

7.12 TANKER JETTY – CONDITION ASSESSMENT

Applicant: Engineering Services

Location/Address: Internal



File Ref: OAH.3.5

Reporting Officer/Position: Gavin Harris – Director Engineering Services
Scott McKenzie - Manager Engineering Administration

Objective: This report recommends that Council accept that the Tanker Jetty has reached the end of its useful life, and that the Shire commence the process of replacing the current structure with a new Jetty.

Background: Construction of the Tanker Jetty commenced in 1934 and was completed in 1935. The jetty originally comprised 192 piers, but was reduced to 143 piers with an overall length of 656m (average width of 4.5m) following a large storm in 1988. A portion of the original jetty head remains, but is isolated from the main structure by a 210m gap. Various repairs to the jetty structure have been undertaken since 1987.

Usage of the Tanker Jetty by vessels reduced soon after the construction of a new jetty located near the Taylor St area in 1976. The Tanker Jetty has subsequently been used for recreational pursuits by pedestrians, and is no longer used for rail transportation or vessel berthing.

Responsibility for maintenance of the Jetty was transferred from the Western Australian State Government to the Shire of Esperance in 1990. At the time of accepting the Jetty, the Shire of Esperance executed a Jetty Licence Agreement with the State Government. In basic terms, in exchange for \$150,000, the Shire of Esperance agreed to: *“at its own expense to put (sic) keep and maintain the Jetty Structures in a state of good and substantial repair order and condition at all times”*.

Since this time the Shire has undertaken significant repair and refurbishment works, including installation of replacement timber piles, concrete encasement and protective wrapping to piles at the tidal zone, installation of steel cross-bracing to piers, reinforced concrete deck overlay and installation of new steel balustrade.

In order to effectively ascertain the structural integrity of the Tanker Jetty, Tender 15/08 was issued in May 2009. BG&E were awarded the tender and the visual condition inspection (above and below water) was conducted in November 2009.

Once BG&E commenced the loading calculations, it was realised that a new Wave Study was required that targeted the Esperance Bay specifically.

To this end, ITQ 06/09 was issued in March 2010. The successful company was JFA & Associates. They undertook to prepare a digital model of the Esperance Bay and using data from wave buoys at various locations throughout Esperance Bay and the surrounding ocean have calculated the force transferred onto the Jetty with regard to various wave events, ranging from a 1 in 1 year event to a 1 in 200 year event.

Australian Standards dictate that a new Jetty should be designed to handle the forces generated by a 1 in 200 year wave event.

Structural analysis of the existing jetty structure indicates that it is suitable for ongoing pedestrian usage only in the short term, subject to remedial works to specific elements identified as deficient and control of crowding. The jetty capacity is not adequate to achieve compliance with the relevant Australian Standards for publicly accessible facilities which are subject to crowd loadings, and for this reason its suitability for ongoing access can only be considered short-term (up to 3 years) subject to future re-assessment of structural condition and risk of over-loading.

During the Special Meeting on Monday, 11th July 2011, Council resolved as follows;

SO177-1646

That Council;

- 1. Receives the Esperance Tanker Jetty Structural Analysis Report as presented.*
- 2. Requests the CEO prepare and present to Council a policy on the use of, and access to the Tanker Jetty once the LGIS Risk Assessment report is received.*

Attachment/s:

Attachment A - BG&E Indicative Costing
Attachment B - BG&E Jetty Cross Sections

Officer's Comment:

Contained within the Tanker Jetty Condition Assessment Agenda item for the July 2011 Special meeting was specific information relating to the structural integrity of the Tanker Jetty.

Following on from the Public Meeting held on 11th July 2011, this item is being represented to Council to allow further discussion on the future direction for staff to progress with regard to the Tanker Jetty.

The public meeting was attended by approximately 40 people and while a range of issues were discussed concerning the jetty the main issue expressed was that it is important to Esperance that a jetty is maintained in the bay into the future. Whether it is the existing structure or a new structure was not of a concern, only that there was a jetty.

