A | COL C01A SEC A
SCALE 1 : 20



C01B-A | COL C01B SEC A
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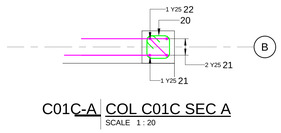

C01C-A | COL C01C SEC A
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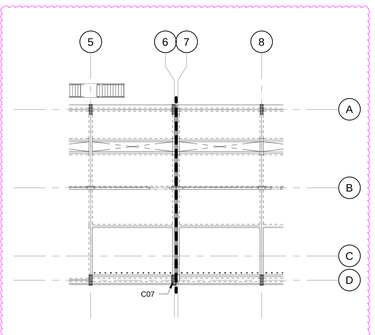
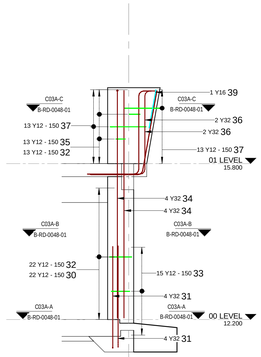


01 | 01 LEVEL COLUMN REBAR KEYPLAN
SCALE 1 : 200



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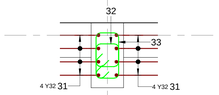

C03A-A | COL C03A SEC A
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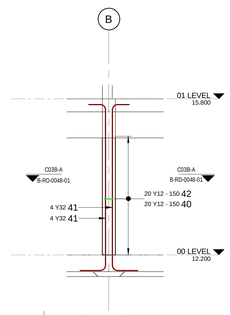
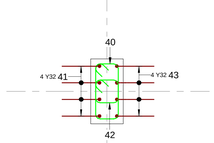
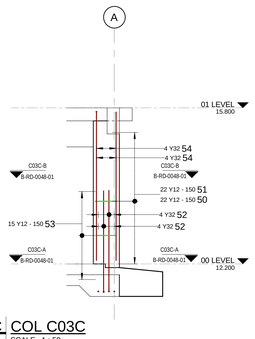


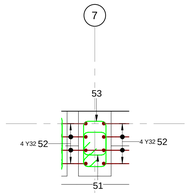
C03B | COL C03B
SCALE 1 : 50



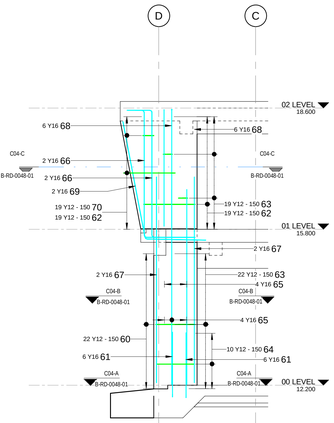
C03B-A | COL C03B SEC A
SCALE 1 : 20



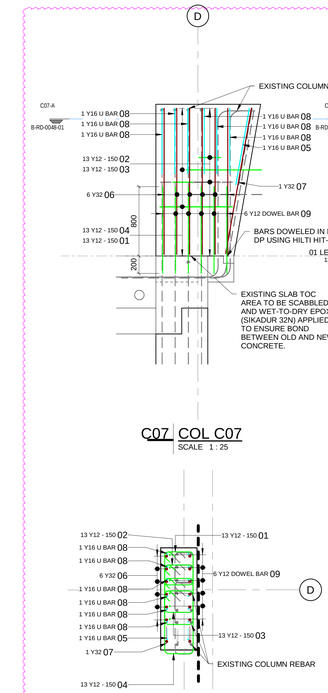
C03C | COL C03C
SCALE 1 : 50



C03C-A | COL C03C SEC A
SCALE 1 : 20

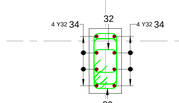


C04 | COL C04
SCALE 1 : 50

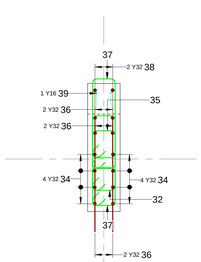


C07 | COL C07
SCALE 1 : 25

C07-A | COL C07 SEC A
SCALE 1 : 25



C03A-B | COL C03A SEC B
SCALE 1 : 20



C03A-C | COL C03A SEC C
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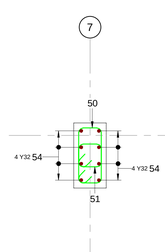

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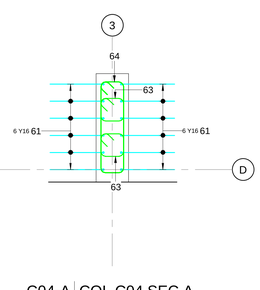
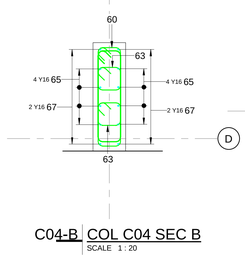
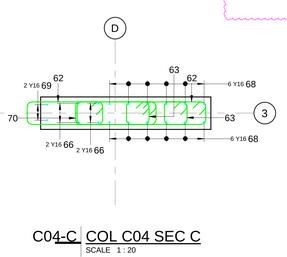


C04-A | COL C04 SEC A
SCALE 1 : 20



C04-B | COL C04 SEC B
SCALE 1 : 20



C04-C | COL C04 SEC C
SCALE 1 : 20

MASTER
09-06-2023
TRANSNET
AECOM

REBAR COLUMN SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
COL C01A	4	01	Y12	22	88	1020	99A	220	220	0	0	0
COL C01A	4	02	Y32	4	16	4900	38	600	3880	600	0	0
COL C01B	1	10	Y12	20	20	1020	99A	220	220	0	0	0
COL C01B	1	11	Y25	4	4	4530	38	400	3860	400	0	0
COL C01C	1	20	Y12	19	19	1020	99A	220	220	0	0	0
COL C01C	1	21	Y25	3	3	5240	37	4500	800	0	0	0
COL C01C	1	22	Y25	1	1	4670	42	900	500	3100	100	0
COL C03A	11	30	Y12	22	242	1620	99A	220	520	0	0	0
COL C03A	11	31	Y32	8	88	2870	37	2350	600	0	0	0
COL C03A	11	32	Y12	35	385	1020	99A	220	220	0	0	0
COL C03A	11	33	Y12	15	165	1440	99A	220	430	0	0	0
COL C03A	11	34	Y32	8	88	5430	37	250	5260	0	0	0
COL C03A	11	35	Y12	13	143	1100	99A	220	260	0	0	0
COL C03A	11	36	Y32	4	44	3290	54	300	1950	1200	0	0
COL C03A	11	37	Y12	26	286	2260	99A	220	840	0	0	0
COL C03A	11	38	Y32	2	22	3110	62	1970	1940	1200	0	0
COL C03A	11	39	Y16	1	11	1870	38	900	150	900	0	0
COL C03B	8	40	Y12	20	160	1620	99A	220	520	0	0	0
COL C03B	8	41	Y32	7.5	60	4700	38	600	3860	400	0	0
COL C03B	8	42	Y12	20	160	1020	99A	220	220	0	0	0
COL C03B	1	43	Y32	4	4	4590	38	600	3860	285	0	0
COL C03C	2	50	Y12	22	44	1620	99A	220	520	0	0	0
COL C03C	2	51	Y12	22	44	1020	99A	220	220	0	0	0
COL C03C	2	52	Y32	8	16	2870	37	2350	600	0	0	0
COL C03C	2	53	Y12	15	30	1440	99A	220	430	0	0	0
COL C03C	2	54	Y32	8	16	3650	37	280	3450	0	0	0
COL C04	1	60	Y12	22	22	2420	99A	220	920	0	0	0
COL C04	1	61	Y16	12	12	1960	37	1500	500	0	0	0
COL C04	1	62	Y12	38	38	2980	99A	220	1200	0	0	0
COL C04	1	63	Y12	82	82	1020	99A	220	220	0	0	0
COL C04	1	64	Y12	10	10	2280	99A	220	850	0	0	0
COL C04	1	65	Y16	8	8	4500	20	4500	0	0	0	0
COL C04	1	66	Y16	4	4	4270	54	1000	2950	400	0	0
COL C04	1	67	Y16	4	4	4760	41	2900	600	1250	50	0
COL C04	1	68	Y16	12	12	2860	37	2700	200	0	0	0
COL C04	1	69	Y16	2	2	4130	62	1400	1370	2760	0	0
COL C04	1	70	Y12	19	19	1100	99A	220	260	0	0	0

REBAR COLUMN WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
<varies>	Y12	2514 kg
<varies>	Y16	251 kg
<varies>	Y25	148 kg
<varies>	Y32	9007 kg
TOTAL		11919 kg

REBAR COLUMN C07 SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
COL C07	1	01	Y12	13	13	2520	99A	340	850	0	0	0
COL C07	1	02	Y12	13	13	1300	99A	340	240	0	0	0
COL C07	1	03	Y12	13	13	1340	99A	340	260	0	0	0
COL C07	1	04	Y12	13	13	2580	99A	340	880	0	0	0
COL C07	1	05	Y16	1	1	1980	38	900	260	900	0	0
COL C07	1	06	Y32	6	6	3540	38	1700	300	1700	0	0
COL C07	1	07	Y32	1	1	3580	38	1720	300	1720	0	0
COL C07	1	08	Y16	6	6	1700	38	760	260	760	0	0
COL C07	1	09	Y12	6	6	1000	20	1000	0	0	0	0

REBAR COLUMN C07 WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
COL C07	Y12	95 kg
COL C07	Y16	19 kg
COL C07	Y32	157 kg
TOTAL		271 kg

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	APPD	DATE
01	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	C K	SW M	07-06-23
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	27-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		07 06 23
CHECKED	C K		07 06 23
DESIGNED	C K		07 06 23
CHECKED	SW M		07 06 23

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

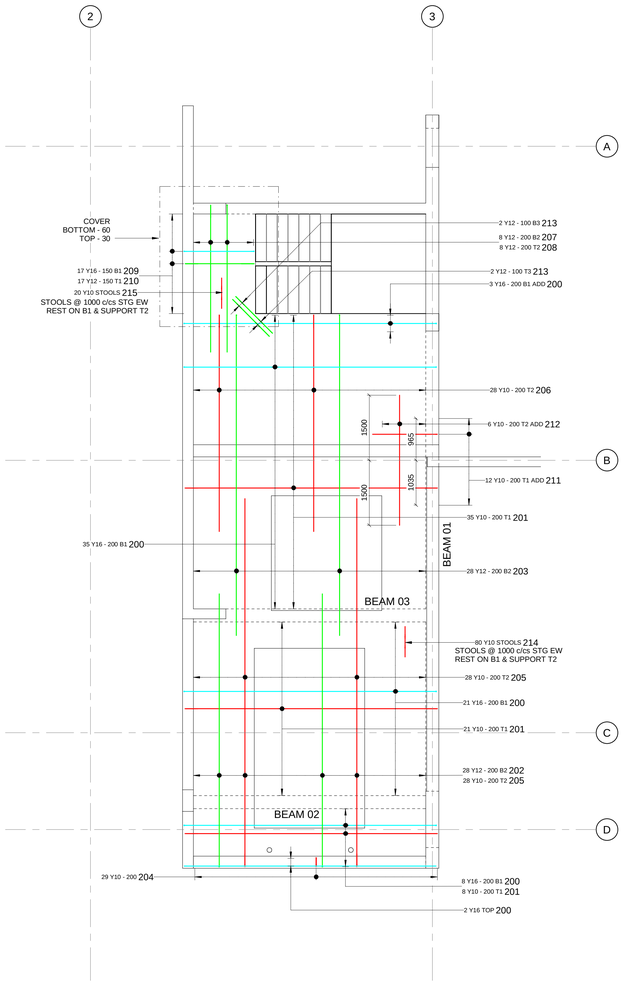
NAME	SW MARAIS	DATE
SIGNATURE		07 06 23
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LOTS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
COLUMN REBAR

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	RD	0048	01	01	AE



02 LEVEL SLAB REBAR

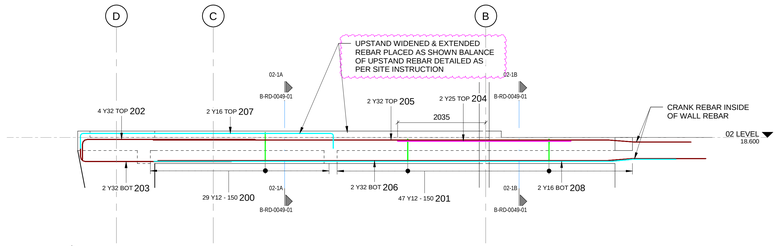
SCALE 1 : 50

REBAR LEVEL 02 SLAB SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
SLAB 02	1	200	Y16	69	69	6190	38	220	5830	220	0	0
SLAB 02	1	201	Y10	64	64	6710	55	300	190	5830	190	300
SLAB 02	1	202	Y12	28	28	6470	37	6300	200	0	0	0
SLAB 02	1	203	Y12	28	28	7540	37	170	7400	0	0	0
SLAB 02	1	204	Y10	29	29	1420	74	330	220	0	0	0
SLAB 02	1	205	Y10	28	28	8910	38	8500	160	300	0	0
SLAB 02	1	206	Y10	28	28	5410	38	5000	160	300	0	0
SLAB 02	1	207	Y12	8	8	3550	37	180	3400	0	0	0
SLAB 02	1	208	Y12	8	8	3800	38	3400	160	300	0	0
SLAB 02	1	209	Y16	17	17	1980	38	220	1620	220	0	0
SLAB 02	1	210	Y12	17	17	2460	55	300	190	1600	190	300
SLAB 02	1	211	Y10	12	12	1710	37	1500	235	0	0	0
SLAB 02	1	212	Y10	6	6	3000	20	3000	0	0	0	0
SLAB 02	1	213	Y12	4	4	1200	20	1200	0	0	0	0
SLAB 02	1	214	Y10	80	80	1060	83	250	190	250	250	0
SLAB 02	1	215	Y10	20	20	1000	83	250	160	250	250	0

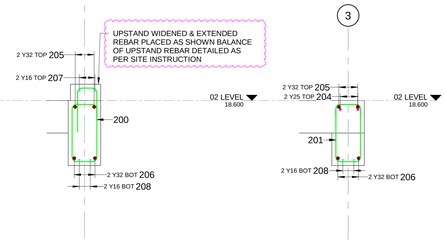
REBAR LEVEL 02 SLAB WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
SLAB 02	Y10	626 kg
SLAB 02	Y12	442 kg
SLAB 02	Y16	727 kg
TOTAL		1795 kg



02-1 LVL 02 BEAM 01

SCALE 1 : 50

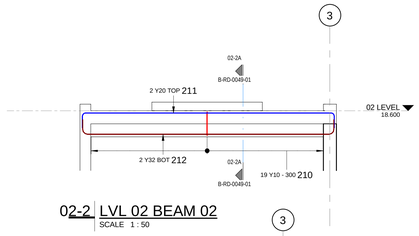


02-1A LVL 02 BEAM 01 SEC A

02-1/ B-RD-0049-01 | SCALE 1 : 20

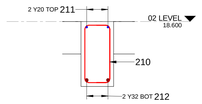
02-1B LVL 02 BEAM 01 SEC B

02-1/ B-RD-0049-01 | SCALE 1 : 20



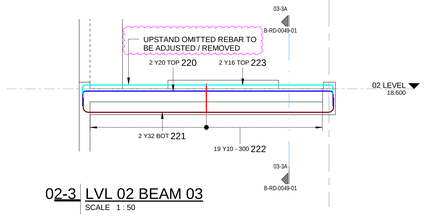
02-2 LVL 02 BEAM 02

SCALE 1 : 50



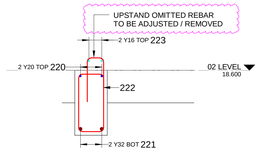
02-2A LVL 02 BEAM 02 SEC A

02-2/ B-RD-0049-01 | SCALE 1 : 20



02-3 LVL 02 BEAM 03

SCALE 1 : 50



03-3A LVL 02 BEAM 03 SEC A

02-3/ B-RD-0049-01 | SCALE 1 : 20

REBAR LEVEL 02 BEAM SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LVL 02 BEAM 01	1	200	Y12	29	29	2260	75	410	190	690	240	540
LVL 02 BEAM 01	1	201	Y12	47	47	1880	74	540	240	0	0	0
LVL 02 BEAM 01	1	202	Y32	4	4	4420	37	4000	500	0	0	0
LVL 02 BEAM 01	1	203	Y32	2	2	3960	37	540	3500	0	0	0
LVL 02 BEAM 01	1	204	Y25	2	2	4000	20	4000	0	0	0	0
LVL 02 BEAM 01	1	205	Y32	2	2	12410	41	10500	620	1290	80	0
LVL 02 BEAM 01	1	206	Y32	2	2	12650	41	10350	600	1700	80	0
LVL 02 BEAM 01	1	207	Y16	2	2	6470	38	350	5850	350	0	0
LVL 02 BEAM 01	1	208	Y16	2	2	12050	41	10550	500	1000	60	0
LVL 02 BEAM 02	1	210	Y10	19	19	2200	74	240	540	0	0	0
LVL 02 BEAM 02	1	211	Y20	2	2	6430	38	350	5830	350	0	0
LVL 02 BEAM 02	1	212	Y32	2	2	6370	38	350	5830	350	0	0
LVL 02 BEAM 03	1	220	Y20	2	2	6400	38	350	5800	350	0	0
LVL 02 BEAM 03	1	221	Y32	2	2	6350	38	350	5810	350	0	0
LVL 02 BEAM 03	1	222	Y10	19	19	2260	75	410	160	690	240	540
LVL 02 BEAM 03	1	223	Y16	2	2	6120	38	200	5800	200	0	0

REBAR LEVEL 02 BEAM WEIGHT SUMMARY

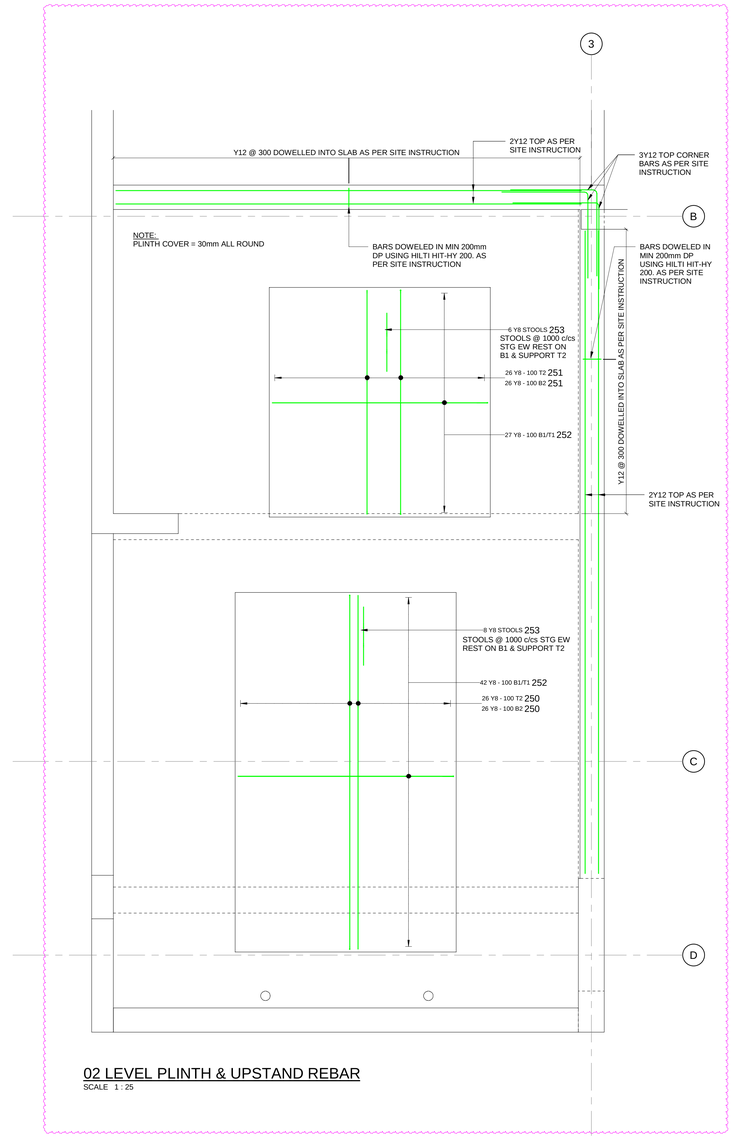
MEMBER NAME	TYPE	WEIGHT
<varies>	Y10	52 kg
LVL 02 BEAM 01	Y12	137 kg
<varies>	Y16	78 kg
<varies>	Y20	63 kg
LVL 02 BEAM 01	Y25	31 kg
<varies>	Y32	639 kg
TOTAL		999 kg

REBAR LEVEL 02 PLINTH SCHEDULE

MEMBER NAME	MARK	TYPE	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
LEVEL 02 PLINTH	250	Y8	52	4300	38	125	4090	125	0	0
LEVEL 02 PLINTH	251	Y8	52	2790	38	120	2590	120	0	0
LEVEL 02 PLINTH	252	Y8	69	5410	60	140	2490	0	0	0
LEVEL 02 PLINTH	253	Y8	14	880	83	220	110	250	250	0

REBAR LEVEL 02 PLINTH WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
LEVEL 02 PLINTH	Y8	298 kg
TOTAL		298 kg



02 LEVEL PLINTH & UPSTAND REBAR

SCALE 1 : 25

MASTER

27-07-2023

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NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE

TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

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NO	DESCRIPTION	BY	CHKD/APPD	DATE
0.1	PLINTH REINFORCEMENT ADDED. UPSTANDS REVISED	A H	JDW / SW M	24-07-23
0.0	ISSUED FOR CONSTRUCTION	A H	C K / SW M	27-06-18

CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		24 / 07 / 23
CHECKED	C K		24 / 07 / 23
DESIGNED	C K		24 / 07 / 23
CHECKED	SW M		24 / 07 / 23

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	24 / 07 / 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

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TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
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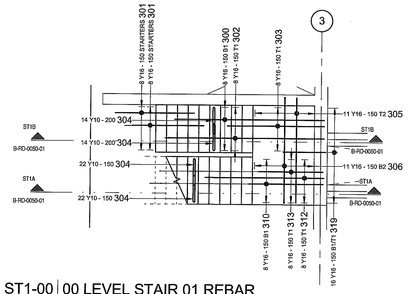
FAX: 086 677 2455

PORT OF SALDANHA

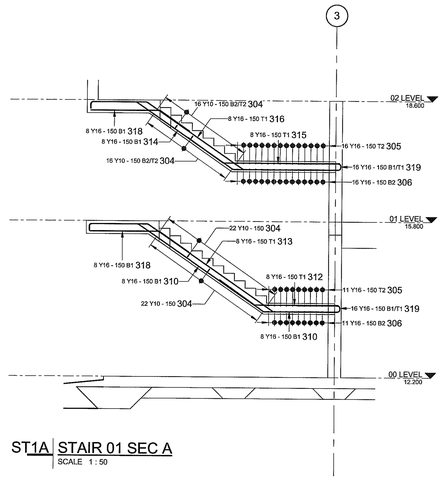
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
LEVEL 02 REBAR LAYOUT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	2	510	B	RD	0049	01	01	AE

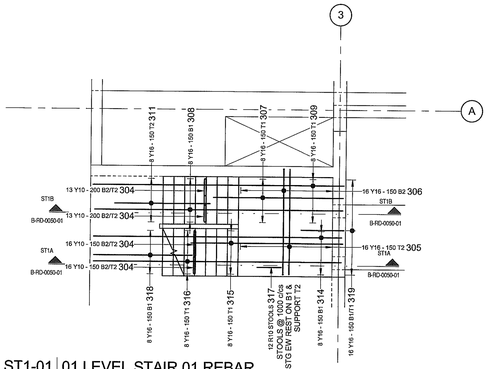
A



ST1-00 | 00 LEVEL STAIR 01 REBAR
SCALE 1 : 50



ST1A | STAIR 01 SEC A
SCALE 1 : 50



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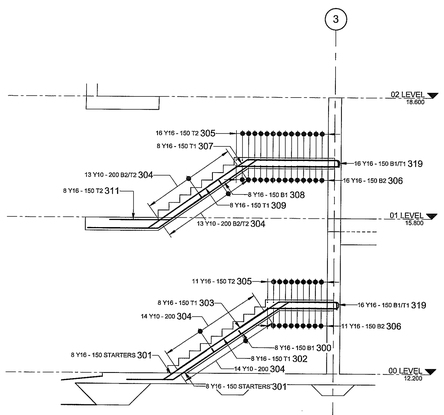

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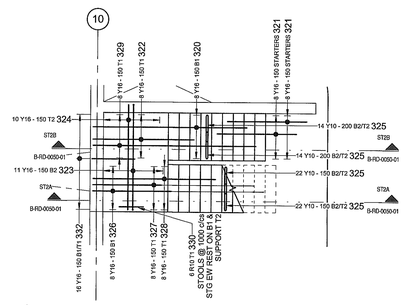

