

HMAS TOWNSVILLE PERMANENT DOCKING AT PORT OF TOWNSVILLE



LOCALITY PLAN

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
ANNUAL PROBABILITY OF EXCEEDANCE	1/500
REGION	C
V ₀ - REGIONAL GUST WIND SPEED	69.3 m/s
M ₀ - WIND DIRECTION MULTIPLIER	1
TERRAIN CATEGORY	2
M _{0,cat} - HEIGHT MULTIPLIER	1.01
M ₀ - SHIELDING MULTIPLIER	1.0
M ₀ - TOPOGRAPHIC MULTIPLIER	1.0
V _{basic} - 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	Ga
K _p - 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	HMAS TOWNSVILLE - SLIPPING WORK LIST
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	TEMPORARY BUNDING PLAN AND DETAILS OPTION 1
S1.04	TEMPORARY BUNDING PLAN AND DETAILS OPTION 2
S1.05	SITE LAYOUT PLAN
S1.06	FOOTING PLAN
S1.10	SECTIONS
S1.11	RETAINING WALL SECTIONS AND DETAILS
S1.12	RETAINING WALL SECTIONS
S1.13	FOOTING DETAILS
S1.14	PRECAST DETAILS

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.

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	APP'D	DATE
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TENDER



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

CLIENT
PORT OF TOWNSVILLE LIMITED
PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
COVER SHEET

JOB NUMBER	SHEET No.	REVISION
TPAA055	S0.01	D

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1472

Date: 09 / 09 / 2024



Queensland
Government

GENERAL NOTES

1. 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 WELDING REQUIREMENTS.
2. 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 EDGE PROTECTION TO SUIT PROPOSED CONSTRUCTION PLANT TO CONSTRUCT THE WORKS.
 - STABILITY OF TRENCH EXCAVATIONS (INCLUDING TRENCH SHORING) FORMWORK AND BACKFILL.
 - ALL SUPPING OPERATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - SUPPING CHAOLLES (INCLUDING GOAL POSTS)
 - BILGE STANDS AND KEEL BLOCKS
 - HALLAGE OF VESSEL
 - LIFTING OF VESSEL
 - CASTING LIFTING POINTS FOR REINFORCEMENT (FOR PREFABRICATED REINFORCEMENT WITH A MASS GREATER THAN 5000).
 - LIFTING DESIGN FOR PRECAST CONCRETE AND PREFABRICATED ELEMENTS (UNLESS SPECIFICALLY SHOWN ON DESIGN DRAWINGS).
 - TEMPORARY PROPPING OF PRECAST PANELS (UNLESS SPECIFICALLY SHOWN ON DESIGN DRAWINGS).
 - 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 SUPPING 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.
- WHERE DESIGNS INCORPORATE PROPRIETY PRODUCTS THE DESIGN SHALL BE BASED ON PUBLICLY AVAILABLE PUBLISHED DATA FROM THE MANUFACTURER.
- WHERE REQUESTED BY THE SUPERINTENDENT, THE CONTRACTOR SHALL PROVIDE DESIGN 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 CONSTRUCT UNTIL WRITTEN NON-REJECTION FROM THE SUPERINTENDENT HAS BEEN PROVIDED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE SUPPLY DRY DOCK RACKS. THE CONTRACTOR IS REQUIRED TO SUBMIT NAVAL ARCHITECT / ENGINEERING DRAWINGS AND CALCULATIONS FOR THE DRY DOCK RACKS, DEMONSTRATING THE CRACKS ARE ADEQUATE FOR THE VESSEL. INCLUDE STRESS CALCULATIONS COMPLETED FOR THIS DRYDOCKING. THE PRINCIPAL SHALL BE RESPONSIBLE FOR THE CERTIFICATION OF THE CONCRETE FOUNDATIONS AND THE CYCLONE TIE DOWN FOR THE VESSEL.
4. THE PROGRAM OF WORKS SHALL BE BASED ON THE PERMISSIBLE WORKING DAYS AND WORKING HOURS IN THE CONTRACT. TENDERS ARE TO NOTE THAT THE TEMPORARY BUNDING OPTIONS SHOWN ON THE DESIGN DRAWINGS ARE INTENDED TO LIMIT A MAXIMUM HIGH TIDE OF LESS THAN RL 3.1m ATL. THE BUNDING IS INTENDED TO KEEP THE WORK AREA RELATIVELY DRY TO ENABLE CONSTRUCTION OF THE PERMANENT FOOTINGS. IT IS ANTICIPATED THAT SLIPS WILL BE INSTALLED, AND FOUNDATIONS CONSTRUCTED WITHIN ONE OF THE FOLLOWING TIMEFRAMES:
- 2024, JULY 9 - 17
 - 2024, AUGUST 7 - 14
 - 2024, OCTOBER 6 - 12
 - 2024, NOVEMBER 6 - 10
- BACKUP ONLY
- SUPPING OPERATIONS ARE EXPECTED TO BE CARRIED OUT AT TIMES WHERE LARGE MORNING TIDES ARE EXPECTED TO OCCUR. IT IS ANTICIPATED THAT SLIPPING OPERATIONS WILL OCCUR IN ONE OF THE BELOW TIMEFRAMES:
- 2024, SEPTEMBER 17 - 20
 - 2024, OCTOBER 15 - 20
 - 2024, NOVEMBER 13 - 19
 - 2024, DECEMBER 8 - 10
- NOT WITHSTANDING THE ABOVE THE CONTRACTOR WILL NEED TO PROVIDE A MARINE EXECUTION PLAN FOR REVIEW AND APPROVAL BY THE REGIONAL HARBOUR MASTER.
5. ALL DIMENSIONS RELATIVE 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.
6. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
7. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
8. THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS.
9. NO SUBSTITUTIONS SHALL BE MADE OR SUBS OF STRUCTURAL MEMBERS VARIED WITHOUT THE APPROVAL OF THE SUPERINTENDENT. THE ENGINEER, THE APPROVAL OF A SUBSTITUTION FROM THE SUPERINTENDENT SHALL NOT BE AN AUTHORISATION FOR AN EXTRA, OR EXTRA INCREASED, WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
10. 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.
11. NO HOLES, RECESSES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
12. ALL MATERIALS AND ELEMENTS SHALL BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
13. THE CONTRACTOR SHALL ALLOW IN THEIR TENDER FOR APPROVED SUBSTITUTIONS DUE TO NON AVAILABILITY OF NOMINATED ITEMS.
14. WHERE CONSTRUCTION CERTIFICATION IS REQUIRED, INSPECTIONS ARE TO BE PERFORMED BY A CERTIFYING ENGINEER. THE CONTRACTOR SHALL ALLOW FOR AND GIVE TWO FULL WORKING DAYS NOTICE FOR ALL INSPECTIONS.
15. 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.
16. 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.

GENERAL NOTES CONTINUED

17. THIS SITE CONTAINS HAZARDOUS MATERIAL. THE CONTRACTOR SHALL TREAT AND REMOVE ALL HAZARDOUS MATERIAL IN ACCORDANCE WITH PRENSA REPORT JOB No. 1216176.
18. ANY DAMAGE CAUSED TO EXISTING SERVICES WILL BE MADE GOOD AT THE CONTRACTORS EXPENSE.
19. EXPLOSIVES SHALL NOT BE USED FOR WORK UNDER THIS CONTRACT.
20. THE CONTRACTOR IS TO PROVIDE A GUARANTEE, GUARANTEEING THE WORKMANSHIP AND ENSURING THAT THE WORKS ARE CONSTRUCTED IN ACCORDANCE WITH OUR DESIGN AND DOCUMENTATION.
21. FOR DETAILS OF SOIL CONDITIONS AND DESIGN PARAMETERS REFER TO DOUGLAS PARTNERS GEOTECHNICAL REPORT NO. 227080.0 R.001 DATED 2002/24.
22. 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.
23. ON COMPLETION OF THE WORKS, REINSTATE TO THE SATISFACTION OF THE SUPERINTENDENT ANY AREAS OF STRUCTURES, PAVEMENTS OR SERVICES DAMAGED, DIRTIED OR MADE UNSERVICEABLE DUE TO CONSTRUCTION WORKS.

CONCRETE

1. CONCRETE WORKS FOR PF1 FOOTING AND PRECAST SHELLS SHALL COMPLY WITH MRTS700 AND ALL OTHER MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS 3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. CONCRETE GRADES AND COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE:

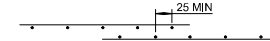
ELEMENT	EXPOSURE	COVER	GRADE
PF1	-FORMED/FINISHED	C2	65 S50
PRECAST SHELLS	-FORMED/FINISHED	C2	65 S50
FOOTINGS	-AGAINST GROUND	C2	65 S50
	-FORMED/FINISHED	C2	65 S50
SLAB ON GROUND	-AGAINST GROUND	A2	60 N40
	-FORMED/FINISHED	B2	60 N40

S50 CONCRETE SHALL BE SPECIAL - CLASS CONCRETE WITH A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 50MPa COMPLYING WITH MRTS 700 CONCRETE.

3. ALL STRUCTURE CAST AGAINST GROUND SHALL BE LAID ON AN APPROVED VAPOUR BARRIER EXCEPT FOR FOOTINGS.
4. PROPERLY FORM ALL CONSTRUCTION JOINTS AND LOCATE THEM ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
5. EMBEDDED FLEXIBLE CONDUITS SHALL HAVE OUTSIDE DIAMETERS NOT GREATER THAN ONE-THIRD OF THE DEPTH OF THE EMBEDDING CONCRETE ELEMENT. LOCATE THEM CLOSE TO THE OPENING 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.
6. 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.
7. ALL CONCRETE SUPPLIED SHALL HAVE A SLUMP OF 80+15mm AND A MAXIMUM NOMINAL AGGREGATE SIZE OF 20mm UNLESS SPECIFIED OTHERWISE.
8. NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER EXCEPT IN STANDARD CONTROLLED GRADE CONCRETE. CALCIUM CHLORIDE ADMIXTURES WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
9. CONCRETE SAMPLING AND TESTING SHALL BE BY PROJECT ASSESSMENT TO AS 3600 AND AS 1579 UNLESS SPECIFIED OTHERWISE.
10. COMPACT ALL CONCRETE DURING PLACEMENT USING MECHANICAL VIBRATORS.
11. 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 SCREENING, AND ANY SUBSEQUENT SKEEDING OR FINISHING. APPLICATION SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND BE BY A FINE CONTINUOUS SPRAY. COMPOUNDS SHALL CONSIST OF PRIMARILY OF ALIPHATIC ACID ANHYDRIDES. COMPOUNDS CONTAINING EVAPORATIVE RETARDERS DO NOT REPLACE CURING COMPOUNDS.
12. 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 ON SET. COMMENCE CURING WITHIN 1 HOUR OF INITIAL SET OR FIRST EXPOSURE AND CONTINUE FOR AT LEAST 7 DAYS AFTER POURING CONCRETE.
13. THE PROCEDURES OUTLINED IN THE FOLLOWING DATA SHEETS, "CURING OF CONCRETE", "AVOID EARLY CRACKING AND 'NOT WEATHER CONCRETING'", SHALL BE FOLLOWED TO REDUCE THE RISK OF PLASTIC SHRINKAGE CRACKING. REFER TO (CCAA) CEMENT CONCRETE AND AGGREGATE AUSTRALIA WEBSITE FOR DATASHEET.
14. FINISH SURFACE OF CONCRETE TO BE BROOM FINISHED U.O.
15. 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

1. 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
2. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
3. REINFORCEMENT FOR PF1 FOOTING AND PRECAST SHALL COMPLY WITH MRTS700. 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.
4. REINFORCEMENT WITHIN THE CAST INSITU PORTION OF PF1 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 REBARMS. THE ELECTRICAL CONTINUITY MUST BE CAPABLE OF DEMONSTRATION. THE ELECTRICAL CONTINUITY SHALL BE TESTED IN ACCORDANCE WITH AS 2832.5.
5. SPLICES TO REINFORCEMENT SHALL ONLY BE MADE IN POSITIONS SHOWN OR AS APPROVED OTHERWISE BY THE STRUCTURAL ENGINEER.
6. REINFORCEMENT SPLICES SHALL BE FULL STRENGTH TENSION SPLICES WITH LAPS AS FOLLOWS UNLESS NOTED OTHERWISE: (FOR LAPS IN BLOCKWORK REFER BLOCKWORK NOTES)
- | ALL REINFORCEMENT | f.c | MIN. COVER | N12 | N16 | N20 |
|-------------------|------|------------|-----|------|-----|
| 25MPa | 30mm | 480 | 750 | 1030 | |
| 32MPa | 40mm | 390 | 500 | 840 | |
| 40MPa | 45mm | 350 | 530 | 750 | |
| 50MPa | 65mm | 350 | 460 | 610 | |
| 25MPa | 30mm | 630 | 970 | 1340 | |
| 32MPa | 40mm | 500 | 770 | 1090 | |
| 40MPa | 45mm | 450 | 650 | 930 | |
| 50MPa | 65mm | 450 | 600 | 800 | |
7. THE MINIMUM FABRIC LAP SHALL BE TWO CROSS WIRES PLUS 25mm. STAGGER SHEETS TO AVOID EXCESSIVE THICKNESS AT LAPs.
8. USE MECHANICAL SPLICES ONLY WHERE SPECIFIED OR APPROVED BY THE STRUCTURAL ENGINEER.
9. DO NOT WELD REINFORCEMENT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
10. PROVIDE 3x12 DIAGONAL BARS x 2000 LONG IN THE TOP LAYER AT ALL RE-ENTRANT CORNERS.
11. REINFORCING BARS SHALL NOT BE CUT TO CLEAR PENETRATIONS NOT DETAILLED 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.
12. SUPPORT ALL REINFORCEMENT SECURELY IN ITS CORRECT POSITION DURING CONCRETING BY SECURELY TYING WITH 1.25mm WIRE TO APPROVED PLASTIC BAR CHAIRS, SPACERS OR SUPPORT BARS. BAR CHAIRS SHALL BE STRENGTH GRADE 120kg UNLESS SPECIFIED OTHERWISE. CONCRETE BAR CHAIRS WITH A MINIMUM COMPRESSIVE STRENGTH OF 60MPa SHALL BE USED FOR EXPOSURE CLASSIFICATION B2, C1 AND C2. CONCRETE BAR CHAIRS SHALL HAVE CHLORIDE PERMEABILITY CLASS LOW UNLESS SPECIFIED OTHERWISE. PLASTIC TYPED STEEL BAR CHAIRS SHALL NOT BE USED. SUPPORT SPACING SHALL BE SUCH AS TO POSITION AND MAINTAIN THE REINFORCEMENT TO THE TOLERANCES OF AS 3600 AND SHALL BE AT 800mm MAXIMUM CENTRE IN SLABS.
13. ALL REINFORCEMENT SHALL BE SOURCED FROM MILLS WITH A RELEVANT JAS AND ACCREDITED THIRD-PARTY CERTIFICATION SCHEME SUCH AS THE ACSRS SCHEME.



11. 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.
12. 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.
3. ANY SERVICE MODIFIED OR CONNECTED TO IS TO HAVE ITS CONDITION EVALUATED TO ENSURE IT WILL MAINTAIN ITS SERVICEABILITY FOR THE DESIGN LIFE.
4. NO POTHOLING OF SERVICES WAS UNDERTAKEN AS PART OF THE SURVEY. 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.
5. REINSTATE ANY PERMANENT OR TEMPORARY BENCHMARKS DISTURBED TO THE SATISFACTION OF THE SUPERINTENDENT.
6. ALL PRECAUTIONS TO PROTECT EXISTING WORKS AND SERVICES MUST BE TAKEN.

