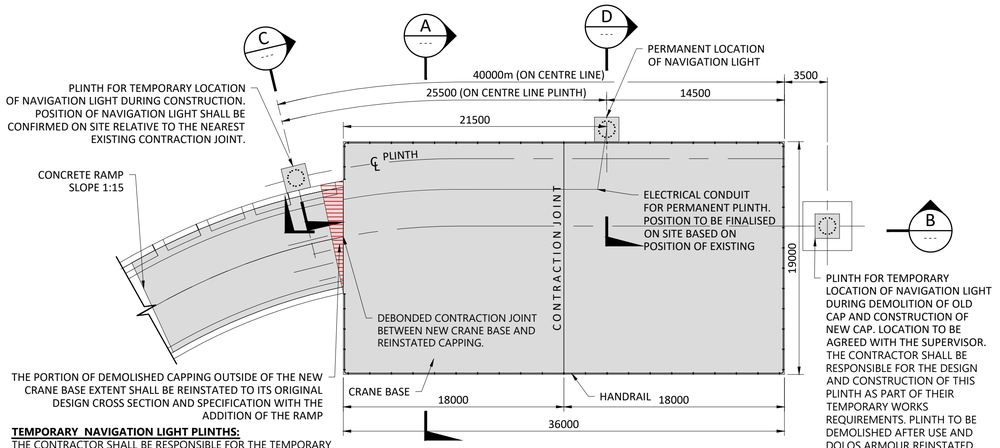



## PLAN OF CRANE BASE

SCALE: 1:250

**TEMPORARY NAVIGATION LIGHT PLINTHS:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY RELOCATION OF THE NAVIGATION LIGHT AND THE ASSOCIATED PLINTHS AS PART OF THEIR TEMPORARY WORKS REQUIREMENTS. A METHOD STATEMENT AND DESIGNS OF THE PLINTHS MUST BE SUBMITTED TO THE PROJECT MANAGER AND SUPERVISOR FOR THEIR APPROVAL.

**HOT DIP GALVANISING COATINGS:**

1. ALL STRUCTURAL FASTENERS (BOLTS, NUTS AND WASHERS) SHALL BE IN ACCORDANCE WITH EN 14399.
2. HOT DIP GALVANISING OF FASTENERS SHALL BE IN ACCORDANCE WITH ISO 10684.
3. HOT DIP GALVANISING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH ISO 1461 (SANS 121) AND ISO 14713-2.
4. ALL STRUCTURAL FASTENERS SHALL BE HOT DIP GALVANISED BY THE CENTRIFUGING PROCESS TO A LOCAL COATING THICKNESS (MIN) OF 160 um AND A MEAN COATING THICKNESS (MIN) OF 175 um RESPECTIVELY.
5. ALL HOT DIP GALVANISED NUTS SHALL BE OVER-TAPPED AFTER GALVANISING, IN ACCORDANCE WITH THE SPECIFIED LIMITS OF SIZE AND TOLERANCES GIVEN IN ISO 965-5.
6. BOLT EXTERNAL SCREW THREADS SHALL CONFORM TO MAXIMUM SIZE OF TOLERANCE POSITION 'H' BEFORE GALVANISING.
7. NUT INTERNAL SCREW THREADS SHALL BE TAPPED WITH TOLERANCE POSITION 'H' OR 'G' AFTER GALVANISING.
8. ALL BOLTS SHALL BE IN ACCORDANCE WITH ISO 898-1 AND EXTERNAL THREADS WITH ISO 965-4.
9. ALL NUTS SHALL BE IN ACCORDANCE WITH ISO 898-2 AND INTERNAL THREADS WITH ISO 965-5.
10. ALL ANCHOR BOLT THREAD UNDERCUT, LEAD-IN AND RUNOUT SHALL BE IN ACCORDANCE WITH ISO STANDARDS.
11. ALL HOT DIP GALVANISED BOLTS AND NUTS SHALL BE SUPPLIED AS ASSEMBLED SETS WITH MATCHED BOLT AND NUT THREAD PAIRS.
12. EXTERNAL THREAD PROTRUSIONS AND NUTS SHALL BE ASSEMBLED WITH AN ANTI-CORROSIVE THREAD LUBRICANT, MOLYKOTE P37 PASTE OR SIMILAR APPROVED.
13. ANCHOR BOLTS AND NUTS SHALL BE INSTALLED AND TIGHTENED IN ACCORDANCE WITH AN APPROVED PROCEDURE FOR CONTROLLED TORQUE TIGHTENING, ACCORDING TO THE RECOMMENDATIONS IN THE SAISC RED BOOK.
14. TIGHTENING TORQUE VALUES SHALL BE DETERMINED IN ACCORDANCE WITH THE SPECIFIED BOLT PRELOAD AND THE FRICTION COEFFICIENT FOR THE THREAD LUBRICANT. THE CONTRACTOR SHALL PROVIDE PROOF OF CALIBRATION FOR THE TORQUE WRENCHES USED.
15. DESIGN BOLT PRELOAD SHALL BE 100 kN. MINIMUM TORQUE SHALL BE 300 N.m.

