

1 GENERAL NOTES:

- 1.1 DO NOT OBTAIN DIMENSIONS BY SCALING FROM THESE DRAWINGS.
- 1.2 THESE NOTES APPLY TO MARINE DRAWINGS. MARINE DRAWINGS ARE THOSE WITH "LS" AS DISCIPLINE CODE (DISC).
- 1.3 REFER TO DRAWING 237847-GENL-DRG-LS-0102 FOR TYPICAL DETAILS.
- 1.4 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL CONTRACT DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE WORK. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
- 1.5 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. LEVELS ARE IN METRES, TO AUSTRALIAN HEIGHT DATUM (AHD). NORTHINGS AND EASTING ARE IN METRES, IN BRISBANE CITY SITE GRID 2002 PROJECTION. BEARINGS ARE RELATIVE TO BRISBANE CITY SITE GRID 2002.
- 1.6 WORKS COVERED UNDER THIS CONTRACT INCLUDE EXTENSION, MODIFICATION AND CONNECTION TO EXISTING STRUCTURES. THE CONTRACTOR SHALL VERIFY ALL RELEVANT DIMENSIONS ON SITE PRIOR TO FINAL PRODUCTION OF SHOP DRAWINGS AND COMMENCEMENT OF FABRICATION.
- 1.7 WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- 1.8 THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SUPERINTENDENT BUT IS NOT AN AUTHORISATION FOR A VARIATION. ANY VARIATION INVOLVED MUST BE SUBMITTED TO THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
- 1.9 ACRONYMS AND ABBREVIATIONS USED ON THE DRAWINGS INCLUDE SOME OF THE FOLLOWING:

B	BOTTOM FACE	PCD	PITCH CIRCLE
B/S	BOTH SIDES		DIAMETER
BTM	BOTTOM	PL	PLATE
CFW	CONTINUOUS FILLET WELD	REF	REFERENCE
CH	CHAINAGE	REINF	REINFORCEMENT
CL	CENTRELINE	RL	REDUCED LEVEL
CPBW	COMPLETE PENETRATION	SOP	SET OUT POINT
	BUTT WELD	SQ	SQUARE
CRS	CENTRES	SS	STAINLESS STEEL
C/W	COMPLETE WITH	STD	STANDARD
DIA	DIAMETER	SWL	STILL WATER LEVEL
DRG	DRAWING	T	TOP FACE
EF	EACH FACE	THK	THICK
EW	EACH WAY	TOC	TOP OF CONCRETE
EXTG	EXISTING	TOF	TOP OF FLOOR
FF	FAR FACE	TOS	TOP OF STEEL
F/S	FAR SIDE	TOG	TOP OF GRATING
GA	GENERAL ARRANGEMENT	TP	TANGENT POINT
GALV	HOT DIP GALVANISED	TYP	TYPICAL
GL	GROUND LEVEL	UNO	UNLESS NOTED
GR	GRADE		OTHERWISE
HD	HOLD DOWN	U/S	UNDERSIDE
IF	INSIDE FACE	WP	WORKING POINT
IL	INVERT LEVEL		
IP	INTERSECTION POINT		
IPBW	INCOMPLETE PENETRATION		
	BUTT WELD		
I/S	INSIDE		
LG	LONG		
MS	MILD STEEL		
N/A	NOT APPLICABLE		
NB	NOMINAL BORE		
NF	NEAR FACE		
N/S	NEAR SIDE		
NOM	NOMINAL		
NTS	NOT TO SCALE		
O/A	OVERALL		
OAE	OR APPROVED EQUIVALENT		
OD	OUTSIDE DIAMETER		
OF	OUTSIDE FACE		
O/S	OUTSIDE		

2 CONCRETE NOTES:

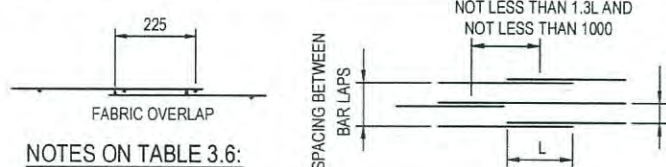
- 2.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 3600. ANY MATTER IN DOUBT SHALL BE REFERRED TO THE SUPERINTENDENT.
- 2.2 CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DESIGN DRAWINGS.
GRADE: S50
SLUMP: 80mm
MAXIMUM NOMINAL AGGREGATE SIZE: 20mm
SHRINKAGE LIMIT: 600µε AT 56 DAYS
- 2.3 CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR ACCEPTANCE.
- 2.4 COVER TO ALL REINFORCEMENT SHALL BE 65mm, UNLESS NOTED OTHERWISE ON THE DESIGN DRAWINGS.
- 2.5 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- 2.6 BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS.
- 2.7 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
- 2.8 FORMWORK SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS3610. FORMWORK DESIGN TO PROVIDE A CLASS 2 FINISH U.N.O.
- 2.9 TESTING AND SAMPLING OF CONCRETE SHALL BE AS SPECIFIED BY PROJECT CONTROL TESTING IN AS 3600.
- 2.10 CONCRETE SHALL BE COMPACTED BY MEANS OF APPROVED HIGH FREQUENCY MECHANICAL VIBRATORS OF THE IMMERSION TYPE WITH A MINIMUM FREQUENCY OF 120Hz AND WITH SUFFICIENT ENERGY OUTPUT TO ENSURE COMPLETE COMPACTION OF ALL PARTS OF THE CONCRETE SECTION.
- 2.11 ALL EXPOSED CONCRETE SURFACES SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATION FOR A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY AFTER INITIAL SET OF THE CONCRETE.
- 2.12 CONCRETE FINISHES SHALL BE IN ACCORDANCE WITH THE SPECIFICATION, WHERE NOT SPECIFIED OR SHOWN OTHERWISE ON THE DRAWINGS OR ARCHITECTURAL FINISHES SCHEDULE, CONCRETE FINISHES SHALL BE AS FOLLOWS:
 - EXPOSED TRAFFICABLE SURFACES SHALL BE BROOM FINISHED.
 - THE TOPS OF ALL PUNTHS AND PEDESTALS WHICH ARE TO SUPPORT BASE PLATES SHALL BE SCABBLED WITH A SURFACE ROUGHNESS OF +/2mm.
 - OTHER UNFORMED EXPOSED SURFACES SHALL BE FINISHED USING ASTEEL TROWEL.
- 2.13 CONSTRUCTION JOINTS SHALL BE USED ONLY WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT. JOINT FACES SHALL BE PROPERLY FORMED PERPENDICULAR TO THE MEMBER AXIS, SCABBLED TO EXPOSE COARSE AGGREGATE, CLEANED FREE OF LAITANCE AND LOOSE MATERIAL AND THOROUGHLY WETTED PRIOR TO CONTINUATION OF CONCRETING. ALTERNATIVELY, THE CONCRETE SET TIME AT JOINT SURFACES SHALL BE RETARDED AND THE SURFACE WATER-WASHED TO EXPOSE THE COARSE AGGREGATE PRIOR TO CONTINUATION OF CONCRETING.
- 2.14 ALL CONCRETE ON GROUND SHALL BE CAST ON A BLINDING LAYER COMPRISING ONE OF THE FOLLOWING:
 - 50 THK LAYER OF N10 CONCRETE
 - 100 THK LAYER OF CBR 45 MATERIAL
 - 150 THK LAYER OF CBR 30 MATERIAL

3 REINFORCEMENT NOTES:

- 3.1 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.
- 3.2 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE SUPERINTENDENT.
- 3.3 WELDING OR SITE BENDING OF REINFORCEMENT IS NOT PERMITTED WITHOUT APPROVAL FROM THE SUPERINTENDENT.

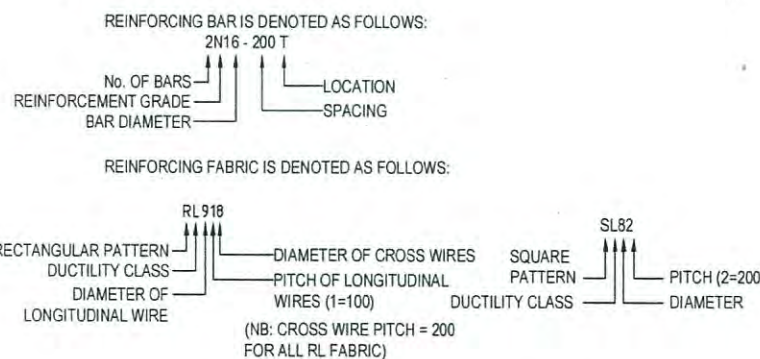
- 3.5 REINFORCEMENT TYPES:
 - N HOT ROLLED DEFORMED BAR TO AS/NZS 4671 WITH $f_{sy} = 500\text{MPa}$.
 - R STRUCTURAL GRADE PLAIN ROUND BAR TO AS1302 WITH $f_{sy} = 250\text{MPa}$.
 - W HARD DRAWN STEEL REINFORCING WIRE TO AS/NZS 4671 WITH $f_{sy} = 450\text{MPa}$.
 - SL SQUARE MESH, LOW DUCTILITY WITH $f_{sy} = 500\text{MPa}$.
 - RL RECTANGULAR MESH, LOW DUCTILITY WITH $f_{sy} = 500\text{MPa}$.
- 3.6 MINIMUM LAP LENGTHS FOR REINFORCEMENT SHALL BE AS FOLLOWS U.N.O.:

BAR LAP LENGTHS 'L'							
BAR SIZE	FOR SLABS <300 THICK AND VERTICAL REINFORCEMENT IN WALLS (k1=1, k7=1.25)			FOR SLABS >300 THICK & HORIZONTAL REINFORCEMENT IN WALLS AND BEAMS (k1=1.3, k7=1.25)			COLUMNS
	CONCRETE GRADE			CONCRETE GRADE			
	32	40	50	32	40	50	
N12	500	500	500	600	500	500	500
N16	700	650	650	900	800	700	700
N20	950	850	800	1200	1100	950	950
N24	1200	1100	960	1550	1400	1250	1200
N28	1500	1350	1200	1950	1750	1550	1500
N32	1800	1600	1450	2350	2100	1900	1800



NOTES ON TABLE 3.6:

- 3.6.1 BAR LAP AND DEVELOPMENT LENGTHS ARE BASED ON AS 3600 WITH GRADE 500 REINFORCEMENT AND 30mm CONCRETE COVER TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- 3.6.2 BARS LARGER THAN N40 SHALL NOT BE LAP SPICED. FOR SUCH BARS, PROPRIETARY MECHANICAL COUPLERS SHALL BE USED HAVING CAPACITY NOT LESS THAN THE BARS BEING CONNECTED.
- 3.6.3 WHERE LAPS ARE SPECIFIED TO BE STAGGERED, THE SET-OUT SHALL BE AS SHOWN ABOVE.
- 3.7 MINIMUM DEVELOPMENT LENGTHS FOR REINFORCEMENT SHALL BE AS FOR LAP LENGTHS U.N.O.
- 3.8 POSITIONS OF REINFORCEMENT LAPS AND SPLICES UNLESS SHOWN, SHALL BE IN ACCORDANCE WITH AS 3600 AND SHALL BE TO THE APPROVAL OF THE SUPERINTENDENT.
- 3.9 REINFORCEMENT DESIGNATION:



- 3.10 PROVIDE PROTECTIVE CAPS TO ALL PROJECTING REINFORCEMENT.
- 3.11 ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC OR GRADE 50 CONCRETE CHAIRS GENERALLY AT NOT GREATER THAN 900 CENTRES BOTH WAYS. BAR CHAIRS SUPPORTED ON THE GROUND SHALL HAVE SUITABLE SPREADER PLATES.

- 3.12 ALL REINFORCEMENT SHALL BE SECURED WITH TIE WIRE (AT ALTERNATE INTERSECTIONS AT LEAST) AND ALL TIE ENDS SHALL BE TURNED INWARDS CLEAR OF THE COVER ZONE. TIE WIRE PASSING THROUGH THE CONCRETE COVER ZONE SHALL NOT BE PERMITTED.
- 3.13 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION OF REINFORCING BAR BENDING SCHEDULES.
- 3.14 ALL COGS, HOOKS AND BENDS SHALL COMPLY WITH AS 3600 U.N.O.
- 3.15 AT PENETRATIONS WITH DIMENSIONS LESS THAN 300mm, REINFORCEMENT SHALL BE DISPLACED EACH SIDE OF THE PENETRATION U.N.O. AT PENETRATIONS WITH DIMENSIONS GREATER THAN 300mm REINFORCEMENT SHALL BE PLACED IN THE REQUIRED POSITION AND CUT OUT TO SUIT THE PENETRATION. ADDITIONAL BARS SHALL BE PROVIDED TO MATCH THE NUMBER AND SIZE OF BARS CUT AND THESE SHALL BE POSITIONED EACH SIDE OF THE PENETRATION U.N.O.
- 3.16 2-N12 TRIMMER BARS 1000 LONG SHALL BE PLACED IN TOP OF SLABS DIAGONALLY ACROSS ALL RE-ENTRANT CORNERS AND OPENINGS U.N.O.
- 3.17 SPACER BARS BETWEEN 2 OR MORE LAYERS OF REINFORCING BARS SHALL BE THE LARGER OF N32 OR THE PRIMARY BAR DIAMETER AT 1200 CENTRES U.N.O.
- 3.18 HELICAL REINFORCEMENT SHALL BE SPLICED USING MECHANICAL MEANS. LAP AND WELDED SPLICES SHALL NOT BE PERMITTED.
- 3.19 STAINLESS STEEL REINFORCEMENT (SHOWN AS 'SS' OR 'STAINLESS STEEL' ON THE DRAWINGS) SHALL BE SOLID RIBBED BARS CONFORMING TO DUPLEX GRADE 2205 AND AUSTENITIC GRADE 316LN TO BS6744 WITH A MINIMUM YIELD STRENGTH OF 500MPa.

4 MISCELLANEOUS

- 4.1 ALL FIXINGS AND FITTINGS TO BE CAST INTO CONCRETE OR BLOCKWORK SHALL BE STAINLESS STEEL GRADE 316 (OR GRADE 316L IF WELDED) U.N.O.
- 4.2 HOLDING DOWN (HD) BOLTS NOT MANUFACTURED FROM STAINLESS STEEL SHALL BE HOT DIP GALVANISED.
- 4.3 CHEMICAL ANCHORS SHALL BE RAMSET CHEMSET INJECTION REO 502 SERIES STAINLESS STEEL ANCHORS (OAE) U.N.O.
- 4.4 STARTER BARS TO BE INSTALLED IN EXISTING CONCRETE SHALL BE RAMSET CHEMSET REO 502 ANCHORS (OAE) USING HOT DIP GALVANISED N BARS U.N.O.
- 4.5 CAST-IN FERRULES SHALL BE STAINLESS STEEL REID ELEPHANT FOOT TYPE COMPLETE WITH STAINLESS STEEL BOLT AND CROSS BAR, IF REQUIRED.
- 4.6 WHERE EXISTING STAINLESS STEEL CHEMICAL ANCHORS, STUDS OR THE LIKE BECOME DISUSED AS A PART OF THE WORKS, THEY SHALL BE CUT OFF FLUSH WITH THE STEEL OR CONCRETE SURFACE U.N.O.
- 4.7 WHERE EXISTING NON STAINLESS STEEL ANCHORS, STARTER BARS, STUDS OR THE LIKE BECOME DISUSED AS A PART OF THE WORKS, THEY SHALL BE CUT OFF FLUSH WITH THE STEEL SURFACE, OR 65mm BELOW THE CONCRETE SURFACE AND THE HOLES FILLED WITH EPOXY GROUT U.N.O.
- 4.8 FOR CONCRETE CAST AGAINST THE GROUND (INCLUDING BLINDING CONCRETE), THE MINIMUM ALLOWABLE BEARING CAPACITY OF THE FOUNDATION MATERIAL SHALL BE 150 kPa U.N.O. WHERE INSTRUCTED BY THE SUPERINTENDENT, UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROVED SELECT FILL TO ACHIEVE THIS REQUIREMENT. THE FOUNDATION MATERIAL SHALL BE INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER AND APPROVED BY THE SUPERINTENDENT PRIOR TO ANY REINFORCEMENT OR CONCRETE BEING PLACED.

LEVEL DATUM TABLE

AHD	DATUM	LAT
1.65	HAT	2.89
1.06	MHWS	2.30
0.65	MHWN	1.89
0.08	MSL	1.32
0.00	AHD	1.24
-0.43	MLWN	0.81
-0.85	MLWS	0.39
-1.24	LAT	0.00

TIDAL PLANES

SOURCE: SEMIDIURNAL TIDAL PLANES 2013
(MARITIME SAFETY QLD) BRISBANE BAR:
PORT OFFICE.

RPEQ	
SIGNATURE:	<i>[Signature]</i>
DATE:	25/02/14
NAME:	RICHARD WOOLLARD
RPEQ No:	13790

5 STRUCTURAL STEEL NOTES

5.1 GENERAL:

- 5.1.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF AS 4100 AND AS 1554.

5.2 MATERIALS:

- 5.2.1 STEEL GRADE AND APPLICABLE STANDARD SHALL BE AS FOLLOWS U.N.O.:

ELEMENT	STEEL GRADE	STANDARD
GUSSET PLATES, STIFFENERS ETC.	350	AS 3678
PLATE AND SECTIONS FABRICATED FROM PLATE	350-100 THK 250-100 THK	AS 3678
HOT ROLLED SECTIONS, WELDED SECTIONS AND FLATS*	300	AS 3679
RECTANGULAR AND SQUARE HOLLOW SECTIONS	≤75 >75	350 450
CIRCULAR HOLLOW SECTIONS	≤168 >168	250 350
COLD FORMED SECTIONS	450	AS 1397

* FLATS SHALL ONLY BE USED WHERE SHOWN SPECIFICALLY ON THE DRAWINGS AS FLATS OR AS OTHERWISE APPROVED BY THE SUPERINTENDENT.

- 5.2.2 UNIDENTIFIED STEEL SHALL NOT BE USED IN STRUCTURAL MEMBERS OR CONNECTIONS.
- 5.2.3 ALL STEEL SHALL BE FREE FROM EXCESSIVE RUST, PITTING AND OTHER DEFECTS LIKELY TO IMPAIR THE STRUCTURAL CAPACITY OF THE MEMBER OR QUALITY OF THE PROTECTIVE COATING SYSTEM.
- 5.2.4 ALL STEEL PLATE 40mm THICK OR GREATER SHALL BE ULTRASONICALLY TESTED FOR LAMINATIONS IN ACCORDANCE WITH AS 1710 - LEVEL 2. RESULTS SHALL BE INTERPRETED IN ACCORDANCE WITH AS 1554.
- 5.2.5 ALL STAINLESS STEEL SHALL COMPLY WITH THE REQUIREMENTS OF AS 2837 AND SHALL BE MARINE GRADE 316 (OR 316L WHERE WELDING IS REQUIRED) U.N.O.
- 5.3 BOLTED CONNECTIONS:
- 5.3.1 ALL BOLTS EXCLUDING CAST-IN HOLD-DOWN BOLTS SHALL BE M20 HIGH STRENGTH STRUCTURAL BOLTS (PROPERTY CLASS 8.8/S) CONFORMING TO AS 1252 U.N.O. COMMERCIAL BOLTS (PROPERTY CLASS 4.6/S), IF SPECIFIED, SHALL CONFORM TO AS 1111.
- 5.3.2 BOLT HOLE CLEARANCES FOR STRUCTURAL CONNECTIONS (EXCLUDING BASE PLATES) SHALL BE 2mm U.N.O. FOR BOLT SIZES < M24 AND NO MORE THAN 3mm FOR BOLT SIZES > M24.
- 5.3.3 ALL BOLT SPACINGS AND EDGE DISTANCES SHALL BE IN ACCORDANCE WITH AS 4100 U.N.O.
- 5.3.4 HIGH STRENGTH STRUCTURAL BOLTS SHALL BE ASSEMBLED AND TENSIONED IN THE SAME MANNER AS COMMERCIAL BOLTS U.N.O. HIGH STRENGTH STRUCTURAL BOLTS REQUIRING TENSIONING SHALL BE NOTED 8.8/TF OR 8.8/TB ON THE DRAWINGS AND SHALL BE TENSIONED IN ACCORDANCE WITH AS 4100.