ST2-00 | 00 LEVEL STAIR 02 REBAR
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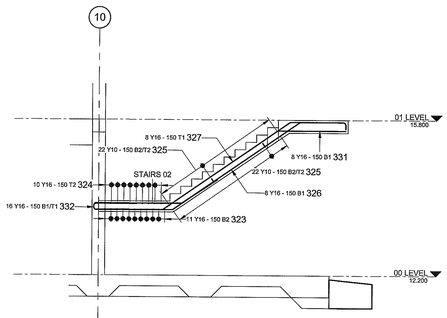
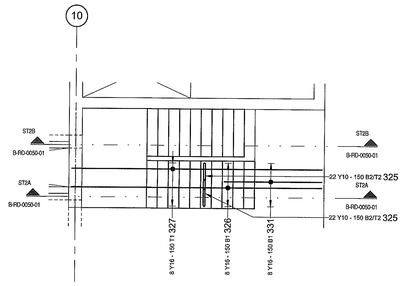


ST2A | STAIR 02 SEC A
SCALE 1 : 50



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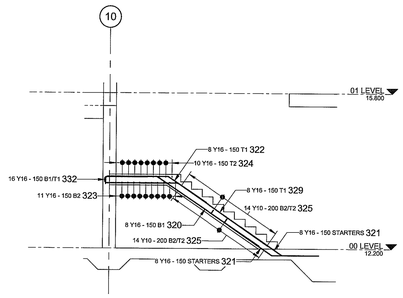

ST2B | STAIR 02 SEC B
SCALE 1 : 50

NOTES:

COVER
TOP - 30
SIDES - 50
BOTTOM - 60

REBAR STAIR SCHEDULE

MEMBER NAME	NUM	MARK	TYPE	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)
STAIRS 01		300	Y16	0	8	4100	45	2850	1120	180	1600	0
STAIRS 01		301	Y16	0	16	2040	62	1200	680	850	0	0
STAIRS 01		302	Y16	0	8	4120	62	2940	1440	1590	0	0
STAIRS 01		303	Y16	0	4	2570	45	1080	1360	180	610	0
STAIRS 01		304	Y10	0	130	1600	74	630	80	0	0	0
STAIRS 01		305	Y16	0	27	3010	55	200	160	2450	160	200
STAIRS 01		306	Y16	0	27	2690	38	160	2450	160	0	0
STAIRS 01		307	Y16	0	8	3310	45	1080	2120	160	610	0
STAIRS 01		308	Y16	0	8	6380	42	1690	2780	1900	1610	0
STAIRS 01		309	Y16	0	8	6270	41	1402	2520	2360	1460	0
STAIRS 01		310	Y16	0	8	6510	42	1710	3550	1140	2030	0
STAIRS 01		311	Y16	0	8	2390	62	1000	580	1400	0	0
STAIRS 01		312	Y16	0	8	2930	62	1002	580	1940	0	0
STAIRS 01		313	Y16	0	8	6500	42	1460	3550	1360	2030	0
STAIRS 01		314	Y16	0	8	6360	42	2440	2740	1070	1570	0
STAIRS 01		315	Y16	0	8	3690	62	1000	580	2700	0	0
STAIRS 01		316	Y16	0	8	6350	42	2202	2740	1302	1570	0
STAIRS 01		317	R10	0	12	660	83	200	60	200	200	0
STAIRS 01		318	Y16	0	16	2430	62	840	480	1600	0	0
STAIRS 01		319	Y16	0	32	2080	38	1000	160	1000	0	0
STAIRS 02		320	Y16	0	8	4190	45	2860	1220	180	1600	0
STAIRS 02		321	Y16	0	16	2040	62	1200	680	850	0	0
STAIRS 02		322	Y16	0	8	2660	45	1070	1460	180	600	0
STAIRS 02		323	Y16	0	11	2690	38	160	2450	160	0	0
STAIRS 02		324	Y16	0	10	3010	55	200	160	2450	160	200
STAIRS 02		325	Y10	0	72	1600	74	630	80	0	0	0
STAIRS 02		326	Y16	0	8	6560	42	1802	3592	1070	2050	0
STAIRS 02		327	Y16	0	8	6560	42	1570	3580	1300	2050	0
STAIRS 02		328	Y16	0	8	2990	62	1000	550	2000	0	0
STAIRS 02		329	Y16	0	8	4210	62	2552	1450	1670	0	0
STAIRS 02		330	R10	0	6	660	83	200	60	200	200	0
STAIRS 02		331	Y16	0	8	2450	62	840	480	1580	0	0
STAIRS 02		332	Y16	0	16	2080	38	1000	160	1000	0	0

REBAR STAIR WEIGHT SUMMARY

MEMBER NAME	TYPE	WEIGHT
	R10	7 kg
	Y10	198 kg
	Y16	1809 kg
TOTAL		2015 kg

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27 JUN 2018
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NOTES

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REFERENCE DRAWINGS

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CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.0	ISSUED FOR CONSTRUCTION	AH	CK	SWM	27-06-18

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TITLE	NAME	SIGN	DATE

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TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	AH		27 06 18
CHECKED	CK		27 06 18
DESIGNED	CK		27 06 18
CHECKED	SWM		27 06 18

PR.ENG./PR.TECH./PR.ARCH		
NAME	SWANEPOEL	DATE
SIGNATURE		27 06 18
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

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8001
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FAX: 086 677 2455

TRANSNET

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
STAIRS REBAR LAYOUT

PROJECT NUMBER						OD	FBS		DIS	TYPE	DRAWING NO				SHEET	REV	ID
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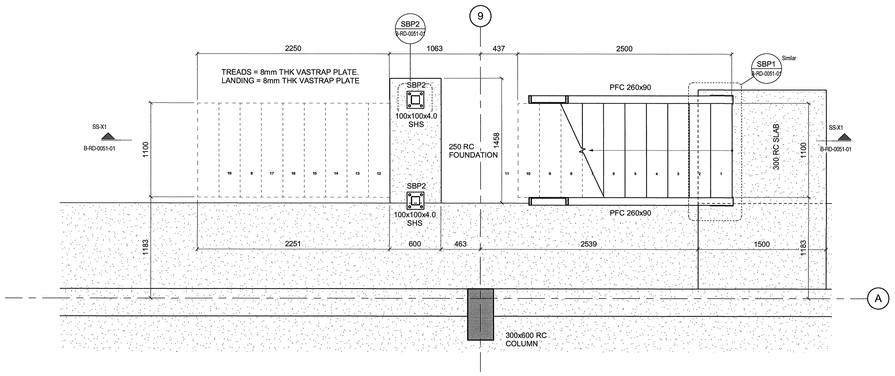
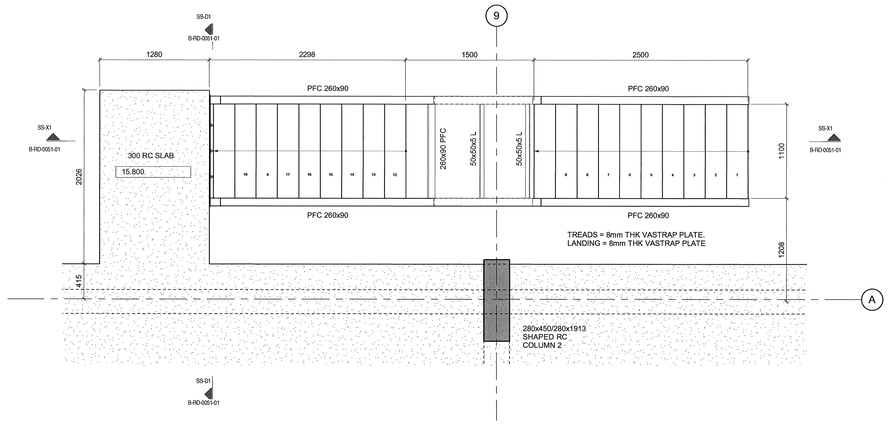


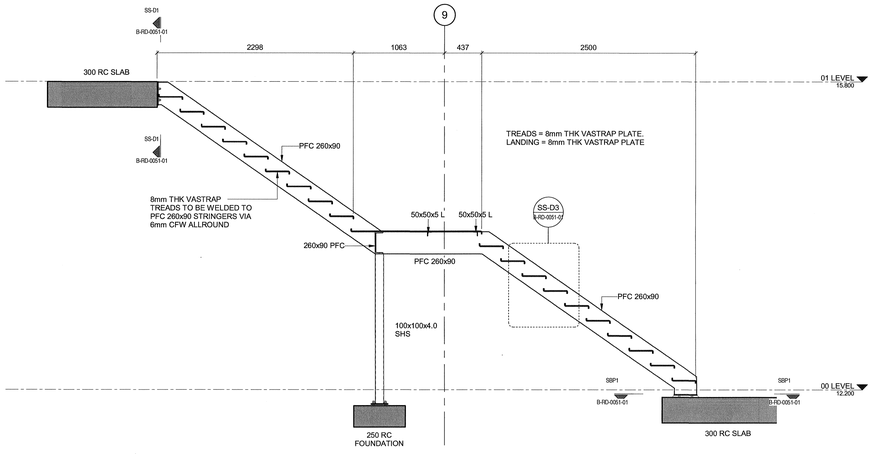
SS1 | STEEL STAIR BASE PLATE LAYOUT

00-1/ B-LA-0046-01 | SCALE 1 : 25



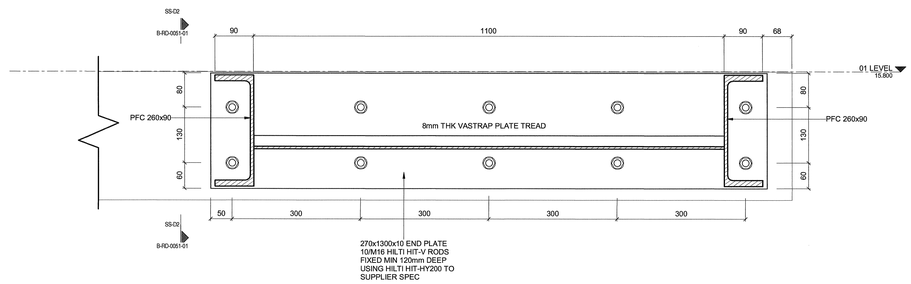
SS2 | STEEL STAIR LAYOUT

01-1/ B-LA-0048-01 | SCALE 1 : 25



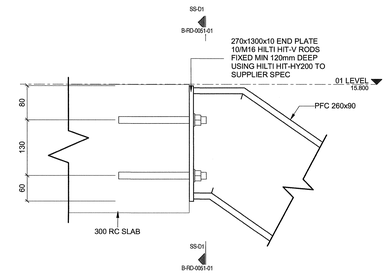
SS-X1 | SECTION SS-X1

SS1/ B-RD-0051-01 | SCALE 1 : 25



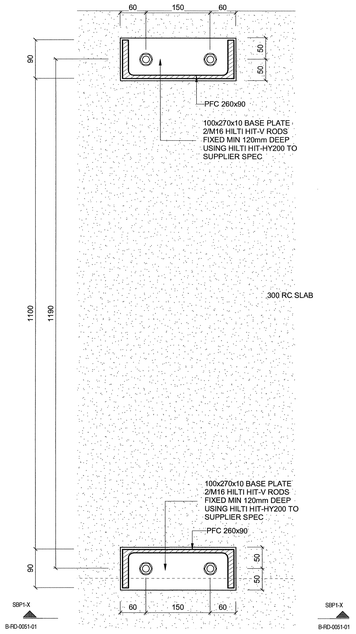
SS-D1 | DETAIL SS-D1

REW1/ B-DE-0030-01 | SCALE 1 : 5



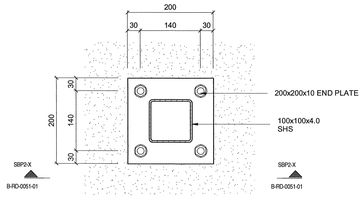
SS-D2 | DETAIL SS-D2

SS-D1/ B-RD-0051-01 | SCALE 1 : 5



SBP1 | BASE PLATE SBP1

REW1/ B-DE-0030-01 | SCALE 1 : 5



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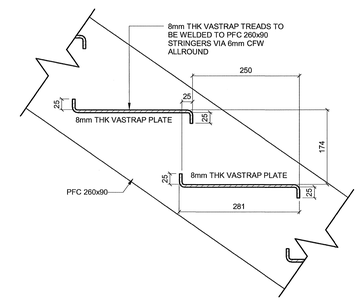
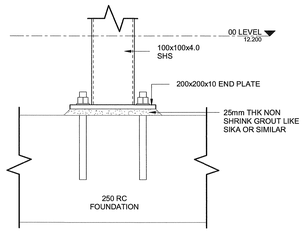
SS1/ B-RD-0051-01 | SCALE 1 : 5



SS-D3 | DETAIL SS-D3

SS-X1/ B-RD-0051-01 | SCALE 1 : 5



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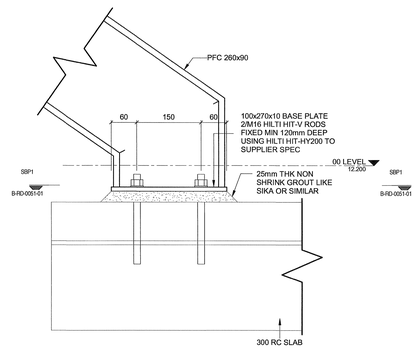
SBP2/ B-RD-0051-01 | SCALE 1 : 5



SBP1-X | DETAIL SBP1-X

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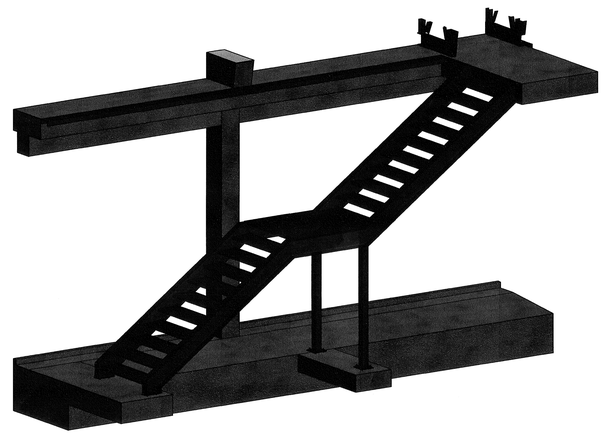

STEEL STAIR - 3D VIEW

MASTER
27 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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NO	DESCRIPTION	BY	CHKD	APPD	DATE
0 0	ISSUED FOR CONSTRUCTION	A H			27-06-18

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TITLE	NAME	SIGN	DATE

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TITLE	NAME	SIGN	DATE
DRAWN	RB		27 06 18
CHECKED	HW		27 06 18
DESIGNED	CK		27 06 18
CHECKED	SMM		27 06 18
PR.ENG./PR.TECH./PR.ARCH			
NAME	DW MARAIS		DATE
SIGNATURE			XX XX 18
REG. NUMBER	20090106		
SCALE:	AS SHOWN		A

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8001
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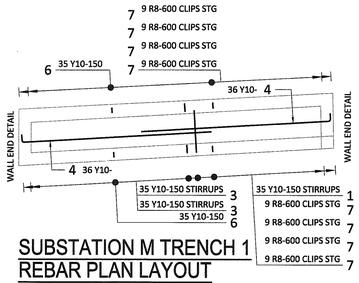
FAX: 086 677 2455

PORT OF SALDANHA

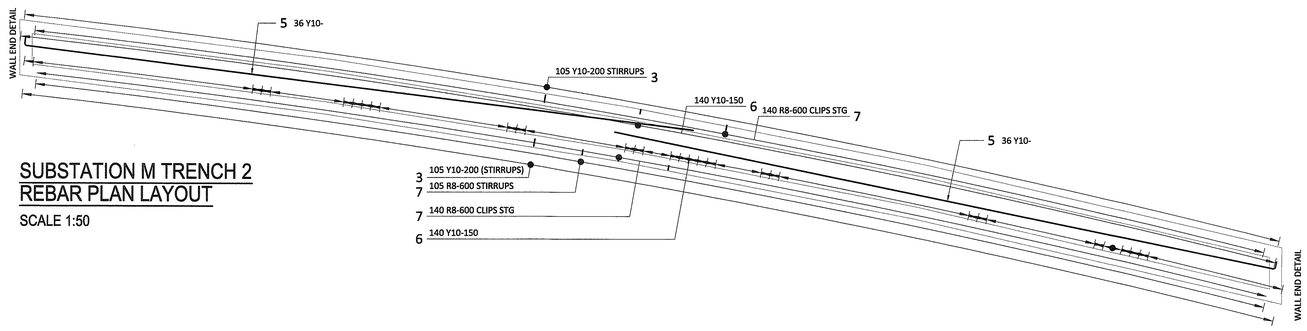
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
STEEL STAIR DETAILS

PROJECT NUMBER		OO	FBS		DIS	TYPE	DRAWING NO.				SHEET	REV	ID
1 9 2 4 7 0 1		2	5 1 0		B	R D	0 0 5 1				0 1	0 0	AE



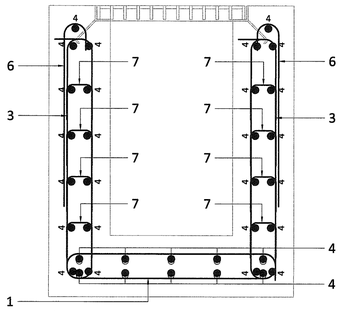
SUBSTATION M TRENCH 1 REBAR PLAN LAYOUT

SCALE 1:50



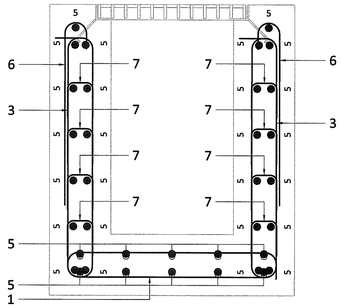
SUBSTATION M TRENCH 2 REBAR PLAN LAYOUT

SCALE 1:50



SUBSTATION M TRENCH 1 TYPICAL SECTION

SCALE 1:10



SUBSTATION M TRENCH 2 TYPICAL SECTION

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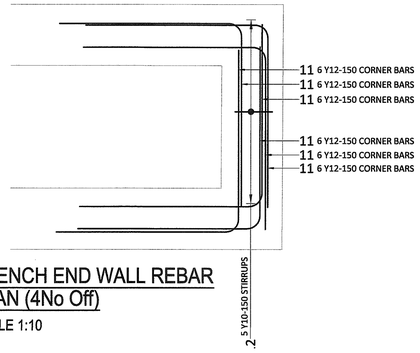

TRENCH END WALL REBAR PLAN (4No Off)

SCALE 1:10

MEMBER		MARK	TYPE		NUMBER		LENGTH	SHAPE CODE	A (mm)	B (mm)	REV
NAME	NUM		R Grade250	Y Grade450	ELEMENT	TOTAL					
TRENCH 1	1	1		10	35	35	1650	60	90	690	
		3		10	70	70	1890	60	790	90	
		4		10	72	72	3190	34	3090		
		6		10	70	70	720	32	600		
		7	8		72	72	290	35	90		
TRENCH 2	1	1		10	1	1	1650	60	90	690	
		3		10	210	210	1890	60	790	90	
		5		10	72	72	11110	34	11010		
		6		10	280	280	720	32	600		
		7	8		385	385	290	35	90		
TRENCH END	4	11		12	36	144	1170	37	600	600	
		12		10	5	20	1990	60	840	90	

BAR WEIGHT SUMMARY			
Grade250	R 8	R 10	R 12
TOTAL LENGTH (m)	132.53		
TOTAL WEIGHT (kg)	52.35		
Grade450	Y 8	Y 10	Y 12
TOTAL LENGTH (m)		1910.00	168.48
TOTAL WEIGHT (kg)		1178.47	149.61

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27 JUN 2018
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REFERENCE DRAWINGS

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CARL CRONJÉ DRIVE
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FAX: +27 (0)21 950 7502
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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	CVH	CK	SWM	18-06-27

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TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	CVH		18 06 27
CHECKED	CK		18 06 27
DESIGNED	CK		18 06 27
CHECKED	SWM		18 06 27

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		18 06 27
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A1

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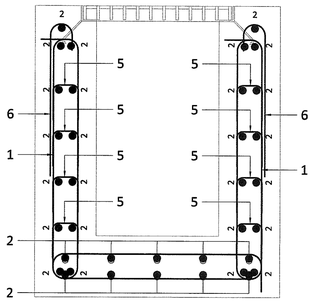
TEL: 021 940 1999
FAX: 086 677 2455

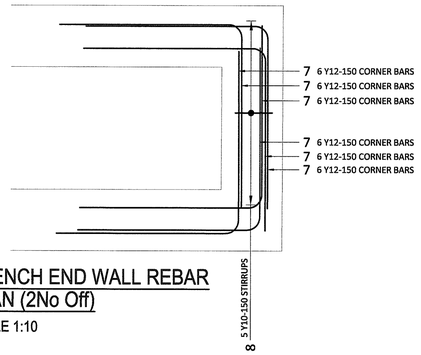
PORT OF SALDANHA

IRON ORE TIPPLER 3
SUBSTATION M
STORMWATER CHANNELS REINFORCING

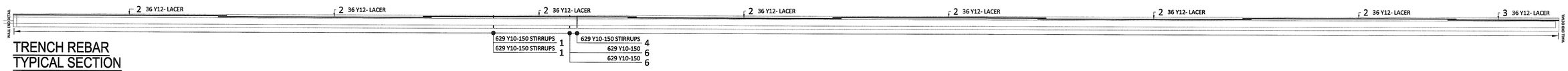
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701-2-510-B-RD-0052-01-00								AE



TRENCH REBAR
TYPICAL SECTION
SCALE 1:10



TRENCH END WALL REBAR
PLAN (2No Off)
SCALE 1:10



TRENCH REBAR
TYPICAL SECTION
SCALE :NTS

MEMBER NAME	MEMBER NUM	MARK	TYPE R Grade250	TYPE Y Grade450	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	REV
TRECH	1	1		10	1258	1258	1890	60	790	90	
		2		12	252	252	13000	20	13000		
		3		12	36	36	6780	20	6780		
		4		10	629	629	1690	60	90	690	
		5	8		8	8	290	35	90		
		6		10	1258	1258	620	32	500		
TRENCH END	2	7		12	36	72	1170	37	600	600	
		8		10	5	10	1590	60	840	90	

BAR WEIGHT SUMMARY			
Grade250	R 8	R 10	R 12
TOTAL LENGTH (m)	2.32		
TOTAL WEIGHT (kg)	0.92		
Grade450	Y 8	Y 10	Y 12
TOTAL LENGTH (m)		4240.49	3604.32
TOTAL WEIGHT (kg)		2616.38	3200.64

MASTER
27 JUN 2018
AECOM TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	CVH	CK	SWM	18-06-27

REVISIONS

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CONTRACTOR / CONSULTANT TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS TITLE	NAME	SIGN	DATE
DRAWN	CVH		18 06 27
CHECKED	CK		18 06 27
DESIGNED	CK		18 06 27
CHECKED	SWM		18 06 27

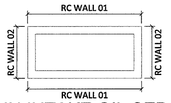
PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		18 06 27
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A1

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS): REG. NO. 1990/000900/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 UYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

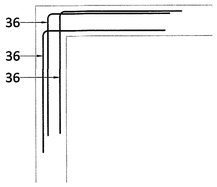
IRON ORE TIPPLER 3
SUBSTATION N
STORMWATER CHANNEL REINFORCEMENT

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701-2510	B	R	D	0053	0100			AE



MAIN INTAKE OIL SEPARATOR RC WALLS KEYPLAN

SCALE 1:100



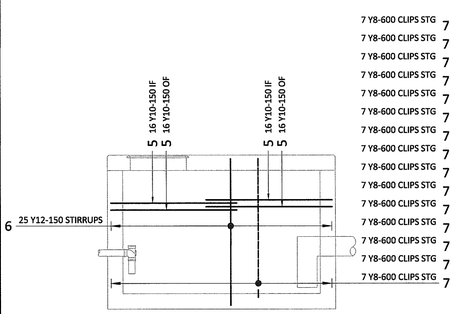
MAIN INTAKE OIL SEPARATOR RC WALL CORNER BARS (4No Off)