Following the meeting the Director Engineering Services asked a series of questions to the Department of Transport in regards to possible funding and design issues. Their response was as follows –

Under what conditions would DoT fund a new jetty?

DoT would not normally fund a jetty unless it is within a DoT managed boat harbour, being a DoT asset. The Esperance Tanker Jetty (ETJ) is located within the Port Authority area and is not intended for vessel use. DoT has no budget allocation to consider the requested funding contribution.

DoT also administers the Recreational Boating Facilities Scheme (RBFS), which can provide some funding to Local Government Authorities to improve recreational boating facilities within their district. The Esperance Tanker Jetty would probably not be eligible for funding under the scheme as it would have to be available for use by recreational vessels and could not be used mainly as a fishing platform or recreational walkway.

The RBFS grant invitation round is expected to be advertised in the last quarter of 2011.

1. Would DoT consider funding the refurbishment of an existing jetty structure?

A future funding contribution could only be considered under the circumstances noted in Question 1. It is also noted that the Shire of Esperance holds a Jetty Licence for the Esperance Tanker Jetty and it is responsible for the restoration and repair of the jetty.

2. If DoT funded the construction of a new jetty (such as Busselton) what were the minimum requirements for the design on the new structure?

Funding for the recent reconstruction of the Busselton Timber Jetty was not from DoT. However, DoT engineers did assist with the design assessment. As with all jetties, plans would be certified by qualified engineer with maritime experience, would meet relevant Australian Standards and be fit for purpose.

3. Confirm what other jetties DoT may have funded besides Busselton (our understanding is that Carnarvon and Rockingham have had funding for new jetties)?

The majority of funding for the Carnarvon Jetty restoration works was from Federal and State grant schemes not involving DoT, as was the case for Busselton.

In recent times the Shire of Dandaragan was successful in obtaining a Royalties for Regions Grant to assist with the construction of a new recreational (non boating) jetty at Jurien Bay with DoT contributing some funding to enable the Shire to remove two old private jetties that required removal.

The Rockingham Jetty received some funding from DoT, as DoT was an equal licensee with the City of Rockingham. The City of Rockingham now has full ownership of the jetty.

Royalties for Regions and Tourism Grants may be an avenue for the Shire of Esperance to explore, given the Jetty is mainly used as a pedestrian walkway and viewing/fishing platform for tourism and community uses.

With reference to the comments in item 2 above the Jetty Licence states –

“the requirement for the Shire to prepare and submit to the Minister for approval a written detailed program of the work proposed to be carried out by the Shire to fully restore the Jetty Structures to a state of good, safe and substantial repair, order and condition”

and

Provisions that, after the execution of the Jetty Licence, the State Government “shall not be responsible or liable to bear or contribute to any costs of the restoration, repair or maintenance of the Jetty Structures or any part thereof and all such costs shall hereafter be borne and paid by the shire...”

Taking into account the comments from the Department of Transport, the existing Jetty Licence, the community meeting and the recommendations from the Esperance Tanker Jetty Structural Assessment report, officers believe the best option for the future of a jetty structure in Esperance is for the replacement of the existing timber structure, that has reached the end of its useful life, with a new structure designed and built to current Australian Standards.

There is historical data that the State Government has supplied funds to undertake the construction of new jetties, particularly when old jetties have reached the end of their useful life, with the minimum requirement being that the new structure is built to current Australian standards. It also appears that once the new structure has been built that the ongoing maintenance and renewal costs into the future are the sole responsibility of the local government.

The other issue that drives the need for Council to determine the direction it wishes to take with the Tanker Jetty is the Esperance Foreshore Protection and Enhancement Project which will see the construction of a headland around the first 80m of the existing jetty. Should funding become available for this project a determination of the future of the Jetty will be required.