UTILITIES

1. 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.
2. 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.
3. ANY SERVICE MODIFIED OR CONNECTED TO IS TO HAVE ITS CONDITION EVALUATED TO ENSURE IT WILL MAINTAIN ITS SERVICEABILITY FOR THE DESIGN LIFE.
4. NO POTHOLING OF SERVICES WAS UNDERTAKEN AS PART OF THE SURVEY. 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.
5. REINSTATE ANY PERMANENT OR TEMPORARY BENCHMARKS DISTURBED TO THE SATISFACTION OF THE SUPERINTENDENT.
6. ALL PRECAUTIONS TO PROTECT EXISTING WORKS AND SERVICES MUST BE TAKEN.

EARTHWORK

1. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH:
- THE APPROVED MARINE EXECUTION PLAN.
 - THE APPROVED EXCAVATION PERMIT
 - PRENSA REPORT JOB No. 12161776
 - TCC CITY PLAN SECTION S06.1 495 NOISE AND VIBRATION (NOTING: WORKING DAYS AND HOURS SHALL COMPLY WITH THE CONTRACT).
 - THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. IN THE EVENT THAT ITEMS OF CULTURAL HERITAGE SIGNIFICANCE ARE FOUND ON SITE, THE CONTRACTOR IS TO NOTIFY THE SUPERINTENDENT IMMEDIATELY.
2. ROCK SHALL BE DEFINED AS MATERIAL WHICH CANNOT BE RIPPED AT A PRODUCTION RATE EXCEEDING THE 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 MODEL). A CRAWLER EXCAVATOR FOR EXCAVATION IN ROCK) OF WIDTH NO GREATER THAN STATED IN TABLE 1. THE ROCK TEETH SHALL BE FITTED WITH HIGH-PENETRATION BOOTS.
- TABLE 1 - PRODUCTION RATE LIMIT FOR NON-RIPPABLE MATERIAL AND CLASSIFICATION OF EXCAVATORS AND SHOVEL LOADERS
- | CLASS NUMBER OF CRAWLER EXCAVATOR | OPERATING MASS (kg) | NET ENGINE POWER (kW) | MAXIMUM BUCKET WIDTH (mm) | PRODUCTION RATE (m ³ /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 |
| 205 | ≤ 50 000 < 60 000 | ≤ 200 < 235 | 1050 | 10 |
- NOTES:
1. 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.
2. OPERATING MASS SHALL ALSO INCLUDE STANDARD ATTACHMENTS, FOR EXAMPLE, ONE-PIECE BOM STANDARD STICK, SMALL BUCKET, STANDARD UNDERCARRIAGE.
- IN ADDITION TO THE REQUIREMENTS OF EARTHWORKS NOTE 1 THE CONTRACTOR SHALL INFORM THE SUPERINTENDENT 10 DAYS BEFORE THE INTENTION OF ROCK BREAKING ACTIVITIES. THE SUPERINTENDENT MAY IMPOSE RESTRICTIONS ON THE ROCK BREAKING HOURS OF WORK. REFER ALSO TO THE GENERAL CONDITIONS OF CONTRACT CLAUSE 51 - WORKING HOURS.
3. 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.
4. LEVEL 1 INSPECTION TO AS 3798 AND TESTING IS REQUIRED FOR ALL EARTHWORKS ASSOCIATED WITH THE FINAL WORKS AND ALL ROCK BREAKING ACTIVITIES.
5. MINIMUM FREQUENCY OF TESTING SHALL BE TYPE 4 IN ACCORDANCE WITH AS 3798
6. EXISTING SURFACES UNDER NEW WORKS AND THE FULL SWLWAY TO THE TEMPORARY BUND ARE TO BE STRIPPED OF ALL VEGETATION AND LOOSE SEDIMENT. LOOSE SEDIMENT SHALL BE REMOVED FOR THE FULL EXTENT OF THE TWO OUTER SWLWAY RAILS. ALL TREE STUMPS AND ROOTS SHALL BE CHASED OUT AND REMOVED. IF DECLARED WEEDS ARE ENCOUNTERED THE CONTRACTOR IS TO ADVISE THE SUPERINTENDENT AND DISPOSE OF THEM IN AN APPROVED MANNER.
7. 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% SMDD.
8. FILL SHALL BE APPROVED FILL STABLE, FREE FROM ORGANIC MATTER, HAVE A LINEAR SHRINKAGE NOT GREATER THAN 12%, A PLASTICITY INDEX NOT GREATER THAN 20, AND A MINIMUM SOAKED CBR OF 15%. MAXIMUM NOMINAL SIZE AND PARTICLE SIZE DISTRIBUTION SHALL COMPLY WITH THE SPECIFICATION.
9. 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.
10. 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:
- A. HAS SHORING OR SHIELDING IN PLACE; OR
 - B. THE TRENCH IS BENCHED; OR
 - C. THE TRENCH IS BENCHED AT AN ANGLE NOT EXCEEDING 45° AND THE BOTTOM VERTICAL FACE IS NOT TO EXCEED 0.5m HIGH; AND
 - D. IS APPROVED AS A SAFE WORK PLACE (IN WRITING) BY A SUITABLE QUALIFIED GEOTECHNICAL ENGINEER.
11. SURFACES DISTURBED DURING CONSTRUCTION SHALL BE MADE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
12. GRADE EVENLY BETWEEN LEVELS SHOWN.

GEOTEXTILES

1. THE GEOTEXTILE SHALL BE BIDIM A49 OR AN EQUIVALENT APPROVED BY THE ENGINEER. IT SHALL BE PLACED FOR THE EXTENTS SHOWN ON THE PLAN AND BENEATH ALL ROCK PROTECTION WORKS.
2. ALTERNATIVE GEOTEXTILES SHALL ONLY BE CONSIDERED IF:
- a. THEY ARE NON-WOVEN, NEEDLE PUNCHED STAPLE FIBRE.
 - b. THEY HAVE AN EQUIVALENT OPENINGS SIZE SUFFICIENT TO RETAIN THE SOIL BELOW WHILE PASSING WATER WITHOUT A SIGNIFICANT RISE IN HEAD.
 - c. IT CAN BE DEMONSTRATED THAT CLOGGING OF THE OPENINGS BY FINE PARTICLES AND CONSEQUENTLY A REDUCTION IN PERMEABILITY HAS BEEN AGREED AS NOT BEING AND ISSUE. THEY HAVE THE FOLLOWING PROPERTIES AS DEFINED BY THE QUEENSLAND DEPARTMENT OF MAIN ROADS AND TRANSPORT SPECIFICATIONS MRTS27:
 - FILTRATION CLASS - IV
 - STRIKATION CLASS - IV
3. THE GEOTEXTILES SHALL BE INSTALLED ON THE PREPARED SURFACE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
4. PLACEMENT OF THE GEOTEXTILE SHALL INCORPORATE THE FOLLOWING:
- a. GEOTEXTILES SHALL BE LAID LOOSELY, FREE OF WRINKLES, CREASES AND FOLDS. IT SHALL BE PLACED IN A MANNER THAT ALLOWS THE FABRIC TO CONFORM TO IRREGULARITIES IN THE SOIL WHEN HEAVIER MATERIALS ARE PLACED ON THE FABRIC, PLACING THE GEOTEXTILE IN A STRETCHED CONDITION UNDER TENSION. STRESS SHALL BE AVOIDED.
 - b. FABRIC PLACEMENT ON SLOPES SHALL BEGIN AT THE SLOPE TOE AND PROCEED UPSLOPE WITH THE UPSLOPE PANEL OVERLAPPING THE DOWNSLOPE PANEL.
 - c. STEEL SECURING PINS (WHERE REQUIRED) SHALL BE 5mm IN DIAMETER OR HAVE A HEAD CAPABLE OF RETAINING A STEEL WASHER HAVING A 38mm OUTSIDE DIAMETER. PIN LENGTH SHALL BE A MINIMUM OF 450mm FOR MEDIUM TO HIGH DENSITY SOIL, AND LONGER FOR LOOSER SOILS. PIN SPACING ALONG THE OVERLAP SHALL BE A MAXIMUM OF 0.6m FOR SLOPES STEEPER THAN 1 ON 3, 1.0m FOR SLOPES BETWEEN 1 ON 3 AND 1 ON 4, AND 1.5m FOR SLOPES FLATTER THAN 1 ON 4. ADDITIONAL PINS SHALL BE USED AS NECESSARY TO PREVENT GEOTEXTILE SLIPPAGE.
 - d. OVERLAPS SHALL BE AT LEAST 450mm.
 - e. CARE SHALL BE EXERCISED IN PLACING OVERLYING STONE TO AVOID PUNCTURING THE GEOTEXTILE.
5. MINOR CONSTRUCTION DAMAGE TO GEOTEXTILE FILTERS SHALL BE REPAIRED BY TRIMMING OUT THE DAMAGED SECTION AND REPLACING WITH A SECTION OF FABRIC THAT PROVIDES A MINIMUM OF 800mm OVERLAP IN ALL DIRECTIONS. THE EDGES OF THE REPLACEMENT FABRIC SHALL BE PLACED UNDER THE UNDAUNAGED GEOTEXTILE. IF REQUIRED, OVERLAYING STONE LAYERS MUST FIRST BE REMOVED TO EXPOSE THE DAMAGED FILTER CLOTH.

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	10/03/24
REV	DESCRIPTION	APPD	DATE

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, AS3610 AND AS3600.
2. THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. EXPOSED FORMED SURFACES SHALL HAVE A MINIMUM CLASS 3 SURFACE FINISH AND A 20mm CHAMFER UNLESS NOTED OTHERWISE.
4. FORMWORK STRIPPING SHALL BE IN ACCORDANCE WITH AS3610 AND SHALL OCCUR NO SOONER THAN:
- FORMWORK STRIPPING 4 DAYS OR WHEN 28MPa CONCRETE STRENGTH HAS BEEN REACHED.
 - CONCRETE STRENGTH IS TO BE CONFIRMED BY A COMPRESSIVE STRENGTH TEST.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE PIPES TO BE PVC WITH SOLVENT CEMENT JOINTS
2. STORMWATER DRAINAGE SHALL BE FREE OF LEAKS WHEN SUBJECTED TO THE WATER TEST REQUIREMENTS OF AS/NZS 3500.3
3. ALL STORMWATER PIPEWORK IS TO BE LAID WITH THE SOCKET FACING UPSTREAM. ALL WORKS ARE TO COMMENCE AT THE OUTLET END OF EACH LINE.

SUBSOIL DRAINAGE NOTES

1. ALL SUBSURFACE DRAINS SHALL BE 100 DIAMETER (D=100mm). POLYETHYLENE CORRUGATED SLOTTED PIPE TO AS 2439.1 WRAPPED IN A TUBULAR, SEAMLESS FILTER SOCK.
2. ABSOLUTE MINIMUM GRADE OF SUBSOIL DRAINS IS TO BE 0.5% PREFERABLE GRADE OF SUBSOIL DRAINS IS 1%.
3. THE SUBSOIL DRAIN OUTLETS SHALL BE PROVIDED WITH PEST-PROOF FLAPS.
4. CONCRETE ANCHORS N20 IN ACCORDANCE WITH AS 1379 AND AS 3600.
5. AT OBlique TEE ON SUBSURFACE DRAIN CLEANING POINTS, THE CONTRACTOR MAY INSTALL VINDEX VERTICAL FITTINGS IF APPROVED BY THE SUPERINTENDENT.
6. MINIMUM COVER OVER SUBSURFACE DRAIN PIPE FOR VARIOUS COMPACTORS IN U.O.
- | | | |
|-------------------|---|-----|
| HAND HELD TONS | - | 100 |
| UNITS < 15 TONNES | - | 200 |
| UNITS > 15 TONNES | - | 300 |
7. PROVIDE CLEANOUTS AT HEAD OF PIPE AND AT 90 DEGREE BENDS UNLESS SHOWN OTHERWISE.

ESCP

1. 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.
2. THE OWNER IS RESPONSIBLE FOR THE IMPLEMENTATION & MAINTENANCE OF THE SOIL EROSION & SEDIMENT CONTROL POST CONSTRUCTION.
3. DURING CONSTRUCTION ALL CONTRACTOR VEHICLES SHALL BE PARKED IN DESIGNATED CONTRACTOR PARKING SPACES.

ACID SULPHATE SOIL

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

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

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	CONSTRUCTION NOTES - SHEET 1		
JOB NUMBER	TPAA055	SHEET No.	S0.02
		REVISION	D

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2024/1472

Date: 09 / 09 / 2024



1. ALL BLOCKWORK SHALL BE CONSTRUCTED USING GRADE 15 BLOCKS (15MPa). BLOCKWORK SHALL HAVE A SALT RESISTANCE GRADE OF EXPOSED IN ACCORDANCE WITH S 3700 AND MORTAR CLASSIFICATION TYPE M4.
2. FULLY BED FACE AND END SHELLS IN HOLLOW BLOCK WALLS.
3. INFILL GROUT TO HAVE AN f_{cu} OF 20MPa WITH 10mm AGGREGATE AND MAXIMUM SLOPE 230mm, +/- 30mm AND SHALL HAVE A CEMENT CONTENT OF NOT LESS THAN 300kg/m³.
4. PROVIDE CLEAN OUT HOLES AT THE BOTTOM OF ALL CORES IN ANY GROUTED LIFT.
5. REMOVE ALL MORTAR INTRUSIONS FROM CORES BEFORE GROUTING.
6. WET ALL CORES BEFORE GROUTING.
7. FILL CONCRETE CORES AS FOLLOWS UNLESS NOTED OTHERWISE:
 - RETAINING WALLS - ALL CORES

8. WALLS TO BE POURED PROGRESSIVELY IN 2.5m MAX. POUR LIFTS. THE CONTRACTOR SHALL ENSURE THAT THE COREFILLING SEQUENCE DOES NOT CAUSE COLLAPSE OF THE WALLS DURING CONSTRUCTION. JOINTS IN WALLS GREATER OR EQUAL TO 3.6m TALL SHALL BE AT HEIGHTS AND LOCATIONS APPROVED BY THE ENGINEER.
9. DO NOT COMMENCE GROUTING UNTIL BLOCKWORK AND REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY THE STRUCTURAL ENGINEER.
10. PROVIDE 15mm MINIMUM REINFT COVER TO INSIDE OF FACE SHELLS. REINFORCEMENT SHALL BE LOCATED CENTRALLY IN THE CORES (N,N O), CAREFULLY LOCATE STARTER BARS IN FOOTINGS, THE REINFORCEMENT SHALL BE SECURELY SO THAT IT WILL NOT BE DISPLACED DURING GROUTING.
11. ALL BAR LAPPS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - a) N12: 600mm LAP
 - b) N16: 800mm LAP
12. DISCONTINUE HORIZONTAL REINFORCEMENT AT CONTROL JOINTS.
13. ALL WALLS SHALL BE BONDED OR TIED AT THEIR INTERSECTIONS.
14. ALL REINFORCED BLOCK WALLS TO BE REINFORCED VERTICALLY AT ENDS OF WALLS, CORNERS, SIDES OF OPENINGS, ADJACENT TO CONTROL JOINTS AND UNBONDED INTERSECTIONS, AND AT MAXIMUM GENSES BETWEEN THE REINFORCING AS SHOWN ON THE DRAWINGS.
15. PROVIDE W-16 SPACERS TO ALL 200 SERIES & V-16 SPACERS TO 150 SERIES BOND BEAM AND INTEL REINFORCEMENT.