- 5.3.5 ALL BOLTS, NUTS AND WASHERS NOT MANUFACTURED FROM STAINLESS STEEL SHALL BE HOT DIP GALVANISED, U.N.O.
- 5.3.6 ALL STAINLESS STEEL BOLTS AND THREADED RODS SHALL HAVE ROLLED THREADS AND BE GRADE A4-70 (OR A4-50 FOR WELDED APPLICATIONS U.N.O.) AND SHALL BE COATED WITH NICKEL BASED ANTI-SEIZE PRIOR TO TIGHTENING AND SHALL BE PROVIDED WITH STAINLESS STEEL NYLOC NUTS AND STAINLESS STEEL WASHERS. ALL STAINLESS STEEL BOLTS SHALL BE PROVIDED WITH A WASHER UNDER THE NUT AND BOLT HEAD. BOLTS AND NUTS SHALL COMPLY WITH ISO 3506 WITH WASHERS OF AUSTENITIC STAINLESS STEEL COMPLYING WITH ISO 7089 OR ISO 7090 AS APPROPRIATE.
- 5.3.7 ALL STAINLESS STEEL FASTENERS IN CONTACT WITH NON-STAINLESS STEEL MEMBERS SHALL BE ISOLATED USING ISOLATING BUSH AND WASHERS. REFER TO DETAILS ON DRAWING 237847-GENL-DRG-LS-0102.

- 5.3.8 MINIMUM BOLTED CONNECTION SHALL BE 2-M20 8.8/S BOLTS U.N.O.
- 5.3.9 WHERE TEMPORARY ERECTION BOLTS ARE USED AND LATER REMOVED, HOLES SHALL BE PLUG WELDED AND GROUND FLUSH.
- 5.3.10 SLOTTED OR OVERSIZED HOLES, WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT, SHALL BE PROVIDED WITH PLATE WASHERS SIZED TO COMPLETELY COVER THE HOLES FOR ALL POSITIONS OF BOLTS IN THE HOLE, AND SHALL BE STIFF ENOUGH SO AS NOT TO DEFORM OR DAMAGE THE PROTECTIVE TREATMENT UPON TIGHTENING.
- 5.3.11 FOR BOLTED SPLICE CONNECTIONS, THE GAP BETWEEN ABUTTING MEMBERS SHALL BE SEALED WITH A POLYURETHANE BASED FLEXIBLE SEALANT (SIKAFLEX O.A.E.) AFTER SPLICE PLATES HAVE BEEN INSTALLED.
- 5.3.12 LOCK NUTS SHALL BE USED FOR ALL BOLTS SECURING VIBRATING EQUIPMENT.

5.4 WELDED CONNECTIONS:

- 5.4.1 ALL WELDS SHALL BE CATEGORY SP (STRUCTURAL PURPOSE) TO AS 1554 USING E48XX OR W50XX CONSUMABLES U.N.O. WELD METAL SHALL HAVE MINIMUM TENSILE STRENGTH OF 480MPa. REFER TO THE SPECIFICATION FOR REQUIRED TESTING REGIME.
- 5.4.2 ALL ABUTTING OR LAPPING STEELWORK SHALL BE WELDED U.N.O. (eg. BY BOLTED CONNECTION).
- 5.4.3 ALL WELDS TO MARINE STRUCTURES SHALL BE 8mm CONTINUOUS FILLET WELDS ALL AROUND (BOTH SIDES) U.N.O.
- 5.4.4 ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS U.N.O.
- 5.4.5 PORTAL FRAME KNEE JOINTS AND SIMILAR MOMENT TYPE CONNECTIONS, AND WELDS TO ADJACENT STIFFENER PLATES AT SUCH CONNECTIONS, SHALL BE CONNECTED BY COMPLETE PENETRATION BUTT WELDS U.N.O.
- 5.4.6 WELDING SYMBOLS SHOWN ON THE DRAWINGS ARE IN ACCORDANCE WITH AS 1101-PART 3.
- 5.4.7 SHARP IRREGULARITIES IN THE WELDS AND ALL SLAG AND SPATTER AND WELD DAGS SHALL BE REMOVED BY APPROPRIATE MEANS.
- 5.4.8 ALL CONNECTIONS OF ABUTTING PLATES, FLANGES, HOLLOW SECTIONS, ETC, SHALL HAVE THE THICKER COMPONENT TAPERED AT 1:4 LEADING INTO THE BUTT WELDED JOINT.
- 5.4.9 WELDING OF STAINLESS STEEL SHALL BE IN ACCORDANCE WITH AS1554.6, GRADE 309 STAINLESS STEEL ELECTRODES SHALL BE USED FOR WELDING OF STAINLESS STEEL TO MILD STEEL.

5.5 FABRICATION:

- 5.5.1 THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE SUPERINTENDENT FOR APPROVAL.
- 5.5.2 ALL CONNECTION DETAILS INCLUDING EDGE DISTANCES AND PITCHES/GAUGES SHALL BE IN ACCORDANCE WITH A.S.I./A.I.S.C. STANDARDISED STRUCTURAL CONNECTIONS U.N.O.
- 5.5.3 ALL PLATES, CLEATS, GUSSETS, STIFFENERS, ETC SHALL BE 10mm THICK U.N.O.
- 5.5.4 ALL COPED CORNERS SHALL HAVE A 11mm RADIUS.
- 5.5.5 ALL STEELWORK SHALL HAVE EDGES AND CORNERS ROUNDED AND GROUND SMOOTH TO A MINIMUM RADIUS OF 2mm. HOLES SHALL BE CLEAN CUT WITHOUT TORN OR RAGGED EDGES AND FREE FROM BURRS. EDGES OF HOLES THAT ARE NOT PERMANENTLY COVERED BY A BOLTED CONNECTION SHALL BE FINISHED WITH A 2mm 45 DEGREE CHAMFER.
- 5.5.6 ALL SHARP IRREGULARITIES, WHETHER APPARENT BEFORE OR AFTER BLAST CLEANING, SHALL BE REMOVED PRIOR TO COMMENCEMENT OF COATING APPLICATION.
- 5.5.7 ENDS OF HOLLOW SECTIONS WHICH ARE NOT HOT DIP GALVANISED OR STAINLESS STEEL SHALL BE SEALED WITH 6mm CAP PLATES AND 6mm CFW, U.N.O.
- 5.5.8 NO HOLES SHALL BE DRILLED INTO HOLLOW SECTIONS. WHERE CONNECTION TO HOLLOW SECTIONS IS REQUIRED, WELDED CLEATS SHALL BE PROVIDED.

- 5.5.9 STEELWORK SHALL BE FREE DRAINING TO PREVENT BUILD UP OF MATERIAL AND WATER. WHERE POSSIBLE OPEN SECTIONS SHALL BE ORIENTED TO PREVENT PONDING. WHERE THIS IS NOT POSSIBLE 6mm SHEDDER PLATES SHALL BE PROVIDED TO THE APPROVAL OF THE SUPERINTENDENT.

- 5.5.10 6mm COVER PLATES SHALL BE PROVIDED TO COVER ALL AREAS WHERE ACCESS FOR PROTECTIVE TREATMENT IN ACCORDANCE WITH THE SPECIFICATION IS NOT PRACTICAL.

- 5.5.11 ALL HOT DIP GALVANISED MEMBERS SHALL BE PROVIDED WITH VENT AND DRAINAGE HOLES IN ACCORDANCE WITH THE GALVANISER'S RECOMMENDATIONS. VENT AND DRAINAGE HOLES IN HOLLOW SECTIONS SHALL BE SEALED AFTER HOT DIP GALVANISING IN ACCORDANCE WITH THE SPECIFICATION.

- 5.5.12 THE CONTRACTOR SHALL PROVIDE ALL CLEATS, BRACKETS, ETC REQUIRED TO SUPPORT NON-STRUCTURAL ELEMENTS (INCLUDING ELECTRICAL, AIR, WATER, HYDRAULIC, OIL COOLING, GREASE AND OTHER SERVICES) FROM STRUCTURAL STEELWORK WHETHER SHOWN ON THE DRAWINGS OR NOT. SUCH ITEMS SHALL BE MADE FROM GR316 STAINLESS STEEL.

- 5.5.13 ALL ITEMS OF STEELWORK SHALL BE PERMANENTLY MARKED WITH A UNIQUE IDENTIFICATION NUMBER WHICH SHALL BE CLEARLY VISIBLE AFTER GALVANISING AND/OR PAINTING.

- 5.5.14 WHERE EXISTING STEELWORK IS REMOVED BY CUTTING, THE REMAINING SURFACE SHALL BE WELD FILLED, AND GROUND FLUSH TO PROVIDE A SMOOTH SURFACE FOR PROTECTIVE TREATMENT.

- 5.5.15 MEMBERS LONGER THAN AVAILABLE STOCK LENGTHS SHALL BE COMPLETE PENETRATION BUTT WELDED INTO LENGTHS REQUIRED WITH SPLICE LOCATIONS SUBJECT TO ACCEPTANCE BY THE SUPERINTENDENT.

- 5.5.16 END PLATES AND SEAL PLATES FOR HOLLOW SECTIONS SHALL BE SIZED SUCH THAT THEY DO NOT PROTRUDE PAST THE CROSS SECTION OF THEIR PARENT ITEM U.N.O. WELDS CONNECTING SUCH SEAL OR END PLATES SHALL BE FINISHED WITH A CONVEX PROFILE TO RESULT IN SMOOTH ROUNDED EDGES TO THE ENDS OF THOSE SECTIONS.

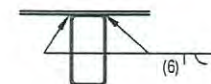
- 5.5.17 ALL SHAFT AND HOLE TOLERANCES DESIGNATED ARE TO BE AS PER THE ISO SYSTEM OF LIMITS AND FITS (ISO 286) U.N.O.

5.6 SURFACE FINISHES:

- 5.6.1 STRUCTURAL STEEL SHALL HAVE PROTECTIVE TREATMENT IN ACCORDANCE WITH THE SPECIFICATION.
- 5.6.2 FAYING SURFACES FOR FRICTION GRIP BOLTED CONNECTIONS (TF) SHALL BE TREATED IN ACCORDANCE WITH THE SPECIFICATION AND SHALL BE MASKED DURING PAINTING OF TOP COAT.
- 5.6.3 PROTECTIVE COATINGS DAMAGED DURING TRANSPORT, HANDLING AND CONSTRUCTION SHALL BE REINSTATED IN ACCORDANCE WITH THE SPECIFICATION AS SOON AS PRACTICAL AFTER THE DAMAGE HAS OCCURRED. DAMAGE TO THE PROTECTIVE COATING SHALL BE REPAIRED PROGRESSIVELY DURING THE COURSE OF CONSTRUCTION AND NOT LEFT UNTIL COMPLETION OF THE WORKS.
- 5.6.4 UNCOATED STAINLESS STEEL INCLUDING FASTENERS SHALL BE CLEANED IN ACCORDANCE WITH AS 1627.1 AND THEN PICKLED AND PASSIVATED IN ACCORDANCE WITH AS1627.5 AND ASTM A380. SURFACES SHALL BE RE-CLEANED, PICKLED AND PASSIVATED WHERE THE OXIDE LAYER HAS BEEN DAMAGED DURING FABRICATION OR CONSTRUCTION BY WORKING, WELDING, GRINDING, SPARKS OR THE LIKE. SURFACE FINISH POLISH SHALL BE IN ACCORDANCE WITH THE SPECIFICATION.

5.7 HULL PLATE NOTES:

- 5.7.1 HULL PLATE SHALL BE 10mm THICK GRADE 350 TO AS 3678 U.N.O.
- 5.7.2 HULL PLATE SHALL BE FIXED TO SUPPORTING FRAMES BY WELDING AS SHOWN BELOW U.N.O. ALL GAPS AND EDGES SHALL BE WELDED TO ADJOINING PLATES OR SUPPORT MEMBERS SO THAT THE INTERFACE BETWEEN HULL PLATES AND SUPPORT MEMBERS IS FULLY SEALED. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A WELDING PROCEDURE WHICH SHALL AVOID HEAT DISTORTION OF THE PLATE DUE TO THE WELDING PROCESS.



RPEQ	
SIGNATURE:	<i>[Signature]</i>
DATE:	25/02/14
NAME:	RICHARD WOOLLARD
RPEQ No:	13790

- 5.7.3 WELDS TO THE HULL PLATE ON THE TRAFFICABLE SURFACE SHALL BE GROUND FLUSH.
- 5.7.4 ALL FIXINGS TO HULL PLATE ARE TO BE BY SS A4-50 WELDED STUDS U.N.O. MINOR FIXINGS (M10 OR SMALLER) MAY BE BY HILTI X-BT SS THREADED STUDS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

6 ERECTION:

- 6.1 THE DOCUMENTED DESIGN IS FOR THE PERMANENT CONDITION ONLY AND DOES NOT SPECIFICALLY CATER FOR INTERIM ARRANGEMENTS DURING CONSTRUCTION AND ERECTION UNLESS NOTED OTHERWISE.
- 6.2 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND ANY ADJACENT STRUCTURES IN A SAFE AND STABLE CONDITION AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS TO ENGAGE A QUALIFIED AND SUITABLY EXPERIENCED ERECTION ENGINEER TO REVIEW AND APPROVE THE CONTRACTOR'S CONSTRUCTION METHODOLOGY AND TO PROVIDE THE DESIGN OF ANY TEMPORARY WORKS (SUCH AS PROPPING AND TEMPORARY BRACING) TO SUIT THE CONTRACTOR'S CONSTRUCTION SEQUENCE AND METHODOLOGY.
- 6.3 DISSIMILAR METALS SHALL BE SEPARATED WITH AN APPROVED ISOLATION MEDIUM.
- 6.4 GROUT UNDER BASEPLATES SHALL BE APPROVED NON SHRINK CEMENTITIOUS GROUT (OR EPOXY GROUT WHERE SUPPORTING MECHANICAL EQUIPMENT) HAVING A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH OF 50 MPa AT 28 DAYS.

7 ALUMINIUM NOTES:

- 7.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 1664.1 AND AS 1665.
- 7.2 UNLESS NOTED OTHERWISE, ALL STRUCTURAL ALUMINIUM SHALL BE ALLOY 6082-T5 TEMPER CONFORMING TO AS 2848.1 AND SHALL COMPLY WITH THE REQUIREMENTS OF AS 1734, AS 1866 OR AS 1867.
- 7.3 ALUMINIUM GRATING SHALL BE WEBFORGE E503 APM ALLOY 6063-T6 TEMPER UNO.
- 7.4 ALL ALUMINIUM WELDING SHALL CONFORM TO AS 1665 AND WTIA TECHNICAL NOTE No 2.
- 7.5 ALL ALUMINIUM ITEMS SHALL BE ISOLATED FROM SUPPORTING STEEL, STAINLESS STEEL, TIMBER AND CONCRETE WITH AN APPROVED ISOLATION MEDIUM.

8 DEMOLITION NOTES:

- 8.1 ALL MATERIAL TO BE DEMOLISHED SHALL BE DISPOSED OF OFF SITE AND NOT IN THE RIVER. THE PILES AND ANY PILE STUBS MUST BE COMPLETELY REMOVED. WHERE IT IS NOT POSSIBLE TO COMPLETELY EXTRACT ANY OF THE PILES, THE PILES AND PILE STUBS MUST BE CUT OFF AT A LEVEL:
- AT LEAST ONE METRE BELOW THE BED LEVEL OR 600mm BELOW ANY EXPOSED LEVEL OF ROCK, OR;
 - AT A GREATER DEPTH THAN DETAILED ABOVE IF REQUIRED BY THE REGIONAL HARBOUR MASTER.

9 RUBBER NOTES:

- 9.1 RUBBER SHALL COMPLY WITH THE REQUIREMENTS OF A TYPE 60H ELASTOMER TO AS 5100.4 APPENDIX B
- 9.2 INDIVIDUAL DIMENSIONS SPECIFIED (THICKNESS, WIDTH AND LENGTH) SHALL NOT BE FORMED BY VULCANISING OR OTHERWISE JOINING OR BUTTING TOGETHER TWO OR MORE RUBBER BEARINGS OF LESSER DIMENSIONS UNLESS INDIVIDUAL DIMENSIONS ARE NO LESS THAN 2m OR UNLESS NOTED OTHERWISE
- 9.3 RUBBER SHALL BE BONDED TO THE SUBSTRATE WITH A FULL SPREAD OF A HIGH PERFORMANCE SOLVENT-BASED CONTACT ADHESIVE, REMA SC2000 OR APPROVED EQUIVALENT, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. PRIOR TO BONDING, THE RUBBER SURFACE SHALL BE CLEANED WITH AN APPROVED TOLUENE-BASED SOLVENT.
- 9.4 ALL JOINTS BETWEEN ADJACENT RUBBER BEARINGS AND VOIDS IN STUD BOLT HOLES SHALL BE SEALED WITH AN APPROVED SEALANT

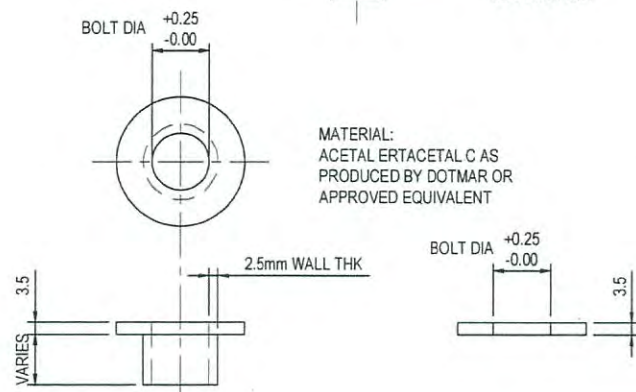
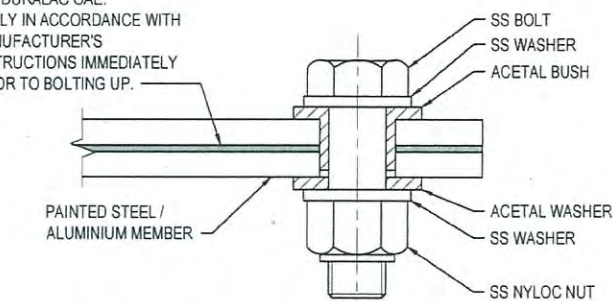
REV	DATE	REVISION DETAILS
1	24.02.14	FOR CONSTRUCTION

APPROVED	SCALE	SIZE
	NOT TO SCALE	A1
	DRAWN	
	D.MULLER	
	DESIGNED	
	M.LAMBKIN	
	VERIFIED	
	R.WOOLLARD	

FOR CONSTRUCTION	
APPROVED	DATE
PROJECT DIRECTOR	24.02.14
A.NILSEN	

PROJECT	BRETT'S WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	BULIMBA, HAWTHORNE & BRETT'S WHARF TERMINALS MARINE GENERAL NOTES SHEET 2
DRAWING No.	237847
PROJECT No.	
WBS	GENL
TYPE	DRG
DISC	LS
NUMBER	0101
REV	1

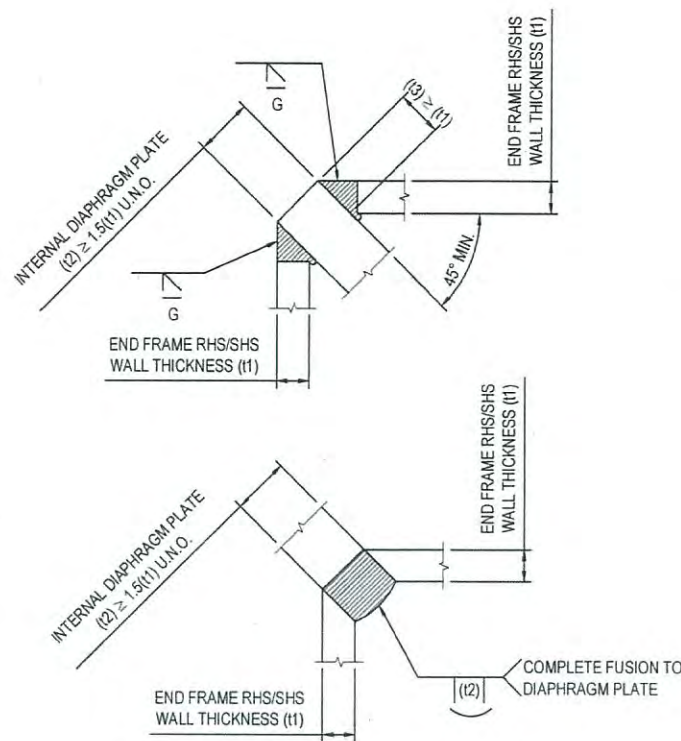
AMI DURALAC OAE:
APPLY IN ACCORDANCE WITH
MANUFACTURER'S
INSTRUCTIONS IMMEDIATELY
PRIOR TO BOLTING UP.