The recommendation outlines an action plan to ensure that a replacement structure is built as soon as possible.

BG&E have prepared an indicative costing, for the jetty structure only, based on a similar build to the Busselton Jetty and escalated to today's cost. The attached costing shows approximately \$14.558M for the demolition of the existing structure and construction of a new jetty structure. The costing excludes a number of issues such as demolition of the first 80m and excluding any other features such as lighting, water level platforms etc and is based on a similar structural design to the Busselton Jetty. An actual construction cost for a new Jetty can only be finalised once a preliminary design is undertaken, following public consultation.

In regards to the option of refurbishment of the existing Jetty infrastructure officers have been unable to obtain a cost estimate due to the complex nature of costing a refurbishment. Unlike a replacement that can be based on unit rates refurbishment is unique to each structure. An experienced operator would need to review the condition assessment document to determine the extent of elements that need to be replaced and then source appropriate material and then determine cost of replacement. Industry experience indicates that refurbishment costs are generally higher than replacement costs

If Council wishes to compare a cost of refurbishment against a cost to replace then officers would need to seek an experienced operator to obtain an indicative cost. Estimates indicate this would take approximately 6-8 weeks to cost.

Consultation: Public Consultation was undertaken during the Public Meeting held on Monday, 11th July 2011 at the Civic Centre with approximately 40 members of the public. The general feeling of the community members in attendance was that would like a structure (jetty) in place, but not necessarily the same style of structure.

Strategic Implications: Strategic Action Plan 2007-2027
Heritage - Endeavour to preserve and protect heritage structures in the Shire of Esperance.
18. Support the investigation and implementation of strategies to assist in the preservation of the Tanker Jetty.

- a) Build a reserve fund for Tanker Jetty Preservation and seek government funding assistance towards its refurbishment and maintenance.
- b) Support options for the generations of funds for jetty preservation (eg businesses on the jetty, bequests).
- c) Endeavour to raise community awareness and support of the need to undertake major preservation work in the near future.

Statutory Implications: The Tanker Jetty is a permanently listed site (register number 831) on the State Register of Heritage Places. Any works proposed on or to the Jetty are to be referred to the Office of Heritage for comment and approval.

The proposal to build a new jetty would need to be referred to the Office of Heritage. As it maybe for the demolition of the jetty, the Office of Heritage Development Committee will need to discuss the matter and provide the Shire with its advice (the Development Committee meet every fourth Tuesday of the month (except in December)). In order to assist the Development Committee, the Shire should provide all necessary information to gain a better understanding of the current condition of the jetty, the proposed new jetty and its design (if available) or the concept plan. A Heritage Impact Statement prepared by a heritage consultant must accompany the proposed works.

Policy Implications: There are no known policy implications arising from the recommendations of this report.

Environmental Considerations: There are no known environmental considerations arising from the recommendations of this report.

Asset Management Implications The construction of a new Jetty will be a significant project that will have substantial impacts on future budgets.

The annualised cost of a new Jetty can be calculated as follows;

	Capital	Annual	Comments
	\$12.3M		Not including Demolition of current Jetty
Interest (Economic Cost)*		\$982,000	8%
Depreciation (Ongoing Cost)		\$245,000	Per annum over 50 years
Operational & Maintenance (Ongoing Costs)**		\$320,000	Per annum over 50 years
Demolition		\$ 45,000	\$2,271,000 annualised over 50 years
		\$1,592,000	

*Should the project be fully funded by grant money this figure can be excluded

**Based on Annual Cost = 1.3 x (Net Present Value/Design life)

As stated in the body of the report it also appears that once a new structure has been built that the ongoing maintenance and renewal costs into the future are the sole responsibility of the local government. The figure of \$1,592,000 is what would be required to operate and maintain a jetty structure per annum if it was built to the same size as the current structure. Council currently spends approximately \$27,000pa on operational expenditure and \$70,000pa on structural repairs.

