



Project Environmental Review (PER) Application for a S.82 *Impact Assessment Act* Permit
Vancouver Fraser Port Authority PER No. 22-017



Prepared for:

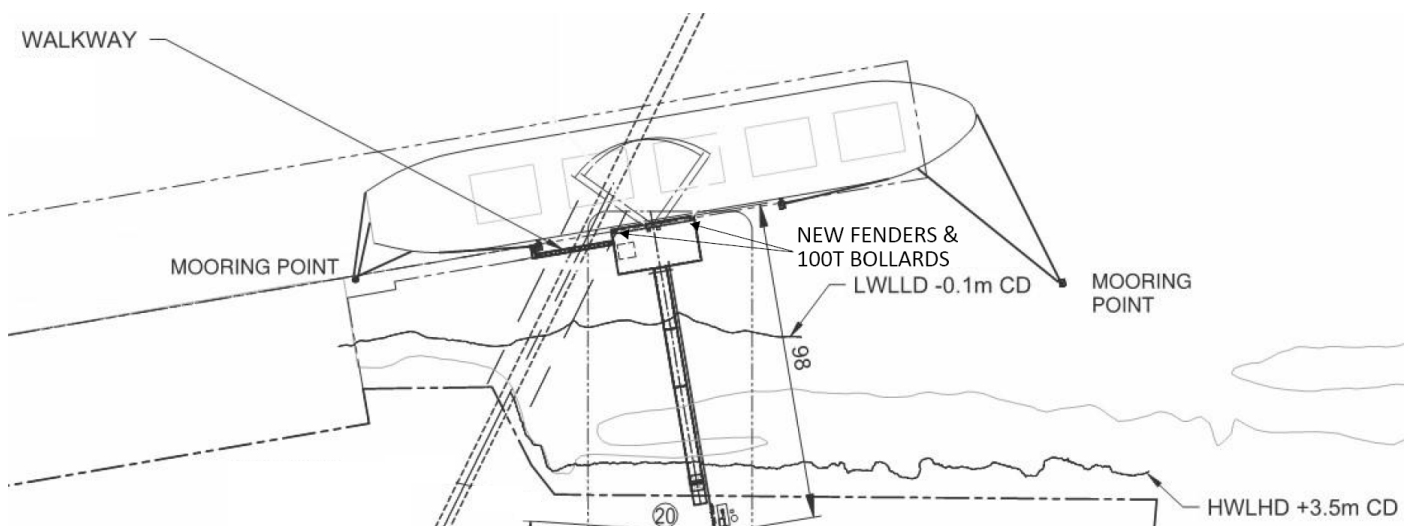
DP World Fraser Surrey
c/o DP World Canada
Suite 1500, Metrotower II
4720 Kingsway,
Burnaby, BC, V5H 4N2

APPENDIX L: Fraser Surrey Canola Transload Facility – Berth 10 Mooring

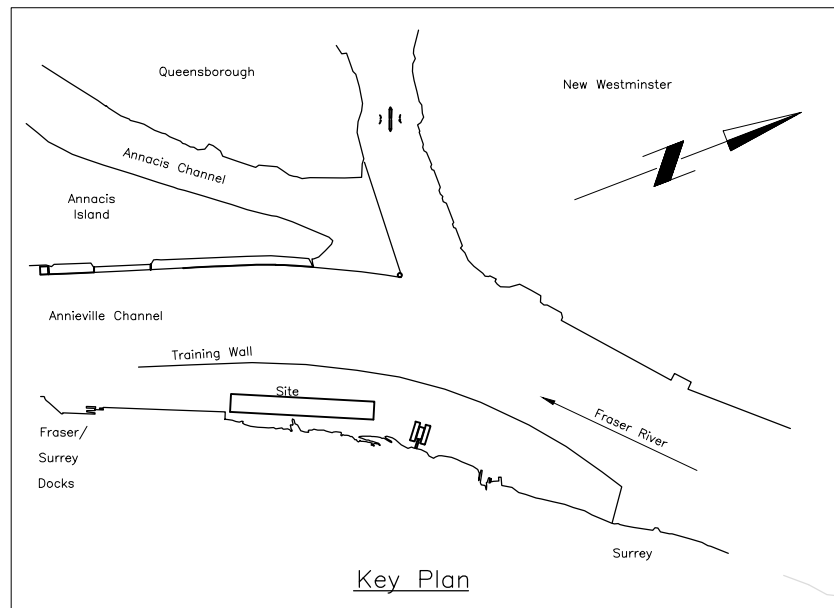
Fraser Surrey Canola Transload Facility - Berth 10 Mooring

DP World Fraser Surrey is proposing to construct a Canola Oil Transload Facility at the northern end of its Fraser Surrey Terminal. Canola oil will arrive by rail to be pumped into storage tanks then out to liquid bulk carriers ranging in size from a 20,000 DWT Handy to a 48,000 DWT Handymax. The vessels will be moored and loaded at the existing Berth 10 which was already designed and constructed to serve this range of vessels as detailed in the attached Seabulk drawings.

