

# HMAS TOWNSVILLE PERMANENT DOCKING AT PORT OF TOWNSVILLE



HMAS Townsville (FCPB 205)  
[https://en.wikipedia.org/wiki/HMAS\\_Townsville\\_%28FCPB\\_205%29](https://en.wikipedia.org/wiki/HMAS_Townsville_%28FCPB_205%29)



## LOCALITY PLAN

State of Queensland (Department of Resources) 2023  
<https://qldglobelife.information.qld.gov.au/>

## DESIGN DATA

1. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING LOADING REQUIREMENTS:

|                                                    |          |
|----------------------------------------------------|----------|
| DESIGN LIFE                                        | 50 YEARS |
| IMPORTANCE LEVEL (REFER NCC)                       | 2        |
| WIND LOADS                                         |          |
| ANNUAL PROBABILITY OF EXCEEDANCE                   | 1/500    |
| REGION                                             | C        |
| V <sub>10</sub> - REGIONAL GUST WIND SPEED         | 69.3 m/s |
| M <sub>10</sub> - WIND DIRECTION MULTIPLIER        | 1        |
| TERRAIN CATEGORY                                   | 2        |
| M <sub>100</sub> - HEIGHT MULTIPLIER               | 1.01     |
| M <sub>10</sub> - SHIELDING MULTIPLIER             | 1.0      |
| M <sub>1000</sub> - TOPOGRAPHIC MULTIPLIER         | 1.0      |
| V <sub>max,0</sub> - DESIGN WIND SPEED LIMIT STATE | 63.0 m/s |

STORM TIDE LEVEL R.L. 6.4m LAT

|                                     |       |
|-------------------------------------|-------|
| EARTHQUAKE LOADS                    |       |
| ANNUAL PROBABILITY OF EXCEEDANCE    | 1/500 |
| Z - HAZARD FACTOR                   | 0.08  |
| SUB-SOIL CLASS                      | C6    |
| k <sub>0</sub> - PROBABILITY FACTOR | 1.00  |
| EARTHQUAKE DESIGN CATEGORY          | I     |

NOTE  
ALL STRUCTURAL AND NON-STRUCTURAL ITEMS SHALL BE DESIGNED TO SUIT THE ABOVE EARTHQUAKE DESIGN CATEGORY.

|                    |         |
|--------------------|---------|
| LIVE LOADS         |         |
| GENERAL DECK LOADS | 5.0 kPa |
| DEAD LOADS         |         |
| VESSEL WEIGHT      | 178 t   |

## LCJ - DRAWING REGISTER

| DRG No. | DESCRIPTION                         |
|---------|-------------------------------------|
| S0.01   | COVER SHEET                         |
| S0.02   | CONSTRUCTION NOTES - SHEET 1        |
| S0.03   | CONSTRUCTION NOTES - SHEET 2        |
| S0.04   | CONSTRUCTION NOTES - SHEET 3        |
| S0.05   | SAFETY AND DESIGN NOTES - SHEET 1   |
| S0.06   | SAFETY AND DESIGN NOTES - SHEET 2   |
| S1.01   | EXISTING SITE LAYOUT PLAN           |
| S1.02   | TEMPORARY WORKS PLAN                |
| S1.03   | NOT USED                            |
| S1.04   | NOT USED                            |
| S1.05   | SITE LAYOUT PLAN                    |
| S1.06   | FOOTING PLAN - STAGE 1              |
| S1.07   | 3D VIEW                             |
| S1.08   | FOOTING PLAN - COMPLETED WORKS      |
| S1.10   | SECTIONS                            |
| S1.11   | RETAINING WALL SECTIONS AND DETAILS |
| S1.12   | RETAINING WALL SECTIONS             |
| S1.13   | FOOTING DETAILS                     |
| S1.14   | STORMWATER PIT DETAILS              |

## "DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.

Registered RPEQ 5892  
Dated this day 13 of 12, 2024

SAFETY IN DESIGN INFORMATION  
THERE MAY BE ADDITIONAL  
HAZARDS/RISKS NOT NORMALLY  
ASSOCIATED WITH THE TYPES OF WORK  
SHOWN ON THIS DRAWING. REFER TO  
THE SAFETY IN DESIGN REPORT.

PLANS AND DOCUMENTS  
referred to in the PDA  
DEVELOPMENT APPROVAL  
Approval no: DEV2024/14722  
Date: 25 February 2025



|   |                      |     |          |
|---|----------------------|-----|----------|
| F | REVISED TENDER ISSUE | DEJ | 13/12/24 |
| E | TENDER ISSUE         | DEJ | 21/11/24 |
| D | TENDER ISSUE         | DEJ | 16/05/24 |
| C | PRELIMINARY ISSUE    | DEJ | 09/05/24 |
| B | PRELIMINARY ISSUE    | DEJ | 08/04/24 |
| A | PRELIMINARY ISSUE    | DEJ | 08/03/24 |

| REV | DESCRIPTION | APPD | DATE |
|-----|-------------|------|------|
|-----|-------------|------|------|

## TENDER

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G  
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|          |                |          |          |
|----------|----------------|----------|----------|
| DRAWN    | JA             | DESIGNED | LW       |
| APPROVED | D.E. JOHNSTONE | DATE     | 16/05/24 |

CLIENT  
PORT OF TOWNSVILLE LIMITED  
PROJECT  
HMAS TOWNSVILLE PERMANENT  
DOCKING

DRAWING  
COVER SHEET

|            |           |          |
|------------|-----------|----------|
| JOB NUMBER | SHEET No. | REVISION |
| TPAA055    | S0.01     | F        |

## GENERAL NOTES

- THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER WRITTEN INSTRUCTIONS OR SKETCHES THAT MAY BE ISSUED. REFER TO STEELWORK NOTES FOR PAINTING REQUIREMENTS.
- IRRESPECTIVE OF THE FORM OF CONTRACT THAT IS USED FOR THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS INCLUDING, BUT NOT LIMITED TO: THE FOLLOWING ITEMS:
  - DESIGN OF TEMPORARY ACCESS ROADS AND CONTRACTOR SET DOWN AREAS.
  - TEMPORARY FACILITIES INCLUDING FOUNDATION CERTIFICATION), WORKING PLATFORMS INCLUDING PROTECTION BUT NOT PROPOSED CONSTRUCTION PLANT TO CONSTRUCT THE WORKS.
  - STABILITY OF TRENCH EXCAVATIONS (INCLUDING TRENCH SHORING), FORMWORK AND BACKFILLING.
  - ALL SLIPPING OPERATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - KEEL PLATES FOR ROLLING VESSEL
    - VESSEL VERTICAL LOAD SUPPORTS
    - HAULAGE OF VESSEL
  - ENSURING PARTIALLY COMPLETED WORKS ARE IN A STABLE CONDITION AND NO ELEMENTS ARE OVERSTRESSED IN A TEMPORARY SITUATION.
  - EROSION AND SEDIMENT CONTROL.CERTIFICATION OF THE SLIPPING OPERATIONS SHALL BE PROVIDED BY A NAVAL ARCHITECT. CERTIFICATION OF OTHER ITEMS SHALL BE PROVIDED VIA A FORM 15, SIGNED BY A REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ). WHERE DESIGNS INCORPORATE PROPRIETARY PRODUCTS THE DESIGN SHALL BE BASED ON PUBLICLY AVAILABLE DATA FROM THE MANUFACTURER. WHERE REQUESTED BY THE SUPERINTENDENT, THE CONTRACTOR SHALL PROVIDE CALCULATIONS FOR REVIEW, UNLESS OTHERWISE AGREED WITH THE SUPERINTENDENT, THE CONTRACTOR SHALL NOT PROCEED WITH PROCUREMENT OF ANY MATERIALS THAT ARE SUBJECT TO DESIGN AND CONSTRUCTION UNTIL WRITTEN NON-REJECTION FROM THE SUPERINTENDENT HAS BEEN PROVIDED.
- THE CONTRACTOR SHALL PROVIDE A MARINE EXECUTION PLAN FOR REVIEW AND APPROVAL BY THE REGIONAL HARBOUR MASTER.
- ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS SHALL NOT BE SCALED.
- ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
- ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS.
- NO SUBSTITUTIONS SHALL BE MADE OR SIZES OF STRUCTURAL MEMBERS VARIED WITHOUT OBTAINING THE APPROVAL OF THE ENGINEER. THE APPROVAL OF A SUBSTITUTION FROM THE SUPERINTENDENT SHALL NOT BE AN AUTHORISATION FOR AN EXTRA, ANY EXTRA INVOLVED SHALL BE RESOLVED WITH THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS AND THE BY-LAWS, ORDINANCES, AND REQUIREMENTS OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION AND CONTRACT DOCUMENTS.
- NO HOLES, RECESSES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- ALL MATERIALS AND ELEMENTS SHALL BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- THE CONTRACTOR SHALL ALLOW IN THEIR TENDER FOR APPROVED SUBSTITUTIONS TO NON AVAILABILITY OF NOMINATED ITEMS.
- WHERE CONSTRUCTION CERTIFICATION IS REQUIRED, INSPECTIONS SHALL BE PERFORMED BY A CERTIFYING ENGINEER. THE CONTRACTOR SHALL ALLOW FOR AND GIVE TWO FULL WORKING DAYS NOTICE FOR ALL INSPECTIONS.
- BEFORE FABRICATION HAS COMMENCED THE CONTRACTOR SHALL SUBMIT ANY SHOP DRAWINGS AND MODELS TO THE SUPERINTENDENT FOR APPROVAL. APPROVAL DOES NOT INCLUDE THE CHECKING OF DIMENSIONS AND QUANTITIES AND DOES NOT RELIEVE THE CONTRACTOR OF THEIR CONTRACTUAL RESPONSIBILITIES. THE CONTRACTOR SHALL ALLOW 10 WORKING DAYS FOR APPROVAL.
- THE CONTRACTOR SHALL PROVIDE SDS OF ALL CHEMICALS TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO BEING DELIVERED TO SITE. NO CHEMICALS SHALL BE BROUGHT ON SITE UNTIL THEY ARE ON THE GOVERNMENT APPROVED LIST OF CHEMICALS. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN APPROVAL FOR THE USE OF ALL CHEMICALS.
- THIS SITE CONTAINS HAZARDOUS MATERIAL. THE CONTRACTOR SHALL TREAT AND REMOVE ALL HAZARDOUS MATERIAL IN ACCORDANCE WITH PRENSA REPORT JOB No. 1218178.
- ANY DAMAGE CAUSED TO EXISTING SERVICES WILL BE MADE GOOD AT THE CONTRACTORS EXPENSE.
- EXPLOSIVES SHALL NOT BE USED FOR WORK UNDER THIS CONTRACT.
- THE CONTRACTOR IS TO PROVIDE A GUARANTEE, GUARANTEEING THE WORKMANSHIP AND ENSURING THAT THE WORKS ARE CONSTRUCTED IN ACCORDANCE WITH OUR DESIGN AND DOCUMENTATION.
- FOR DETAILS OF SOIL CONDITIONS AND DESIGN PARAMETERS REFER TO DOUGLAS PARTNERS GEOTECHNICAL REPORT NUMBERS 227086/01.001 DATED 20/02/24
- SURVEY BASED ON SURVEY CONDUCTED BY CRS (GEOMETRICS) 31st JULY 2023 AND TCC MAPPING. THE EXTENT OF THE CRS SURVEY IS INDICATED ON THE DRAWINGS. NO POTHOLING OF SERVICES WAS UNDERTAKEN AS PART OF THE SURVEY SCOPE CARRIED OUT BY CRS (GEOMETRICS) - ONLY VISIBLE SERVICES WERE LOCATED DURING THE SURVEY. WHERE ANY DISCREPANCIES EXIST BETWEEN THE SURVEY AND THE INVESTIGATIONS CARRIED OUT BY THE CONTRACTOR, CONTACT THE SUPERINTENDENT FOR A DIRECTION.
- ON COMPLETION OF THE WORKS, REINSTATE TO THE SATISFACTION OF THE SUPERINTENDENT ANY AREAS, STRUCTURES, PAVEMENTS OR SERVICES DAMAGED, DIRTIED OR MADE UNSERVICEABLE DUE TO CONSTRUCTION WORKS.

## CONCRETE

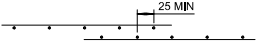
- CONCRETE WORKS FOR 'PF1' AND 'PF2' FOOTING SHALL COMPLY WITH MRS70 TO ALL OTHER MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS 3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- CONCRETE GRADES AND COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE:

| ELEMENT        | EXPOSURE                              | COVER    | GRADE     |
|----------------|---------------------------------------|----------|-----------|
| FOOTINGS       | - AGAINST GROUND<br>- FORMED/FINISHED | C2<br>C2 | 65<br>S50 |
| SLAB ON GROUND | - AGAINST GROUND<br>- FORMED/FINISHED | A2<br>B2 | 60<br>N40 |

550 CONCRETE SHALL BE SPECIAL - CLASS CONCRETE WITH A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 50MPa COMPLYING WITH MRS70 TO 70 CONCRETE.
- BUNDLING CONCRETE SHALL BE GRADE M15.
- ALL STRUCTURE CAST AGAINST GROUND SHALL BE LAID ON AN APPROVED VAPOR BARRIER EXCEPT FOR FOOTINGS.
- PROPERLY FORM ALL CONSTRUCTION JOINTS AND LOCATE THEM ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
- EMBEDDED FLEXIBLE CONDUITS SHALL HAVE OUTSIDE DIAMETERS NOT GREATER THAN ONE-THIRD OF THE DEPTH OF THE EMBEDDING CONCRETE ELEMENT. LOCATE THEM BETWEEN OPPOSING FACE REINFORCEMENT LAYERS WITH A MINIMUM COVER OF 50mm AND SPACED AT CENTRES NOT LESS THAN THREE TIMES THE LARGER CONDUIT DIAMETER AND AT LEAST 50mm CLEAR FROM PARALLEL REINFORCEMENT.
- NO OTHER HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- ALL CONCRETE SUPPLIED SHALL HAVE A SLUMP OF 80+/-15mm AND A MAXIMUM NOMINAL AGGREGATE SIZE OF 20mm UNLESS SPECIFIED OTHERWISE.
- NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. EXPLOSION IN STANDARD CONTROLLED GRADE CONCRETE. CALCIUM CHLORIDE ADMIXTURES WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
- CONCRETE SAMPLING AND TESTING SHALL BE BY PROJECT ASSESSMENT TO AS 3600 AND AS 1379 UNLESS SPECIFIED OTHERWISE.
- COMPACT ALL CONCRETE DURING PLACEMENT USING MECHANICAL VIBRATORS.
- THE USE OF A DTMR REGISTERED EVAPORATION RETARDING COMPOUND ON THE TOP SURFACE OF CONCRETE IS MANDATORY FOR ALL CONCRETE WORKS. IT SHALL BE APPLIED WITHIN 10 MINUTES OF PLACEMENT AND INITIAL SCREEDING, AND ANY SUBSEQUENT SCREEDING OR FINISHING. APPLICATION SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND BE BY A FINE CONTINUOUS SPRAY. COMPOUNDS SHALL CONSIST OF PRIMARILY OF ALIPHATIC ALCOHOL, SUITABLE FOR USE ON CONCRETE. EVAPORATIVE RETARDERS DO NOT REPLACE CURING COMPOUNDS.
- THE CONTRACTOR SHALL SUBMIT A PROCEDURE FOR CURING, INCLUDING METHODS AND MATERIALS TO THE SUPERINTENDENT FOR APPROVAL AT LEAST TWO WORKING WEEKS PRIOR TO THE FIRST CONCRETE POUR. WHERE CURING COMPOUNDS ARE PROPOSED THEY SHALL BE A DTMR REGISTERED PRODUCT APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. CURE ALL CONCRETE SURFACES EXPOSED WITHIN 7 DAYS OF INITIAL SET. COMMENCE CURING WITHIN 1 HOUR OF INITIAL SET OR FIRST EXPOSURE AND CONTINUE FOR AT LEAST 7 DAYS AFTER POURING CONCRETE.
- THE PROCEDURES OUTLINED IN THE FOLLOWING DATA SHEETS, 'CURING OF CONCRETE', 'AVOID EARLY CRACKING' AND 'HOT WEATHER WEATHERCASTING' SHALL BE FOLLOWED TO REDUCE THE RISK OF PLASTIC SHRINKAGE CRACKING. REFER TO (CCAA) CEMENT CONCRETE AND AGGREGATE AUSTRALIA WEBSITE FOR DATASHEET.
- FINISH SURFACE OF CONCRETE TO BE BROOM FINISHED U.N.O.
- ANY CRACK MORE THAN 0.15mm WIDE SHALL BE INSPECTED BY THE SUPERINTENDENT. THE CONTRACTOR SHALL REPAIR THE CRACKS AS DIRECTED BY THE SUPERINTENDENT.