Financial Implications: BG&E were heavily involved in the replacement of the Busselton Jetty. BG&E have calculated an indicative cost to demolish and reconstruct the Esperance Tanker Jetty based on the costing of the recently renewed Busselton Jetty and escalated for regional loading and taking into account inflation.

If the Tanker Jetty Headland is constructed as part of the Esperance Foreshore Protection and Enhancement Project (EFPEP) then the first 80m of the jetty would no longer be required and the indicative cost to demolish the jetty and construct a new structure from Pier 30 to 143 is \$14.6M, consisting of \$2.3M for demolition and \$12.3M for new construction.

There are two Reserve Accounts that relate to the Tanker Jetty, balances as at 30 June 2011 are;

Tanker Jetty Reserve	\$1,489,920
Tanker Jetty Donation Reserve	\$28,186

The Tanker Jetty Reserve Account includes \$1m that has been allocated to the Shire of Esperance by the Royalties for Regions programme through the Country Local Government Fund in the first year of the grants.

There has been approximately \$626,000 of renewal and upgrade works undertaken on the jetty since 1996, while approximately \$133,000 has been spent on operations since 2000. Traditionally over the last 5 years \$70,000 has been allocated annually since 2006 and any funds not expended have been placed into reserve.

In terms of the structural assessment \$134,285 has been expended on the Esperance Tanker Jetty Structural Assessment and a further \$85,215 was expended on the Tanker Jetty Wave Study.

Officer's/ Committee Recommendation:

Moved: Cr Rodgers

Seconded: Cr Smith

AP0811-397

That Council:

1. Accepts that the existing Tanker Jetty is now beyond its useful life and supports its complete replacement as a priority.
2. Requests the CEO prepare preliminary designs for a new jetty based on community consultation.
3. Requests the CEO to prepare a business case (including capital costs, whole of life costs, operational costs and renewal costs) for the development of a new jetty structure based on the agreed jetty design.
4. Requests the CEO commence lobbying the Western Australian and Australian Governments for funding to replace the Tanker Jetty.
5. Requests the CEO seek expressions of interest from heritage consultants to prepare a Heritage Impact Statement for the proposed demolition of the Tanker Jetty and the replacement jetty.
6. Refer the proposal to demolish the Tanker Jetty and plans for a new jetty, together with a Heritage Impact Statement, to the Office of Heritage.

CARRIED

F8 - A1

(Against Cr Pearce)

Voting Requirements: Simple Majority.

Council Resolution: **O0811-1665**

ATTACHMENT A

P09171
8 Aug 2011

ESPERANCE TANKER JETTY - STEEL PILE OPTION



Reconstruction Pier 30 to 143 - Steel Piles

1.0 Demolition

Item No.	Description	Quantity	Unit	Rate	Total (ex GST)
1.1	Remove existing handrail off existing jetty Works shall include, removing the existing handrail and disposal.	520	m	\$ 70.00	\$ 36,400.00
1.2	Removal of existing jetty superstructure Works shall include, removal and disposal of existing concrete overlay, timber decking and stringers.	2400	m ²	\$ 650.00	\$ 1,560,000.00
1.3	Removal of existing piers Works shall include, removal of timber corbels, halfcaps, cross-bracing, walers and cutting off piles at sea bed level. All items to be disposed.	114	No	\$ 6,000.00	\$ 684,000.00
ESTIMATED TOTAL SUM - DISMANTLING AND DEMOLITION					\$ 2,280,400.00

2.0 Steel Piling

Piers at 10.7m spacing (49 No), two piles each pier.

