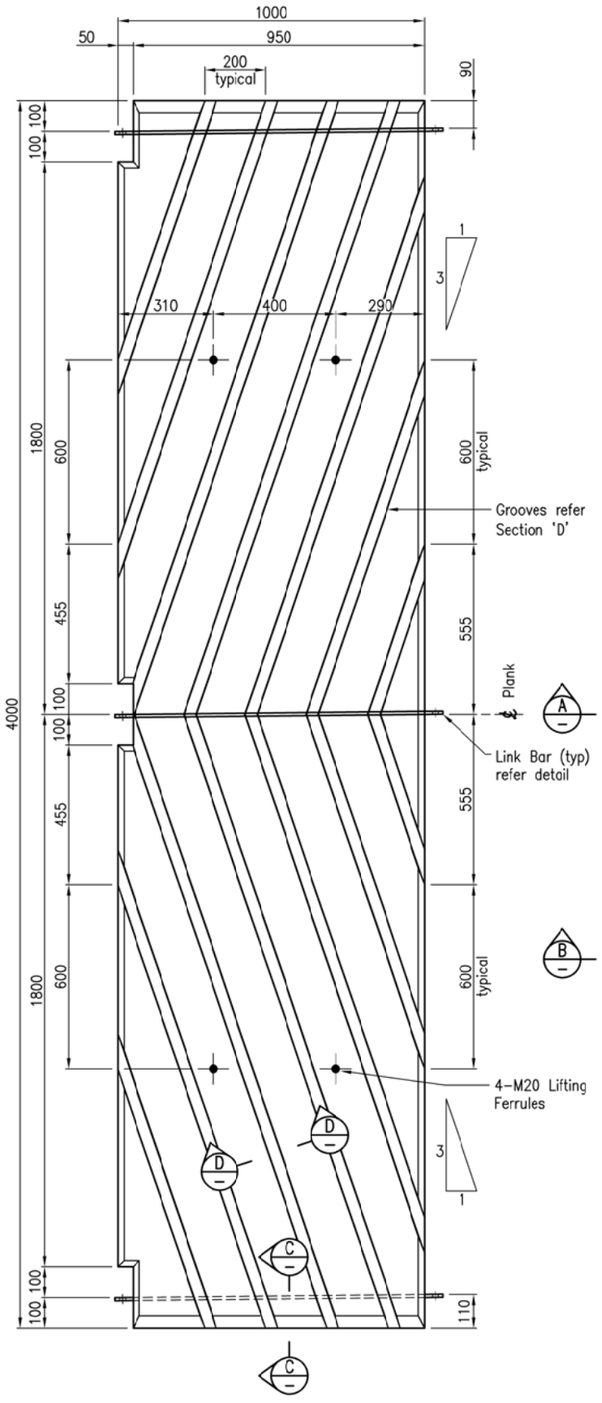
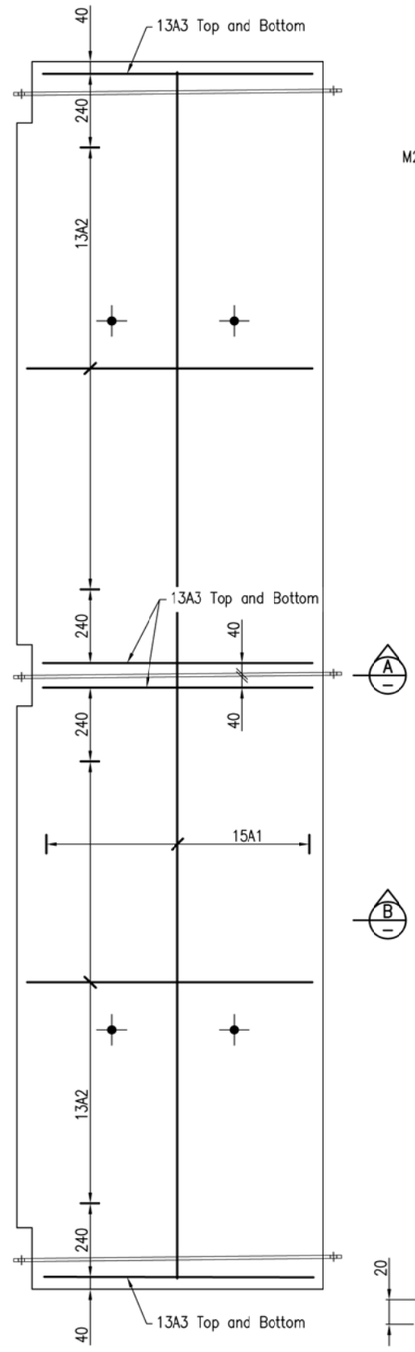
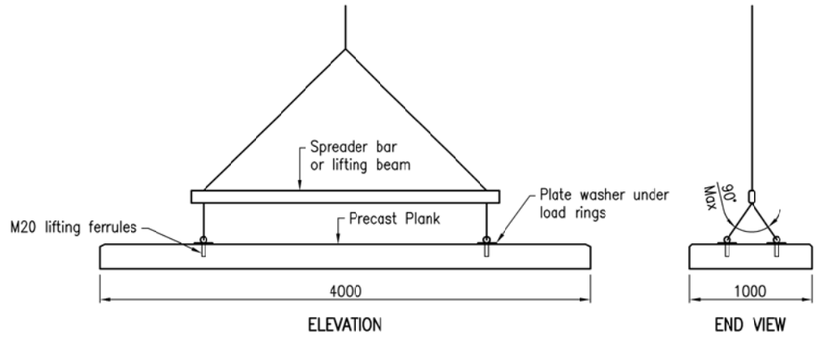