SCALE 1:25

MEMBER NAME	NUM	MARK	TYPE R Grade250	TYPE Y Grade450	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	REV
OIL SEPARATOR CORNER BARS	4	36		12	48	192	1970	37	1000	1000				
OIL SEPARATOR CRACK BARS	3	23		12	8	24	2000	20	2000					
OIL SEPARATOR FOUNDATION REBAR	1	4		10	20	20	1070	99	300	300	110			
		8		12	25	25	2310	55	300	140	1550	140	300	
		9		12	12	12	4270	55	300	110	3570	110	300	
		10		12	12	12	3770	35	3570					
		11		12	25	25	1750	35	1550					
OIL SEPARATOR MANHOLE	1	37		12	8	8	600	20	600					
		38		12	4	4	1320	20	1320					
		39		12	4	4	1010	20	1010					
OIL SEPARATOR SLAB REBAR	1	4		10	20	20	1070	99	300	300	110			
		13		12	20	20	2300	55	300	110	1590	110	300	
		14		12	20	20	1780	35	1590					
		15		12	4	4	2990	55	300	110	2280	110	300	
		16		12	5	5	2470	35	2280					
		17		12	8	8	4280	55	300	110	3570	110	300	
		18		12	8	8	3760	35	3570					
		19		12	14	14	850	55	150	110	440	110	150	
		20		12	14	14	630	35	440					
		21		8	5	5	1070	75	230	100	270	140	210	
		22		12	3	3	1500	20	1500					
OIL SEPARATOR WALL 01	2	5		10	64	128	2060	20	2060					
		6		12	25	50	5200	72	2400	140				
		7		8	105	210	350	35	140					
OIL SEPARATOR WALL 02	2	6		12	12	24	5200	72	2400	140				
		7		8	45	90	350	35	140					
		12		10	32	64	1550	20	1550					

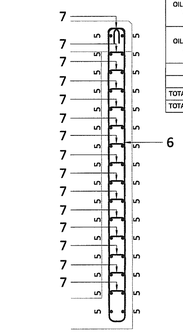
BAR WEIGHT SUMMARY			
Grade450	Y 8	Y 10	Y 12
TOTAL LENGTH (m)	110.35	405.68	1218.59
TOTAL WEIGHT (kg)	43.59	250.30	1082.11

POSITION	LENGTH	A (mm)	B (mm)	C (mm)	Symbol (mm)
4	1070	300	300	110	



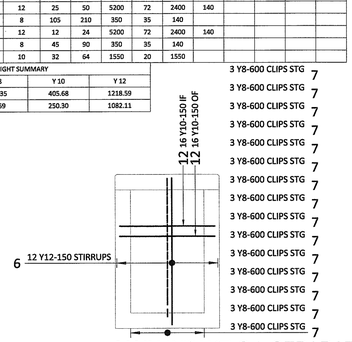
MAIN INTAKE OIL SEPARATOR RC WALL 01 ELEVATION (2No Off)

SCALE 1:50



MAIN INTAKE OIL SEPARATOR RC WALL 01 SECTION

SCALE 1:25



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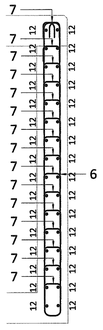
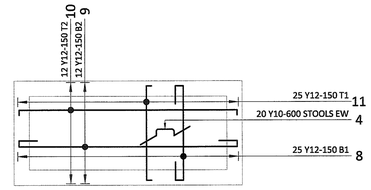


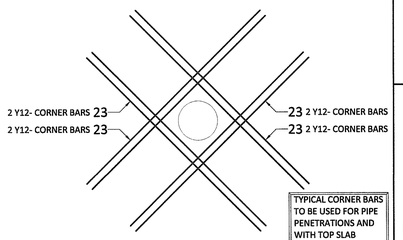
MAIN INTAKE OIL SEPARATOR RC WALL 02 SECTION

SCALE 1:25



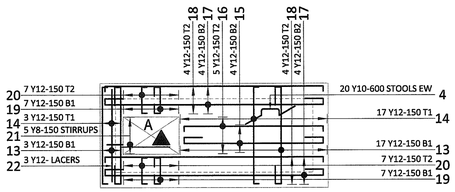
MAIN INTAKE OIL SEPARATOR RC FOUNDATION REBAR LAYOUT

SCALE 1:50



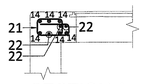
MAIN INTAKE OIL SEPARATOR ANTI-CRACK BARS (3No Off)

SCALE 1:25



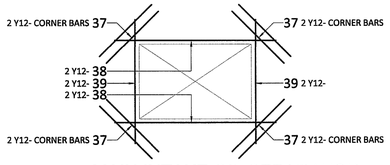
MAIN INTAKE OIL SEPARATOR RC FOUNDATION REBAR LAYOUT

SCALE 1:50



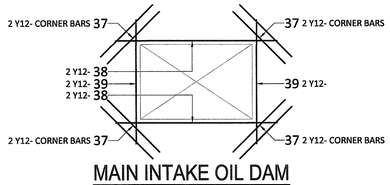
SECTION A

SCALE 1:25



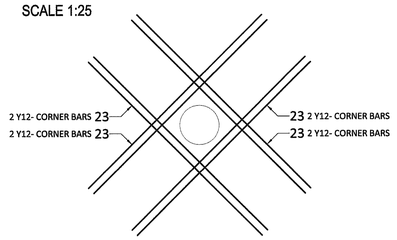
MAIN INTAKE OIL SEPARATOR MANHOLE CORNER DETAIL

SCALE 1:25



MAIN INTAKE OIL DAM MANHOLE CORNER DETAIL

SCALE 1:25



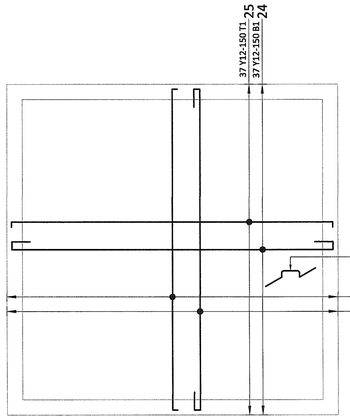
MAIN INTAKE OIL DAM ANTI-CRACK BARS

SCALE 1:25

MEMBER NAME	NUM	MARK	TYPE R Grade250	TYPE Y Grade450	NUMBER ELEMENT	NUMBER TOTAL	LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	REV
OIL DAM CORNER BARS	4	36		12	66	264	1970	37	1000	1000				
OIL DAM CRACK BARS	1	23		12	8	8	2000	20	2000					
OIL DAM FOUNDATION	1	4		10	25	25	1070	99	300	300	110			
		24		12	37	37	6010	55	300	140	5250	140	300	
		25		12	74	74	5400	35	5250					
		26		12	37	37	5950	55	300	110	5250	110	300	
OIL DAM MANHOLE	1	37		12	8	8	600	20	600					
		38		12	4	4	1320	20	1320					
		39		12	4	4	1010	20	1010					
OIL DAM SLAB	1	4		10	25	25	1070	99	300	300	110			
		22		12	7	7	1500	20	1500					
		24		12	32	32	6010	55	300	140	5250	140	300	
		25		12	60	60	5450	35	5250					
		26		12	28	28	5950	55	300	110	5250	110	300	
		31		12	5	5	4740	55	300	140	3980	140	300	
		32		12	5	5	4180	35	3980	130				
		33		12	18	18	2940	55	300	110	2250	110	300	
		34		12	18	18	2450	35	2250	130				
		35		8	5	5	1070	75	230	100	270	140	210	
OIL DAM WALLS	4	27		12	74	296	1490	37	610	910				
		28		12	74	296	3450	34	3350					
		29		10	44	176	5250	20	5250					
		30	8		220	880	340	35	140					

BAR WEIGHT SUMMARY			
Grade250	R 8	R 10	R 12
TOTAL LENGTH (m)	299.20		
TOTAL WEIGHT (kg)	118.18		
Grade450	Y 8	Y 10	Y 12
TOTAL LENGTH (m)	5.35	977.50	3696.30
TOTAL WEIGHT (kg)	2.11	603.12	3282.31

POSITION	LENGTH	A (mm)	B (mm)	C (mm)	Symbol (mm)
4	1070	300	300	110	

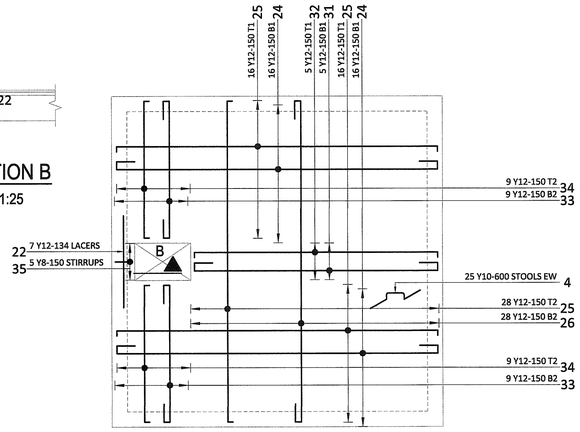


MAIN INTAKE OIL DAM RC FOUNDATION REBAR LAYOUT

SCALE 1:50

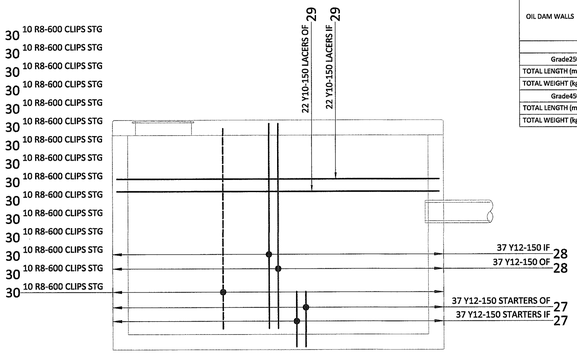
SECTION B

SCALE 1:25



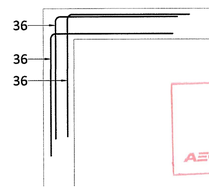
MAIN INTAKE OIL DAM RC SLAB REBAR LAYOUT

SCALE 1:50



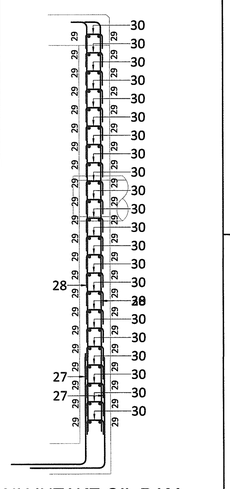
MAIN INTAKE OIL DAM RC WALL ELEVATION (4No Off)

SCALE 1:50



MAIN INTAKE OIL DAM RC WALL CORNER BARS (4No Off)

SCALE 1:25



MAIN INTAKE OIL DAM RC WALL SECTION

SCALE 1:25

MASTER
27 JUN 2018
AECOM
TRANSNET

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DRAWING NO. | REFERENCE

REFERENCE DRAWINGS

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	CVH	CK	SWM	18-06-27

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TITLE	NAME	SIGN	DATE
DRAWN	CVH		18 06 27
CHECKED	CK		18 06 27
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NAME	SW MARAIS	DATE
SIGNATURE		18 06 27
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A1

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PORT OF SALDANHA

IRON ORE TIPPLER 3
MAIN INTAKE SUBSTATION
OIL DAM AND OIL SEPARATOR REINFORCING

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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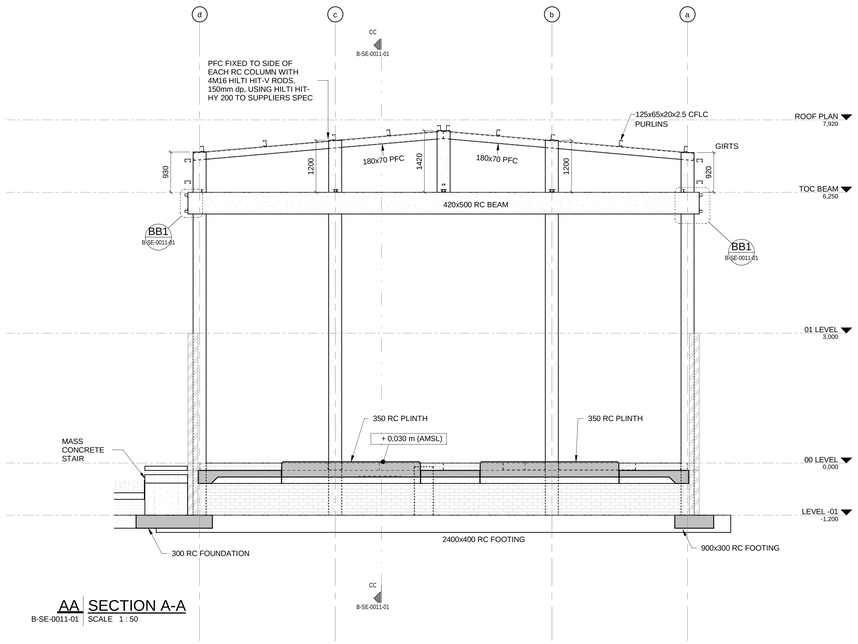
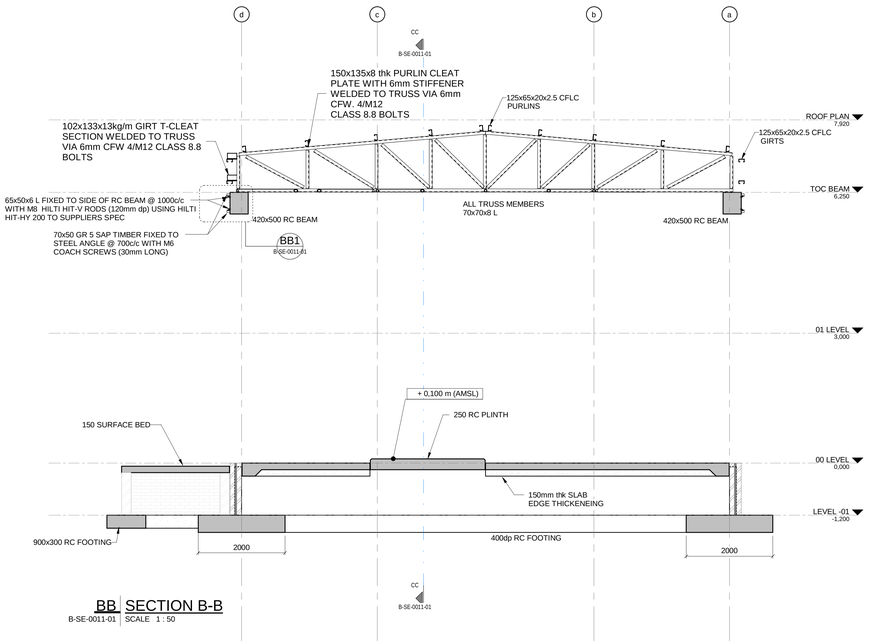
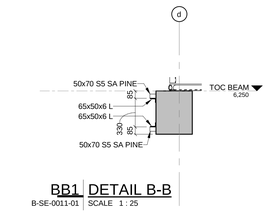


AA | SECTION A-A
B-SE-0011-01 | SCALE 1 : 50



BB | SECTION B-B
B-SE-0011-01 | SCALE 1 : 50



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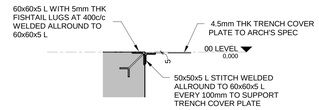
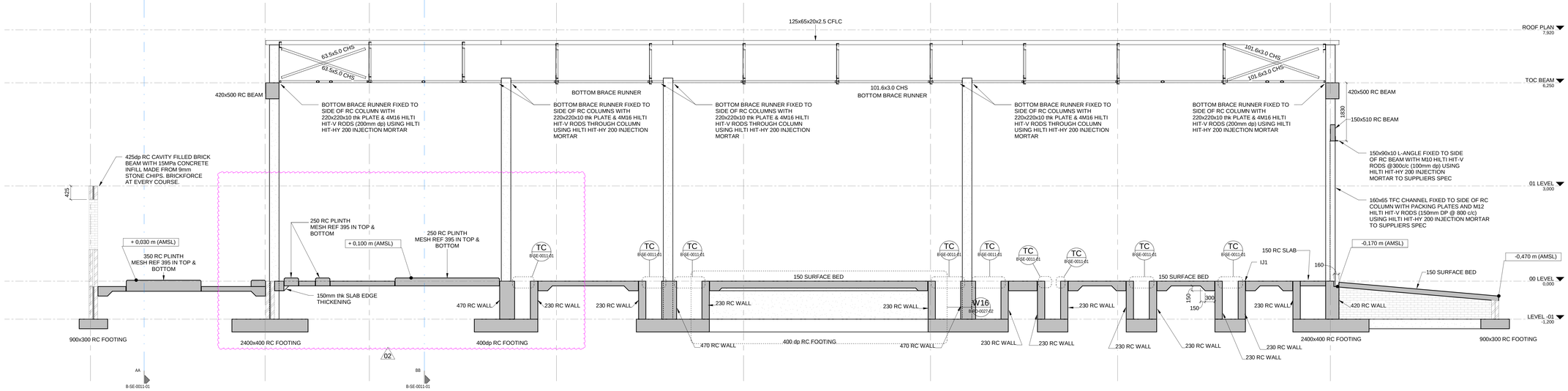
B-SE-0011-01 | SCALE 1 : 25



TC | TRENCH CONNECTION DETAIL
B-SE-0011-01 | SCALE 1 : 10



CC | SECTION C-C
B-SE-0011-01 | SCALE 1 : 50

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION AND DRAWINGS. CONSTRUCTION OF THE ACTUAL BUILDING MAY NOT COMMENCE UNTIL SUCH TIME THAT FINAL EARTH GRID (AND ASSOCIATED EQUIPMENT), HAS BEEN INSTALLED, TESTED AND ACCEPTED.

MASTER
23-11-2021
AECOM
TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHK	APPD	DATE
02	PLINTHS ADDED - DIMS ADDED/AMENDED	A H	C K	SWM	17-11-21
01	HOLD POINT ADDED & DETAILS ADDED	C.H	C K	SWM	21-06-18
00	ISSUED FOR CONSTRUCTION	O A	C K	SWM	14-06-18

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CONTRACTOR/CONSULTANT	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	IG		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
DATE	
SIGNATURE	17 11 21
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
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TABLE BAY BUILDING, TYGERBERG PARK,
163 LYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
SUBSTATION M
BUILDING SECTIONS - SHEET 1

PROJECT NUMBER								OD	FBS			DIS	TYPE	DRAWING NO.			SHEET		REV	ID
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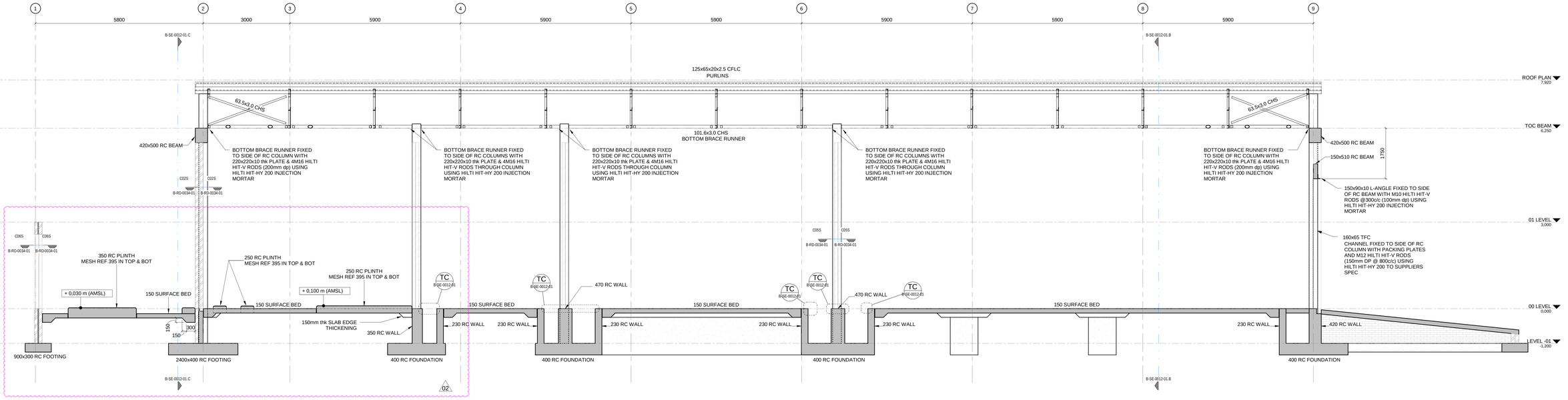
A



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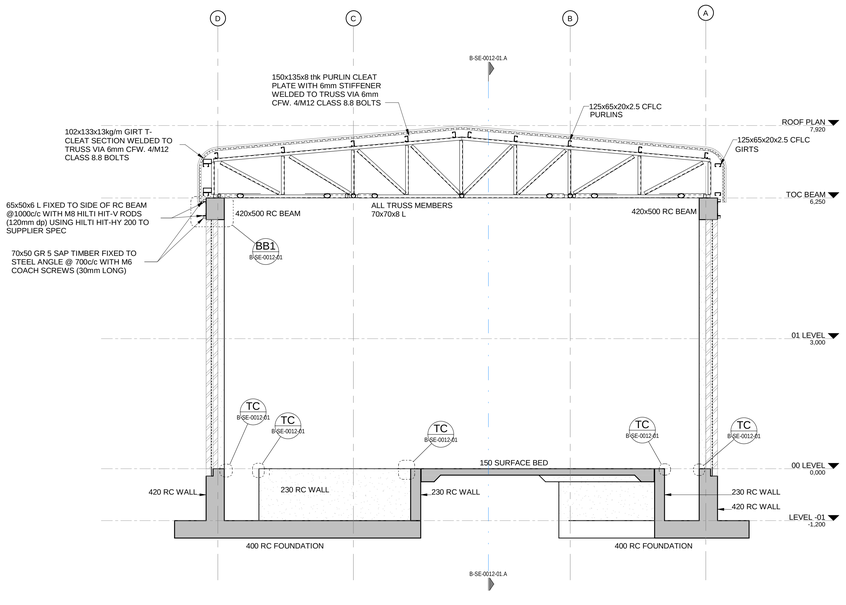

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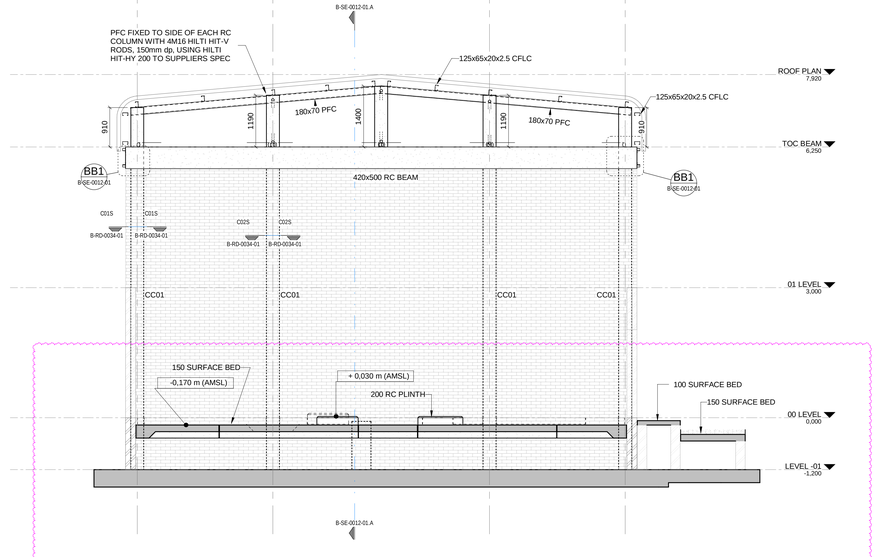

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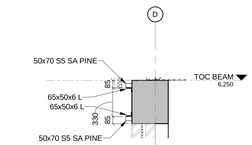
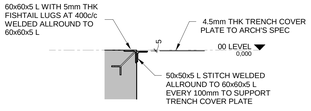
B-SE-0012-01 | SCALE 1 : 50

02



BB1 DETAIL B-B
B-SE-0012-01 | SCALE 1 : 25



TC TRENCH CONNECTION DETAIL
B-SE-0012-01 | SCALE 1 : 10

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION AND DRAWINGS. AWAITING DETAILS ON FINAL OFFERED MV AND LV ELECTRICAL EQUIPMENT DIMENSIONS AND WEIGHTS.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
2. **THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.**

MASTER
23-11-2021

AECOM
CAPE TOWN OFFICE
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TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
02	PLINTHS ADDED - DIMS ADDED/AMENDED	A H	C K	SWM	17-11-21
01	HOLD POINT ADDED & DETAILS ADDED	C H	C K	SWM	21-06-05
00	ISSUED FOR CONSTRUCTION	A H	C K	SWM	14-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		17 11 21
CHECKED	C K		17 11 21
DESIGNED	I G		17 11 21
CHECKED	SW M		17 11 21