Item No.	Description	Quantity	Unit	Rate	Total (ex GST)
2.1	Allow for mobilisation and demobilisation of piling plant	1	Item	\$ 450,000.00	\$ 450,000.00
2.2	Fabrication, and delivery to site of 406CHS12.7 steel piles (98 No) Works shall include shop detailing, fabrication of piles into required lengths, transport to site.	1666	m	\$ 320.00	\$ 533,120.00
2.3	Protective treatment to surface of piles Works shall include Abrasive grit blast cleaning, interzone 954, painting etc.	2125	m ²	\$ 100.00	\$ 212,500.00
2.4	Preparation, handling and pitching of piles Works shall include, transport from storage site, preparation of pile toe and head, fixing pile in piling plant ready for driving.	98	No	\$ 2,350.00	\$ 230,300.00
2.5	Driving of steel piles driven in water Works shall include preboring, dollying below existing ground, compiling pile records, driving piles including temporary supports and any necessary guide arrangements, temporary compressions, moving piling plant and equipment between piles.	-	m	incl	\$ -
2.6	Site welded splice to steel pile (Provisional) Work shall include cutting off and disposal of surplus length of pile, forming connection with old work including welding.	98	No	\$ 4,000.00	\$ 392,000.00
2.7	Preparing top of steel pile Works shall include cutting off and disposal of surplus length of pile, notch to receive fullcap, weld partial cap plates.	98	No	\$ 1,000.00	\$ 98,000.00
ESTIMATED TOTAL SUM - STEEL PILING					\$ 1,915,920.00

ATTACHMENT A

P09171
8 Aug 2011

ESPERANCE TANKER JETTY - STEEL PILE OPTION



3.0 Structural Steel

Item No.	Description	Quantity	Unit	Rate	Total (ex GST)
3.1	300x200x10 RHS Fullcap 98 No x 4m long) Works shall include, shop drawings, fabrication, protective treatment, erection including temporary bracing and support, site welding and making good surface treatment etc.	14.3	t	\$ 28,215.00	\$ 403,474.50
3.2	460UB82 Stringer beams (1040m long o/all) Works shall include, shop drawings, fabrication, protective treatment, erection including temporary bracing and support, splices, bolts etc.	85	t	\$ 17,850.00	\$ 1,517,250.00
3.3	Allow for all baseplates, cap plates, end plates, splice plates, attached and loose connections not separately identified, fitted stiffeners & the like required	1	Item	incl	\$ -
ESTIMATED TOTAL SUM - STRUCTURAL STEEL					\$ 1,920,724.50

