



REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November 1996 have been used to determine the cultural heritage significance of the place.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.11.2 Reclaiming land
- 5.8 Working on the land

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 109 Environmental change
- 302 Rural industries and market gardens

11.1 AESTHETIC VALUE*

11.2. HISTORIC VALUE

Higgins Cut (fmr) was an attempt, made in 1865 by private individuals, to drain a section of the fertile Capel River flood plain for agriculture and was the forerunner of extensive rural drainage works undertaken in various parts of the south-west of Western Australia by the State government in the early 1900s. (Criterion 2.1)

Higgins Cut (fmr) was a major component of the drainage system of the Stirling Estate from 1904 to 1917, the first major rural drainage system undertaken by the Public Works Department in the south-west, and for which the floodgates at the place were installed. (Criterion 2.2)

Higgins Cut (fmr) is important to the local area because it was the first known attempt to drain the extensive floodplains of the Capel River and because it set an example which was followed by neighbouring farmers such as James McCourt who arranged for similar drainage work to be undertaken on his property in 1874. (Criterion 2.2)

* For consistency, all references to architectural style are taken from Apperly, Richard; Irving, Robert and Reynolds, Peter *A Pictorial Guide to Identifying Australian Architecture: Styles and Terms from 1788 to the Present*, Angus & Robertson, North Ryde, 1989.

Higgins Cut (fmr) is associated with the Higgins family and their descendants (including the Roberts family), who have been farmers in the Capel River district since the earliest European settlement of the area in the 1840s and are the current owners of the place. The place is also associated with ticket of leave man Thomas Williams, who helped construct the place while in the employ of Henry Higgins. (Criterion 2.3)

Higgins Cut (fmr) is an example of creative innovation for the period when private land owners in the Colony did not commonly undertake such extensive agricultural drainage works. It is also an example of considerable determination and physical achievement as the work of excavating the channel was undertaken with manual labour and wheelbarrows. (Criterion 2.4)

11. 3. SCIENTIFIC VALUE

Higgins Cut (fmr) and associated remnant floodgate is important for its potential to contribute to a better understanding of the occupation of the Capel River area and early attempts to alter the environment for agricultural exploitation and its unforeseen detrimental side effects. (Criterion 3.2)

11. 4. SOCIAL VALUE

Higgins Cut (fmr) is valued by the local community for its associations with the Higgins family and their descendants including the Roberts family, who have been farmers in the district since the 1840s, and as an example of innovative, early agricultural drainage work on the Capel River flood plains. (Criterion 4.1)

Higgins Cut (fmr) contributes to the local community's sense of place as an example of early agricultural settlement in the district. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12. 1. RARITY

Higgins Cut (fmr) is the earliest substantial rural drainage work undertaken in Western Australia and the forerunner of later works in the area. (Criterion 5.1)

Higgins Cut (fmr) is unusual as an example of a substantial rural drainage project that was undertaken by a private individual rather than the Colonial or State Governments. The floodgates were added later by the State Government. (Criterion 5.1)

12. 2 REPRESENTATIVENESS

12. 3 CONDITION

The 1865 drainage channel is in poor condition as it has been filled in a number of places with earth banks, creating a series of salty deadwaters.

The remnants of the 1906 floodgates and bridge are in very poor condition. The bridge structure is tilting precariously and the iron bars that held the gates are rusted.

12.4 INTEGRITY

Higgins Cut (fmr) has low integrity as it has not been in use as a drainage channel since 1917 and the floodgates were removed in 1925.

It is unlikely that *Higgins Cut (fmr)* will be reused as a drainage channel in the future as the Capel River has now been diverted to the sea further upstream.

12.5 AUTHENTICITY

While the drainage channel is now separated from the sea by a sandbar, and four earth banks have been constructed across it converting it into a series of salty deadwaters, it still has a moderate degree of authenticity as the extent of the original work can still be determined.

A large portion of the original deck to the timber bridge is missing and the floodgates and fasteners have been removed leaving only the metal rods that held them in place. These elements have only a moderate to low degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Kelsall Binet Architects.

13.1 DOCUMENTARY EVIDENCE

Higgins Cut (fmr) is an unused drainage channel constructed in 1865 by Henry Higgins, with the remains of a floodgate installed by the Public Works Department in 1906.