## REINFORCEMENT

- REINFORCEMENT SYMBOLS:
  - R - GRADE 230R PLAIN ROUND BARS TO AS/NZS 4671
  - N - GRADE 500 DEFORMED BARS TO AS/NZS 4671
  - L - GRADE 500 HARD DRAWN WELDED WIRE FABRIC TO AS/NZS 4671
  - W - HARD DRAWN PLAIN WIRE TO AS/NZS 4671
- REINFORCEMENT IS SHOWN DIAGMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- REINFORCEMENT FOR 'PF1' AND 'PF2' FOOTING SHALL COMPLY WITH MRS70. ALL OTHER REINFORCEMENT SHALL BE SUPPLIED AND BENT IN ACCORDANCE WITH AS 3600. REBENDING OF REINFORCEMENT WITH OR WITHOUT HEATING IS NOT PERMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
- REINFORCEMENT WITHIN 'PF1' AND 'PF2' SHALL HAVE PROVISION FOR POSSIBLE FUTURE CATHODIC PROTECTION. THIS SHALL INCLUDE PROVIDING ELECTRICAL CONTINUITY OF ALL REINFORCEMENT. FITTINGS AND ANCHOR PLATES, ANCHORS FOR METAL ITEMS ATTACHED TO CONCRETE WITH A LARGE EXPOSED SURFACE AREA MUST BE ELECTRICALLY ISOLATED FROM THE SURROUNDING REINFORCEMENT. THE ELECTRICALS CONTINUITY MUST BE CAPABLE OF DEMONSTRATION. THE ELECTRICAL CONTINUITY SHALL BE TESTED IN ACCORDANCE WITH AS 2832.5.
- SPLICES TO REINFORCEMENT SHALL ONLY BE MADE IN POSITIONS SHOWN OR AS APPROVED OTHERWISE BY THE STRUCTURAL ENGINEER.
- REINFORCEMENT SPLICES SHALL BE FULL STRENGTH TENSION SPLICES WITH THE FOLLOWING UNLESS OTHERWISE SPECIFIED (FOR LAPS IN BLOCKWORK REFER BLOCKWORK NOTES):

| ALL HORIZONTAL BARS | ALL VERTICAL BARS | ALL BARS BELOW BAR | MIN. COVER | N12  | N16  | N20 | N32 |
|---------------------|-------------------|--------------------|------------|------|------|-----|-----|
| 25MPa               | 30mm              | 480                | 750        | 1030 | -    | -   | -   |
| 32MPa               | 40mm              | 390                | 590        | 840  | 1700 | -   | -   |
| 40MPa               | 45mm              | 350                | 530        | 750  | 1520 | -   | -   |
| 50MPa               | 65mm              | 350                | 460        | 610  | 1290 | -   | -   |
| 25MPa               | 30mm              | 630                | 970        | 1340 | -    | -   | -   |
| 32MPa               | 40mm              | 500                | 770        | 1090 | 2210 | -   | -   |
| 40MPa               | 45mm              | 450                | 650        | 930  | 1930 | -   | -   |
| 50MPa               | 65mm              | 450                | 600        | 800  | 1680 | -   | -   |
- THE MINIMUM FABRIC LAP SHALL BE TWO CROSS WIRES PLUS 25mm. STAGGER SHEETS TO AVOID EXCESSIVE THICKNESS AT LAPS.
- USE MECHANICAL SPLICES ONLY WHERE SPECIFIED OR APPROVED BY THE STRUCTURAL ENGINEER.
- DO NOT WELD REINFORCEMENT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
- PROVIDE 3-N/2 DIAGONAL BARS x 2000 LONG IN THE TOP LAYER AT ALL RE-ENTRANT CORNERS.
- REINFORCEMENT BARS SHALL NOT BE CUT TO CLEAR PENETRATIONS NOT SHOWN ON THE DRAWINGS BUT BE DISPLACED TO CLEAR THEM. ADDITIONAL REINFORCING CONSISTENT WITH THE REINFORCEMENT MAT SPACING IS TO BE PROVIDED IN LINE WITH THE BLOCKOUTS.
- SUPPORT ALL REINFORCEMENT SECURELY IN ITS CORRECT POSITION DURING CURING BY SECURELY TYING WITH 1.25mm WIRE TO APPROVED PLASTIC BAR CHAIRS, SPACERS OR SUPPORT BARS. PLASTIC TYPED STEEL BAR CHAIRS SHALL NOT BE USED.
- BAR CHAIRS SHALL BE STRENGTH GRADE 120kg UNLESS SPECIFIED OTHERWISE. CONCRETE BAR CHAIRS WITH A MINIMUM COMPRESSIVE STRENGTH OF 50MPa SHALL BE USED FOR EXPOSURE CLASSIFICATION B2, C1 AND C2. CONCRETE BAR CHAIRS SHALL HAVE CHLORIDE PERMEABILITY CLASS L0 UNLESS SPECIFIED OTHERWISE.
- SUPPORT SPACINGS SHALL BE SUCH AS TO POSITION AND MAINTAIN THE REINFORCEMENT TO THE TOLERANCES OF AS 3600 AND SHALL BE AT 800mm MAXIMUM CENTRES IN SLABS.
- ALL REINFORCEMENT SHALL BE SOURCED FROM MILLS WITH A RELEVANT JAS AND ACCREDITED THIRD-PARTY CERTIFICATION SCHEME SUCH AS THE ACSRS SCHEME.

## UTILITIES

- THE CONTRACTOR SHALL CONFIRM THE POSITION OF ALL SERVICES, AND THE POSITION LEVEL AND SIZE OF THE UTILITY SERVICES IN THE FIELD PRIOR TO PROCEEDING WITH ANY CONSTRUCTION OR EXCAVATION WORK.
- THE CONTRACTOR SHALL ARRANGE FOR AND CARRY OUT ANY WORK REQUIRED TO ADJUST, REMOVE, REDIRECT, CUT INTO OR CUT OFF ANY SERVICE REQUIRED TO COMPLETE THE WORKS.
- ANY SERVICE MODIFIED OR CONNECTED TO IS TO HAVE ITS CONDITION EVALUATED TO ENSURE IT WILL MAINTAIN ITS SERVICEABILITY FOR THE DESIGN LIFE.
- NO POTHOLING OF SERVICES WAS UNDERTAKEN AS PART OF THE SURVEY SCOPE CARRIED OUT BY CRS (GEOMETRICS) - ONLY VISIBLE SERVICES WERE LOCATED DURING THE SURVEY. WHERE ANY DISCREPANCIES EXIST BETWEEN THE SURVEY AND THE INVESTIGATIONS CARRIED OUT BY THE CONTRACTOR, CONTACT THE SUPERINTENDENT FOR A DIRECTION.
- REINSTATE ANY PERMANENT OR TEMPORARY BENCHMARKS DISTURBED TO THE SATISFACTION OF THE SUPERINTENDENT.
- ALL PRECAUTIONS TO PROTECT EXISTING WORKS AND SERVICES MUST BE TAKEN.

## EARTHWORK

- ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH:
    - THE APPROVED MARINE EXECUTION PLAN.
    - THE APPROVED EXCAVATION PERMIT
    - THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
    - TCC CITY PLAN SECTION S06.4 19 NOISE AND VIBRATION (NOTING WORKING DAYS AND HOURS SHALL COMPLY WITH THE CONTRACT).
    - THE APPROVED EROSION AND SEDIMENT CONTROL PLANS. IN THE EVENT THAT ITEMS OF CULTURAL HERITAGE SIGNIFICANCE ARE FOUND ON SITE, THE CONTRACTOR IS TO NOTIFY THE SUPERINTENDENT IMMEDIATELY.
  - ROCK SHALL BE DEFINED AS MATERIAL WHICH CANNOT BE RIPPED AT A PRODUCTION RATE SPECIFIED IN TABLE 1. THE CRAWLER EXCAVATOR SHALL BE EQUIPPED WITH A HEAVY-DUTY BUCKET OR ROCK BUCKET (APPROVED BY THE MANUFACTURER OF THE CRAWLER EXCAVATOR) FOR USE WITH THE PARTICULAR MOOD OF CRAWLER EXCAVATOR FOR EXCAVATION IN ROCK) OF WIDTH NO GREATER THAN STATED IN TABLE 1. THE BUCKET TEETH SHALL BE FITTED WITH PENETRATION BOOKETS.
- | CLASS NUMBER OF CRAWLER EXCAVATOR | OPERATING MASS (kg) | NET ENGINE POWER (kW) | MAXIMUM BUCKET WIDTH (mm) | PRODUCTION RATE (m <sup>3</sup> /h) |
|-----------------------------------|---------------------|-----------------------|---------------------------|-------------------------------------|
| 55                                | ≥ 12 500 < 15 000   | ≥ 55 < 65             | 450                       | 1.5                                 |
| 85                                | ≥ 19 000 < 23 000   | ≥ 85 < 100            | 600                       | 3                                   |
| 115                               | ≥ 27 000 < 31 000   | ≥ 115 < 135           | 750                       | 4.5                                 |
| 155                               | ≥ 38 000 < 44 000   | ≥ 155 < 175           | 900                       | 7                                   |
| 200                               | ≥ 50 000 < 60 000   | ≥ 200 < 235           | 1050                      | 10                                  |

- NOTES:
- CLASS NUMBER SHALL BE THE NUMBER OR THE LOWER OF THE TWO NUMBERS, FOR WHICH THE MACHINE WOULD BE CLASSIFIED SEPARATELY BY NET ENGINE POWER AND BY OPERATING MASS.
  - OPERATING MASS SHALL ALSO INCLUDE STANDARD ATTACHMENTS, FOR EXAMPLE, ONE-PIECE BOOM STANDARD STICK, SMALL BUCKET, STANDARD UNDERCARRIAGE.
  - EARTHWORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH 'AS 3798. GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS', EXCEPT WHERE VARIED BY THESE NOTES AND THE SPECIFICATION.
  - LEVEL 1 INSPECTION TO AS 3798 AND TESTING IS REQUIRED FOR ALL EARTHWORKS ASSOCIATED WITH THE FINAL WORKS AND ALL ROCK BREAKING ACTIVITIES.
  - MINIMUM FREQUENCY OF TESTING SHALL BE TYPE 4 IN ACCORDANCE WITH AS 3798.
  - EXISTING SURFACES UNDER NEW WORKS AND THE FULL SLPWAY TO THE SITE BOUNDARY ARE TO BE STRIPPED OF ALL VEGETATION AND LOOSE SEDIMENT. LOOSE SEDIMENT SHALL BE REMOVED FOR THE FULL EXTENT OF THE TWO OUTER SUPPLY RAILS. ALL TREE STUMPS AND ROCKS SHALL BE CHAINED OUT AND REMOVED. IF DECLARED WEEDS ARE ENCOUNTERED THE CONTRACTOR IS TO ADVISE THE SUPERINTENDENT AND DISPOSE OF THEM IN AN APPROVED MANNER.
  - ANY EXCAVATIONS REQUIRED TO REMOVE EXISTING MANHOLES, PITS, STUMPS, ROOTS OR OTHER EXISTING ELEMENTS SHALL BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) OR WITH COMPACTED FILL TO 98% SMOO.
  - FILL (IF REQUIRED) SHALL BE APPROVED FILL COMPLYING WITH THE FOLLOWING:
    - FREE FROM ORGANIC MATTER
    - MAXIMUM NOMINAL PARTICLE SIZE OF 53mm
    - AN APPROVED PARTICLE SIZE DISTRIBUTION
    - A MINIMUM SOAKED CBR OF 15%
    - LIQUID LIMIT LESS THAN 20%
    - PLASTIC INDEX LESS THAN 45
    - WEIGHTED PLASTICITY INDEX LESS THAN 2200POTENTIAL SWELL LESS THAN 2.5% WHERE CBR AND SWELL ARE VALUES AT OPTIMUM MOISTURE CONTENT (OMC), 97% STANDARD COMPACTION DRY DENSITY RATIO OR HALF DENSITY RATIO OF 15 USING STANDARD COMPACTIVE EFFORT, 4 DAY SOAKED BASED ON 4.5kg SURCHARGE.
  - THE EXISTING SURFACE LEVELS AND CONTOURS ARE BASED ON SURVEY CONDUCTED BY CRS (GEOMETRICS) 31/7/23 AND TCC MAPPING. THE EXTENT OF THE CRS SURVEY IS INDICATED ON THE DRAWINGS. ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE DESIGN DOCUMENTATIONS SHALL BE IMMEDIATELY REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
  - THE CONTRACTOR SHALL ENSURE THAT THE SIDES AND BOTTOMS OF ALL EXCAVATIONS ARE STABLE DURING ALL STAGES OF CONSTRUCTION AND REMAIN FREE OF ORGANIC MATERIAL AND RUBBISH. THE CONTRACTOR SHALL ENSURE THAT IF A PERSON ENTERS A TRENCH MORE THAN 1.5m DEEP, THE FOLLOWING CONTROL MEASURES ARE IMPLEMENTED:
    - HAS SHORING OR SHIELDING IN PLACE; OR
    - THE TRENCH IS BENCHED; OR
    - THE TRENCH IS BATTERED - ANGLE NOT EXCEEDING 45° AND THE BOTTOM VERTICAL FACE IS NOT TO EXCEED 0.5m HIGH; AND
    - IS APPROVED AS A SAFE WORK PLACE (IN WRITING) BY A SUITABLE QUALIFIED GEOTECHNICAL ENGINEER.
  - SURFACES DISTURBED DURING CONSTRUCTION SHALL BE MADE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
  - GRADE EVENLY BETWEEN LEVELS SHOWN.

## FORMWORK

- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, AS3610 AND AS3600.
  - THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
  - EXPPOSED FORMED SURFACES SHALL HAVE A MINIMUM CLASS 3 SURFACE FINISH AND A 20mm CHAMFER UNLESS NOTED OTHERWISE.
  - FORMWORK STRIPPING SHALL BE IN ACCORDANCE WITH AS3610 AND SHALL OCCUR NO SOONER THAN:
    - FORMWORK STRIPPING 4 DAYS
    - OR WHEN 25MPa CONCRETE STRENGTH HAS BEEN REACHED. CONCRETE STRENGTH IS TO BE CONFIRMED BY A COMPRESSIVE STRENGTH TEST.
- ESCP
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, IMPLEMENTATION & MAINTENANCE OF THE SOIL EROSION & SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AS PER PRENSA CONTAMINATED SOIL AND WASTE MANAGEMENT PLAN SECTION 8.4.
  - THE OWNER IS RESPONSIBLE FOR THE IMPLEMENTATION & MAINTENANCE OF THE SOIL EROSION & SEDIMENT CONTROL POST CONSTRUCTION.
  - DURING CONSTRUCTION ALL CONTRACTOR VEHICLES SHALL BE PARKED IN DESIGNATED CONTRACTOR PARKING SPACES.

## ACID SULPHATE SOIL

- POTENTIAL ACID SULPHATE SOIL TO BE MANAGED AS PER PRENSA ACID SULPHATE SOIL MANAGEMENT PLAN.

