Attachment 6

Bledisloe North Wharf



BLEDISLOE NORTH WHARF

Prepared for Port of Auckland Ltd Prepared by Beca Limited (Beca) At: Port of Auckland

Project No.: 3237885 18 SEPTEMBER 2024 CONCEPT DESIGN



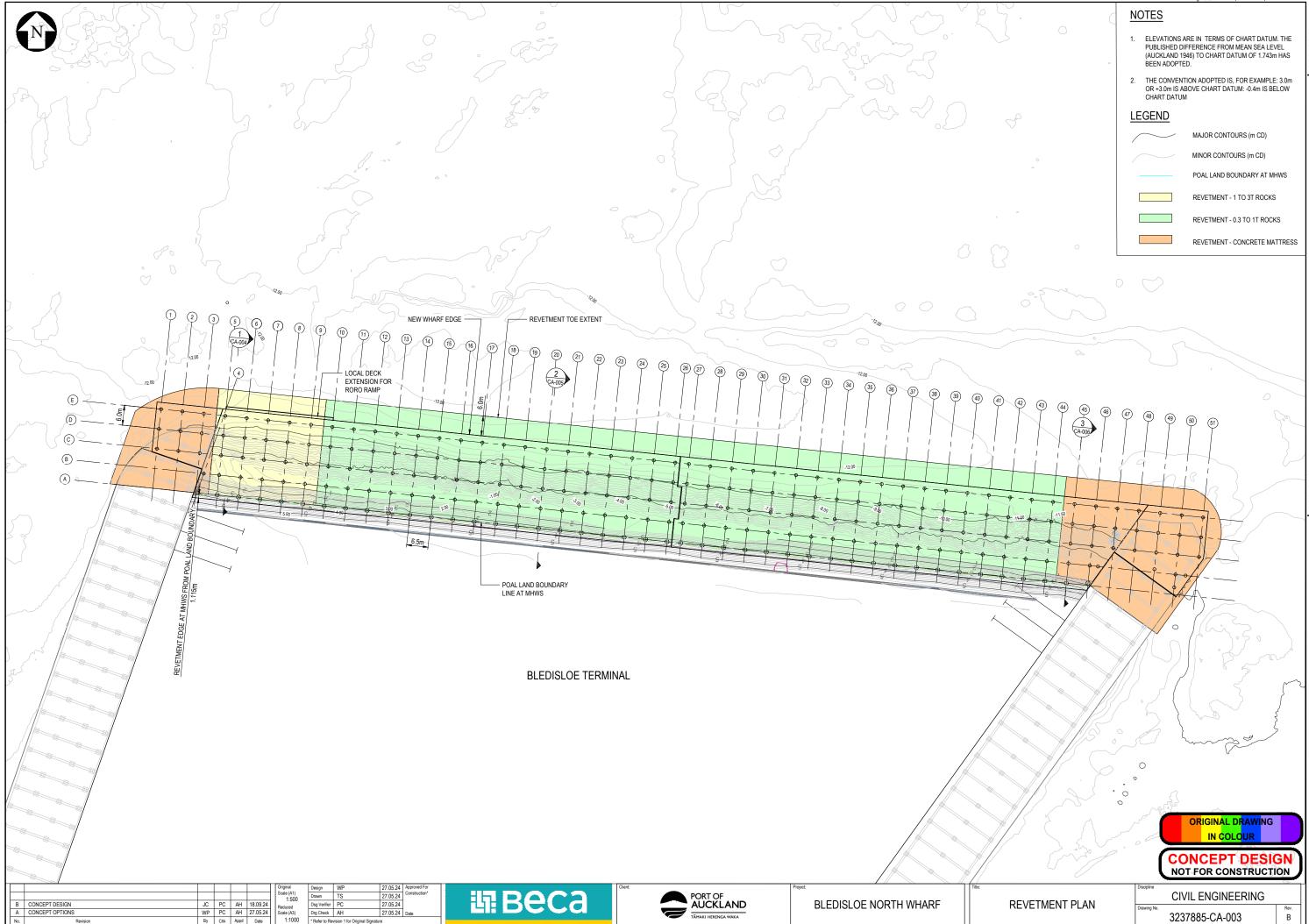
DRAWING LIST							
DRAWING No.	REV	DRAWING TITLE					
3237885-CA-000	В	COVER SHEET, LOCALITY PLAN AND DRAWING LIST					
3237885-CA-001	В	EXISTING SITE AND GEOTECHNICAL INVESTIGATION PLAN					
3237885-CA-002	В	PROPOSED WORKS LAYOUT PLAN					
3237885-CA-003	В	REVETMENT PLAN					
3237885-CA-004	В	REVETMENT SECTION - 1					
3237885-CA-005	В	REVETMENT SECTION - 2					
3237885-CA-006	В	REVETMENT SECTION - 3					
3237885-CA-007	С	STORMWATER AND SERVICES PLAN					
3237885-2200-SE-100	Α	DEMOLITION PLAN					
3237885-2200-SE-110	Α	GENERAL ARRANGMENT PLAN AND ELEVATION					
3237885-2200-SE-113	Α	PLAN - PILE SETOUT					
3237885-2200-SE-114	Α	PLAN - DECK UNITS					
3237885-2200-SE-121	Α	TYPICAL SECTION SHEET 1					
3237885-2200-SE-122	Α	TYPICAL SECTION SHEET 1					
3237885-2200-SE-123	Α	TYPICAL DETAILS					