**REINFORCED CONCRETE:**

1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
2. CONCRETE STRENGTH GRADE C30/19
3. MINIMUM CONCRETE COVER 75 MM
4. 50 X 50 MM CHAMFER TO ALL EXPOSED EDGES

**NAVIGATION LIGHT PLINTH STARTER BARS:**

STARTER BARS FOR THE TEMPORARY NAVIGATION LIGHT PLINTH CONNECTION TO BE GROUTED USING SIKAGROUT 212 OR SIMILAR APPROVED. DRILLING AND REINFORCEMENT INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION

**STAINLESS STEEL MATERIALS**

- ALL STAINLESS STEEL FOR WELDING ACCORDING TO ASTM A240/A240M GRADE 316L, EN 10088
- ALL STAINLESS STEEL FOR GENERAL PURPOSE ACCORDING TO ASTM A240/A240M GRADE 316, EN 10088

**WELDING**

- ALL WELDS 6mm CONTINUOUS FILLET WELDS UNLESS OTHERWISE NOTED
- ALL PARTIAL, FULL PENETRATION GROOVE WELDS AND BUTT WELDS ACCORDING TO PREQUALIFIED WPS AND WPQR (WELDING PROCEDURE SPECIFICATION AND WELDING PROCEDURE QUALIFICATION RECORD)
- ALL WELDING OF STAINLESS STEELS IN ACCORDANCE WITH EN 1011-3 OR AWS D1.6/D1.6M

**FASTENERS**

- ALL STRUCTURAL BOLTS - STAINLESS STEEL 316 TO ISO 3506-1 GRADE A4-70
- ALL STRUCTURAL NUTS - STAINLESS STEEL 316 TO ISO 3506-2 GRADE A4-70
- ALL STRUCTURAL WASHERS - STAINLESS STEEL 316 TO ISO 7089/DIN 125A GRADE A4-70, HEAVY DUTY THROUGH THICKNESS HARDENED

**GROUTING**

- ALL GROUTING MATERIAL TO HANDRAIL MOUNTING SIKACRETE 212 OR SIMILAR APPROVED
- ALL GROUT SHALL BE SPECIFIED AS NON-SHRINK GROUT, VERIFIED IN MANUFACTURER'S DATA SHEETS

**SPECIFICATION FOR HANDRAILS**

CONSTRUCTION TOLERANCES

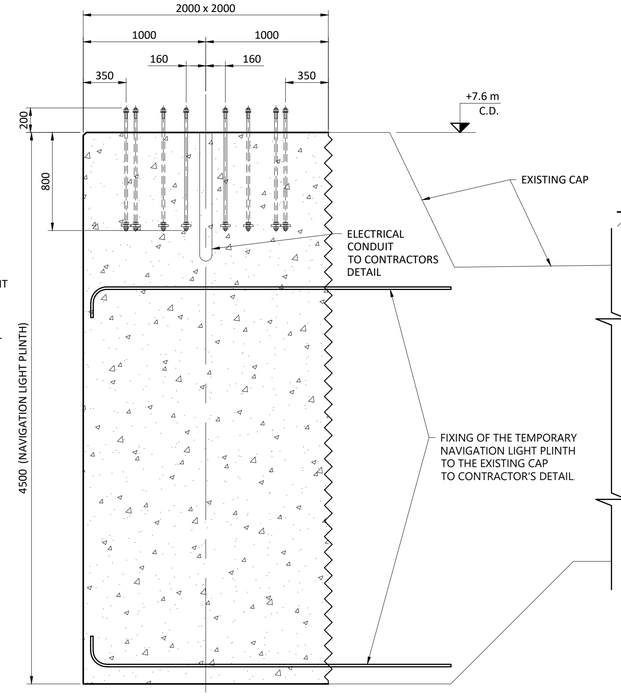
- ANCHOR BOLT POSITIONS ± 2mm WITH REFERENCE TO HANDRAIL MOUNTING PLATE BOLT HOLES
- HANDRAIL POSITION (LONGITUDINAL & TRANSVERSE) ± 20mm
- HANDRAIL POSITION (HEIGHT) ± 20mm
- ALL ANCHOR BOLTS SHALL ALIGN WITH HANDRAIL MOUNTING HOLES TO CORRECTLY INSTALL ANCHOR BOLTS, NUTS AND WASHERS