In 1829 and early 1830, there was not enough surveyed land available for European settlers arriving at the Swan River Colony. Surveyor J. S. Roe and a party of gentlemen, including James Stirling, took the schooner *Eagle* south down the coast to find land suitable for pastoralism. They found what they were looking for in the area of Geographe Bay, around the Capel, Vasse and Preston rivers. The coastal area of the district was named Wellington and was soon opened up for selection. Stirling selected 16,610 acres at Wellington Location 41, James Henty took 60,000 acres south from the Collie and Preston rivers and Colonel Peter Latour acquired 51,000 acres near the Leschenault Inlet.¹

Land regulations in the Colony required that improvements be made on properties granted within a stipulated period of time, generally five or seven years, or the land would be resumed. Absentee landlords, such as Latour, and later Stirling, relied on others to work their land, sometimes in return for a portion of the grant. Latour is understood to have employed William Higgins to work his property at the Leschenault.² William and Sarah Higgins arrived in the Colony on the *Britannia* on 6 May 1830, with their three children, Henry William (7), Martha (5) and Sarah (3). They were among the earliest European settlers in the Leschenault district and quickly added another three children to their family.³

The Bussell, Molloy and Layman families took up land at Augusta in 1830, and the land between Augusta and Port Leschenault gradually began to be settled, although development was slow with so much of the land in the hands of only a few owners and with hostility from the Aboriginal occupants. There were no smaller parcels of land available for purchase and although a garrison was established at Port Leschenault for protection of settlers, it was only effective over a relatively small area. In 1837, the settlers at Augusta moved north to the Vasse River area, and that year, John Scott was employed by Stirling to work his lands near Port Leschenault. The Western Australian Company was formed in England in 1840, and migrants were brought out to form a settlement at Australind on land purchased from

¹ Chase, Diana & Krantz, Valerie, *Just a Horse Ride Away: A History of the Shire of Capel and its people*, Shire of Capel, 1995, pp. 16-17.

² Erickson, Rica, *Bicentennial Dictionary of Western Australians*, Perth, UWA Press, 1988, p. 1475.

³ Erickson, Rica, *Bicentennial Dictionary of Western Australians*, Perth, UWA Press, 1988, p. 1475, Chase, Diana & Krantz, Valerie, *op cit*, p. 17.

Stirling and Latour. The settlement failed, but a number of the people who came out to Australind took up land further south.⁴

In 1844, William Higgins drowned in the Preston River.⁵ Sarah Higgins and her children remained in the district, where Henry, Edward, Charles and Frederick became well known as fine horse and cattle breeders. In 1845, Henry was a signatory to a request from the residents of the Wellington district to Governor Hutt for construction of better communications through the area. Sea travel was the best form of travel to and from the district, but travel overland, even for short distances, was hampered by streams, and by tracks that were sandy in summer and impassable in winter. One well-used track was along the beachfront.⁶

In 1851, Henry is recorded as the lessee of Charles Prinsep's property 'Paradise' on Paradise Creek. The introduction of convicts to the Colony in 1850, provided labour and an increased market for produce, which may have been the impetus that the Higgins family needed. In March 1853, Henry and Frederick purchased Leschenault (Wellington) Location 63 from Francis Ommanney.⁷ Ommanney was an absentee owner who had not come out to the Colony and had purchased the land unseen. In 1846, he had paid £320 for the 320 acre Location, but Henry and Frederick Higgins purchased it for £160.⁸ The Higgins brothers named the property 'Springfield'. Their mother, Sarah, lived with them at Springfield. The following year, on 11 April 1854, Henry married Lavinia Gardiner.⁹

Springfield was a coastal strip of land that took in the sand dunes and the paperbark swamps on the landward side of the dunes. The Capel River, in similar fashion to a number of other rivers on the west coast that flowed to the sea, did not have a defined riverbed at its mouth. The regular river flow was not sufficient to cut a deep course through the sand dunes, with the result that much of the water simply spread out on the landward side of the dunes, creating brackish lakes and muddy flats where paperbarks and peppermint trees flourished. Because the height of the land was close to sea level the water table was high, increasing the amount of water behind the dunes. In winter, when the river flow increased, the surrounding land was inundated. The area was known locally as 'the Lakes' and rowboats were used in the winter for getting from one property to another.¹⁰

⁴ Chase, Diana & Krantz, Valerie, op cit, pp. 16-30.