To accommodate the loading of canola oil, a platform and trestle will be constructed at the berth along with a walkway connection to the existing pier to the south. Dolphin 2 at midship will be removed and replaced by 2 fenders at each outside corner of the new platform:

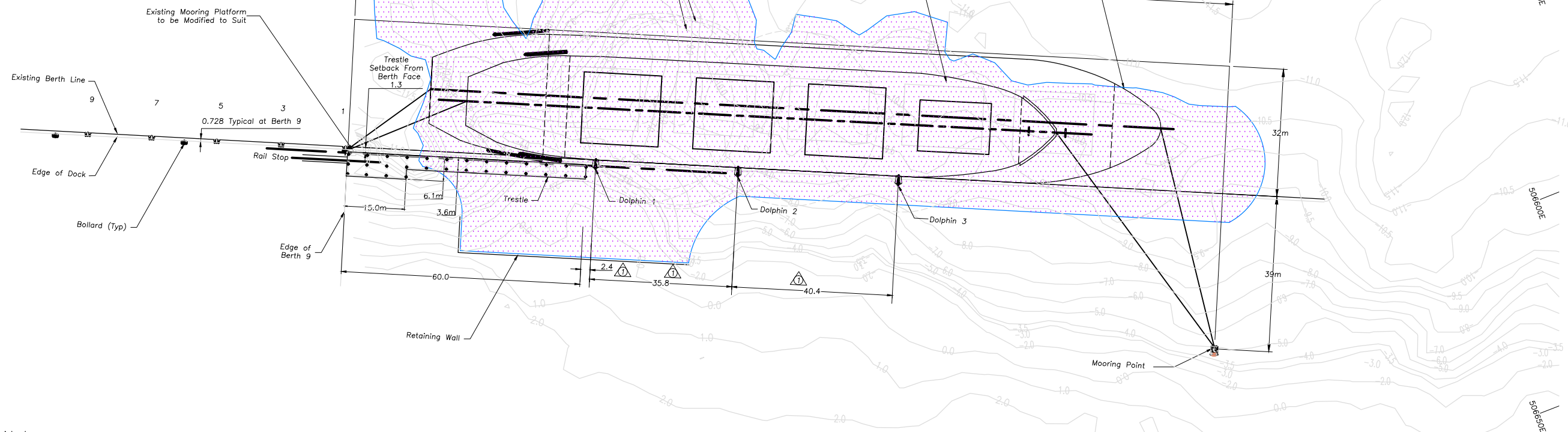


The replacement of Dolphin 2 with two new fenders will result in safer and more effective mooring at Berth 10. The exact capacity of the new fenders will be defined in the detailed design process but will be required to accommodate a 48,000 DWT Handymax in line with the existing Berth 10 structures.



Berth 9

Berth 10



Notes

1. Horizontal Datum: UTM NAD 83.
2. Horizontal Distances Are in Metres Unless Noted Otherwise.
3. Berth Face to Edge of Trestle 1.3m \approx (4'-0") Additional 15m x 2.4m Area For Truck Access from Berth 9 to Avoid Conflict with Existing Rail Stop.

2001-02-21

ISSUED FOR RECORD

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rev.	description	date	by	chk'd	No.	Dwg No.	Reference Drawings
2	Issued for Record	2001-02-21	E.N.	D.T.			
1	Issue for As built of Dolphins	2001-01-08	E.N.	M.M.			
0	Issue for Construction - File Installation Only	2000-11-29	E.N.	D.T.			

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approved		
checked	P.J.P.	2001-02-21
drawn	E.N.	2001-02-21
designed	D.T.	2000-11-29

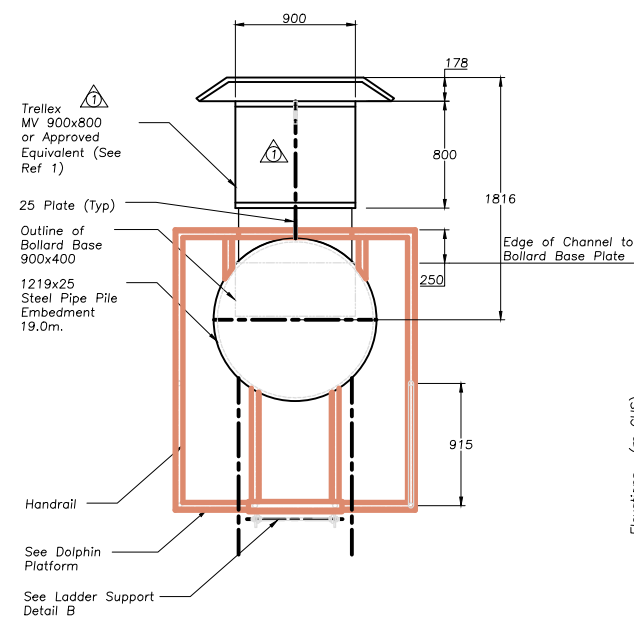
client approval

customer:
Fraser River Port Authority

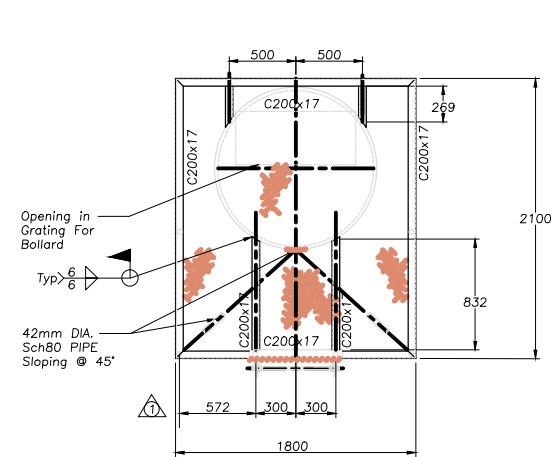
project:
Fraser Surrey Docks
Berth 10

Seabulk Consultants Inc.
Marine - Bulk Handling - Engineering - Construction - Project Management
title:
Berth 10
General Arrangement