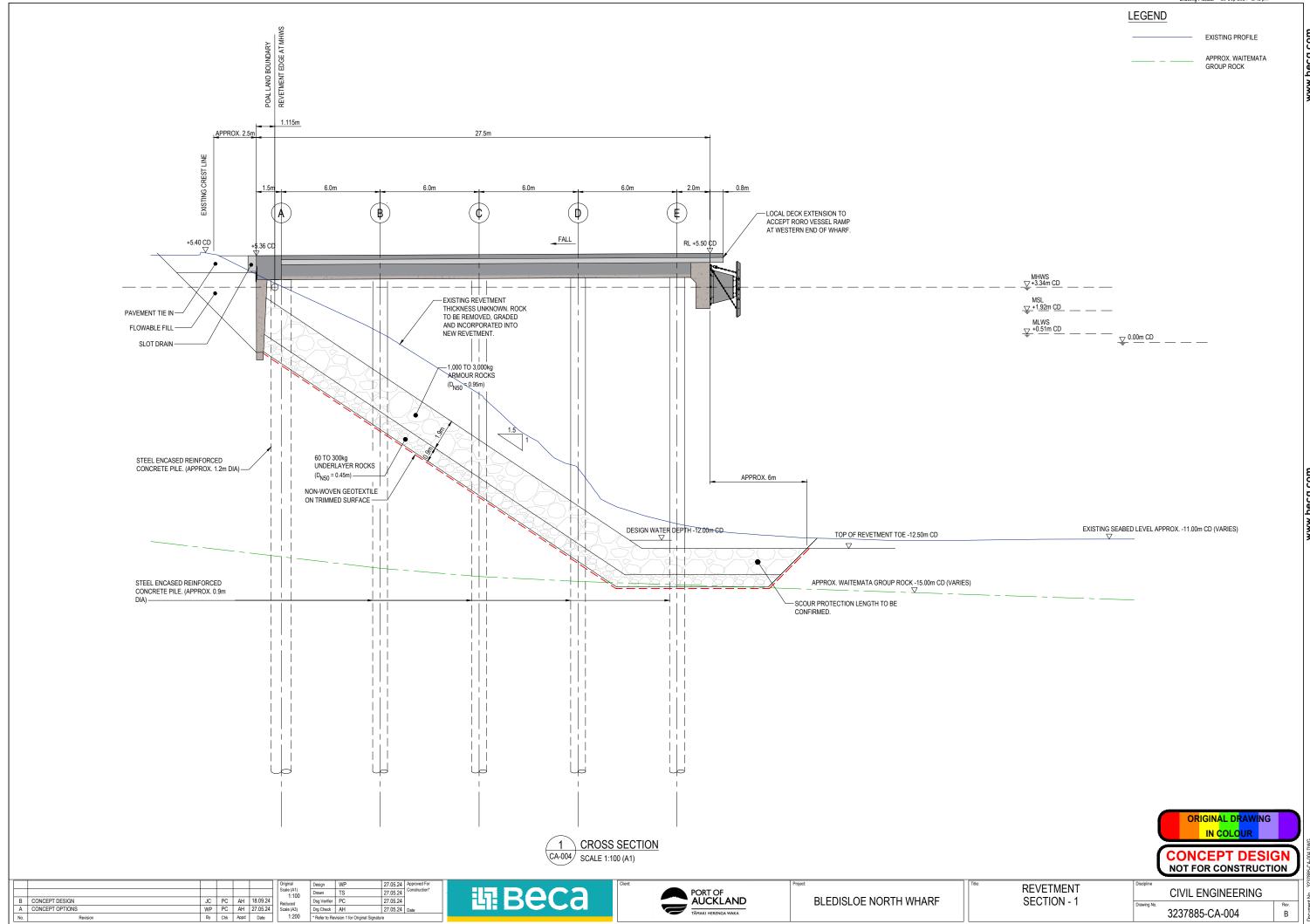


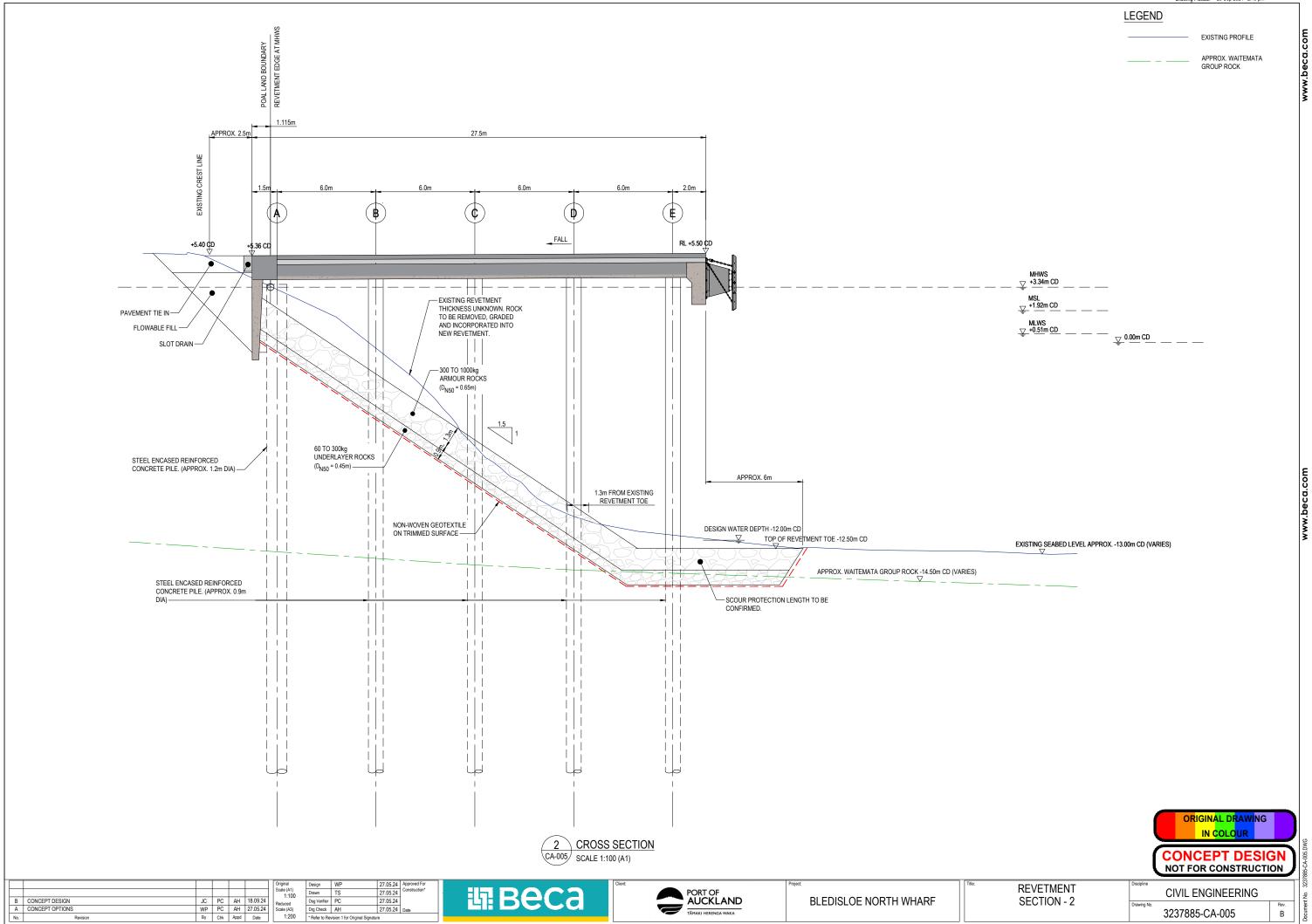


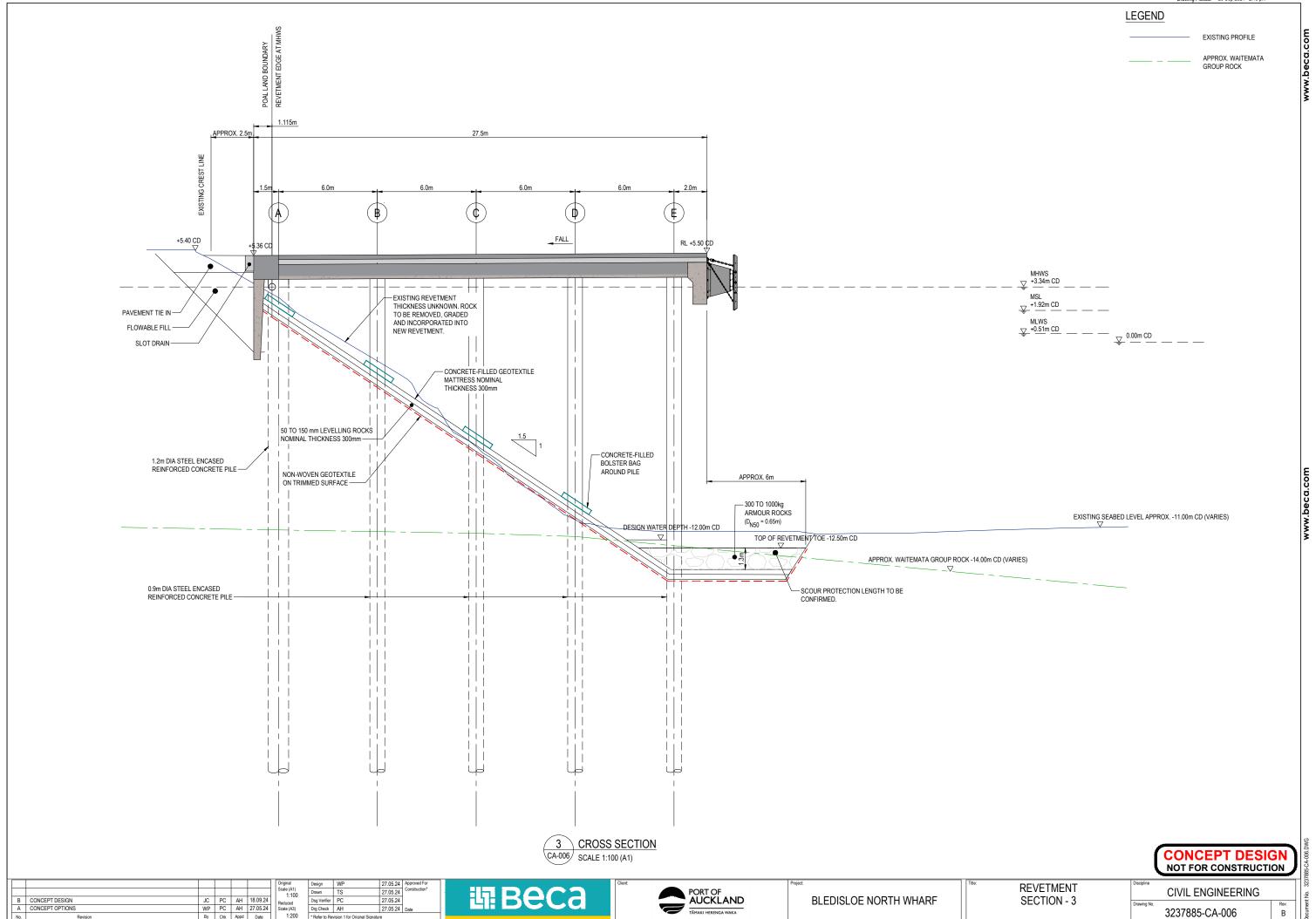


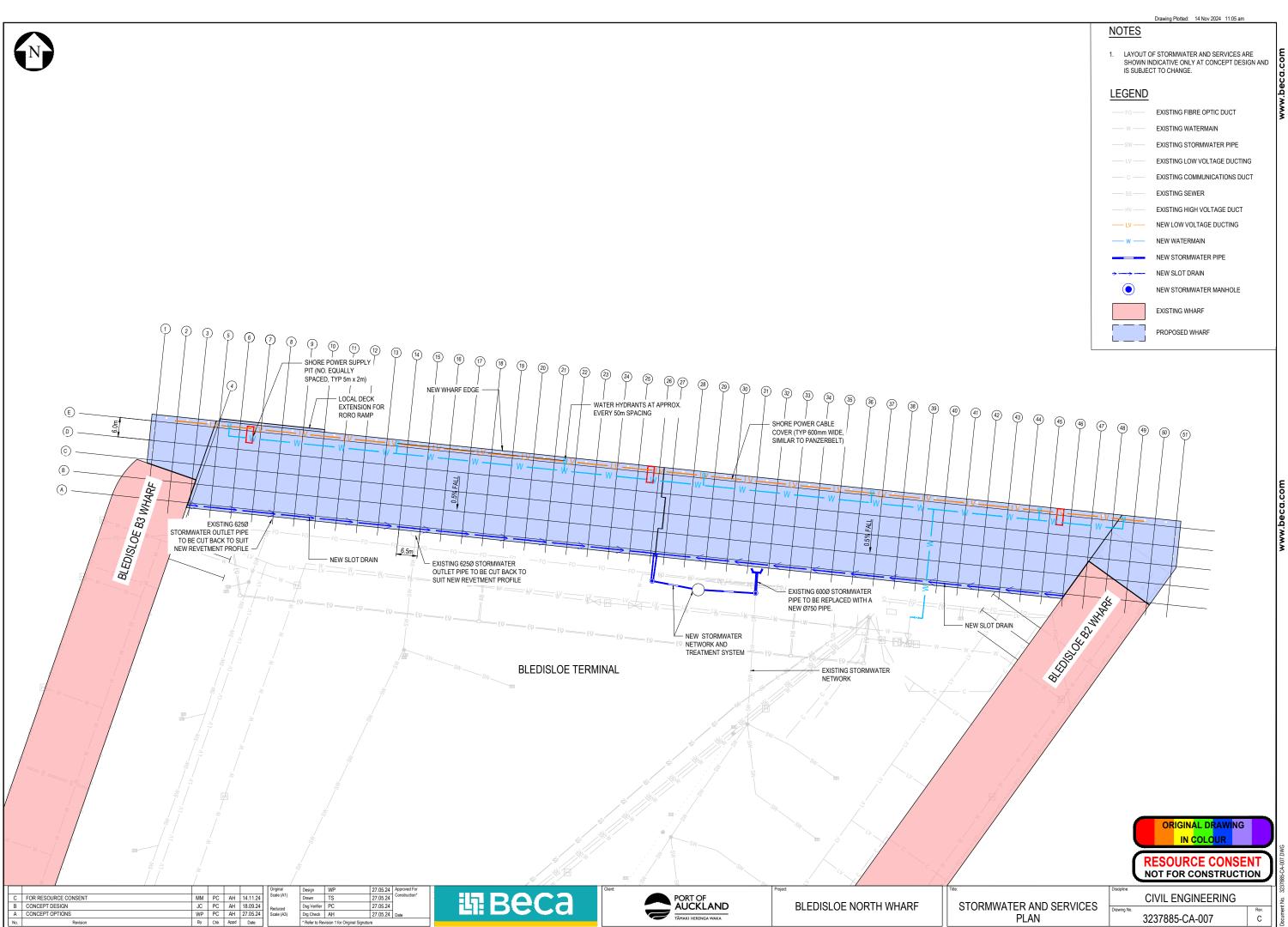












CONCEPT DESIGN NOT FOR CONSTRUCTION

1:500 VM MK AH 18.09.24 A CONCEPT DESIGN Scale (A3) Revision By Chk Appd Date

18.09.24 Drg Check M. KIRKPATRICK 18.09.24

Dsg Verifier D. VINCE



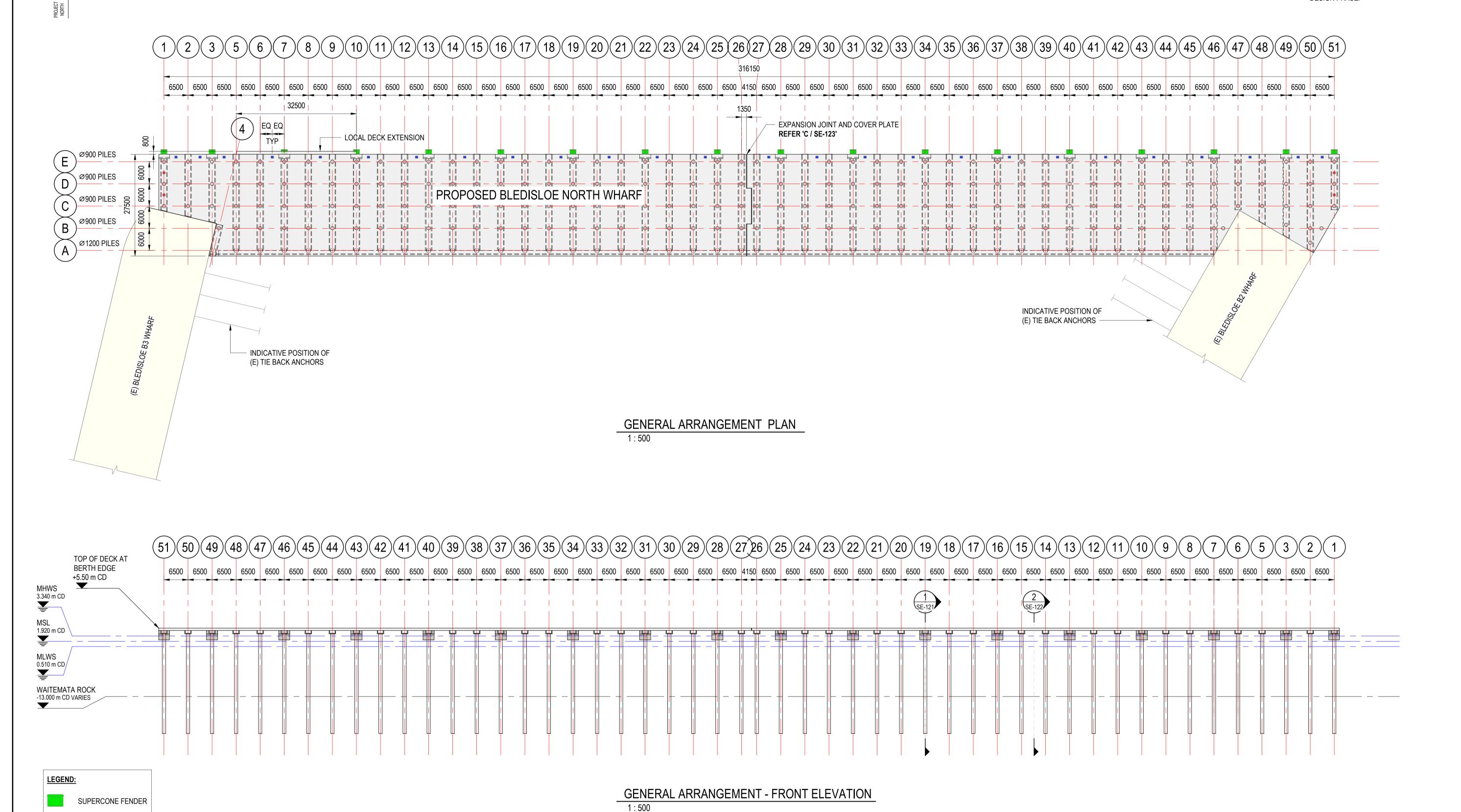


BLEDISLOE NORTH WHARF

DEMOLITION PLAN	
	Drawing No.
	1 000

STRUCTURAL 3237885-2200-SE-100

1.0 LAYOUT OF STORMWATER AND DRAINAGE. FUTURE SHORE POWER, ELECTRICAL PITS, HYDRANTS, WATERMAIN AND OTHER WHARF FURNITURE TO BE ASCERTAINED IN THE NEXT DESIGN PHASE.