4.0 Precast Concrete Deck Planks

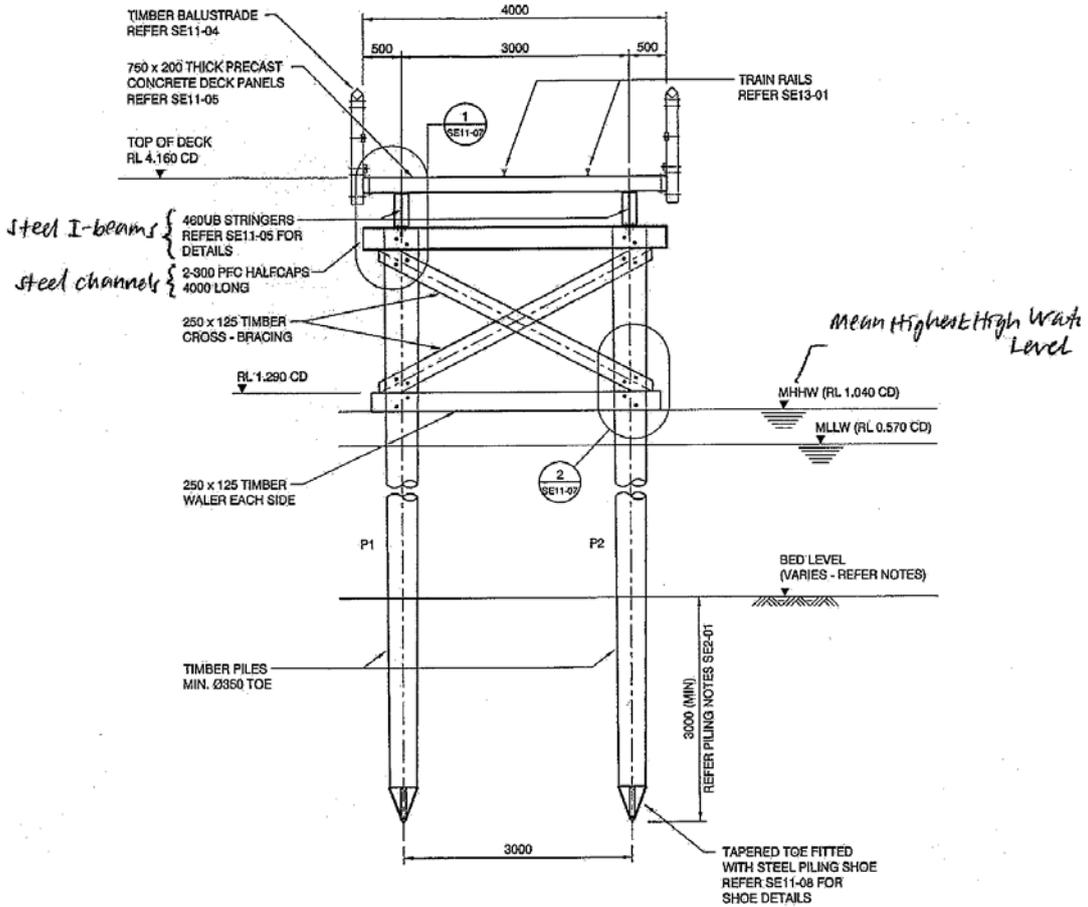
Item No.	Description	Quantity	Unit	Rate	Total (ex GST)
4.1	Precast concrete deck planks 4000 long x 750 wide x 200 thick Works shall include formwork, reinforcement, cast in sleeves, Grade S50 concrete, curing, erection onto bedding strip, grouting stud holes etc.	2080	m2	\$ 350.00	\$ 728,000.00
4.2	Reid 'Swiftlift' foot anchor cast into precast concrete deck planks Works shall include supply with hot dipped galvanised treatment, casting into planks with recess former, grouting recess at completion.	1400	No	\$ 60.00	\$ 84,000.00
ESTIMATED TOTAL SUM - PRECAST CONCRETE DECK PLANKS					\$ 812,000.00

5.0 Falsework

Item No.	Description	Quantity	Unit	Rate	Total (ex GST)
5.1	Falsework to jetty superstructure Work shall include all erection and removal on completion	2080	m ²	\$ 75.00	\$ 156,000.00
ESTIMATED TOTAL SUM - FALSEWORK					\$ 156,000.00