SEPARATION BUSH

SEPARATION WASHER

TYPICAL DETAIL FOR STAINLESS STEEL FASTENERS
IN CONTACT WITH NON-STAINLESS STEEL MEMBERS
(REFER NOTE 5.3.7 - MARINE GENERAL NOTES)



TYPICAL MITRE JOINT WELDS

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

NOTES

- REFER DRAWINGS GENL-DRG-LS-0100 TO 0101 FOR MARINE NOTES.

RPEQ	
SIGNATURE	<i>[Signature]</i>
DATE	24.02.14
NAME	RICHARD WOOLLARD
RPEQ No	13790

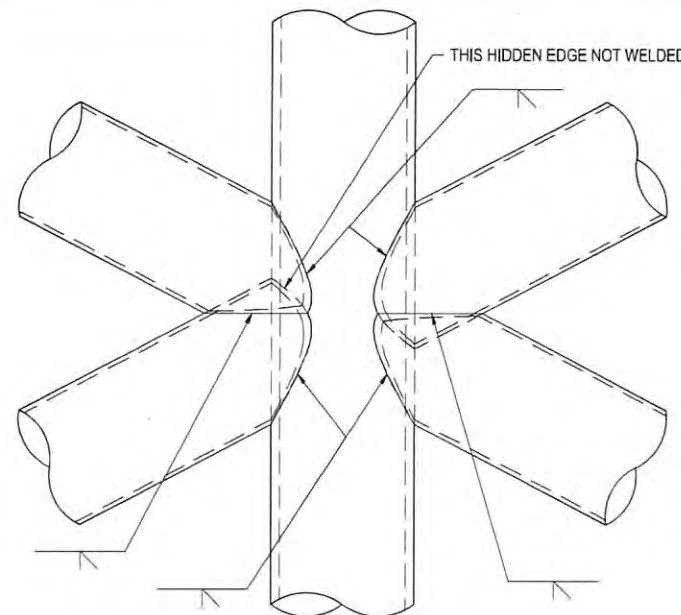
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1	24.02.14	FOR CONSTRUCTION

APPROVED
A.NILSEN

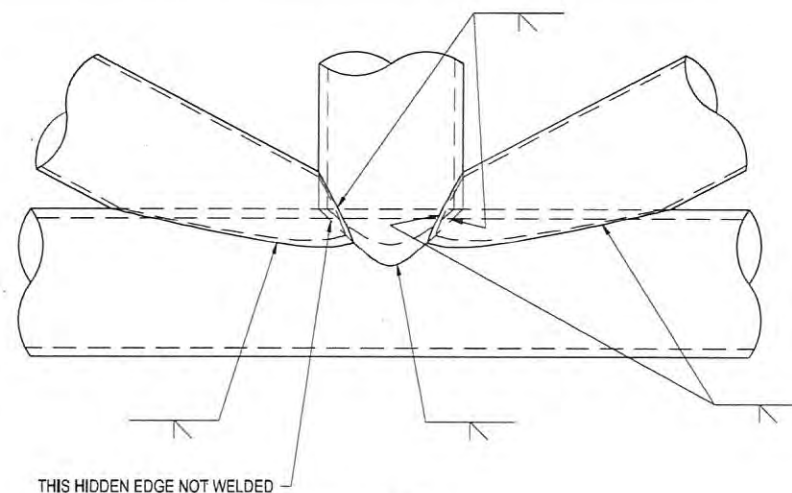
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AS SHOWN	A1
DRAWN	D.MULLER
DESIGNED	M.LAMBKIN
VERIFIED	R.WOOLLARD

FOR CONSTRUCTION
APPROVED
PROJECT DIRECTOR
DATE
24.02.14
A.NILSEN

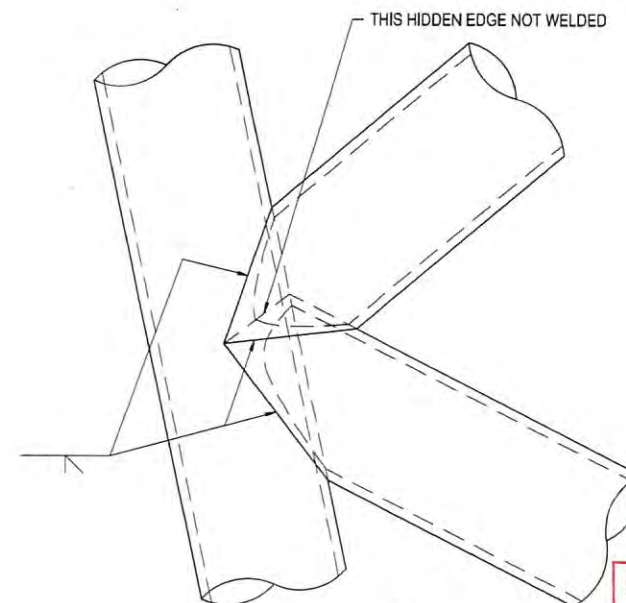
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TITLE	BULIMBA, HAWTHORNE & BRETT'S WHARF TERMINALS MARINE TYPICAL DETAILS
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TYPE	DRG
DISC	LS
NUMBER	0102
REV	1



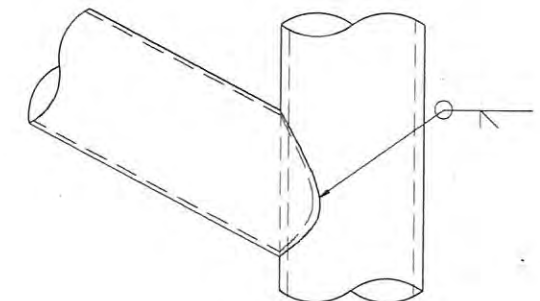
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BULM-0400 HABT-0401



DETAIL 2
1:5
BULM-0400 HABT-0401



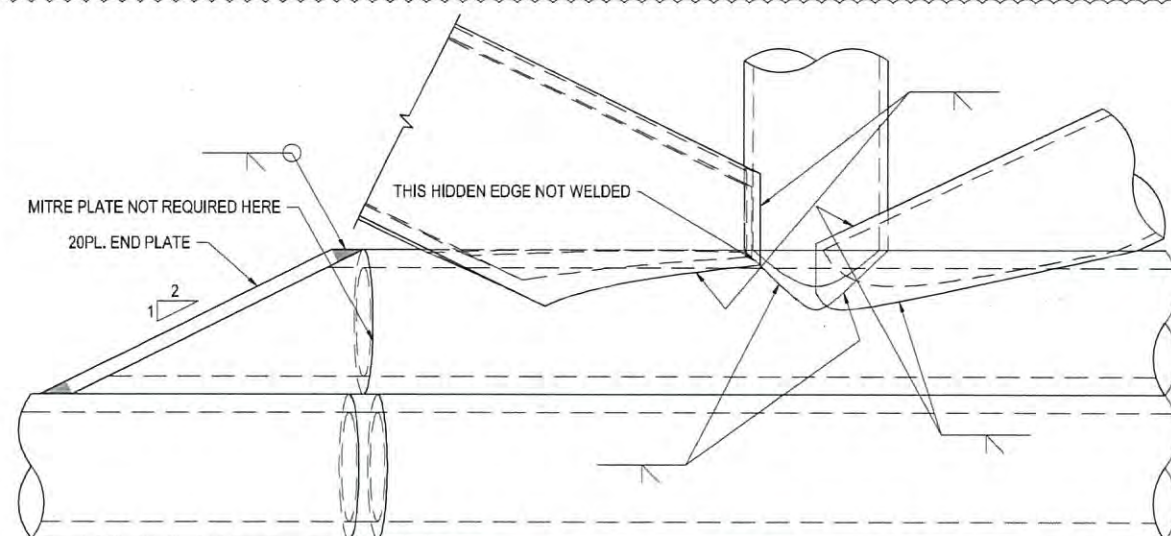
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1:5
BULM-0400 HABT-0401



DETAIL 7
1:5
BULM-0400

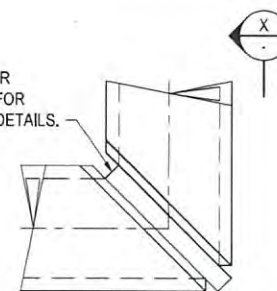
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

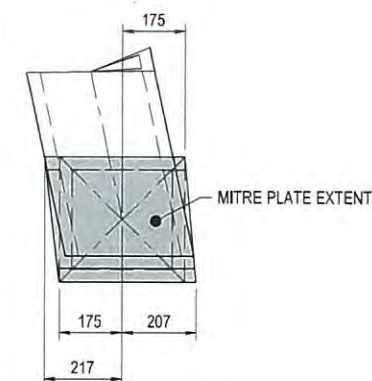


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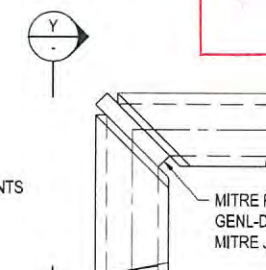
MITRE PLATE. REFER
GENL-DRG-LS-0102 FOR
MITRE JOINT WELD DETAILS.



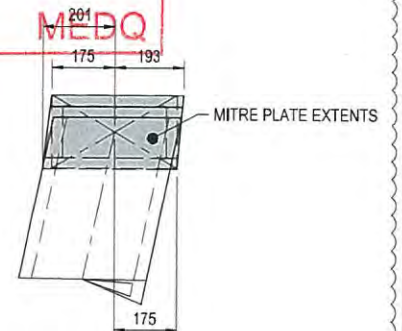
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HABT-0401



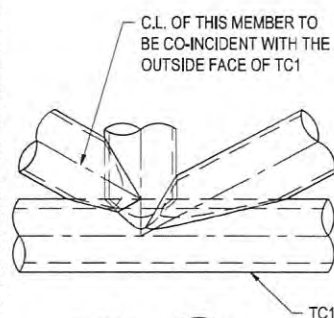
ELEVATION X
1:10



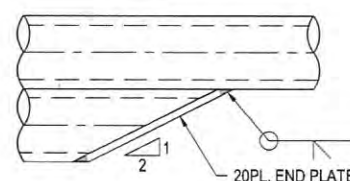
ELEVATION K
1:10
HABT-0401



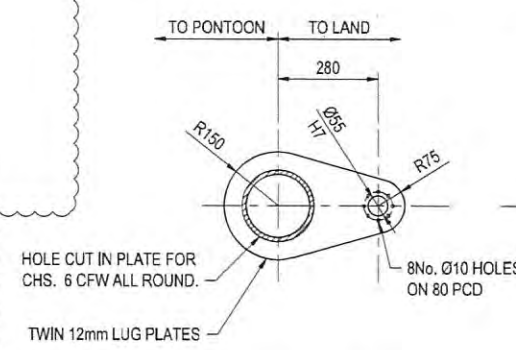
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1:10



DETAIL 9
1:10
HABT-0401

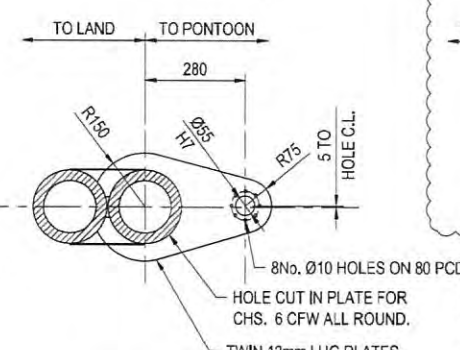


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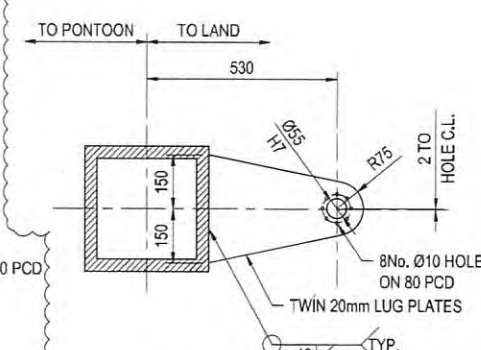
SECTION A
1:10
BULM-0400 HABT-0401

TYPICAL WALKWAY HANGER
SUPPORT DETAIL



SECTION B
1:10
BULM-0400

WALKWAY HANGER
SUPPORT AT END FRAME



SECTION Z
1:10
HABT-0401

WALKWAY HANGER
SUPPORT AT END FRAME

MITRE PLATE PROFILED TO
SUIT REQUIRED WELD PREP.
REFER GENL-DRG-LS-0102 FOR
MITRE JOINT WELD DETAILS.



ELEVATION C
1:10
BULM-0400

NOTES

1. REFER DRAWINGS GENL-DRG-LS-0100 TO 0101 FOR MARINE NOTES.
2. ALL PLATES TO BE ALUMINIUM. REFER TO MARINE NOTES FOR GRADE.

SCALE 1:5
100 0 200 400mm
SCALE 1:10

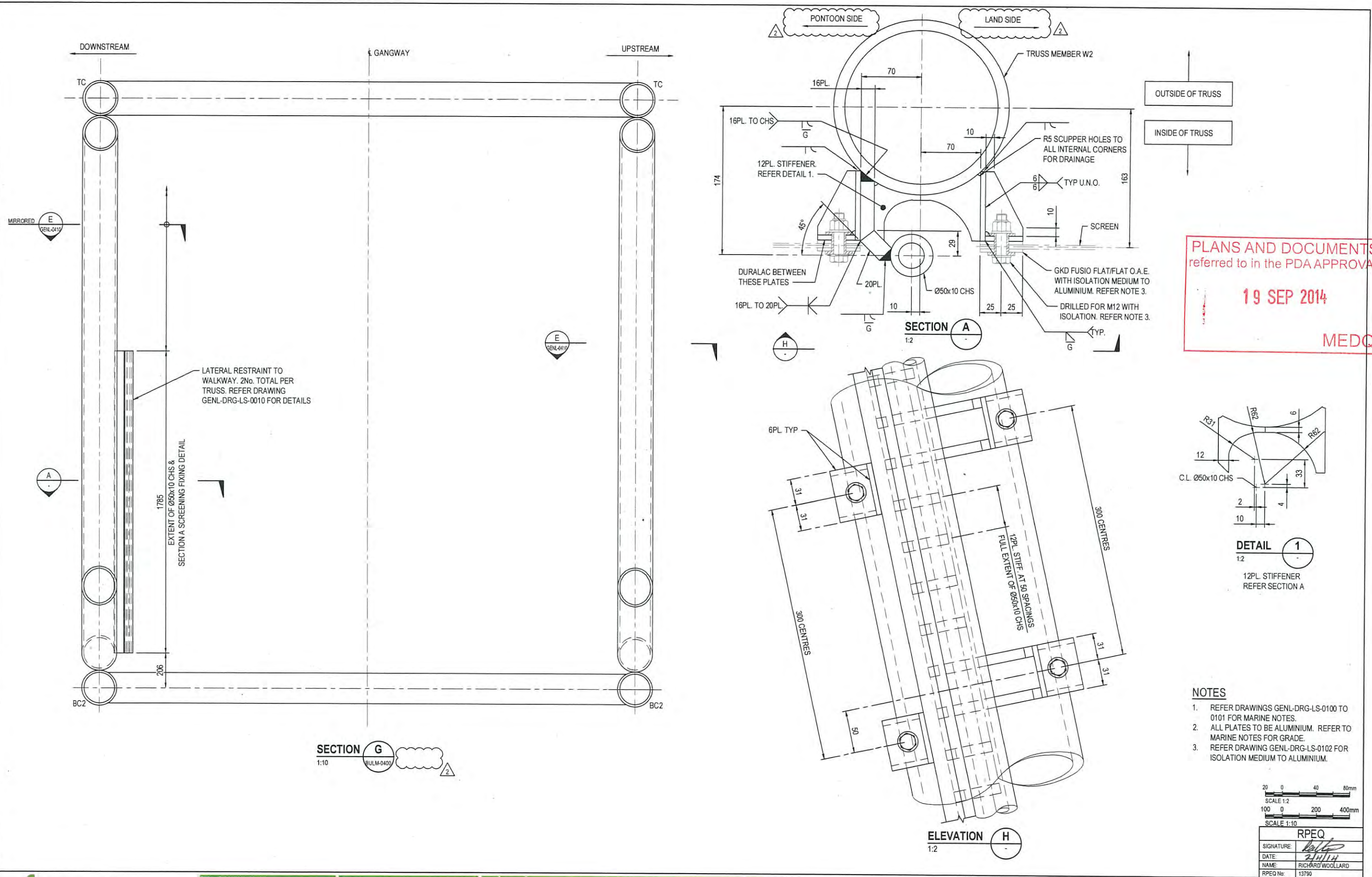
RPEQ
SIGNATURE: *[Signature]*
DATE: 02/04/14
NAME: RICHARD WOOLLARD
RPEQ No: 13790

REV	DATE	REVISION DETAILS
2	02.04.14	ISSUED FOR CONSTRUCTION - SECTIONS ADDED
1	24.02.14	FOR CONSTRUCTION

APPROVED	SCALE	SIZE
	AS SHOWN	A1
	DRAWN	D.MULLER
	DESIGNED	M.LAMBKIN
	VERIFIED	
		R.WOOLLARD

FOR CONSTRUCTION	DATE
APPROVED PROJECT DIRECTOR	02/04/14
A.NILSEN	

PROJECT	TITLE	DWG No.	WBS	TYPE	DATE	NUMBER	REV
BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER	BULIMBA, HAWTHORNE & BRETTS WHARF TERMINALS GANGWAY EXTERNAL STRUCTURE TYPICAL DETAILS	237847	GENL	DRG	LS	0408	2



PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

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REV	DATE	REVISION DETAILS
2	02.04.14	ISSUED FOR CONSTRUCTION - DETAILS MIRRORED
1	24.02.14	FOR CONSTRUCTION

APPROVED	SCALE	SIZE
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	DRAWN	
	D. MULLER	
	DESIGNED	
	M. LAMBKIN	
	VERIFIED	
	R. WOOLLARD	

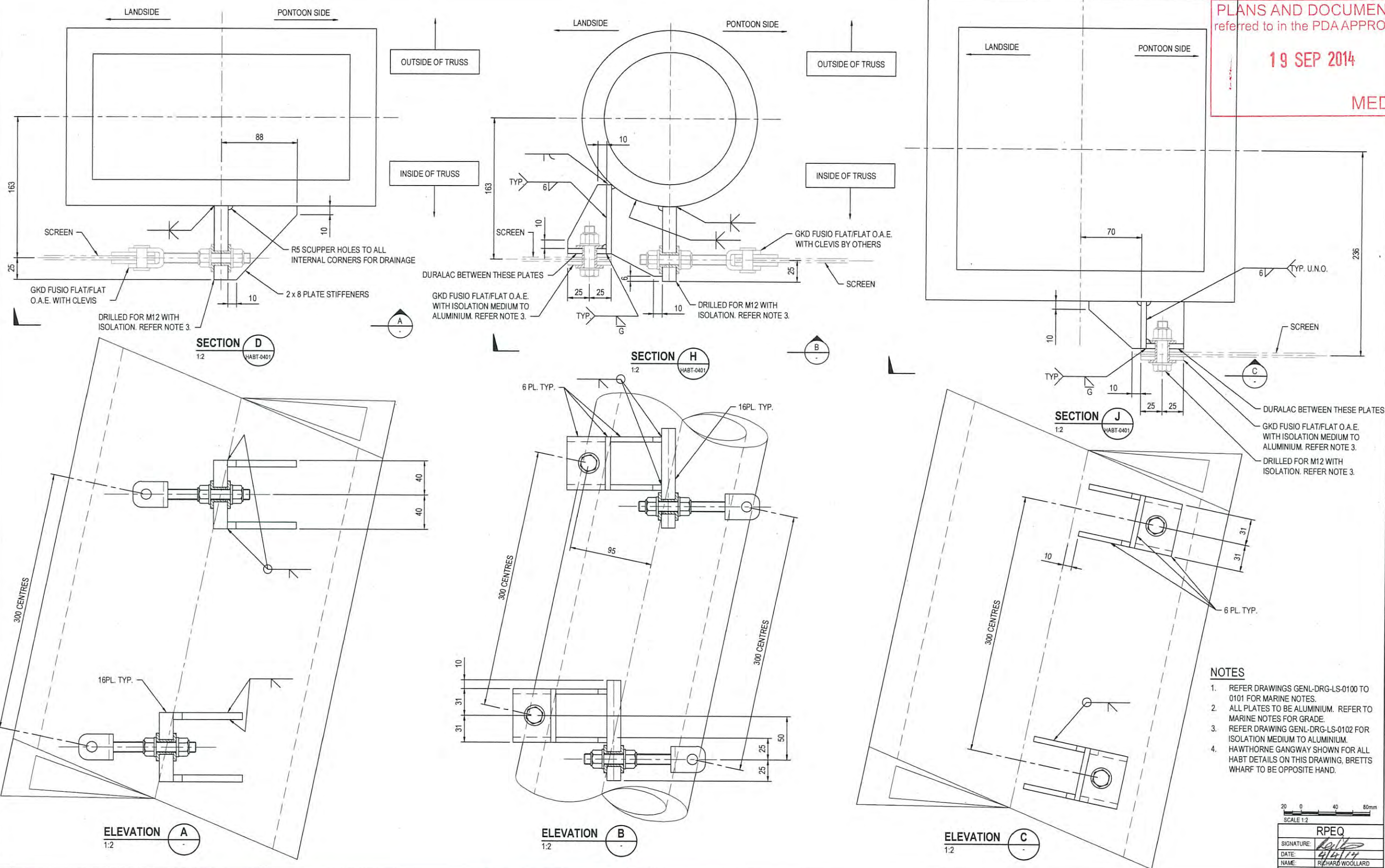
FOR CONSTRUCTION
APPROVED PROJECT DIRECTOR
DATE 02.04.14
A. NILSEN

PROJECT	BRITTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	BULIMBA, HAWTHORNE & BRITTS WHARF TERMINALS GANGWAY EXTERNAL STRUCTURE SCREEN DETAILS - SHEET 2
DRAWING No.	237847
PROJECT No.	13790
WBS	GENL
TYPE	DRG
DESC	LS
NUMBER	0411
REV	2