⁵ Erickson, Rica, op cit, p. 1475, gives the date of burial as 11 November 1840, while Diana Chase, op cit, p. 35, gives 1844 as the date from the Picton Cemetery Records.

⁶ Chase, Diana & Krantz, Valerie, pp. 32-33; Statham, Pamela, *Swan River Colony 1829-1850*, In Stannage, C. T. (ed) *A New History of Western Australia*, UWA Press, Perth, 1981, pp. 181-210.

⁷ Deed of Memorial, Book 5 No. 446, 7 March 1853. Wellington Locations 57-67 were initially recorded as Leschenault Locations, but at some point changed to Wellington.

⁸ Deed of Memorial, Book 5 No. 446, 7 March 1853; Country Enrolment 508, 1846.

⁹ Chase, Diana & Krantz, Valerie, op cit, pp. 46-48; Erickson, Rica, op cit, p. 1475.

¹⁰ Chase, Diana & Krantz, Valerie, op cit, p. 59; LePage, J. S. H. *Building a State: the Story of the Public Works Department of Western Australia, 1829-1985*, Perth, WAWA, 1989, p. 362; early maps of the locality.

Henry Higgins is claimed to have employed ticket of leave men to clear, drain and prepare Springfield for crops, but the earliest record of ticket of leave men employed by any of the Higgins brothers is 1863.¹¹ It is more likely that Henry and his brothers did most of the work themselves to establish Springfield, which became well known for its impressive harvests of onions and potatoes, and for its horses and dairy cattle. Henry's brothers Edward and Frederick, later established a property in the district called *Rose Hill* and Charles, who married Lavinia Higgins' sister, Mary Gardiner, in 1863, established *Moulden Farm*.¹²

In 1862, Western Australia experienced widespread heavy rainfall and flooding, and it was probably this event that finally prompted Henry Higgins to try and drain the part of his farmland that was inundated each year. He set about cutting a channel from his land through the sand dunes to the sea.¹³ He would have been assisted in the work by his brothers and also by ticket of leave man Thomas Williams, who was employed as a labourer at Springfield for four years, from June 1863 to June 1867. Thomas Williams (convict no. 5839) had been sentenced in 1859 to ten years for horse stealing. He had arrived on the *Palmerston* in February 1861, and was given his ticket of leave two years later. He was awarded a conditional pardon in October 1867.¹⁴

According to Charles Higgins' diary, Higgins Cut was opened in May 1865. The water must have poured through the channel initially, as Charles noted that his wheelbarrow was washed away.¹⁵ Unfortunately, that was all he had to say of the event. The cut was only partly successful because at high tides and during storms the sea swept back through the channel and spread salt water over the land.¹⁶

Higgins Cut also created problems for neighbour James McCourt because it cut the beach track, which he used to access his various properties, forcing him to make a long detour. McCourt took the matter up with the Resident Magistrate who required Henry Higgins to create a ford so that the right of way was not obstructed. Higgins levelled the banks of Higgins Cut at one spot for a ford, the surface of which was later metalled to provide a firm surface through the channel.¹⁷ In the early 1870s, when Henry's daughter, Anne, began a school at Springfield, her young cousins still had to row to class across the flooded fields.¹⁸

11 Chase, Diana & Krantz, Valerie, op cit, p. 47; WA Biographical Index, Employers of Ticket-of-Leave men, A-W (1850-1890), entries for Henry, Frederick & Edward Higgins.

12 Chase, Diana & Krantz, Valerie, op cit, pp. 47-48; Erickson, Rica, op cit, p. 1471.

13 CSO records Vol. 546, p. 49, SROWA ACC 36, quoted in Chase, Diana & Krantz, Valerie, op cit, p. 59; LePage, J. S. H., op cit, pp. 85-86.