**SAFETY IN DESIGN INFORMATION**  
THERE MAY BE ADDITIONAL HAZARDOUS RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

**PLANS AND DOCUMENTS**  
referred to in the PDA DEVELOPMENT APPROVAL  
Approval no: DEV2024/14722  
Date: 25 February 2025



| REV | DESCRIPTION          | APPD | DATE     |
|-----|----------------------|------|----------|
| F   | REVISED TENDER ISSUE | DEJ  | 13/12/24 |
| E   | TENDER ISSUE         | DEJ  | 21/11/24 |
| D   | TENDER ISSUE         | DEJ  | 16/05/24 |
| C   | PRELIMINARY ISSUE    | DEJ  | 09/05/24 |
| B   | PRELIMINARY ISSUE    | DEJ  | 08/04/24 |
| A   | PRELIMINARY ISSUE    | DEJ  | 08/03/24 |

## TENDER



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**LCJ ENGINEERS**

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| DRAWN    | JA            | DESIGNED | LW       |
|----------|---------------|----------|----------|
| APPROVED | D.E.JOHNSTONE | DATE     | 16/05/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED

**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

**DRAWING**  
CONSTRUCTION NOTES - SHEET 1

**JOB NUMBER**  
TPAA055

**SHEET NO. REVISION**  
S0.02 F

## "DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.

Registered RPEQ 5892

Dated this day 13 of 12, 2024





SAFETY IN DESIGN REPORT

1. THE WORK HEALTH AND SAFETY ACT 2011 REQUIRES DESIGNERS PROVIDE A WRITTEN REPORT OUTLINING THE HAZARDS IDENTIFIED BY THE DESIGNER, ACTIONS TAKEN TO REDUCE THOSE RISKS AND ANY OTHER REMAINING HAZARDS.
2. HAZARDS OUTLINED IN THIS REPORT ARE STRUCTURAL AND CIVIL ENGINEERING IN NATURE, WHICH HAVE BEEN IDENTIFIED SO FAR AS REASONABLE AND PRACTICABLE. OTHER DESIGNERS MAY IDENTIFY ADDITIONAL HAZARDS AND RELEVANT PERSONS MUST REVIEW ALL DESIGNERS' SAFETY IN DESIGN REPORTS.
3. THE BUILDING OWNER, CLIENT AND CONTRACTOR MUST ENSURE THAT ALL RELEVANT PERSONS ARE MADE AWARE OF THE PROVISIONS OF THE REPORT.
4. THIS REPORT APPLIES TO ALL STAGES OF THE STRUCTURE LIFE INCLUDING CONSTRUCTION, MAINTENANCE, USE AND DEMOLITION.
5. RISKS NOTED AT EACH LIFECYCLE STAGE MAY APPLY TO OTHER STAGES. RELEVANT PERSONS SHALL REVIEW ALL STAGES.

DESIGN BASIS

1. THE PURPOSE OF THIS STRUCTURE IS TO SUPPORT HMAS TOWNSVILLE.
2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS LISTED ON THE FORM 1'S.
3. THE FOLLOWING TESTING HAS BEEN UNDERTAKEN:
- GEOTECHNICAL INVESTIGATION 227086.00 29/02/2024 BY DOUGLAS PARTNERS
  - PRENSA CONTAMINATED SOIL AND WASTE MANAGEMENT PLAN
  - FORMER CURTAIN BROS SLIPWAY
  - ROSS STREET, SOUTH TOWNSVILLE QLD
  - PORT OF TOWNSVILLE L10
- APRIL 2024  
CLIENT No. P0021  
JOB No. 1218178

CONTROL MEASURES

HAZARDS ARE CONTROLLED THROUGH RISK CONTROL MEASURES AS FOLLOWS:

- ELIMINATION - REMOVE THE HAZARD THROUGH DESIGN MEASURES
- ENGINEERING - PROVIDE AN ENGINEERING SOLUTION TO CONTROL THE RISK
- ADMINISTRATION - USE OF ADMINISTRATION CONTROLS TO INFLUENCE PEOPLE
- CODES OF PRACTICE
- CURRENT CODES OF PRACTICE ARE AVAILABLE AT WORKSAFE.QLD.GOV.AU

SAFETY IN DESIGN INFORMATION  
THERE MAY BE ADDITIONAL  
HAZARDS/RISKS NOT NORMALLY  
ASSOCIATED WITH THE TYPES OF WORK  
SHOWN ON THIS DRAWING. REFER TO  
THE SAFETY IN DESIGN REPORT.

PLANS AND DOCUMENTS  
referred to in the PDA  
DEVELOPMENT APPROVAL



Approval no: DEV2024/14722  
Date: 25 February 2025

STRUCTURE LIFECYCLE STAGE: CONSTRUCTION

| HAZARDS                                |                                     |                                                                                                                                               | CONTROL     |             |                                      | PERSON RESPONSIBLE FOR CONTROL | ADDITIONAL NOTES                                                                                                  |
|----------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
|                                        |                                     |                                                                                                                                               | ELIMINATION | ENGINEERING | ADMINISTRATION/<br>CODES OF PRACTICE |                                |                                                                                                                   |
| FALLS, SLIPS AND TRIPS                 | WORK AT HEIGHT                      | PROVIDE SCAFFOLDING AS REQUIRED                                                                                                               |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | PROVIDE EDGE PROTECTION                                                                                                                       |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | FOLLOW PROVISIONS OF CODE OF PRACTICE                                                                                                         |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        | UNEVEN SURFACES                     | WHERE APPLICABLE, LEVELS DESIGNED TO MINIMISE UNEXPECTED STEPS AND FALLS                                                                      |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
|                                        | EXPOSED REINFORCING BARS            | PROVIDE HOOKS TO TOP OF BARS WHERE POSSIBLE                                                                                                   |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
| WORK ON EXISTING STRUCTURES            | STRUCTURE COLLAPSE                  | PROVIDE SAFETY CAPS TO UNHOOKED BARS                                                                                                          |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | OBTAIN EXISTING STRUCTURAL DRAWINGS WHERE POSSIBLE                                                                                            | ✓           |             |                                      | ENGINEER/CONTRACTOR            | EXISTING DRAWINGS WERE NOT AVAILABLE                                                                              |
|                                        |                                     | FULLY PROP ANY LOAD BEARING ELEMENTS DURING CONSTRUCTION                                                                                      |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        | LOADS ON PARTIAL STRUCTURES         | ENSURE DESIGN LOADS ARE NOT APPLIED TO PARTIALLY CONSTRUCTED STRUCTURE                                                                        |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | WHERE POSSIBLE, DESIGN STRUCTURE FOR PARTIALLY CONSTRUCTED STATE                                                                              |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
| FALLING OBJECTS                        | STRUCTURAL COMPONENTS               | CONTRACTOR MUST CONSULT ENGINEER IF DESIGN LOADS WILL BE APPLIED TO PARTIAL STRUCTURES                                                        |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | TEMPORARILY PROP STRUCTURES AS REQUIRED DURING CONSTRUCTION                                                                                   |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | PROVIDE CLEARLY MARKED LIFTING POINTS                                                                                                         |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
|                                        | LOOSE OBJECTS                       | CREATE EXCLUSION ZONES                                                                                                                        |             | ✓           | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | PROVIDE MINIMUM OF TWO BOLT HOLES IN STEELWORK FOR EASE OF ERECTION                                                                           |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
| CRUSHING COLLAPSE OF STACKED MATERIALS | HEAVY CONSTRUCTION MATERIALS        | PROVIDE FLOOR FALL THROUGH PROTECTION WHERE > 1500mm CLEARANCE TO FLOOR BELOW                                                                 |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | PROVIDE EXCLUSION ZONES WHEN MOVING MATERIALS. ENSURE MATERIALS ARE STABLE BEFORE MOVING PLANT                                                |             |             | ✓                                    | CONTRACTOR                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS                             |
|                                        |                                     | PROVIDE EXCLUSION ZONES WHEN MOVING MATERIALS. ENSURE MATERIALS ARE STABLE BEFORE MOVING PLANT                                                |             |             | ✓                                    | CONTRACTOR                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS                             |
|                                        | SERVICES                            | IDENTIFY AND DOCUMENT EXISTING SERVICES                                                                                                       |             |             | ✓                                    | ENGINEER                       | WHERE KNOWN, EXISTING SERVICES HAVE BEEN NOTED ON PLANS                                                           |
|                                        |                                     | DIAL BEFORE YOU DIG                                                                                                                           |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
| EARTHWORKS                             | WORK NEAR SHAFTS OR EXCAVATIONS     | PROVIDE LOAD PATH AROUND SERVICES                                                                                                             |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
|                                        |                                     | ISOLATE SERVICE PRIOR TO CONSTRUCTION                                                                                                         | ✓           |             |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | ENSURE ADEQUATE CLEARANCE TO OVERHEAD POWERLINES                                                                                              |             |             | ✓                                    | CONTRACTOR                     | CONTRACTOR TO CONTACT SERVICE PROVIDER AND FOLLOW APPROPRIATE PROCEDURES AND CODE OF PRACTICE                     |
|                                        | OVERHEAD POWERLINES                 | ENSURE APPROPRIATE SERVICE PROVIDERS ARE NOTIFIED AND HAZARD FLAGGING IS INSTALLED                                                            |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | ENSURE APPROPRIATE SERVICE PROVIDERS ARE NOTIFIED AND HAZARD FLAGGING IS INSTALLED                                                            |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
| TRAFFIC MANAGEMENT                     | WORK NEAR SHAFTS OR EXCAVATIONS     | WHERE POSSIBLE, DESIGN FOR INSTALLATION WITHOUT ENTERING EXCAVATION                                                                           | ✓           |             |                                      | ENGINEER                       |                                                                                                                   |
|                                        |                                     | WHERE POSSIBLE, PROVIDE EXCAVATION SIDE SUPPORT, OR BENCHES/BATTERS                                                                           |             | ✓           |                                      | ENGINEER/CONTRACTOR            | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | CREATE EXCLUSION ZONES AROUND EXCAVATION                                                                                                      |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        | EROSION AND SEDIMENT CONTROL        | COMPLY WITH EROSION AND SEDIMENT CONTROL PLAN                                                                                                 |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | CONSTRUCTION OF AND AROUND STEEP BATTERS                                                                                                      |             | ✓           |                                      | ENGINEER/CONTRACTOR            | CONTRACTOR TO PROVIDE METHOD STATEMENT FOR BATTERS STEEPER THAN 1 VERTICAL IN 3 HORIZONTAL                        |
| WATER BODIES                           | SLOPE STABILITY                     | WHERE POSSIBLE FLATTEN BATTERS TO LESS THAN 1 VERTICAL TO 3 HORIZONTAL                                                                        |             | ✓           |                                      | ENGINEER/CONTRACTOR            | CONTRACTOR RESPONSIBLE FOR ENSURING EXCAVATIONS REQUIRED TO CONSTRUCT THE WORK ARE STABLE. REFER CODE OF PRACTICE |
|                                        |                                     | OBTAIN A GEOTECHNICAL REPORT AND COMPLY WITH RECOMMENDATIONS                                                                                  | ✓           |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | REFER TO CONTROLS IN PRENSA CONTAMINATED SOIL MANAGEMENT PLAN SECTION 8.1, TABLE 2.                                                           |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        | HUMAN EXPOSURE TO CONTAMINATED SOIL | REFER TO CONTROLS IN PRENSA CONTAMINATED SOIL MANAGEMENT PLAN SECTION 8.1, TABLE 2.                                                           |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | REFER TO CONTROLS IN PRENSA CONTAMINATED SOIL MANAGEMENT PLAN SECTION 8.1, TABLE 2.                                                           |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
| PLANT                                  | TRAFFIC MANAGEMENT                  | PROVIDE A TRAFFIC MANAGEMENT PLAN WHERE APPLICABLE                                                                                            |             | ✓           |                                      | ENGINEER                       | A TRAFFIC MANAGEMENT PLAN WAS NOT PREPARED FOR THIS PROJECT                                                       |
|                                        |                                     | PROVIDE OFF STREET CARPARKING, ADEQUATE SITE ACCESS AND MATERIAL STORAGE AREAS                                                                |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | PROVIDE OFF STREET CARPARKING, ADEQUATE SITE ACCESS AND MATERIAL STORAGE AREAS                                                                |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        | WATER BODIES                        | ISOLATE OR DRAIN WATER BODY WHERE POSSIBLE                                                                                                    | ✓           |             |                                      | ENGINEER/CONTRACTOR            |                                                                                                                   |
|                                        |                                     | PROVIDE APPROPRIATE PPE                                                                                                                       |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
| HAZARDOUS SUBSTANCES                   | DROWNING                            | AVOID ELECTRICAL WORK NEAR WATER BODIES                                                                                                       |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED AND ENSURE THAT DEWATERING PROCESS DOES NOT COMPROMISE THE STABILITY OF ADJACENT WORKS |             |             | ✓                                    | CONTRACTOR                     | MAINTAIN A STABLE CONDITION                                                                                       |
|                                        |                                     | CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED AND ENSURE THAT DEWATERING PROCESS DOES NOT COMPROMISE THE STABILITY OF ADJACENT WORKS |             |             | ✓                                    | CONTRACTOR                     | MAINTAIN A STABLE CONDITION                                                                                       |
|                                        | CAVE INS                            | CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED AND ENSURE THAT DEWATERING PROCESS DOES NOT COMPROMISE THE STABILITY OF ADJACENT WORKS |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED AND ENSURE THAT DEWATERING PROCESS DOES NOT COMPROMISE THE STABILITY OF ADJACENT WORKS |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
| PLANT                                  | OVERTURNING/COLLISION               | FOLLOW PROVISIONS OF CODE OF PRACTICE                                                                                                         |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | EXCLUDE PLANT FROM EXCAVATION/RETAINING STRUCTURE/BATTER ZONE OF INFLUENCE                                                                    |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | DESIGN STRUCTURE FOR APPROPRIATE PLANT LOADS                                                                                                  |             | ✓           |                                      | ENGINEER                       |                                                                                                                   |
|                                        | COLLISIONS                          | PROVIDE EXCLUSION ZONES AROUND OPERATING PLANT                                                                                                |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | PROVIDE EXCLUSION ZONES AROUND OPERATING PLANT                                                                                                |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
| HAZARDOUS SUBSTANCES                   | ASBESTOS                            | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE                                 |             |             | ✓                                    | CONTRACTOR                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE     |
|                                        |                                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE                                 |             |             | ✓                                    | CONTRACTOR                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE     |
|                                        |                                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE                                 |             |             | ✓                                    | CONTRACTOR                     | ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS. REFER CODE OF PRACTICE     |
|                                        | TREATED TIMBER                      | REFER PRENSA REPORT JOB No. 1218178                                                                                                           |             | ✓           |                                      | ENGINEER                       | REFER PRENSA REPORT JOB No. 1218178                                                                               |
|                                        |                                     | REFER PRENSA REPORT JOB No. 1218178                                                                                                           |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
| HAZARDOUS SUBSTANCES                   | VOLATILE ORGANIC COMPOUNDS          | REFER CODE OF PRACTICE                                                                                                                        |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | REFER CODE OF PRACTICE                                                                                                                        |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | REFER CODE OF PRACTICE                                                                                                                        |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        | SYNTHETIC MINERAL FIBRE             | KEEP AREAS WELL VENTILATED WHEN USING GLUES, SOLVENTS AND PAINTS                                                                              |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | USE APPROPRIATE PPE WHEN HANDLING FIBREGLASS, ROCKWOOL OR SIMILAR PRODUCTS                                                                    |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
| HAZARDOUS SUBSTANCES                   | CONTAMINATED LAND                   | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE                                   |             |             | ✓                                    | CONTRACTOR                     | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE       |
|                                        |                                     | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE                                   |             |             | ✓                                    | CONTRACTOR                     | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE       |
|                                        |                                     | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE                                   |             |             | ✓                                    | CONTRACTOR                     | ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE       |
|                                        | TREATED TIMBER                      | USE APPROPRIATE PPE WHILE CUTTING, SANDING OR DRILLING                                                                                        |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | DO NOT BURN TREATED TIMBER                                                                                                                    |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
| HAZARDOUS SUBSTANCES                   | VOLATILE ORGANIC COMPOUNDS          | KEEP AREAS WELL VENTILATED WHEN USING GLUES, SOLVENTS AND PAINTS                                                                              |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | KEEP AREAS WELL VENTILATED WHEN USING GLUES, SOLVENTS AND PAINTS                                                                              |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | KEEP AREAS WELL VENTILATED WHEN USING GLUES, SOLVENTS AND PAINTS                                                                              |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        | SYNTHETIC MINERAL FIBRE             | USE APPROPRIATE PPE WHEN HANDLING FIBREGLASS, ROCKWOOL OR SIMILAR PRODUCTS                                                                    |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | USE APPROPRIATE PPE WHEN HANDLING FIBREGLASS, ROCKWOOL OR SIMILAR PRODUCTS                                                                    |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
| HAZARDOUS SUBSTANCES                   | CONTAMINATED LAND                   | REMOVE / CONTAIN SUBSTANCE PRIOR TO CONSTRUCTION                                                                                              |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | REMOVE / CONTAIN SUBSTANCE PRIOR TO CONSTRUCTION                                                                                              |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        |                                     | REMOVE / CONTAIN SUBSTANCE PRIOR TO CONSTRUCTION                                                                                              |             |             | ✓                                    | CONTRACTOR                     |                                                                                                                   |
|                                        | TREATED TIMBER                      | USE APPROPRIATE PPE WHILE CUTTING, SANDING OR DRILLING                                                                                        |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |
|                                        |                                     | DO NOT BURN TREATED TIMBER                                                                                                                    |             | ✓           |                                      | CONTRACTOR                     | REFER CODE OF PRACTICE                                                                                            |