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

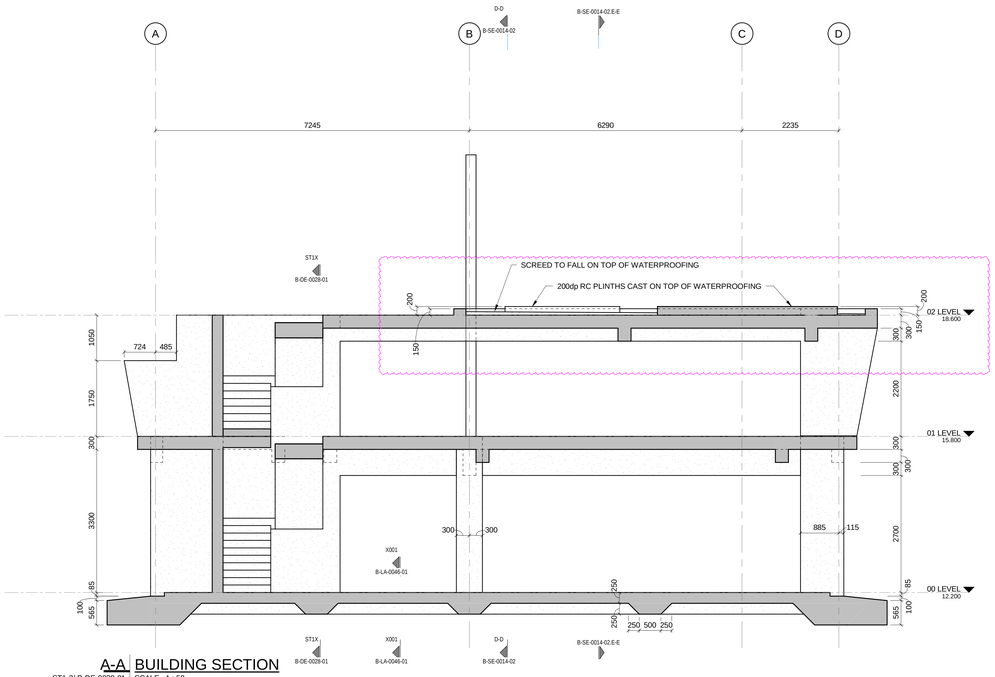
NAME	SW MARAIS	DATE
SIGNATURE		17 11 21
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET SOC LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK, 163 UYS KRIGE DRIVE, PLATTEKLOOF, 8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

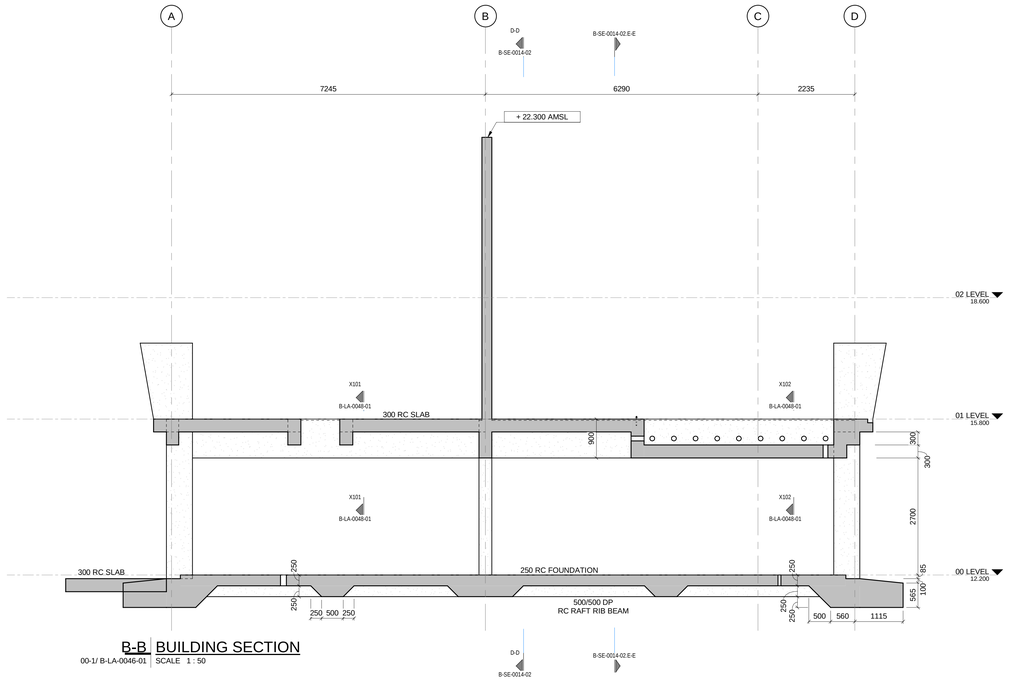
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
SUBSTATION N
BUILDING SECTIONS - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1 2	5 1 0	B	S E	0 0 1 2	0 1	02	AE



A-A | BUILDING SECTION

ST1-2/ B-DE-0028-01 | SCALE 1 : 50



B-B | BUILDING SECTION

00-1/ B-LA-0046-01 | SCALE 1 : 50

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION & DRAWINGS. CONSTRUCTION OF THE ACTUAL BUILDING MAY NOT COMMENCE UNTIL SUCH TIME THAT THE FINAL EARTH GRID (& ASSOCIATED EQUIPMENT), HAS BEEN INSTALLED, TESTED & ACCEPTED

MASTER

27-07-2023

AECOM

TRANSNET

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. **DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED**
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TYGER WATERFRONT
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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	PLINTH DETAILS AND UPSTANDS UPDATED, FIRE SPECIFICATIONS ADDED	A H	JDW	SW M	24-07-23
0.2	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
0.1	BEAMS & OPENINGS MOVED - NOTES ADDED	A H	C K	SW M	27-06-18
0.0	ISSUED FOR CONSTRUCTION	O A	H-W	SW M	14-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		24 07 23
CHECKED	H vW		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS		DATE
SIGNATURE			24 07 23
REG. NUMBER	20090106		
SCALE:	AS SHOWN		A

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000906/06
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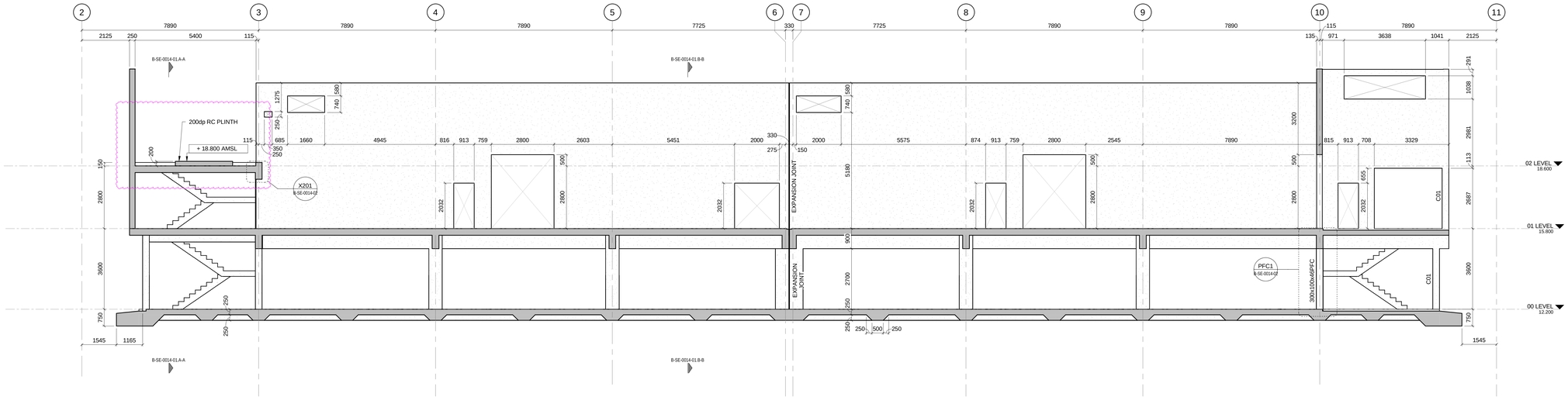
163 LIVS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

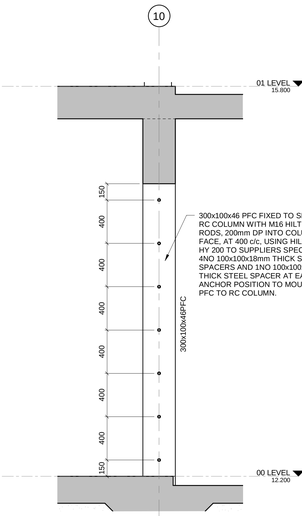
IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
BUILDING SECTIONS - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	S E	0 0 1 4	0 1	0 3	AE



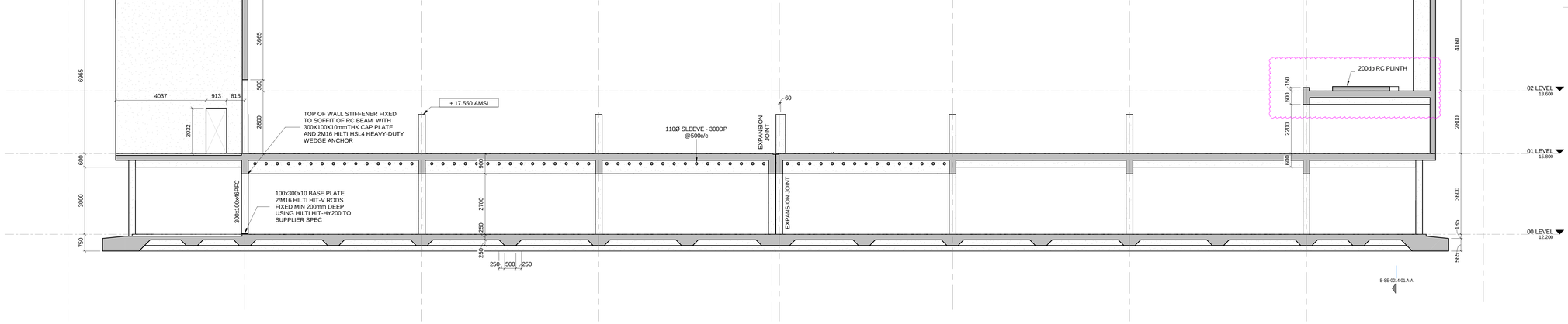
D-D | BUILDING SECTION

00-1/ B-LA-0046-01 | SCALE 1 : 75



PFC1 | PFC TO RC COLUMN

D-D/ B-SE-0014-02 | SCALE 1 : 20



E-E | BUILDING SECTION

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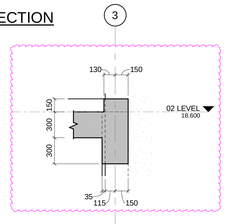

X201 | DETAIL CALLOUT

D-D/ B-SE-0014-02 | SCALE 1 : 25

REFER TO RESPECTIVE ELECTRICAL DOCUMENTATION & DRAWINGS. CONSTRUCTION OF THE ACTUAL BUILDING MAY NOT COMMENCE UNTIL SUCH TIME THAT THE FINAL EARTH GRID (& ASSOCIATED EQUIPMENT), HAS BEEN INSTALLED, TESTED & ACCEPTED

MASTER

27-07-2023

AECOM

TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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AECOM

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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.6	PLINTH DETAILS AND UPSTANDS UPDATED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.5	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	J DW	SW M	07-06-23
0.4	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.3	OPENINGS FOR SERVICES ADDED/AMENDED	A H	C K	SW M	09-09-21
0.2	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	C K	SW M	01-07-20
0.1	STEEL COLUMNS CHANGED TO RC COLUMNS - NOTES ADDED	A H	C K	SW M	27-06-18
0.0	ISSUED FOR CONSTRUCTION	O A	H.vW	SW M	14-06-18

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CONTRACTOR/CONSULTANT			
TITLE	NAME	SIGN	DATE
DRAWN	A H		24 07 23
CHECKED	C K		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	
DATE	24 07 23

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LUYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
BUILDING SECTIONS - SHEET 2

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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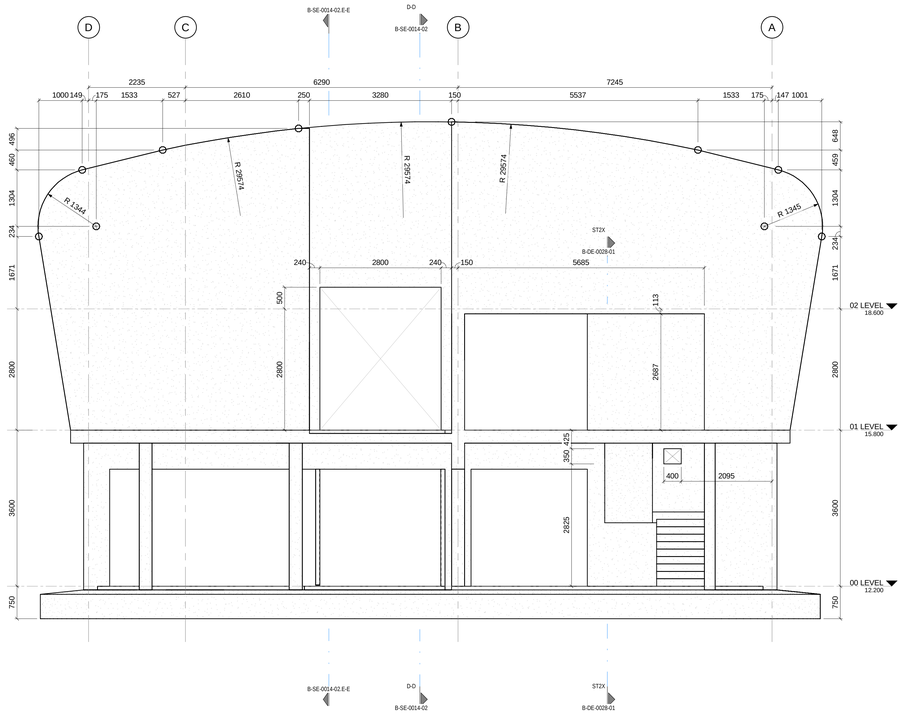
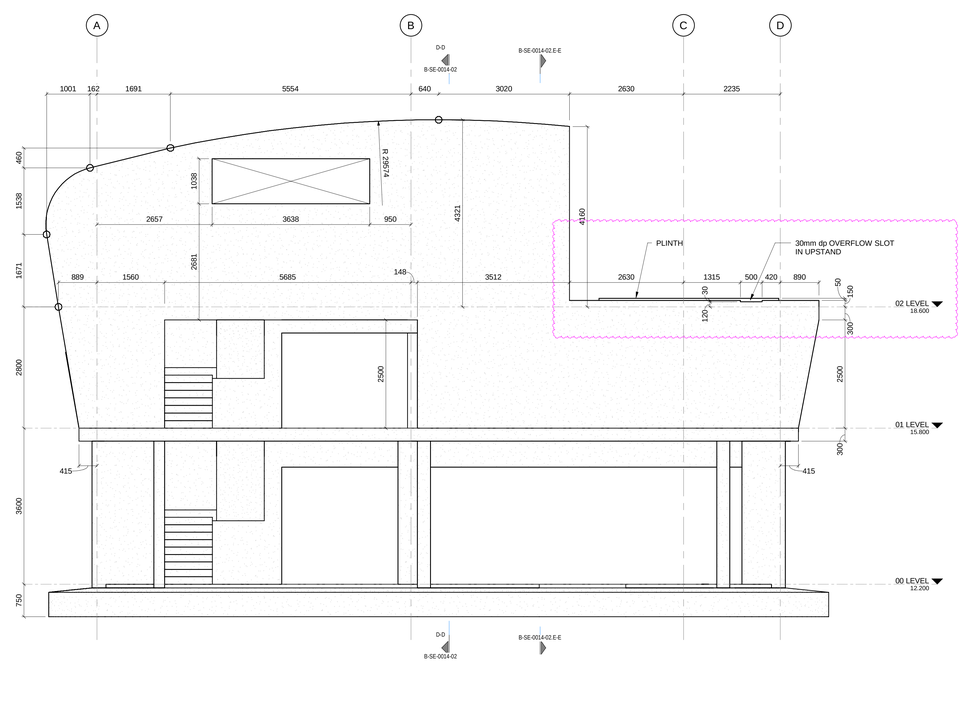
SCALE: AS SHOWN **A**



S SOUTH ELEVATION
SCALE 1 : 50



N NORTH ELEVATION
SCALE 1 : 50

MASTER
27-07-2023

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

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REG. No. 1966/006628/07

REVISIONS

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	PLINTH DETAILS AND UPSTANDS UPDATED, FIRE SPECIFICATIONS ADDED	A H	JDW	SW M	24-07-23
0.2	OPENINGS FOR SERVICES ADDED/AMENDED	A H	C K	SW M	09-09-21
0.1	FLOOR SLOT POSITION AMENDED - WALLS EXTENDED - DOOR SIZE AMENDED	A H	H vW	SW M	01-07-21
0.0	ISSUED FOR CONSTRUCTION	O A	H vW	SW M	14-06-18

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CONTRACTOR/CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	A H		24 07 23
CHECKED	C K		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH

NAME	SW MARAIS	DATE
SIGNATURE		24 07 23
REG. NUMBER	20090106	
SCALE:	AS SHOWN	A

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990/000905/06
TABLE BAY BUILDING, TYGERBERG PARK,
163 LVS KRIGE DRIVE, PLATTEKLOOF, 8001
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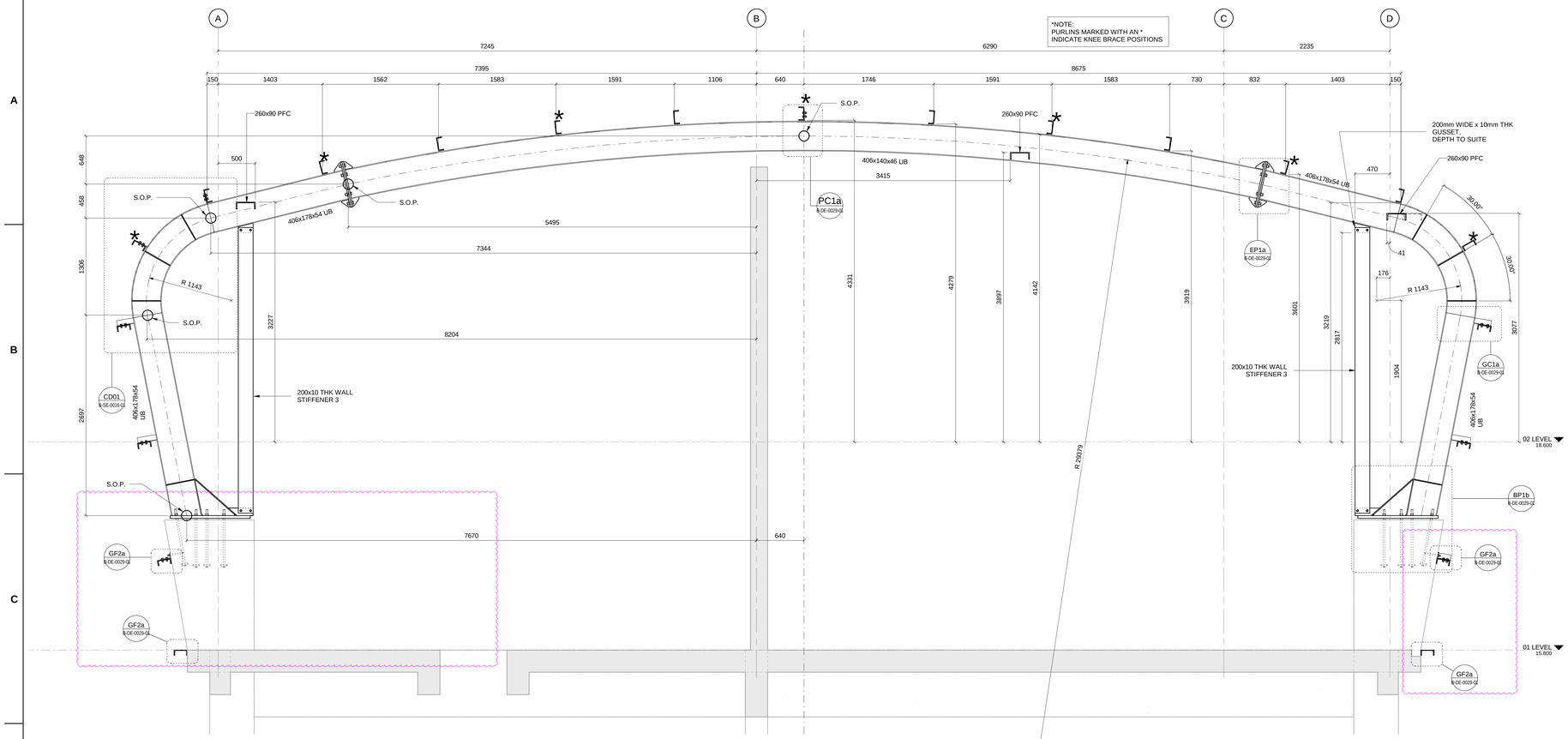
FAX: 086 677 2455

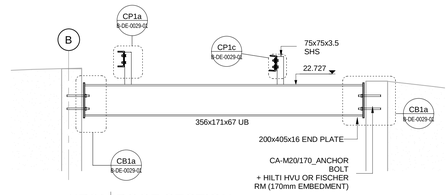
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
BUILDING ELEVATIONS - SHEET 1

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	B	S E	0 0 1 5	0 1	0 3	AE



H-H ROOF SECTION
SCALE 1 : 25



XR01 ROOF SECTION
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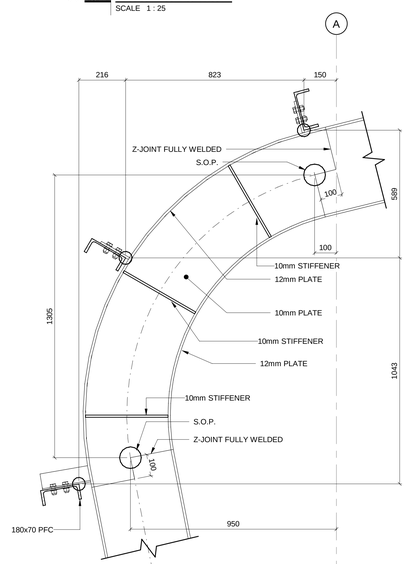
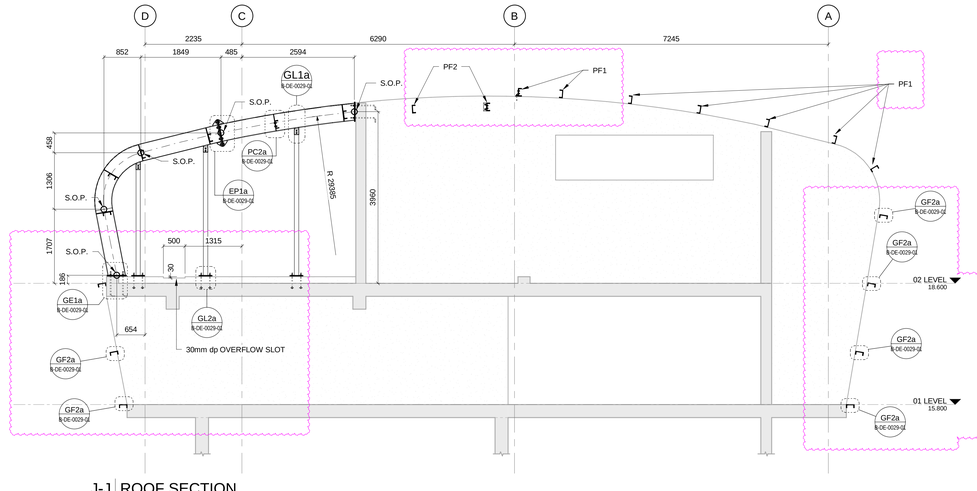
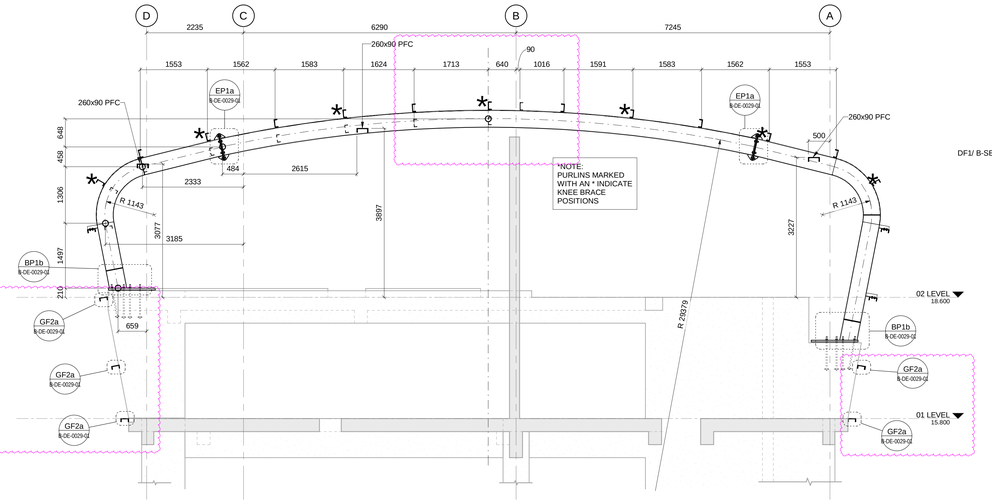