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

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www.aurecongroup.com

SUB-CONSULTANT

CLIENT



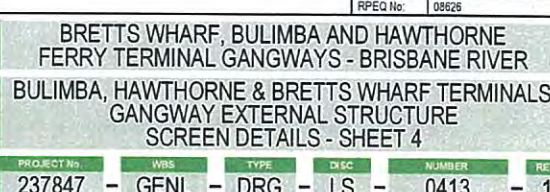
Dedicated to a better Brisbane

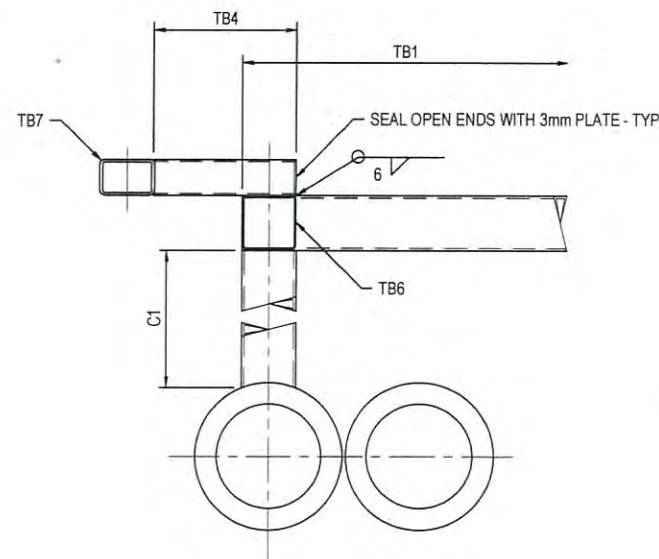
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1	02.04.14	ISSUED FOR CONSTRUCTION	A.NILSEN

SCALE	SIZE
AS SHOWN	A1
DRAWN	D.MULLER
DESIGNED	M.LAMBKIN
VERIFIED	R.WOOLLARD

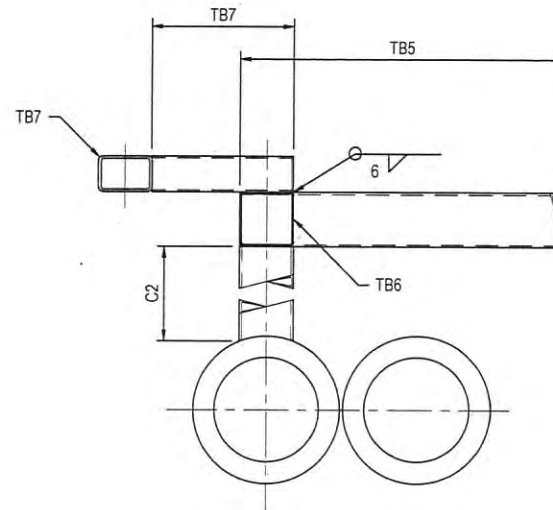
FOR CONSTRUCTION
APPROVED PROJECT DIRECTOR A.NILSEN
DATE 02.04.14

PROJECT	BRETT'S WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	BULIMBA, HAWTHORNE & BRETT'S WHARF TERMINALS GANGWAY EXTERNAL STRUCTURE SCREEN DETAILS - SHEET 3
DRAWING No.	237847
WBS	GENL
TYPE	DRG
DWG	LS
NUMBER	0412
REV	1

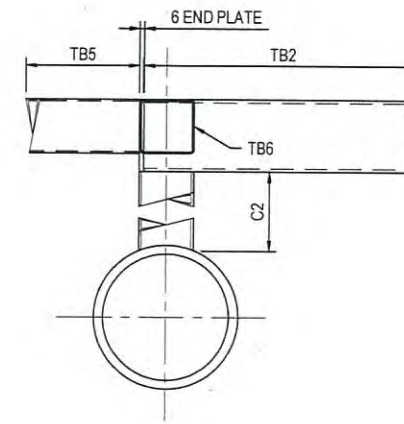




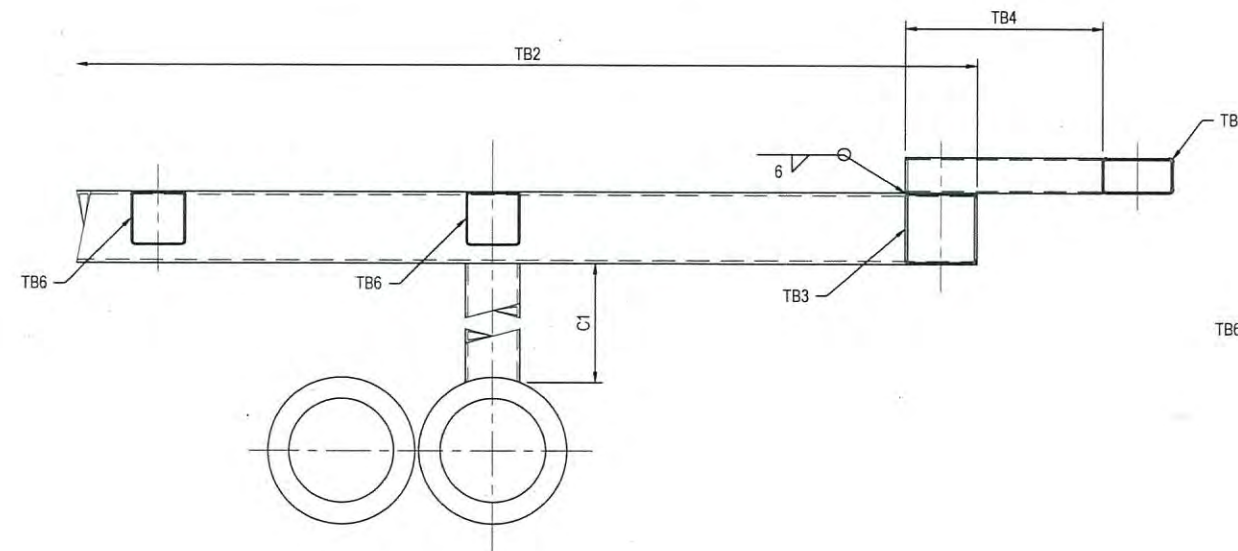
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BULM-0430



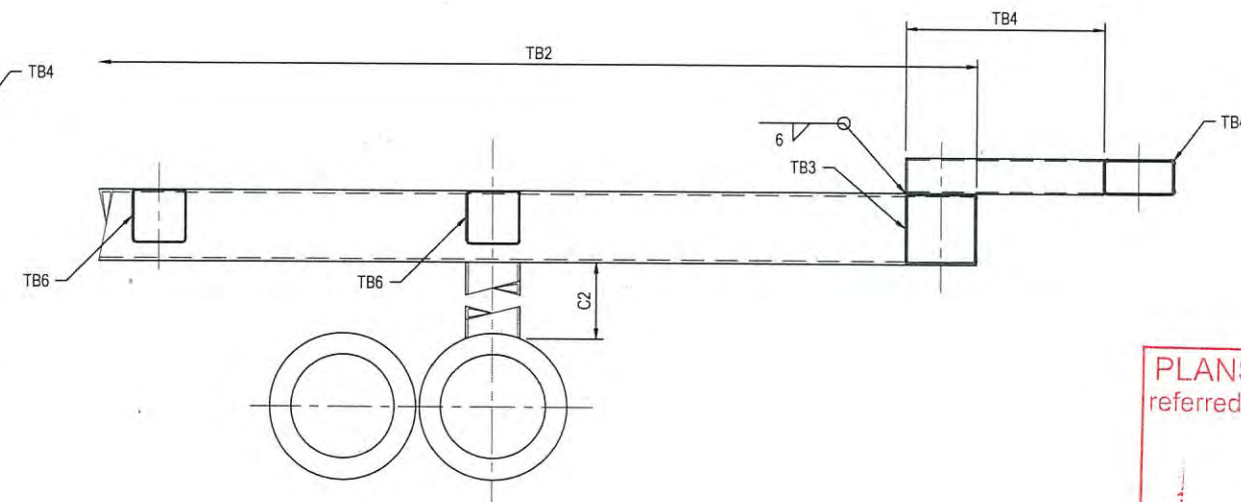
SECTION B
1:5
BULM-0430



SECTION E
1:5
BULM-0430



SECTION C
1:5
BULM-0430



SECTION D
1:5
BULM-0430

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

NOTES

1. ALL GANGWAY ROOF MEMBERS AND PLATEWORK TO BE ALUMINIUM. REFER MARINE NOTES FOR GRADE.
2. REFER DRAWINGS GENL-DRG-LS-0100 TO 0101 FOR MARINE NOTES.
3. WELDS TO ROOF FRAMING TO BE 6CFW ALL ROUND UNO.
4. REFER BULM-DRG-LS-0430 FOR MEMBER MARK SCHEDULE.

50 0 100 200mm

SCALE 1:5

RPEQ

SIGNATURE: *[Signature]*

DATE: 22/04/14

NAME: RICHARD WOOLLARD

RPEQ No: 13790

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www.aurecongroup.com

SUB-CONSULTANT

CLIENT



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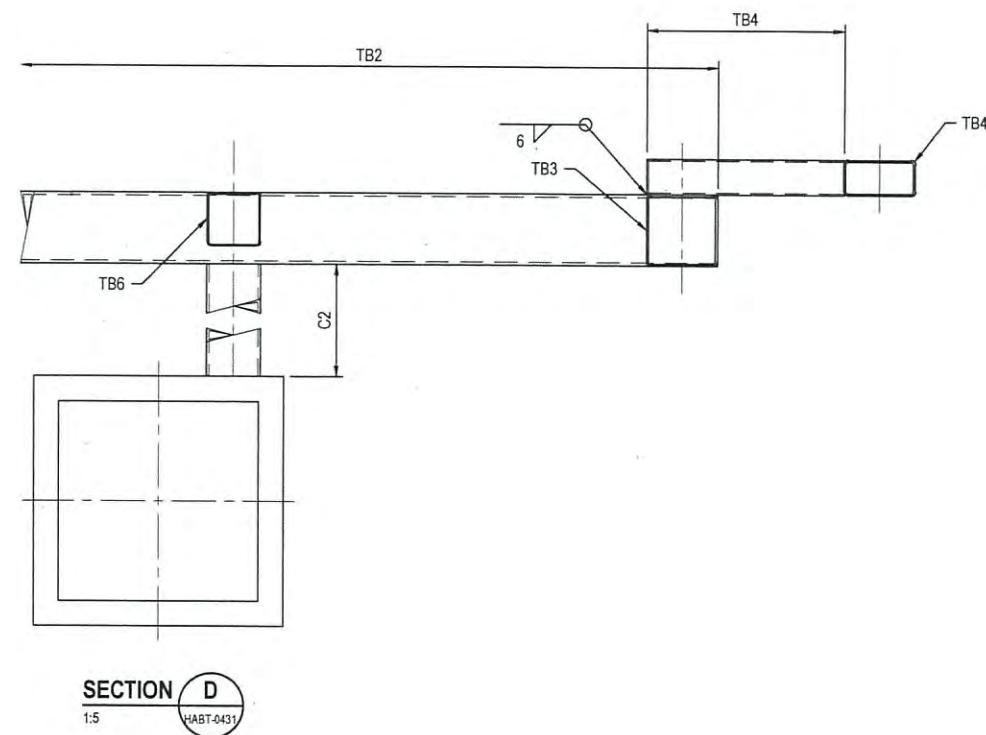
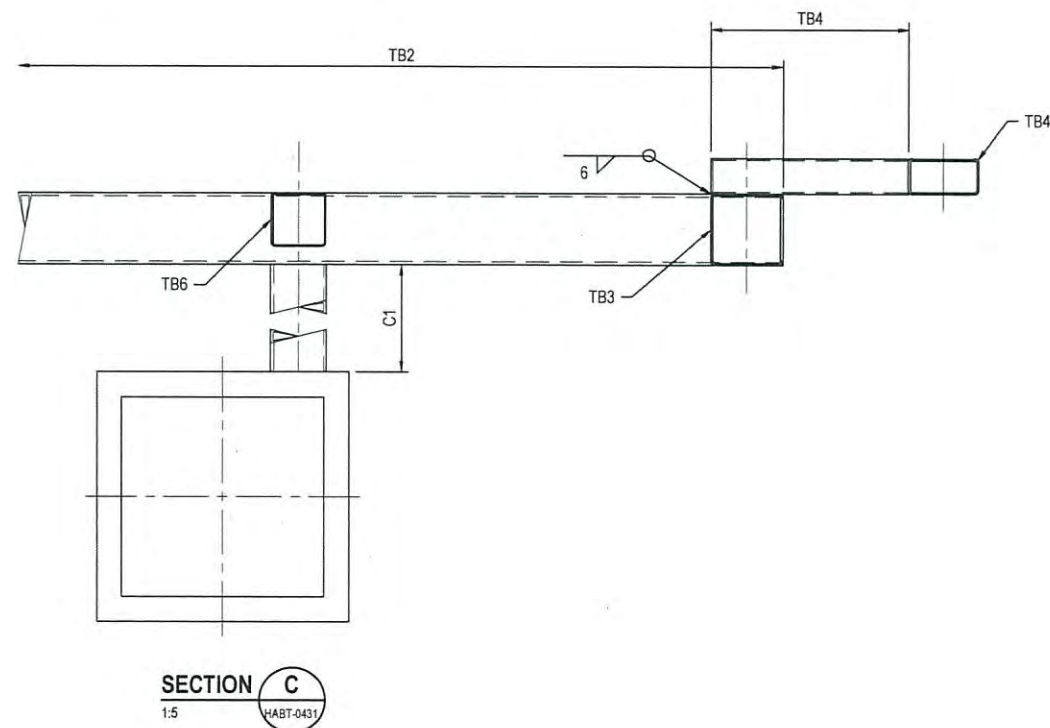
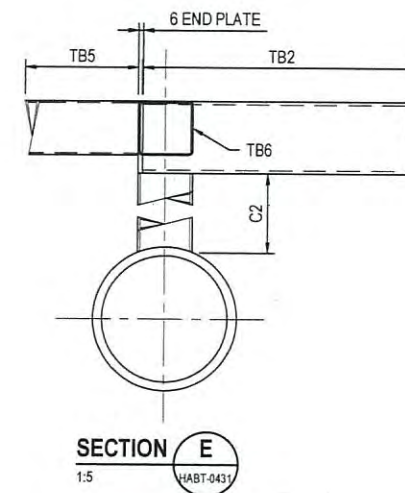
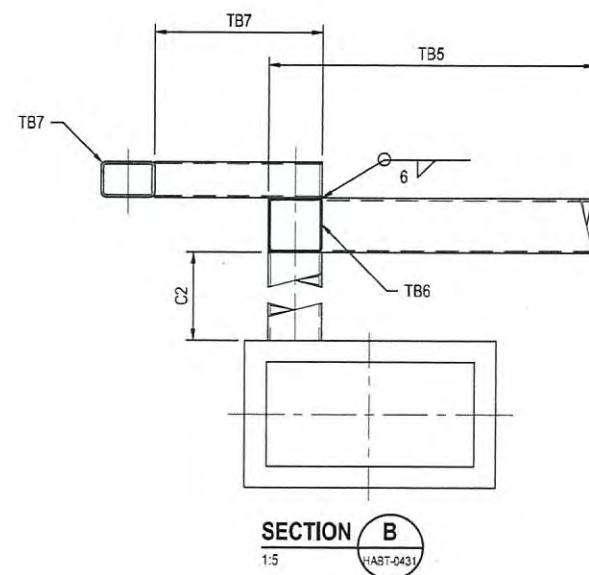
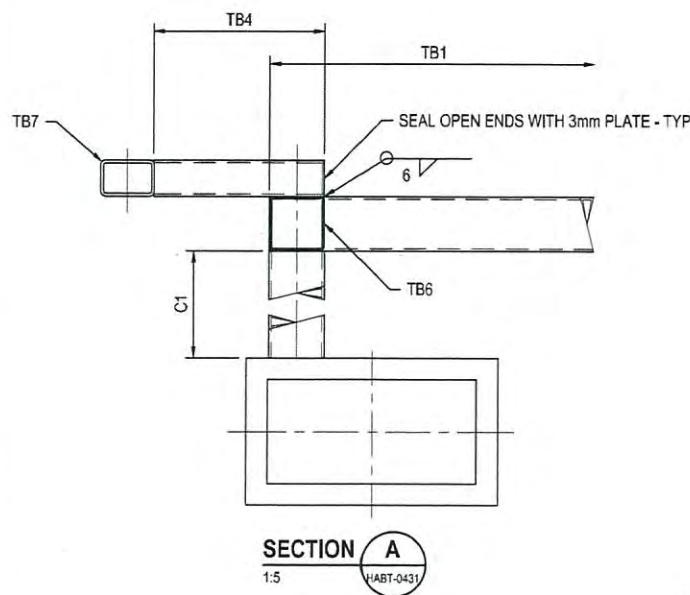
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1	24.02.14	FOR CONSTRUCTION

APPROVED
A.NILSEN
A.NILSEN

SCALE	SIZE
1:5	A1
DRAWN	D.MULLER
DESIGNED	M.LAMBKIN
VERIFIED	R.WOOLLARD

FOR CONSTRUCTION
APPROVED PROJECT DIRECTOR
DATE 02.04.14
A.NILSEN

PROJECT	BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	BULIMBA, HAWTHORNE & BRETTS WHARF TERMINALS GANGWAY EXTERNAL STRUCTURE ROOF DETAILS - SHEET 1
DRAWING No.	237847
WBS	GENL
TYPE	DRG
DISC	LS
NUMBER	0433
REV	2



PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

NOTES

1. ALL GANGWAY ROOF MEMBERS AND PLATEWORK TO BE ALUMINIUM. REFER MARINE NOTES FOR GRADE.
2. REFER DRAWINGS GENL-DRG-LS-0100 TO 0101 FOR MARINE NOTES.
3. WELDS TO ROOF FRAMING TO BE 6CFW ALL ROUND UNO.
4. REFER HABT-DRG-LS-0431 FOR MEMBER MARK SCHEDULE.