STRUCTURE LIFECYCLE STAGE: MAINTENANCE

| HAZARDS                       |                    |                                                                                                     | CONTROL     |             |                                      | PERSON RESPONSIBLE FOR CONTROL | ADDITIONAL NOTES             |
|-------------------------------|--------------------|-----------------------------------------------------------------------------------------------------|-------------|-------------|--------------------------------------|--------------------------------|------------------------------|
|                               |                    |                                                                                                     | ELIMINATION | ENGINEERING | ADMINISTRATION/<br>CODES OF PRACTICE |                                |                              |
| FALLS, SLIPS AND TRIPS        | WORK AT HEIGHT     | WHERE POSSIBLE, PLACE ITEMS OF REGULAR MAINTENANCE AT LOW HEIGHT                                    | ✓           |             |                                      | ENGINEER                       |                              |
|                               |                    | WHERE APPROPRIATE, PROVIDE SAFE ACCESS TO ITEMS AT HEIGHT, INCLUDING ANCHOR POINTS OR FIXED LADDERS |             | ✓           |                                      | ENGINEER                       |                              |
| CONFINED SPACE                | ENCLOSED SPACES    | MINIMISE THE REQUIREMENT TO ENTER CONFINED SPACES FOR MAINTENANCE                                   | ✓           |             |                                      | ENGINEER                       |                              |
|                               |                    | FOLLOW THE PROVISIONS OF CODE OF PRACTICE                                                           |             |             | ✓                                    | CONTRACTOR                     | REFER CODE OF PRACTICE       |
| MATERIAL SELECTION AND DESIGN | STORMWATER DEVICES | PROVIDE INFRASTRUCTURE THAT CAN BE MAINTAINED WITHOUT CONFINED SPACE ENTRY                          |             | ✓           |                                      | ENGINEER                       | CONSIDER ALTERNATE SOLUTIONS |
|                               |                    | SELECT MATERIALS WHICH REQUIRE MINIMAL MAINTENANCE DURING DESIGN LIFE                               |             | ✓           |                                      | ENGINEER                       |                              |
| MATERIAL SELECTION AND DESIGN | LOADS ON STRUCTURE | DESIGN SURFACE FOR APPROPRIATE MAINTENANCE LOADS - ELEVATED WORK PLATFORMS ETC.                     |             | ✓           |                                      | ENGINEER                       |                              |
|                               |                    | WHERE POSSIBLE PROVIDE LEVEL WORKING SURFACE FOR MAINTENANCE                                        |             | ✓           |                                      | ENGINEER                       |                              |

"DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty, Ltd,  
hereby certify that the works have been designed in  
accordance to relevant design standards and  
specifications.

Registered RPEQ 5892

Dated this day 13 of 12, 2024

DRAWN JA DESIGNED LW

APPROVED D.E.JOHNSTONE DATE 16/05/24

CLIENT PORT OF TOWNSVILLE LIMITED

PROJECT HMAS TOWNSVILLE PERMANENT DOCKING

DRAWING SAFETY AND DESIGN NOTES - SHEET 1

JOB NUMBER TPAA055 SHEET No. S0.05 REVISION F

13/12/2024 10:08:07

STRUCTURE LIFECYCLE STAGE: USE FOR INTENDED PURPOSE

| HAZARDS                |                                      | CONTROL MEASURE                                                                                                                                                                                                                                      | CONTROL     |             |                                     | PERSON RESPONSIBLE FOR CONTROL     | ADDITIONAL NOTES                                                                                  |
|------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|
|                        |                                      |                                                                                                                                                                                                                                                      | ELIMINATION | ENGINEERING | ADMINISTRATION/<br>CODE OF PRACTICE |                                    |                                                                                                   |
| GENERAL ARRANGEMENT    | TYING INTO EXISTING INFRASTRUCTURE   | ENSURE NEW WORKS TIE INTO EXISTING AS PER CURRENT DESIGN STANDARDS WHERE ABLE. IF UNABLE, ENSURE CONSISTENCY WITH SURROUNDING ENVIRONMENT AND ENSURE RESIDUAL RISK IS CONVEYED TO THE STAKEHOLDER.                                                   |             | ✓           |                                     | ENGINEER                           |                                                                                                   |
| PAVEMENT DETERIORATION | ROUTINE AND PREVENTATIVE MAINTENANCE | ENSURE SCHEDULED MAINTENANCE WORKS ARE IN ACCORDANCE WITH STANDARD MAINTENANCE PRACTICES BUT ARE AT LEAST SUFFICIENT TO MAINTAIN THE SHAPE, PROFILE AND AMENITY OF THE PAVEMENT.                                                                     |             |             | ✓                                   | MAINTENANCE CONTRACTOR/ASSET OWNER | WHOLE LIFE COSTS MAY BE HIGHER IF PROJECT CONSTRAINTS ARE IN PLACE                                |
| DRAINAGE STRUCTURES    | ROUTINE AND PREVENTATIVE MAINTENANCE | ENSURE SCHEDULED MAINTENANCE WORKS ARE IN ACCORDANCE WITH STANDARD MAINTENANCE PRACTICES FOR DRAINAGE BUT ARE AT LEAST SUFFICIENT TO MAINTAIN THE HYDRAULIC PERFORMANCE OF DRAINAGE STRUCTURES AND PREVENT PIPING AND/OR EROSION OF TRENCH BACKFILL. |             |             | ✓                                   | MAINTENANCE CONTRACTOR/ASSET OWNER | ENSURE MAINTENANCE IS SCHEDULED APPROPRIATELY                                                     |
| LINEMARKING / SIGNAGE  | FADING                               | REPLACE WHEN REFLECTIVITY AND / OR LUMINOSITY DOES NOT COMPLY WITH MINIMUM REQUIREMENTS                                                                                                                                                              |             |             | ✓                                   | MAINTENANCE CONTRACTOR/ASSET OWNER | ENSURE MAINTENANCE IS SCHEDULED APPROPRIATELY                                                     |
| FALLS, SLIPS AND TRIPS | WORK AT HEIGHT                       | PROVIDE ADEQUATE BALUSTRADES                                                                                                                                                                                                                         |             | ✓           |                                     | ENGINEER/CONTRACTOR                | REFER CODE OF PRACTICE                                                                            |
|                        | UNEVEN SURFACES                      | WHERE APPLICABLE, LEVELS DESIGNED TO ELIMINATE UNEXPECTED STEPS AND FALLS                                                                                                                                                                            |             | ✓           |                                     | ENGINEER                           |                                                                                                   |
|                        | SLIPPERY SURFACES                    | PROVIDE ADEQUATE DRAINAGE TO ALL SURFACES                                                                                                                                                                                                            |             | ✓           |                                     | ENGINEER/CONTRACTOR                | REFER CODE OF PRACTICE                                                                            |
|                        | ELEVATED PATHS AND WALKWAYS          | PROVIDE ADEQUATE BALUSTRADES                                                                                                                                                                                                                         |             | ✓           |                                     | ENGINEER/CONTRACTOR                | COMPLY WITH PROVISIONS OF ACCESS STANDARDS/REGULATIONS                                            |
| FALLING OBJECTS        | LOOSE OBJECTS                        | PROVIDE FLOOR FALL THROUGH PROTECTION WHERE > 1500mm CLEARANCE TO FLOOR BELOW                                                                                                                                                                        |             | ✓           | ✓                                   | ENGINEER                           |                                                                                                   |
| TRAFFIC MANAGEMENT     | WORKER AND TRAFFIC INTERACTION       | RESTRICT ACCESS TO BELOW WORK AREAS                                                                                                                                                                                                                  | ✓           |             |                                     | CLIENT                             |                                                                                                   |
|                        |                                      | SEPARATE TRAFFIC AND PEDESTRIANS WHERE POSSIBLE                                                                                                                                                                                                      | ✓           |             |                                     | ENGINEER                           |                                                                                                   |
|                        |                                      | FORWARD MOTION PREFERENCE GIVEN TO TRAFFIC                                                                                                                                                                                                           |             | ✓           |                                     | ENGINEER                           |                                                                                                   |
|                        |                                      | PROVIDE LOADING FACILITY CLOSE TO GOODS STORAGE                                                                                                                                                                                                      |             | ✓           |                                     | ENGINEER/CONTRACTOR                | REFER CODE OF PRACTICE                                                                            |
|                        | EMERGENCY VEHICLE                    | ENSURE ADEQUATE ACCESS FOR EMERGENCY VEHICLES                                                                                                                                                                                                        |             | ✓           |                                     | ENGINEER                           |                                                                                                   |
|                        | PEDESTRIANS                          | PEDESTRIANS SEPARATED FROM TRAFFIC                                                                                                                                                                                                                   |             | ✓           |                                     | ENGINEER                           | NO SEPARATION HAS BEEN PROVIDED, BUT CONSISTENT WITH EXISTING DESIGN AND ADJACENT SECTION OF ROAD |
| EROSION                | LANDSCAPING AREAS                    | ENSURE WORKS ARE ESTABLISHED AT HANDOVER AND VEGETATION TYPE, SOIL TYPE AND PREPARATION IS SUITABLE TO ENSURE LANDSCAPING IS SUSTAINABLE                                                                                                             |             |             | ✓                                   | MAINTENANCE CONTRACTOR             | ENSURE THAT AREAS ARE MAINTAINED AND PERIODICALLY INSPECTED FOR EROSION                           |
|                        | HARD LANDSCAPING AREAS               | ENSURE WORKS ARE MAINTAINED DURING DESIGN LIFE TO ENSURE THAT EROSION DOES NOT COMPROMISE THE SAFETY OF USERS                                                                                                                                        |             |             | ✓                                   | MAINTENANCE CONTRACTOR             |                                                                                                   |
| DISABLED ACCESS        | ACCESS AND EGRESS                    | ENSURE DESIGN CATERES FOR PERSONS WITH DISABILITIES                                                                                                                                                                                                  |             | ✓           |                                     | ENGINEER                           |                                                                                                   |
| MANUAL TASKS           | LIFTING OF MATERIALS                 | PROVIDE MECHANICAL LIFTING DEVICES OR LIFTING POINTS WHERE APPROPRIATE                                                                                                                                                                               |             | ✓           | ✓                                   | ENGINEER                           | REFER CODE OF PRACTICE                                                                            |
|                        |                                      | PROVIDE TRAINING FOR WORKERS                                                                                                                                                                                                                         |             |             | ✓                                   | CLIENT                             | REFER CODE OF PRACTICE                                                                            |
| HAZARDOUS SUBSTANCES   | SKIN/EYE IRRITATION                  | PROVIDE EYE WASH STATION AND SAFETY SHOWER WHERE APPROPRIATE                                                                                                                                                                                         | ✓           |             |                                     | ENGINEER                           |                                                                                                   |
| CONFINED SPACES        | ENCLOSED SPACES                      | ELIMINATE ENCLOSED SPACES FROM WORKSPACE                                                                                                                                                                                                             |             |             | ✓                                   | ENGINEER                           |                                                                                                   |
|                        |                                      | PROVIDE WARNING SIGNS                                                                                                                                                                                                                                |             |             | ✓                                   | CONTRACTOR                         |                                                                                                   |

STRUCTURE LIFECYCLE STAGE: DEMOLITION

| HAZARDS    |                    | CONTROL MEASURE                                                             | CONTROL     |             |                                     | PERSON RESPONSIBLE FOR CONTROL | ADDITIONAL NOTES       |
|------------|--------------------|-----------------------------------------------------------------------------|-------------|-------------|-------------------------------------|--------------------------------|------------------------|
|            |                    |                                                                             | ELIMINATION | ENGINEERING | ADMINISTRATION/<br>CODE OF PRACTICE |                                |                        |
| SEQUENCING | EARTH COLLAPSE     | ENSURE EARTH IS STABLE BEFORE REMOVING STRUCTURE                            |             |             | ✓                                   | CONTRACTOR                     |                        |
|            | STRUCTURE COLLAPSE | CLEARLY NOTE ANY CONSTRUCTION/DEMOLITION SEQUENCING REQUIREMENTS ON PLANS   |             |             |                                     | ENGINEER                       | REFER CODE OF PRACTICE |
|            |                    | FULLY SUPPORT STRUCTURE DURING DEMOLITION AND REMOVE IN METHODOICAL FASHION |             |             | ✓                                   | CONTRACTOR                     | REFER CODE OF PRACTICE |

SAFETY IN DESIGN INFORMATION  
THERE MAY BE ADDITIONAL  
HAZARDS/RISKS NOT NORMALLY  
ASSOCIATED WITH THE TYPES OF WORK  
SHOWN ON THIS DRAWING. REFER TO  
THE SAFETY IN DESIGN REPORT.

PLANS AND DOCUMENTS  
referred to in the PDA  
DEVELOPMENT APPROVAL  
Approval no: DEV2024/1472/2  
Date: 25 February 2025



|     |                      |      |          |
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| B   | PRELIMINARY ISSUE    | DEJ  | 08/04/24 |
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www.lcjengineers.com.au

|          |               |          |                  |
|----------|---------------|----------|------------------|
| DRAWN    | JA            | DESIGNED | LW               |
| APPROVED | D.E.JOHNSTONE |          | DATE<br>16/05/24 |

CLIENT  
PORT OF TOWNSVILLE LIMITED  
  
PROJECT  
HMAS TOWNSVILLE PERMANENT DOCKING

DRAWING  
SAFETY AND DESIGN NOTES -  
SHEET 2

|            |           |          |
|------------|-----------|----------|
| JOB NUMBER | SHEET No. | REVISION |
| TPAA055    | S0.06     | F        |

"DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty. Ltd.  
hereby certify that the works have been designed in  
accordance to relevant design standards and  
specifications.

*D. Johnstone*

Registered RPEQ 5892

Dated this day 13 of 12 2024



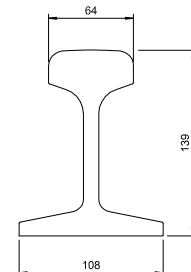
### EXISTING SITE LAYOUT PLAN

SCALE: 1 : 100

### LEGEND:

- DENOTES EXTENT OF PERMANENT SITE WORKS
- DENOTES RAIL - TYPE 1 REFER CROSS SECTION
- DENOTES RAIL - TYPE 2 REFER CROSS SECTION
- DENOTES 30m² OF RUSTY SEDGE
- DENOTES 350m² OF DISTURBANCE TO SCATTERED MANGROVE SAPPLINGS AND SUCCULENTS

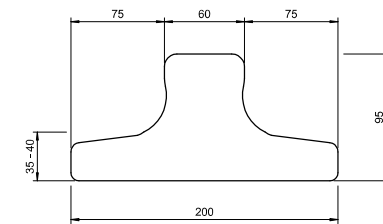
**NOTE:**  
1. VEGETATION CLEARANCE IDENTIFIED IN BLUE AND RED BOXES HAS BEEN ASSESSED BY PORT OF TOWNSVILLE TO BE MAINTENANCE OF A PRE-EXISTING STRUCTURE AND CAN BE CLEARED IN ACCORDANCE WITH WORK TYPE 3.1 OF QPW / 2017 / 3931 V2.00  
2. DESIGN ALLOWABLE BEARING PRESSURE AT UNDERSIDE OF SLAB DURING SLIPPING ACTIONS = 250 KPa  
3. CONTRACTORS TO PROVIDE 10 DAYS NOTICE BEFORE REMOVAL OF ABOVE MARKED VEGETATION TO PRINCIPAL FOR PRINCIPAL TO ISSUE MARINE PLANT NOTICE.