1. ALL PANELS ARE TO HAVE TWO LAYERS OF REINFORCEMENT THROUGHOUT, AND A MINIMUM OF N16 PERIMETER BARS IN EACH LAYER WITH 65 COVER TO PANEL EDGES AND ALL OPENINGS.
2. CONCRETE COMPRESSIVE STRENGTH AT THE TIME OF LIFTING - f_{cm} = 25MPa MIN.
3. ALL PANELS ARE TO HAVE 20mm CHAMFERS.
4. ALL MATERIALS, COMPONENTS AND EQUIPMENT USED IN THE MANUFACTURING AND PLACEMENT OF PREFABRICATED CONCRETE ELEMENTS SHALL COMPLY WITH AS 3550.
5. ALL PANELS SHALL BE CAST WITH AN APPROVED BOND BREAKER APPLIED IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATION.
6. INSTALLATION OF ANCHORS SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS WITH N12 BARS x 300 LONG MINIMUM THROUGH CROSS HOLES TO BE TIED TO REINFORCEMENT.
7. ANY CLARIFICATION OF DETAILING OR DISCREPANCIES ON SITE, SHALL BE REFERRED TO THE SUPERINTENDENT.
8. LEGGS ON 1" AND 1/2" BARS SHALL BE 600 LONG MINIMUM U.N.O.

1.1. **GENERAL CONSTRUCTION CATEGORY**
IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS 5131 THE CONSTRUCTION CATEGORIES FOR THIS PROJECT ARE DEFINED IN THE TABLE BELOW:

ELEMENT	IMPORTANCE LEVEL	SERVICE CATEGORY	FABRICATION CATEGORY	CONSTRUCTION CATEGORY
ALL STRUCTURAL STEELWORK U.N.O.	IL2	SC1	FC2	CC2

1.2. **TREATMENT GRADES**
UNLESS NOTED OTHERWISE IN THE PROJECT DRAWINGS, FOR THE ELEMENTS ON THIS PROJECT, THE TREATMENT GRADES ACCORDING TO AS/NZS 5131 SHALL BE:

ELEMENT	TREATMENT GRADE
ALL PAINTED STRUCTURAL STEELWORK U.N.O.	P2

1.3. **COATING QUALITY LEVEL**
THE COATING QUALITY LEVEL ASSESSED ACCORDING TO AS/NZS 5131 SHALL BE AS GIVEN IN THE TABLE BELOW:

ITEM	COATING QUALITY LEVEL
ALL PAINTED STRUCTURAL STEELWORK U.N.O.	PC2

- 2.1. STRUCTURAL STEELWORK FABRICATION**
WORMSHIPSHIP AND QUALITY
ALL STRUCTURAL STEELWORK SHALL BE FABRICATED IN ACCORDANCE WITH AS/NZS 5131. ALL WORK ON THIS PROJECT SHALL BE UNDERTAKEN BY COMPETENT PERSONNEL. REQUIREMENTS AND EXAMPLES OF QUALIFICATIONS FOR COMPETENT PERSONNEL ARE CONTAINED IN AS/NZS 5131. STEELWORK SHALL BE FABRICATED BY FABRICATORS CERTIFIED UNDER THE AUSTRALIAN STRUCTURAL STEELWORK COMPLIANCE SCHEME (NSSCS)
- 2.2. FABRICATION TOLERANCES**
FABRICATION TOLERANCES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131. THE TOLERANCE CLASS FOR FUNCTIONAL TOLERANCES SHALL BE CLASS 1 U.N.O.
- 2.3. STEEL MATERIALS**
2.3.1 GRADES
ALL STRUCTURAL STEEL MATERIAL SHALL CONFORM TO THE FOLLOWING TABLE U.N.O.
- | COMPONENT | TO CONFORM WITH AUSTRALIAN STANDARD | MINIMUM GRADE |
|--|-------------------------------------|----------------------------|
| HOT ROLLED STEEL SECTIONS | AS/NZS 3670.1, TS 102 | 300 |
| PLATE | AS/NZS 3678, TS 102 | 250 |
| PLATS | AS/NZS 1594, TS 102 | 300 |
| HOLLOW SECTIONS
CIRCULAR (CHS)
SQUARE (SHS)
RECTANGULAR (RHS) | AS/NZS 1163, TS 102 | C350.0
C350.0
C350.0 |

MEMBER SIZES SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS. NO SUBSTITUTION IS PERMITTED WITHOUT APPROVAL IN WRITING FROM THE ENGINEER. DOCUMENTATION SUPPLIED WITH MATERIALS AND COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

ALL STRUCTURAL STEEL SHALL BE SOURCE FROM MILLS WITH A RELEVANT JAS AND ACCREDITED THIRD PARTY CERTIFICATION SCHEME SUCH AS THE ACSR SCHEME. ALTERNATIVE SOURCING OF THIRD PARTY CERTIFIED STRUCTURAL STEEL SHALL BE SUBMITTED FOR REVIEW AND MUST BE APPROVED PRIOR TO THE COMMENCEMENT OF PROCUREMENT.

2.3.6 SPlicing OF STRUCTURAL MEMBERS

ALL STRUCTURAL STEELWORK MEMBERS SHALL BE SUPPLIED IN A SINGLE LENGTH, EXCEPT WHERE OTHERWISE NOTED WITH SPlice LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS. SPlices AT OTHER LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION COMMENCEMENT.

ALL CUTTING, HILING AND SHAPING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131. PENETRATIONS OR CUT-OUTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL.

2.5.1 <u>BOLT DESIGNATION</u>	
8/8S	HIGH STRENGTH STRUCTURAL GRADE BOLTS OF GRADE 8.8 TO AS/NZS 1252.1 TIGHTENED TO A SNUG TIGHT CONDITION TO AS/NZS 5131.
A4-70	HIGH STRENGTH AUSTENITIC STAINLESS STEEL. STRUCTURAL GRADE BOLT OF A4 STEEL, GRADE 40 AND 70 PROPERTY CLASS TO ISO 3506-1, TIGHTENED TO A SNUG TIGHT CONDITION TO AS/NZS 5131. WASHERS USED IN CONJUNCTION WITH A4-70 BOLTS SHALL BE A2-70 DESIGNATION. BOLTS AND NUTS SHALL HAVE ISO COARSE PITCH METRIC ROLLED THREAD.

THE FOLLOWING STANDARDS:

- ISO 3506-1 FASTENERS - MECHANICAL PROPERTIES OF CORROSION-RESISTANT STAINLESS STEEL FASTENERS.
- ISO 3506-2 FASTENERS - MECHANICAL PROPERTIES OF CORROSION-RESISTANT STAINLESS STEEL FASTENERS.

THE MATERIAL TESTER SHALL SHOW THE FULL CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES OF THE MATERIAL, INCLUDING YIELD, TENSILE AND ELONGATION RESULTS AND SHALL BE PROVIDED TO THE SUPERINTENDENT AND APPROVED PRIOR TO USE.

HIGH STRENGTH STRUCTURAL BOLTS SHALL BE VERIFIED TO AS/NZS 1252.2. THE DOCUMENTATION REQUIRED BY THE STANDARD, INCLUDING THE 'SUPPLIER DECLARATION OF CONFORMITY' (SDoC) SHALL BE PROVIDED.

ALL STAINLESS STEEL FASTENERS (BOLTS, NUTS AND WASHERS) SHALL BE EITHER ELECTRO-POLISHED OR PASSIVATED IN ACCORDANCE WITH ASTM A380.
ALL BOLTS GRADE 8.8/S SHALL BE GALVANISED TO AS/NZS 1214.

2.6.1 WELDING	
WELDING CONSUMABLES	
2.6.1 WELDING CONSUMABLES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 1554, BASED ON THE YIELD STRENGTH OF THE STEEL TO BE WELDED, AS DEFINED IN THE TABLE BELOW:	
MATERIAL TO BE WELDED	TO CONFORM TO AUSTRALIAN STANDARD
CARBON STEEL WITH YIELD STRENGTH $\leq 500\text{MPa}$	AS/NZS 1554.1
STAINLESS STEEL	AS/NZS 1554.8
2.6.2 WELD CONSUMABLES STRENGTH	
NOMINAL YIELD STRENGTH OF STEEL TO BE WELDED	NOMINAL TENSILE STRENGTH OF WELD METAL, f_w (MPa)
ALL STEEL WITH GRADE ≤ 300 MPa	430
2.6.3 WELD QUALITY	
ELEMENT	WELD QUALITY
ALL WELDS	S.P.U.N.O.
2.6.4 NON-DESTRUCTIVE EXAMINATION	
THE EXTENT OF NON DESTRUCTIVE EXAMINATION (NDE) SHALL BE 100% VISUAL SCANNING, 10% VISUAL EXAMINATION TO AS/NZS 1554 AND 5% ULTRASONIC EXAMINATION (UT) ON BUTT WELDS	
2.6.5 SITE WELDS	
ALL SITE WELDS TO BE TOUCHED UP WITH A ZINC RICH EPOXY AFTER WELDING AND, WHERE DIRECTED BY THE PRINCIPAL, TREATED WITH A PROTECTIVE OUTER WRAP. DURING THE COURSE OF THE PROPOSED EPOXY SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO BE USED ON THE PROJECT.	

IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS:

- A. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET WELD (CFW)
- B. BOLTING THROUGH HOLLOW STEEL SECTIONS WILL NOT BE ACCEPTABLE.
- C. STEEL TO BE STRENGTHENED SHALL BE MINIMUM A572 GR. 50
- D. A MINIMUM OF TWO THREADS SHALL EXTEND PAST THE NUT
- E. ALL BOLT HOLES IN STRUCTURAL STEEL MEMBERS SHALL BE OVERSIZED HOLES WITHIN THE LIMITATIONS OF AISC 360-10
- F. ALL BOLTS SHALL BE INSTALLED UNDER TENSION
- G. UNDER BOTH THE BOLT HEAD AND NUT, ALL STAINLESS STEEL BOLTS SHALL BE INSTALLED WITH AN APPROVED NEOPRENE WASHER BETWEEN NUT AND BOLT HEAD AND STRUCTURAL STEEL
- H. PLATES SHALL BE 10mm MINIMUM THICK.

ALL DETAILING WHERE NOT SPECIFICALLY SHOWN SHALL BE IN ACCORDANCE WITH THE AUSTRALIAN STEEL INSTITUTE (ASI) CURRENT EDITIONS OF THE 'DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL' AND THE ASI STANDARDISED STRUCTURAL CONNECTION DETAILS CONTAINED THEREIN. ENDS OF HOLLOW STEEL SECTIONS THAT FORM PART OF THE CONNECTION BETWEEN STRUCTURAL STEELWORK SHALL HAVE A MINIMUM THICKNESS OF 10mm OTHERWISE THE ENDS OF HOLLOW STEEL SECTION MEMBERS SHALL BE SEALED WITH 4mm THICK PLATES AND CONTINUOUSLY SEAL WELDED.

GALVANISING VENT HOLES SHALL BE IN ACCORDANCE WITH AS/NZS 2312.2

WHERE HOLLOW SECTIONS ARE TO BE HOT DIPPED GALVANISED, VENT AND DRAINAGE HOLES SHALL BE PROVIDED CONFORMING TO THE REQUIREMENTS OF AS/NZS 5131 IN NON-VIEWABLE LOCATIONS.

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 ANY STRUCTURAL RESPONSIBILITIES. THE CONTRACTOR SHALL ALLOW 10 WORKING DAYS FOR APPROVAL.

CHECKING OF THE SHOP DRAWINGS WILL CONSTITUTE A CHECK OF THE STRUCTURAL MEMBERS (E.G. I BEAMS, COLUMNS, JOISTS, GIRDERS, BRACINGS, ETC.) FOR THICKNESS AND GENERAL LOCATIONS ONLY. SHOP DRAWINGS SHALL BE PREPARED TO TAKE INTO CONSIDERATION THE FOLLOWING:

- ALL SITE DETAILS AND INSTALLATIONS DURING THE COURSE OF THE CONSTRUCTION;
- CONSTRUCTION SEQUENCING;
- ANY HANDLING AND/OR INSTALLATION RESTRICTION;
- OPERATIONAL REQUIREMENTS OF THE FACILITY;
- ACCEPTABLE TOLERANCES OF ELEMENTS STILL TO BE CONSTRUCTED;
- THE LOCATIONS OF EXISTING STRUCTURAL FRAMING ELEMENTS;
- LIVE SERVICES THAT CANNOT BE DECOMMISSIONED DURING INSTALLATION; AND
- NEW SERVICES.

THE SUPERINTENDENT HAS ALLOWANCE FOR ONE REVIEW OF SHOP DRAWINGS. FURTHER REVIEWS, ESPECIALLY TO ADDRESS THE ABOVE DOT POINTS, MAY BE GROUNDS FOR A VARIATION CLAIM AGAINST THE CONTRACTOR.

2.3.1 THE CONTRACTOR SHALL OTHERWISE ALL STEELWORK SHALL HAVE THE FOLLOWING PAINT SYSTEM:

- * ABRASIVE BLAST CLEANED TO AS 1627.4 CLASS 2.5.
- * TWO COATS OF UNIVERSAL COATINGS INTERSPERSED 954 GF TO 800 MICRONS TOTAL.
- * STRIPE COAT BY BRUSH ALL EDGES, WELDS, SEAMS ETC. BEFORE EACH COAT OF APPLICATION.
- * EACH COAT SHALL BE A DIFFERENT COLOUR.
- * EACH COAT SHALL BE TESTED IN ACCORDANCE WITH AS 3894.1, ANY DEFECTS IDENTIFIED SHALL BE RECTIFIED BY A METHOD APPROVED BY THE PRINCIPAL.
- * THE SECOND COAT SHALL NOT BE PLACED UNTIL ANY DEFECTS IN THE FIRST COAT HAVE BEEN RECTIFIED.

- 2.9.2 HANDRAILS, GUARDRAILS AND LADDERS SHALL BE HOT DIP GALVANISED (125 MICRON HDG900) IN ACCORDANCE WITH AS/NZS 2312 AND AS 4680 OR AN APPROVED EQUIVALENT INTERNATIONAL STANDARD.
- 2.9.3 NOT WITHSTANDING ITEM 3.4, NO PROTECTIVE COATING IS REQUIRED FOR HUNGRY BOARDS USED AS TEMPORARY RINDING

- 2.9.4 PROTECTIVE OUTER WRAPS
ALL PROTECTIVE OUTER WRAPS SHALL BE SOURCED FROM THE SAME SUPPLIER AND APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS BY APPROVED APPLICATORS. NO NOMINATED PRODUCTS SHALL BE SUBSTITUTED UNLESS APPROVED IN WRITING BY THE PRINCIPAL.

- 2.9.5 UNLESS NOTED OTHERWISE ALL STEELWORK SHALL HAVE THE FOLLOWING

ABBREVIATION	COLOUR	COLOUR CODE TO AS 2700
HANDRAILS, GUARDRAILS, KNEE RAILS, STANCHIONS, KICKPLATE, LADDERS	GOLDEN YELLOW	Y14
ALL OTHER STEELWORK	NEUTRAL GREY, GREY OR BLACK	N23, B44 OR N61

- 2.10 MECHANICAL AND CHEMICAL ANCHORS
MECHANICAL AND CHEMICAL ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

3.1. **STRUCTURAL STEELWORK ERECTION**
GENERAL
 STRUCTURAL STEELWORK ERECTION SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

3.2. **CAMBER**
 ALL MEMBERS HAVING A NATURAL CAMBER WITHIN THE STRAIGHTNESS TOLERANCE SHALL BE ERECTED WITH THE NATURAL CAMBER UP.