ATTACHMENT B

BUSSELTON JETTY

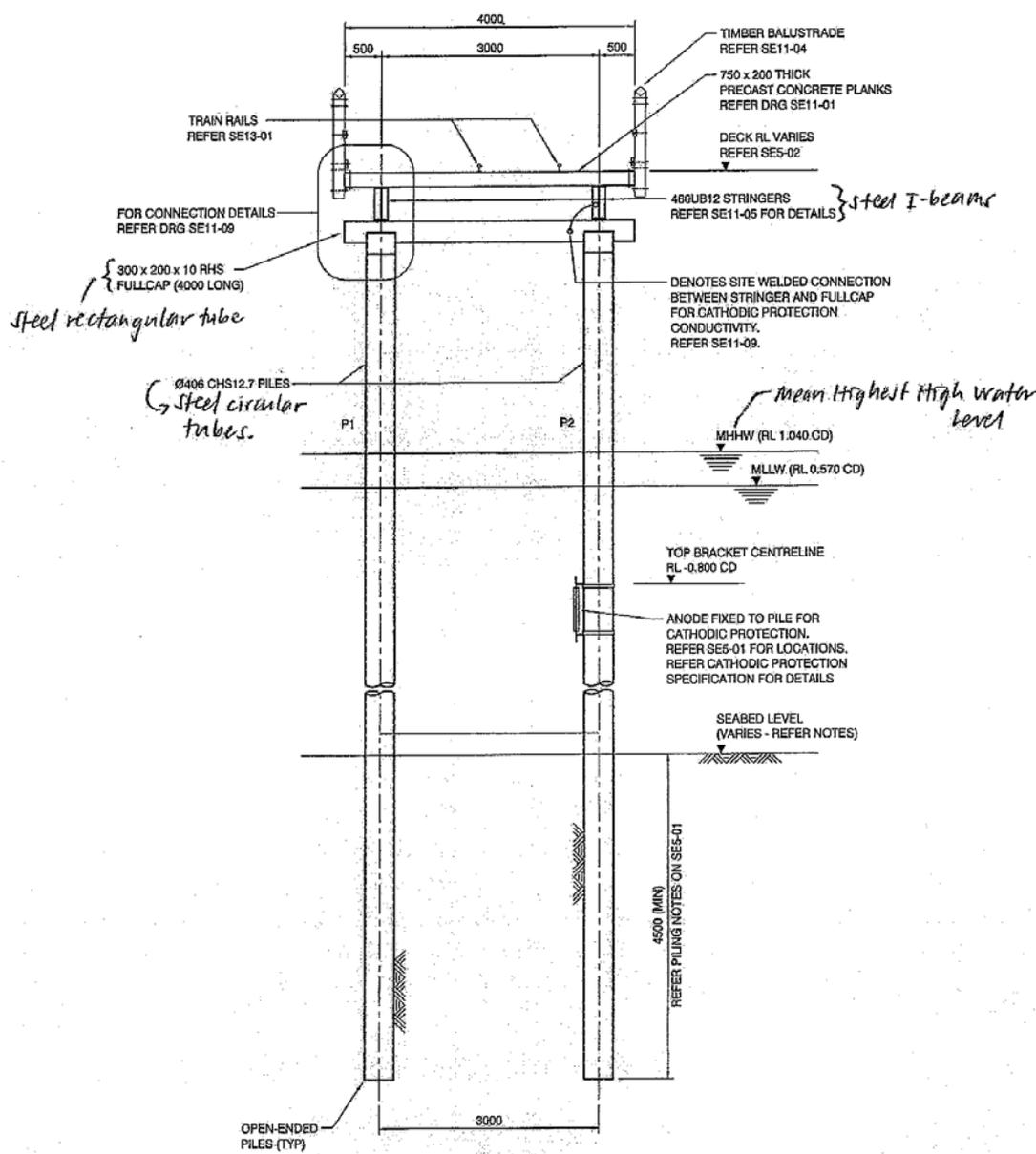


TYPICAL PIER ELEVATION - TIMBER PILES
 1:50

Pier Spacing = 9.20m (twice distance of existing piers)

ATTACHMENT B

BUSSELTON JETTY



TYPICAL PIER ELEVATION - STEEL PILES
 1:50

Pier Spacing = 11.40m (2.5 x distance of existing piers)

Ms D Hoffrichter	Observer – part of meeting
Mrs H Gee	Observer – part of meeting
Mrs C Willoughby	Observer – part of meeting
Mrs A Cull	Observer (Airport Coordinator Shire of Esperance) - part of meeting
Ms L McIntyre	Observer from 1.29pm
Mr T Slater	Kalgoorlie Miner
Mr A Paull	Esperance Express

- 2.2 **APOLOGIES:**
Cr I S Mickel, JP President Rural Ward

2.3 **NOTIFICATION OF GRANTED LEAVE OF ABSENCE:**

Cr Starceвич was granted leave of absence at the Ordinary Council Meeting held on 26 July 2011, for the period 10 August to 25 August 2011 inclusive.