### RAIL TYPE 1 - CROSS SECTION

SCALE: 1 : 2

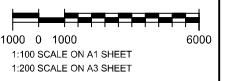
**NOTE:**  
ASSUMED TO BE 63lb RAIL



### RAIL TYPE 2 - CROSS SECTION

SCALE: 1 : 2

**SAFETY IN DESIGN INFORMATION**  
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.



**PLANS AND DOCUMENTS**  
referred to in the PDA  
DEVELOPMENT APPROVAL  
Approval no: DEV2024/1472/2  
Date: 25 February 2025

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| B   | PRELIMINARY ISSUE    | DEJ  | 08/04/24 |
| A   | PRELIMINARY ISSUE    | DEJ  | 08/03/24 |

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|          |               |          |          |
|----------|---------------|----------|----------|
| DRAWN    | JA            | DESIGNED | LW       |
| APPROVED | D.E.JOHNSTONE | DATE     | 16/05/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED  
**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

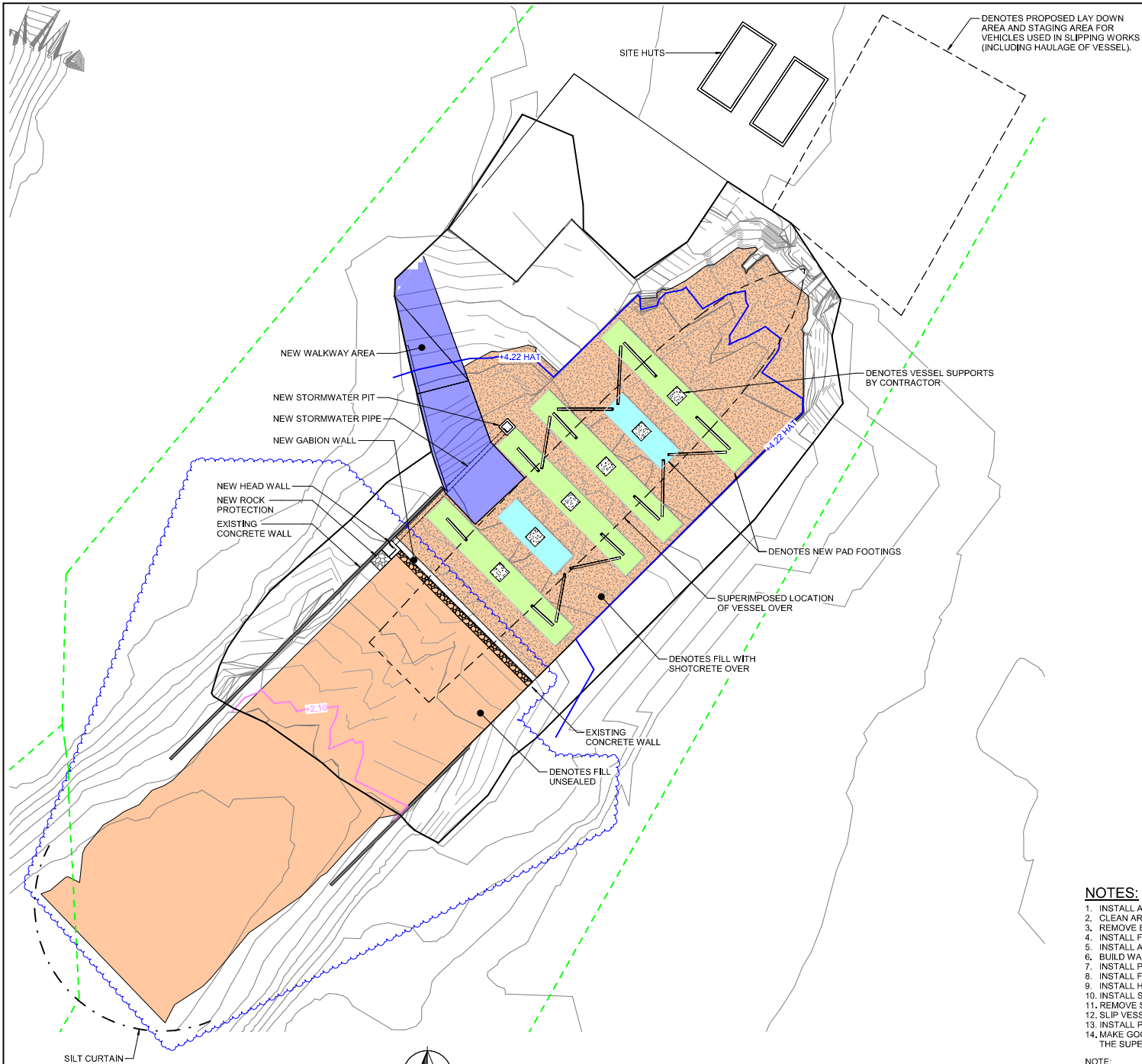
**DRAWING**  
EXISTING SITE LAYOUT PLAN

|            |           |          |
|------------|-----------|----------|
| JOB NUMBER | SHEET No. | REVISION |
| TPAA055    | S1.01     | F        |

**"DESIGN CERTIFICATION"**  
I Daniel Johnstone of LCJ Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.  
  
Registered RPEQ 5892  
Dated this day 13 of 12 2024

EXISTING SITE LAYOUT PLAN

13/12/2024 10:08:21



| AHD             | CHART DATUM |
|-----------------|-------------|
| HAT             | +2.36       |
| MHWS            | +1.31       |
| MHW             | +0.46       |
| MSL             | +0.14       |
| AHD             | 0.000       |
| MLWN            | -0.18       |
| MLWS            | -1.03       |
| LAT             | -1.858      |
| TIDE TABLE 2024 |             |

- LEGEND:**
- DENOTES 2.1m CONTOUR
  - DENOTES EXTENT OF CRS SURVEY
  - DENOTES APPROXIMATE SITE BOUNDARY
  - DENOTES HAT CONTOUR

**SAFETY IN DESIGN INFORMATION**

THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

1500 0 1500 9000

1:150 SCALE ON A1 SHEET

1:300 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**

referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2024/14722

Date: 25 February 2025

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**"DESIGN CERTIFICATION"**

I Daniel Johnstone of LCJ Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.

Registered RPEQ 5892

Dated this day 13 of 12 2024

**LCJ ENGINEERS**

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www.lcjengineers.com.au

- NOTES:**
- INSTALL AND ANCHOR SILT CURTAIN PRIOR TO COMMENCING ANY SITE WORKS.
  - CLEAN AREA AND INSTALL TEMPORARY WORKS ITEMS.
  - REMOVE EXISTING RAILS WHERE FOOTINGS ARE TO BE INSTALLED.
  - INSTALL FILL ON RAMP.
  - INSTALL AND TEST ROCK ANCHORS
  - BUILD WALKWAY RETAINING WALLS AND STORMWATER PIPE.
  - INSTALL PF1 AND PF2.
  - INSTALL FILL WITHIN WALKWAY.
  - INSTALL HEADWALL AND STORMWATER PIT.
  - REMOVE SILT CURTAIN.
  - SLIP VESSEL INTO POSITION AND SUPPORT FROM UNDERNEATH
  - INSTALL PERMANENT STRUTS
  - MAKE GOOD ANY DAMAGE TO EXISTING FEATURES TO THE SATISFACTION OF THE SUPERINTENDENT.
- NOTE:**
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES.

THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO THE COMMENCEMENT OF WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE PROVIDER.

**TEMPORARY WORKS PLAN**

SCALE: 1:150

|            |                                   |           |          |
|------------|-----------------------------------|-----------|----------|
| DRAWN      | JA                                | DESIGNED  | LW       |
| APPROVED   | D.E.JOHNSTONE                     | DATE      | 16/05/24 |
| CLIENT     | PORT OF TOWNSVILLE LIMITED        |           |          |
| PROJECT    | HMAS TOWNSVILLE PERMANENT DOCKING |           |          |
| DRAWING    | TEMPORARY WORKS PLAN              |           |          |
| JOB NUMBER | TPAA055                           | SHEET No. | S1.02    |
| REVISION   |                                   |           | F        |