3.3. **TOLERANCES**
 ERECTION TOLERANCES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131. THE TOLERANCE CLASS FOR FUNCTIONAL TOLERANCES SHALL BE CLASS 1 UNLESS NOTED OTHERWISE. MISALIGNED HOLES SHALL BE DRILLED NOT BLOWN. NO OXY-ACETYLENE PERMITTED ON SITE.

3.4. **POST INSTALLED ANCHORS**
 ALL CHEMICAL AND EXPANSIVE ANCHORS IN CONCRETE OR REINFORCED BLOCKWORK SHALL BE HILTI OR RAMSET PRODUCTS OR AN APPROVED EQUIVALENT. UNLESS NOTED OTHERWISE, EPOXY FOR CHEMICAL ANCHORS SHALL BE RAMSET RES 502. MINIMUM INSTALLATION REQUIREMENTS SHALL BE AS FOLLOWS:

SIZE	MINIMUM EDGE DISTANCE	MINIMUM SPACING	MINIMUM EMBEDMENT DEPTH
M12	100	100	110
M16	125	125	125
M20	150	150	140

POURING BOLTS SHALL BE THE REQUIREMENTS AS SHOWN IN THE DRAWINGS. HOLDING BOLTS SHALL BE GRADE 4-83 AND SHALL BE SUPPLIED WITH TWO LEVELING NUTS AND WASHERS PER BOLT. WASHERS SHALL HAVE A MINIMUM THICKNESS OF .50". BOLT SHALL BE THREADED FOR THE FULL PROJECTION. THREADS SHALL BE HEAVILY GREASED AND NUTS AND WASHERS SHALL BE ON THE BOLT PRIOR TO CONCRETE PLACEMENT. GROUT UNDER BASE PLATES SHALL BE "OSROSC" CONCREXTRA UW OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MATERIALS USED FOR GROUTING UNDER STEEL BASE PLATES AND REINFORCING PLATE SHALL MEET THE REQUIREMENTS DEFINED IN AASHTO'S M311.

ALL BOLTS, NUTS AND WASHERS, INCLUDING HOLD DOWN BOLTS, CAST-IN FERROLES, CAST-IN PLATES AND MASONRY ANCHORS ARE TO BE STAINLESS STEEL GRADE 316 UNLESS NOTED OTHERWISE. ALL LIFTING INSERTS SHALL BE HOT DIPPED GALVANISED

SUBMIT THE ERECTION SEQUENCE METHODOLOGY (ESM) FOR APPROVAL.

- 3.8 PROPRIETARY ITEMS
PROPRIETARY ITEMS (E.G. FERRULES) SHALL BE INSTALLED
IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
4. STRUCTURAL STEELWORK INSPECTION, TESTING AND ERECTION SHALL CONFORM
TO THE REQUIREMENTS OF AS/NZS 5131. INSPECTION AND TEST PLANS (ITP)
SHALL BE PREPARED, AS LISTED IN THE TABLE BELOW:

ITEM	ITP
MATERIALS & COMPONENTS	REQUIRED
PREPARATION & ASSEMBLY	REQUIRED
WELDING	REQUIRED
MECHANICAL FASTENING	REQUIRED
SURFACE TREATMENT	REQUIRED
PAINT COATINGS	REQUIRED
GALVANISED COATINGS	REQUIRED
ERECTION	REQUIRED

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

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	APP'D	DATE

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

CLIENT
PORT OF TOWNSVILLE LIMITED

PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
CONSTRUCTION NOTES - SHEET
2

JOB NUMBER	SHEET No.	REVISION
TPAA055	S0.03	D

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1472

Date: 09 / 09 / 2024



TASK HEADING	ITEM No.	DESCRIPTION OF TASK	NOTES
PREPARE SITE / PRELIMINARIES	1	ENGAGE / MAKE AVAILABLE VESSEL HAUL OUT DECKMASTER TO SUPERVISE SLIPPING OPERATION	PROVIDE EQUIPMENT AND GEAR REQUIRED FOR TOWING AND HAUL OUT OF VESSEL
	2	CLEAN UP AND REMOVE ANY VEGETATION, MUD, SCRAP METAL ITEMS ETC. FROM SITE TO ALLOW EASY ACCESS FOR PERSONNEL, MACHINERY AND PROVIDE SUITABLE WORKING ENVIRONMENT. CLEARED AREA WILL REQUIRE A 20t + WINCH OR HAULING VEHICLE TO PULL VESSEL UP SLIPWAY.	PoTL ENVIRONMENTAL / PLANNING TO BE INFORMED PRIOR TO UNDERTAKING WORK. ISSUE MARINE PLANT NOTIFICATION. DO NOT MOVE ANY MUD BEYOND THE EXTENT OF THE SLIPWAY.
	3	ABOVE LOW WATER MARK - REMOVE RUST OFF RAILS, ANY AREAS TOO DAMAGED OR RAILS MISSING TO BE REINSTATED SUFFICIENTLY FOR THE SLIPWAY CRADLES TO ROLL FREELY. CHECK THAT THE OUTER RAILS ARE SPACED EVENLY AT 6.13m APART.	SLIPPING TO PROVIDE EXTENT OF RAIL PREPARATIONS REQUIRED UP THE SLIPWAY. PoTL ENVIRONMENTAL / PLANNING TO BE CONSULTED (MAINLY DUE TO METHOD OF WORK FOR NOISE CONCERNS.
	4	BELOW HIGH WATER MARK - REMOVE MUD AND DEBRIS ALONG RAILS TO WIDTH OF THE CRADLES DOWN TO LOWEST REQUIRED DEPTH. MUD SHALL BE PUSHED / SCRAPED INTO DEEPER WATER HOWEVER NOT BEYOND THE EXTENT OF THE SLIPWAY IN SUCH A WAY THAT THERE IS MINIMAL TURBIDITY. TO ENSURE NO 'BUMPS' LIKELY TO DERAIL THE CRADLES ON THE DAY OF SLIPPING A SUBSTANTIAL I-BEAM IS TO SCRAPED DOWN THE FULL EXTENT OF TRAVEL REQUIRED. MACHINE FROM LAND AT LOWEST TIDE AND POSSIBLY EXCAVATOR OFF FLAT TOP BARGE MAY BE REQUIRED TO COMPLETE THIS.	EXTENT OF RAIL PREPARATIONS REQUIRED DOWN THE SLIPWAY TO BE CONFIRMED BY CONTRACTOR. PoTL ENVIRONMENTAL / PLANNING TO BE CONSULTED AS WILL REQUIRE A PERMIT. ANY WORK BELOW WATER MARK IS CONSIDERED DREDGING.
	5	DIVER INSPECTION OF RAIL BELOW LOW WATER MARK AND DETERMINE IF HAUL DOWN BLOCK STILL IN PLACE AND USEABLE.	THIS MAY BE DONE AT SOME TIME AFTER INITIAL MUD REMOVAL. RAMP POCKET IS BLOCKED OFF WITH TEMPORARY BUND TO ALLOW RAILS AND THE SUPPORT FRAME CONCRETE PADS TO BE PREPARED AND SUPPORT FRAME PUT IN POSITION.
	6	CONSTRUCT FOUNDATIONS. LOCATION TO SUIT FINAL LOCATION OF VESSEL AND TO BE SUFFICIENT SO THAT JACKING POINTS TO LIFT TWO CRADLES ARE LOCATED ON NEW FOOTINGS. FOUNDATION ALSO TO BE OF SUFFICIENT SIZE TO SUPPORT TEMPORARY SAFETY CHOCKS AND KEEL AND BILGE BLOCKS.	DOCKMASTER TO CONFIRM SIZE AND LOCATION OF FIXINGS FOR PERMANENT SUPPORT STRUCTURE (EXCEPT FOR CYCLONE TIE DOWN) AND JACKING POINTS AND CRADLES ARE LOCATED OVER NEW CONCRETE FOOTINGS. IF THIS CANNOT BE ACHIEVED CONTACT THE SUPERINTENDENT FOR POSSIBLE REDESIGN OF PERMANENT FOUNDATIONS. IT IS ANTICIPATED THAT THERE WILL BE FOUR JACKING POINTS (JUST INSIDE THE OUTSIDE RAILS) AND POSSIBLY 6 KEEL BLOCKS AT THE DOUBLE OLD CENTRE RAILS AND 6 BILGE STANDS (3 EACH SIDE).
PRIOR TO VESSEL HAUL OUT	7	IN-WATER SCRUB / CLEAN ENTIRE VESSEL HULL WHERE IT IS LOCATED AT COMMON USER FACILITY. INSTALLATION CRADLE FRAME LOCATIONS NEED TO BE CLEARED OF ANY MARINE GROWTH.	METHODOLOGY TO BE DESCRIBED IN CEMP FOR APPROVAL BY PoTL ENVIRONMENT.
	8	SUPPLY INTERMEDIATE BULK CONTAINERS (IBC'S) ON DECK AND LIFT WITH WATER TO TRIM VESSEL AS REQUIRED. ALLOW FOR 6 OFF INTERMEDIATE BULK CONTAINERS.	DOCK MASTER TO ADVISE LOCATION AND CONFIRM NUMBER OFF.
	9	OFFLOAD EQUIPMENT AND GEAR INCLUDING (SUBJECT TO DETAILED METHODOLOGY): • 2 x SLIPPING CRADLES WITH BOGGIES (APPROX. 11 TONNES EACH). • 2 x LONG STEEL SPREADER BARS (APPROX. 2 TONNES EACH). • 10 x 1.8 TONNE CONCRETE HARD STAND BLOCKS 1.1m x 1.1m x 0.65m HIGH (FORKLIFTABLE). • 8 TRIPOD STEEL BILGE STANDS. • FORKLIFT TINE EXTENSION BAR. • 2 PALLETES OF TIMBER BLOCKS, WEDGES, BINDERS AND CHAIN TIES. • PALLET WITH LIFTING JACKS (4). • 2 CONTROL 3 ARM LONG HYDRAULIC HOSES AND SLIPPING CREW TOOLS. • 4 x 100 TONNE HYDRAULIC POWER PACK JACKS.	DOCK MASTER TO SUPPLY GEAR AND ARRANGE TRUCKING TO SLIPWAY. DOCKMASTER TO CONFIRM JACK REQUIREMENTS.
	10	PREPARE AND SUPPLY EQUIPMENT AT SLIPWAY AND SUPPLY MANPOWER INCLUDING: • PROVIDE MOBILE CRANE, FORKLIFT WINCH TRUCK / CRANE / WINCH FOR HAULING VESSEL UP SLIPWAY, GENERATOR, EWP AND / OR CRANE CAGE, FLOOD LIGHTING (IF REQUIRED), DINGHY ETC. • SUPPLY WELDING EQUIPMENT, COMPRESSOR, TOOLS, AND QUALIFIED LABOUR TO ASSIST. • SUPPLY OF 4 x 310UC x ABOUT 5m HIGH 'GOAL POSTS'. • ASSEMBLE SUPPLIED SLIPPING CRADLES WITH THEIR BOGGIES ON RAILS THEN FIT GOAL POSTS AND SPREADER BARS. • FIT BLOCKS TIMBER CHOCKS ON TOP OF CRADLES (MIGHT NEED WELD OF FLATBARS TO NAIL CHOCKS FROM FLOATING AWAY). • FABRICATE AND FIT 'COW SCOOPS' TO FRONT OF LOWER BOGGIE SET WHEELS.	DOCK MASTER PERSONNEL TO BE ON SITE DURING VESSEL HAUL OUT AND PROVIDE MANPOWER TO ENSURE CORRECT SETUP OF SLIPPING EQUIPMENT. SIZE AND LENGTH OF 'GOAL POSTS' TO BE CONFIRMED BY DOCK MASTER.
	11	ARRANGE HEAVY Haul CONTRACTOR OR WINCH SUPPLIER FOR WINCH TRUCK / CRANE OR SIMILAR FOR HAULING VESSEL UP SLIPWAY. REQUIRE APPROXIMATELY 20 TONNES MINIMUM PULL FORCE.	MINDFUL OF RESTRICTED SPACE TO MANOEUVRE PoTL CAN ASSIST WITH ANY ROAD CLOSURES, FENCE REMOVALS ETC.
SLIPPING / HAULOUT OPERATIONS	12	TRIAL LOWER THE ASSEMBLED CRADLES DOWN RAILS. POSSIBLY USE THE EXISTING HAULDOWN BLOCK IF FUNCTIONAL AND WIRE CAN BE RIGGED. OTHERWISE WORKBOAT IF CRADLES DONT ROLL EASY.	DOCK MASTER ACCREDITED SLIPPING MASTER REQUIRED ON-SITE TO OVERSEE THE PREPARATIONS AND FINAL SLIPPING.
	13	DAY PRIOR TO SLIPPING ARRANGE TOW VESSEL(S) FOR MOVE FROM COMMON USE FACILITY WHARF AT TOWNSVILLE MARINE PRECINCT TO EX CB-SLIP AND SUPPLY SOME FENDERS FOR OVERNIGHT BERTHING AT TOWNSVILLE MARINE PRECINCT.	PoTL CAN MAKE INNER HARBOUR WHARF AVAILABLE IN PREPARATION FOR HAULOUT NEXT DAY. ON REQUEST PoTL CAN MAKE ALAN TICHEURST TUG (CALL SIGN 248250C) AND CREW AVAILABLE.
	14	COORDINATE VESSEL TOW WITH REGIONAL HARBOUR MASTER AND LOG WITH MARITIME SAFETY QUEENSLAND / VESSEL TRAFFIC SERVICES.	AS ADVISED BY THE RHM TWO TUGS AND ONE SUPPORT VESSEL WILL BE REQUIRED FOR MOVING THE VESSEL. THE STANDARD FOR COMMERCIAL MARINE CONSTRUCTION ACTIVITIES - TOWNSVILLE. RELEASE BY MSQ SHALL APPLY.
	15	REMOVE TEMPORARY BUND TO ALLOW WATER INTO RAMP POCKET. PREPARE FOR ARRIVAL OF VESSEL INCLUDING LOWERING SLIPWAY CRADLE TO REQUIRED LOCATION DOWN RAILS. PREPARE EQUIPMENT FOR HAUL OUT.	REFER GENERAL NOTES FOR PREFERRED SLIPPING DATES.
	16	PREPARE FOR ARRIVAL OF VESSEL INCLUDING LOWERING SLIPWAY CRADLE TO DESIGNATED LOCATION DOWN RAILS PREPARING EQUIPMENT FOR HAULOUT.	WILL REQUIRE MEN ON VESSEL DECK (AT LEAST 2 DOCK MASTER SLIPPING CREW) TO MAN LINES. HAVE AT READY FENDERS AND GOAL POST WEDGES.
HARDSTAND VESSEL AND PACKUP	17	NEARING HIGH TIDE MANOEUVRE VESSEL BETWEEN AND GOAL POSTS THEN LASH AND CHOCK TO THEM.	
	18	HAUL SLIPWAY CRADLES AND VESSEL UNTIL BOW TOUCHES DOWN. HAVE DIVER CONFIRM LOCATION OF AFT CRADLE TO AFT END OF SKEG (MEASURE STICK). IF NECESSARY LOWER DOWN SLIPWAY, ADJUST VESSEL LOCATION AND HAUL AGAIN WITH DIVER TO CONFIRM. ONCE CONFIRMED OK REMOVE CREW OFF VESSEL THEN HAUL UP SLIPWAY TO DESIGNATED POSITION.	DOCK MASTER TO BE IN CHARGE OF HAULOUT. DRAIN IBC'S TO REDUCE WEIGHT AFTER HAULOUT.
	19	REINSTATE TEMPORARY BUNDING AND DEWATER TO ALLOW WORK IN DRY DOCK.	
	20	BEYOND FOUNDATION FILL. ROLL AND LEVEL SLIPWAY GROUND TO SUIT FORKLIFT ACCESS REQUIRED FOR TASK 21. FILL WITH COARSE GRAVEL MIX ALLOW FOR APPROXIMATELY 250mm TO 10 LEVEL.	DOCK MASTER TO CONFIRM EXTENT OF SLIPWAY TO BE LEVELLED FOR FORKLIFT ACCESS.
	21	RAISE VESSEL USING HYDRAULIC SYSTEM SO KEEL HARDSTAND BLOCKS CAN BE FORKLIFTED INTO PLACE. LOWER VESSEL ONTO KEEL BLOCKS AND FIT BILGE STANDS. FIT BILGE STAND CONNECTING CHAINS AND BINDERS.	DOCK MASTER CREW TO OPERATE HYDRAULIC JACKS AND SUPERVISE INSTALL OF CONCRETE BLOCKS FOR KEEL BLOCKS AND BILGE STANDS. INSTALL TIMBER BLOCKS AND WEDGES AS DIRECTED BY DOCK MASTER AS WELL AS THE CHAIN / BINDERS TO ENSURE VESSEL PROPERLY SUPPORTED.
ANCILLARY WORKS	22	REMOVE GOAL POSTS FROM CRADLES INCLUDING GRINDING WELDS FLUSH AND PRIMING BARE STEEL. REMOVE SLIPWAY CRADLES AND THEIR BOGGIES SIDWAYS.	METHOD OF REMOVAL TO BE FORMULATED AS THEY ARE HEAVY ITEMS.
	23	MODIFY INSTALLATION CRADLE AS REQUIRED TO BE SUITABLE FOR PERMANENT SUPPORT OF THE VESSEL. FIX MODIFIED CRADLE TO FOUNDATIONS.	DOCKMASTER TO CONFIRM FRAMING AND SIZING. ALL FIXINGS TO CONCRETE FOUNDATIONS SHALL BE STAINLESS STEEL AND COMPLY WITH THE STEELWORK NOTES.
	24	LOAD INSTALLATION CRADLES, SPREADER BARS, FORKLIFT EXTENSION TINES, JACKING SYSTEM AND TOOLS ONTO TRUCK FOR RETURN TO SUPPLIER. REMOVE GRAVEL LEVELLING PAD.	
	25	FIX HOLD DOWN PLATES TO HULL AND CONNECT TO CYCLONE TIEDOWN HARDPOINTS.	TO BE COMPLETED AFTER ALL DOCK MASTER EQUIPMENT REMOVED FROM SITE.
COMPLETION	26	CONSTRUCT NEW CONCRETE HARDSTAND AND ASSOCIATED RETAINING WALLS. MODIFY HANDRAIL OF HMAS TOWNSVILLE TO SUIT NEW ACCESS	
	27	REMOVE TEMPORARY BUNDING	