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Α	CONCEPT DESIGN	VM	MK	AH	18.09.24	
No.	Revision	Ву	Chk	Appd	Date	

Design R. EVANS 18.09.24 18.09.24 V. MANDRIK As indicated Dsg Verifier D. VINCE 18.09.24 Drg Check M. KIRKPATRICK 18.09.24 Scale (A3)

Beca



BLEDISLOE NORTH WHARF

GENERAL ARRANGMENT PLAN AND ELEVATION

STRUCTURAL

3237885-2200-SE-110

CONCEPT DESIGN

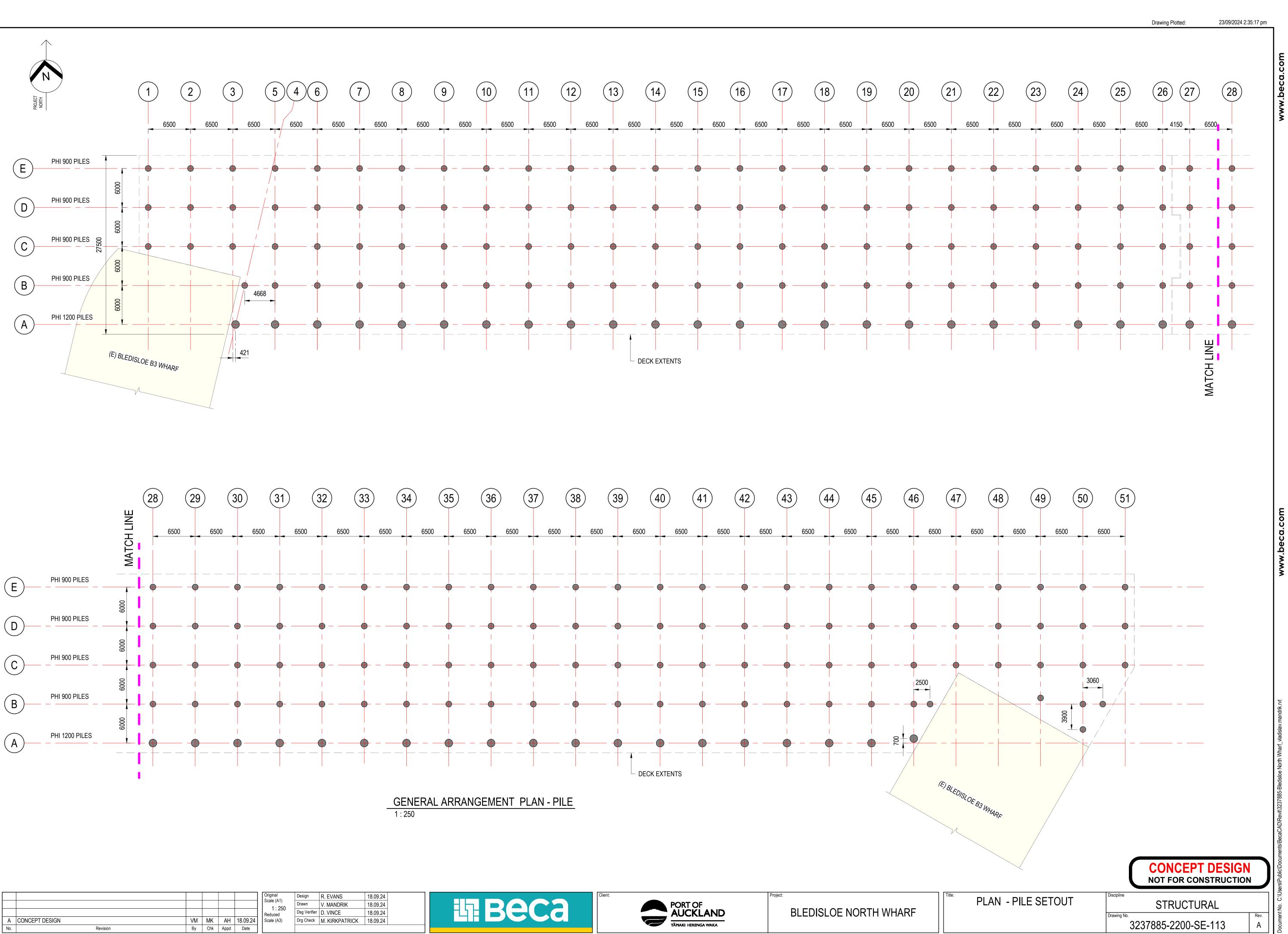
NOT FOR CONSTRUCTION

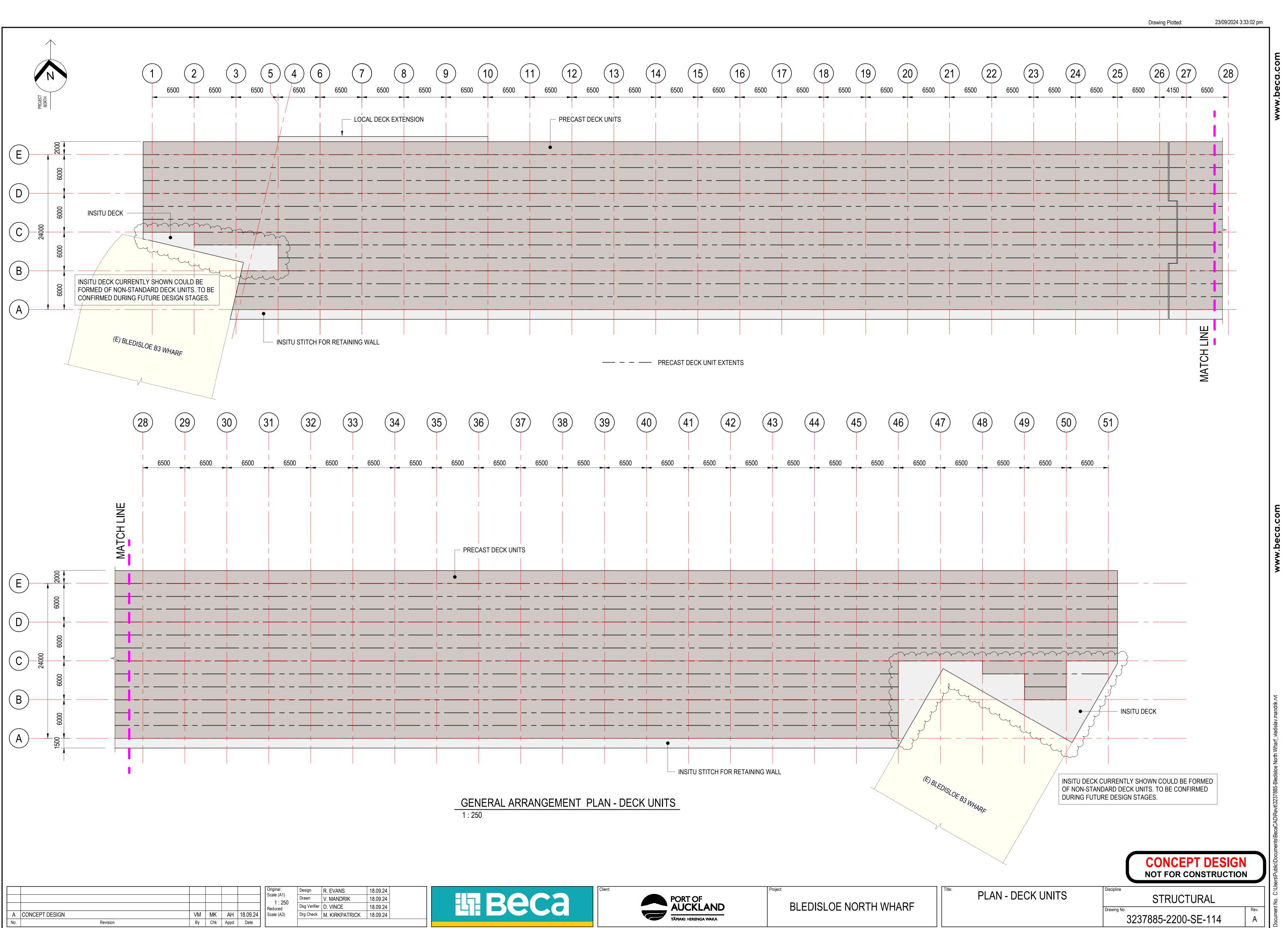
150T PILLAR BOLLARD

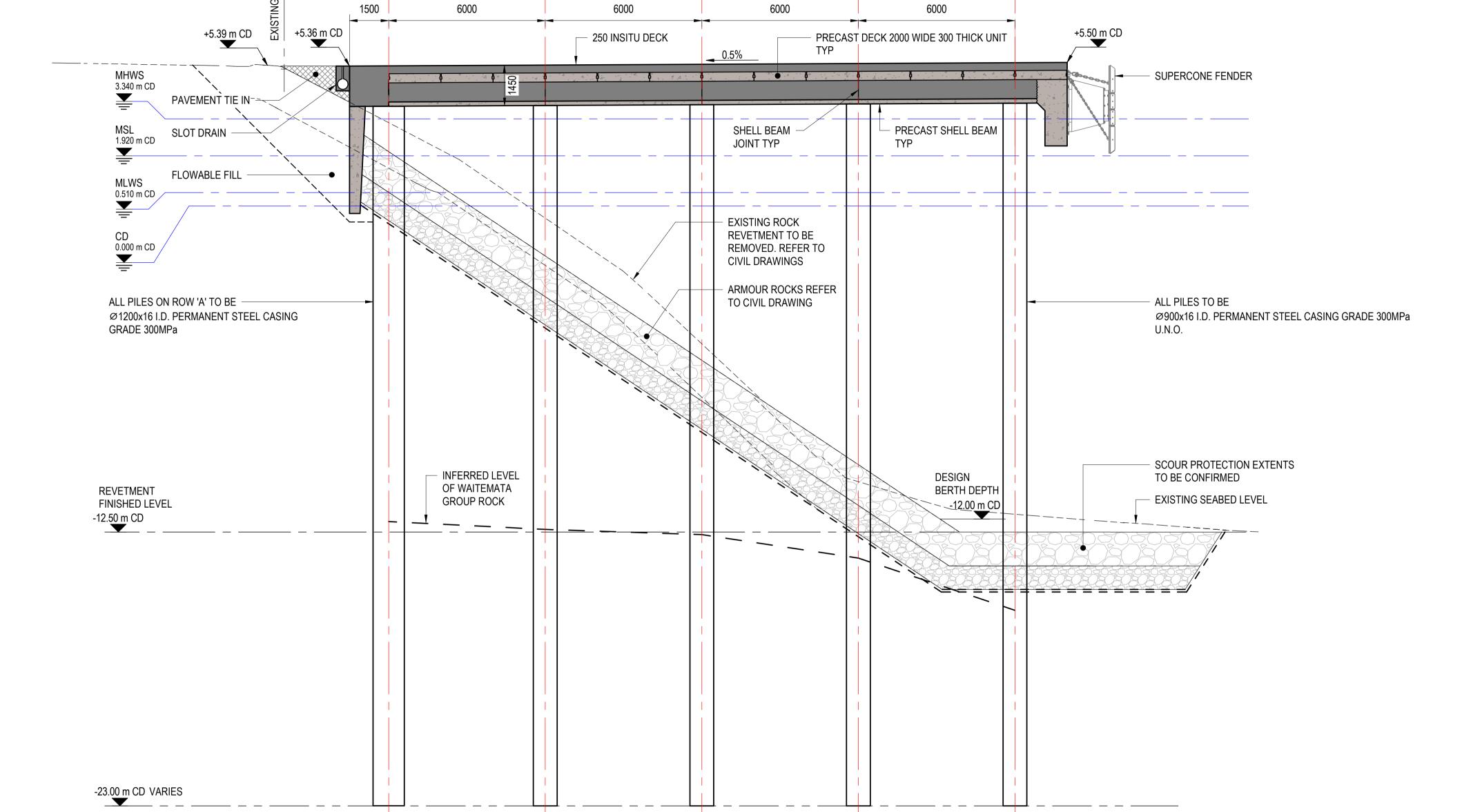
150T TEE BOLLARD

Ø900 PILES

Ø1200PILES







CROSS SECTION

CONCEPT DESIGN NOT FOR CONSTRUCTION

1:100 Reduced Scale (A3) VM MK AH 18.09.24

By Chk Appd Date A CONCEPT DESIGN

 Design
 R. EVANS
 18.09.24

 Drawn
 V. MANDRIK
 18.09.24

 Dsg Verifier
 D. VINCE
 18.09.24

 Drg Check
 M. KIRKPATRICK
 18.09.24

Beca PORT OF AUCKLAND
TĀMAKI HERENGA WAKA

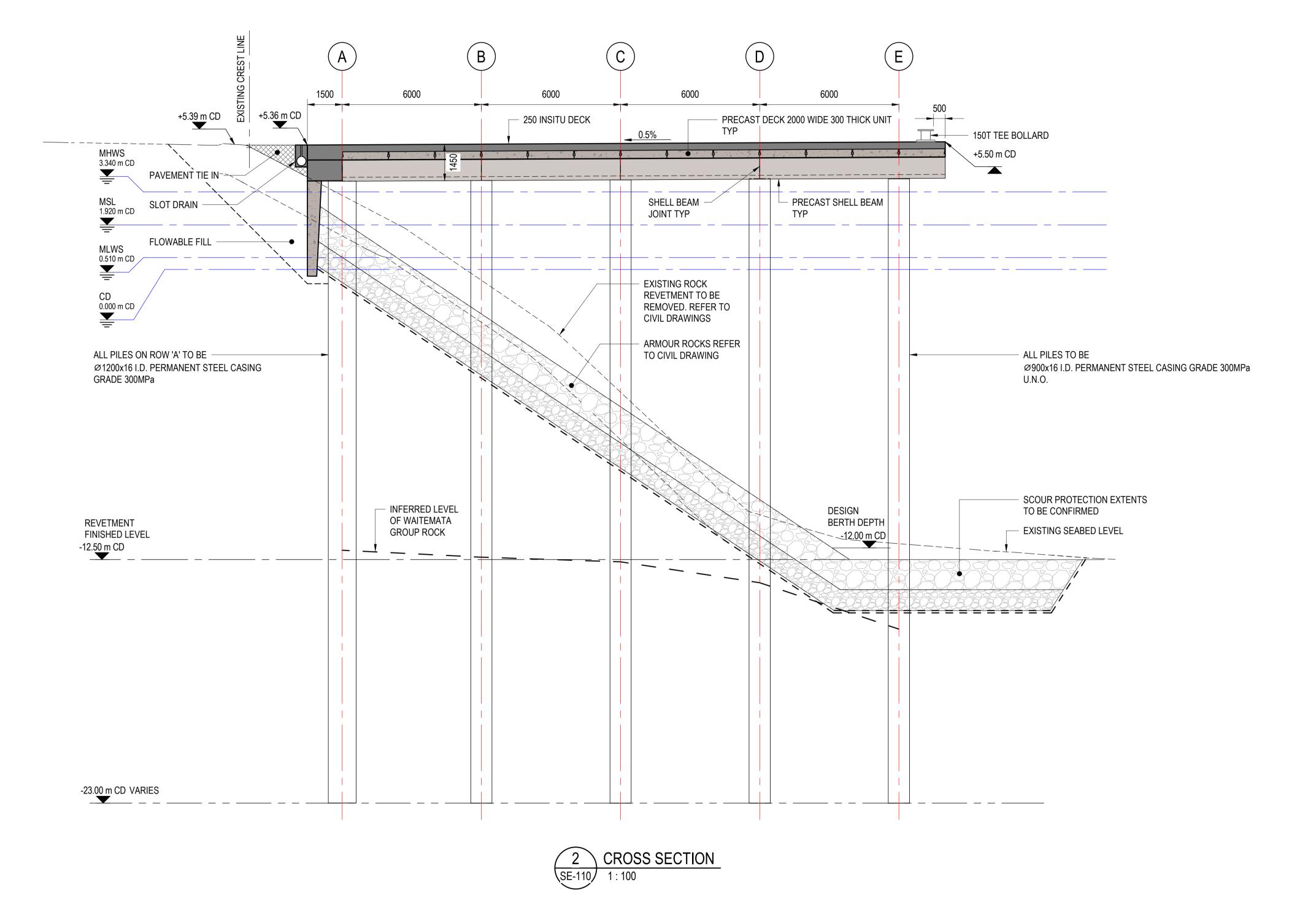
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BLEDISLOE NORTH WHARF

TYPICAL SECTION SHEET 1

STRUCTURAL 3237885-2200-SE-121

23/09/2024 2:35:22 pm



CONCEPT DESIGN NOT FOR CONSTRUCTION

VM MK AH 18.09.24

By Chk Appd Date A CONCEPT DESIGN

 Design
 R. EVANS
 18.09.24

 Drawn
 V. MANDRIK
 18.09.24

 Dsg Verifier
 D. VINCE
 18.09.24

 Drg Check
 M. KIRKPATRICK
 18.09.24
 1:100 Reduced Scale (A3)

III Beca

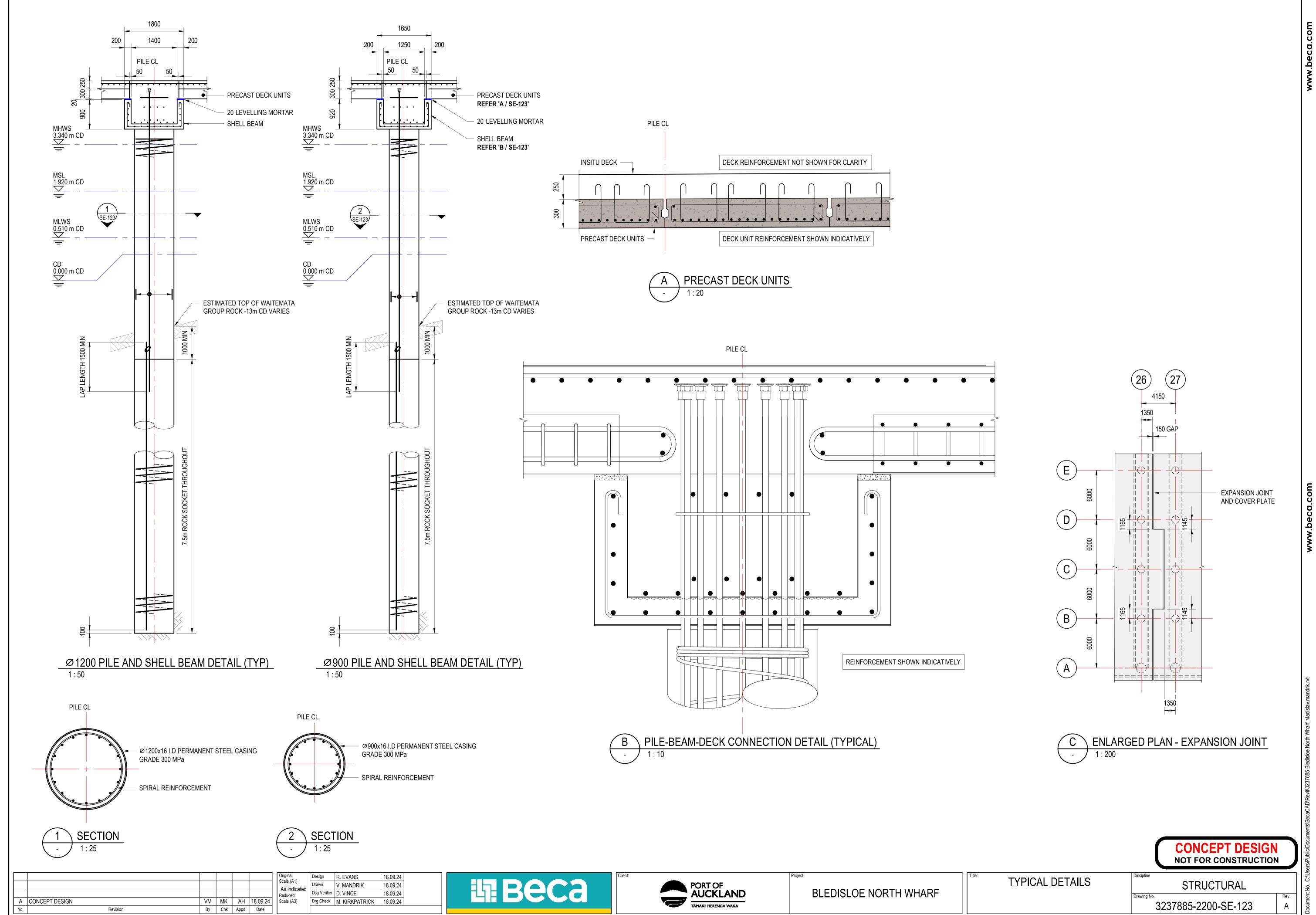


BLEDISLOE NORTH WHARF

TYPICAL SECTION SHEET 2

STRUCTURAL 3237885-2200-SE-122





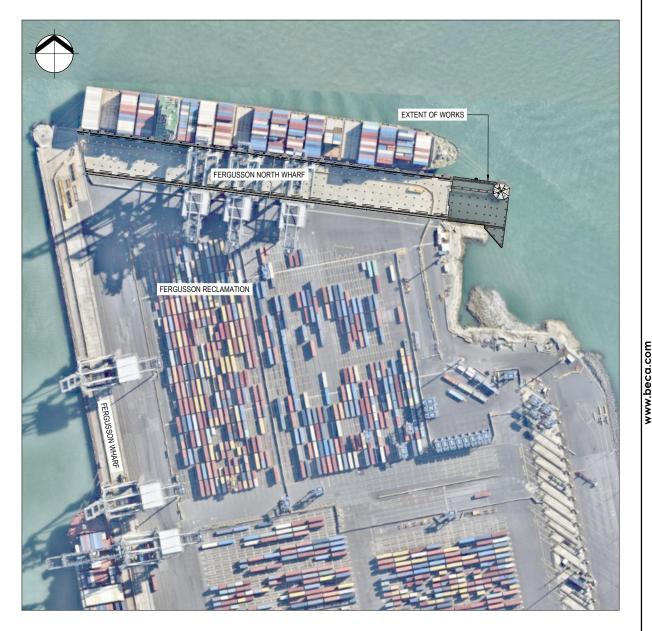
Fergusson North Berth Extension

FERGUSSON FN WHARF EASTERN EXTENSION

PORT OF AUCKLAND LTD

LIST OF DRAWINGS										
No.	No. REV DRAWING TITLE									