ANCHOR BOLTS FOR HANDRAILS

- STAINLESS STEEL FASTENERS
- M16 X 170 LONG STUD BOLTS - STAINLESS STEEL 316 TO ISO 3506-1 GRADE A4-70 FISCHER A A4
- M16 NUTS - STAINLESS STEEL 316 TO ISO 3506-2 GRADE A4-70
- M16 STRUCTURAL WASHERS - STAINLESS STEEL 316 TO ISO 7089/DIN 125A GRADE A4-70

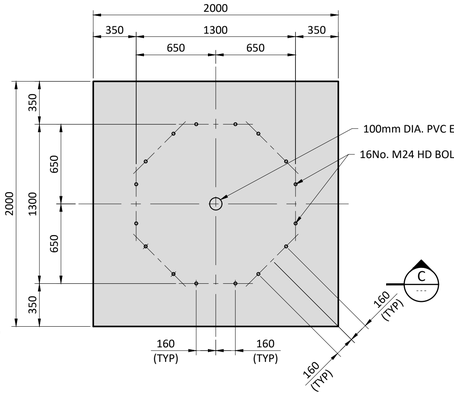
INSTALLATION

- ANCHOR BOLTS SHALL BE DRILLED IN PLACE WITH TEMPLATES MATCHING HANDRAIL BOLT PATTERN.
- ALL STAINLESS STEEL SURFACES SHALL REMAIN UNCOATED AND ANY DAMAGE CAUSED DURING INSTALLATION MADE GOOD.



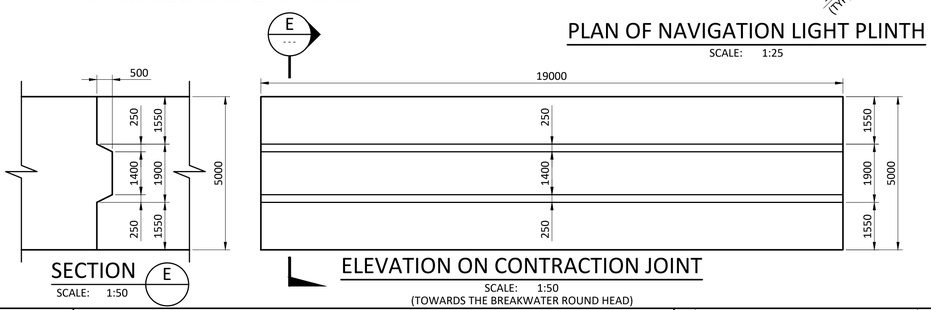

## SECTION C

SCALE: 1:25




## PLAN OF NAVIGATION LIGHT PLINTH

SCALE: 1:25

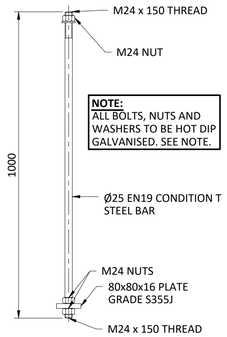



## SECTION E

SCALE: 1:50

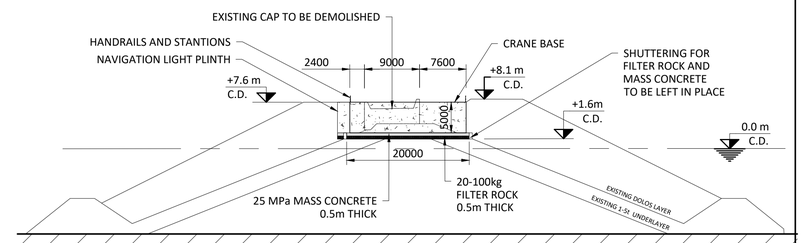
## ELEVATION ON CONTRACTION JOINT

SCALE: 1:50
(TOWARDS THE BREAKWATER ROUND HEAD)