ABBREVIATIONS:

IBC	- 1000L INTERMEDIATE BULK CONTAINER (CUBE SHAPED) FROM IBC OR OTHER SUPPLIER.
EX CB-SLIP	- FORMER CURTAIN BROTHERS SLIPWAY
RHM	- REGIONAL HARBOUR MASTER

Approval no: DEV2024/1472
Date: 09 / 09 / 2024



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

CLIENT
PORT OF TOWNSVILLE LIMITED

PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
HMAS TOWNSVILLE - SLIPPING
WORK LIST

JOB NUMBER	SHEET No.	REVISION
TPAA055	S0.04	D

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 15.
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 L14
 - APRIL 2024
 - CLIENT No. P0221
 - 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

STRUCTURE LIFECYCLE STAGE: CONSTRUCTION

HAZARDS		CONTROL MEASURE	ELIMINATION	CONTROL ENGINEERING	ADMINISTRATION/ CODES OF PRACTICE	PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
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	
		PROVIDE SAFETY CAPS TO UNHOOKED BARS			✓	CONTRACTOR	REFER CODE OF PRACTICE
WORK ON EXISTING STRUCTURES	STRUCTURE COLLAPSE	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	
		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
FALLING OBJECTS	STRUCTURAL COMPONENTS	PROVIDE CLEARLY MARKED LIFTING POINTS		✓		ENGINEER	
		CREATE EXCLUSION ZONES			✓	CONTRACTOR	REFER CODE OF PRACTICE
		ENSURE TEMPORARY PROPS ARE ADEQUATELY DESIGNED AND SECURED		✓	✓	ENGINEER/CONTRACTOR	
		PROVIDE MINIMUM OF TWO BOLT HOLES IN STEELWORK FOR EASE OF ERECTION		✓		ENGINEER	
	LOOSE OBJECTS	PROVIDE FLOOR FALL THROUGH PROTECTION WHERE > 1500mm CLEARANCE TO FLOOR BELOW			✓	CONTRACTOR	REFER CODE OF PRACTICE
CRUSHING COLLAPSE OF STACKED MATERIALS	HEAVY CONSTRUCTION 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	RUPTURE OF SERVICE, POSSIBLE ELECTROCUTION	IDENTIFY AND DOCUMENT EXISTING SERVICES			✓	ENGINEER	WHERE KNOWN, EXISTING SERVICES HAVE BEEN NOTED ON PLANS
		DIAL BEFORE YOU DIG			✓	CONTRACTOR	
		PROVIDE LOAD PATH AROUND SERVICES		✓		ENGINEER	
		OVERHEAD POWERLINES	ISOLATE SERVICE PRIOR TO CONSTRUCTION	✓			CONTRACTOR
		ENSURE ADEQUATE CLEARANCE TO OVERHEAD POWERLINES			✓	CONTRACTOR	CONTRACTOR TO CONTACT SERVICE PROVIDER AND FOLLOW APPROPRIATE PROCEDURES AND CODE OF PRACTICE
		ENSURE APPROPRIATE SERVICE PROVIDERS ARE NOTIFIED AND HAZARD FLAGGING IS INSTALLED			✓	CONTRACTOR	
EARTHWORKS	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	WHERE POSSIBLE FLATTEN BATTERS TO LESS THAN 1 VERTICAL TO 3 HORIZONTAL		✓		ENGINEER/CONTRACTOR	CONTRACTOR TO PROVIDE METHOD STATEMENT FOR BATTERS STEEPER THAN 1 VERTICAL IN 3 HORIZONTAL
	SLOPE STABILITY	OBTAIN A GEOTECHNICAL REPORT AND COMPLY WITH RECOMMENDATIONS	✓		✓	CONTRACTOR	CONTRACTOR RESPONSIBLE FOR ENSURING EXCAVATIONS REQUIRED TO CONSTRUCT THE WORK ARE STABLE. REFER CODE OF PRACTICE
	HUMAN EXPOSURE TO CONTAMINATED SOIL	REFER TO CONTROLS IN PRENSA CONTAMINATED SOIL MANAGEMENT PLAN SECTION 8.1, TABLE 2.			✓	CONTRACTOR	
TRAFFIC MANAGEMENT	WORK INVOLVING PUBLIC ROADWAYS, RAILWAYS OR SHIPPING LANES	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	
WATER BODIES	DROWNING	ISOLATE OR DRAIN WATER BODY WHERE POSSIBLE	✓			ENGINEER/CONTRACTOR	
		PROVIDE APPROPRIATE PPE			✓	CONTRACTOR	
	ELECTROCUTION	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
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
	LOADS ON STRUCTURE OR EARTHWORKS	DESIGN STRUCTURE FOR APPROPRIATE PLANT LOADS		✓		ENGINEER	
		COLLISIONS	PROVIDE EXCLUSION ZONES AROUND OPERATING PLANT			✓	CONTRACTOR
HAZARDOUS SUBSTANCES	ASBESTOS	NOMINATE KNOWN LOCATIONS OF ASBESTOS CONTAMINATION			✓	ENGINEER	REFER PRENSA REPORT JOB No. 1218178
		DO NOT DISTURB POSSIBLE ASBESTOS MATERIAL			✓	CONTRACTOR	REFER CODE OF PRACTICE
		TEST POSSIBLE ASBESTOS MATERIALS PRIOR TO DISTURBING			✓	CONTRACTOR	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	
	VOLATILE ORGANIC COMPOUNDS	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
	CONTAMINATED LAND	REMOVE / CONTAIN SUBSTANCE PRIOR TO CONSTRUCTION			✓	CONTRACTOR	ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED. REFER CODE OF PRACTICE

STRUCTURE LIFECYCLE STAGE: MAINTENANCE

HAZARDS			CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION/ 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
	STORMWATER DEVICES	PROVIDE INFRASTRUCTURE THAT CAN BE MAINTAINED WITHOUT CONFINED SPACE ENTRY		✓		ENGINEER	CONSIDER ALTERNATE SOLUTIONS
MATERIAL SELECTION AND DESIGN	MATERIAL DURABILITY	SELECT MATERIALS WHICH REQUIRE MINIMAL MAINTENANCE DURING DESIGN LIFE		✓		ENGINEER	
		DESIGN SURFACE FOR APPROPRIATE MAINTENANCE LOADS - ELEVATED WORK PLATFORMS ETC.		✓		ENGINEER	
	LOADS ON STRUCTURE	WHERE POSSIBLE PROVIDE LEVEL WORKING SURFACE FOR MAINTENANCE		✓		ENGINEER	

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

CLIENT
PORT OF TOWNSVILLE LIMITED

PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
SAFETY AND DESIGN NOTES -
SHEET 1

JOB NUMBER	SHEET No.	REVISION
TPAA055	S0.05	D

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1472

Date: 09 / 09 / 2024



HAZARDS		CONTROL MEASURE	CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION/ 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

CLIENT
PORT OF TOWNSVILLE LIMITED

PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
SAFETY AND DESIGN NOTES -
SHEET 2

JOB NUMBER TPAA055	SHEET No. S0.06	REVISION D
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DRAWN JA	DESIGNED LW
APPROVED D.E.JOHNSTONE	DATE 16/05/24

Approval no: DEV2024/1472
Date: 09 / 09 / 2024



PLANS AND DOCUMENTS
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Approval no: DEV2024/1472

Date: 09 / 09 / 2024



Queensland
Government



EXISTING SITE LAYOUT PLAN

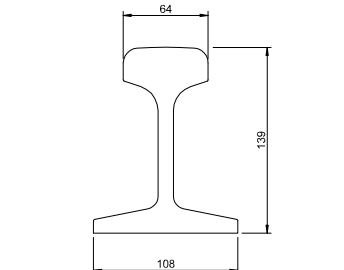
SCALE: 1 : 100

LEGEND:

- DENOTES EXTENT OF PERMANENT SITE WORKS
- DENOTES RAIL - TYPE 1 REFER CROSS SECTION
- DENOTES CONDITION ASSESSED AS DAMAGED NOT USABLE
- DENOTES CONDITION ASSESSED AS MAYBE REUSABLE
- DENOTES RAIL - TYPE 2 REFER CROSS SECTION
- DENOTES CONDITION ASSESSED AS DAMAGED NOT USABLE
- DENOTES RAIL - TYPE 2 REFER CROSS SECTION
- DENOTES CONDITION ASSESSED AS DAMAGED NOT USABLE
- DENOTES MISALIGNMENT IN RAIL
- DENOTES 30m² OF RUSTY SEDGE
- DENOTES 350m² OF DISTURBANCE TO SCATTERED MANGROVE SAPLINGS AND SUCCULENTS

NOTE:
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 CPW / 2017 / 3531 V2.00

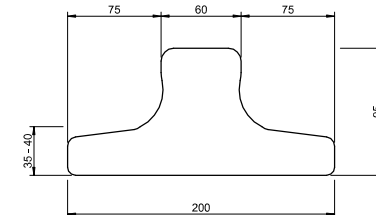
NOTE:
DESIGN ALLOWABLE BEARING PRESSURE AT UNDERSIDE OF SLAB DURING SLIPPING ACTIONS = 250 KPa
CONTRACTORS TO PROVIDE 10 DAYS NOTICE BEFORE REMOVAL OF ABOVE MARKED VEGETATION TO PRINCIPAL FOR PRINCIPAL TO ISSUE MARINE PLANT NOTICE.



RAIL TYPE 1 - CROSS SECTION

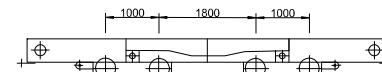
SCALE: 1 : 2

NOTE:
ASSUMED TO BE 63kg RAIL



RAIL TYPE 2 - CROSS SECTION

SCALE: 1 : 2



ASSUMED SLIPPING CRADLE WHEEL ARRANGEMENT
(ON OUTER RAILS ONLY)

SCALE: 1 : 50

NOTE:
CONTACT SUPERINTENDENT FOR REASSESSMENT AND POTENTIAL REDESIGN IF WHEEL CONFIGURATION ON SLIPPING CRADLE IS DIFFERENT.

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.

20 0 20 120
1:2 SCALE ON A1 SHEET
1:4 SCALE ON A3 SHEET

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

REV	DESCRIPTION	APP'D	DATE
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

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HMAS TOWNSVILLE PERMANENT
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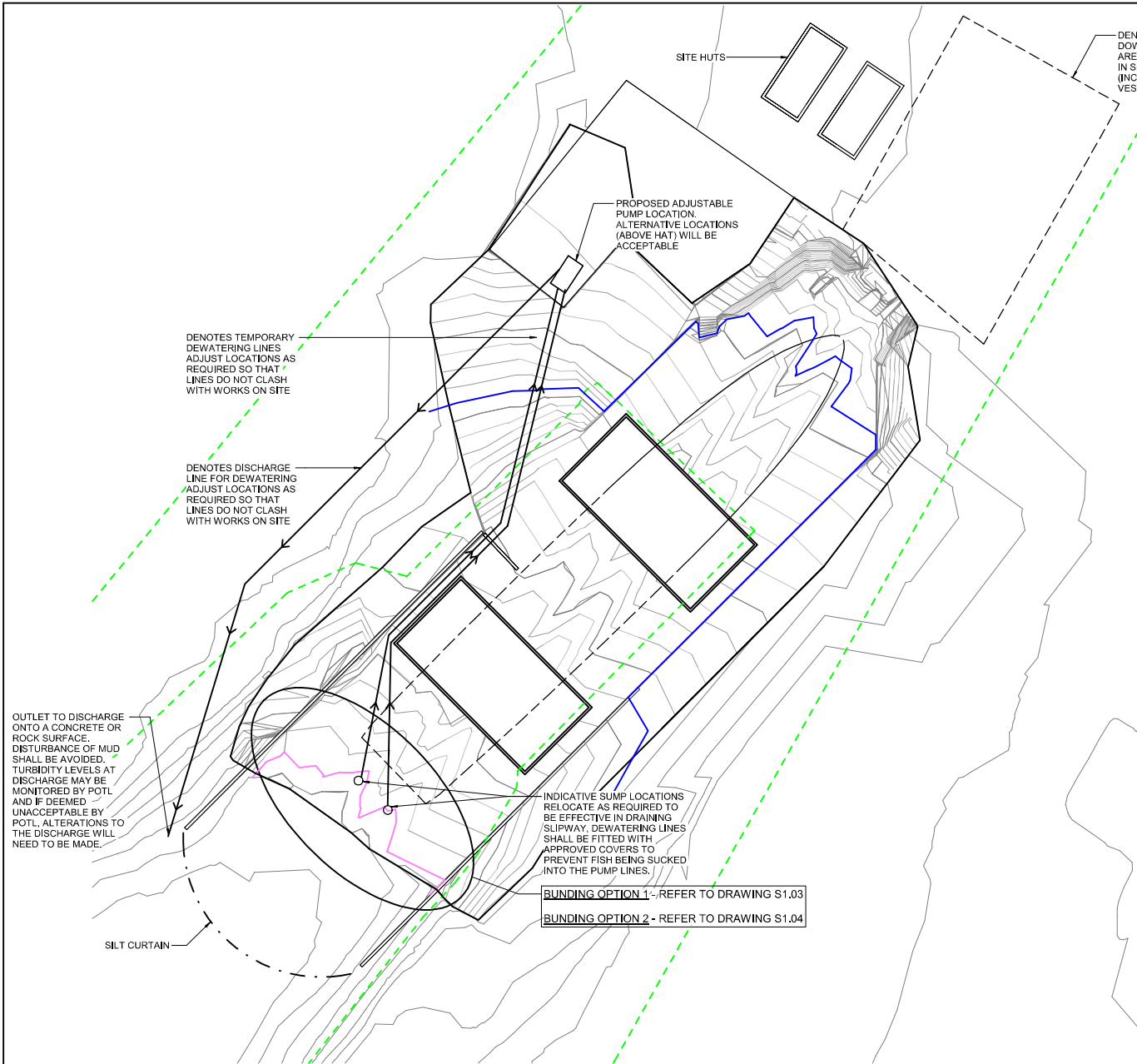
DRAWING
EXISTING SITE LAYOUT PLAN

JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.01	D

EXISTING SITE LAYOUT PLAN

16/05/2024 3:17:00 PM

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OUTLET TO DISCHARGE
ONTO A CONCRETE OR
ROCK SURFACE.
DISTURBANCE OF MUD
SHALL BE AVOIDED.
TURBIDITY LEVELS AT
DISCHARGE MAY BE
MONITORED BY POTL
AND IF DEEMED
UNACCEPTABLE BY
POTL, ALTERATIONS TO
THE DISCHARGE WILL
NEED TO BE MADE.