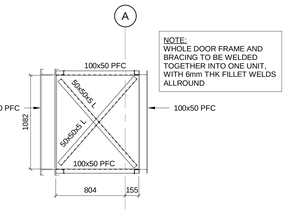
CD01 COLUMN BEND DETAIL
H-H/ B-SE-0016-01 | SCALE 1 : 10



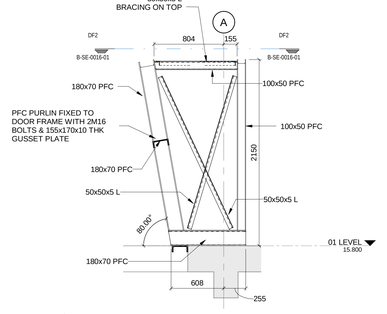
J-J ROOF SECTION
SCALE 1 : 50



I-I ROOF SECTION
SCALE 1 : 50



DF2 EXTERNAL STAIR DOOR FRAME - PLAN LAYOUT
DF1/ B-SE-0016-01 | SCALE 1 : 25



DF1 EXTERNAL STAIR DOOR FRAME - SECTION
REW1/ B-DE-0030-01 | SCALE 1 : 25

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED
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TYGER WATERFRONT
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO	DESCRIPTION	BY	CHKD	APPD	DATE
0.3	ROOF LAYOUT UPDATED TO SUITE NEW PLANTROOM REQUIREMENTS, CONNECTION DETAILS ADDED, FIRE SPECIFICATIONS ADDED	A H	J DW	SW M	24-07-23
0.2	UPDATE IS BASED ON SITE/AS-BUILT CONDITIONS	A H	J DW	SW M	07-06-23
0.1	WALL STIFFENERS ADDED/AMENDED	A H	J DW	SW M	29-03-23
0.0	ISSUED FOR CONSTRUCTION	O A	H VR	SW M	14-09-22

REVISIONS

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TITLE	NAME	SIGN	DATE
DRAWN	A H		24 07 23
CHECKED	H VW		24 07 23
DESIGNED	I G		24 07 23
CHECKED	SW M		24 07 23

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE

PR.ENG./PR.TECH./PR.ARCH	
NAME	SW MARAIS
SIGNATURE	24 07 23
REG. NUMBER	20090106
SCALE:	AS SHOWN

Transnet Capital Projects
TRANSNET LTD. (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000906/06
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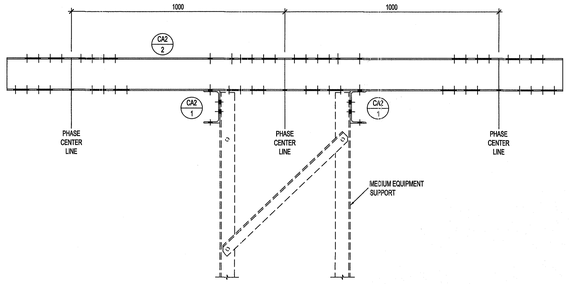
163 LYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

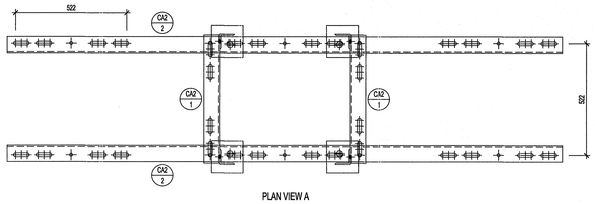
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
MAIN INTAKE SUBSTATION
ROOF SECTIONS

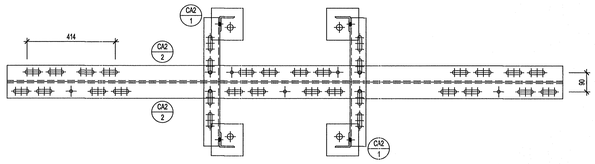
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A 1 9 2 4 7 0 1 2	5 1 0	B	S E	0 0 1 6	0 1	0 3	AE



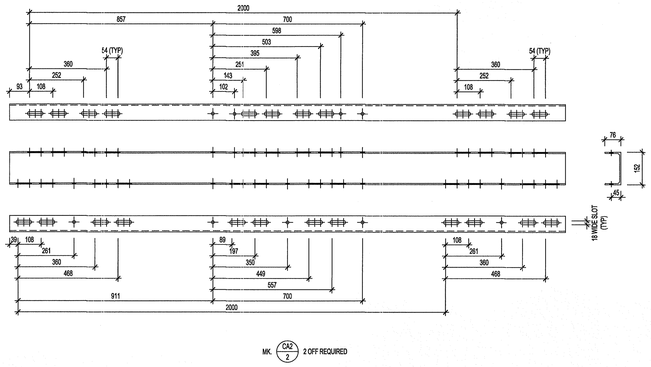
FRONT ELEVATION



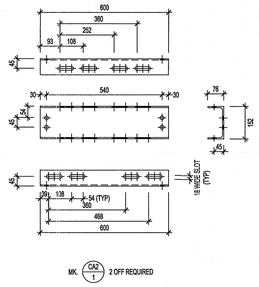
PLAN VIEW A



PLAN VIEW B



MK. CA2 2 OFF REQUIRED



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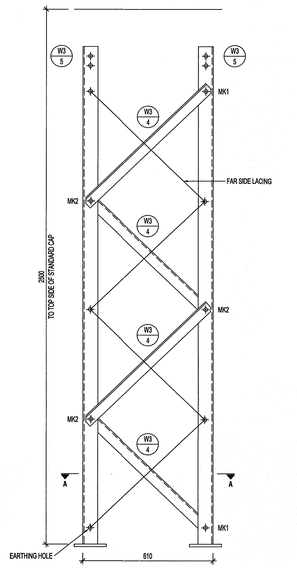
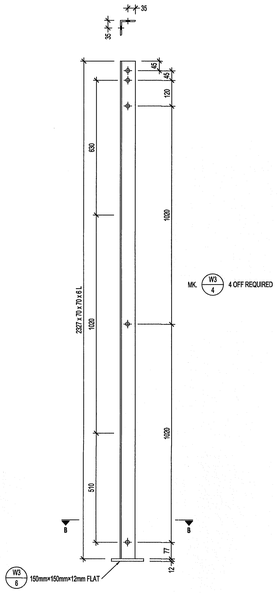
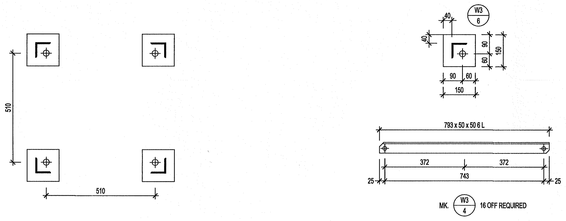
MEDIUM EQUIPMENT - M2 CAP

SCALE 1:10





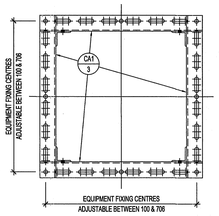
MK. W3 4 4 OFF REQUIRED

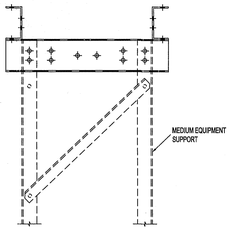


MK. W3 4 16 OFF REQUIRED

2,5m LATTICE STEEL MEDIUM EQUIPMENT SUPPORT

SCALE 1:10

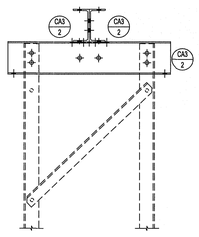




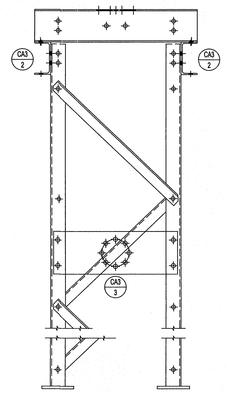
CA1 3 ALL PARTS MAY BE USED EITHER AS SHOWN OR UPSIDE DOWN, AS REQUIRED, TO GIVE THE DESIRED FIXING CENTRES. THIS TO BE DETERMINED AT SITE DURING ERECTION.

MEDIUM EQUIPMENT - M1 CAP

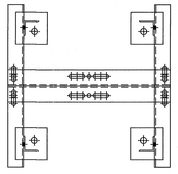
SCALE 1:10



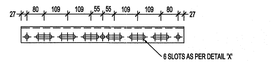
SIDE ELEVATION

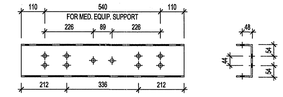


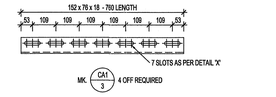
FRONT ELEVATION



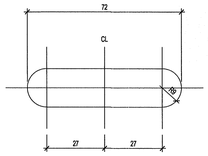
PLAN VIEW



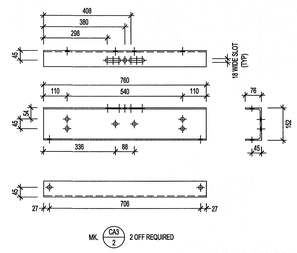




MK. CA1 3 4 OFF REQUIRED



DETAIL 'X'



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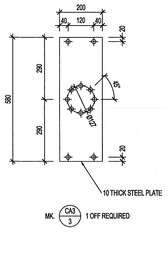

MK. CA3 1 1 OFF REQUIRED

MEDIUM EQUIPMENT - M3 CAP

SCALE 1:10

NOTES :

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162.
3. ALL STEEL TO BE GRADE S355JR/350WA (EXCEPT ANGLES ≤ 45mm TO BE MILD STEEL).
4. ALL WELDS TO BE SEAL WELDED.
5. ALL STEELWORK TO BE HOT DIPPED GALVANIZED TO SANS 121.
6. STEELWORK TO BE CHECKED AND STRAIGHTENED AFTER GALVANIZING.
7. BOLTS, NUTS AND WASHERS TO BE IN ACCORDANCE WITH SANS 1700.
8. ALL MARKINGS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK.
10. NO SECTIONS TO BE BUTT WELDED.
11. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLERANCE OF ± 1,5mm.
12. ALL HOLES TO BE 18mm Ø UNLESS OTHERWISE STATED.

2,5m LATTICE STEEL SUPPORT

BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	40	8	8	8	120	1.22
2	M16	2	4.8	45	12	12	12	120	1.91

STEEL SCHEDULE AND MASS

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
W3	16	MILD STEEL ANGLE 80 × 80 × 6	793	12.69	56.71
W2	4	MILD STEEL ANGLE 70 × 70 × 6	2327	9.31	59.38
W1	4	MILD STEEL PLATE 150 × 12	150	0.60	8.48

MEDIUM EQUIPMENT - CAP M1

BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	40	8	8	8	120	1.22
2	M16	2	4.8	45	4	4	4 FLAT & 8 BEVEL	120	0.72

STEEL SCHEDULE AND MASS

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
CA1	4	TF CHANNEL 152 × 76 × 18kg/m	760	3.04	54.41

MEDIUM EQUIPMENT - CAP M2

BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	40	8	8	8	120	1.22
2	M16	2	4.8	45	4	4	4 FLAT & 8 BEVEL	120	0.72

STEEL SCHEDULE AND MASS

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
CA1	2	TF CHANNEL 152 × 76 × 18kg/m	800	1.2	21.48
CA2	2	TF CHANNEL 152 × 76 × 18kg/m	2600	5.2	93.08

MEDIUM EQUIPMENT - CAP M3

BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	40	8	8	8	120	1.22
2	M16	2	4.8	45	4	4	4 FLAT & 8 BEVEL	120	0.72

STEEL SCHEDULE AND MASS

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
CA3	4	TF CHANNEL 152 × 76 × 18kg/m	760	3.04	54.41
CA4	1	MILD STEEL PLATE 200 × 10	580	3.04	9.1

MASTER
15 JUN 2018
AECOM TRANSNET

NOTES

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2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	H VW	SW M	14-06-2018

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CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
				DRAWN	A H		14 06 18
				CHECKED	C K		14 06 18
				DESIGNED	C K		14 06 18
				CHECKED	SW M		14 06 18
OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	SW MARAIS		DATE
				SIGNATURE			14 06 18
				REG. NUMBER	20090106		

SCALE : AS SHOWN A0

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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
2,5m MEDIUM EQUIPMENT SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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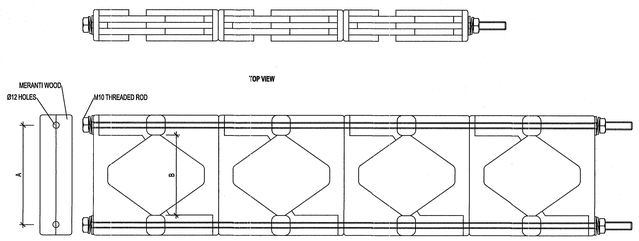

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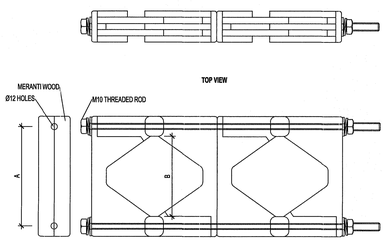
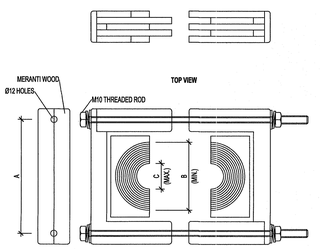
50 - 75	90 - 130	75
75 - 100	110 - 150	100

SCALE 1 : 2



CLAMP	A	B
50 - 75	90 - 130	75
75 - 100	110 - 150	100

SCALE 1 : 2



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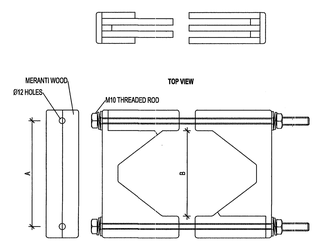
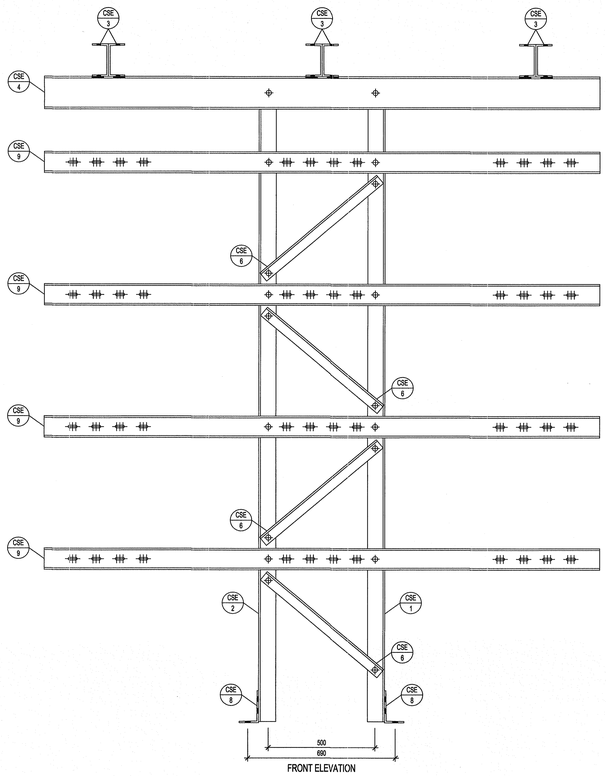
25 - 55	70 - 110	55	24

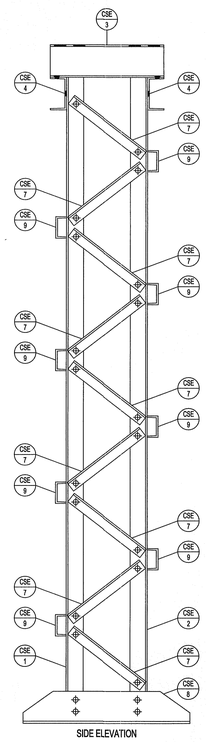
SCALE 1 : 2

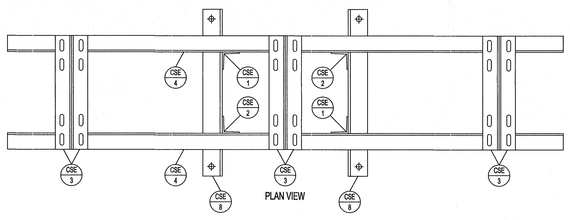


CLAMP	A	B
50 - 75	90 - 130	75
75 - 100	110 - 150	100

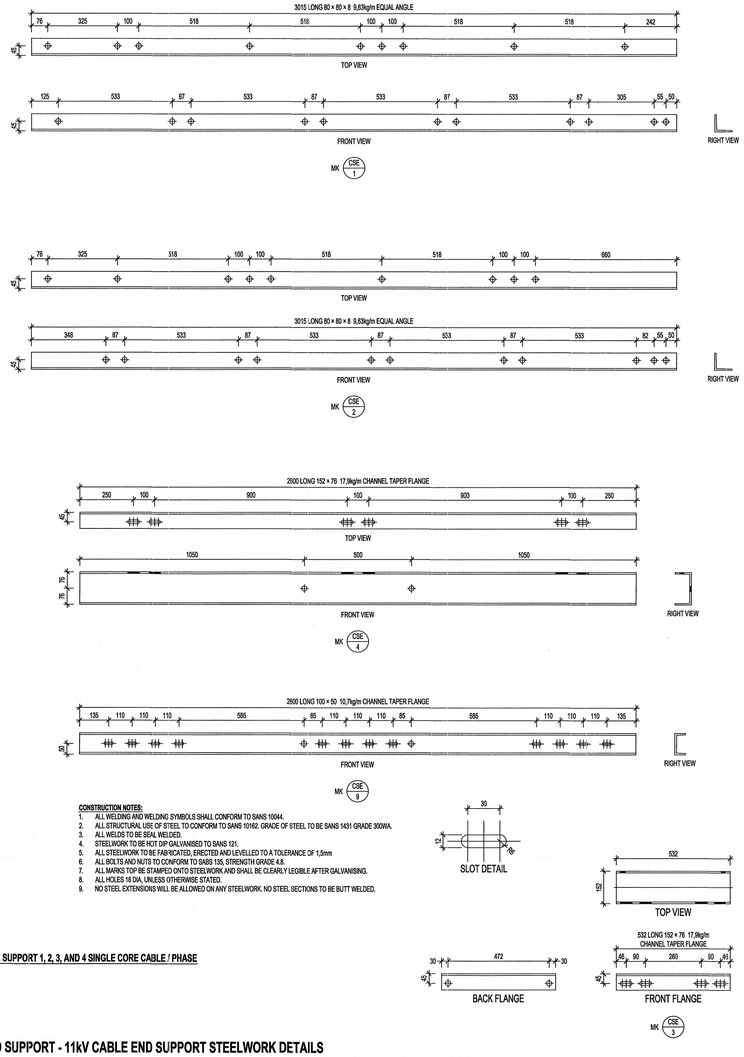
SCALE 1 : 2





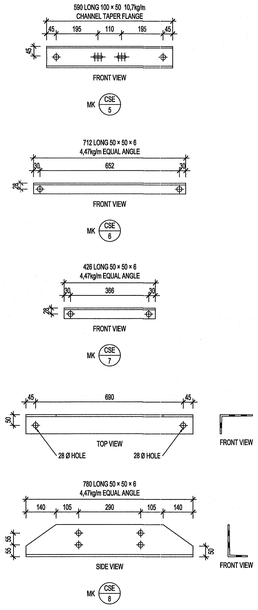


BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	TORQUE mm
16	2	4.8	100
20	2.5	4.8	200
24	3	4.8	300



CONSTRUCTION NOTES:

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162, GRADE OF STEEL TO BE SANS 1431 GRADE 300WA.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1,5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SABS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.



MV CABLE SUPPORT 1, 2, 3, AND 4 SINGLE CORE CABLE / PHASE

CABLE END SUPPORT - 11kV CABLE END SUPPORT STEELWORK DETAILS

SCALE 1:10

MASTER
15 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE
.	.

REFERENCE DRAWINGS

NOTES

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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-2018

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TITLE	NAME	SIGN	DATE
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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE
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TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SW M		14 06 18
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.	.	.	. . .

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A0

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
11kV CABLE END SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OC	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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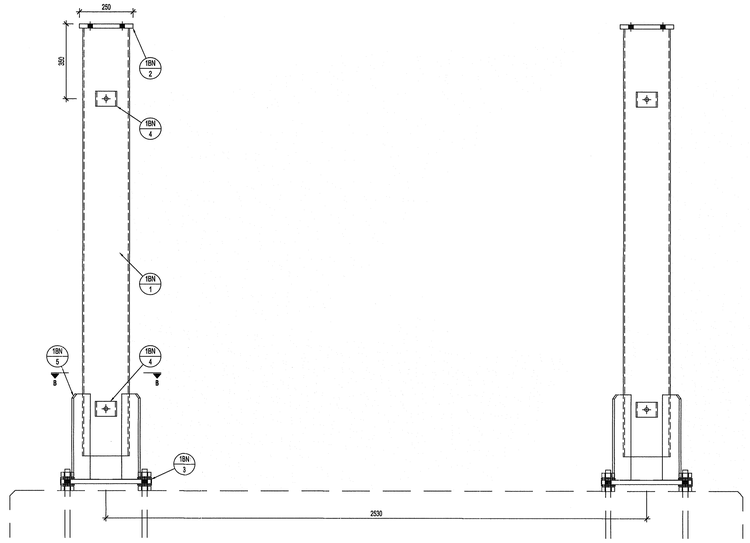
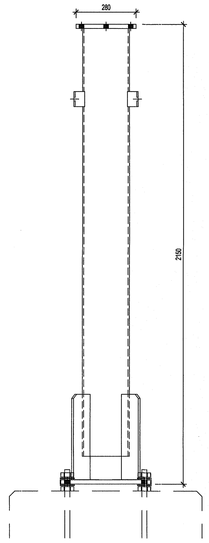


FRONT ELEVATION

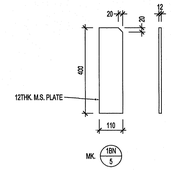


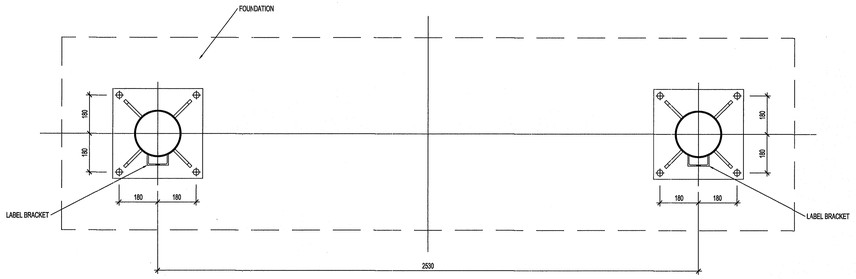
SIDE ELEVATION

CONSTRUCTION NOTES:

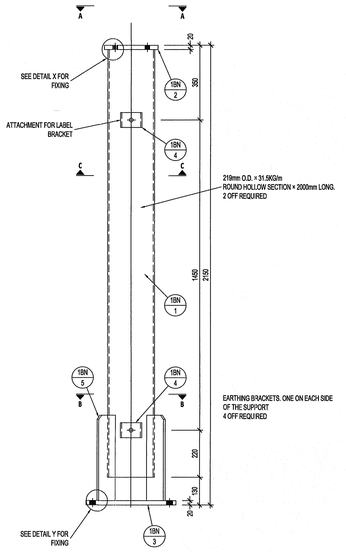
1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO PART 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR BS 4360 GRADE 43A.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1.5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TO P BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.
10. NO STEEL SECTIONS TO BE BUTT WELDED.
11. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLORANCE OF ±1.5mm.
12. ALL HOLES TO BE 18mm Ø UNLESS OTHERWISE STATED.