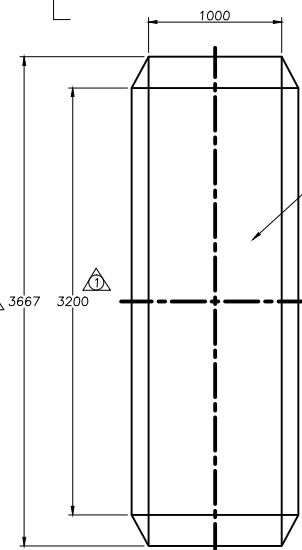
date:	2001-02-21	job no.:	SC-111-99	scale:	1:500	size:	D	dwg. no.:	SC-111-C-001	rev.:	2
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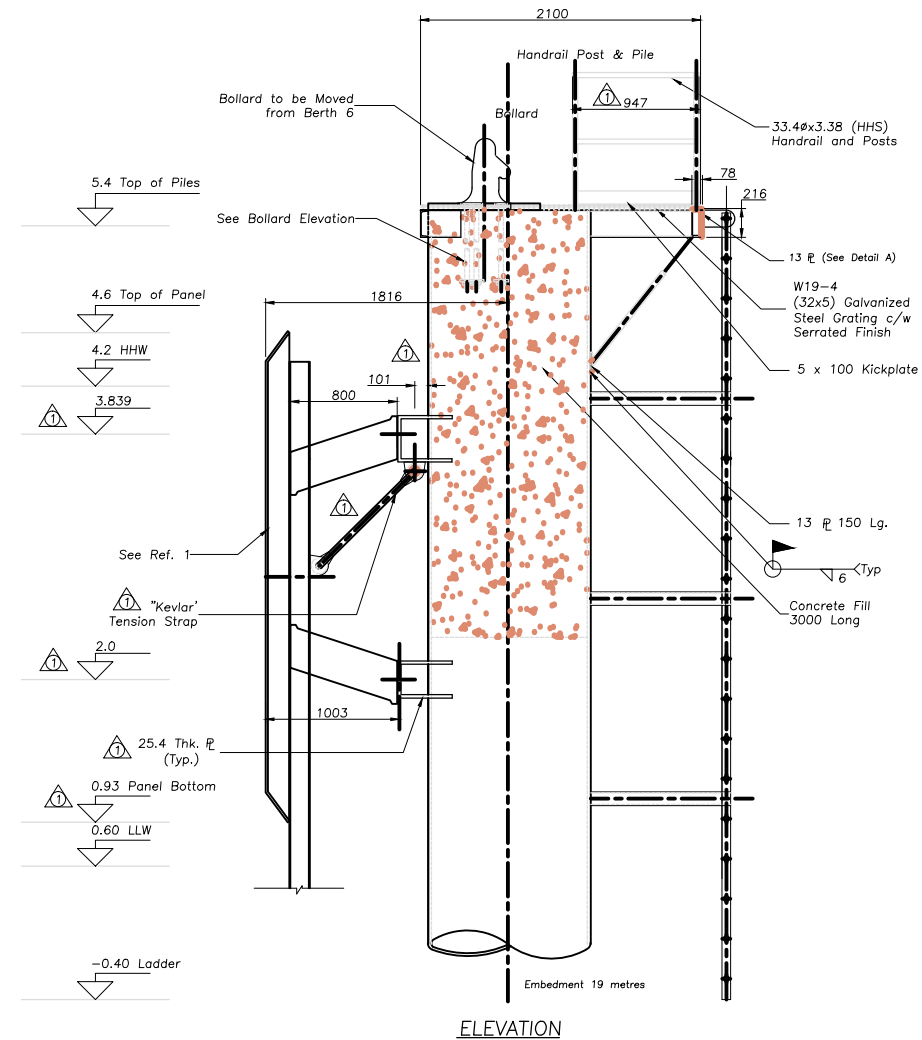
FLEXIBLE MONOPILE DOLPHIN
3 REQUIRED