GENERAL										
3237885-GE-2000	Α	DRAWING LIST AND LOCALITY PLAN								
3237885-GE-2001	Α	SITE LAYOUT PLAN								
3237885-GE-2010	Α	BOREHOLE LOCATION PLAN								
STRUCTURAL										
3237885-SE-2101	Α	GENERAL NOTES								
3237885-SE-2110	Α	GENERAL ARRANGEMENT PLAN								
3237885-SE-2113	Α	WHARF EXTENSION GENERAL ARRANGEMENT PLAN								
3237885-SE-2115	Α	GENERAL ARRANGEMENT TYPICAL SECTIONS								
3237885-SE-2116	Α	GENERAL ARRANGEMENT TYPICAL DETAILS								
3237885-SE-2118	Α	GENERAL ARRANGEMENT CRANE RAIL TOLERANCES								
3237885-SE-2121	Α	PILE ARRANGEMENT PLAN								
3237885-SE-2123	Α	PILE DETAILS SHEET 1								
3237885-SE-2124	Α	PILE DETAILS SHEET 2								
3237885-SE-2131	Α	DECK ARRANGEMENT PLAN								
3237885-SE-2151	Α	DECK REINFORCEMENT PLAN BOTTOM STEEL ARRANGEMENT								
3237885-SE-2153	Α	DECK REINFORCEMENT PLAN TOP STEEL ARRANGEMENT								
3237885-SE-2155	Α	DECK REINFORCEMENT SECTIONS - SHEET 1								
3237885-SE-2156	Α	DECK REINFORCEMENT SECTIONS - SHEET 2								
3237885-SE-2157	Α	DECK REINFORCEMENT SECTIONS - SHEET 3								
3237885-SE-2159	Α	DECK REINFORCEMENT SECTIONS - SHEET 4								
3237885-SE-2160	Α	SHEAR KEY REINFORCEMENT								
3237885-SE-2165	Α	COVER PLATE DETAILS- SHEET 1								
3237885-SE-2166	Α	COVER PLATE DETAILS- SHEET 2								
3237885-SE-2167	Α	COVER PLATE DETAILS- SHEET 3								
3237885-SE-2168	Α	BOLLARD DETAILS								
3237885-SE-2171	Α	FENDER DETAILS								
3237885-SE-2172	Α	FENDER PANEL PRECAST CONCRETE AND REINFORCEMENT DETAILS								
3237885-SE-2175	Α	PRECAST RETAINING WALL PANEL								
3237885-SE-2190	Α	CRANE STOP BLOCKS								
3237885-SE-2191	Α	CRANE RAIL DETAILS								