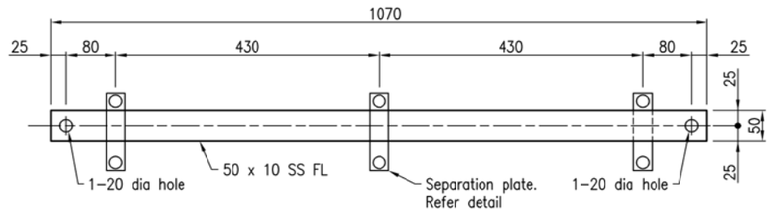
PLAN



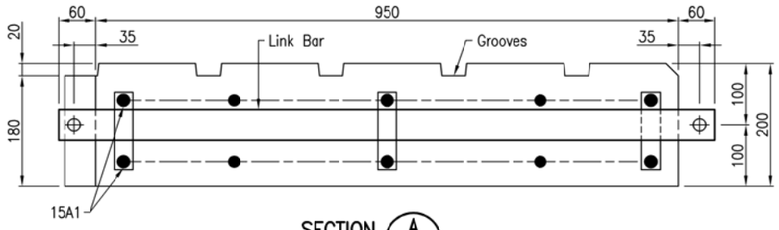
REINFORCEMENT PLAN



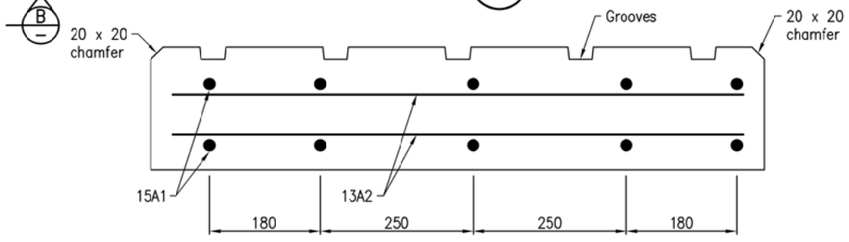
LIFTING DETAIL



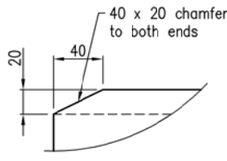
LINK BAR DETAIL
(Quantity = 3)



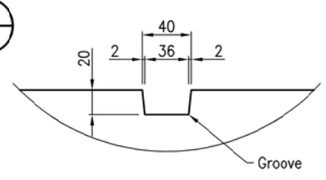
SECTION A



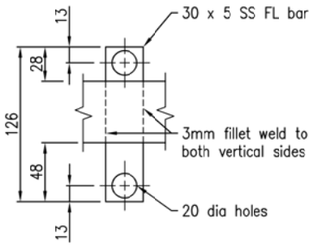
SECTION B



SECTION C



SECTION D



SEPARATION PLATE DETAIL

SCHEDULE

REINFORCEMENT						
Bar Mark	Size and Grade	Dmax	Minimum Af (mm²)	Length	Quantity	Centres
15A1	15 G1105-60-D1	20	199	3930	10	-
13A2	13 G1312-60-D1	15	127	930	28	240
13A3	13 G1312-60-D1	15	127	880	8	-

NOTES:

1. PRECAST PLANKS to be manufactured to MRTS72.
2. DESIGN LOADING: This plank shall only be used for recreational boating situations. The maximum design load is for a dual axle trailer – 2 tonnes per axle at 750 centres.
3. CONCRETE to be in accordance with MRTS70.
   Concrete to be S50/20, exposure classification C.
4. GLASS FIBRE REINFORCED POLYMER (GFRP) REINFORCEMENT to be in accordance with CSA S807 and have the following properties:

Rupture strain	>= 1.2 %
Transverse coefficient of thermal expansion	<= $40x10^{-6}$/°C
Bar surface profile factor (k5) (defined in CSA S806)	<= 1.05

   Size and grades of reinforcement bar are defined in the format:
   nn Ga-E-D1, Dmax, Af, where:

nn	Effective bar diameter (nominal)
G	Glass fibre reinforced polymer
a	Minimum guaranteed tensile strength (MPa)
E	Modulus of Elasticity (GPa)
D1	Durability designation (as defined in CSA S807)
Dmax	Maximum diameter (including bar surfoce profile)
Af	Effective cross-sectional area (mm^2)

   Minimum cover shall be 30 unless shown otherwise.

5. STAINLESS STEEL to be in accordance with ASTM A276.
   Stainless Steel flat bar Grade 316.
   All work shall be neatly finished with sharp edges removed.
6. TRAFFICABLE SURFACE FINISH: The aggregate shall be lightly or medium exposed and level with or slightly above the concrete matrix to achieve a non-slip finish.
7. MASS of RG4000 FRP Precast Plank is 2000kg.
   The mass of the plank shall be clearly and permanently marked on a side surface.
8. M20 Ferrules shall be stainless steel Grade 316 Elephant Foot Ferrules with the following capacities:

Ferrule	Length	Minimum Working Load Limit
M20	95mm	(TENSION) 26.6kN for concrete strength of 32MPa

9. LIFTING TRANSPORTATION AND STORAGE shall be in accordance with MRTS72. Planks shall not be moved before attaining a minimum strength of 32MPa.
10. DIMENSIONS are in millimetres unless shown otherwise.

Departmental Specifications:

MRTS70 Concrete
MRTS72 Manufacture of Precast Elements

Australian and International Standards:

ASTM A276 Standard Specification for Stainless Steel Bars and Shapes
CSA S806 Design and Construction of Building Structures with Fibre-Reinforced Polymers.
CSA S807 Specification for Fibre-Reinforced Polymers.

Department of Transport and Main Roads

PRECAST PLANKS FOR BOAT RAMP

TYPE RG4000 FRP

Queensland Government

A3
Not to Scale
A

Standard Drawing No
4003
Date 11/18