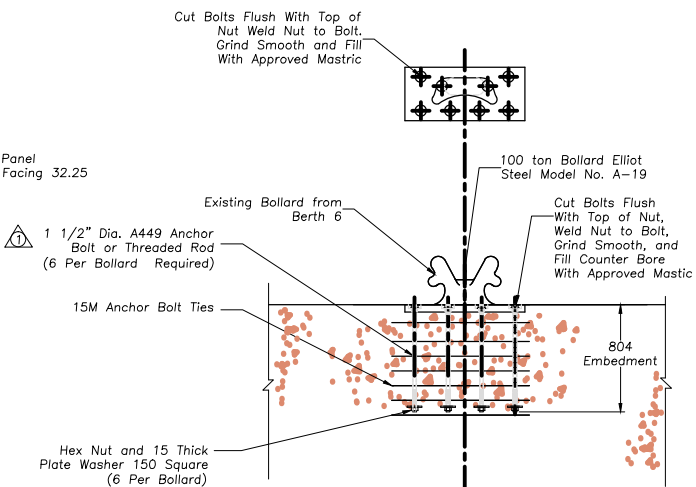
TYPICAL DOLPHIN AND
MOORING PILE



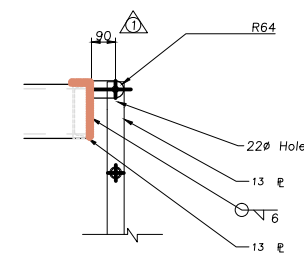
FENDERING



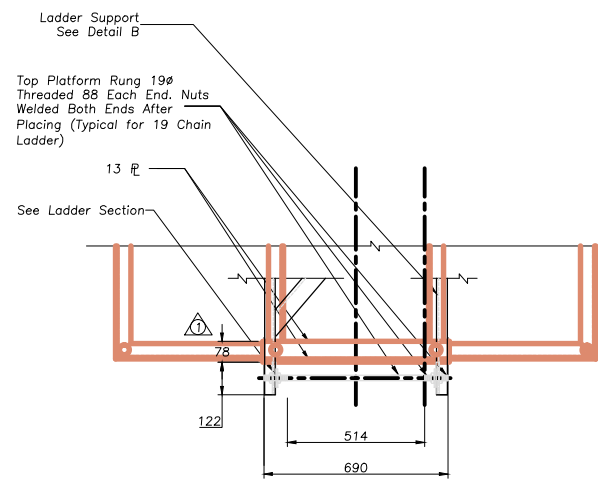
ELEVATION



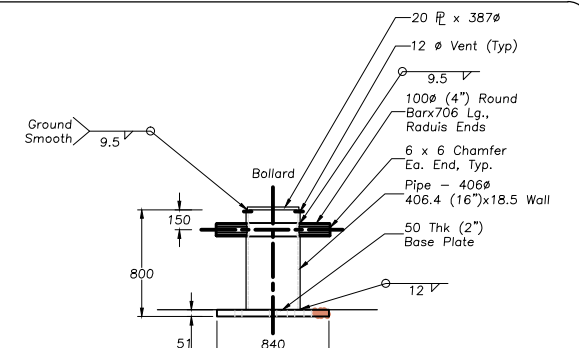
BOLLARD BOLT DETAIL A
N.T.S.



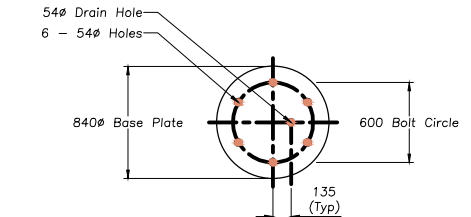
LADDER SECTION
1:12.5



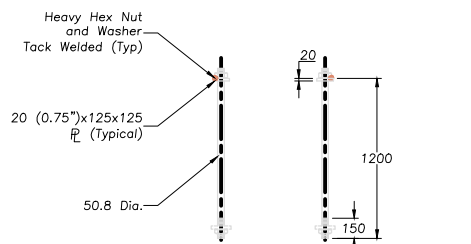
TOP PLATE - DETAIL A
1:12.5



100 TON CRUCIFORM BOLLARD
Bollard to be Hot Dip Galvanized

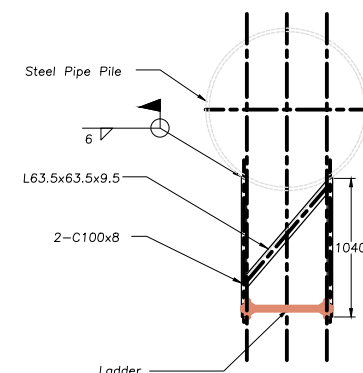


BASE PLATE DETAIL C

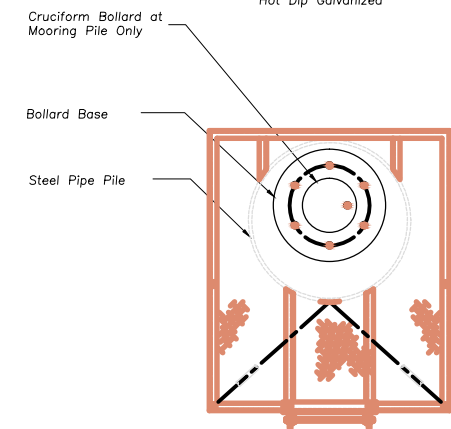


ANCHOR BOLT - GR.A449
6 REQUIRED

Anchor Bolts to be Hot Dip Galvanized



LADDER SUPPORT
DETAIL B



MOORING PILE
1 REQUIRED

2001-02-21

ISSUED FOR RECORD

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rev.	description	date	by	chk'd	No.	Dwg No.	Reference Drawings
1	Issued for Record	2001-02-21	E.N.	D.T.			
0	Issue for Construction	2000-12-05	E.N.	D.T.			
B	Design Review	2000-11-30	E.N.	D.T.			
A	Pricing for Steel Work	2000-11-23	E.N.	D.T.	1	D4277	MV800x900CS Fender System (Svedala)