50 0 100 200mm

SCALE 1:5

RPEQ	
SIGNATURE	<i>[Signature]</i>
DATE	02/04/14
NAME	RICHARD WOOLLARD
RPEQ No.	13790

REV	DATE	REVISION DETAILS	APPROVED
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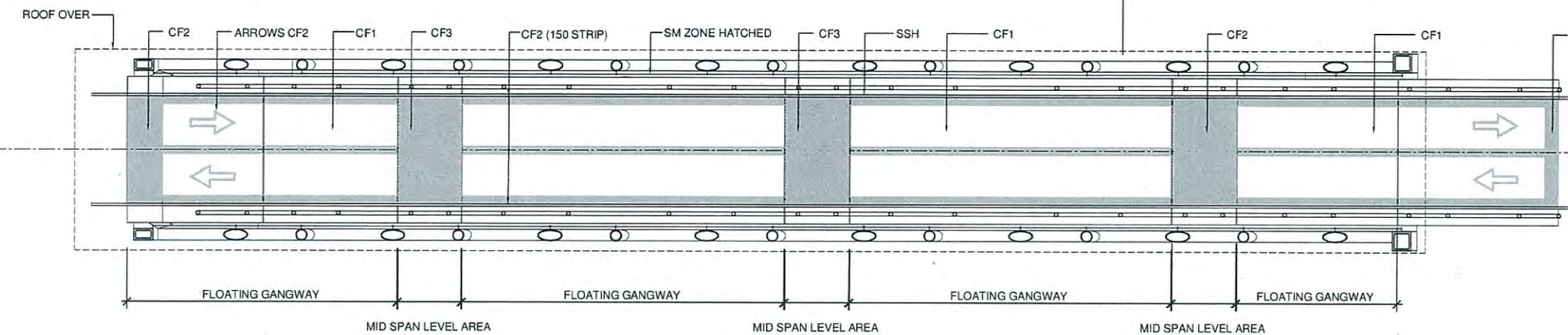
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DRAWN	D.MULLER		
DESIGNED	M.LAMBKIN		
VERIFIED	R.WOOLLARD		

FOR CONSTRUCTION	
APPROVED	DATE
PROJECT DIRECTOR	02/04/14
A.NILSEN	

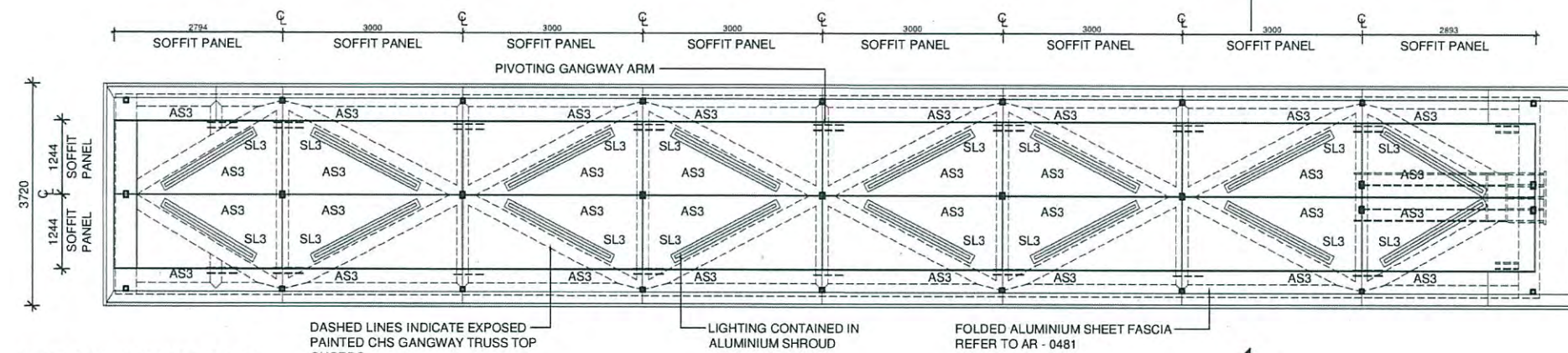
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TITLE	BULIMBA, HAWTHORNE & BRETT'S WHARF TERMINALS GANGWAY EXTERNAL STRUCTURE ROOF DETAILS - SHEET 2			
DRAWING No.	237847	PROJECT No.	13790	REV
		WBS	TYPE	DISC
			GENL	DRG
			LS	0434
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NOTE:
FALL ARREST ROOF
SAFETY SYSTEM TO BE
INSTALLED & CERTIFIED
BY CONTRACTOR.
SYSTEM SUBJECT TO
ARCHITECTS APPROVAL

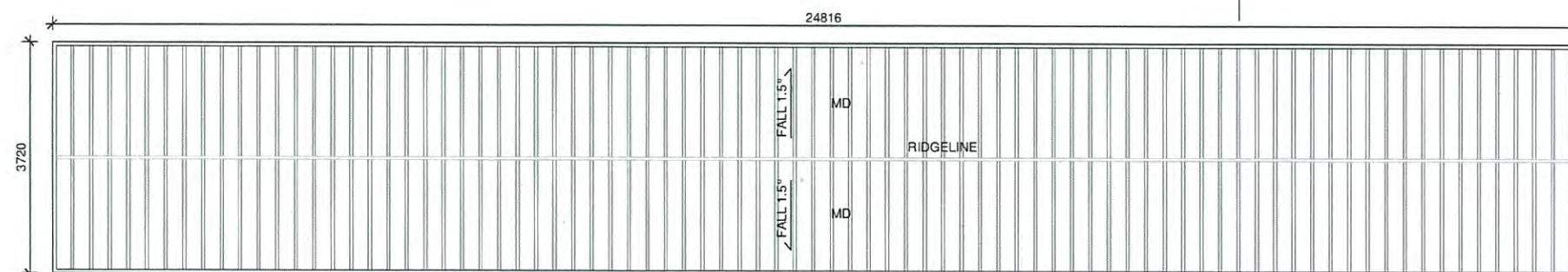
LEGEND	
AS3	SHEET ALUMINIUM SOFFIT
CF1	FLOOR FINISH TYPE 1
CF2	FLOOR FINISH TYPE 2
CF3	FLOOR FINISH TYPE 3
MD	ALUMINIUM METAL DECK ROOFING
SL3	EXTERIOR RATED STRIP LIGHTING, SHROUD 3
SM	STAINLESS STEEL MESH SCREEN



01 26M GANGWAY FLOOR PLAN
1:50 @ A1



02 26M GANGWAY RCP
1:50 @ A1



03 26M GANGWAY ROOF PLAN
1:50 @ A1

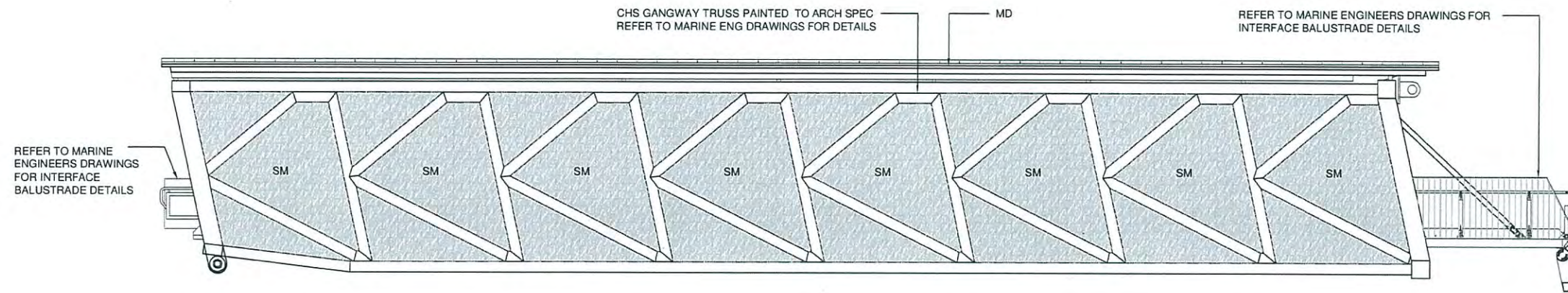
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

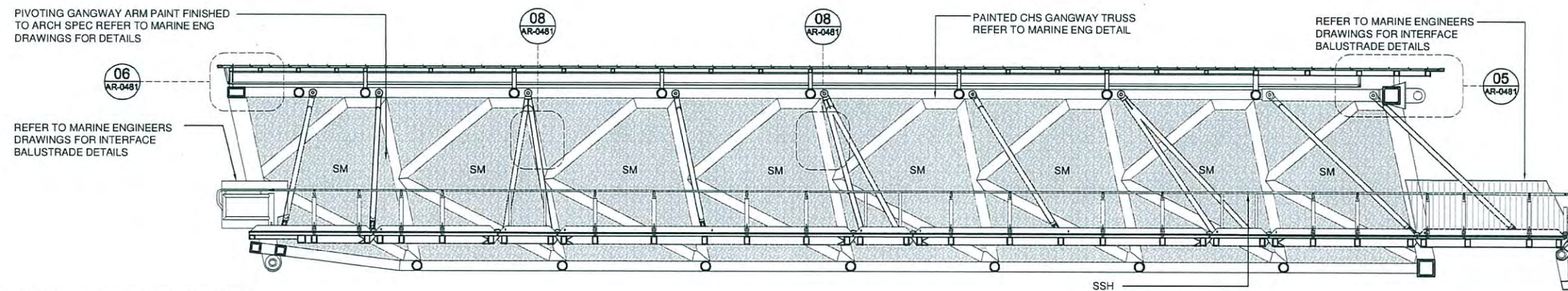
MEDQ

NOTE:
FALL ARREST ROOF
SAFETY SYSTEM TO BE
INSTALLED & CERTIFIED
BY CONTRACTOR.
SYSTEM SUBJECT TO
ARCHITECTS APPROVAL

LEGEND	
AS3	SHEET ALUMINUM SOFFIT
CF1	FLOOR FINISH TYPE 1
CF2	FLOOR FINISH TYPE 2
CF3	FLOOR FINISH TYPE 3
MD	ALUMINIUM METAL DECK ROOFING
SL3	EXTERIOR RATED STRIP LIGHTING, S-R0003
SM	STAINLESS STEEL MESH SCREEN



01 26M GANGWAY ELEVATION - TYPICAL
1:50 @ A1



02 26M GANGWAY SECTION A
1:50 @ A1

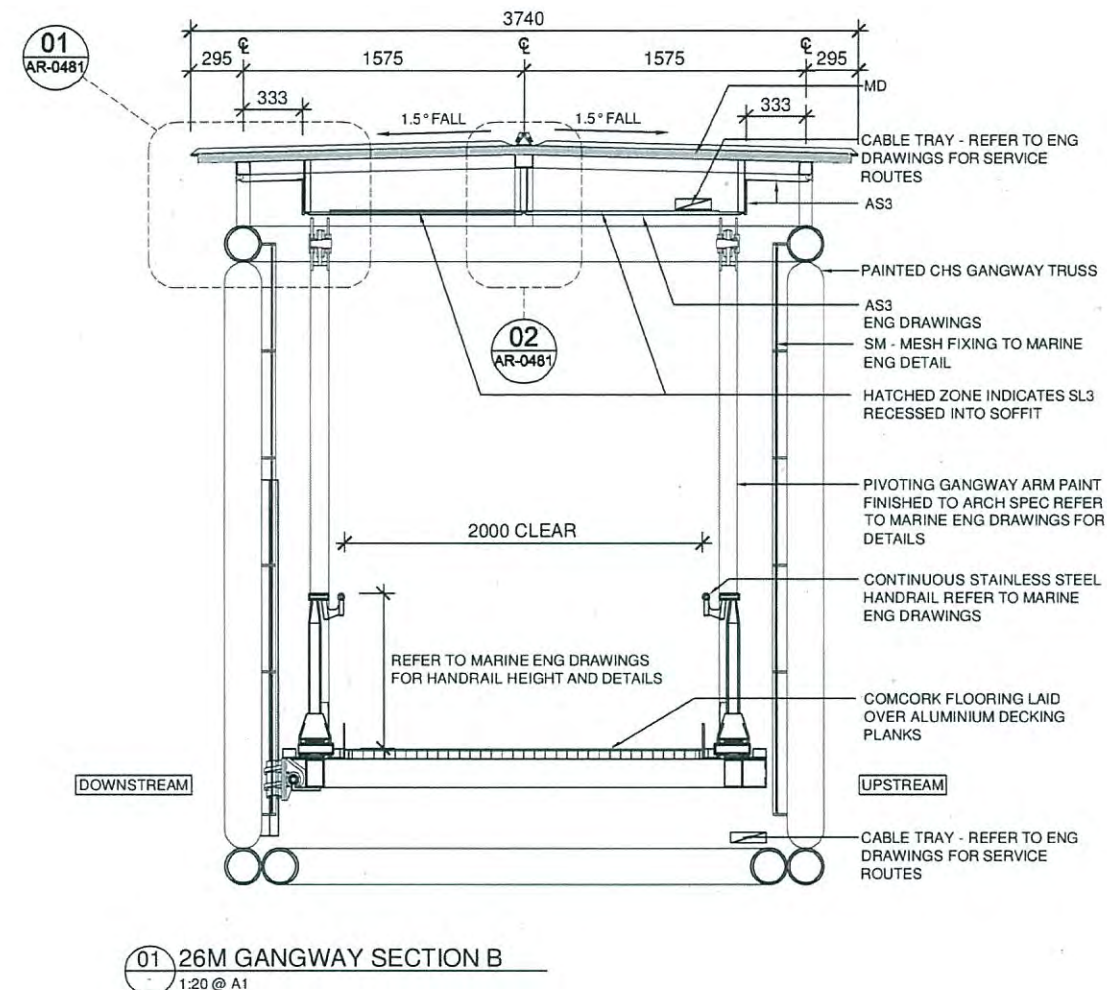
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

NOTE:
FALL ARREST ROOF
SAFETY SYSTEM TO BE
INSTALLED & CERTIFIED
BY CONTRACTOR.
SYSTEM SUBJECT TO
ARCHITECTS APPROVAL

LEGEND	
AS3	SHEET ALUMINIUM SOFFIT
CF1	FLOOR FINISH TYPE 1
CF2	FLOOR FINISH TYPE 2
CF3	FLOOR FINISH TYPE 3
MD	ALUMINIUM METAL DECK ROOFING
SL3	EXTERIOR RATED STRIP LIGHTING, SHROUD 3
SM	STAINLESS STEEL MESH SCREEN

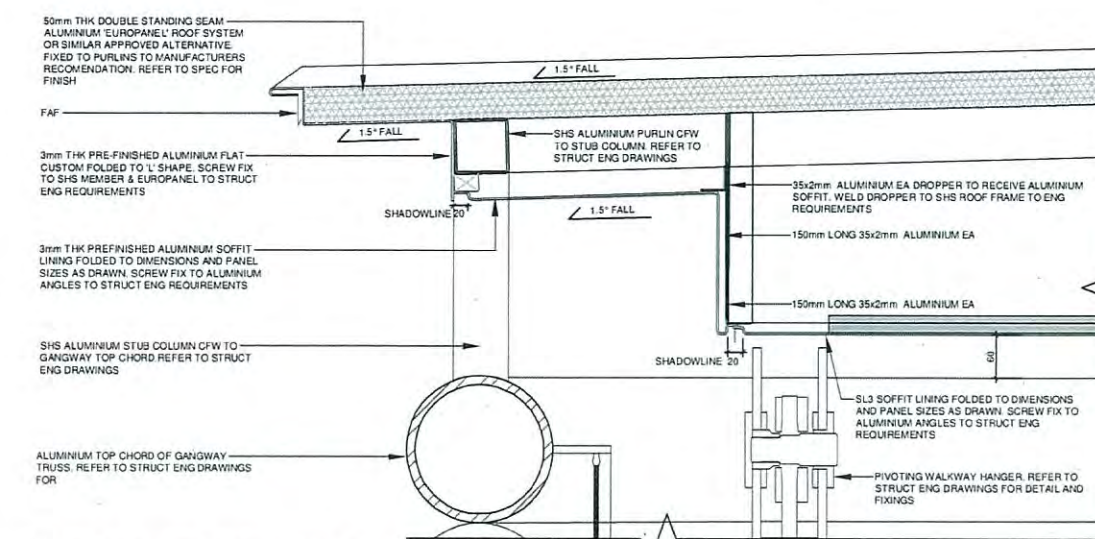


01 26M GANGWAY SECTION B
1:20 @ A1

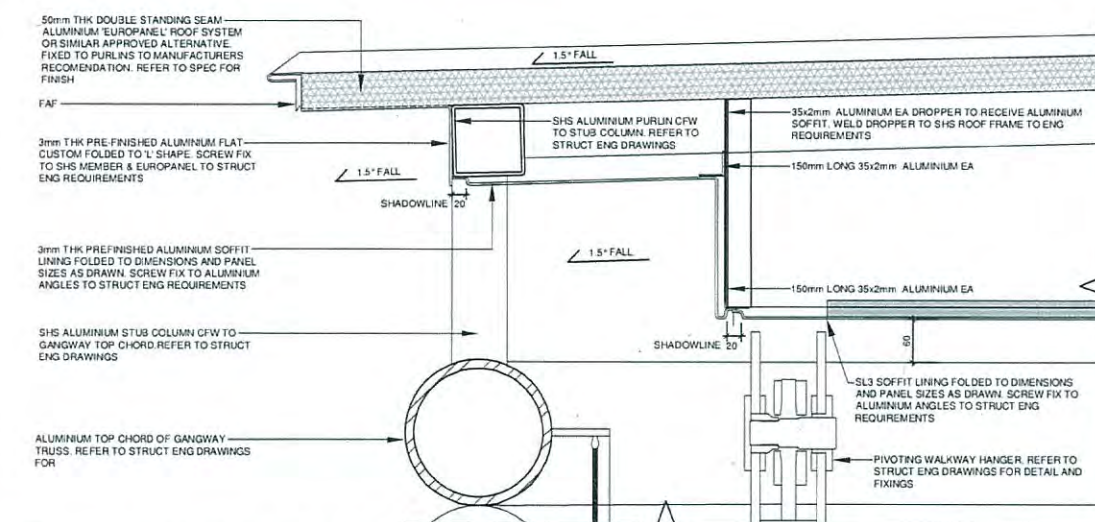
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

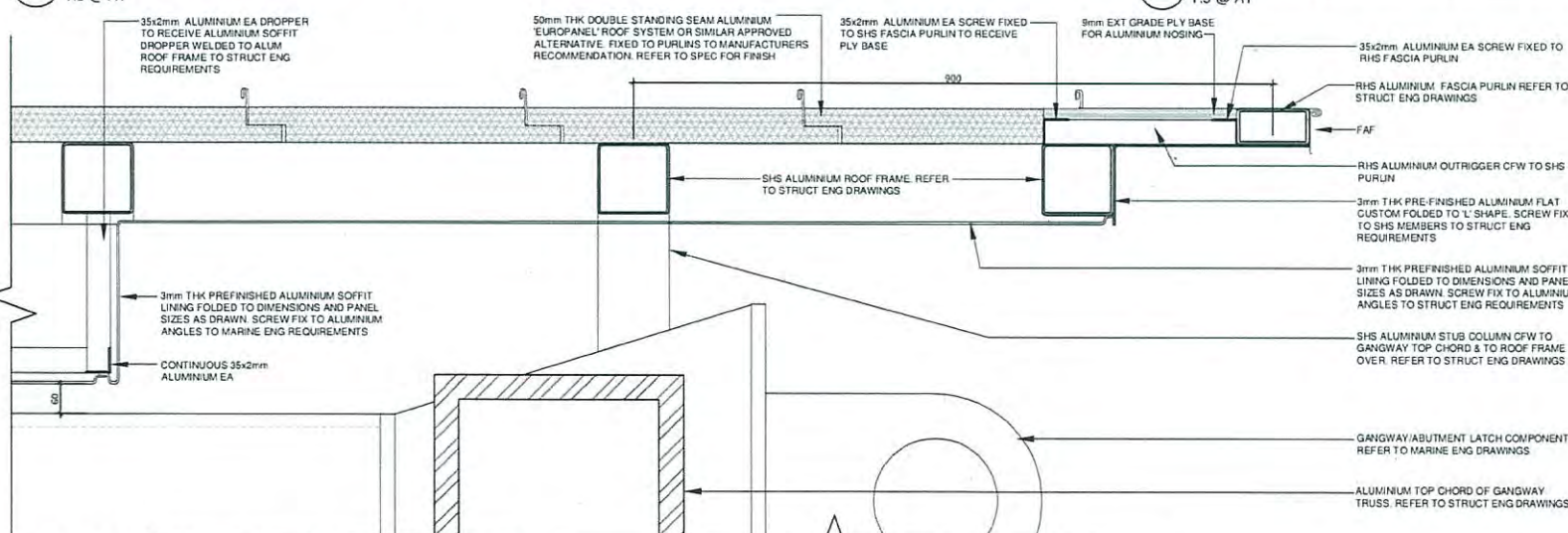
MEDQ



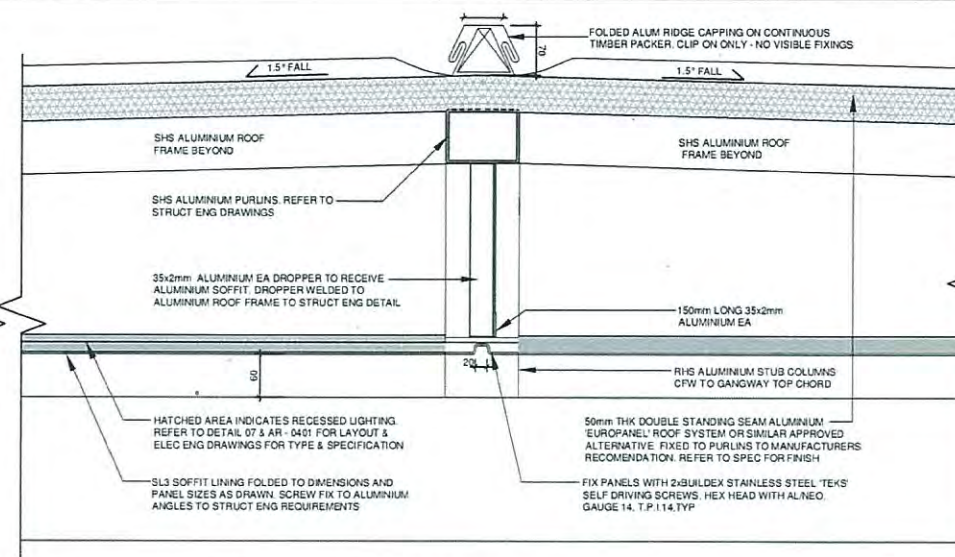
01 DETAIL SECTION - EAVE - TYPICALLY
1:5 @ A1