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
1BN	2	MILD STEEL ROUND TUBE Ø219 x 6 WALL	2000	4.0	126.12
2BN	2	MILD STEEL PLATE 250 x 20	280	0.56	21.98
3BN	2	MILD STEEL PLATE 420 x 25	420	0.84	65.39
4BN	8	MILD STEEL TF CHANNEL 100 x 50	70	0.56	5.94
5BN	8	MILD STEEL PLATE 110 x 12	400	3.20	32.96



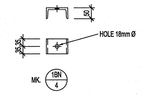


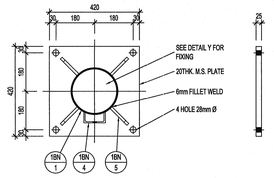
FOUNDATION AND SUPPORT

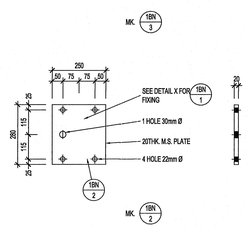


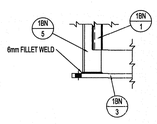
EARTHING BRACKETS. ONE ON EACH SIDE OF THE SUPPORT
4 OFF REQUIRED

COLUMN ELEVATION

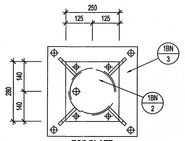




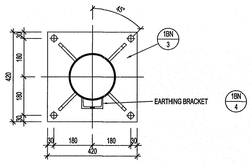




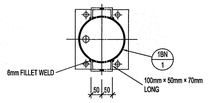
DETAIL - Y



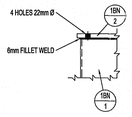
TOP PLATE
VIEW A-A



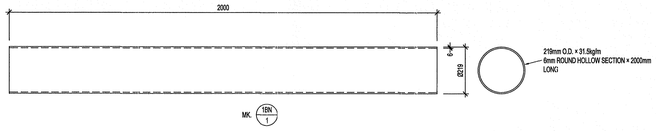
BASE PLATE
SECTION B-B



SECTION C-C



DETAIL - X



132kV CIRCUIT BREAKER TUBULAR SUPPORT STEELWORK DETAILS

SCALE 1:10

MASTER
15 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE
.	.

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-2018

REVISIONS

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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE
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TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	AH		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SW M		14 06 18
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PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A0

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) | REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
165 LYS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
132kV CIRCUIT BREAKER SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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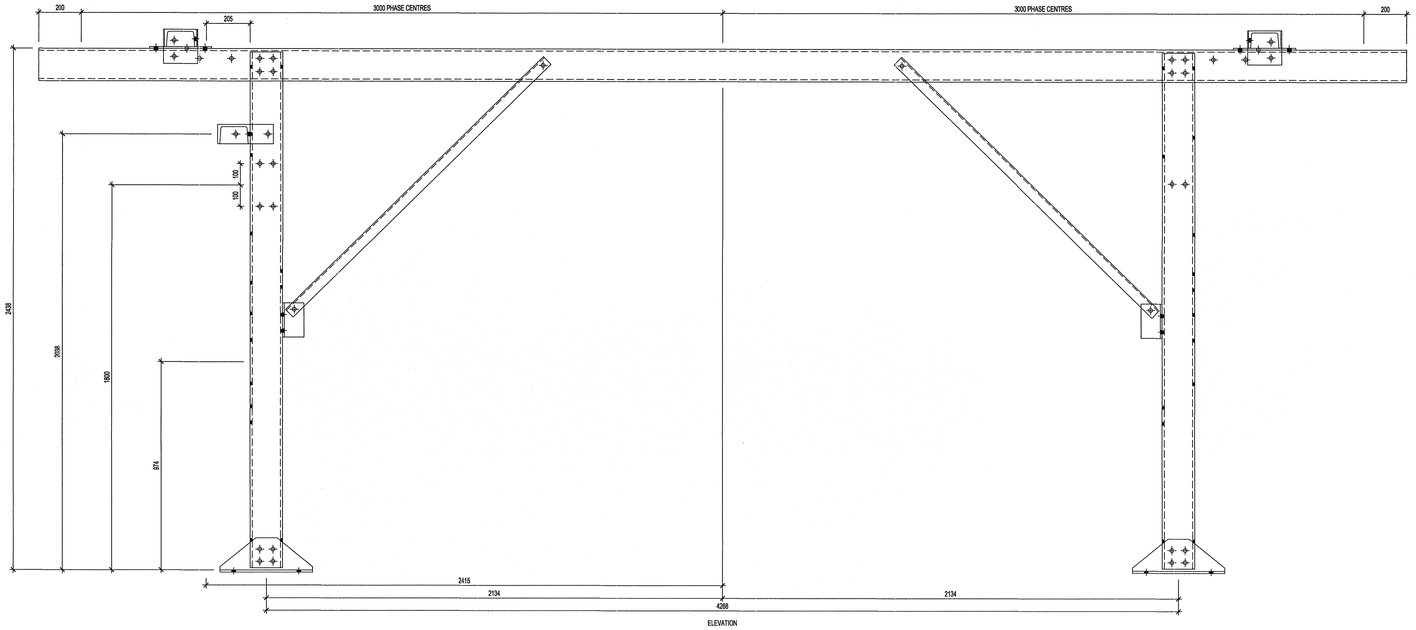
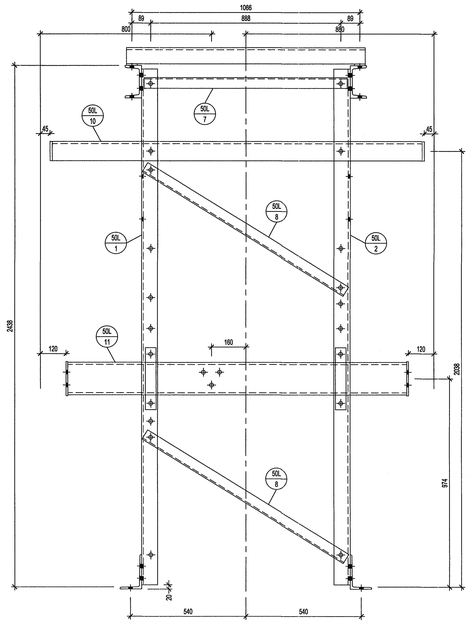


ELEVATION

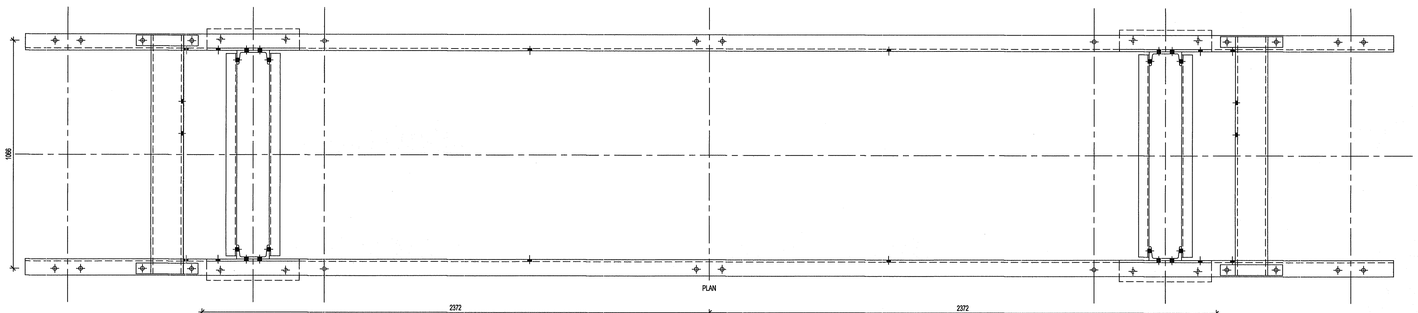


BOLT SCHEDULE				
STRENGTH GRADE 4.8				
MARK	TYPE	LENGTH	NO OFF	WASHERS/BOLT
1	M 16	40	24	1 FLAT
2	M 16	40	26	1 BEVELED
3	M 16	35	16	1 FLAT
4	M 16	45	4	1 BEVELED

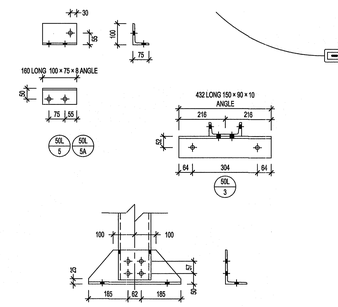
NOTES ON BOLTS:
1. BOLTS TO BE SUPPLIED WITH ONE NUT AND TWO WASHERS.
2. BOLTS ERECTED WITH HEAD TO INSIDE PREFERRED.
3. WASHER TO BE PLACED UNDER NUT AND BOLT.
4. ALL BOLTS TO BE GALVANISED.

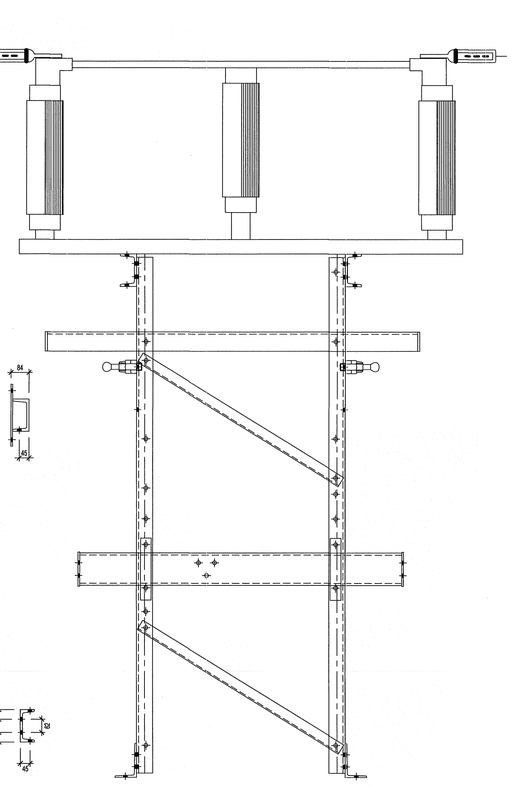
BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS, GRADE	TORQUE nm
16	2	4.8	100
20	2	4.8	200
24	3	4.8	300

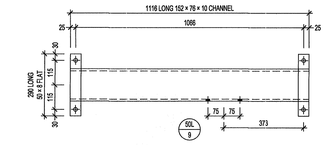
NOTES :
1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR 4360 GRADE 43A.
3. ALL WELDS TO BE SEALED WELD.
4. STEELWORK, BOLTS, NUTS AND WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLERANCE OF ... 1,5mm.
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
8. ALL HOLES TO BE 18mm DIAMETER UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED. THIS IS NOT APPLICABLE TO THE SURGE ARRESTOR BRACKET THAT WILL BE ADDED FROM TIME TO TIME

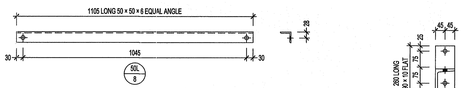


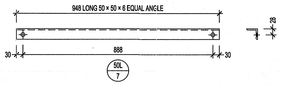
PLAN

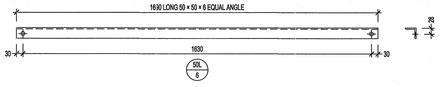


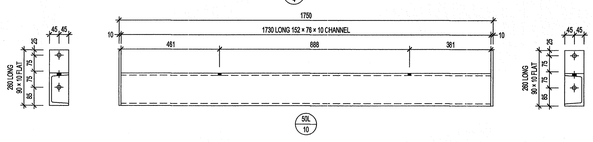


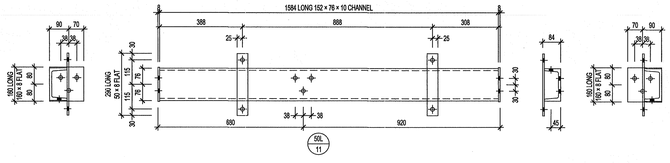


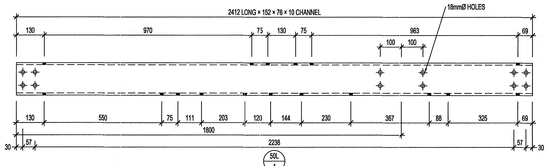


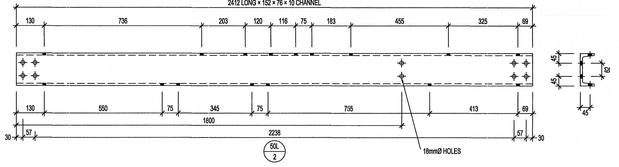












132kV ISOLATOR LATTICE SUPPORT STEELWORK DETAILS

SCALE 1:10

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

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MASTER
15 JUN 2018
AECOM TRANSNET

AECOM
CAPE TOWN OFFICE
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CARL CRONJÉ DRIVE
TEL: +27 (0)21 950 7500
FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-2018

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OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SW M		14 06 18

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE :	AS SHOWN	A0

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
132kV ISOLATOR SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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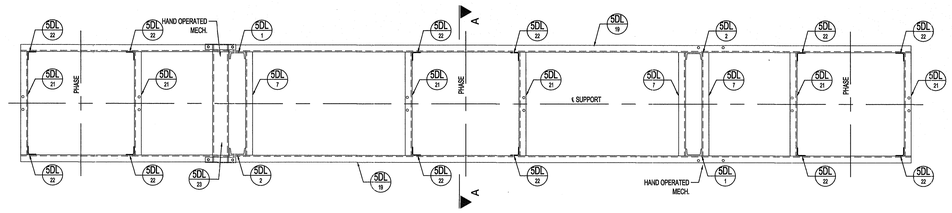
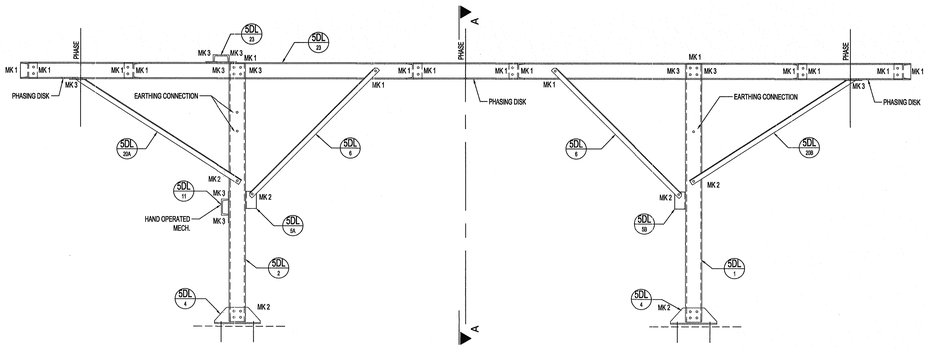
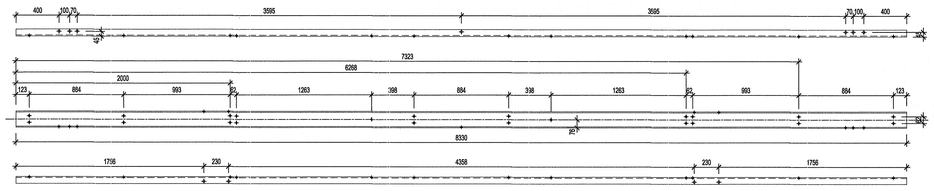


PLAN VIEW
SCALE 1:20



FRONT VIEW
SCALE 1:20



5DL / 19
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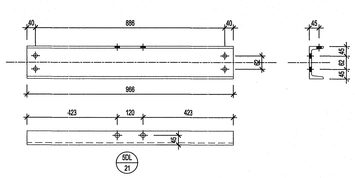
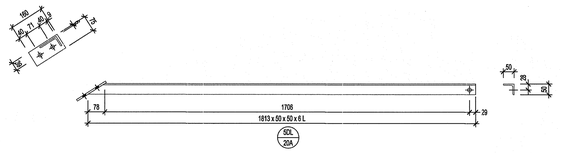
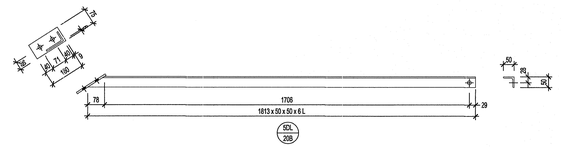
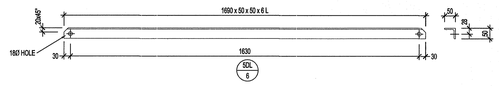
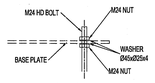


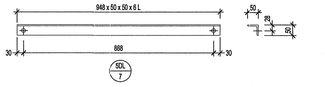


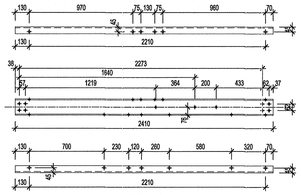






MOUNTING ARRANGEMENT
OF FRAME ON FOUNDATION
NTS





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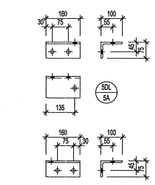
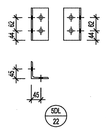
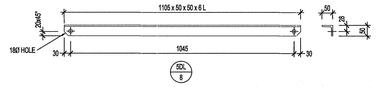
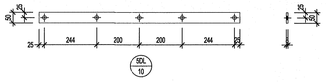
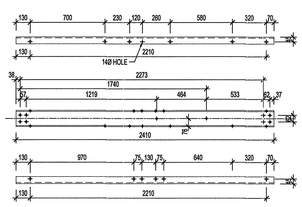
SCALE 1:20











5DL / 1
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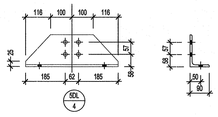
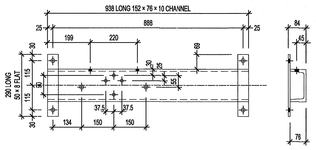
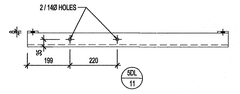
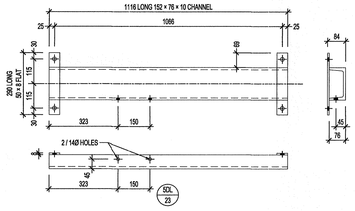








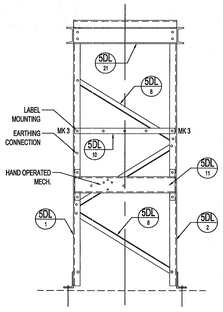
CONSTRUCTION NOTES:

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO PART 6.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR BS 4360 GRADE 43A.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1.5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 135. STRENGTH GRADE 4.8.
7. ALL MARKS TOP BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.
10. NO STEEL SECTIONS TO BE BUTT WELDED.
11. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLORANCE OF ±1.5mm.
12. ALL HOLES TO BE 18mm Ø UNLESS OTHERWISE STATED.

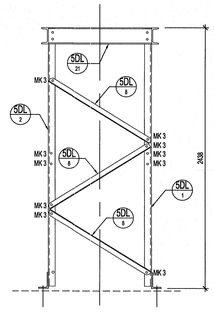
BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS. GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	35	68	68		120	10.74
2	M16	2	4.8	40	24	40	24	120	3.98
3	M16	2	4.8	45	48	40	48 FLAT 48 BEVEL	120	9.60
MASS OF BOLTS, WASHERS & NUTS									24.32

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
1	2	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	2412	4.82	86.34
2	2	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	2412	4.82	86.34
3	4	MILD STEEL UNEQUAL ANGLE 150 x 90 x 10	432	1.73	31.44
4	2	MILD STEEL UNEQUAL ANGLE 100 x 75 x 8	160	0.32	3.39
5	2	MILD STEEL UNEQUAL ANGLE 100 x 75 x 8	160	0.32	3.39
6	4	MILD STEEL ANGLE 50 x 50 x 6	1690	6.76	25.48
7	4	MILD STEEL ANGLE 50 x 50 x 6	948	3.76	14.29
8	6	MILD STEEL ANGLE 50 x 50 x 6	1105	6.63	25.02
9	1	MILD STEEL FLAT BAR 50 × 8	938	0.94	2.94
10	1	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	938	0.94	16.80
11	2	MILD STEEL FLAT BAR 50 × 8	250	0.58	1.82
12	2	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	8333	16.66	298.21
13	2	MILD STEEL ANGLE 50 x 50 x 6	1813	3.63	19.65
14	2	MILD STEEL FLAT BAR 75 × 8	160	0.32	1.51
15	2	MILD STEEL ANGLE 50 x 50 x 6	1813	3.63	19.65
16	2	MILD STEEL FLAT BAR 75 × 8	160	0.32	1.51
17	6	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	966	5.79	103.64
18	12	MILD STEEL ANGLE 80 x 80 x 6	150	1.80	13.21
19	1	TAPERED FLANGE CHANNEL 152 x 76 x 18 kg/m	1116	1.11	19.97
20	2	MILD STEEL FLAT BAR 50 × 8	290	0.58	1.82
		TOTAL MASS			776.42



SIDE VIEW
SCALE 1:20



SECT A-A
SCALE 1:20

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15 JUN 2018
AECOM
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NOTES

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4. CONCRETE GRADE STRENGTH TO BE 30MPa/19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.

AECOM

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	HW	SW	14-06-2018

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TITLE	NAME	SIGN	DATE
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CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	S W M		14 06 18

PR.ENG. / PR.TECH./PR. ARCH	
NAME	SW MARAIS
SIGNATURE	
REG. NUMBER	20090108
SCALE :	SCALE

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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
NEW MAIN INTAKE SUBSTATION
132 kV INLINE ISOLATOR SUPPORT
STEELWORK DETAILS

PROJECT NUMBER				OD		FBS		DIS	TYPE		DRAWING NO.				SHEET		REV		ID
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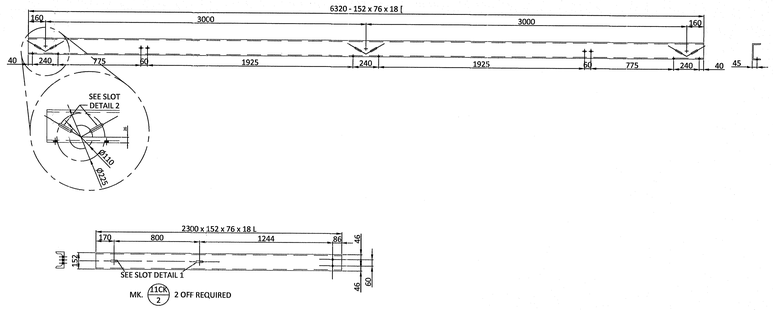

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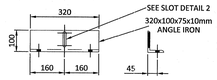

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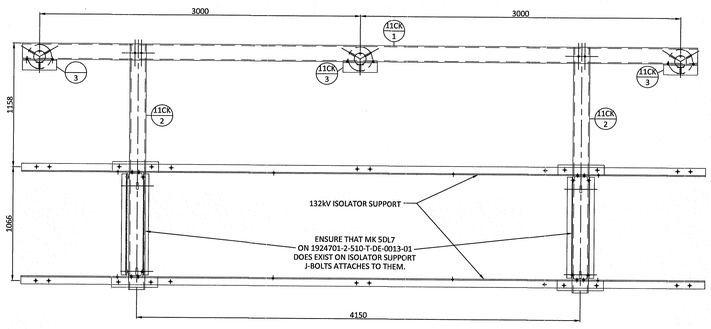
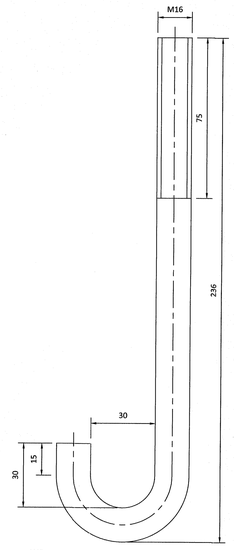


PLAN



J - BOLT
MATERIAL: STAINLESS STEEL
QTY: 4 - OFF
SCALE: 1:1

MASTER
15 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE
-	-

REFERENCE DRAWINGS

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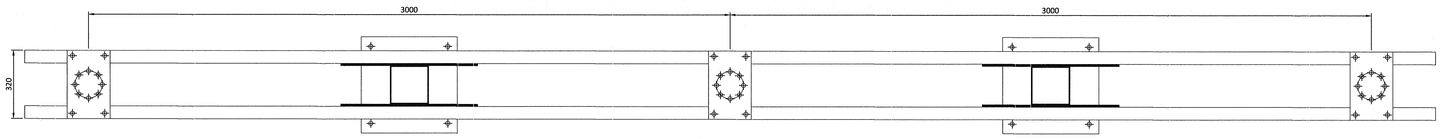
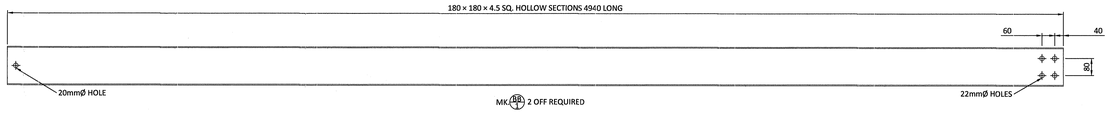
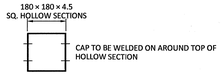
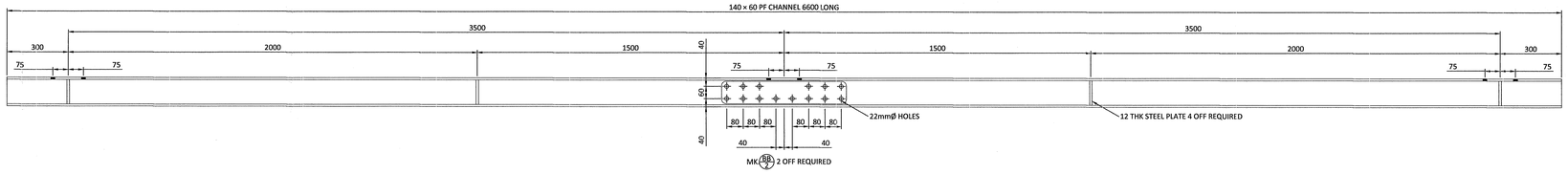
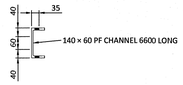
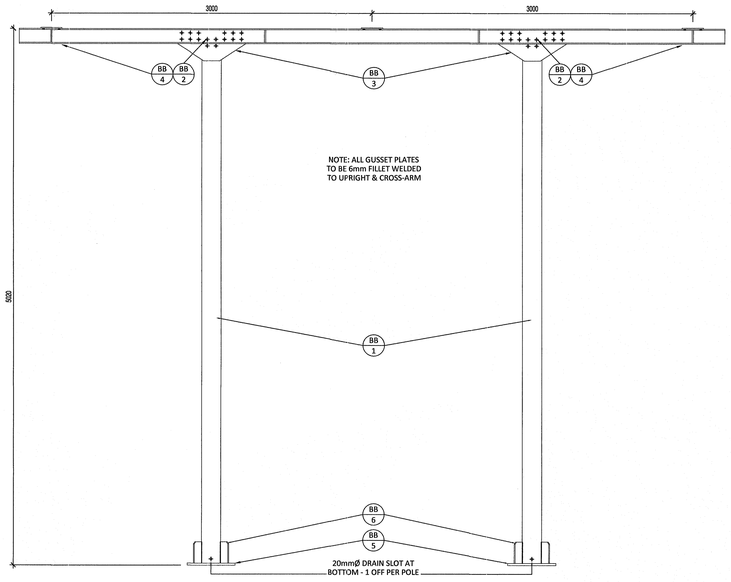








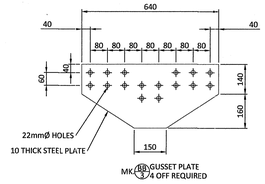




NOTE: ALL GUSSET PLATES
TO BE 6mm FILLET WELDED
TO UPRIGHT & CROSS-ARM

TWIN TUBULAR BUSBAR - 132kV TUBULAR SUPPORT STEELWORK DETAILS

SCALE 1:20



MK BB 3 GUSSET PLATE
4 OFF REQUIRED

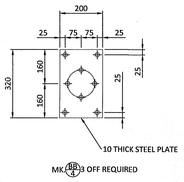
BOLT SCHEDULE				
STRENGTH GRADE 4.8				
MARK	TYPE	LENGTH	NO OFF	WASHERS/BOLT
1	M 20	240	8	2 FLAT
2	M 20	50	48	2 FLAT

NOTES ON BOLTS:
1. BOLTS TO BE SUPPLIED WITH ONE NUT AND TWO WASHERS.
2. BOLTS ERECTED WITH HEAD TO INSIDE PREFERRED.
3. WASHER TO BE PLACED UNDER NUT AND BOLT.
4. ALL BOLTS TO BE GALVANISED.