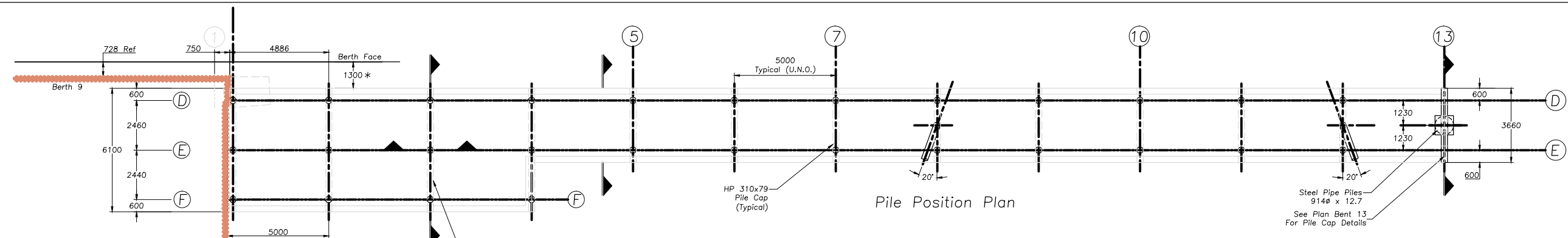
approved	checked	drawn	designed
	P.J.P. 2001-02-21	E.N. 2001-02-21	R.V. 2000-12-05