		LIST OF DRAWINGS						
No. REV DRAWING TITLE								
GENERAL CIVIL								
		ROCK REVETMENT						
3237885-CE-2601	Α	ROCK REVETMENT PLAN						
3237885-CE-2603	Α	ROCK REVETMENT CROSS SECTIONS SHEET 1						
3237885-CE-2604	Α	ROCK REVETMENT CROSS SECTIONS SHEET 2						
		WHARF SERVICES						
3237885-CE-2710	Α	WHARF STORMWATER AND SERVICES LAYOUT PLAN						
3237885-CE-2712	Α	WHARF TYPICAL SECTION						
3237885-CE-2713	Α	WHARF SERVICES DETAILS						
3237885-CE-2714	Α	WHARF SERVICES HYDRANT AND WATER SUPPLY DETAILS						
3237885-CE-2719	Α	LADDER DETAILS						



LOCALITY PLAN

PRELIMINARY NOT FOR CONSTRUCTION

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ı	Α	PRELIMINARY DESIGN	VDLT	PC	AH	02.08.24	Si
ı	No.	Revision	By	Chk	Appd	Date	Н

Original	Design	PC	01.08.24	Approved For
Scale (A1) NTS	Drawn	VDLT	01.08.24	Construction*
Reduced	Dsg Verifier	AH	01.08.24	
Scale (A3)	Drg Check	PC	01.08.24	Date
NTS	* Refer to Re			





FERGUSSON FN WHARF EASTERN EXTENSION

DRAWING LIST LOCALITY PLAN 3237885-GE-2000

- ELEVATIONS ARE IN TERMS OF CHART DATUM. THE PUBLISHED DIFFERENCE FROM MEAN SEA LEVEL (AUCKLAND 1946) TO CHART DATUM OF 1.743m HAS BEEN ADOPTED. THE CONVENTION ADOPTED IS, FOR EXAMPLE: 3.0m OR +3.0m IS ABOVE CHART DATUM, -0.4m IS BELOW
- CO-ORDINATE VALUES ARE IN TERMS OF NZTM2000 (NEW ZEALAND TRANSVERSE MERCATOR).
- 3. CONTRACTOR TO REFER TO SITE DATA FOR MOST RECENT ${\bf HYDOGRAPHIC\ SURVEY}.$
- 4. CONTRACT WORKS INCLUDE:
 WHARF STRUCTURE AND ASSOCIATED WHARF FURNITURE, SERVICES AND STORMWATER COLLECTION SYSTEM
 - REMOVAL OF EXISTING MOORING DOLPHIN ACCESS GANGWAY AND DEMOLITION OF SUPPORTING PILE
 - EXTENT OF ROCK REVETMENT SHOWN
- 5. WORKS NOT PART OF THIS CONTRACT:
 RECLAMATION CONSTRUCTION
 - RECLAMATION SERVICES AND STORMWATER
 - WORKS
 - PAVEMENT WORKS
 - DREDGING

LEGEND



PROPOSED FERGUSSON FN WHARF EASTERN EXTENSION



PROPOSED ROCK REVETMENT



RECLAMATION (REFER NOTE 5)



EXISTING STRUCTURES



EXISTING RECLAMATION





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01.08.24



FERGUSSON FN WHARF EASTERN EXTENSION

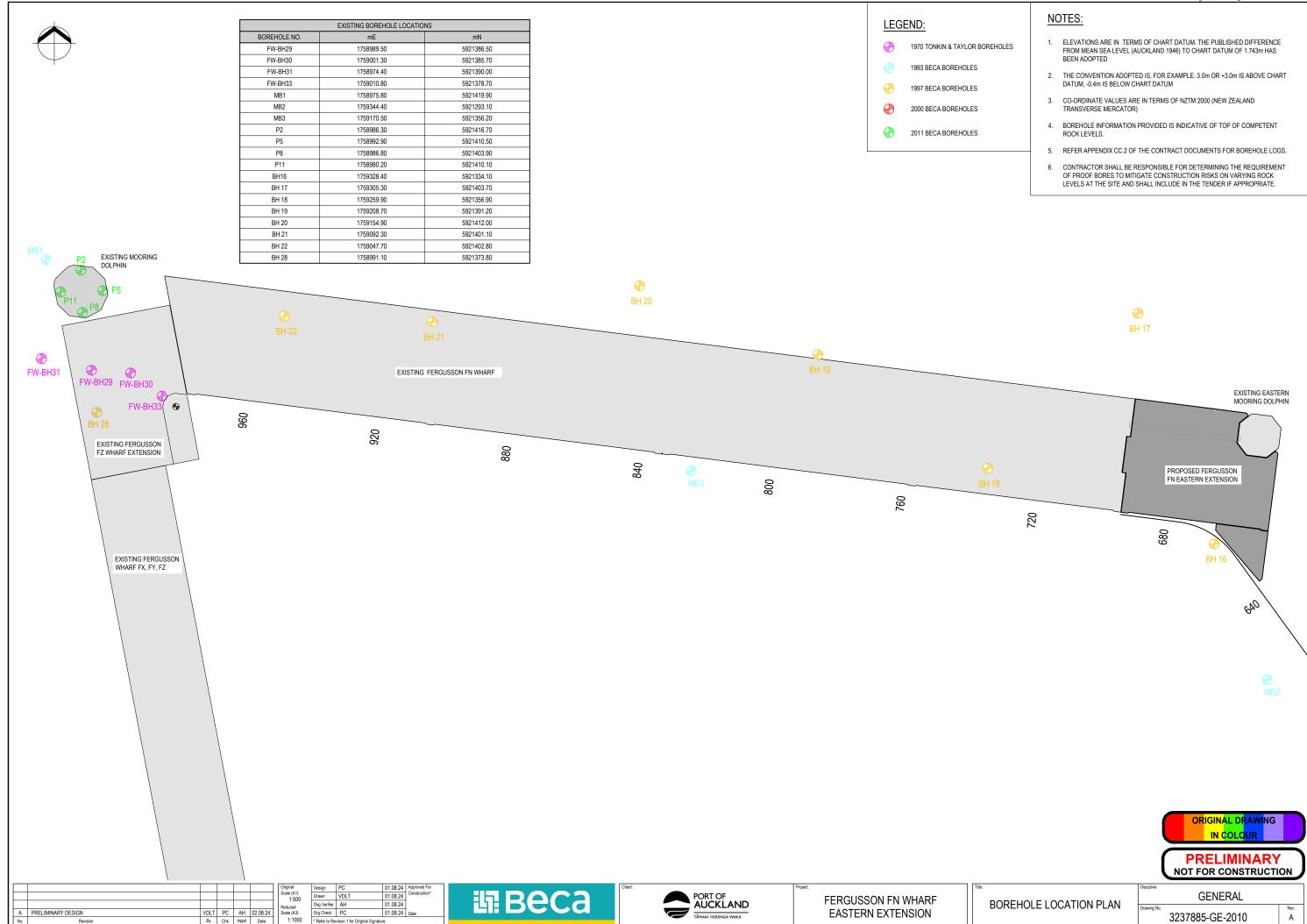
GENERAL SITE LAYOUT PLAN 3237885-GE-2001

ORIGINAL DRAWING

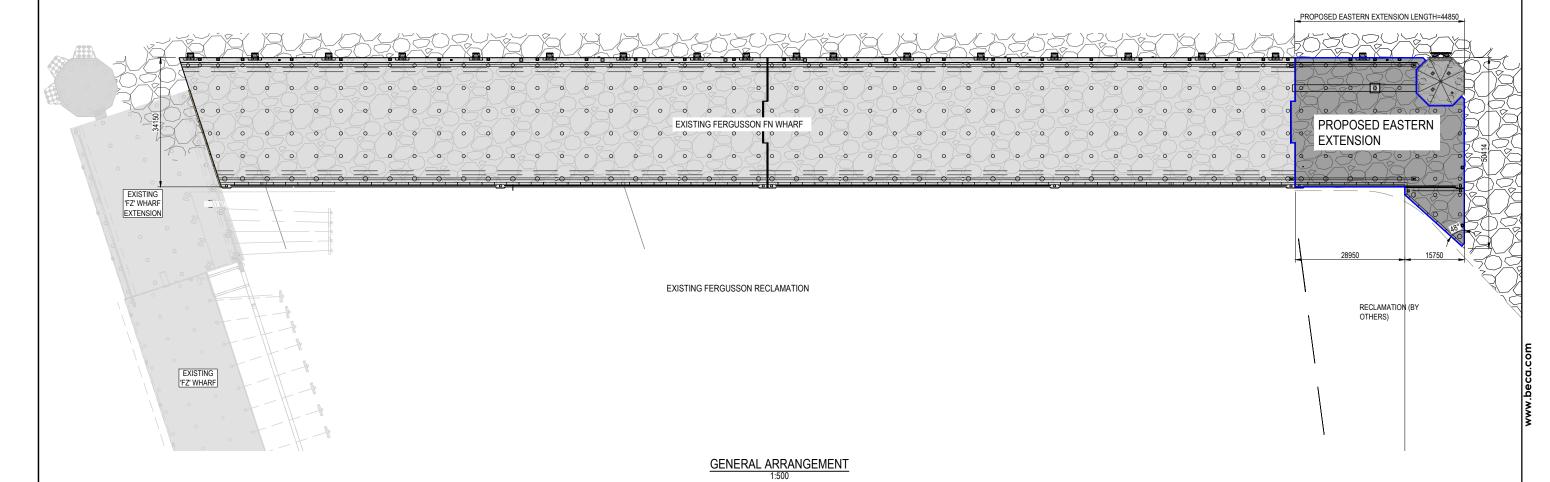
IN COLOUR

PRELIMINARY

NOT FOR CONSTRUCTION







- REFER TO DRG. No. SE-2101 FOR GENERAL NOTES.
- REFER TO CIVIL DRAWINGS FOR SERVICES. REFER TO DRG. No. SE-2113 FOR FULL SET OF GRIDS.

DESIGN SPECIFICATION:

DESIGN STANDARDS

- 1.2. AS4997-2005 GUIDELINES FOR THE DESIGN OF MARITIME STRUCTURES
- 1.3. NEW ZEALAND TRANSPORT BRIDGE MANUAL 3RD EDITION
- 1.4. NZS3101-2006 CONCRETE STRUCTURES STANDARD 1.5. NZS3404-1997 STEEL STRUCTURES STANDARD
- REFER TO THE STRUCTURAL DESIGN REPORT FOR FURTHER DETAILS.

- DESIGN LIFE
 2.1. DESIGN LOADS BASED ON A 50 YEAR DESIGN LIFE
- 2.2. DURABILITY REQUIREMENTS BASED ON ACHIEVING A 100 YEAR DESIGN LIFE

- 3.1. DEAD LOAD BASED ON THE FOLLOWING MATERIAL DENSITIES:
 - PRECAST CONCRETE: 26.5kN/m3 - INSITU CONCRETE: 25.0kN/m3
 - STEELWORK: 77.0kN/m3
- SUPERIMPOSED DEAD LOAD OF 0.25kPa HAS BEEN APPLIED TO THE WHARF DECK TO ACCOUNT FOR PROPOSED AND FUTURE SERVICES.