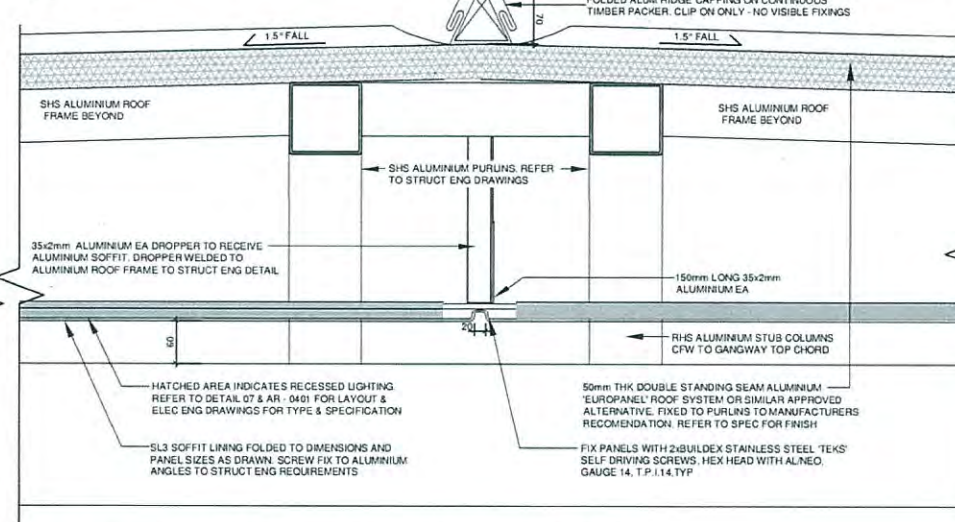
03 DETAIL SECTION - EAVE - ABUTMENT END BAY
1:5 @ A1



05 DETAIL SECTION - EAVE - ABUTMENT SIDE
1:5 @ A1



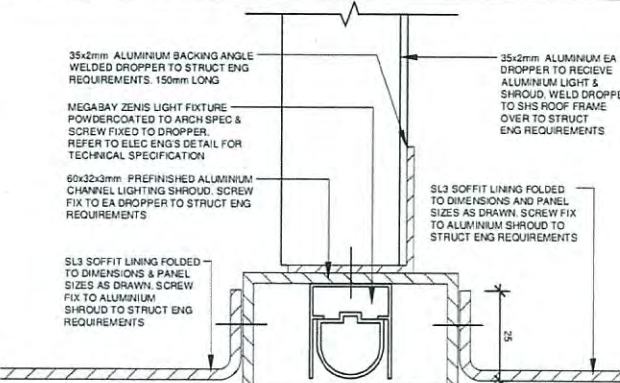
02 DETAIL SECTION - RIDGE - TYPICALLY
1:5 @ A1



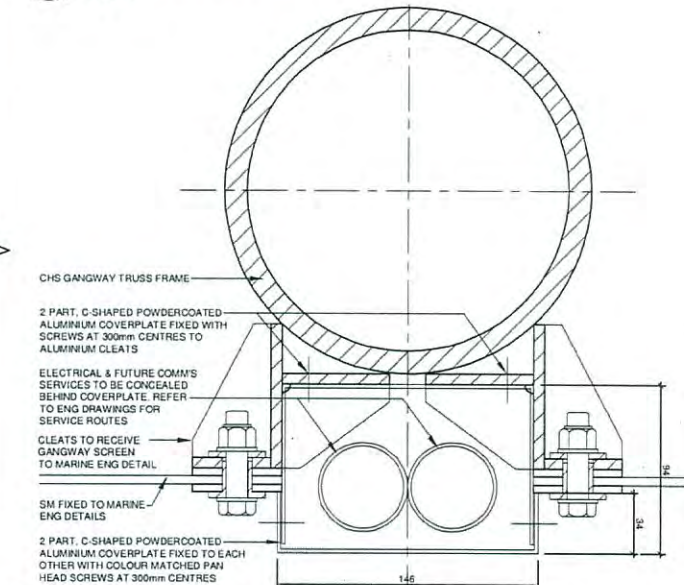
04 DETAIL SECTION - RIDGE - ABUTMENT END BAY
1:5 @ A1

NOTE:
FALL ARREST ROOF SAFETY SYSTEM TO BE INSTALLED & CERTIFIED BY CONTRACTOR. SYSTEM SUBJECT TO ARCHITECTS APPROVAL

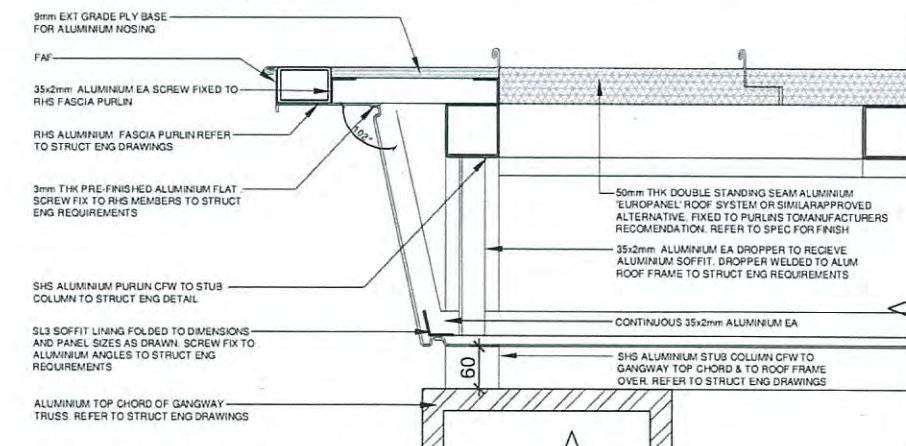
LEGEND	
AS3	SHEET ALUMINIUM SOFFIT
CF1	FLOOR FINISH TYPE 1
CF2	FLOOR FINISH TYPE 2
CF3	FLOOR FINISH TYPE 3
MD	ALUMINIUM METAL DECK ROOFING
SL3	EXTERIOR RATED STRIP LIGHTING, SHROUD 3
SM	STAINLESS STEEL MESH SCREEN



07 DETAIL SECTION - GANGWAY LIGHT
1:1 @ A1

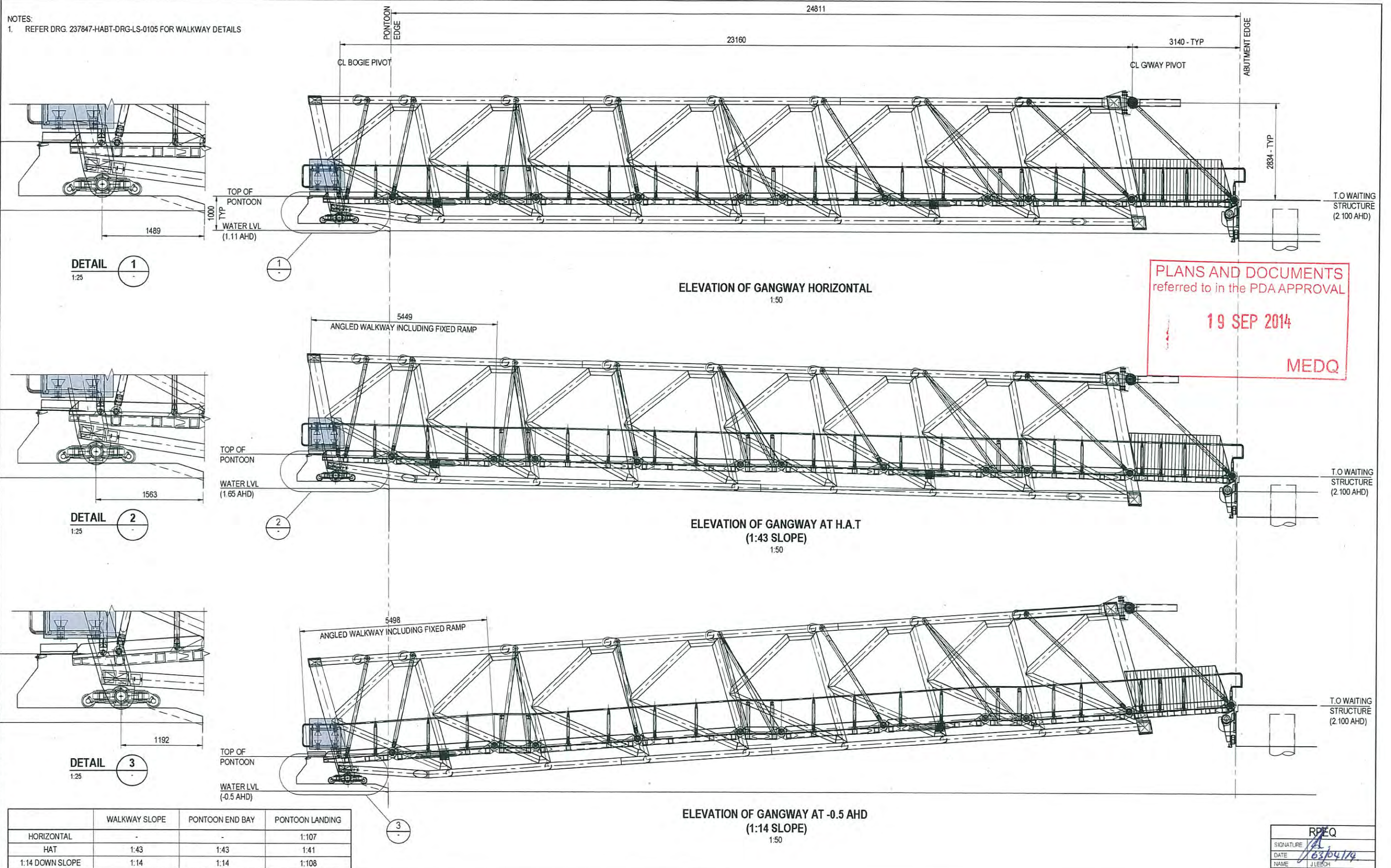


08 DETAIL SECTION - SERVICES COVERPLATE
1:2 @ A1



06 DETAIL SECTION - EAVE - PONTOON SIDE
1:5 @ A1

NOTES:
1. REFER DRG. 237847-HABT-DRG-LS-0105 FOR WALKWAY DETAILS



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REV	DATE	REVISION DETAILS
1	02.04.14	ISSUED FOR CONSTRUCTION

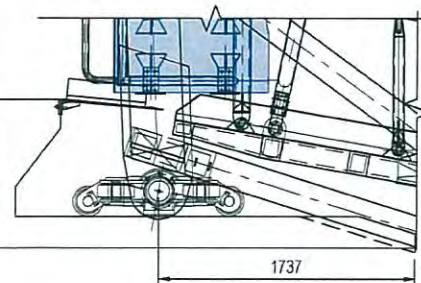
APPROVED
A.NILSEN

SCALE
AS SHOWN
SIZE
A1
DRAWN
L.CHACZKO
DESIGNED
D.HUNDSCHIEDT
VERIFIED
L.WILLIAMS

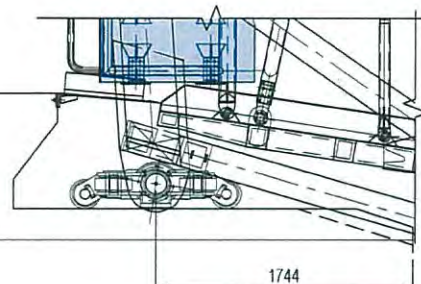
FOR CONSTRUCTION
APPROVED
PROJECT DIRECTOR
A.NILSEN
DATE
22.04.14

PROJECT	BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	HAWTHORNE AND BRETTS WHARF TERMINALS GANGWAY OPERATIONAL LIMITS GENERAL ARRANGEMENT SHEET 1
DRAWING No.	237847
PROJECT No.	237847
WGS	HABT
TYPE	DRG
DISC	LS
NUMBER	0100
REV	1

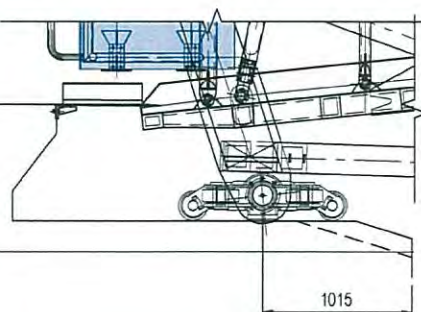
NOTES:
1. REFER DRG. 237847-HABT-DRG-LS-0105 FOR WALKWAY DETAILS



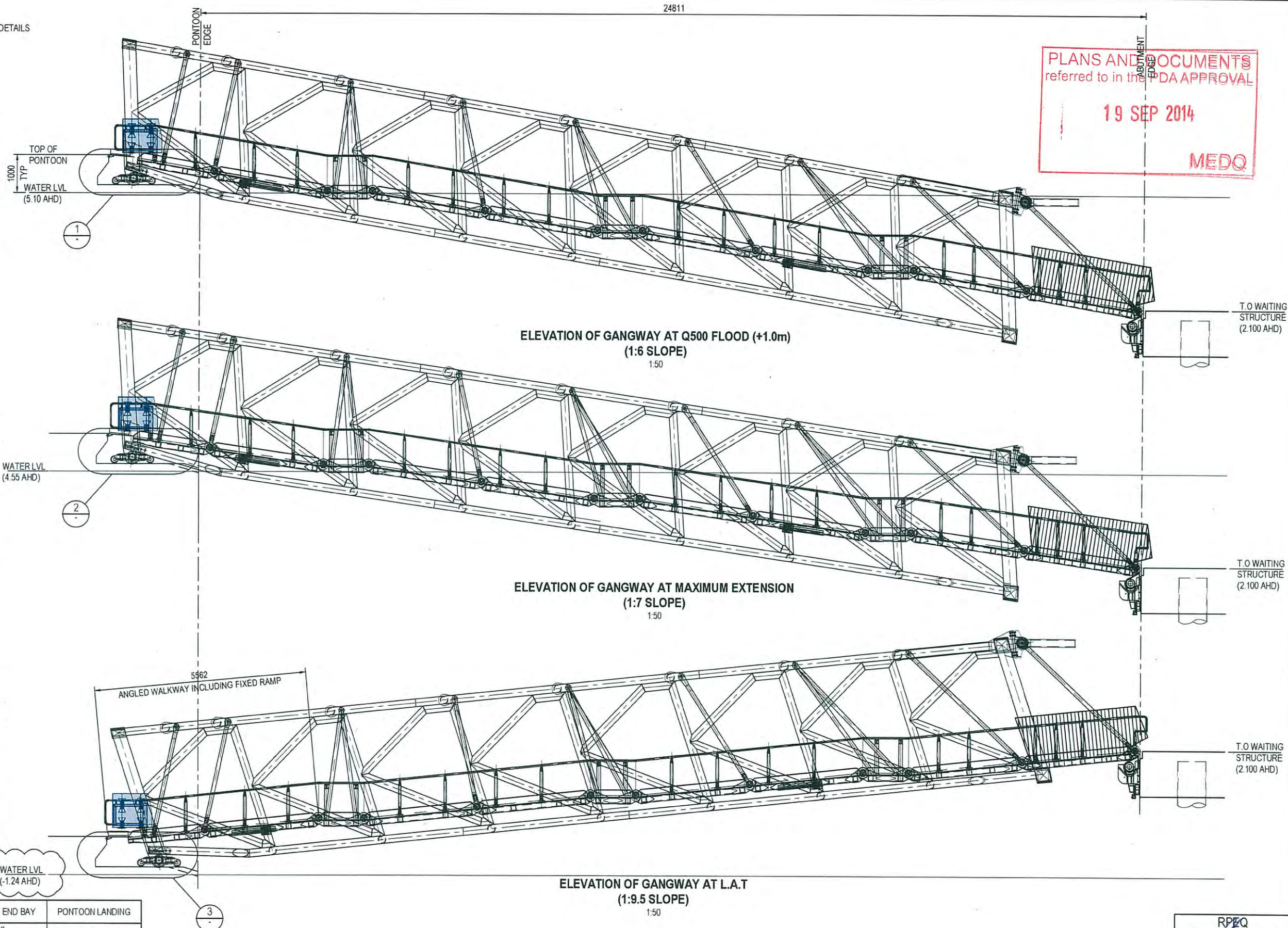
DETAIL 1
1:25



DETAIL 2
1:25



DETAIL 3
1:25



PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
19 SEP 2014
MEDQ

	WALKWAY SLOPE	PONTON END BAY	PONTON LANDING
Q500 FLOOD	1:6	1:6	-
MAX. EXTENSION	1:7	1:7	-
LAT	1:9.5	1:9.5	1:462

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REV DATE REVISION DETAILS

REV	DATE	REVISION DETAILS
2	10.04.14	LEVEL NOTE CORRECTED
1	02.04.14	ISSUED FOR CONSTRUCTION

APPROVED

A.NILSEN
A.NILSEN

SCALE

AS SHOWN
DRAWN
L.CHACZKO
DESIGNED
D.HUNDSCHIEDT
VERIFIED
L.WILLIAMS

SIZE

A1

FOR CONSTRUCTION

APPROVED	DATE
PROJECT DIRECTOR	02.04.14
A.NILSEN	
A.NILSEN	

PROJECT

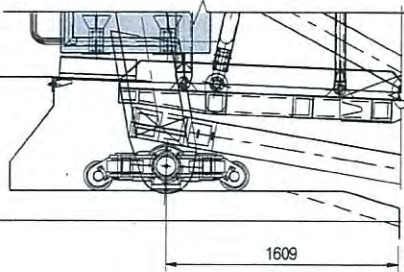
TITLE
DRAWING No.