customer:	project:
Fraser River Port Authority	Fraser Surrey Docks Berth 10

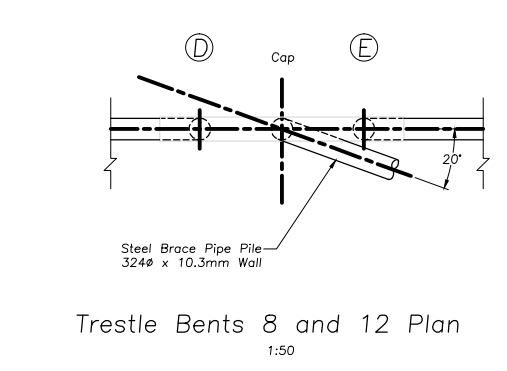
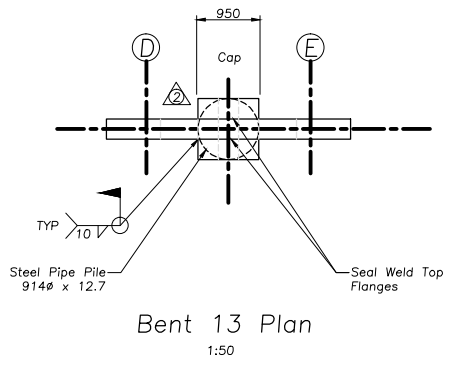
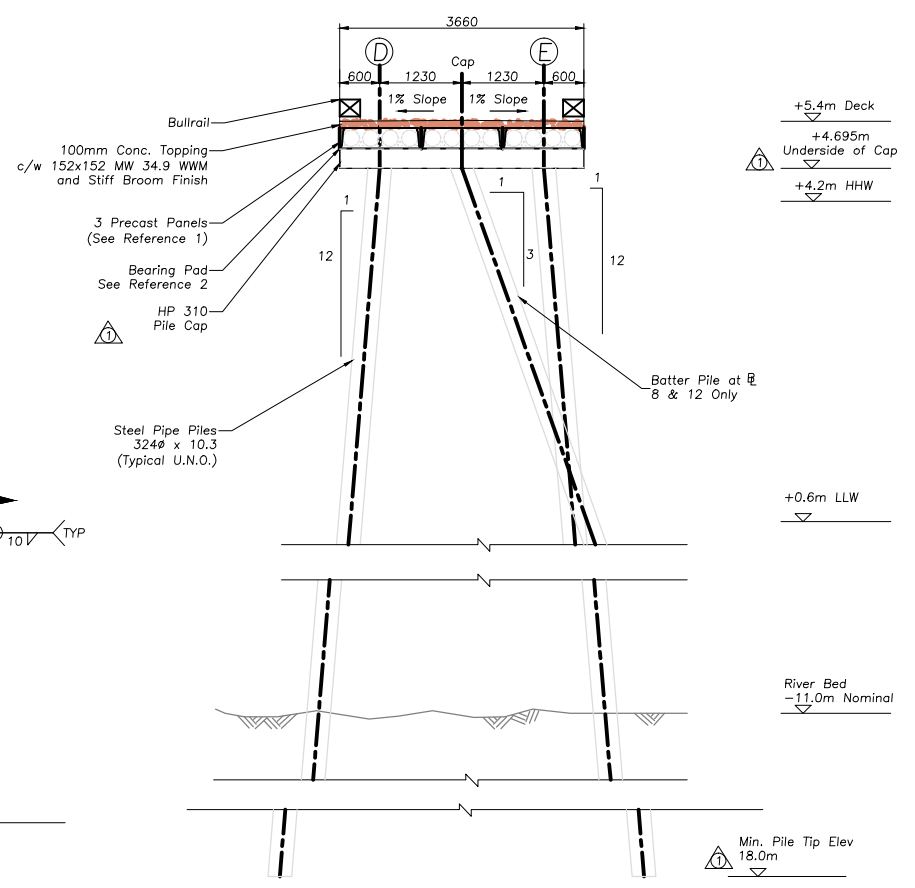
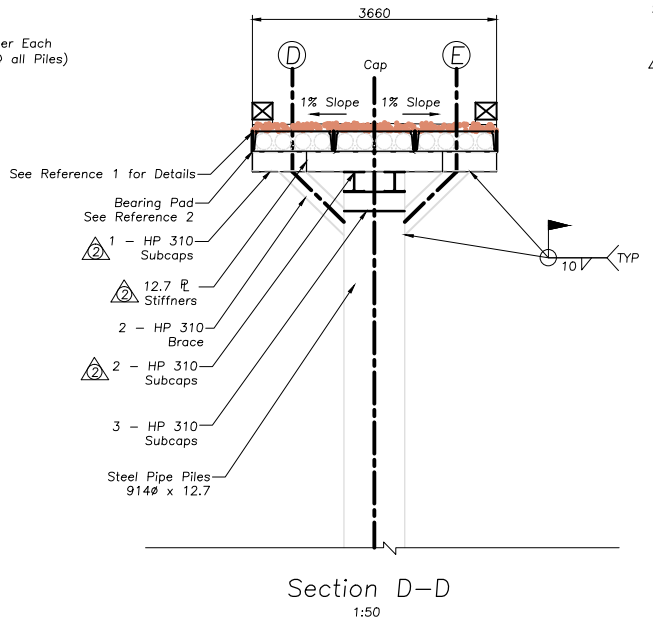
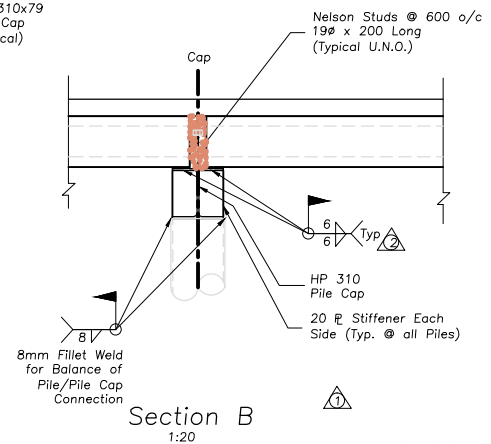
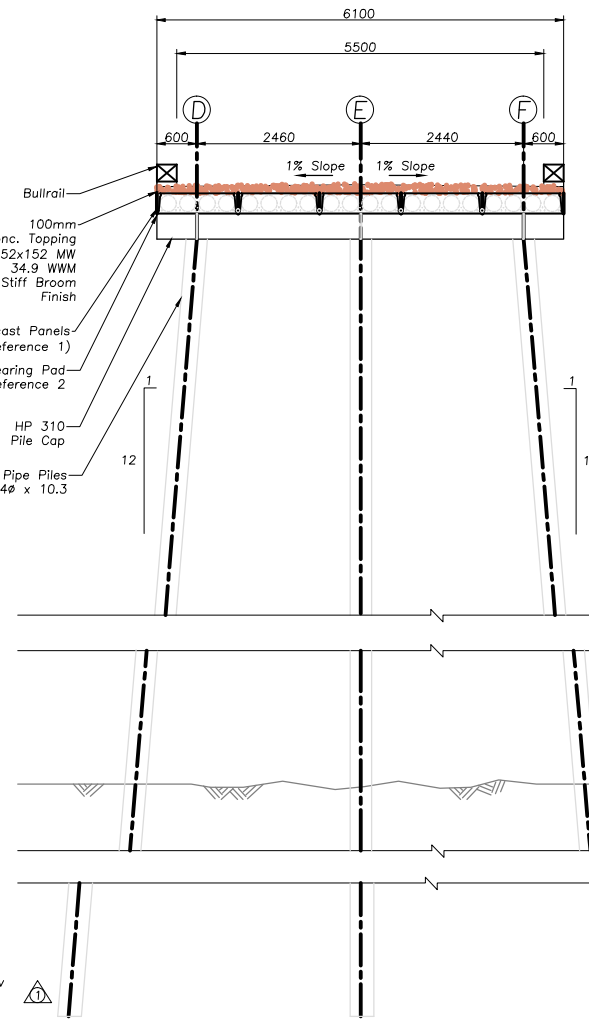
client approval	cust no.

date:	job no.:	scale:	size:	dwg. no.:	rev.:
2000-02-21	SC-111-99	1:25	D	SC-111-C-002	1

Seabulk Consultants Inc.
Marine - Bulk Handling - Engineering - Construction - Project Management
title: Berth 10 Dolphin and Mooring Details



* 1300 Layout Dimension Based on Berth 9 Berthface Ref. @ 728 mm From Face of Edge Beam. Confirm Ref. Dimension in Field.



Note:

- Pipe Piles to be Driven Open Ended
- Fill with Sand After Driving Except 1 m³ Batter Piles @ # 8 and 12
- Pile Driving Criteria: Set 24 Blows per 300mm With 20kN (4500lbs) Drop Hammer @ 3 metres.