13/12/2024 10:12:12

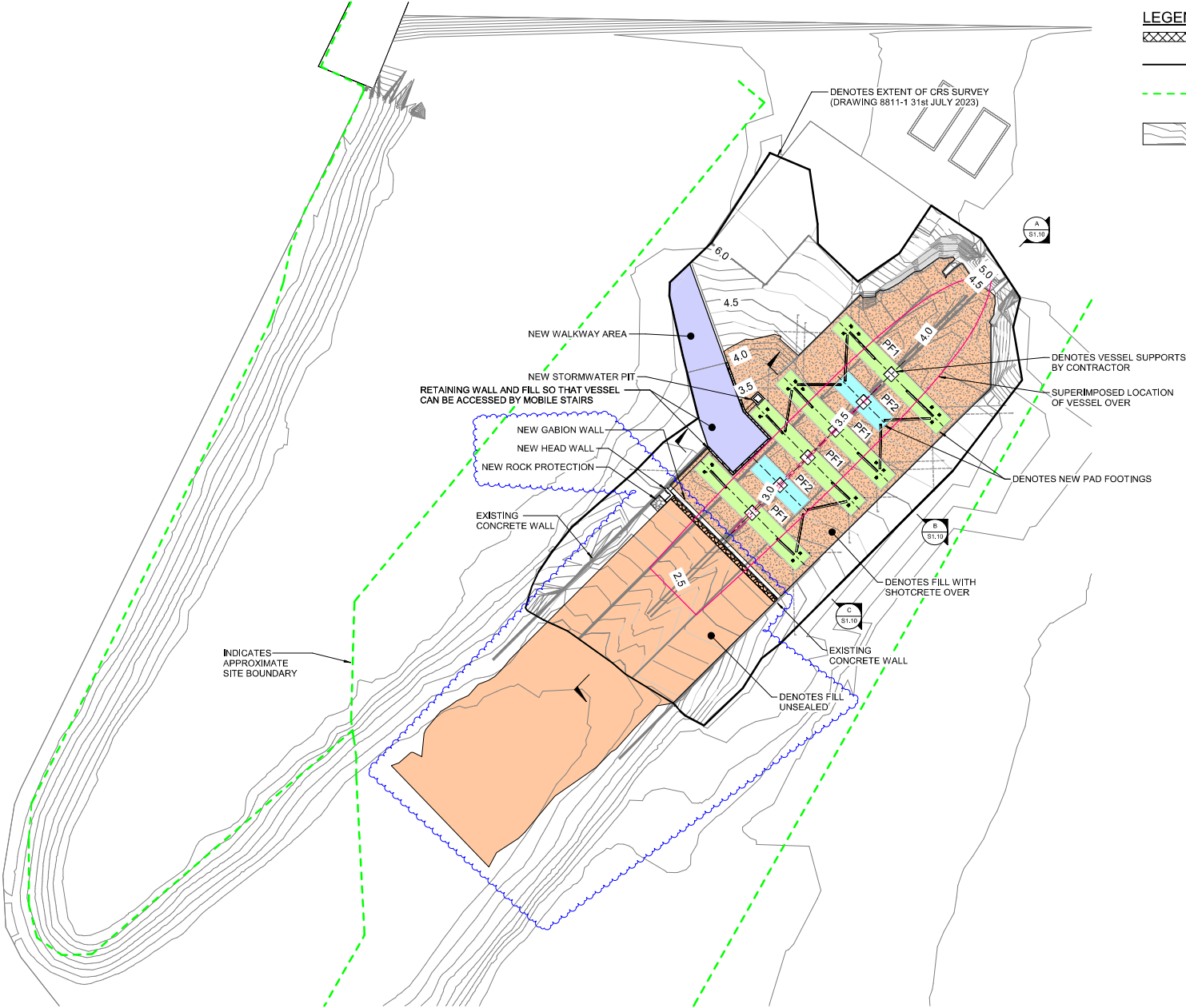
**LEGEND:**

- XXXXXX DENOTES CONCRETE RETAINING WALL
- DENOTES EXTENT OF CRS SURVEY
- - - - - DENOTES APPROXIMATE SITE BOUNDARY
- ~~~~~ DENOTES FINISHED SURFACE CONTOURS (0.1m INTERVALS)

**SAFETY IN DESIGN INFORMATION**  
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2000 0 2000 12000  
1:200 SCALE ON A1 SHEET  
1:400 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**  
referred to in the PDA  
**DEVELOPMENT APPROVAL**  
Approval no: DEV2024/1472/2  
Date: 25 February 2025



**SITE PLAN**  
SCALE: 1 : 200

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| B   | PRELIMINARY ISSUE    | DEJ  | 08/04/24 |
| A   | PRELIMINARY ISSUE    | DEJ  | 08/03/24 |

**TENDER**

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|----------|---------------|----------|----------|
| DRAWN    | JA            | DESIGNED | LW       |
| APPROVED | D.E.JOHNSTONE | DATE     | 16/05/24 |

|            |                                   |           |       |          |   |
|------------|-----------------------------------|-----------|-------|----------|---|
| CLIENT     | PORT OF TOWNSVILLE LIMITED        |           |       |          |   |
| PROJECT    | HMAS TOWNSVILLE PERMANENT DOCKING |           |       |          |   |
| DRAWING    | SITE LAYOUT PLAN                  |           |       |          |   |
| JOB NUMBER | TPAA055                           | SHEET No. | S1.05 | REVISION | F |

**"DESIGN CERTIFICATION"**  
I Daniel Johnstone of LCJ Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.  
*D. Johnstone*  
Registered RPEQ 5892  
Dated this day 13 of 12 2024

**FOOTING PLAN - STAGE 1**

SCALE: 1: 100

**LEGEND:**

- DENOTES NATURAL SURFACE CONTOUR
- DENOTES FILL WITH SHOTCRETE OVER
- DENOTES FILL UNSEALED
- DENOTES HAT CONTOUR
- DENOTES SETOUT POINT
- DENOTES FINISHED SURFACE LEVEL
- DENOTES HEIGHT DIFFERENCE FROM EXISTING
- DENOTES INSPECTION POINT
- DENOTES ROCK ANCHOR AT 45° TO THE SURFACE AND REFERENCE NUMBER, REFER SCHEDULE BELOW:
- DENOTES ROCK ANCHORS AT 50° (TO AVOID CLASHING) TO THE SURFACE AND REFERENCE NUMBER

| ROCK ANCHOR SCHEDULE |               |              |           |           |
|----------------------|---------------|--------------|-----------|-----------|
| No.                  | ULTIMATE LOAD | WORKING LOAD | TEST LOAD | # LENGTH  |
| ①                    | 686kN         | 390kN        | 585kN     | 2 x 8.75m |
| ②                    | 370kN         | 176kN        | 263kN     | 9.50m     |
| ③                    | 344kN         | 123kN        | 185kN     | 8.75m     |
| ④                    | 106kN         | 51kN         | 77kN      | 4.50m     |

# PROVISIONAL LENGTH ONLY.  
TO BE CONFIRMED BY CONTRACTOR.**ROCK ANCHOR NOTES:**

- ROCK ANCHOR DESIGN SHOWN ON DRAWINGS IS NOMINAL BASED ON THE BELOW PARAMETERS FROM AS 4678.
  - STRUCTURE CLASSIFICATION: B
  - ANCHOR CATEGORY: 3
  - WORKING BOND STRESS BETWEEN GROUT AND ROCK: 100 kPa
- FINAL DESIGN, INSTALLATION AND TESTING TO BE COMPLETED BY THE CONTRACTOR.
- CONTRACTOR TO PROVIDE CERTIFIED (FORM 15) DESIGN TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION OF ANCHORS.
- CONTRACTOR TO PROVIDE RESULTS OF TESTING AND FORM 12 CERTIFICATION OF FINAL INSTALLATION.

**GABION WALL NOTES:**

- STEEL-WIRE GABIONS SHALL BE MANUFACTURED FROM GALVANISED, HEXAGONALLY WOVEN, STEEL-WIRE MESH HAVING A WIRE DIAMETER NOT LESS THAN 2.7mm AND A MESH OPENING OF 80mm ACROSS THE FLATS OF THE HEXAGON. SELVEDGE WIRE SHALL HAVE A DIAMETER NOT LESS THAN 3.4mm AND BINDING WIRE SHALL HAVE A DIAMETER NOT LESS THAN 2.2mm. ALL WIRE SHALL COMPLY WITH AS 2358 AND AS 2423. GALVANISING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN AS/NZS 4680. THE WIRE SHALL HAVE A BLACK PVC OR OTHER DURABLE PLASTIC COATING OF NOMINAL THICKNESS 0.55mm, MINIMUM THICKNESS 0.4mm.
- ROCK FILL FOR GABIONS SHALL BE CLEAN, HAVE A DENSITY GREATER THAN 2450kg/m<sup>3</sup>, HARD AND ANGULAR TO ROUND IN SHAPE. IT SHALL BE RESISTANT TO WEATHERING ACTIONS OF WATER AND AIR AND SHALL BE FREE FROM CRACKS AND OTHER STRUCTURAL DEFECTS, WHICH MAY REDUCE ITS MECHANICAL STRENGTH AND RESISTANCE TO WEATHERING.
- UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT, PRIOR TO PROCUREMENT, THE CONTRACTOR SHALL PROVIDE TEST RESULTS CONFIRMING THE PROPOSED ROCK COMPLIES WITH THE FOLLOWING:
  - MINIMUM DENSITY = 2500kg/m<sup>3</sup>;
  - WET STRENGTH (GREATER THAN 100kN) AND WET/DRY STRENGTH VARIATION (SHALL NOT EXCEED 35%) TO AS1141.22;
  - LOS ANGELES VALUE TO AS1141.23 COMPLIES WITH AS2758.4; AND
  - WEAK PARTICLES TO AS1141.32 (SHALL NOT EXCEED 1%).
- THE MINIMUM ROCK SIZE SHALL BE 100mm AND THE MAXIMUM ROCK SIZE SHALL BE 250mm. THE BREADTH OR THICKNESS OF A SINGLE STONE SHALL NOT BE LESS THAN ONE-THIRD OF ITS LENGTH.
- WHERE REQUESTED BY THE SUPERINTENDENT A DROP TEST OF SITE DELIVERED MATERIAL SHALL BE CONDUCTED. THE PROCEDURE FOR THE DROP TEST SHALL BE AS DTMR TEST METHOD Q231 HOWEVER THE NUMBER OF SPECIMENS TESTED SHALL BE DETERMINED BY THE SUPERINTENDENT, ON SITE STOCKPILES WITH A MEAN BREAKDOWN PERCENTAGE THAT EXCEEDS 15% SHALL NOT BE USED WITHIN THE PROJECT WORKS.
- TYPICAL GEOTEXTILE SHALL BE BDM A29 OR PROPEX 801 OR AN APPROVED EQUIVALENT THAT ACHIEVES STRENGTH CLASS C AS DEFINED BY MRTS27. ALL GEOTEXTILES SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST ONEROUS OF MRTS27 AND THE MANUFACTURERS' RECOMMENDATIONS.

**"DESIGN CERTIFICATION"**

I, Daniel Johnstone of L&J Engineers Pty. Ltd. hereby certify that the works have been designed in accordance to relevant design standards and specifications.

Registered RPEQ 5892

Dated this day 13 of 12, 2024

**SAFETY IN DESIGN INFORMATION**  
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1000 0 1000 6000  
1:100 SCALE ON A1 SHEET  
1:200 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**  
referred to in the PDA  
DEVELOPMENT APPROVAL  
Approval no: DEV2024/14722  
Date: 25 February 2025

| REV | DESCRIPTION          | APPD | DATE     |
|-----|----------------------|------|----------|
| F   | REVISED TENDER ISSUE | DEJ  | 13/12/24 |
| E   | TENDER ISSUE         | DEJ  | 21/11/24 |
| D   | TENDER ISSUE         | DEJ  | 16/05/24 |
| C   | PRELIMINARY ISSUE    | DEJ  | 09/05/24 |
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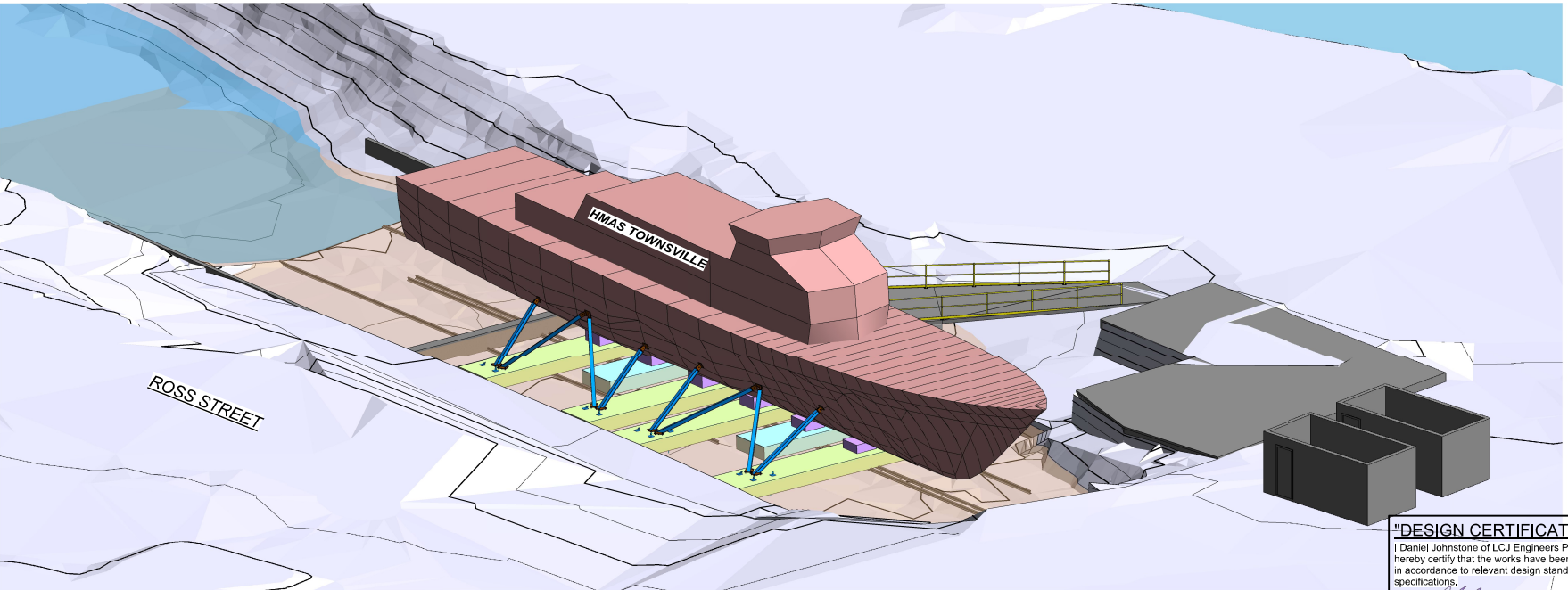
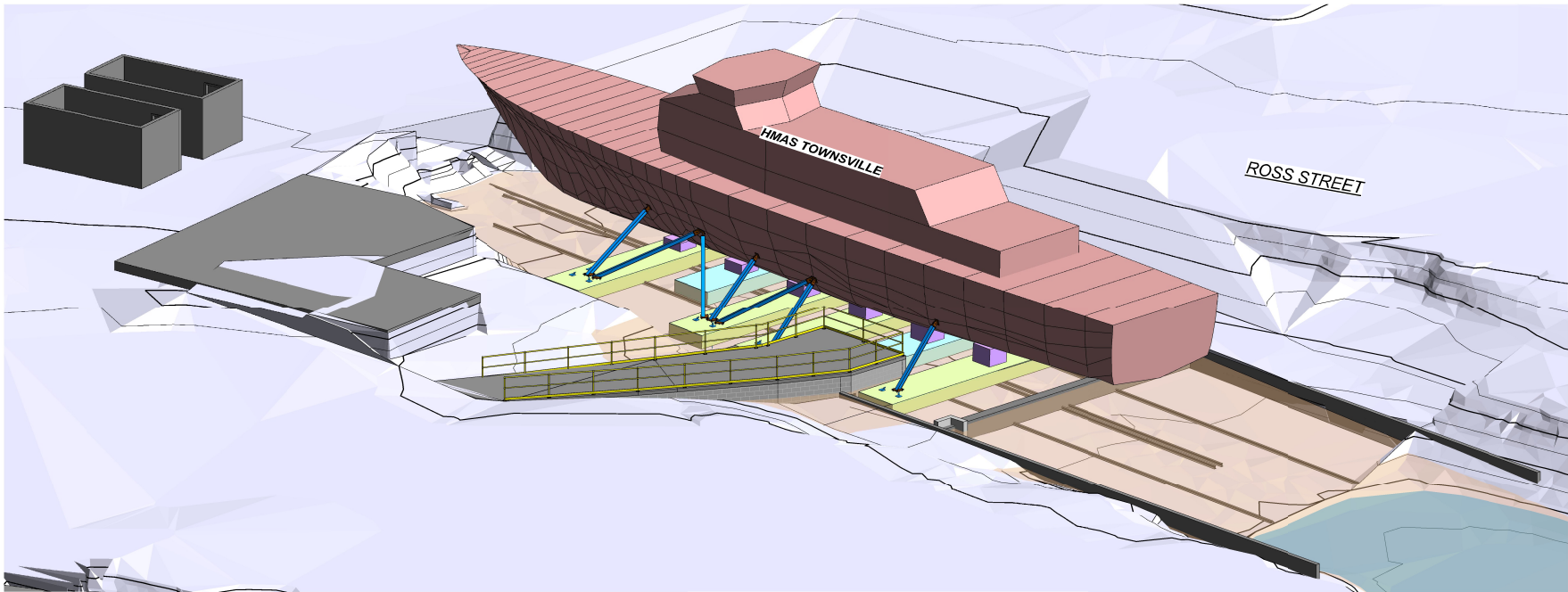