3.3 LIVE LOADS:

- UNIFORMLY DISTRIBUTED LOAD OF 55kPa FOR TEMPORARY STORAGE OF CONTAINERS ON THE WHARF DECK
- CONCENTRATED LOAD OF 750kN OVER A 400mm X 400mm BEARING AREA.
 REPRESENTS CONCENTRATED LOAD AT CORNER OF STACK OF
 CONTAINERS. COVER PLATES AT DECK JOINTS HAVE NOT BEEN DESIGNED. FOR THIS LOAD
- LADEN REACH STACKER WITH MAXIMUM FRONT AND REAR AXLE LOADS OF 100t AND 14t RESPECTIVELY. AXLE CONFIGURATION BASED ON A HYSTER RS 46-41L CH CONTAINER FORKLIFT AND AS4997-2005.
- LADEN STRADDLE CARRIER LOAD OF 120t EQUALLY DISTRIBUTED OVER 8 WHEELS
- 80T KATO NK800 MOBILE CRANE SUPER POST PANAMAX CONTAINER QUAY CRANE WITH A 120t LIFTING CAPACITY UNDER TWIN 20' TANDEM LIFT OPERATION. SELF WEIGHT OF
- THE QUAY CRANE 2020t. REFER TO REPORT FOR FURTHER DETAILS. 3.4 EARTHQUAKE LOADS:
- IMPORTANCE LEVEL 2 SITE SUBSOIL CLASSIFICATION: C (SHALLOW SOIL)

AUG 24 M, KIRKPATRICK AUG 24

NEAR FAULT FACTOR N(T,D) = 1.0

3.5 TEMPERATURE AND SHRINKAGE IN ACCORDANCE WITH TNZBM

- 3.6 EARTH PRESSURES HAVE BEEN CONSIDERED IN ACCORDANCE WITH THE GEOTECHNICAL MEMORANDUM. A VERTICAL 55kPa SURCHARGE HAS BEEN CONSIDERED IMMEDIATELY BEHIND THE REAR RETAINING WALL.
- 3.7 WIND LOADS ARE IN ACCORDANCE WITH AS/NZS1170.2
- · TERRAIN CATEGORY 2
- REGION N71 - BASIC WIND SPEEDS:
- Vu = 45m/s (1/500 APE)
- Vs = 39m/s (1/25 APE) Vo = 20m/s (NORMAL OPERATING CONDITION)
- 3.8 WAVE AND CURRENT LOADS:
 WHARF HAS BEEN DESIGNED FOR THE FOLLOWING DESIGN WAVES:

LIMIT STATE JILTIMATE LIMIT STATE (1/500 APE)	SIGNIFICANT WAVE HEIGHT (m)	PERIOD (s)	
ULTIMATE LIMIT STATE (1/500 APE)	3.04	3.74	
SERVICEABILITY LIMIT STATE (1/25 APE)	2.78	3.52	

- CURRENT VELOCITY OF 1.0m/s
- WHARF HAS NOT BEEN DESIGN FOR THE EFFECTS OF A TSUNAMI.

3.9 VESSEL BERTHING LOADS:

- THE WHARF AND FENDER SYSTEM HAS BEEN DESIGNED TO ACCOMMODATE THE FOLLOWING VESSEL BERTHING CONFIGURATIONS:
 - A SINGLE LARGE CONTAINER VESSEI
 - TWO SMALLER CONTAINER VESSELS BERTHED BACK-TO-BACK

VESSEL DESIGN CRITERIA	SMALL VESSEL	LARGE VESSEL
VESSEL TYPE	GENERAL CARGO	GENERAL CARGO
DEAD WEIGHT TONNAGE	10,000t	104,000t
DISPLACEMENT TONNAGE	16,200t	143,000t
OVERALL LENGTH (Loa)	153m	340m
MAXIMUM BEAM (B)	23.7m	42.8m
DRAFT (D)	8.4m	14.5m
MAXIMUM BERTHING ANGLE	3°	3°
MAXIMUM BERTHING VELOCITY	250mm/s	100mm/s

- THE WHARF HAS BEEN DESIGNED FOR A FENDER REACTION OF 1235kN. THIS ASSUMES QUARTER POINT VESSEL BERTHING AND THE FULL IMPACT IS TAKEN BY A SINGLE FENDER.
- **THE WHARF HAS BEEN DESIGNED FOR AN UNFACTORED VESSEL MOORING LOAD OF 300t ASSUMING 2 No. 150t BOLLARDS ARE LOADED SIMULTANEOUSLY.

PRELIMINARY NOT FOR CONSTRUCTION

- 1	Г							Original	Design	M, KIRKPATRICK
- 1	Г							Scale (A1) 1:500	Drawn	T. ZHU
- 1	Г							Reduced	Dsg Verifier	P. CHUA
- 1	Г	Α	PRELIMINARY DESIGN	TZ	MK	DV	02.08.24	Scale (A3)	Drg Check	M, KIRKPATRICK
- 1		No.	Revision	Ву	Chk	Appd	Date	1:1000	* Refer to Re	vision 1 for Original Signal



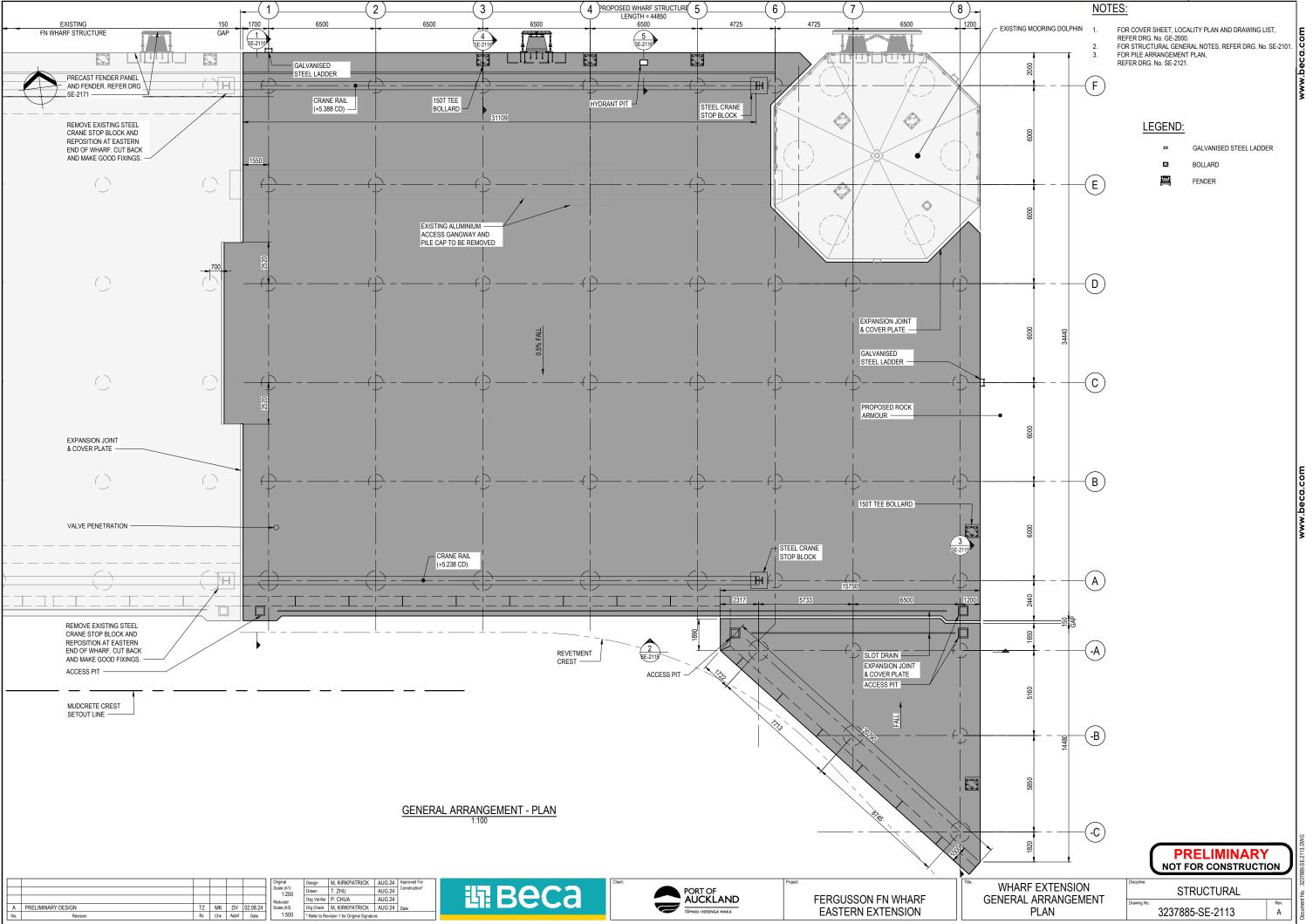


FERGUSSON FN WHARF **EASTERN EXTENSION**

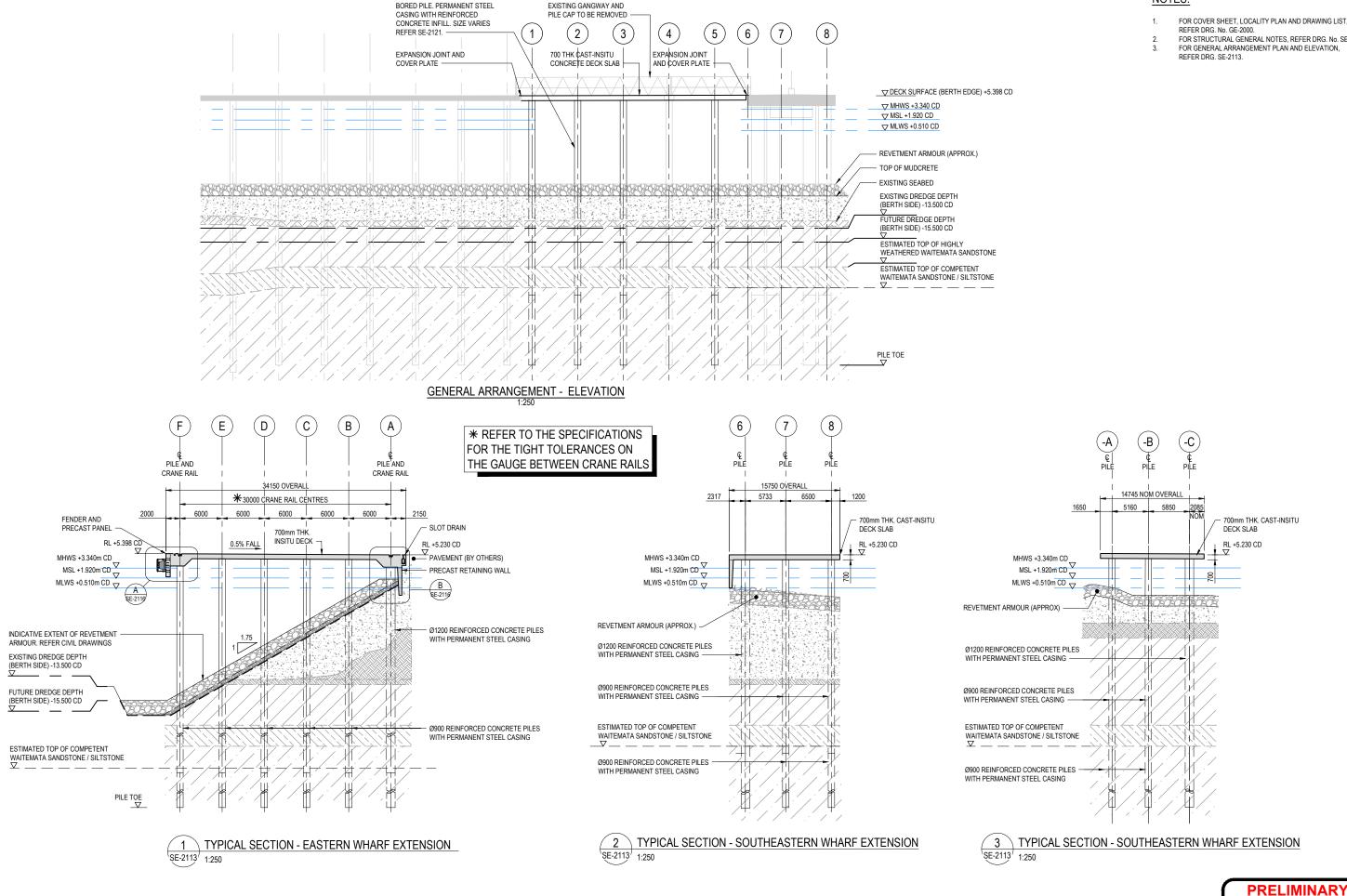
GENERAL ARRANGEMENT PLAN

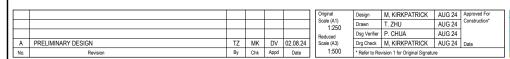
STRUCTURAL 3237885-SE-2110





Drawing Plotted: 01 Aug 2024 10:57 am NOTES: FOR COVER SHEET, LOCALITY PLAN AND DRAWING LIST, REFER DRG. No. GE-2000. FOR STRUCTURAL GENERAL NOTES, REFER DRG. No. SE-2101.