2001-02-21
ISSUED FOR RECORD
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rev.	description	date	by	chk'd	No.	Dwg No.	Reference Drawings
2	Issued for Record, Note Revised and Weld Added	2001-02-21	E.N.	D.T.			
1	Issue for Construction - Pile Cap Revised to Steel	2000-12-08	E.N.	D.T.	2	94681	Con-Force Structures Limited
0	Issue for Construction - Pile Installation Only	2000-11-29	E.N.	D.T.	1	SC-111-C-004	Precast Panel Layout

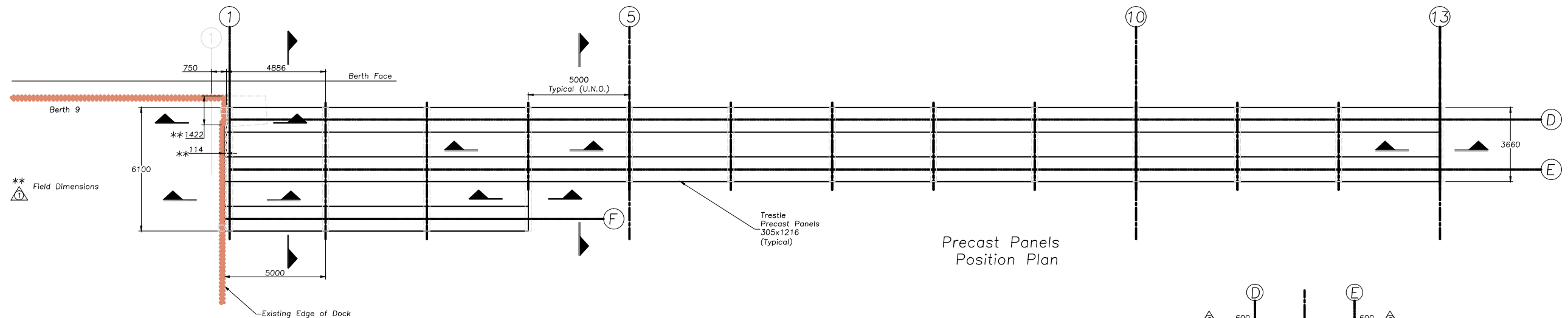
approved	checked	drawn	designed
	P.J.P.	E.N.	D.T.
	2000-02-21	2000-02-21	2000-12-18

customer:
 Fraser River Port Authority

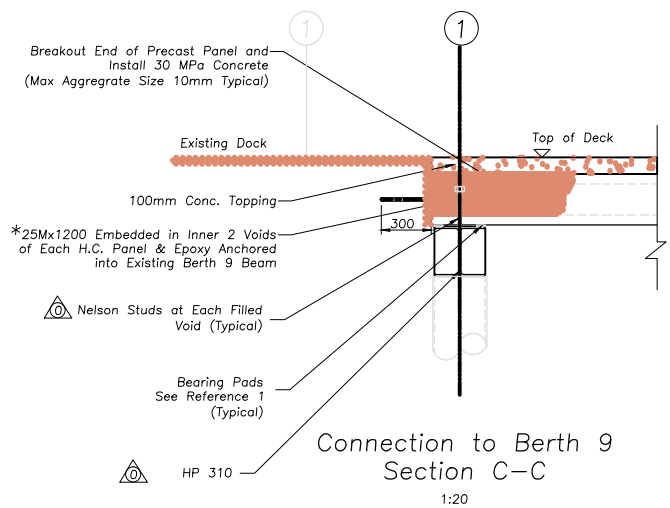
project:
 Fraser Surrey Docks
 Berth 10

date:
 2000-02-21

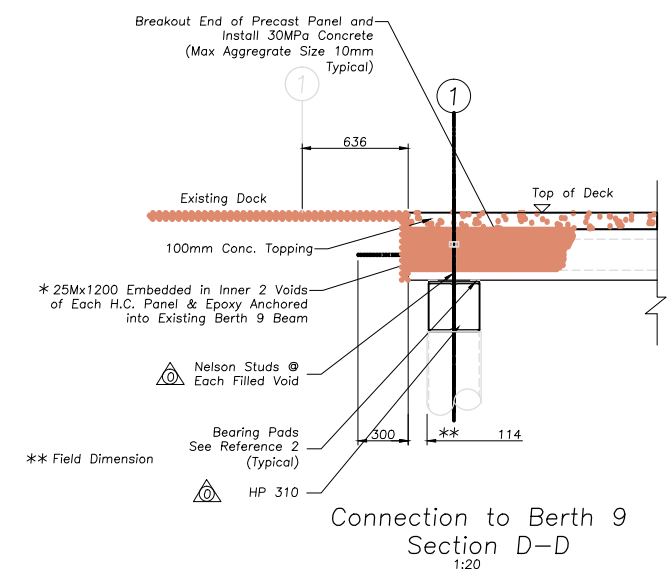
Seabulk Consultants Inc.
 Marine - Bulk Handling - Engineering - Construction - Project Management
 title:
 Berth 10
 General Arrangement
 Pile Position Layout