| DRAWN          | CGD | DESIGNED | LW       |
|----------------|-----|----------|----------|
| APPROVED       |     |          | DATE     |
| D.E. JOHNSTONE |     |          | 12/12/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED

**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

**DRAWING**  
FOOTING PLAN - STAGE 1

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.06     | F        |



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PLANS AND DOCUMENTS  
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Approval no: DEV2024/147/2  
Date: 25 February 2025



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www.lcjengineers.com.au

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|---------------|-----|----------|----------|
| APPROVED      |     |          | DATE     |
| D.E.JOHNSTONE |     |          | 21/11/24 |

CLIENT  
PORT OF TOWNSVILLE LIMITED  
PROJECT  
HMAS TOWNSVILLE PERMANENT  
DOCKING

DRAWING  
3D VIEW

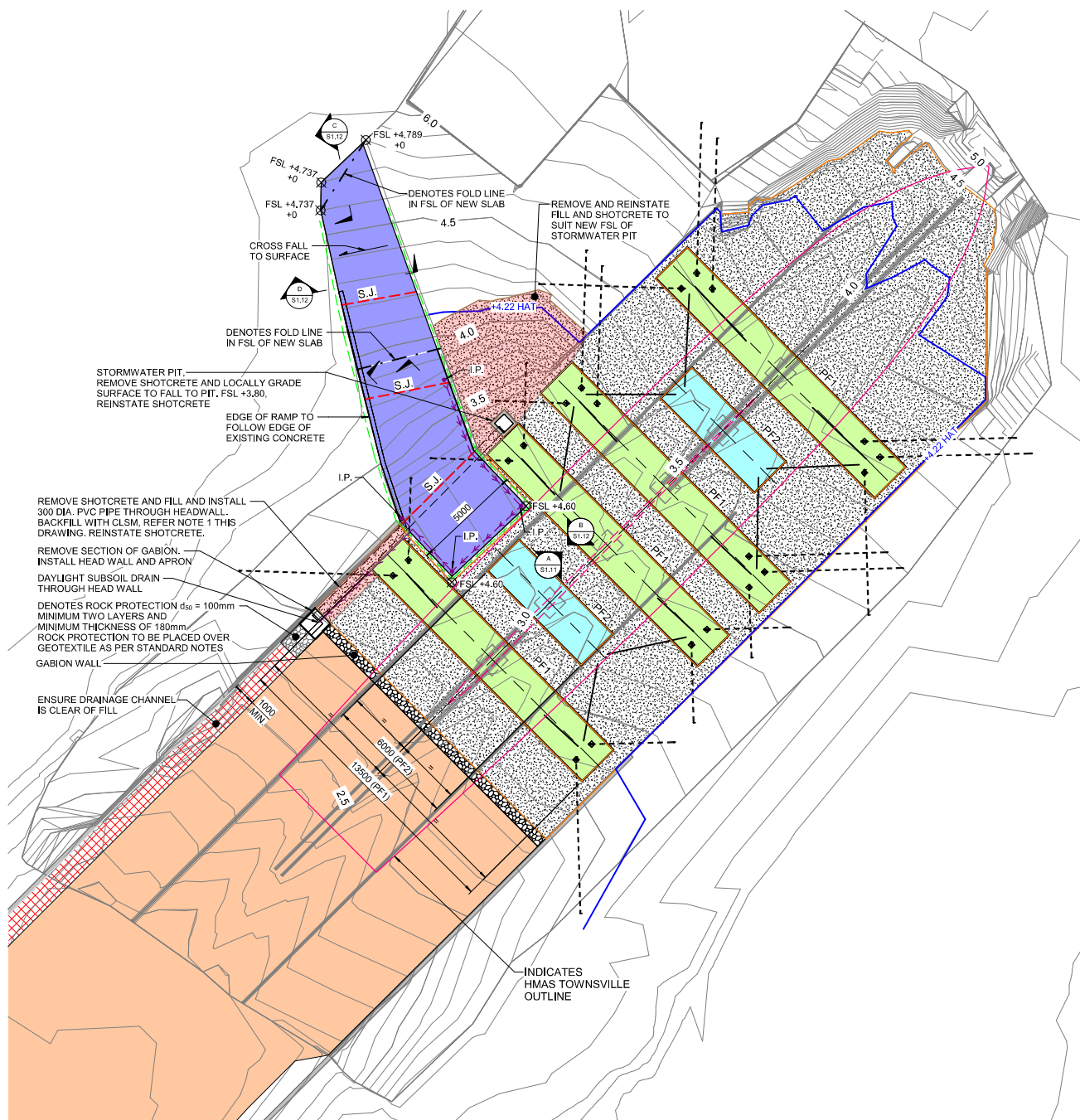
## "DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty, Ltd,  
hereby certify that the works have been designed  
in accordance to relevant design standards and  
specifications.

Registered RPEQ 5892

Dated this day 13 of 12 2024

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.07     | B        |



- LEGEND:**
- DENOTES MASONRY RETAINING WALL
  - DENOTES NEW CONCRETE HARDSTAND
  - DENOTES NATURAL SURFACE CONTOUR
  - DENOTES FILL WITH SHOTCRETE OVER
  - DENOTES FILL UNSEALED
  - DENOTES HAT CONTOUR
  - DENOTES HANDRAIL
  - INDICATES CHANGE IN DIRECTION OF SLAB I.E. VALLEY OR RIDGE DENOTED AS 'FOLD LINE'
  - NEW SUBSOIL AND INSPECTION OPENING (IO)
  - DENOTES SETOUT POINT
  - DENOTES FINISHED SURFACE LEVEL
  - DENOTES HEIGHT DIFFERENCE FROM EXISTING

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referred to in the POA  
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Approval no: DEV2024/1472/2  
Date: 25 February 2025

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Registered RPEQ 5892  
Dated this day 13 of 12, 2024

|          |                |          |          |
|----------|----------------|----------|----------|
| DRAWN    | JA             | DESIGNED | LW       |
| APPROVED | D.E. JOHNSTONE | DATE     | 16/05/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED

**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

**DRAWING**  
FOOTING PLAN - COMPLETED WORKS

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.08     | A        |

**NOTE:**

1. CONTROLLED LOW STRENGTH MATERIALS (CLSM) SHALL BE STABILISED SAND 12:1 SAND CEMENT RATIO (BY MASS) OR AN APPROVED EQUIVALENT AND SHALL COMPLY WITH AS/NZS 3725:2007.  
28 DAY UCS TESTING FOR CLSM SHALL BE COMPLETED AT THE MINIMUM RATE OF:  
- 1 TEST PER DAYS PRODUCTION  
- 1 TEST PER 50m³  
NO LIVE LOADS FROM CONSTRUCTION EQUIPMENT AND TRAFFIC LOADING SHALL BE PERMITTED OVER THE TRENCH FOR 3 DAYS AFTER PLACEMENT OR UNTIL CLSM HAS REACHED A UCS GREATER THAN 0.8MPa. TESTING TO CONFIRM EARLY DAY TRAFFICKING SHALL BE COMPLETED AT THE SAME RATE AS THE MINIMUM TESTING.

**FOOTING PLAN**  
SCALE: 1 : 100

## HMAS TOWNSVILLE

DISPLACEMENT = 220T  
DRAFT = 1.8m (APPROX.)  
LENGTH OVERALL = 42.0m  
DEPTH MOULDED = 4.29m

## AHD CHART DATUM

|      |        |        |
|------|--------|--------|
| HAT  | +2.36  | +4.22  |
| MHWS | +1.31  | +3.17  |
| MHW  | +0.46  | +2.32  |
| MSL  | +0.14  | +2.00  |
| AHD  | 0.000  | +1.856 |
| MLWN | -0.18  | +1.68  |
| MLWS | -1.03  | +0.83  |
| LAT  | -1.856 | 0.00   |

TOWNSVILLE, QUEENSLAND  
TIDE TABLE 2024

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500 0 500 3000  
1:50 SCALE ON A1 SHEET  
1:100 SCALE ON A3 SHEET

1000 0 1000 6000  
1:100 SCALE ON A1 SHEET  
1:200 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**  
referred to in the PDA  
**DEVELOPMENT APPROVAL**  
Approval no: DEV2024/1472/2  
Date: 25 February 2025

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|          |                |          |          |
|----------|----------------|----------|----------|
| DRAWN    | JA             | DESIGNED | LW       |
| APPROVED | D.E. JOHNSTONE | DATE     | 16/05/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED  
**PROJECT**  
HMAS TOWNSVILLE PERMANENT  
DOCKING

**DRAWING**  
SECTIONS

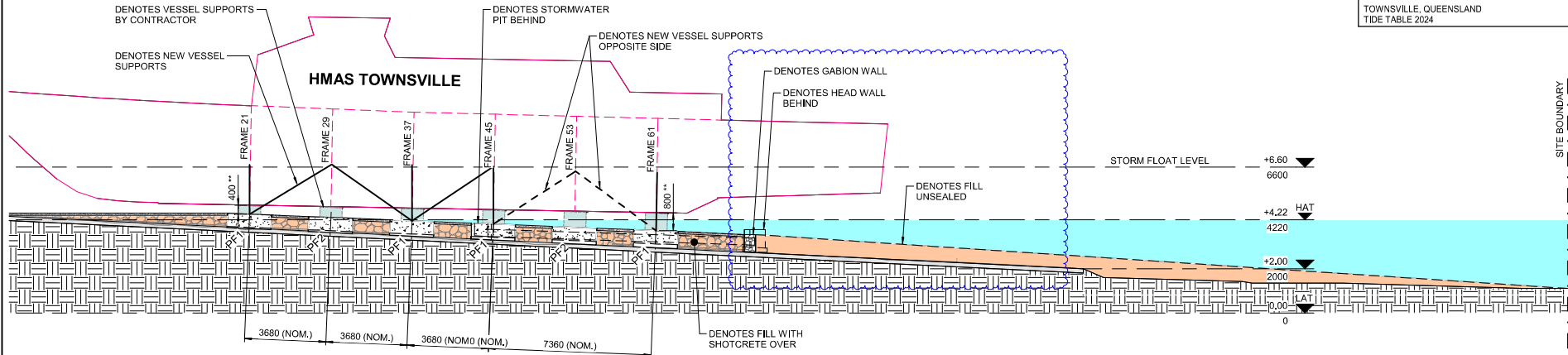
|            |           |          |
|------------|-----------|----------|
| JOB NUMBER | SHEET No. | REVISION |
| TPAA055    | S1.10     | F        |

## "DESIGN CERTIFICATION"

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*D. Johnstone*  
Registered RPEQ 5892

Dated this day 13 of 12, 2024



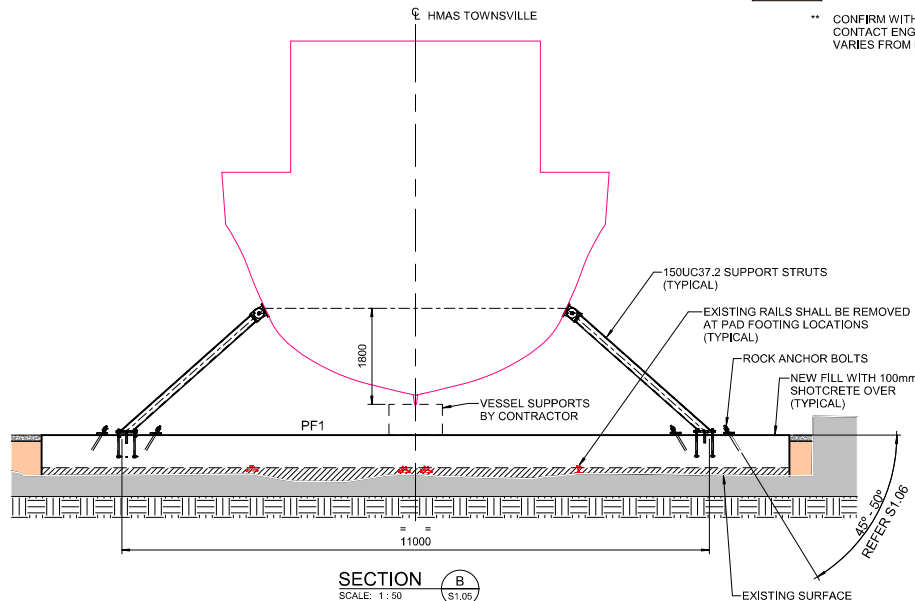
**SECTION A**  
SCALE: 1:100  
S1.05

**NOTE:**  
DECK TO BE AT 2.5% SLOPE TOWARDS ROSS CREEK FOR DRAINAGE

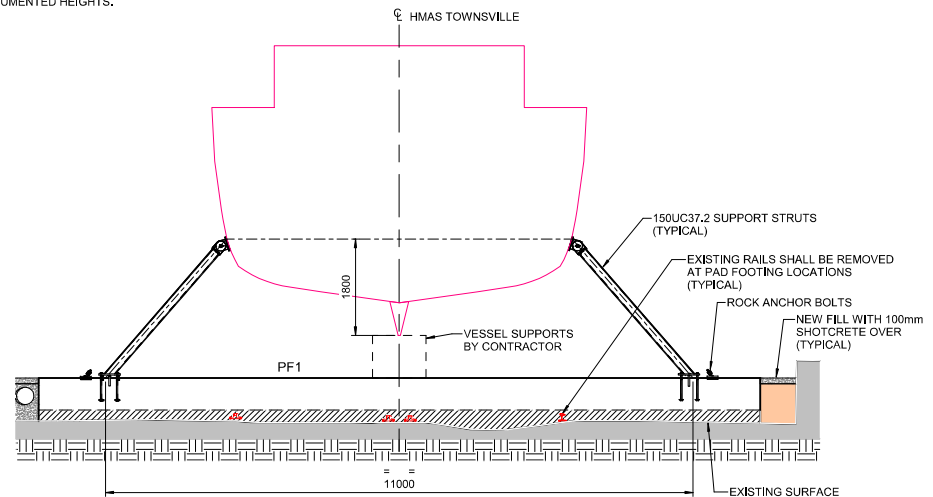
## LEGEND:

- DENOTES APPROXIMATE EXISTING SOIL PROFILE: FILL / CONCRETE
- DENOTES APPROXIMATE NEW FILL

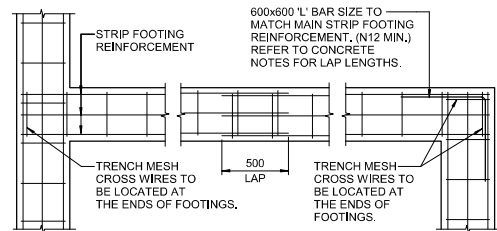
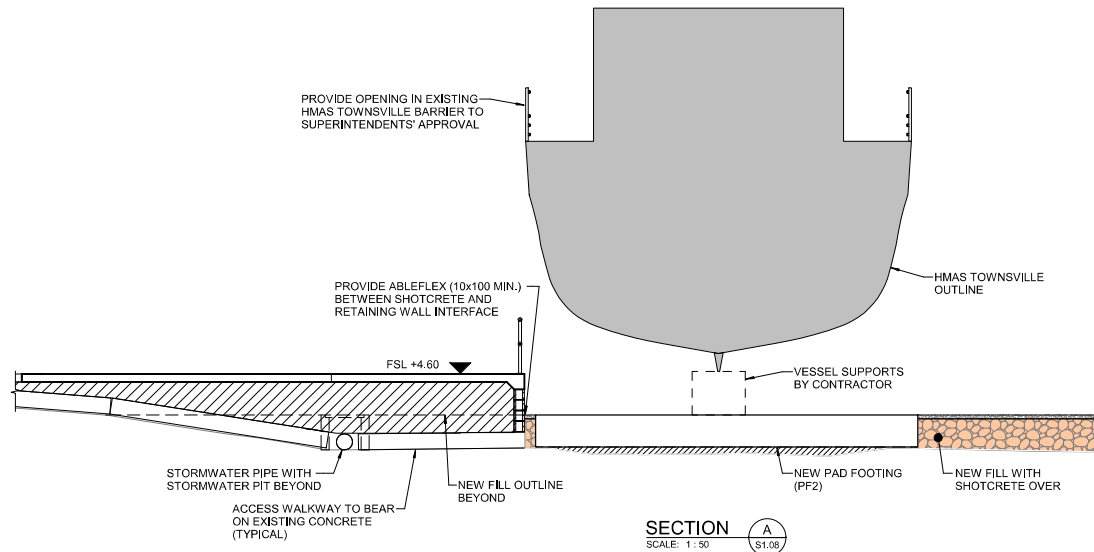
\*\* CONFIRM WITH SLIPPING CONTRACTOR.  
CONTACT ENGINEER IF DIMENSION  
VARIES FROM DOCUMENTED HEIGHTS.



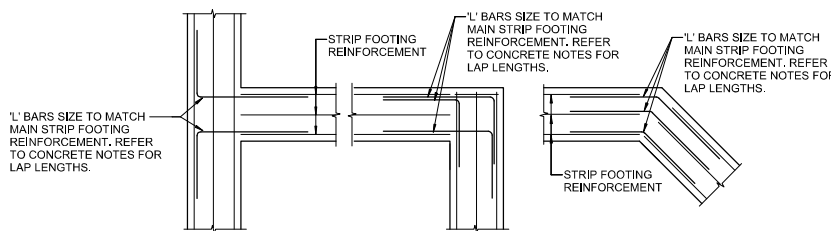
**SECTION B**  
SCALE: 1:50  
S1.05



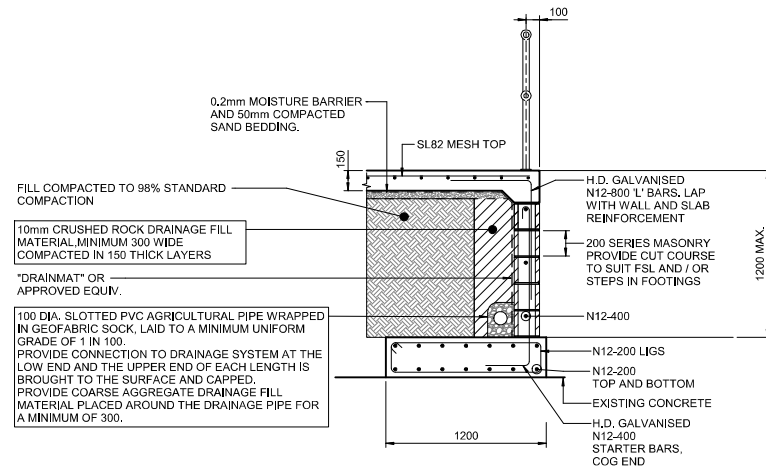
**SECTION C**  
SCALE: 1:50  
S1.05



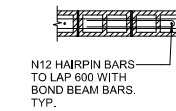
**STRIP FOOTING INTERSECTION DETAILS - MESH**  
SCALE 1:20



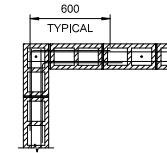
**STRIP FOOTING INTERSECTION DETAILS - BARS**  
SCALE 1:20



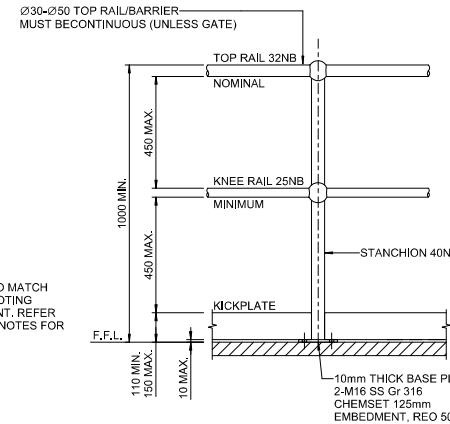
**TYPICAL RETAINING WALL DETAIL**  
SCALE 1:20



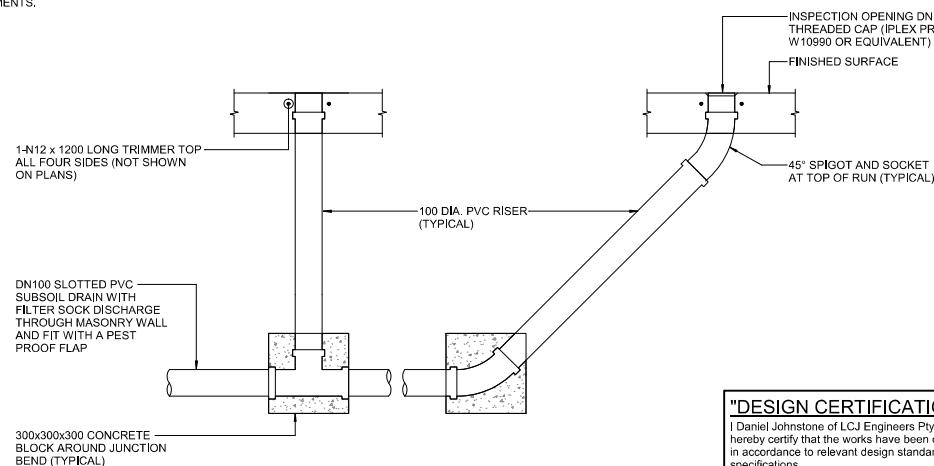
**FREE END-190 SERIES**  
SCALE 1:20



**TYPICAL BLOCKWORK INTERSECTIONS**  
SCALE 1:20



**TYPICAL HANDRAIL DETAIL FOR RETAINING WALL**  
SCALE 1:10



**SUBSOIL DRAIN INSPECTION OPENING SECTIONAL ELEVATION**  
SCALE 1:10

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1:40 SCALE ON A3 SHEET

500 0 500 3000  
1:50 SCALE ON A1 SHEET  
1:100 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**  
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Approval no: DEV2024/14722  
Date: 25 February 2025

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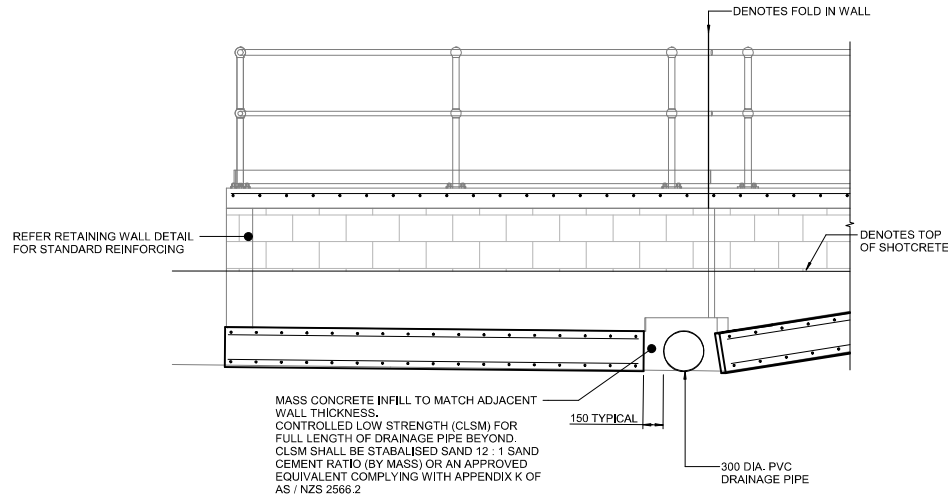
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|----------|----------------|----------|----------|