BRETTS WHARF, BULIMBA AND HAWTHORNE
FERRY TERMINAL GANGWAYS - BRISBANE RIVER
HAWTHORNE AND BRETTS WHARF TERMINALS
GANGWAY OPERATIONAL LIMITS
GENERAL ARRANGEMENT SHEET 2

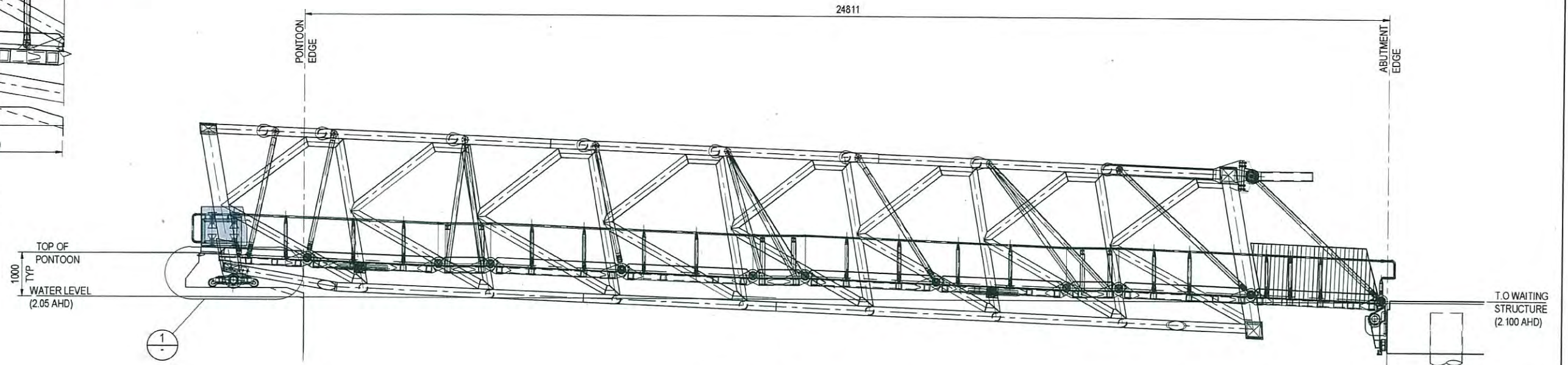
PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
237847	HABT	DRG	LS	0101	2

RPEQ
SIGNATURE: [Signature]
DATE: 13/05/14
NAME: J.LEECH
RPEQ No: 08626

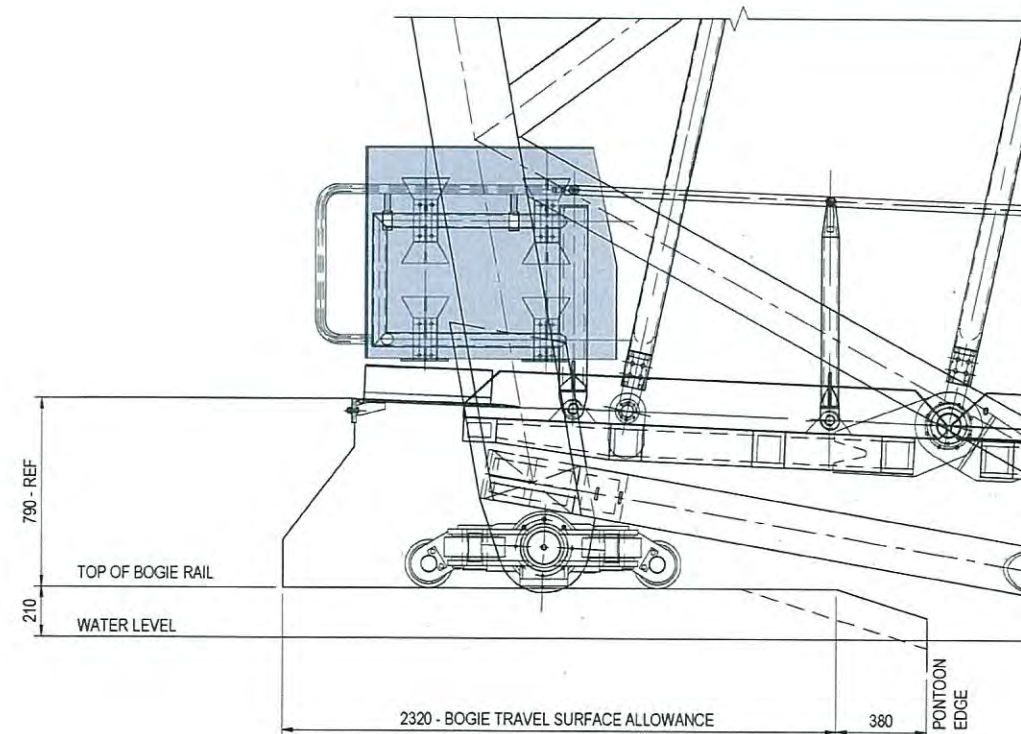
NOTES:
1. REFER DRG. 237847-HABT-DRG-LS-0105 FOR WALKWAY DETAILS



DETAIL 1
1:25



ELEVATION OF GANGWAY AT HAT +400
(1:25 SLOPE)
1:50



ELEVATION OF PONTOON PROFILE INTERFACE
1:15

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

	WALKWAY SLOPE	PONTOON END BAY	PONTOON LANDING
HAT +400	1:25	1:25	1:27

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REV	DATE	REVISION DETAILS
1	02.04.14	ISSUED FOR CONSTRUCTION

APPROVED
A. NILSEN

SCALE
AS SHOWN
SIZE
A1
DRAWN
L. CHACZKO
DESIGNED
D. HUNDSCHIEDT
VERIFIED
L. WILLIAMS

FOR CONSTRUCTION
APPROVED
PROJECT DIRECTOR
A. NILSEN
DATE
02.04.14

PROJECT	BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	HAWTHORNE AND BRETTS WHARF TERMINALS GANGWAY OPERATIONAL LIMITS GENERAL ARRANGEMENT SHEET 3
DRAWING No.	237847
PROJECT No.	237847
WBS	HABT
TYPE	DRG
DISC	LS
NUMBER	0102
REV	1

RPEQ
SIGNATURE J. LEECH
DATE 02/04/14
NAME J. LEECH
RPEQ No. 0000

BRETT'S WHARF TERMINAL GEOMETRY SHOWN ON ALL DRAWINGS
HAWTHORNE TERMINAL TO BE OPPOSITE HAND AS NOTED

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

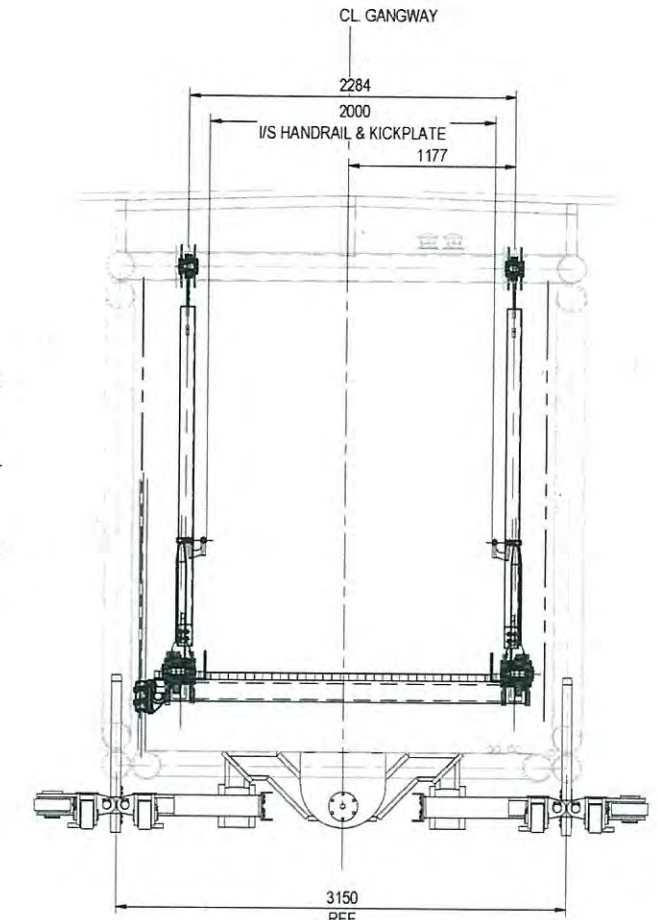
MEDQ

END FLAP CONNECTION TO
PONTOON REFER TO
237847-HABT-DRG-LS-0121
FOR DETAILS

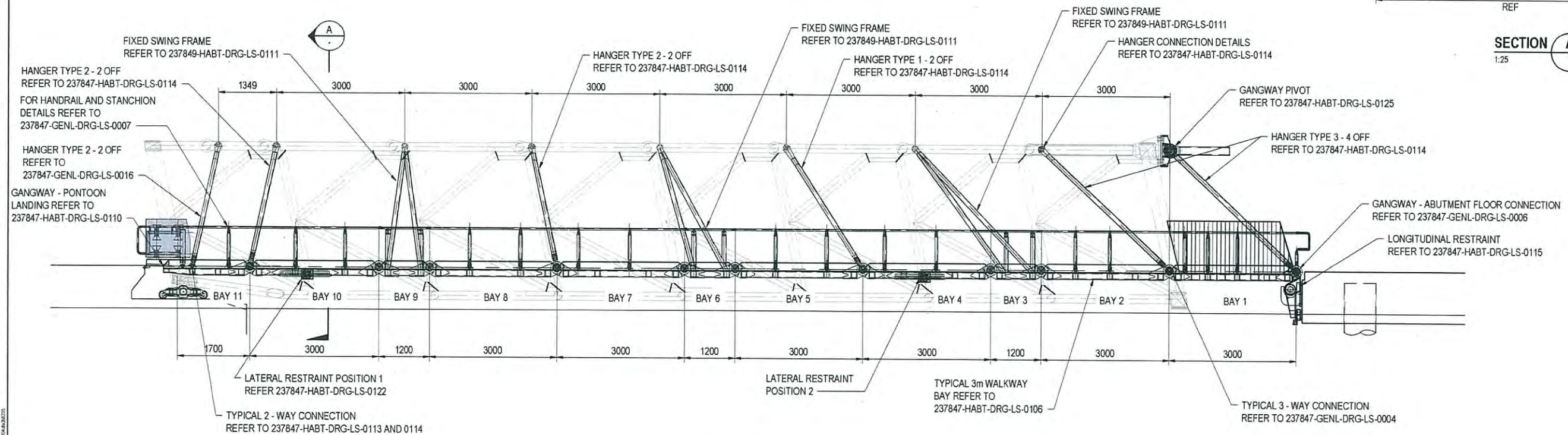
UPSTREAM BOGIE
REFER TO 237847-HABT-DRG-LS-0116 FOR DETAILS

DOWNSTREAM BOGIE
REFER TO 237847-HABT-DRG-LS-0116 FOR DETAILS

PLAN
1:50



SECTION A
1:25



26M GANGWAY ELEVATION
1:50

- NOTES:
1. REFER TO DRG 237847-HABT-DRG-LS-0107 FOR TYPICAL GRATING DETAILS
 2. REFER TO 237847-GENL-DRG-LS SERIES OF DRAWINGS FOR STANDARD DETAILS

RREQ
SIGNATURE
DATE 10/09/14
NAME J LEECH
RREQ No 08626

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REV DATE REVISION DETAILS

1	02.04.14	ISSUED FOR CONSTRUCTION
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APPROVED

A. NILSEN

SCALE

AS SHOWN

SIZE

A1

FOR CONSTRUCTION

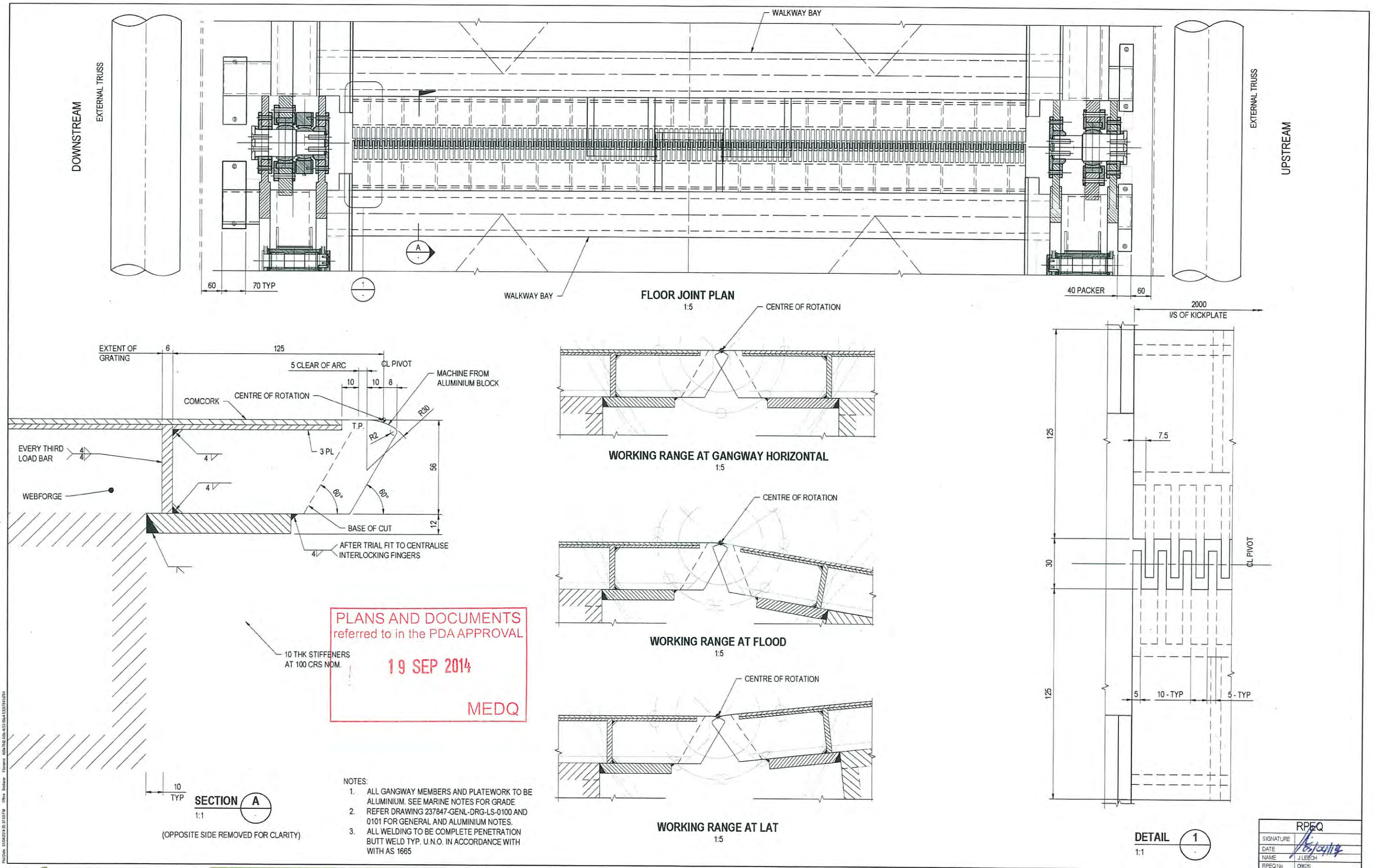
APPROVED	DATE 02.04.14
PROJECT DIRECTOR	
A. NILSEN	

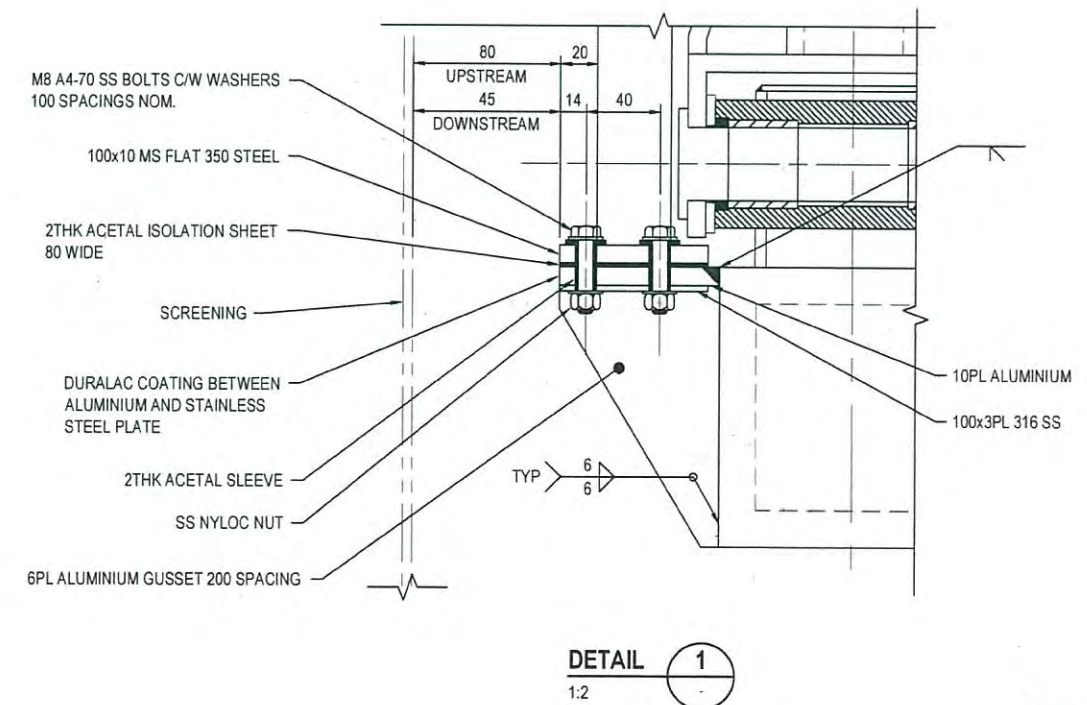
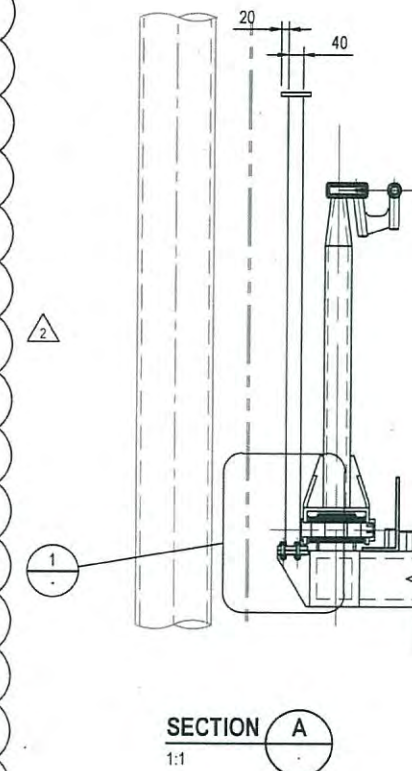
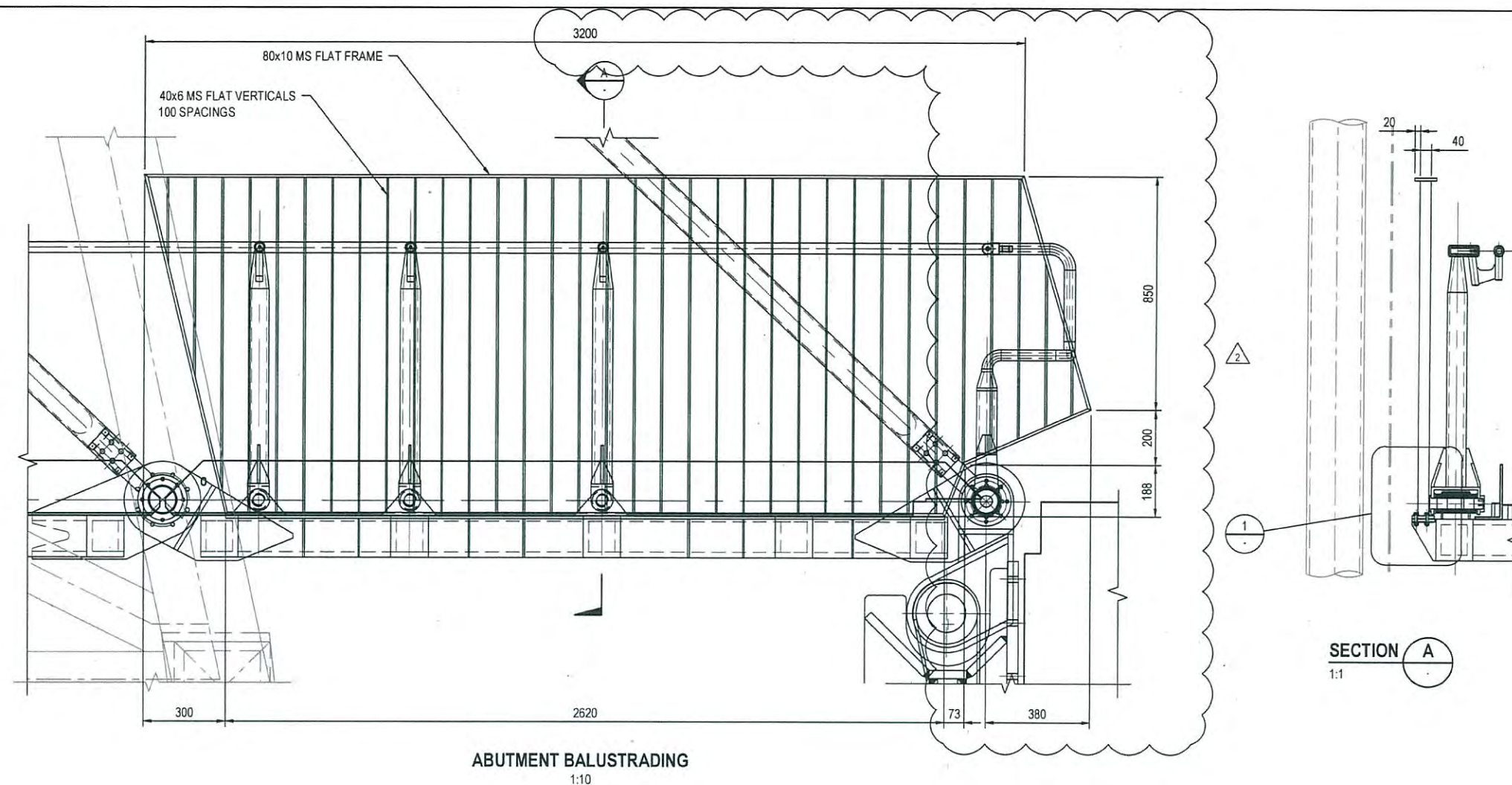
PROJECT

TITLE

BRETT'S WHARF, BULIMBA AND HAWTHORNE
FERRY TERMINAL GANGWAYS - BRISBANE RIVER
HAWTHORNE AND BRETT'S WHARF TERMINALS
26M DISABLED ACCESS
GENERAL ARRANGEMENT

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
237847	-	HABT	-	DRG	-	LS - 0105 - 1





PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

NOTES:

1. ALL GANGWAY MEMBERS AND PLATEWORK TO BE ALUMINIUM. U.N.O. SEE MARINE NOTES FOR GRADE
2. REFER DRAWING 237847-GENL-DRG-LS-0100 AND 0101 FOR GENERAL AND ALUMINIUM NOTES.