INDICATIVE SUMP LOCATIONS
RELOCATE AS REQUIRED TO
BE EFFECTIVE IN DRAINING
SLIPWAY. DEWATERING LINES
SHALL BE FITTED WITH
APPROVED COVERS TO
PREVENT FISH BEING SUCKED
INTO THE PUMP LINES.

BUNDING OPTION 1 - REFER TO DRAWING S1.03
BUNDING OPTION 2 - REFER TO DRAWING S1.04



TEMPORARY WORKS PLAN

SCALE: 1 : 150

NOTE:
CHECK FOR TRAPPED FISH AFTER OVERTOPPING TIDE.
CAPTURE TRAPPED FISH USING NETS WITH A MESH
SIZE THAT MINIMISES INJURY OR DEATH OF THE FISH
AND RELEASE BACK INTO ROSS CREEK.

SITE HUTS

PROPOSED ADJUSTABLE
PUMP LOCATION.
ALTERNATIVE LOCATIONS
(ABOVE HAT) WILL BE
ACCEPTABLE

DENOTES PROPOSED LAY
DOWN AREA AND STAGING
AREA FOR VEHICLES USED
IN SLIPPING WORKS
(INCLUDING HAULAGE OF
VESSEL).

AHD	CHART DATUM
HAT	+2.36 +4.22
MHWS	+1.31 +3.17
MHWN	+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	

LEGEND:

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

**PLANS AND DOCUMENTS
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NOTES:

- INSTALL AND ANCHOR SILT CURTAIN PRIOR TO COMMENCING ANY WORKS ON THE TEMPORARY BUNDING.
- CLEAN AREA AND INSTALL BUND DURING LOW TIDE.
- ONCE BUNDS ARE INSTALLED:
 - ENSURE THAT THE TOP OF THE BUNDS ARE AT ONE RL TO ENSURE THERE ARE NO PREFERENTIAL FLOW PATHS FOR EROSION.
 - WHERE HUNGRY BOARDS HAVE BEEN USED, THE INTERFACE BETWEEN HUNGRY BOARD SECTIONS AND EXISTING CONCRETE ARE SEALED AND WATER TIGHT.
- PROVIDE MINIMUM TWO OFF SUMP PITS TO DEWATER THE SLIPWAY.
- PREVENT WATER FROM COMING INTO CONTACT WITH OPEN EXCAVATION INCLUDING POTENTIAL ACID SULPHATE SOIL. WHERE RAIN IS FORECAST THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ADDITIONAL MEASURES TO ENSURE OPEN EXCAVATIONS ARE NOT INUNDED BY STORMWATER.
- PUMP OUT THE SITE TO DEWATER. PREVENT WATER FROM COMING INTO CONTACT WITH OPEN EXCAVATION INCLUDING POTENTIAL ACID SULPHATE SOIL. IF THIS IS NOT ACHIEVED PUMPED WATER SHALL BE TREATED IN ACCORDANCE WITH RELEVANT ENVIRONMENTAL REQUIREMENTS, REFER ALSO TO PRENSA, ACID SULPHATE SOILS MANAGEMENT PLAN, SECTION 8.6.
- AVOID CONTACT WITH OPEN WATER.
- COMPLETE FOUNDATION WORKS WITHIN BUNDED AREA.
- REMOVE ANY SILT AND CONSTRUCTION RUBBISH.
- REMOVE BUND.
- REMOVE SILT CURTAIN.
- FLOAT VESSEL INTO FINAL POSITION.
- REPEAT STEPS 1 TO 5 IF REQUIRED.
- COMPLETE WORKS TO SUPPORT THE VESSEL.
- REMOVE BUND AND SILT.
- REMOVE SILT CURTAIN.
- 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.

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1:150 SCALE ON A1 SHEET
1:300 SCALE ON A3 SHEET

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REV	DESCRIPTION	APP'D	DATE

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

CLIENT
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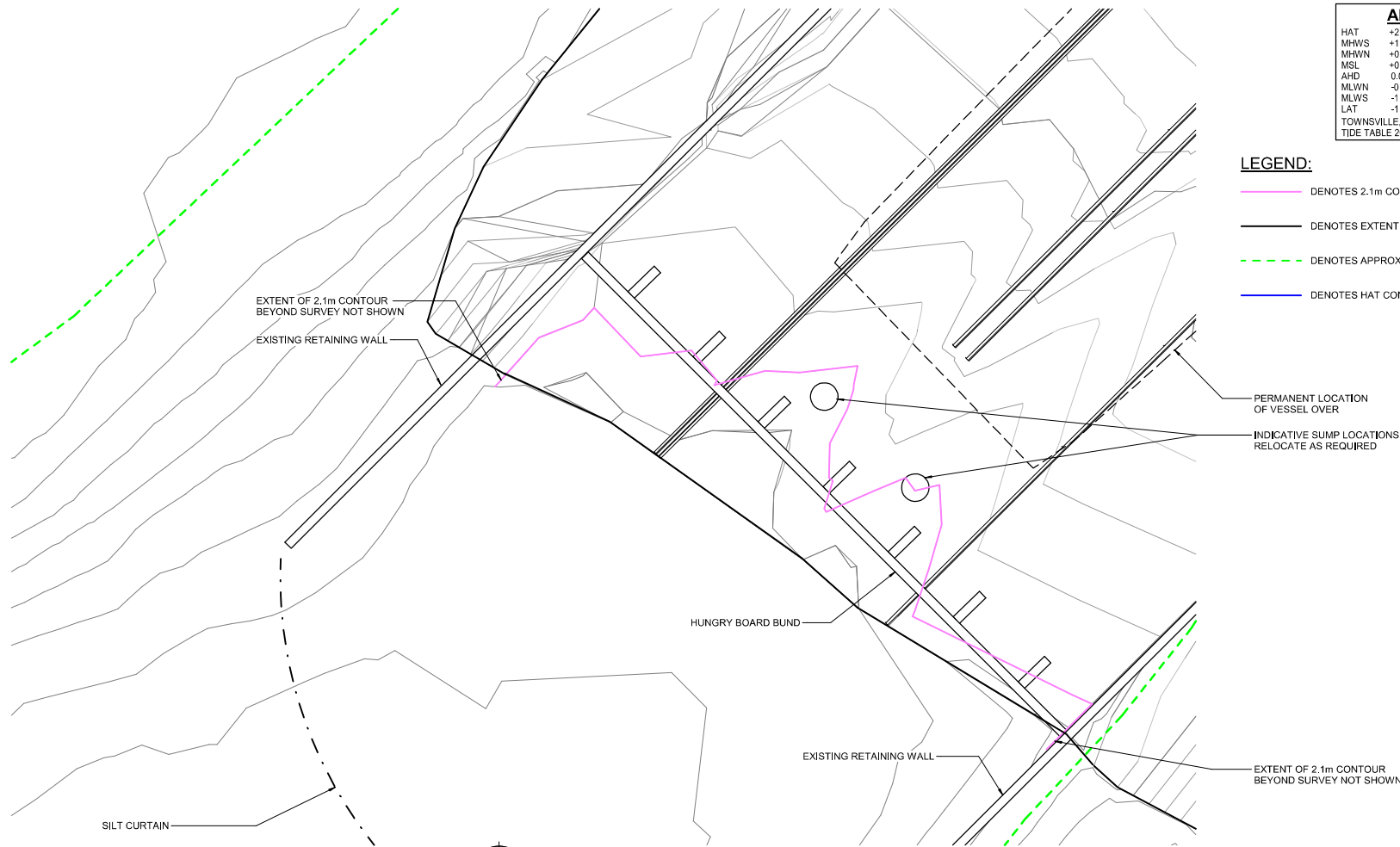
PROJECT
HMAS TOWNSVILLE PERMANENT
DOCKING

DRAWING
TEMPORARY WORKS PLAN

JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.02	D

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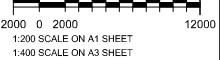
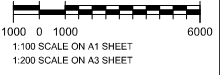
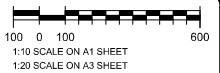


AHD	CHART DATUM
HAT	+2.36 +4.22
MHWS	+1.31 +3.17
MHW	+0.46 +2.32
MSL	+0.14 +2.00
AHD	0.000 +1.856
MLWN	-0.18 +1.68
MLWS	-1.03 +0.83
LAT	-1.856 0.00
TOWNSVILLE, QUEENSLAND	
TIDE TABLE 2024	

LEGEND:

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

SAFETY IN DESIGN INFORMATION
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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	TEMPORARY BUNDING PLAN AND DETAILS OPTION 1

JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.03	D

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2024/1472
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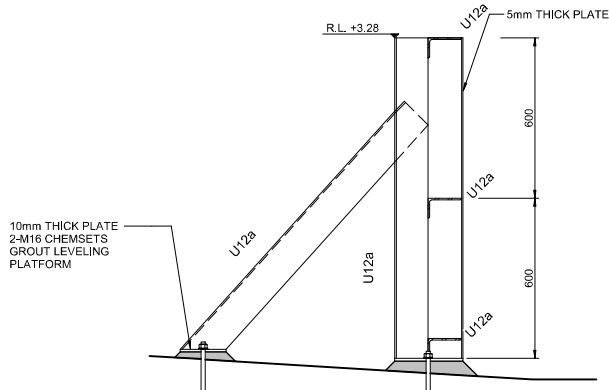


THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO THE COMMENCEMENT OF WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE PROVIDER.



TEMPORARY BUNDING PLAN OPTION 1

SCALE: 1: 50



HUNGRY BOARD DETAIL

SCALE: 1: 10

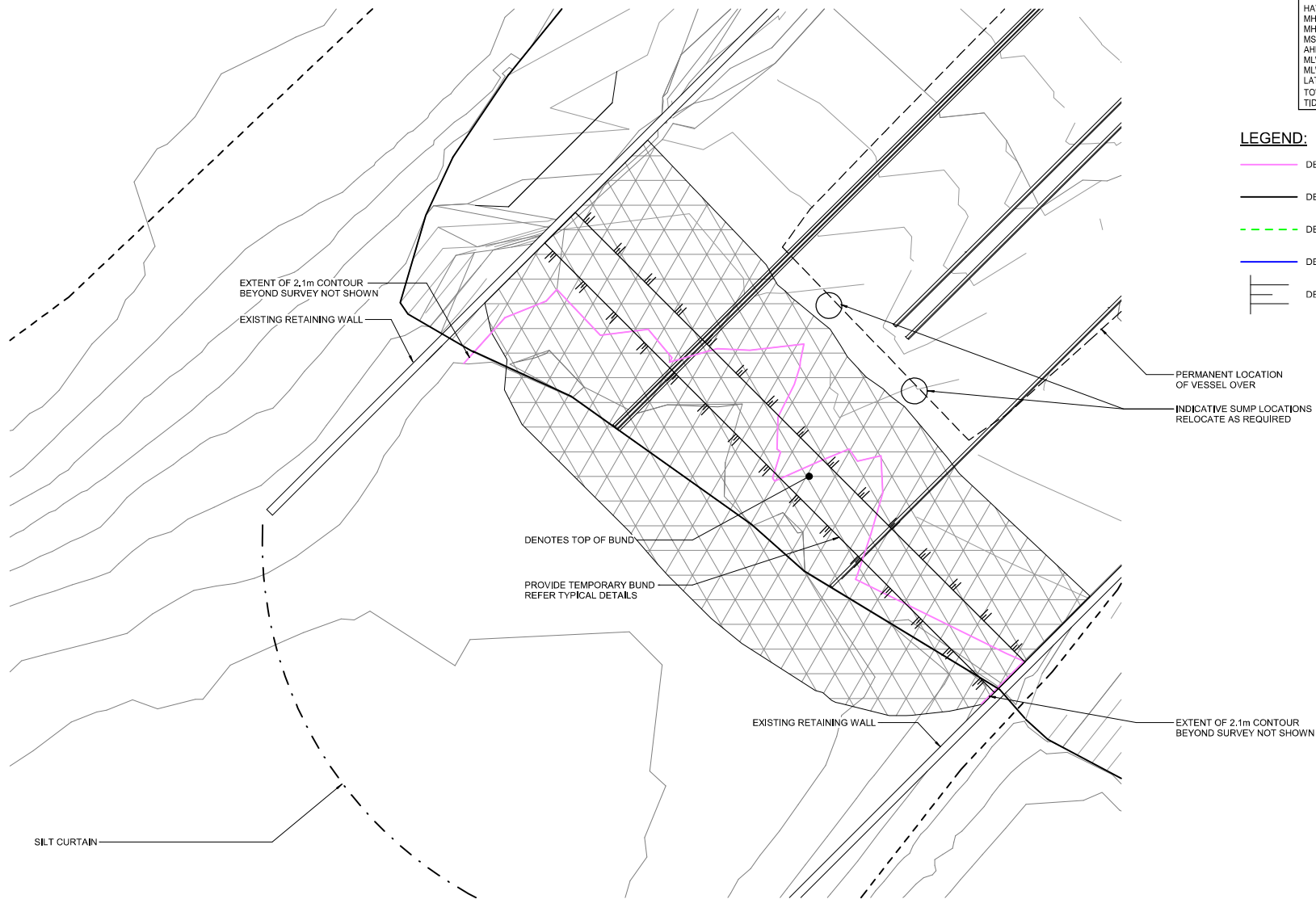
NOTE:

- U12a DENOTES 125x75x6 UA
- ALTERNATIVE FRAMING MAY BE SUITABLE PROVIDED APPROVAL FROM SUPERINTENDENT IS GIVEN

TEMPORARY BUNDING PLAN AND DETAILS OPTION 1

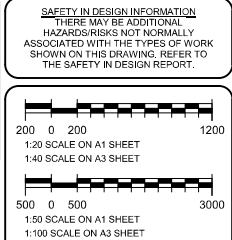
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AHD	CHART DATUM
HAT	+2.254 +4.11
MHW	+1.254 +3.11
MHN	+0.404 +2.26
MSL	+0.084 +1.94
AHD	0.000 +1.856
MLWN	-0.226 +1.63
MLWS	-1.086 +0.77
LAT	-1.856 0.00
TOWNSVILLE, QUEENSLAND TIDE TABLE 2018	

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



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A	PRELIMINARY ISSUE	DEJ	08/03/24
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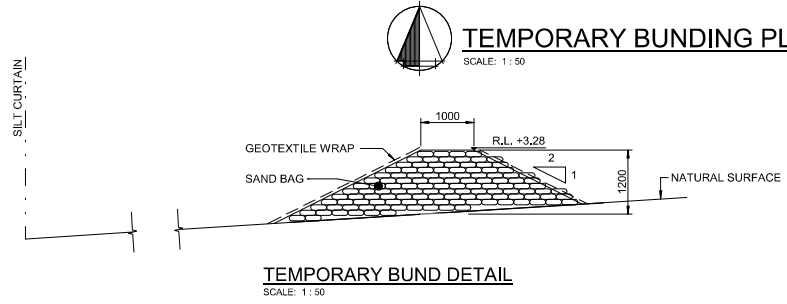
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PROJECT		
HMAS TOWNSVILLE PERMANENT DOCKING		
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TEMPORARY BUNDING PLAN AND DETAILS OPTION 2		
JOB NUMBER	SHEET No.	REVISION
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TEMPORARY BUNDING PLAN AND DETAILS OPTION 2



SITE LAYOUT PLAN



 **FOOTING PLAN**
SCALE: 1:100

- LEGEND:**
-  DENOTES MASONRY RETAINING WALL
 -  DENOTES NEW CONCRETE HARDSTAND
 -  DENOTES LOCALISED GROUT INFILL TO ENSURE SLIPWAY REMAINS FREE DRAINING
 -  DENOTES NATURAL SURFACE CONTOUR
 -  DENOTES HAT CONTOUR
 -  DENOTES HANDRAIL
 -  DENOTES APPROXIMATE VESSEL LOCATION
 -  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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1000 0 1000 6000
1:100 SCALE ON A1 SHEET
1:200 SCALE ON A3 SHEET

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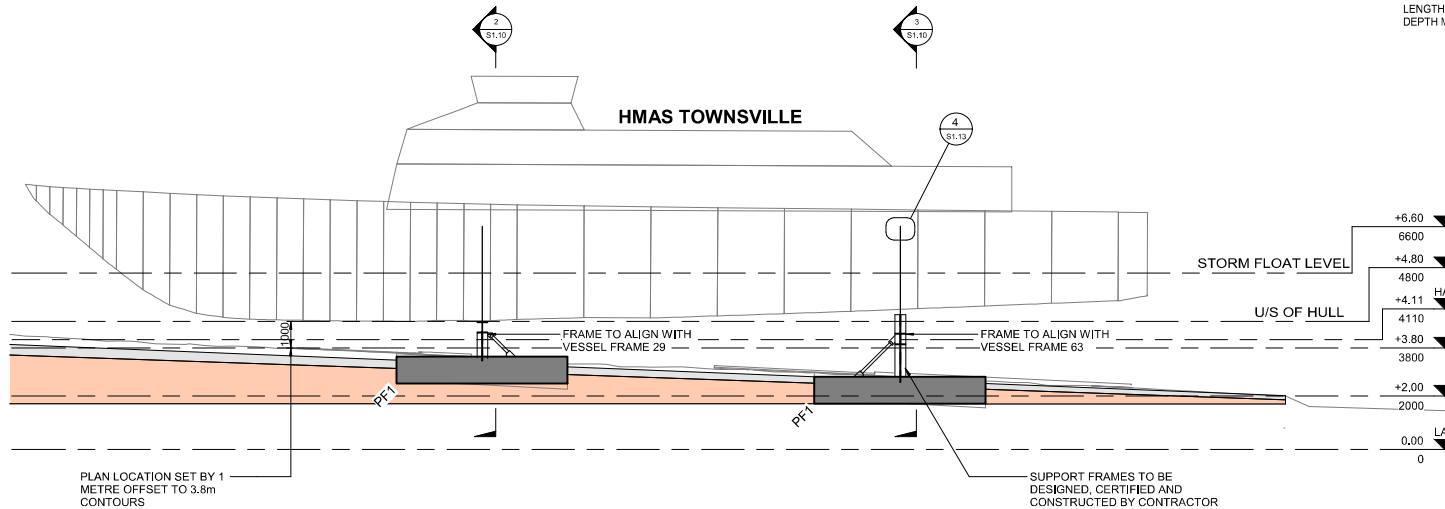
DRAWING
FOOTING PLAN

JOB NUMBER	SHEET No.	REVISION
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Queensland Government

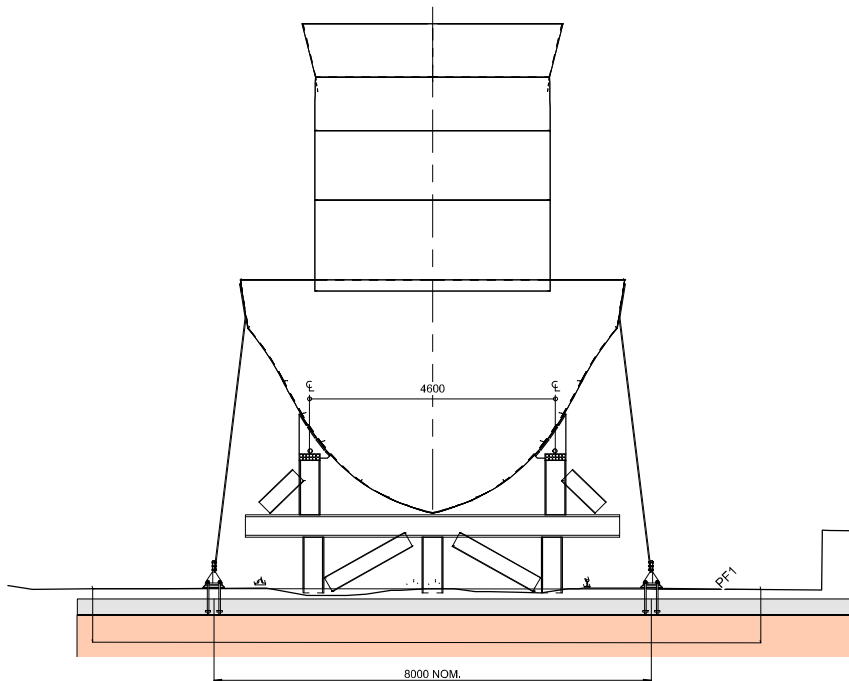


SECTION 1
SCALE: 1 : 100
\$1.05

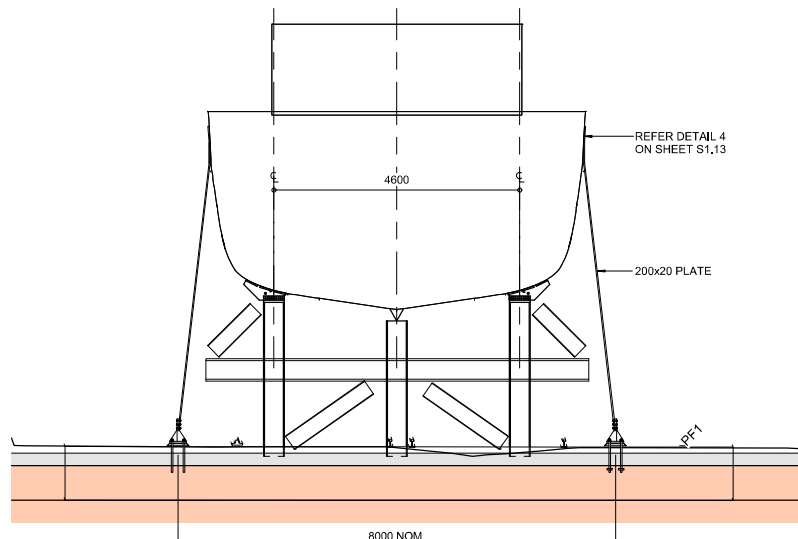
NOTE:
DECK TO BE AT 0.25% SLOPE TOWARDS ROSS CREEK FOR DRAINAGE

LEGEND:

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



SECTION 2
SCALE: 1 : 50
\$1.05



SECTION 3
SCALE: 1 : 50
\$1.05

HMAS TOWNVILLE

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

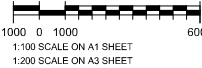
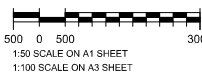
AHD CHART DATUM

HAT	+2.36	+4.22
MHWS	+1.31	+3.17
MHWN	+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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REV	DESCRIPTION	APPD	DATE
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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

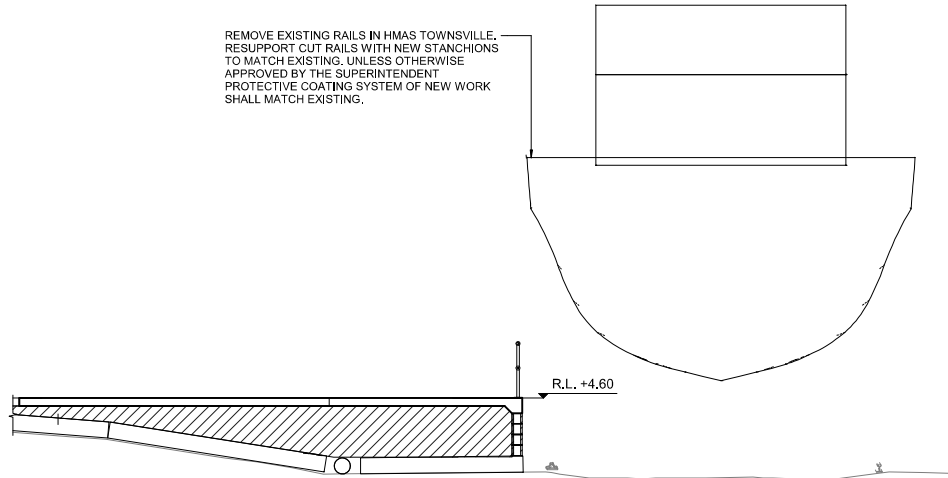
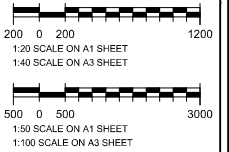
JOB NUMBER	SHEET No.	REVISION
TPAA055	\$1.10	D

REMOVE EXISTING RAILS IN HMAS TOWNSVILLE, RESUPPORT CUT RAILS WITH NEW STANCHIONS TO MATCH EXISTING, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT. PROTECTIVE COATING SYSTEM OF NEW WORK SHALL MATCH EXISTING.

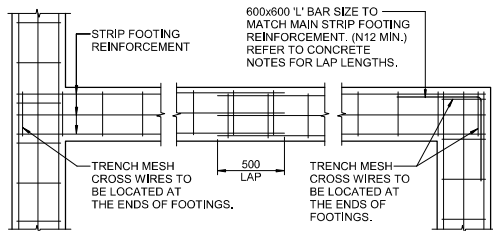
FREE END-190 SERIES
SCALE 1:20

TYPICAL BLOCKWORK INTERSECTIONS
SCALE 1:20

SAFETY IN DESIGN INFORMATION
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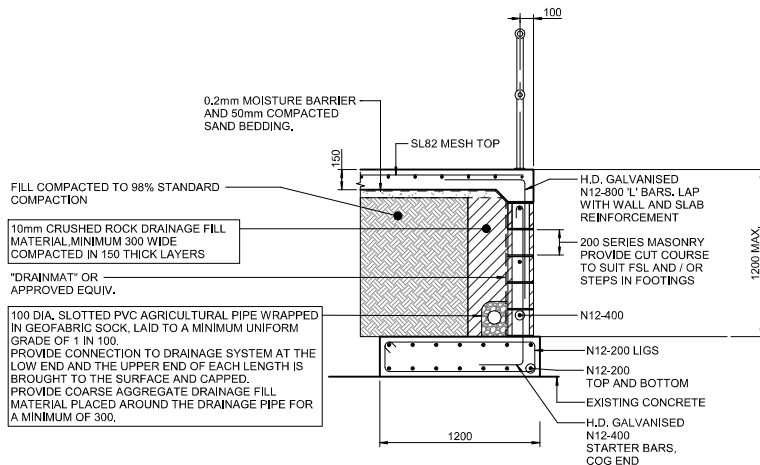


SECTION 1
SCALE: 1:50

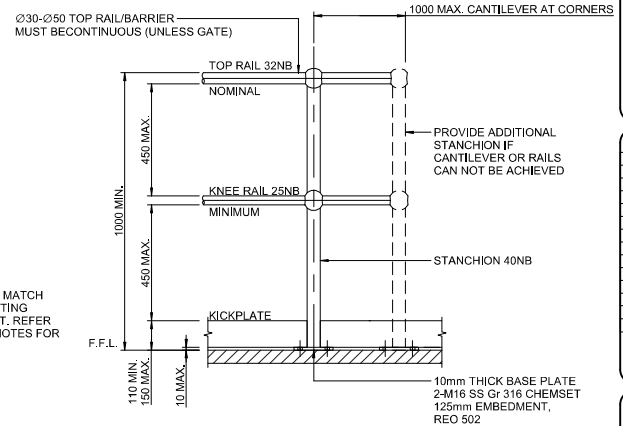
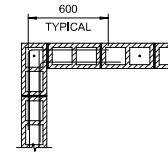
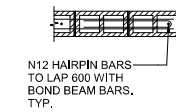


NOTE:
FOOTING REINFORCEMENT SHALL BE LAPPED THE FULL FOOTING WIDTH AT 'T' AND 'L' INTERSECTIONS.

STRIP FOOTING INTERSECTION DETAILS - MESH
SCALE 1:20



SECTION 4
SCALE: 1:20
TYPICAL RETAINING WALL DETAIL
SCALE 1:20

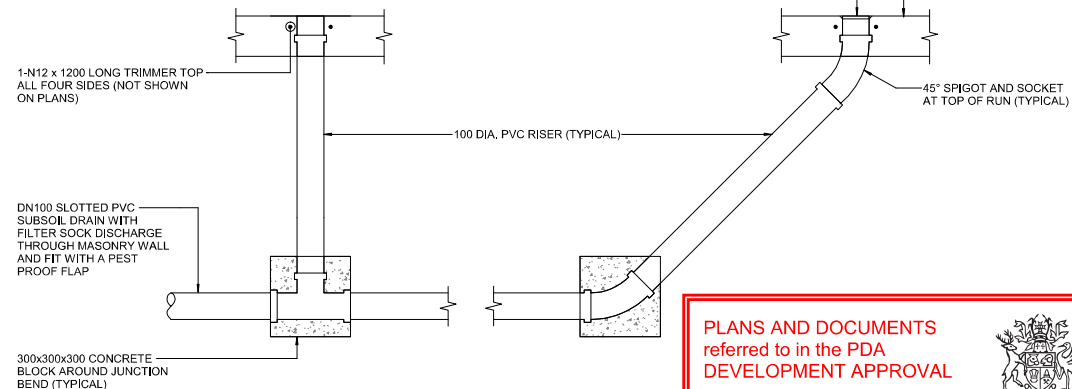


TYPICAL HANDRAIL DETAIL FOR RETAINING WALL
SCALE 1:10

NOTE:
• NOT APPLICABLE FOR HANDRAILS ON HMAS TOWNSVILLE
• PROVIDE STANDARD CLOSURE BENDS AT ENDS (NOT RETURNS) OF HANDRAILS

STRIP FOOTING INTERSECTION DETAILS - BARS
SCALE 1:20

NOTE:
REFER TO FOOTING DETAILS FOR LIG REQUIREMENTS.