MASS kg		
STRUCTURE	BOLTS	TOTAL
471.4	6.74	478.14

NOTES :
1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA.
3. ALL WELDS TO BE 6mm CONTINUOUS FILLET WELD.
4. STEELWORK, BOLTS, NUTS AND WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF ... 1,5mm.
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
8. ALL HOLES TO BE 18mm DIAMETER UNLESS OTHERWISE STATED.
9. 12 THICK STEEL PLATE TO BE WELDED ON THE INSIDE OF PF (140 × 60) MADE TO FIT AS INDICATED.
10. STEEL CAP TO BE WELDED ON AROUND THE TOP HOLLOW SECTIONS OF SUPPORT.
11. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.

BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS. GRADE	TORQUE nm
16	2	4.8	100
20	2	4.8	200
24	3	4.8	300



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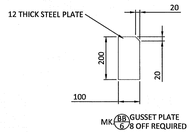
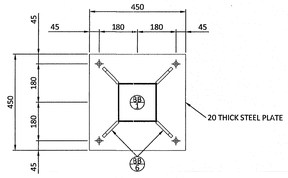


MK BB 5 GUSSET PLATE
8 OFF REQUIRED



MK BB 6 2 OFF REQUIRED

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DRAWING NO.	REFERENCE
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3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.
4. CONCRETE GRADE STRENGTH TO BE 30MPa/19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.

AECOM
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FAX: +27 (0)21 950 7502
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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
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TITLE	NAME	SIGN	DATE
DRAWN	A H		14 05 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SW M		14 06 18

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 05 18
REG. NUMBER	20090106	
SCALE :	1:20 1:10	A0

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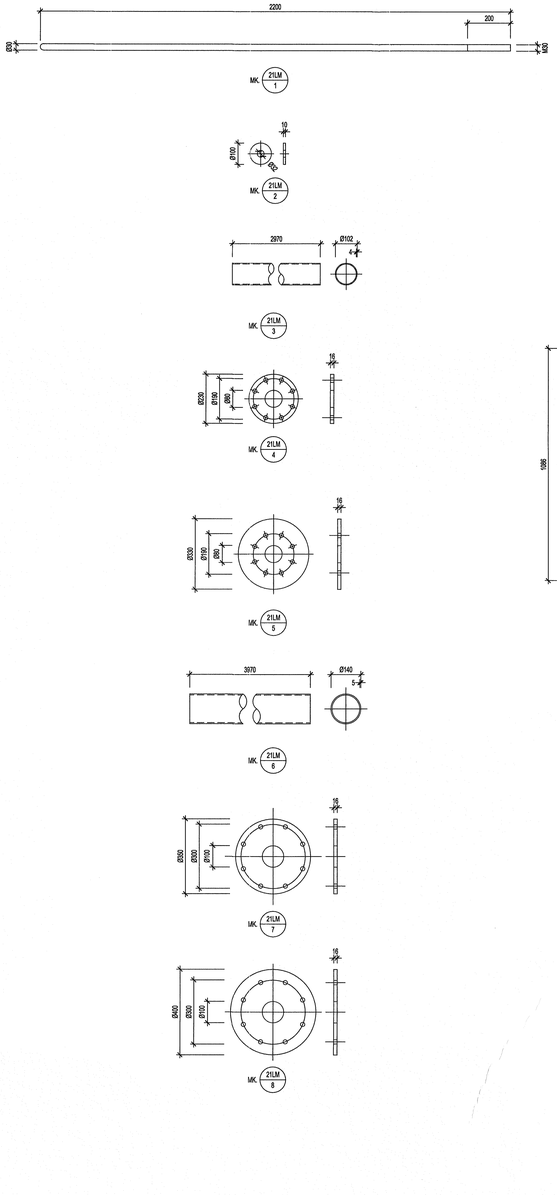
PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
NEW MAIN INTAKE SUBSTATION
132 kV TWIN TUBULAR BUSBAR SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1 9 2 4 7 0 1	2	5 1 0	T	DE	0 0 2 5	0 1	0 0	AE

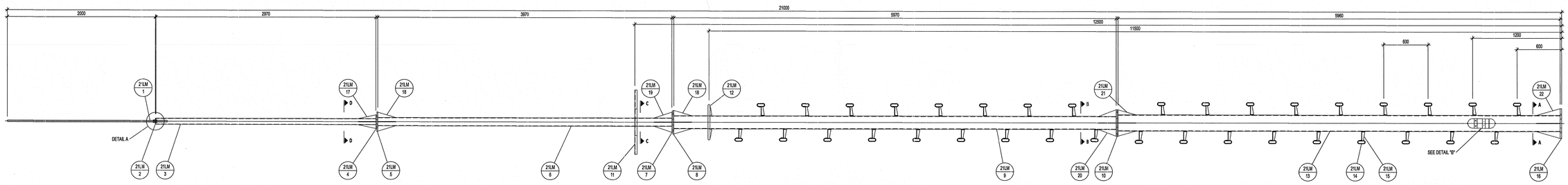


CONSTRUCTION NOTES:

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO PART 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR BS 4360 GRADE 43A.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1.5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 136, STRENGTH GRADE 4.8.
7. ALL MARKS TOP BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.
10. NO STEEL SECTIONS TO BE BUTT WELDED.
11. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLERANCE OF ± 1.5mm
12. ALL HOLES TO BE 19mm Ø UNLESS OTHERWISE STATED.

BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS, GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
M6	1	BRASS	20	1	2	2	0.5	0.01
M10	1	4.8	12	2	0	2	25	0.02
M16	1	4.8	60	8	8	8	120	1.31
M30	3.5	3.5		3	3		780	0.74

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
21LM	1	MILD STEEL ROUND BAR Ø30	2200	2.2	12.21
21LM	1	MILD STEEL PLATE Ø100 × 10	100	0.1	0.5
21LM	1	MILD STEEL ROUND TUBE Ø102 × 4	2970	2.97	28.6
21LM	1	MILD STEEL PLATE Ø230 × 16	230	0.23	5.02
21LM	1	MILD STEEL PLATE Ø330 × 16	330	0.33	10.93
21LM	1	MILD STEEL ROUND TUBE Ø140 × 5	3970	3.97	65.9
21LM	1	MILD STEEL PLATE Ø350 × 16	350	0.35	11.3
21LM	1	MILD STEEL PLATE Ø400 × 16	400	0.4	17.68
21LM	1	MILD STEEL ROUND TUBE Ø219 × 6	5970	5.97	188.23
21LM	2	MILD STEEL PLATE Ø450 × 16	450	0.9	40.2
21LM	8	TF CHANNEL 76 × 38 × 7kg/m	450	3.6	24.12
21LM	4	TF CHANNEL 76 × 38 × 7kg/m	336	1.34	9
21LM	1	MILD STEEL ROUND TUBE Ø38.1× 2 WALL	1765	1.76	3.14
21LM	4	MILD STEEL ROUND TUBE Ø38.1× 2 WALL	160	0.64	1.13
21LM	1	MILD STEEL ROUND TUBE Ø273 × 6 WALL	5960	5.95	246.33
21LM	43	MILD STEEL PLATE 40 × 5	212.5	2.76	4.34
21LM	43	MILD STEEL PLATE 50 × 5	144	1.48	0.79
21LM	43	MILD STEEL ROUND BAR Ø8	152	1.98	0.98
21LM	43	MILD STEEL PLATE 40 × 5	70	0.98	1.54
21LM	1	MILD STEEL PLATE Ø500 × 25	450	0.5	35.63
21LM	4	MILD STEEL PLATE 300 × 6	64	0.26	3.86
21LM	8	MILD STEEL PLATE 300 × 6	90	0.72	10.74
21LM	4	MILD STEEL PLATE 300 × 6	100	0.4	5.86
21LM	4	MILD STEEL PLATE 300 × 6	115	0.46	6.5
21LM	4	MILD STEEL PLATE 300 × 6	85	0.34	4.8
21LM	4	MILD STEEL PLATE 400 × 8	115	0.46	11.54
21LM	1	MILD STEEL PLATE 500 × 3	220	0.22	2.35
21LM	1	MILD STEEL PLATE 50 × 3	261	0.26	0.29
21LM	1	MILD STEEL PLATE 50 × 3	261	0.26	0.29
21LM	1	MILD STEEL PLATE 50 × 3	261	0.26	0.29



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DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

MASTER
15 JUN 2018
AECOM TRANSNET

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TITLE	NAME	SIGN	DATE
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TRANSNET CAPITAL PROJECTS			
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DRAWN	AH		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SWM		14 06 18
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.	.	.	. . .
PR.ENG. / PR.TECH./PR. ARCH			
NAME	SW MARAIS		DATE
SIGNATURE			14 06 18
REG. NUMBER	20090106		
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PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
21m LIGHTING MAST
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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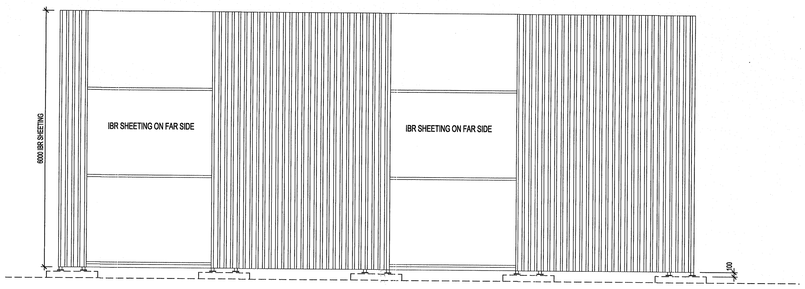
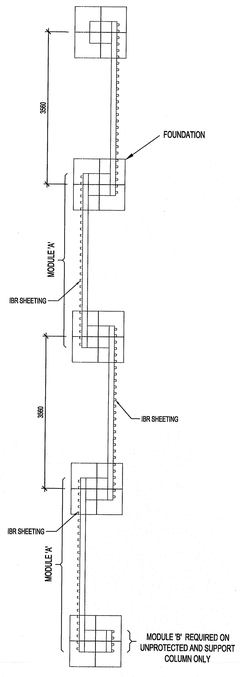
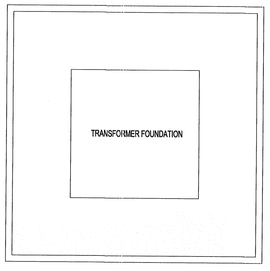
A0



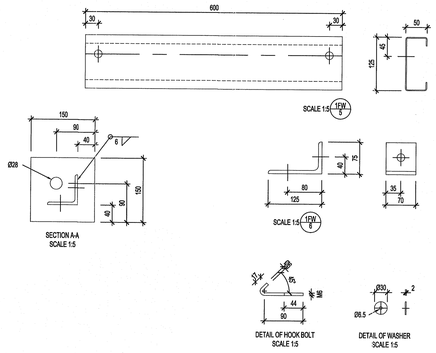
FRONT VIEW
SCALE 1:50



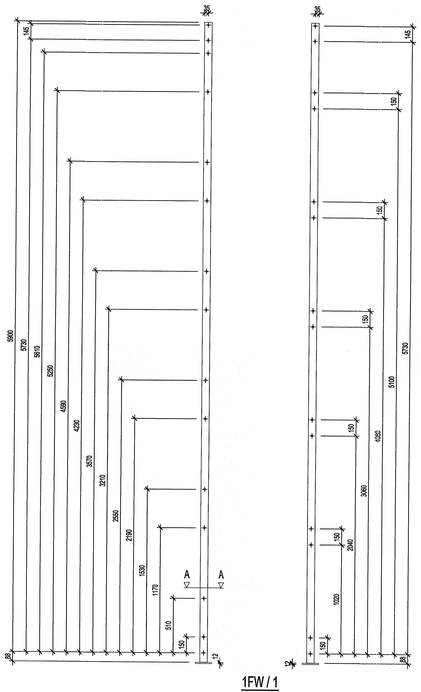
PLAN VIEW
SCALE 1:50



TYPICAL BARRIER LAYOUT - PLAN VIEW
FIRE PROTECTION STANDARD FP231/7/S



1FW / 4
SCALE 1:20



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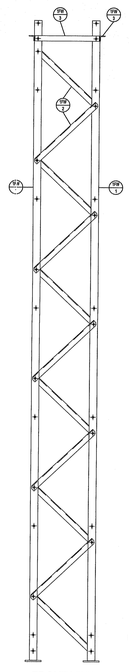
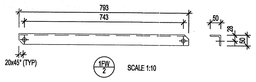
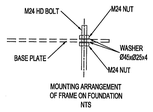


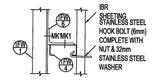
FRONT VIEW
SCALE 1:20

SIDE VIEW
SCALE 1:20

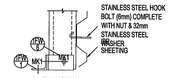




MOUNTING ARRANGEMENT OF FRAME ON FOUNDATION
NTS



SIDE ELEVATION ARRANGEMENT OF IBR SHEETING FIXING
SCALE 1:10



PLAN ARRANGEMENT OF IBR SHEETING FIXING
SCALE 1:10

CONSTRUCTION NOTES:

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO PART 5.
2. ALL STRUCTURAL USE OF STEEL, TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR BS 4360 GRADE 43A.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1.5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SANS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TOP BE STAMPED OVTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.
10. NO STEEL SECTIONS TO BE BUTT WELDED.
11. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELED TO A TOLORANCE OF ±1.5mm.
12. ALL HOLES TO BE 18mm Ø UNLESS OTHERWISE STATED.

BOLT SCHEDULE

MARK	BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS. GRADE	LENGTH mm	No. OF BOLTS	No. OF NUTS	No. OF WASHERS	TORQUE nm	MASS kg
1	M16	2	4.8	35	24	24	24	120	3.13
2	M16	2	4.8	40	8	8	8	120	1.22
3	M16	2	4.8	45	40	40	40	120	6.37
MASS OF BOLTS, WASHERS & NUTS									10.71

ITEM	QTY	DISCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH m	MASS kg
1FW1	4	MILD STEEL ANGLE 70 x 70 x 6	5988	23.95	153.12
1FW1	4	MILD STEEL PLATE 12 x 150	150	0.60	8.48
1FW2	44	MILD STEEL ANGLE 50 x 50 x 6	793	15.86	155.56
1FW3	4	MILD STEEL ANGLE 50 x 50 x 6	600	2.40	10.72
1FW4	4	MILD STEEL LIPPED CHANNEL 125 x 50 x 2 (MODULE A)	4160	16.64	65.39
1FW5	4	MILD STEEL LIPPED CHANNEL 125 x 50 x 2 (MODULE B)	600	2.40	9.43
1FW6	16	MILD STEEL LIPPED CHANNEL 125 x 50 x 2 (MODULE A)	70	1.12	13.66
1FW8	8	MILD STEEL LIPPED CHANNEL 125 x 50 x 2 (MODULE B)	70	0.56	6.83
		TOTAL MASS:			423.09

REQUIREMENTS PER MODULE			
MODULE 'A'		MODULE 'B'	
DESCRIPTION	NO OFF	DESCRIPTION	NO OFF
FOR INLAND USE ONLY IBR PROFILE GALVASEED TO SANS 121 0.5 THICK x 6000 LENGTH	6	FOR INLAND USE ONLY IBR PROFILE GALVASEED TO SANS 121 0.5 THICK x 6000 LENGTH	1
FOR COASTAL USE ONLY IBR PROFILE STAINLESS STEEL SHEET GRADE 304 0.5 THICK x 6000 LENGTH	6	FOR COASTAL USE ONLY IBR PROFILE STAINLESS STEEL SHEET GRADE 304 0.5 THICK x 6000 LENGTH	1
BOLT MK 1 (M16 x 35) SEE BOLT SCHEDULE	16	BOLT MK 1 (M16 x 35) SEE BOLT SCHEDULE	8
6mm STAINLESS STEEL HOOK BOLT COMPLETE WITH NUT & 30Ø STAINLESS STEEL WASHER	52	6mm STAINLESS STEEL HOOK BOLT COMPLETE WITH NUT & 30Ø STAINLESS STEEL WASHER	8
1FW 6 MILD STEEL CLEAT SEE STEEL SCHEDULE	16	1FW 8 MILD STEEL CLEAT SEE STEEL SCHEDULE	8
1FW 4 MILD STEEL RAIL SEE STEEL SCHEDULE	4	1FW 5 MILD STEEL RAIL SEE STEEL SCHEDULE	4

MASTER
15 JUN 2018
AECOM TRANSNET

DRAWING NO.	REFERENCE

REFERENCE DRAWINGS

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.
4. CONCRETE GRADE STRENGTH TO BE 30MPa*19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.
6. COVER TO REINFORCEMENT TO BE 50 MIN.
7. ALL EXPOSED HORIZONTAL CONCRETE SURFACES TO BE WOOD FLOATED.
8. ALL HD BOLTS, NUTS & WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
9. HD BOLT POSITIONS MUST BE SURVEYED & ACCEPTED BY STRUCTURAL STEEL CONTRACTOR IN WRITING PRIOR TO CASTING OF CONCRETE.
10. REFER TO EARTHING ARRANGEMENT DETAIL DRAWINGS FOR EARTHING REQUIREMENTS OF FOUNDATION AND STEEL WORK.
11. HANDRAIL / BALUSTRADE: MENTIS MILD STEEL BALL TYPE - STANCHIONS 42.9 OD - SPACING 1000 - HANDRAIL 34.1Ø - GALVANISED TO SANS 121 - TOP MOUNTED 1000 HIGH.
12. ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED WITH 135 MICRON FINAL DRY THICKNESS TO SANS 121 & ESKOM STANDARD35 AFTER WELDING & DRILLING.
13. A COMPLETE SET OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION COMMENCES. SHOP DRAWINGS WILL ONLY BE CHECKED FOR COMPLIANCE WITH DESIGN INTENT. NO DIMENSIONAL CHECKS WILL BE DONE.
14. ALL SHOP SPLICES ARE TO BE INDICATED ON DRAWINGS.

AECOM
CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
TYGER WATERFRONT
CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	HW	SWM	14-06-2018

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CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	A H		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SWM		14 06 18

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SK.MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20090106	
SCALE :	1:50 1:20 1:10 1:5	A0

Transnet Capital Projects
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000906/06
TABLE BAY BUILDING, TYGERBERG PARK,
169 LYTS KRIGE DRIVE, PLATTEKLOOF,
8001
TEL: 021 940 1999
FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE
NEW MAIN INTAKE SUBSTATION
FIRE BARRIER
STEELWORK DETAILS

PROJECT NUMBER	COD	FBG	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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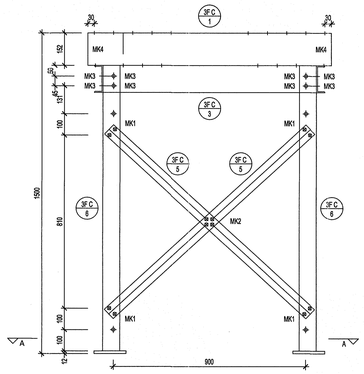
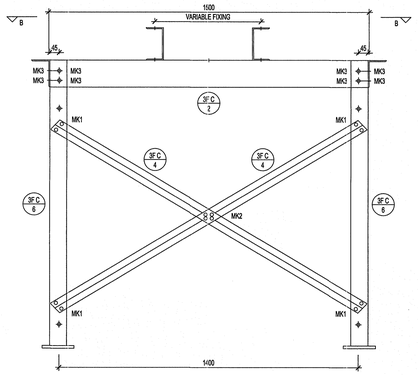


END ELEVATION



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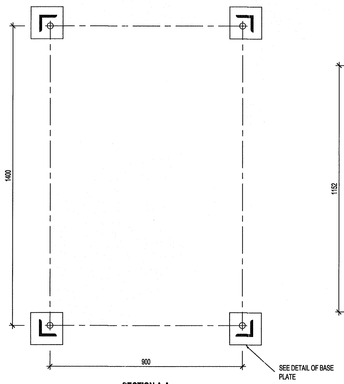
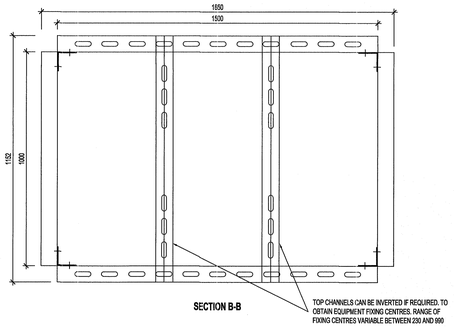


SECTION A-A



SECTION B-B

DETAIL X
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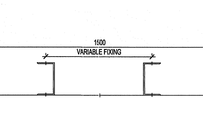
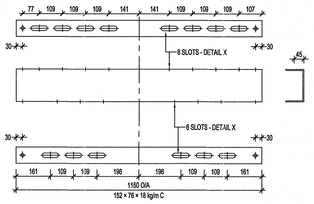


BASE PLATE
SCALE 1:5



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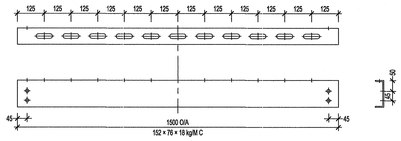
MK. 2 REQUIRED



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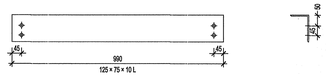

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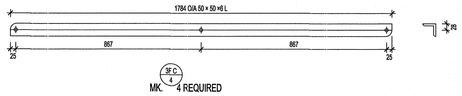

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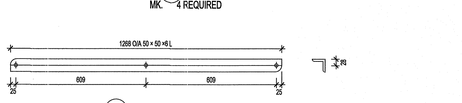

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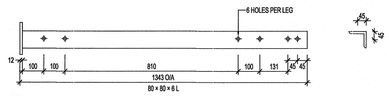

3F C 6
MK. 4 REQUIRED

CONSTRUCTION NOTES:

1. ALL WELDING AND WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO PART 5.
2. ALL STRUCTURAL USE OF STEEL TO CONFORM TO SANS 10162. GRADE OF STEEL TO BE SANS 1431 GRADE 300WA OR BS 4360 GRADE 43A.
3. ALL WELDS TO BE SEAL WELDED.
4. STEELWORK TO BE HOT DIP GALVANISED TO SANS 121.
5. ALL STEELWORK TO BE FABRICATED, ERECTED AND LEVELLED TO A TOLERANCE OF 1,5mm
6. ALL BOLTS AND NUTS TO CONFORM TO SABS 135, STRENGTH GRADE 4.8.
7. ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANISING.
8. ALL HOLES 18 DIA, UNLESS OTHERWISE STATED.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK. NO STEEL SECTIONS TO BE BUTT WELDED.