3.0 PUBLIC QUESTION TIME

Nil questions

4.0 DEPUTATIONS, PRESENTATIONS, INSPECTIONS, PETITIONS

Nil this month

5.0 DECLARATION OF MEMBERS INTERESTS

5.1 **DECLARATIONS OF FINANCIAL INTERESTS – LOCAL GOVERNMENT ACT SECTION 5.60A**

Nil declarations

5.2 **DECLARATIONS OF PROXIMITY INTERESTS – LOCAL GOVERNMENT ACT SECTION 5.60B**

Nil declarations

5.3 DECLARATIONS OF IMPARTIALITY INTERESTS – ADMIN REGULATIONS SECTION 34C

Cr Stewart Item 7.8 (Page 98) Budget Amendment – Noel White Pavilion and Basketball Stadium Renovation Plans as she is a life member of the Agricultural Society

Cr Pearce Item 7.8 (Page 98) Budget Amendment – Noel White Pavilion and Basketball Stadium Renovation Plans as he is a member of the Agricultural Society

Cr Penny

Item 7.11 (Page 110) Tanker Jetty Risk Assessment & Item 7.12 (Page 115) Tanker Jetty Condition Assessment as his employer was involved with the "Push Your Boss off the Jetty" promotion.

Cr Reynolds

Item 7.11 (Page 110) Tanker Jetty Risk Assessment & Item 7.12 (Page 115) Tanker Jetty Condition Assessment as he is a tourism operator

6.0 CONFIRMATION OF MINUTES

Committee Recommendation:

Moved: Cr Penny

Seconded: Cr Rodgers

AP0811-384

That the Minutes of the All Purpose Committee meeting held on 19 July 2011, be confirmed as a true and correct record.

**CARRIED
F9 - A0**

Voting Requirement: Simple Majority

Council Resolution: O0811-1665

4.0 ANNOUNCEMENTS BY THE PERSON PRESIDING WITHOUT DISCUSSION:

NIL

5.0 DECLARATION OF MEMBERS INTERESTS:

5.1 DECLARATIONS OF FINANCIAL INTERESTS – LOCAL GOVERNMENT ACT SECTION 5.60A

NIL

5.2 DECLARATIONS OF PROXIMITY INTERESTS – LOCAL GOVERNMENT ACT SECTION 5.60B

NIL

5.3 DECLARATIONS OF IMPARTIALITY INTERESTS – ADMIN REGULATIONS SECTION 34C

Item 13.1 (Page 9 of the Ordinary Council Meeting) State Barrier Fence Specified Area Rate Referendum

Cr Mickel declared an Impartiality Interest as he is an owner of a farm
Cr Walker declared an Impartiality Interest as he is an owner of a farm
Cr Stewart declared an Impartiality Interest as she has an interest in farming operations
Cr Paxton declared an Impartiality Interest as he is an owner of a UV property
Cr Rodger declared an Impartiality Interest as his daughter owns a farm

Refer item 7.8 (page 98 of the All Purpose Committee Meeting held on the 16 August 2011) Budget Amendment - Noel White Pavilion and Basketball Stadium and Renovation plans

Cr Stewart declared an Impartiality Interest as she is a life member of the Agricultural Society.
Cr Pearce declared an Impartiality Interest as he is a member of the Agricultural Society.

Refer item 7.11 and 7.12 (page 110 and 115 of the All Purpose Committee Meeting held on the 16 August 2011) Tanker Jetty Risk Assessment & Tanker Jetty Condition Assessment

Cr Penny declared an Impartiality Interest as his employer was involved with the “Push Your Boss off the Jetty” promotion.

Cr Reynolds declared an Impartiality Interest as he is a tourism operator

6.0 PUBLIC QUESTION TIME:

David Reichstein asked the Council a question regarding the civic precinct and the possibility of the Shire selling off the land. The Shire President advised Mr Reichstein that land ownership will stay within the Shire, and this current Council has no intension of selling the land.