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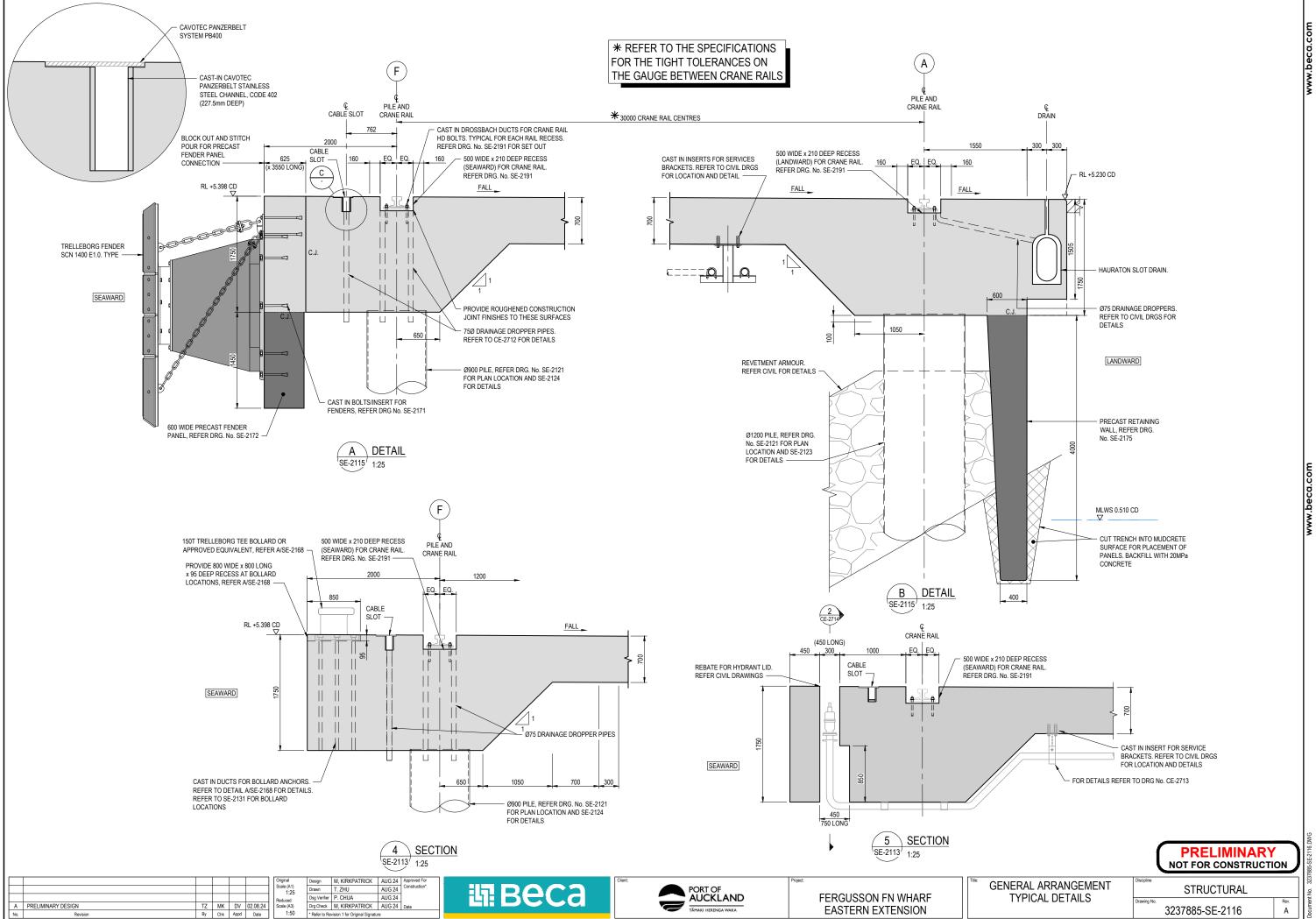


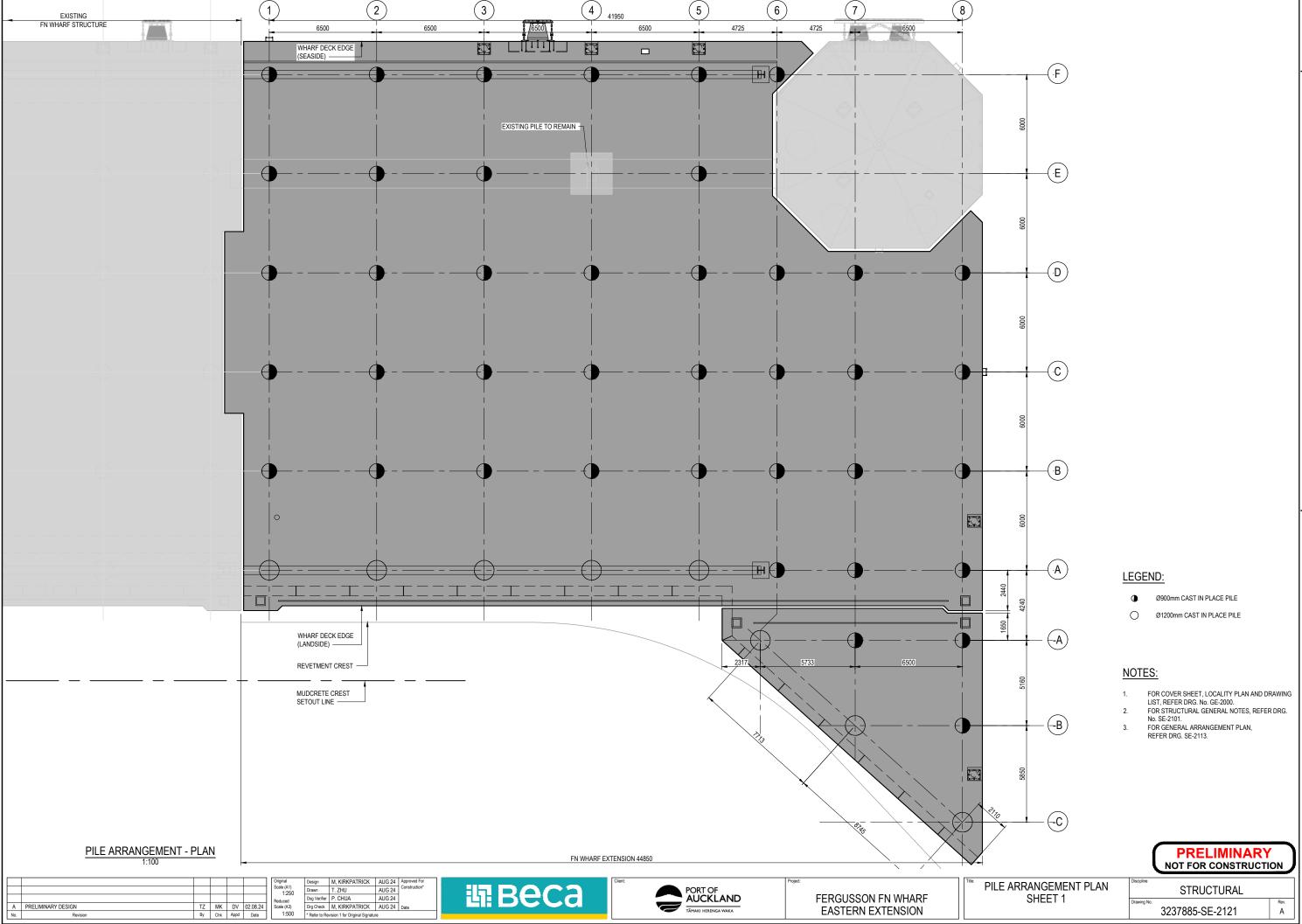
FERGUSSON FN WHARF EASTERN EXTENSION

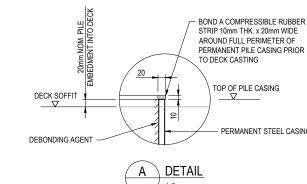
GENERAL ARRANGEMENT TYPICAL SECTIONS

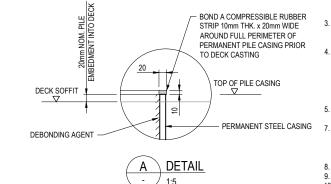
NOT FOR CONSTRUCTION STRUCTURAL 3237885-SE-2115

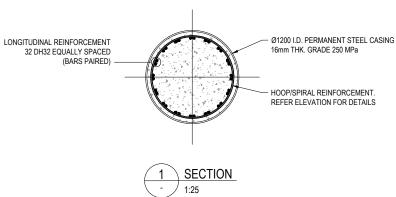
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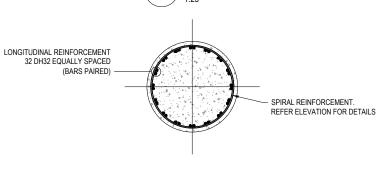


	TABLE 1 - Ø1200 PILE SCHEDULE (REFER NOTE 13)												
LONGITUDINAL GRID	GITUDINAL TRANSVERSE PILE LEVEL FOUNDING LEVEL WAI		ESTIMATED TOP OF COMPETENT WAITEMATA SANDSTONE (N>50) RL (m)	ESTIMATED TOE LEVEL OF PERMANENT STEEL CASING (REFER NOTE 2) RL (m)	ESTIMATED PILE LENGTH (m)	ESTIMATED PERMANENT STEEL CASING LENGTH (m)	MINIMUM SOCKET LENGTH (BELOW CASING TOE) (m)						
А	1-5	3.510	-33.000	-22.000	-23.000	36.51	26.49	10.0					
-A	6	4.540	-30.500	-22.000	-23.000	35.04	27.52	7.5					
-B	7	4.570	-30.500	-22.000	-23.000	35.07	27.55	7.5					
-C	8	4.600	-30.500	-22.000	-23.000	35.10	27.58	7.5					

- REFER TO DRG. No. SE-2101 FOR GENERAL NOTES.
- PERMANENT STEEL PILE CASING SHALL EXTEND TO DEPTH WHERE WAITEMATA SANDSTONE IS STABLE UNCASED AND TO GIVE ADEQUATE SEAL TO ALLOW FOR DEWATERING
- PERMANENT STEEL CASING SHALL BE GRADE 250MPa. ALL CASING WELDS AND JOINTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF THE CASING.
- THIS DRAWING SHOWS THE MINIMUM CASING THICKNESS AND GRADE FOR THE PERMANENT WORKS. CONSTRUCTION LOAD CASE EFFECTS SHALL BE CONSIDERED BY THE CONTRACTOR. IF CASING THICKNESS OR GRADE IS REVISED TO SUIT CONSTRUCTION REQUIREMENTS. THE CONTRACTOR SHALL SEEK APPROVAL FROM THE ENGINEER PRIOR TO INSTALLATION.
- EXISTING REVETMENT ARMOUR ROCK MAY BE ENCOUNTERED AT ANY WHARF PILE LOCATION.
 SPLICING OF ADJACENT LENGTHS OF SPIRAL SHALL BE EITHER BY
- PROVIDING 135° STIRRUP HOOKS OR BY WELDED LAP SPLICES. REFER TO GENERAL NOTES DRAWING FOR ANCHORAGE REQUIREMENTS FOR
- COVER TO PILE REINFORCEMENT SHALL BE 50mm MINIMUM
- ALL PILE REINFORCEMENT IS TO BE GRADE 500MPa.
- PILE REINFORCEMENT CAGES ARE TO BE SUSPENDED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL MONITOR THE REINFORCEMENT CAGE FOR SIGNS OF COLLAPSE DURING CONCRETING.
- 11. PILE CONCRETE TO BE OVER-POURED AND BROKEN DOWN TO PROVIDE SOUND CONCRETE AT THE UNDERSIDE OF THE DECK OR A SIMILAR METHOD AS APPROVED BY THE ENGINEER.
- 12. NO MORE THAN 50% OF THE TOTAL AREA OF VERTICAL PILE REINFORCEMENT SHALL BE SPLICED AT ANY ONE LOCATION. ADJACENT LAP SPLICES SHALL BE STAGGERED BY THE DEVELOPMENT LENGTH. NO LAPS ARE PERMITTED IN THE FOLLOWING LOCATIONS: WITHIN 5.0m BELOW THE DECK SOFFIT
- WITHIN +/-4.0m OF THE PERMANENT STEEL CASING TOE LEVEL
- GROUND AND STRATA LEVELS INCLUDING THE TOP OF COMPETENT WAITEMATA SANDSTONE ARE ESTIMATES INFERRED FROM AVAILABLE BOREHOLE INFORMATION. NOMINATED PILE AND CASING LENGTHS ARE ESTIMATES AND SHALL BE CONFIRMED BY THE CONTRACTOR ONSITE BASED ON ENCOUNTERED CONDITIONS.
- 14. TOP OF WAITEMATA SANDSTONE LEVELS ON ALL PILES SHALL BE INSPECTED AND APPROVED BY ENGINEER PRIOR TO CONCRETING.
- 15. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIREMENTS FOR PROOF BORES.
- 16. VIDEO CONFIRMATION OF THE FIRST 6 PILES AND EVERY SUBSEQUENT 5TH PILE IS TO BE CARRIED OUT BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION.