BOLT SIZE mm	PITCH mm	MILD STEEL BOLTS GRADE	TORQUE nm
16	2	4.8	100
20	2	4.8	200
24	3	4.8	300

MASS kg		
STRUCTURE	BOLTS	TOTAL
164.17	6.608	170.78

BOLT SCHEDULE

MK	TYPE	WASHER/BOLT	QUANTITY
1	16/35	1 FLAT	16
2	16/35	2 FLAT	4
3	16/40	1 FLAT	16
4	16/40	2 BEVELLED	4
5	20/55	1 BEVELLED 4 FLAT	4

NECRT SUPPORT
OLD DESIGN DETAILS FOR IN LINE APPLICATION NO CABLE HOOD 1500mm HIGH
SCALE 1:10

MASTER
15 JUN 2018
AECOM TRANSNET

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
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TYGER WATERFRONT
CARL CRONJÉ DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	AH	HVW	SWM	14-06-2018

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OPERATING DIVISIONS					
TITLE	NAME	SIGN	DATE		
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TRANSNET CAPITAL PROJECTS					
TITLE	NAME	SIGN	CATE		
DRAWN	A H		14	06	18
CHECKED	C K		14	06	18
DESIGNED	C K		14	06	18
CHECKED	SW M		14	06	18
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PR.ENG. / PR.TECH./PR. ARCH			
NAME	SW MARAIS	CATE	
SIGNATURE		14	06 18
REG. NUMBER	20090106		
SCALE :	AS SHOWN	A0	

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165 LYS KRIGE DRIVE, PLATTEKLOOF, TEL: 021 940 1999
8001 FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
NECRT SUPPORT
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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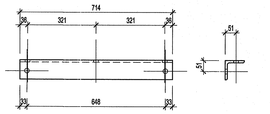

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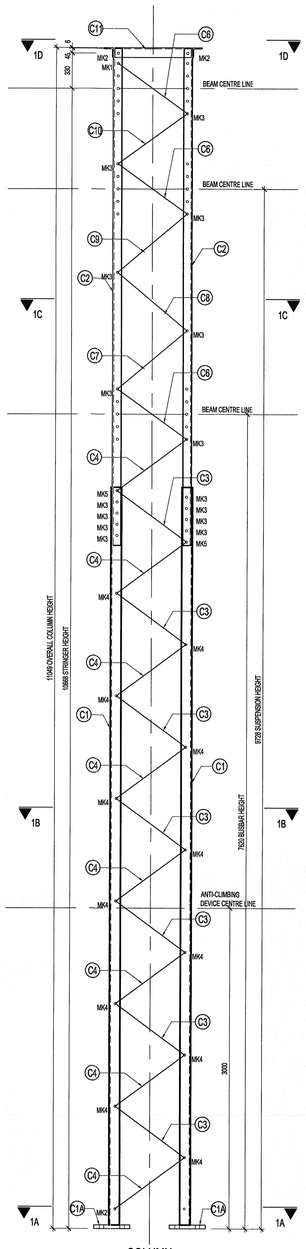
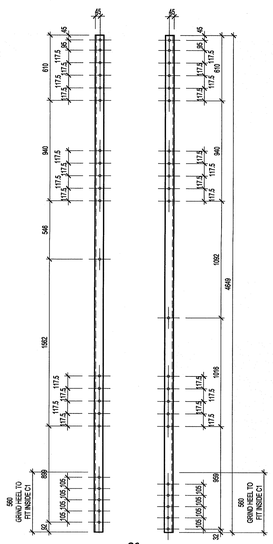


COLUMN ELEVATION
SCALE 1:20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940
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546
1682
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1175
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860
GRIND WELD TO FIT INSIDE C1
89
105
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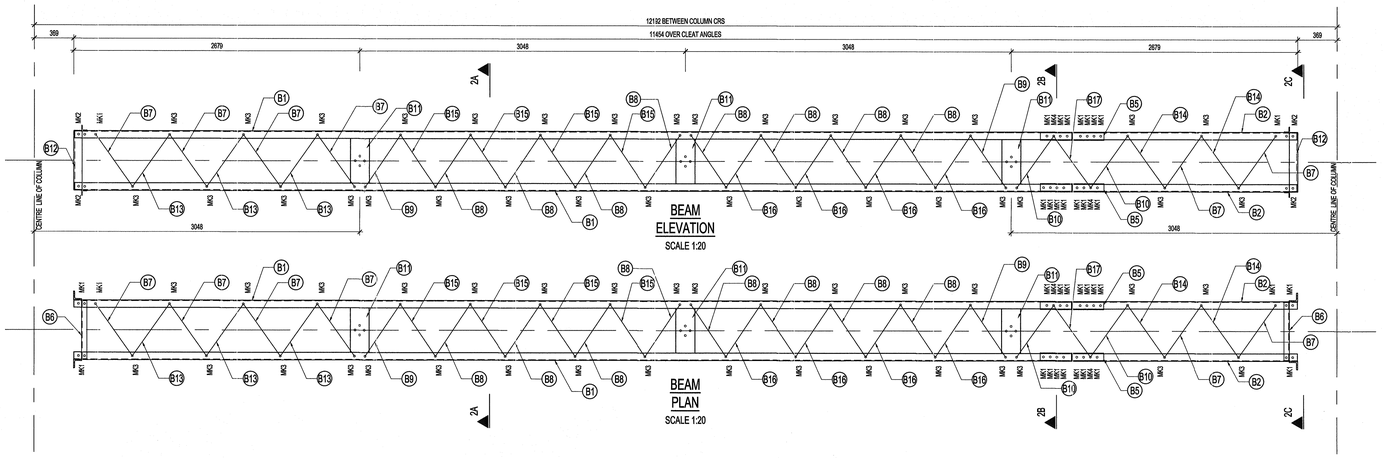
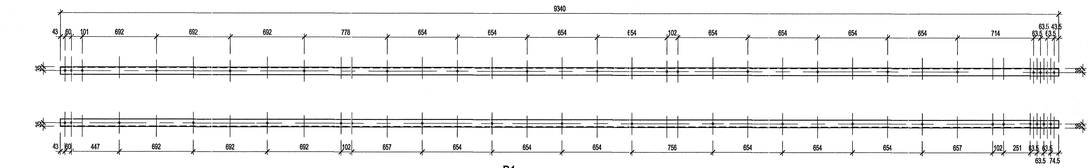
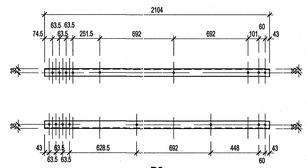


BEAM ELEVATION
SCALE 1:20

BEAM PLAN
SCALE 1:20



B1
ELEVATIONS
SCALE 1:20



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ELEVATIONS
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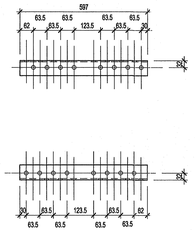

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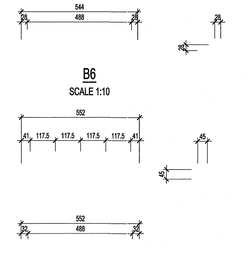
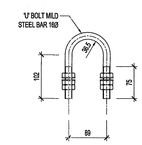
ELEVATIONS
SCALE 1:10



B6
SCALE 1:10

B12
SCALE 1:10



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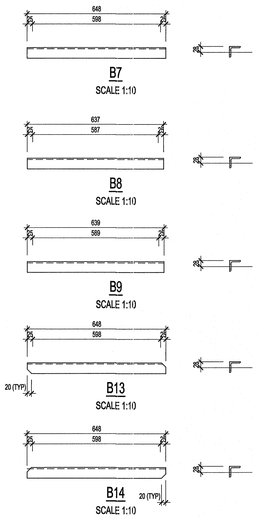


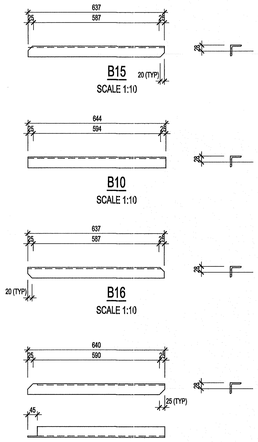
B7
SCALE 1:10

B8
SCALE 1:10

B9
SCALE 1:10

B13
SCALE 1:10

B14 20 (TYP)
SCALE 1:10



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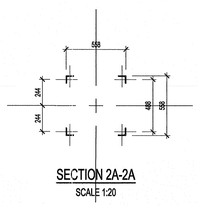
B10
SCALE 1:10

B16
SCALE 1:10

B17
SCALE 1:10



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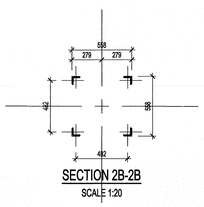

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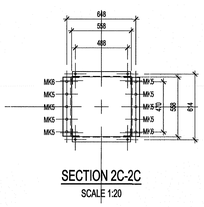

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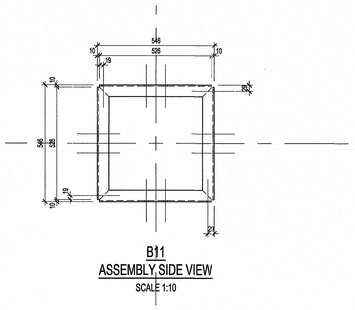
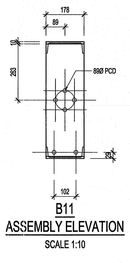


B11
ASSEMBLY SIDE VIEW
SCALE 1:10



B11
ASSEMBLY ELEVATION
SCALE 1:10

BEAM RATING SCHEDULE

ITEM	DESCRIPTION	MOUNTING HEIGHT (m)	MA LOADING PER PHASE (kN)	DIMENSIONS
132 / 40 / 1	STRINGER STRAIN	10	4.5	12192; 6096; 6096; 3048; 3048; 3048; 3048

BOLT SCHEDULE

MARK	BOLT SIZE	MILD STEEL GRADE	PITCH	LENGTH	NO OFF BOLTS	NO OFF NUTS	NO OFF WASHERS	TORQUE Nm	TOTAL MASS kg
MK1	M16	4.8	2	40	72	72	144	120	12.24
MK2	M16	4.8	2	40	8	8	8	120	1.27
MK3	M16	4.8	2	45	128	128	256	120	22.78
MK4	M16	4.8	2	50	8	8	16	120	1.49
MK5	M20	4.8	2	50	16	16	16	225	4.90
MK6	M20	4.8	2	55	4	4	8	225	1.34
MASS OF BOLTS, BOLTS & NUTS									39.53

STEEL SCHEDULE & MASS

ITEM	QTY	DESCRIPTION	CUTTING LENGTH mm	TOTAL LENGTH mm	TOTAL MASS kg
B1	4	MS 70x70x6 L	9340	37.36	238.35
B2	4	MS 70x70x6 L	2104	8.42	53.46
B5	4	MS 70x70x6 L	596.5	2.39	15.22
B6	4	MS 50x50x6 L	544	2.18	9.73
B7	24	MS 50x50x6 L	648	15.55	69.52
B8	32	MS 50x50x6 L	637	20.38	91.12
B9	8	MS 50x50x6 L	639	5.11	22.85
B10	8	MS 50x50x6 L	644	5.15	23.03
B11	12	TFC 178x54x15kg/m	526	6.31	92.78
B12	4	MS 80x80x10 L	552	2.21	26.27
B13	12	MS 50x50x6 L	648	7.78	34.76
B14	8	MS 50x50x6 L	648	5.18	23.17
B15	16	MS 50x50x6 L	637	10.19	45.56
B16	16	MS 50x50x6 L	637	10.19	45.56
B17	4	MS 50x50x6 L	640	2.56	11.44
UB1	0	"U" BOLT STEEL ROUND BAR 16Ø	385	385	-
TOTAL MASS					802.82

NOTES:

1. ALL WELDING & WELDING SYMBOLS SHALL CONFORM TO SANS 10044 PART 1 TO S.
2. ALL STRUCTURE USE OF STEEL TO CONFORM TO SANS 10162
3. ALL STEEL TO BE GRADE 1355JR/300WA (EXCEPT ANGLES 45mm TO BE MILD STEEL)
4. ALL WELDS TO BE SEALED WELDED.
5. STEELWORK TO BE HOT DIPPED GALVANIZED TO SANS 121
6. STEELWORK TO BE CHECKED & STRAIGHTENED AFTER GALVANIZING.
7. BOLTS, NUTS & WASHERS TO BE IN ACCORDANCE WITH SANS 1700
8. ALL MARKINGS TO BE STAMPED ONTO STEELWORK & SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
9. NO STEEL EXTENSIONS WILL BE ALLOWED ON ANY STEELWORK
10. NO SECTIONS TO BE BUILT WELDED
11. ALL STEELWORK TO BE FABRICATED, ERECTED & LEVELED TO A TOLERANCE OF ±1.5mm.
12. ALL HOLES TO BE 18Ømm UNLESS OTHERWISE STATED.

MASTER
15 JUN 2018
AECOM
TRANSNET

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

NOTES

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2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL EXCAVATIONS & FOUNDING LEVELS TO INSPECTED & APPROVED BY ENGINEER PRIOR TO CAST OF CONCRETE.
4. CONCRETE GRADE STRENGTH TO BE 30MPa/19mm STONE.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 25 x 25 CHAMFER ALL ROUND.
6. COVER TO REINFORCEMENT TO BE 50 MIN.
7. ALL EXPOSED HORIZONTAL CONCRETE SURFACES TO BE WOOD FLOATED.
8. ALL HD BOLTS, NUTS & WASHERS TO BE HOT DIPPED GALVANIZED TO SANS 121.
9. HD BOLT POSITIONS MUST BE ALIGNED FOR CASTING TO A TOLERANCE OF ±2mm AS PER SANS 1200 G.6 GRADE II & SURVEYED & ACCEPTED BY STRUCTURAL STEEL CONTRACTOR IN WRITING PRIOR TO CASTING OF CONCRETE.
10. REFER TO EARTHING ARRANGEMENT DETAIL DRAWINGS FOR EARTHING REQUIREMENTS OF FOUNDATION AND STEEL WORK.
11. HANDRAIL / BALUSTRADE: MENTIS MILD STEEL BALL TYPE - STANCHIONS 42.9 OD - SPACING 1000 - HANDRAIL 34.1Ø - GALVANISED TO SANS 121 - TOP MOUNTED 1000 HIGH.
12. ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED WITH 135 MICRON FINAL DRY THICKNESS TO SANS 121 & ESKOM STANDARDS AFTER WELDING & DRILLING.
13. A COMPLETE SET OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION COMMENCES. SHOP DRAWINGS WILL ONLY BE CHECKED FOR COMPLIANCE WITH DESIGN INTENT . NO DIMENSIONAL CHECKS WILL BE DONE. COMMENTS ON SHOP DRAWINGS
14. ALL SHOP SPLICES ARE TO BE INDICATED ON DRAWINGS.
15. STRUCTURES SHALL BE ERECTED, ALIGNED , SQUARED, PLUMBED & LEVELED TO AN ACCURACY SPECIFIED IN SANS 1200 H 6.2.2.c.2 - CLASS II
16. WEEDKILLER SHALL BE APPLIED BEFORE & AFTER COMPLETION OF YARD STONE SURFACING.

AECOM

CAPE TOWN OFFICE
WATERSIDE PLACE, SOUTH GATE
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REG. No. 1966/006628/07

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	A H	H VW	SW M	14-06-2018

REVISIONS

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TITLE	NAME	SIGN	DATE

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TITLE	NAME	SIGN	DATE
DRAWN	A H		14 06 18
CHECKED	C K		14 06 18
DESIGNED	C K		14 06 18
CHECKED	SW M		14 06 18

PR.ENG. / PR.TECH./PR. ARCH		
NAME	SW MARAIS	DATE
SIGNATURE		14 06 18
REG. NUMBER	20050106	
SCALE :	1:200	A0

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FAX: 086 677 2455

PORT OF SALDANHA

IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
BEAM 132 / 40 / 1
STEELWORK DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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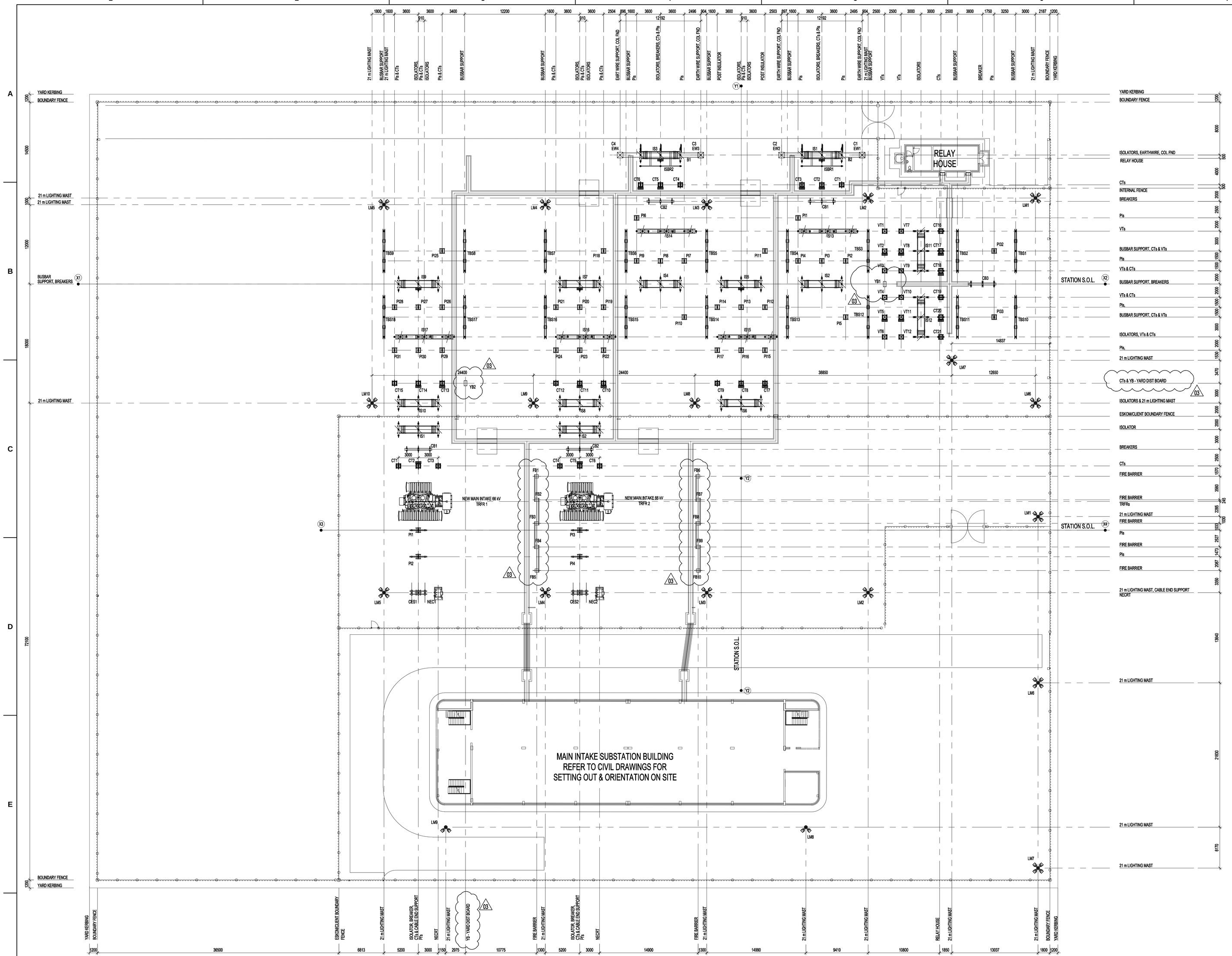

ESKOM YSTERVARK SUBSTATION STEELWORK SCHEDULE

MARK	DESCRIPTION	DRAWING NO	TOTAL No OFF
CT1-21	MEDIUM EQUIPMENT SUPP 2,5 m	1924701-2-510-T-OE-0019-01	21
	MEDIUM EQUIPMENT CAP M1	1924701-2-510-T-OE-0019-01	21
VT1-12	MEDIUM EQUIPMENT SUPP 2,5 m	1924701-2-510-T-OE-0019-01	12
	MEDIUM EQUIPMENT CAP M1	1924701-2-510-T-OE-0019-01	12
PI1-10	MEDIUM EQUIPMENT SUPP 2,5 m	1924701-2-510-T-OE-0019-01	29
PI15-33	MEDIUM EQUIPMENT CAP M3	1924701-2-510-T-OE-0019-01	29
PI11-14	MEDIUM EQUIPMENT SUPP 2,5 m	1924701-2-510-T-OE-0019-01	4
	MEDIUM EQUIPMENT CAP M2	1924701-2-510-T-OE-0019-01	4
CB1-3	132 kV CIRCUIT BKR SUPP	1924701-2-510-T-OE-0021-01	3
IS1-12	132 kV ISOLATOR SUPP	1924701-2-510-T-OE-0022-01	12
IS13-17	132 kV INLINE ISOLATOR SUPP	1924701-2-510-T-OE-0023-01	5
ISBR1-2	SA BRACKET ON ISOLATOR	1924701-2-510-T-OE-0024-01	2
TBS1-18	132 kV TUBULAR BUSBAR SUPP	1924701-2-510-T-OE-0025-01	18
LM1-10	21 m LIGHTING MAST	1924701-2-510-T-OE-0026-01	10
C1-4	COLUMN 152 / C	1924701-2-510-T-OE-0029-01	4
EW1-4	EARTH WIRE SUPPORT E1	1924701-2-510-T-OE-0029-01	4
91-2	850Nm -132+L477	1924701-2-510-T-OE-2930-01	2
YB1-2	YARD AC DB SUPPORT	1924701-2-510-T-OE-0031-01	2

TRANSNET NEW MAIN INTAKE SUBSTATION STEELWORK SCHEDULE

MARK	DESCRIPTION	DRAWING NO	USED FOR	TOTAL No OFF
CT1-6	MEDIUM EQUIPMENT SUPP 2,5m	1924701-2-510-T-OE-0019-01	132 kV CTs	6
	MEDIUM EQUIPMENT CAP M1	1924701-2-510-T-OE-0019-01	132 kV CTs	6
IS1-2	132 kV ISOLATOR SUPP	1924701-2-510-T-OE-0022-01	132 kV ISOLATOR	2
CB1-2	132 kV CIRCUIT BKR SUPP	1924701-2-510-T-OE-0021-01	132 kV BREAKER	2
NEC1-2	NECRT SUPP	1924701-2-510-T-OE-0028-01	NECRT	2
CES1-2	11kV CABLE END SUPP	1924701-2-510-T-OE-0010-01	CABLE END SUPPORT	2
LM1-8	21m LIGHTING MAST	1924701-2-510-T-OE-0026-01	21m LIGHTING MAST	8
FB1-10	FIRE BARRIER	1924701-2-510-T-OE-0027-01	FIRE BARRIER	10
PI1-6	MEDIUM EQUIPMENT SUPP 2,5m	1924701-2-510-T-OE-0019-01	132 kV PIs	6
	MEDIUM EQUIPMENT CAP M2	1924701-2-510-T-OE-0019-01	132 kV PIs	6

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REFERENCE DRAWINGS

DRAWING NO.	REFERENCE

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TYGER WATERFRONT
CARL CRONJE DRIVE
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FAX: +27 (0)21 950 7502
REG. No. 1966/006628/07

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
03	YARD DISTRIBUTION BOARD ADDED - FIRE BARRIER RENUMBERED	A H	C K	SW M	2021-01-14
02	LIGHTING MAST POSITION AMENDED	A H	C K	SW M	2021-04-16
01	LIGHTING MAST POSITION AMENDED	A H	C K	SW M	2020-07-01
00	ISSUED FOR CONSTRUCTION	A H	C K	SW M	2018-06-14

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NAME	SW MARAIS	DATE	
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IRON ORE TIPPLER 3 PROJECT
BULK POWER UPGRADE:
NEW MAIN INTAKE SUBSTATION
GENERAL ARRANGEMENT
STEEL

PROJECT NUMBER							OD	FBS	DIS	TYPE	DRAWING NO.				SHEET	REV	ID
1	9	2	4	7	0	1	2	5	1	0	T	L	A	0	0	0	4	0	1	0	3	AE