REV	DATE	REVISION DETAILS
2	06.05.14	BALUSTRADE DETAILS REVISED
1	02.04.14	ISSUED FOR CONSTRUCTION

APPROVED
A.NILSEN
A.NILSEN

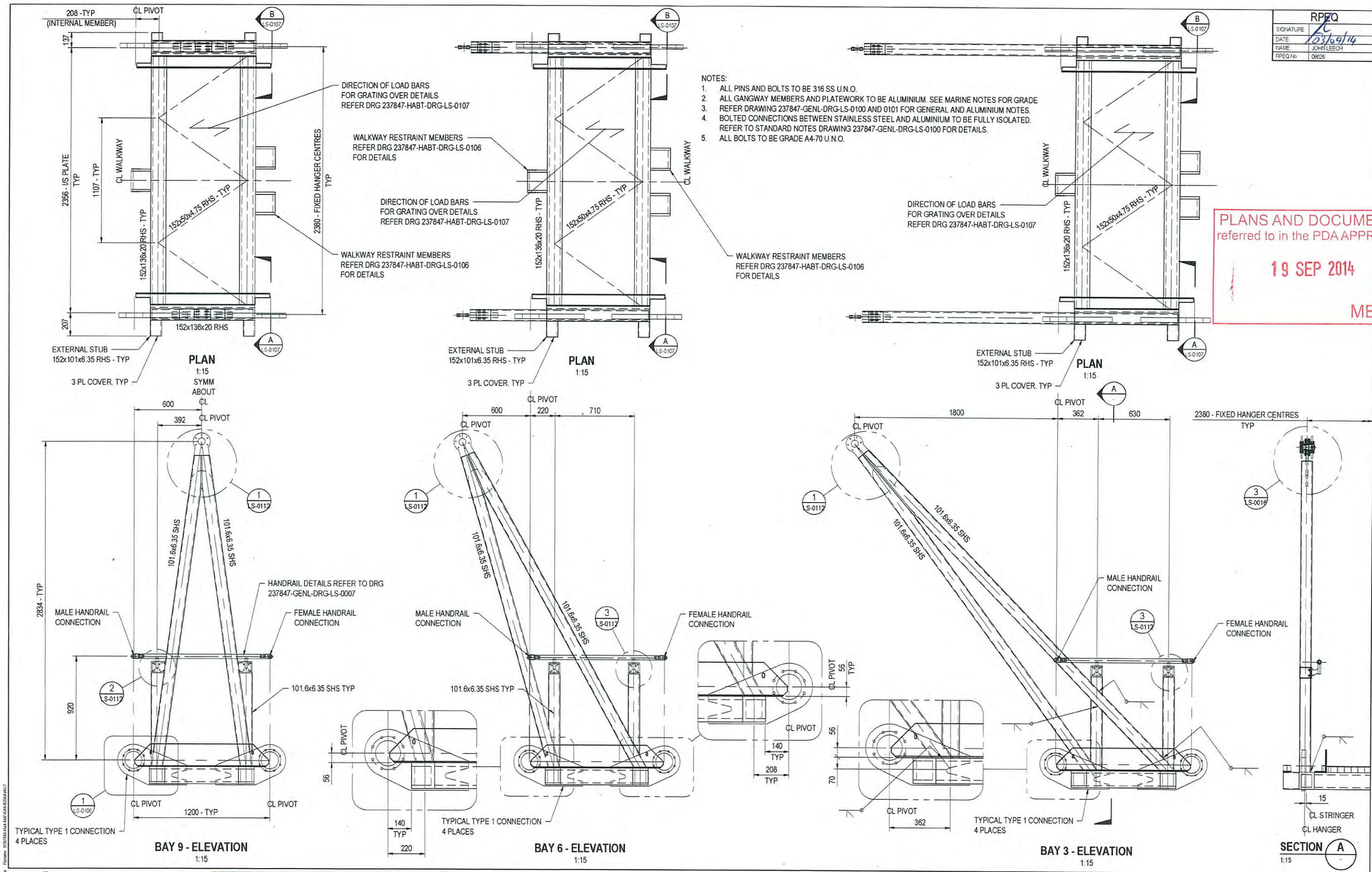
SCALE	SIZE
AS SHOWN	A1
DRAWN	
N.BIRCH	
DESIGNED	
D.HUNDSCHIEDT	
VERIFIED	
L.WILLIAMS	

FOR CONSTRUCTION
APPROVED
PROJECT DIRECTOR
DATE
02.04.14
A.NILSEN

PROJECT
TITLE
DRAWING No.

BRETT'S WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
HAWTHORNE AND BRETT'S WHARF TERMINALS 26M DISABLED ACCESS WALKWAY AND ABUTMENT BALUSTADING DETAILS
PROJECT No. 237847
WBS HABT
TYPE DRG
DISC LS
NUMBER 0109
REV 2

RPEQ
SIGNATURE
DATE
NAME J. LEECH
RPEQ No. 08926



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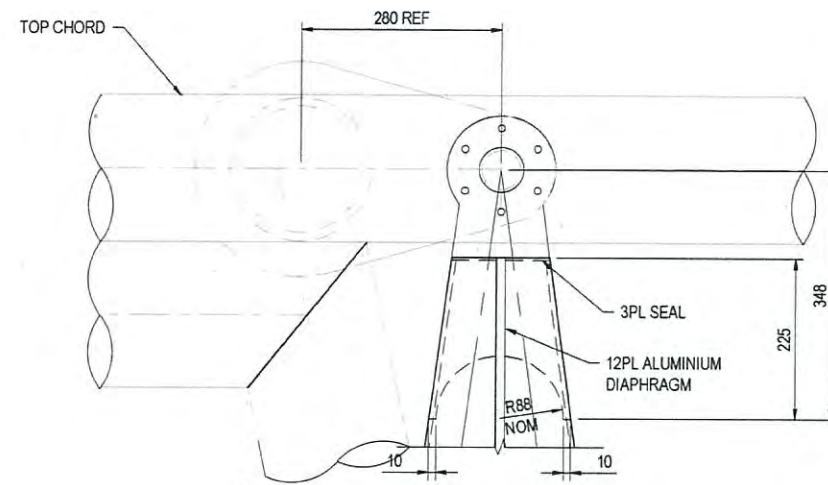
REV	DATE	REVISION DETAILS
1	02.04.14	ISSUED FOR CONSTRUCTION

APPROVED
ANILSEN

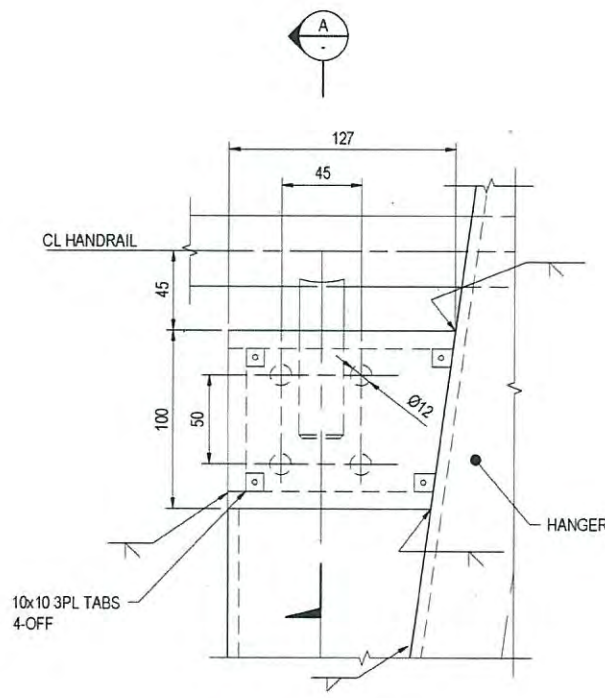
SCALE	SIZE
AS SHOWN	A1
DRAWN	L.CHACZKO
DESIGNED	D.HUNDSCHIEDT
VERIFIED	L.WILLIAMS

FOR CONSTRUCTION
APPROVED
PROJECT DIRECTOR
ANILSEN
DATE
02.04.14

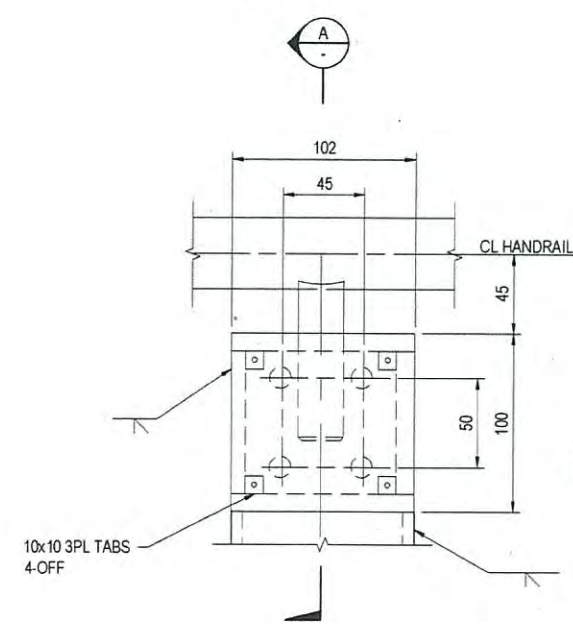
PROJECT	BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
TITLE	HAWTHORNE AND BRETTS WHARF TERMINALS 26M DISABLED ACCESS FIXED SWING FRAME DETAILS SHEET 1 OF 2
DRAWING No.	237847 - HABT - DRG - LS - 0111
PROJECT No.	
WBS	
TYPE	
DRG	
NUMBER	
REV	



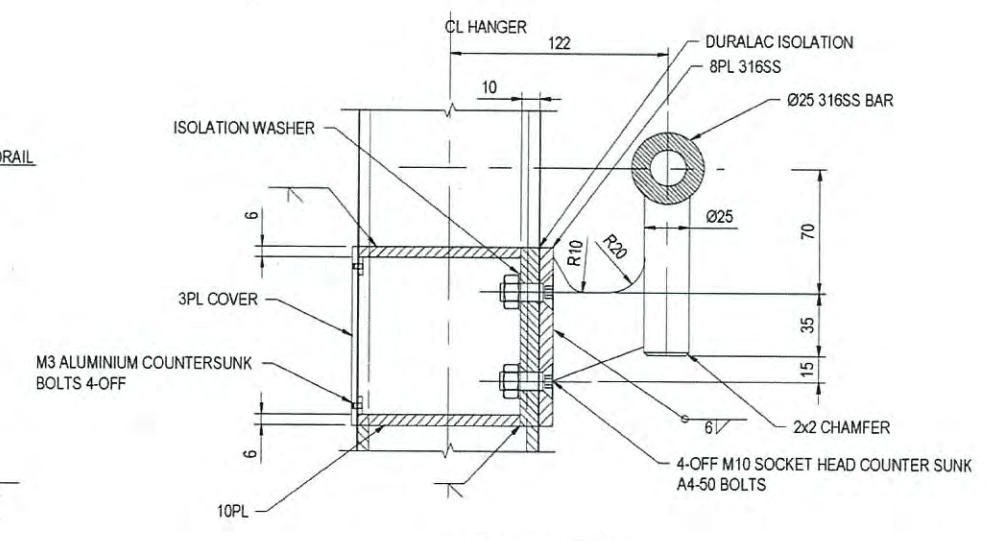
DETAIL 1
1:5
LS-0111



DETAIL 2
1:2
LS-0111



DETAIL 3
1:2
LS-0111



SECTION A
1:2

- NOTE:
1. ALL PINS AND BOLTS TO BE 316 SS U.N.O.
 2. ALL GANGWAY MEMBERS AND PLATEWORK TO BE ALUMINIUM. SEE MARINE NOTES FOR GRADE.
 3. REFER DRAWING 237847-GENL-DRG-LS-0100 AND 0101 FOR GENERAL AND ALUMINIUM NOTES.
 4. BOLTED CONNECTIONS BETWEEN STAINLESS STEEL AND ALUMINIUM TO BE FULLY ISOLATED. REFER TO STANDARD NOTES DRAWING 237847-GENL-DRG-LS-0100 FOR DETAILS.
 5. ALL BOLTS TO BE GRADE A4-70 U.N.O.

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ

RPEQ	
SIGNATURE	
DATE	02/09/14
NAME	JOHN LEECH
RPEQ No	09605

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REV	DATE	REVISION DETAILS	APPROVED
1	02.04.14	ISSUED FOR CONSTRUCTION	ANILSEN

SCALE	SIZE
AS SHOWN	A1
DRAWN	K.CHEONG
DESIGNED	D.HUNDSCHIEDT
VERIFIED	L.WILLIAMS
APPROVED	A.NILSEN

FOR CONSTRUCTION	PROJECT
APPROVED PROJECT DIRECTOR DATE 02.04.14	BRETTS WHARF, BULIMBA AND HAWTHORNE FERRY TERMINAL GANGWAYS - BRISBANE RIVER
	HAWTHORNE AND BRETTS WHARF TERMINALS 26M DISABLED ACCESS
	FIXED SWING FRAME DETAILS SHEET 2 OF 2
DRAWING No.	PROJECT No.
237847	237847
HABT	DRG
LS	0112
1	1

HANGER DETAILS
REFER DRG. 237847-HABT-DRG-LS-0114

TYPE 1 CONNECTION
REFER DRG. 237847-HABT-DRG-LS-0106

TYPE 2 CONNECTION
REFER DRG. 237847-HABT-DRG-LS-0106

TYPICAL 3 WAY CONNECTION

1:2

TYPE 2 CONNECTION

TYPE 1 CONNECTION

TYPICAL 2 WAY CONNECTION

1:2

CL FLOOR LUG

CL HANGER

NOTE:

1. ALL PINS AND BOLTS TO BE 316SS U.N.O.
2. ALL GANGWAY MEMBERS AND PLATEWORK TO BE ALUMINIUM. SEE MARINE NOTES FOR GRADE
3. REFER DRAWING 237847-GENL-DRG-LS-0100 AND 0101 FOR GENERAL AND ALUMINIUM NOTES.
4. BOLTED CONNECTIONS BETWEEN STAINLESS STEEL AND ALUMINIUM TO BE FULLY ISOLATED. REFER TO STANDARD NOTES DRAWING FOR DETAILS.
5. ALL BOLTS AND SCREWS TO BE GRADE A4-70 U.N.O.
6. ALL WELDING TO BE IN ACCORDANCE WITH AS 1665

SCHAEFFLER GE80UK-2RS BEARING

THREAD IN MATING BOSS
TYP U.N.O.

2mm OVERSIZE HOLE IN BOSS
TYP U.N.O.

8xM6 COUNTERSUNK SCREW

4x45° CHAMFER

2x45° CHAMFER

1x45° CHAMFER

6x45° CHAMFER

3x45° CHAMFER

SCHAEFFLER GE70UK-2RS BEARING

SECTION A

1:2

(FOR ALL OTHER DETAILS
REFER SECTION B)

ALUMINIUM PLATE

STAINLESS STEEL PLATE
GRADE 316L

10 NOM MACHINE THICKNESS ON ASSEMBLY
TO PRODUCE 0.000 TO 0.200 TOTAL AXIAL CLEARANCE

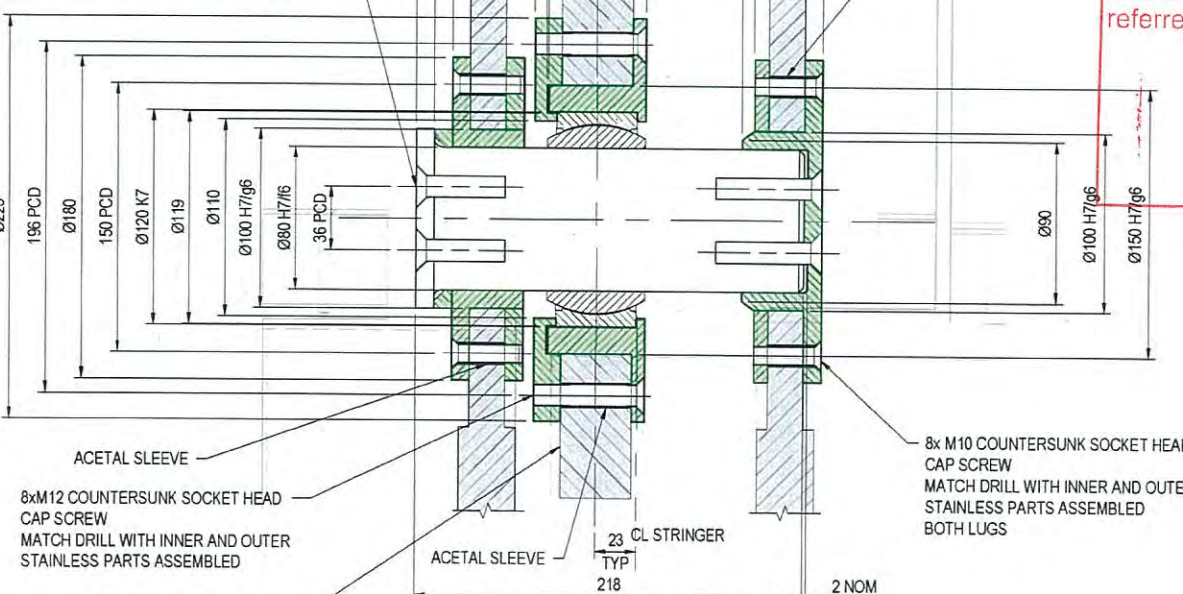
2x M12 COUNTERSUNK SCREW 30 LONG
BOTH SIDES. THREADED HOLES THIS SIDE
TO ASSIST ASSEMBLY/REMOVAL ONLY

ACETAL SLEEVE

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 SEP 2014

MEDQ



RREQ	
SIGNATURE	
DATE	19/09/14
NAME	J LEECH
RREQ No	09626

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REV DATE REVISION DETAILS

1 02.04.14 ISSUED FOR CONSTRUCTION

APPROVED

ANILSEN

SCALE

AS SHOWN

SIZE

A1

DRAWN

L.CHACZKO

DESIGNED

D.HUNDSCHIEDT

VERIFIED

L.WILLIAMS

FOR CONSTRUCTION

APPROVED

PROJECT DIRECTOR

DATE

02.04.14

ANILSEN

PROJECT

BRETTS WHARF, BULIMBA AND HAWTHORNE
FERRY TERMINAL GANGWAYS - BRISBANE RIVER

TITLE

HAWTHORNE AND BRETTS WHARF TERMINALS
26M DISABLED ACCESS
WALKWAY BAY CONNECTION DETAILS

DRAWING No.

237847

HABT

DRG

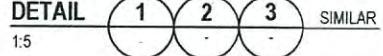
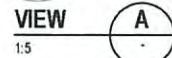
LS

0113

1



1.5



- PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
- 19 SEP 2014
- MEDQ

RPEQ	
SIGNATURE	
DATE	03/04/14
NAME	J LEECH
RPEQ No.	09626