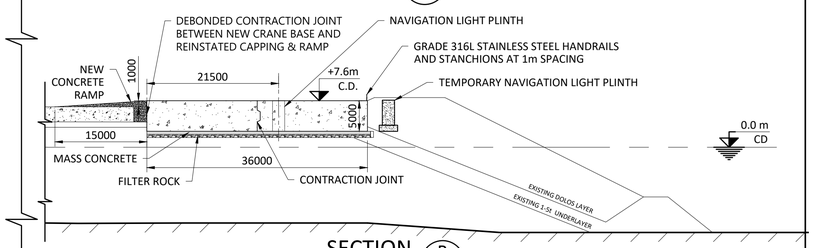

## M24 ANCHOR BOLT

SCALE: 1:10



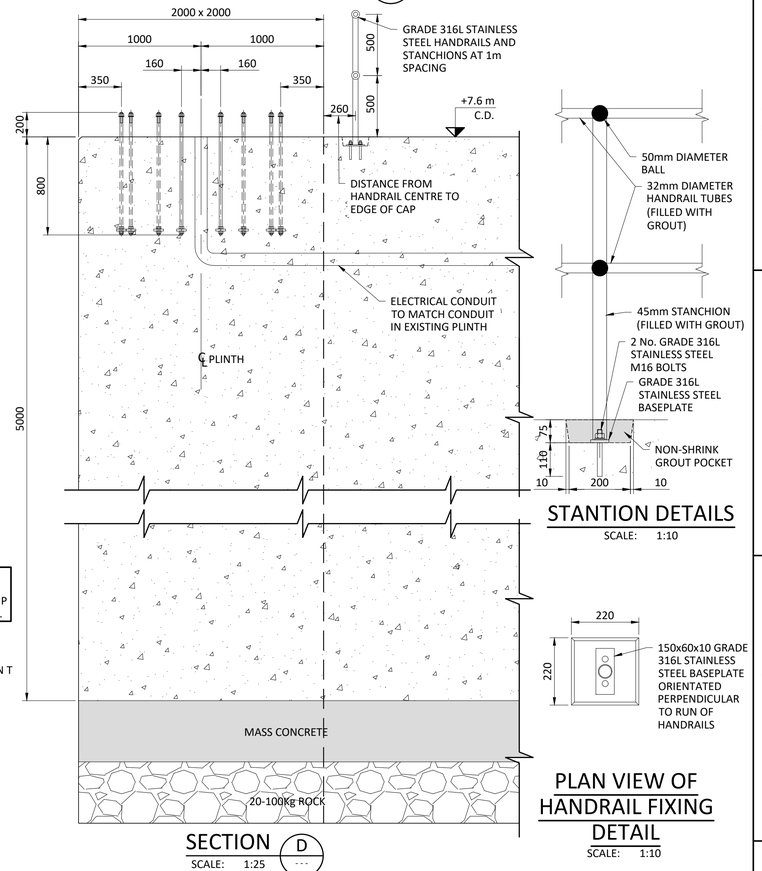

## SECTION A

SCALE: 1:500




## SECTION B

SCALE: 1:500




## SECTION D

SCALE: 1:25




## STANTION DETAILS

SCALE: 1:10

## PLAN VIEW OF HANDRAIL FIXING DETAIL

SCALE: 1:10

| DRAWING NO. | REFERENCE |
|---|---|

REFERENCE DRAWINGS

NOTES

1. CO-ORDINATE SYSTEM BASED ON GAUSS CONFORM CLARKE 1880 LO31
2. ALL LEVELS ARE IN METRES AND RELATIVE TO CHART DATUM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE, TO BE REVISED FOLLOWING IN-SURVEY.
5. AS BUILT INFORMATION AND ARMOUR UNIT LOCATIONS ARE APPROXIMATE, AND BASED ON AVAILABLE INFORMATION. UNIT LOCATION AND QUANTITIES TO BE REVISED FOLLOWING IN-SURVEY.

ISSUED FOR CONSTRUCTION

| NO. | DESCRIPTION | BY | CHKD | APPD | DATE |
|---|---|---|---|---|---|
| 02 | ISSUED FOR CONSTRUCTION | LJK | AHH | SAH | 27/11/2025 |
| 01 | ISSUED FOR CONSTRUCTION | LJK | AHH | AHH | 26/02/2025 |
| 00 | ISSUED FOR CONSTRUCTION | GdT | GMH | PES | 20/08/2021 |

REVISIONS

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|---|---|---|---|
| TITLE | NAME | SIGN | DATE |

| TNPA | | | |
|---|---|---|---|
| TITLE | NAME | SIGN | DATE |

| PRDW | | | | | |
|---|---|---|---|---|---|
| TITLE | NAME | SIGN | DATE | | |
| DRAWN | LJK | | 27 | 11 | 25 |
| CHECKED | AHH | | 27 | 11 | 25 |
| DESIGNED | SAH | | 27 | 11 | 25 |
| CHECKED | AHH | | 27 | 11 | 25 |

| PR.ENG. / PR.TECH./PR. ARCH | | | |
|---|---|---|---|
| NAME | SAH | DATE | |
| SIGNATURE | | 27 | 11 | 25 |
| REG. NUMBER | 20090248 | | |
| SCALE : | AS SHOWN | A0 | |

Transnet National Ports Authority
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TEL: 035 905 3728
FAX: 0866 770815

# PORT OF RICHARDS BAY

RICHARDS BAY BREAKWATERS:
SOUTH BREAKWATER
NEW CRANE BASE
PLAN AND SECTIONS

| PROJECT NUMBER | OD | FBS | DIS | TYPE | DRAWING NO. | SHEET | REV | ID |
|---|---|---|---|---|---|---|---|---|
| 4126515-1001 | S | SE | 0002 | 01 | 02 | TD | | |