

APPENDIX E PILE SCHEDULE

PORT MARLBOROUGH NZ LTD
Picton Ferry Precinct Development - Indicative Pile Schedule

29th May 2020

Location	Description	No. Piles	Diameter (mm UNO)	Length	Type	Productivity	Comments
New #1 Longarm Wharf	Wharf Piles	142	760	25-30m	close ended steel pile rc filled	1 pile per day	top driven. Alternative is 914mm diameter tubes driven open ended, cleaned out and concrete filled
	End Dolphin Piles	4	1050	32m	open ended steel pile, rc filled	1 pile per 2 days	top driven / bored
	Nesting Dolphin / Outer and Inner Linkspan Supports	16	3000	24m	open ended steel pile rc filled	1 pile per 4 days	bored. Alternative is 4No sheet piled cellular shaft to linkspans with 6.5m diameter RC column, plus western nesting dolphin foundation system.
	Dolphin access bridge structure support piles	4	760	25m	close ended steel pile rc filled	1 pile per day	top driven
Secondary Linkspan	Pontoon Fender Piles	2	1.2m	24m	rc pile with permanent steel casing	1 pile per 2 days	bored
	Pontoon restraint Piers	3	760	24m	close ended steel pile rc filled	1 pile per day	top driven. Alternative is 914mm diameter tubes driven open ended, cleaned out and concrete filled
Commercial jetty (TBC by Shearwater)	Piles		610	28	close ended steel pile rc filled	1 pile per day	top driven
Temporary tug jetty	Piles	8	760	28	open ended. Not cleaned out. Not filled	2 piles per day	top driven
Seawall	King Piles	120	610	24m	close ended steel pile rc filled	2 piles per day	top driven
	Sheetpile Facing	228	TBC	12m	156m (plan length)	4 sheets per day	vibro driven
	Tie-back Piles	114	450 shaft 900screw	12m	bored screw pile	2 piles per day	screw bored
Overpass to Upper Linkspan	Single pile piers	4	2.8m dia	30m	Reinforced concrete bored pile with permanent steel casing, possible 6 m long rock sockets (34 m long piles if rock encountered, rock socket from 28 m)	1 per week	Steel casings top vibrated/driven, some piles will definitely have rock sockets in the bottom at the seaward. Further work is needed to determine how far south the rock goes. May use downhole rock hammer to excavate
	Twin pile piers	2	2.1m dia	30m	Reinforced concrete bored pile with permanent steel casing	2 per week	Steel casings top vibrated/driven, likely to have rock sockets in the bottom. Allow for 2 diameter length of rock socket. May use downhole rock hammer to excavate
	Twin pile piers - oversize casing around piles	2	2.8m dia	10m	Permanent steel casing - no concrete fill in annulus between oversize casing and pile	1 per day	Steel casings top vibrated/driven (provisional only)
	Abutment piles	4	1.2m dia	20m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 per day	Steel casings top vibrated/driven
Overpass to Lower Linkspan	Single pile piers	5	2.4m dia	30m	Reinforced concrete bored pile with permanent steel casing, possible 6 m long rock sockets (34 m long piles if rock encountered, rock socket from 28 m)	1 per week	Steel casings top vibrated/driven, possible rock socket below, some piles will definitely be in rock at southern end. Further work is needed to determine how far north the rock goes. May use downhole rock hammer to excavate rock
	Abutment piles	6	1.0m dia	20m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 per day	Steel casings top vibrated/driven
Dublin Street Overpass	Wall pier piles (western side)	6	0.9m dia	9m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 to 2 per day	Steel casings top vibrated/driven
	Wall pier piles (eastern side)	10	0.9 m dia	18m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 per day	Steel casings top vibrated/driven
	Abutment piles (eastern end)	3	0.9 m dia	18m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 day	Steel casings top vibrated/driven
	Abutment piles (western side)	3	0.9m dia	9m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 to 2 per day	Steel casings top vibrated/driven
Passenger walkway	Tower foundation piles (2 no. landslide towers only)	8	0.6m dia	20m	Reinforced concrete bored pile with permanent steel casing, possible driven plug (bottom driven)	1 per day	Steel casings top vibrated/driven
Waitohi Culvert	Abutment piles	300	approx. 0.5m dia (0.45x0.45m end plate)	20 m	Top driven 310UC158 H-piles with 450x450 end plate	1 to 2 per day	Top driven
Terminal Building	Type 1 Option 1	18	900	20	Reinforced concrete bored pile with temporary steel casing	2 days per pile	Refer attached Sketch from Dunning Thornton
	Type 2 Option 1	24	750	20	Reinforced concrete bored pile with temporary steel casing	2 days per pile	
Terminal Building	Type 1 Option 2	18	750	15	Steel Tube Base Driven Reinforced Concrete filled after driving	2-3 per day?	
	Type 2 Option 2	24	600	15	Steel Tube Base Driven Reinforced Concrete filled after driving	3-4 per day?	

- Notes:
1. Pile details indicated above are based on geotechnical information available as at May 2020 and concept design layouts only
 2. Design loads and details for the linkspan supports are in development
 3. On basis of no new short-arm and concept drawing for berth nesting/linkspan support dolphin
 4. Pile founding conditions for overpasses will be at least partially rock socketed. Information on which piles and rock strengths currently unavailable.