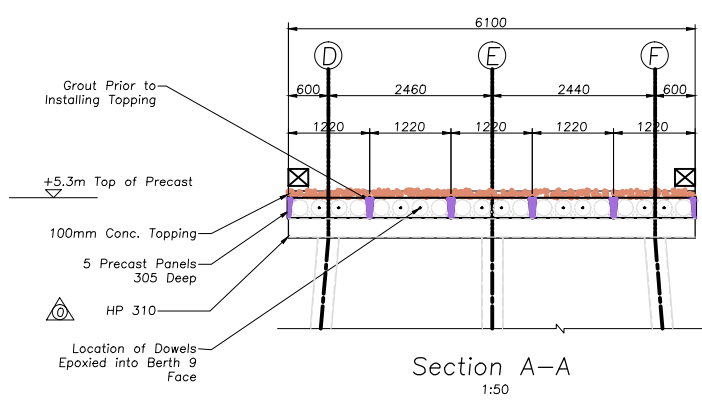
Precast Panels Position Plan



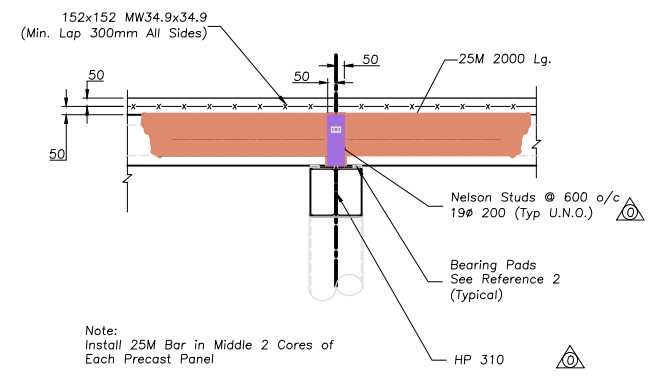
Connection to Berth 9 Section C-C 1:20



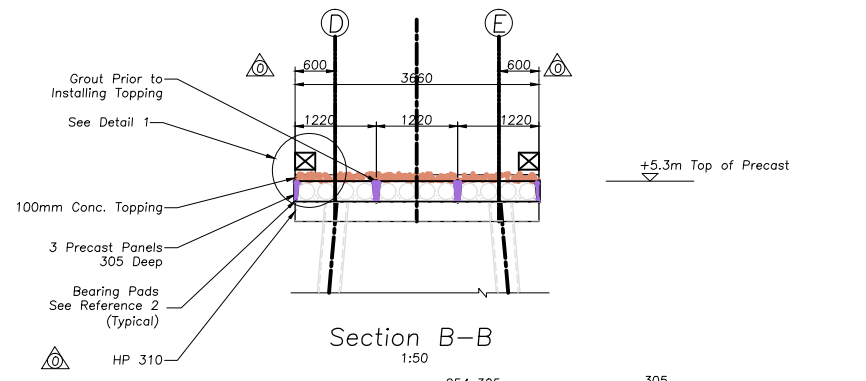
Connection to Berth 9 Section D-D 1:20



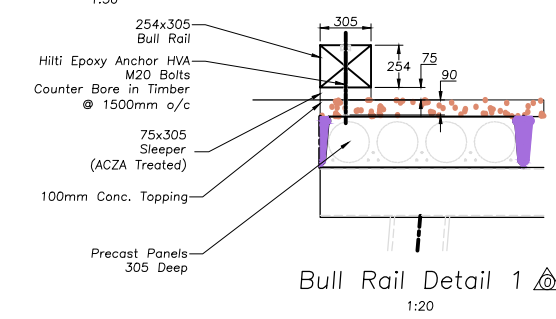
Section A-A 1:50



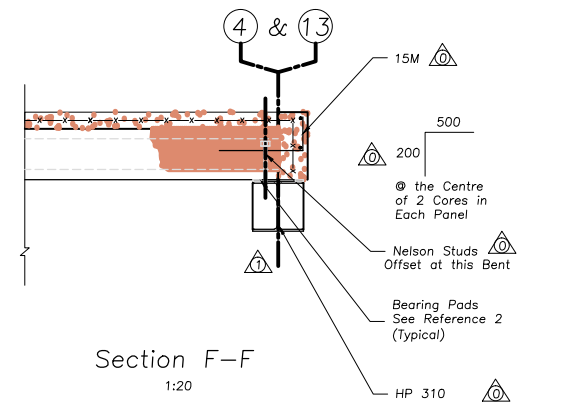
Section E-E Connection Between Precast Panels 1:20



Section B-B 1:50



Bull Rail Detail 1 1:20



Section F-F 1:20

*Each Embedment to be Proof Loaded to 100 Kn.

2001-02-21
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rev.	description	date	by	chk'd	No.	Dwg No.	Reference Drawings
1	Issued for Record	2001-02-21	E.N.	D.T.			
0	Issue for Construction	2000-12-08	E.N.	D.T.	2	94681	Conforce Structures Limited
A	Precast Shop Drawing Development	2000-11-15	E.N.	D.T.	1	SC-111-C-003	Pile Position Layout

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approved		
checked	P.J.P.	2001-02-21
drawn	E.N.	2001-02-21
designed	D.T.	2000-12-08

customer:
 Fraser River Port Authority

project:
 Fraser Surrey Docks Berth 10

client approval

Seabulk Consultants Inc.
 Marine - Bulk Handling - Engineering - Construction - Project Management
 title:
 Berth 10
 Precast Panel Layout and Details

date:	2001-02-21	job no.:	SC-111-99	scale:	1:100	size:	D	dwg. no.:	SC-111-C-004	rev.:	1
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