| APPROVED | D.E. JOHNSTONE | DATE     | 16/05/24 |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED  
**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

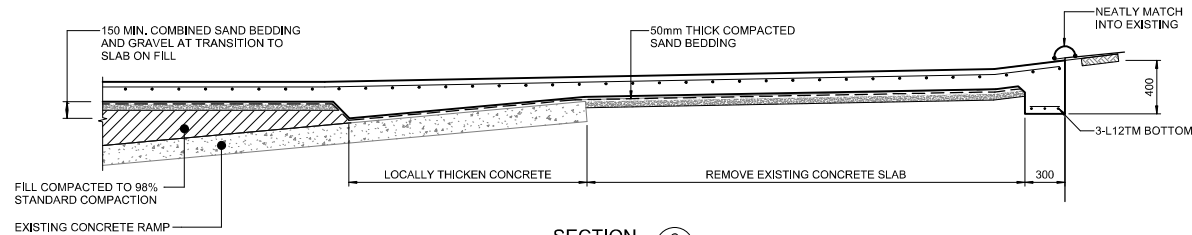
**DRAWING**  
RETAINING WALL SECTIONS AND DETAILS

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.11     | F        |

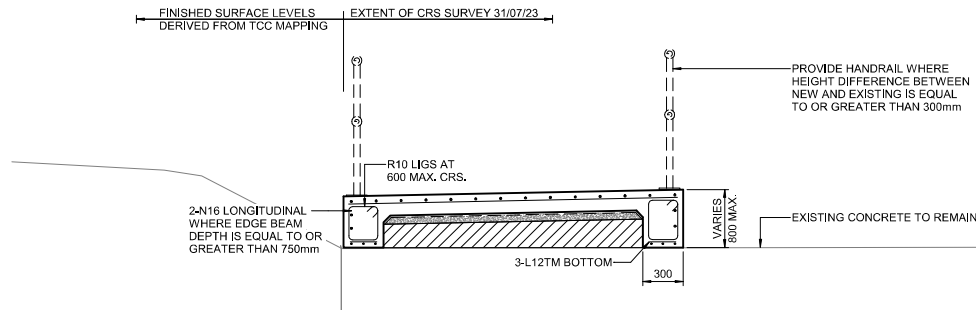


SECTION B  
SCALE: 1 : 20  
S1.08

NOTES  
1. WHERE HEIGHT DIFFERENCE BETWEEN OBVERT AND UNDERSIDE OF FILL IS LESS THAN 300mm LIMIT THE COMPACTION EQUIPMENT TO A PEDESTRIAN VIBRATING PLATE (UP TO 135kg) AND MAXIMUM LAYER THICKNESS TO 125mm



SECTION C  
SCALE: 1 : 20  
S1.08



SECTION D  
SCALE: 1 : 20  
S1.08

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1:40 SCALE ON A3 SHEET

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DEVELOPMENT APPROVAL  
Approval no: DEV2024/1472/2  
Date: 25 February 2025  
Queensland Government

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| APPROVED      | DATE     |          |     |
| D.E.JOHNSTONE | 16/05/24 |          |     |

CLIENT  
PORT OF TOWNSVILLE LIMITED  
PROJECT  
HMAS TOWNSVILLE PERMANENT DOCKING

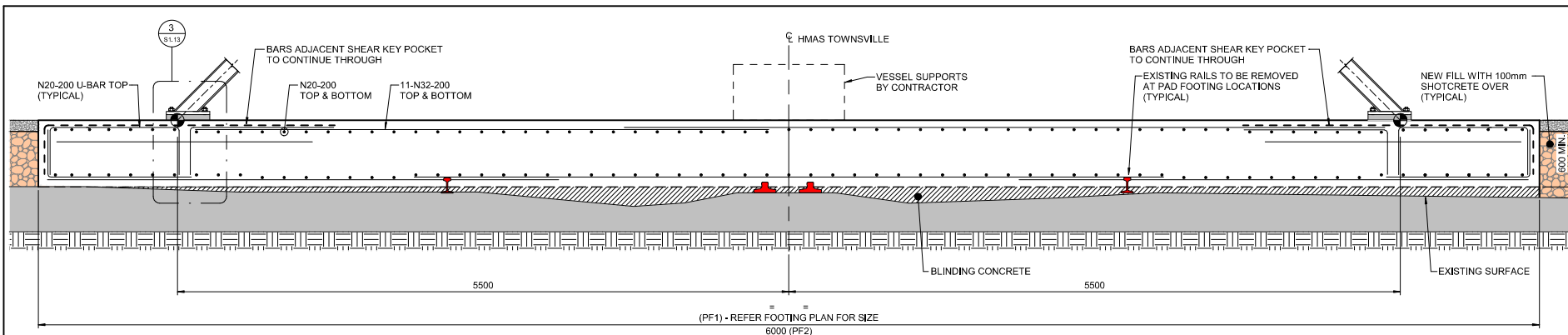
DRAWING  
RETAINING WALL SECTIONS

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.12     | E        |

## "DESIGN CERTIFICATION"

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Registered RPEQ 5892  
Dated this day 13 of 12 2024

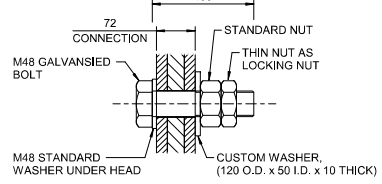


### PAD FOOTING (PF1/PF2)

SCALE: 1:20

#### LEGEND:

- DENOTES APPROXIMATE EXISTING SOIL PROFILE: FILL / CONCRETE
- DENOTES APPROXIMATE NEW FILL

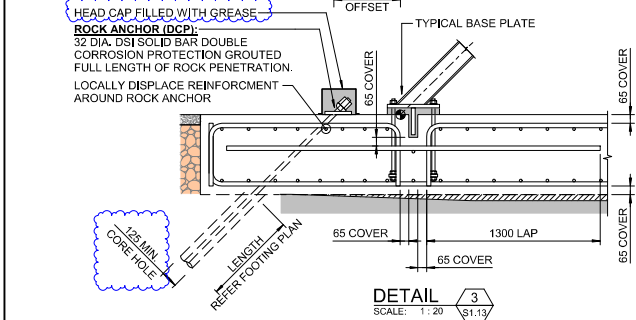


### TYPICAL PIN DETAILS

SCALE: 1:5

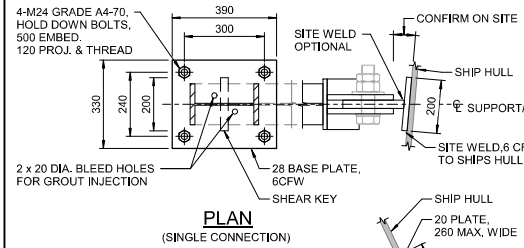
#### NOTES:

1. ALL SITE WELDS TO BE TOUCHED UP WITH ZINC RICH PRIMER.
  2. IN ADDITION TO THE ZINC RICH PRIMER, SITE WELDS TO THE EXTERNAL FACE OF THE HULL SHALL BE TOP COATED TO MATCH THE EXISTING PAINT ON THE HULL.
- .. DENOTES MAIN FRAME OF VESSEL. REMOVE INTERNAL LINING AND SERVICES PRIOR TO FIXING EXTERNAL STRUT TO HULL. ENSURE MINIMUM OF 900mm (450mm EACH SIDE) OF 6mm WELD (OR EQUIVALENT) TO INSIDE FACE OF HULL. REINSTATE INTERNAL LININGS AND SERVICES TO SATISFACTION OF SUPERINTENDENT. WELDING SHALL BE SEQUENCED TO LIMIT DISTORTION TO EXISTING HULL.



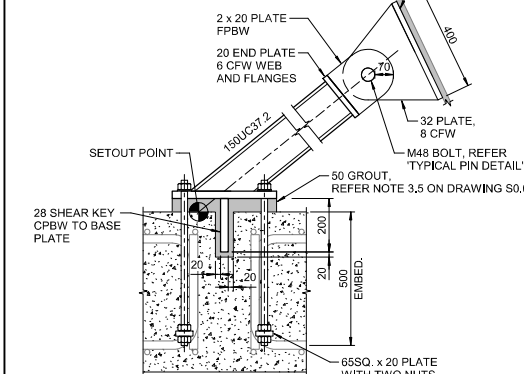
### DETAIL 3

SCALE: 1:20 S1.13



### PLAN

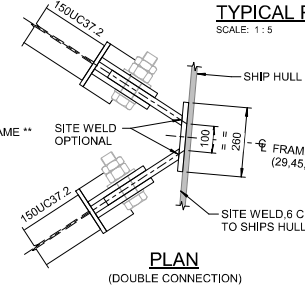
(SINGLE CONNECTION)



### SECTION

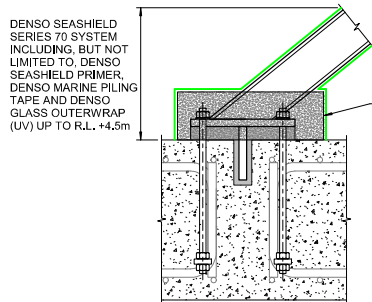
### TYPICAL BASE PLATE DETAIL

SCALE: 1:10



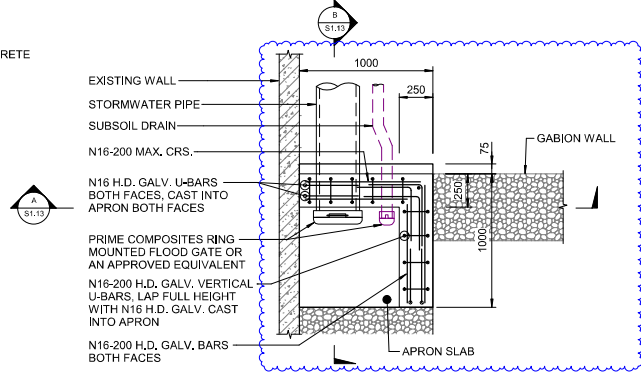
### PLAN

(DOUBLE CONNECTION)



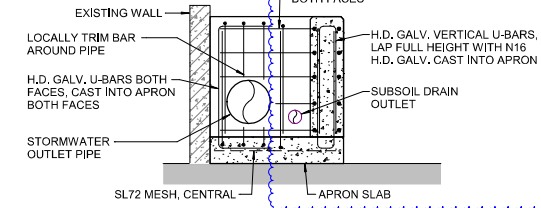
### TYPICAL CORROSION PROTECTION

**PROVISIONAL ITEM IF ORDERED**  
ENCASE BASE FIXING WITH AN APPROVED EPOXY GROUT. EPOXY ENCASMENT TO BE CIRCULAR AND PROVIDE 50mm COVER TO BASE PLATE.



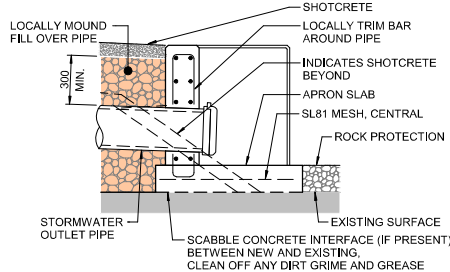
### STORMWATER HEADWALL DETAIL

SCALE: 1:20



### SECTION

SCALE: 1:20 S1.13



### SECTION

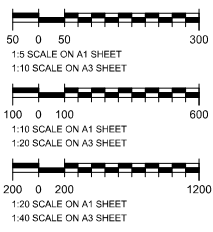
SCALE: 1:20 S1.13

### "DESIGN CERTIFICATION"

I Daniel Johnstone of LCJ Engineers Pty. Ltd, hereby certify that the works have been designed in accordance to relevant design standards and specifications.

Registered RPEQ 5892  
Dated this day 13 of 12 2024

**SAFETY IN DESIGN INFORMATION**  
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.



**PLANS AND DOCUMENTS**  
referred to in the PDA DEVELOPMENT APPROVAL  
Approval no: DEV2024/14722  
Date: 25 February 2025

| REV | DESCRIPTION          | APPD | DATE     |
|-----|----------------------|------|----------|
| F   | REVISED TENDER ISSUE | DEJ  | 13/12/24 |
| E   | TENDER ISSUE         | DEJ  | 21/11/24 |
| D   | TENDER ISSUE         | DEJ  | 16/05/24 |
| C   | PRELIMINARY ISSUE    | DEJ  | 09/05/24 |
| B   | PRELIMINARY ISSUE    | DEJ  | 08/04/24 |
| A   | PRELIMINARY ISSUE    | DEJ  | 08/03/24 |

### TENDER



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|          |               |          |          |
|----------|---------------|----------|----------|
| DRAWN    | JA            | DESIGNED | LW       |
| APPROVED | D.E.JOHNSTONE | DATE     | 16/05/24 |

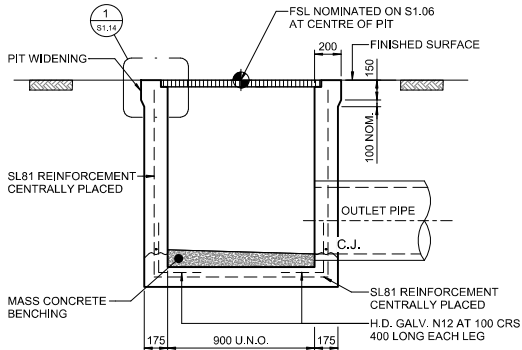
**CLIENT**  
PORT OF TOWNSVILLE LIMITED  
**PROJECT**  
HMAS TOWNSVILLE PERMANENT DOCKING

**DRAWING**  
FOOTING DETAILS

|            |           |          |
|------------|-----------|----------|
| JOB NUMBER | SHEET No. | REVISION |
| TPAA055    | S1.13     | F        |

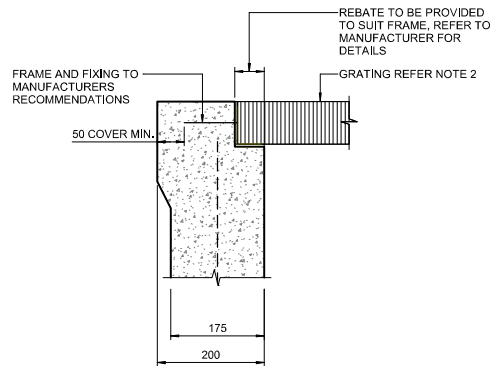
FOOTING DETAILS

13/12/2024 10:10:38



### STORMWATER GULLY PIT AND FIELD INLET PIT

- NOTES:**
- FOR CONSTRUCTION NOTES REFER DRAWING S0.02 - S0.04.
  - GRATE TO BE HINGED WITH LOCK-DOWN FIXING.
  - ALL CONSTRUCTION JOINTS TO BE WELL SCABBLED AND HIGH PRESSURE WATER CLEANED TO EXPOSE COARSE AGGREGATE WITHOUT DISTURBING IT.
  - BACKFILL AROUND PITS SHALL BE COMPACTED IN ACCORDANCE WITH AS 3725.



DETAIL 1  
SCALE: 1:5 S1.14

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THE SAFETY IN DESIGN REPORT.

50 0 50 300  
1:5 SCALE ON A1 SHEET  
1:10 SCALE ON A3 SHEET

200 0 200 1200  
1:20 SCALE ON A1 SHEET  
1:40 SCALE ON A3 SHEET

**PLANS AND DOCUMENTS**  
referred to in the PDA  
DEVELOPMENT APPROVAL  
Approval no: DEV2024/147/2  
Date: 25 February 2025

| REV | DESCRIPTION          | APPD | DATE     |
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| A   | PRELIMINARY ISSUE    | DEJ  | 08/03/24 |

### TENDER

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G  
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| DRAWN         | JA       | DESIGNED | LW |
|---------------|----------|----------|----|
| APPROVED      | DATE     |          |    |
| D.E.JOHNSTONE | 16/05/24 |          |    |

**CLIENT**  
PORT OF TOWNSVILLE LIMITED  
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HMAS TOWNSVILLE PERMANENT  
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**DRAWING**  
STORMWATER PIT DETAILS

| JOB NUMBER | SHEET No. | REVISION |
|------------|-----------|----------|
| TPAA055    | S1.14     | F        |

### "DESIGN CERTIFICATION"

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hereby certify that the works have been designed  
in accordance to relevant design standards and  
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*D. Johnstone*

Registered RPEQ 5892

Dated this day 13 of 12 2024

STORMWATER PIT DETAILS