INSTALLATION METHOD:

- INSTALL PERMANENT STEEL CASING TO THE NOMINATED TOE LEVEL
- BORE THROUGH THE PERMANENT STEEL CASING TO THE NOMINATED PILE FOUNDING LEVEL. THE CONTRACTOR SHALL INFORM THE ENGINEER WHERE THE TOP OF COMPETENT WAITEMATA SANDSTONE (N>50) VARIES BY MORE THAN +/-1.0m OF THE TABULATED LEVELS. THE CONTRACTOR SHALL SEEK APPROVAL FROM THE ENGINEER OF ANY MODIFICATIONS TO PILE LEVELS, LENGTHS AND ANY CHANGES REQUIRED TO PILE REINFORCEMENT PRIOR TO PROCEEDING.
- PILE SOCKET TO BE DELIBERATELY ROUGHENED TO AN AVERAGE 10-15mm AMPLITUDE OVER THE PILE SOCKET LENGTH. REFER TO THE PROJECT SPECIFICATION FOR INSPECTION REQUIREMENTS. THE PILE SOCKET SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO ANY CONCRETE POURS.
- INSTALL PILE REINFORCEMENT CAGE AND CONCRETE INFILL WITHIN THE PERMANENT STEEL CASING.

Osg Verifier P. CHUA AUG 24 Reduced Scale (A3) 1:50 MK DV 02.08.24 Drg Check M, KIRKPATRICK AUG 24 D PRELIMINARY DESIGN

TYPICAL ELEVATION Ø1200 PILE

TERMINATE WITH STANDARD 180 DEGREE

APPLY DEBONDING AGENT OVER TOP 1500mm

LONGITUDINAL REINFORCEMENT 32 DH32 EQUALLY SPACED

OF PERMANENT STEEL CASING (INTERNAL) 2 COATS OF SIKA BLACKSEAL PLUS OR

APPROVED EQUIVALENT.

EXISTING SEABED LEVEL (VARIES)

PERMANENT STEEL CASING

ESTIMATED TOP OF COMPETENT WAITEMATA SANDSTONE (N>50) REFER TO TABLE 1

ESTIMATED PERMANENT STEEL CASING TOE LEVEL REFER TO TABLE 1

PILE SOCKET TO BE DELIBERATELY ROUGHENED. REFER TO NOTE 5

ESTIMATED PILE FOUNDING LEVEL REFER TO TABLE 1

HOOK OR APPROVED FOOTPLATE

DH25-100 HOOPS

(A `

TOP OF PILE LEVEL

REFER TO TABLE 1





FERGUSSON FN WHARF **EASTERN EXTENSION**

NOT FOR CONSTRUCTION PILE DETAILS STRUCTURAL SHEET 1 3237885-SE-2123

DO NOT SCALE FOR SET OUT DIMENSIONS

OTENTIAL PLASTIC HINGE DH25-100 HOOPS

PRELIMINARY

- REFER TO DRG. No. SE-2101 FOR GENERAL NOTES.
 REFER TO DRG. No. SE-2123 FOR PILE GENERAL NOTES.
 CONTRACTOR TO CONFIRM ESTIMATED PILE FOUNDING LEVELS
 INDICATED IN TABLE 1

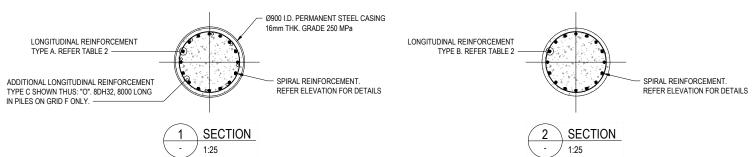


TABLE 1 - Ø900 PILE SCHEDULE (REFER NOTE 13 DRG. SE-123)												
LOCATION		TOP OF	ESTIMATED PILE	ESTIMATED TOP OF COMPETENT	ESTIMATED TOE LEVEL OF PERMANENT STEEL CASING	ESTIMATED PILE	ESTIMATED PERMANENT STEEL	MINIMUM SOCKET LENGTH				
LONGITUDINAL GRID	TRANSVERSE GRID	PILE LEVEL RL (m)	FOUNDING LEVEL RL (m)	WAITEMATA SANDSTONE (N>50) RL (m)	(REFER NOTE 2 DRG. SE-123) RL (m)	LENGTH (m)	CASING LENGTH (m)	(BELOW CASING TOE) (m)				
A	6-8	+3.510	-33.000	-22.000	-23.000	36.510	26.49	10.0				
В	1-8	+4.590	-30.500	-22.000	-23.000	35.090	27.57	7.5				
С	1-8	+4.620	-30.500	-22.000	-23.000	35.120	27.60	7.5				
D	1-8	+4.650	-30.500	-22.000	-23.000	35.150	27.63	7.5				
E	1-3, 5	+4.680	-30.500	-22.000	-23.000	35.180	27.66	7.5				
F	1-6	+3.660	-35.500	-22.000	-23.000	39.160	26.64	12.5				
-A	7-8	+4.540	-30.500	-22.000	-23.000	35.040	27.52	7.5				
-B	8	+4.570	-30.500	-22.000	-23.000	35.070	27.55	7.5				

TABLE 2 - PILE REINFORCEMENT SCHEDULE								
LOCA	LONGITUDINAL REINFORCEMENT							
LONGITUDINAL GRID			TYPE B	TYPE C				
B-E	1-8	16DH32	16DH25	-				
F	1-8	16DH32	16DH25	ADDITIONAL 8DH32				

POTENTIAL PLASTIC HINGE ZONE 2000	RH16-150 SPIRAL		APPLY DEBONDING AGENT OVER TOP 1500mm OF PERMANENT STEEL CASING (INTERNAL) 2 COATS OF SIKA BLACKSEAL PLUS OR APPROVED EQUIVALENT. LONGITUDINAL REINFORCEMENT TYPE A 12000 LONG. REFER TO TABLE 2 ROCK AMOUR LEVEL (VARIES)
RH16-250 SPIRAL	LAP LENGTH 1500 MIN 25 REFER NOTE 12 DRG. SE-2123		ADDITIONAL REINFORCEMENT TYPE C, 8DH32, 8000 LONG IN PILES ON GRID F ONLY. EXISTING SEABED LEVEL (VARIES)
POTENTIAL PLASTIC HINGE ZONE 8000	4000	1000 MIN REFER. NOTE 2 DRG. SE-2123	PERMANENT STEEL CASING ESTIMATED TOP OF COMPETENT WAITEMAT/ SANDSTONE (N>50) REFER TO TABLE 1 ESTIMATED PERMANENT STEEL CASING TOE LEVEL REFER TO TABLE 1 7 PILE SOCKET TO BE DELIBERATELY ROUGHENED. REFER TO NOTE 5 DRG. SE-2123
MH16-250 SPIRAL	00	LEVATION Ø900 PILE	ESTIMATED PILE FOUNDING LEVEL REFER TO TABLE 1

TOP OF PILE LEVEL REFER TO TABLE 1

- TERMINATE WITH STANDARD 180 DEGREE HOOK OR APPROVED FOOTPLATE

- EXTRA HALF TURN PLUS WELDED LAP SPLICE TO PREVIOUS TURN

RH16-150 HOOPS

ı											
ı							Original	Design	M, KIRKPATRICK	AUG 24	Approved Fo
ı							Scale (A1) 1:25	Drawn	T. ZHU	AUG 24	Construction*
ı								Dsg Verifier	P. CHUA	AUG 24	1
ı	Α	PRELIMINARY DESIGN	TZ	MK	DV	02.08.24	Scale (A3)	Drg Check	M, KIRKPATRICK	AUG 24	Date
ı	No.	Revision	Ву	Chk	Appd	Date	1:50	* Refer to Revision 1 for Original Signature			





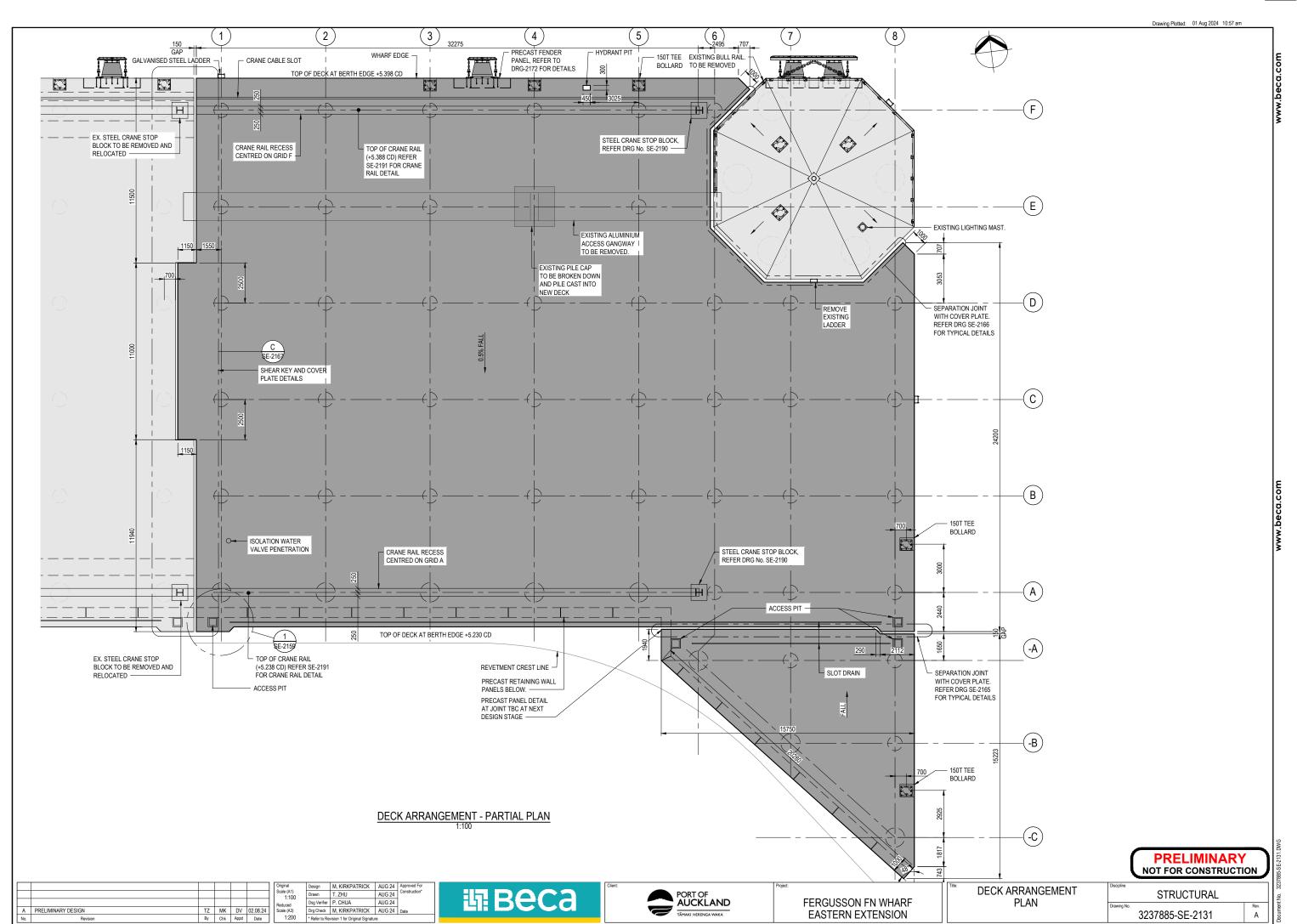
FERGUSSON FN WHARF EASTERN EXTENSION

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PRELIMINARY

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