SUBSOIL DRAIN INSPECTION OPENING
SECTIONAL ELEVATION
SCALE 1:10

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1472
Date: 09 / 09 / 2024



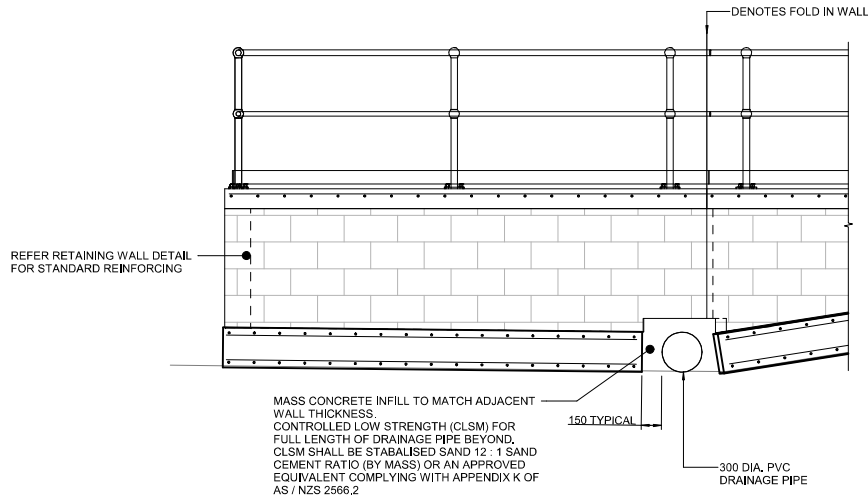
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PROJECT
HMAS TOWNSVILLE PERMANENT DOCKING

DRAWING
RETAINING WALL SECTIONS AND DETAILS

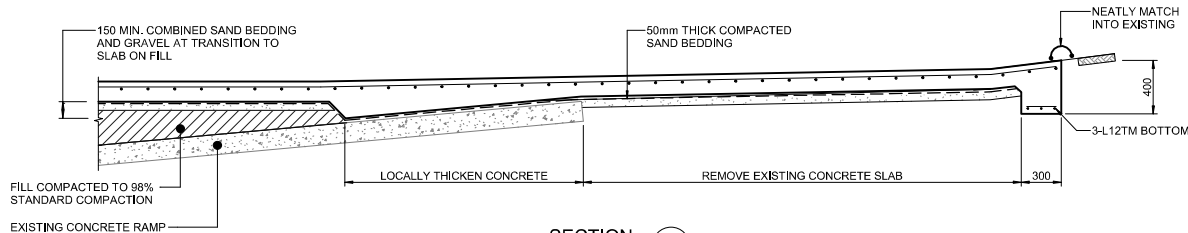
JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.11	D

RETAINING WALL SECTIONS AND DETAILS

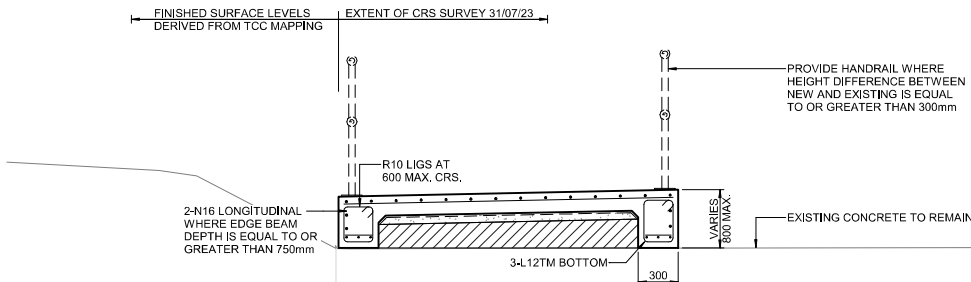


SECTION 1
SCALE: 1 : 20

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 2
SCALE: 1 : 20



SECTION 3
SCALE: 1 : 20

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

C	TENDER ISSUE	DEJ	16/05/24
B	PRELIMINARY ISSUE	DEJ	09/05/24
A	PRELIMINARY ISSUE	DEJ	08/04/24

REV	DESCRIPTION	APP'D	DATE
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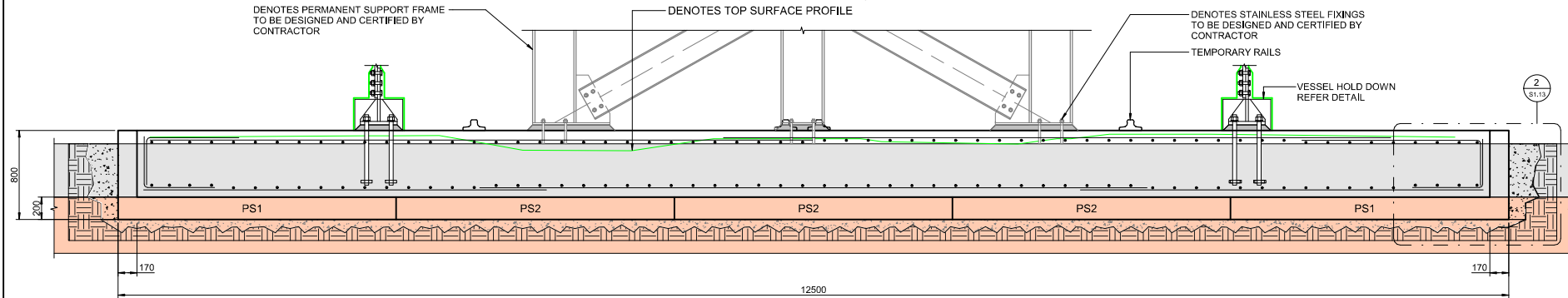
DRAWING
RETAINING WALL SECTIONS

JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.12	C

PLANS AND DOCUMENTS
referred to in the PDA
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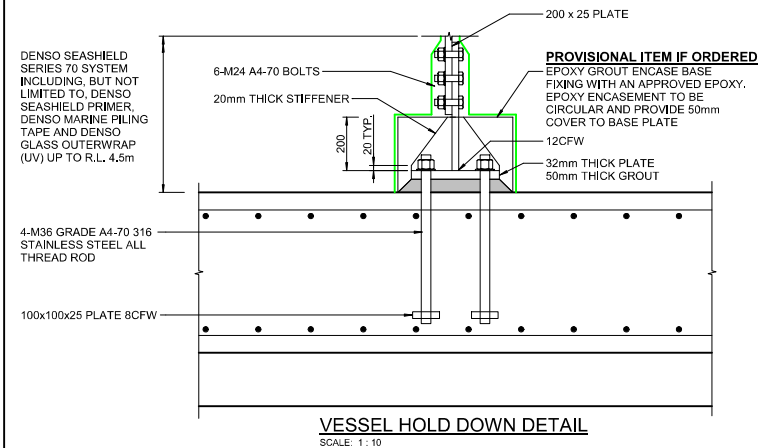


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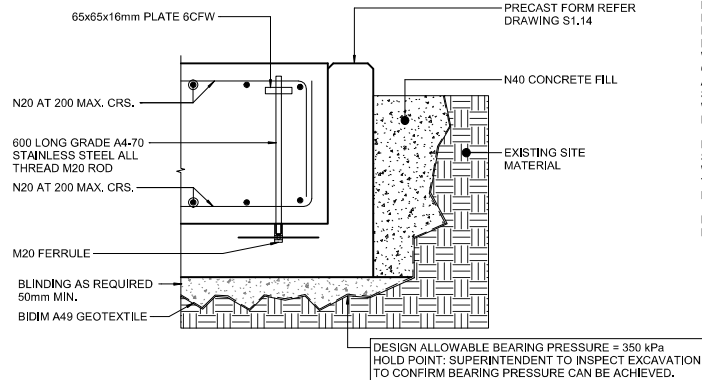
-  DENOTES APPROXIMATE EXISTING SOIL PROFILE: FILL / CONCRETE
-  DENOTES APPROXIMATE EXISTING SOIL PROFILE: MICROGRANITE

KEY:

- PS1 / PS2 - DENOTES PRECAST CONCRETE SHELLS USED AS FORMWORK FOR PF1 FOOTING



VESSEL HOLD DOWN DETAIL
SCALE: 1:10



DETAIL
SCALE: 1:10

DENOTES MAIN FRAME OF VESSEL REMOVE INTERNAL LININGS AND SERVICES PRIOR TO FIXING TIE DOWN PLATE TO HULL. ENSURE MINIMUM OF 900mm 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.

DENOTES 8mm THICK FILLET SITE WELD TO EXISTING HULL. WELDING SHALL BE SEQUENCED TO LIMIT DISTORTION TO EXISTING HULL.

DENOTES CRANK IN THE DOWN PLATE FSBW IF PLATE PROVIDED IN TWO PARTS.

DETAIL
SCALE: 1:10

- 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.

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100 0 100 600
1:10 SCALE ON A1 SHEET
1:20 SCALE ON A3 SHEET

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

D	TENDER ISSUE	DEJ	16/05/24
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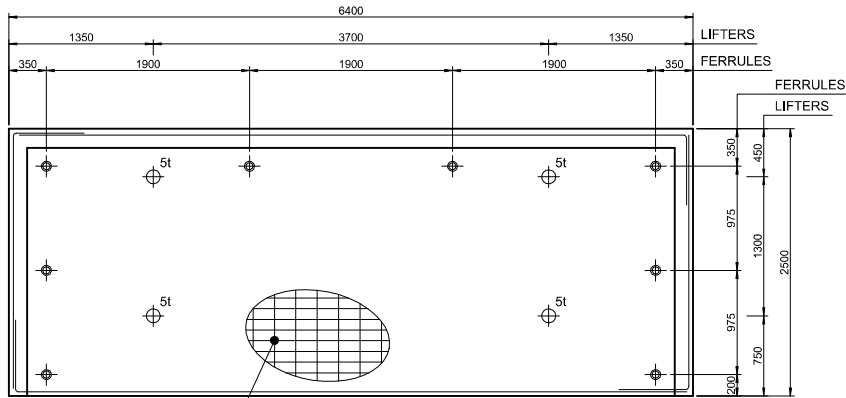
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DRAWING
FOOTING DETAILS

JOB NUMBER	SHEET No.	REVISION
TPAA055	S1.13	D

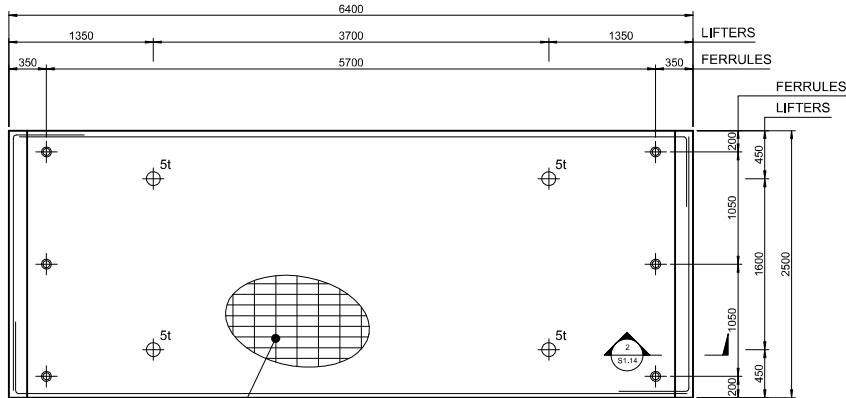
FOOTING DETAILS



RL1018 MESH EACH FACE
(MAIN BARS IN LONG
DIRECTION OF PANEL)

PRECAST FOOTING SHELL - PS1

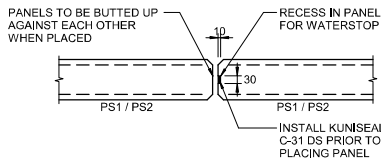
SCALE: 1 : 25



RL1018 MESH EACH FACE
(MAIN BARS IN LONG
DIRECTION OF PANEL)

PRECAST FOOTING SHELL - PS2

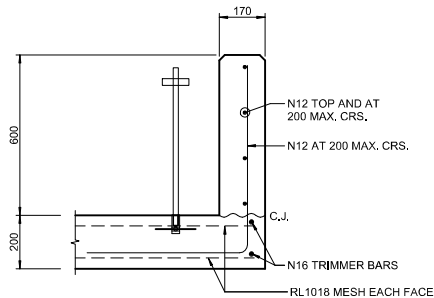
SCALE: 1 : 25



TYPICAL PANEL JOINT DETAIL

SCALE: 1 : 10

NOTE:
WALLS SIMILAR



SECTION 2

SCALE: 1 : 10

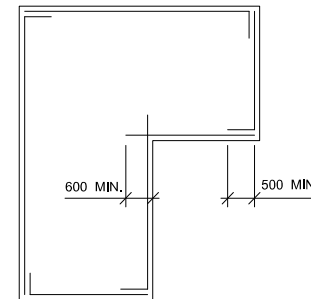
NOTES:
C.J. DENOTES OPTIONAL CONSTRUCTION JOINT
SCABBLE HARDENED CONCRETE SURFACE TO A MINIMUM 3mm AMPLITUDE
REMOVE LOOSE OR SOFT MATERIAL, FOREIGN MATTER AND LAITANCE
DAMPEN THE SURFACE JUST BEFORE PLACING THE FRESH CONCRETE
AND COAT WITH A NEAT CEMENT SLURRY

	DENOTES M20 x 95 LONG CAST IN FERRULE WITH N12 x 300 LONG CROSS BAR. REFER DETAIL 2 ON SHEET S1.13
	REID SWIFTLIFT - 5 TONNE LIFTING ANCHOR ON FACE OF PANEL
BF	BOTH FACES
NF	NEAR FACE - INSIDE
FF	FAR FACE - OUTSIDE

200 THICK	
MESH	RL1018 BOTH FACES
PERIMETER BAR	2-N16
CONCRETE GRADE	S50
CONCRETE F _c AT LIFTING	25 MPa

NOTES

- ALL FERRULES AND CAST IN PLATES ARE TO BE PLACED NEAR SIDE UNLESS NOTED OTHERWISE.
- ALL FERRULES AND CAST IN PLATES ON PANEL EDGE FACES ARE TO BE PLACED CENTRALLY UNLESS NOTED OTHERWISE.
- ALL FERRULES ARE TO HAVE N12 x 300 LONG TAILS.
- PROVIDE 20mm CHAMFER TO ALL PANEL OUTER AND OPENING EDGES UNLESS NOTED OTHERWISE.



TYPICAL PERIMETER BAR LAYOUT

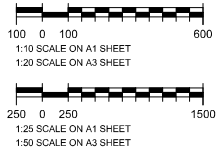
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NOTE:
LIFT DESIGN HAS BEEN BASED ON PANELS BEING LIFTED VERTICALLY AND THE BASE OF THE PANEL REMAINING HORIZONTAL UNTIL BEING LOWERED INTO THE FOUNDATION EXCAVATION (i.e. LIFT DESIGN HAS ASSUMED THAT PANELS WILL NOT BE ROTATED DURING PLACEMENT). IF THE CONTRACTOR REQUIRES A DIFFERENT METHOD OF PLACEMENT IT WILL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN THEIR OWN LIFT DESIGN AND CERTIFICATION.

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PRECAST DETAILS