14 Erickson, Rica & O'Mara, Gillian, *Convicts in Western Australia, 1850-1887*, UWA Press, Perth, 1994, p. 599.

15 Charles Higgins Diary, May 1865, in private ownership, quoted in Chase, Diana & Krantz, Valerie, op cit, p. 59.

16 Chase, Diana & Krantz, Valerie, op cit, p. 59.

17 CSO records Vol. 546, p. 49, SROWA ACC 36, quoted in Chase, Diana & Krantz, Valerie, op cit, pp. 49 & 110.

18 Chase, Diana & Krantz, Valerie, op cit, p. 59.

Although Higgins Cut was not successful, a similar drainage channel was constructed in 1874, about 2.5 miles (4 kms) north at the mouth of the Capel River. This was known as McCourt's Cut, but was also referred to as the Capel Cut. It was constructed by the Colonial Works Office on land resumed from Location 182. McCourt's Cut was dug west from Mallokup Bridge across the Yanget Swamp and through the dunes at James McCourt's farm. A network of small drains fed the main channel. At high tides, salt seeped back from the ocean and salted the soil near the channels but the farmers affected by the drainage, including McCourt, James Ramsay and William Rose, felt the cut was successful. In his farm journal, Ramsay noted that in June 1874, 'were it not for the C[apel] cut I believe the water would be within a few feet of the door'.¹⁹

At Springfield, Henry and Lavinia Higgins had thirteen children, the last, Alfred, was born in 1879, shortly before Henry died at the age of fifty-six. The older Higgins boys, William, Reuben Gardiner, David Henry and Henry Charles, formed the Higgins Brothers, and continued to live at Springfield and work their properties together. None of the boys married, and their mother and sister Madeline kept house for them.²⁰ In 1891, Lavinia died and the four older brothers acquired title to the properties which comprised Wellington Locations 63, 85, 206 and 213, with a total area of 424 acres (171 ha). In 1894, William was living at Yule Station, and Reuben, David and Henry Charles bought out his quarter share of the family properties for £150.²¹ They, and younger brother Alfred, continued to live at Springfield with their sister Madeline.

In 1903-04, during a period of rapid land settlement following the gold boom, James Stirling's Wellington Location 41 was subdivided as the Stirling Estate. Before any of the land could be sold, the Public Works Department (PWD) undertook drainage work in the area, under the *Land Drainage Act, 1900* and the 1902 amendments. The drainage of the Stirling Estate was the first major work of this kind.²² As part of the work, the PWD purchased a 7.25 acre (2.9ha) strip of land encompassing Higgins Cut. The Department paid the Higgins brothers £100 for the land.²³

Stirling Estate drainage - This work has been put in hand at the instigation of the Lands Department who also found the money. The work for the year consists of main and tributary channels and a flood gate to prevent the ingress of the sea. The work is well in hand and should be completed by the end of March, when the rains are expected to begin.²⁴

...During the year [1905-06] this work has been further extended, a set of flood gates being constructed on McCourt's Cut, five miles of drains cut

¹⁹ Ramsay, James, Farm Journals, Battye Private Archives, 385A, quoted in Chase, Diana & Krantz, Valerie, op cit, pp. 73-74

²⁰ Chase, Diana & Krantz, Valerie, op cit, p. 83; Erickson, Rica, op cit, p. 1472.

²¹ Deed of Memorial, Book 12 No. 45, 6 November 1894.

²² Le Page, J. S. H., op cit, p. 361.

²³ Deed of Memorial, Book 15 No. 320, 5 April 1906.

²⁴ Public Works Department, Annual Report for year ending 31 December 1904, in *Votes & Proceedings of Parliament*, 1905, Vol. 2, p. 54.

ranging from five feet to 40 feet wide, temporary culverts have been put in, and further flood-gates are in course of construction.²⁵

[In 1906-07] all channel banks were raised two feet in height above the channel beds and adjustable needle weirs have been erected at the junction of the two branch and main drains. A bridge was erected at Higgins Crossing, and roads and approaches made.²⁶

PWD plans for the floodgate at Higgins Cut are dated 9 January 1906. The location of the gates is marked on the 1906 site plan. The bridge section of the floodgate provided access for operation of the gates, as well as a crossing point.²⁷ The north-south oriented Stirling Estate drain constructed by the PWD drained into Higgins Cut, which was initially one of the main sea outlet drains for the Stirling Estate drainage system.²⁸

The floodgates installed at McCourt's Cut were of the same design as those installed at Higgins Cut.²⁹ Other drainage work, which included a number of floodgates, was carried out on the Wonnerup Estuary and the Vasse River.

Stirling estate - Wonnerup & Vasse River weirs have been completed and flood gates erected, which are working satisfactorily. These structures prevent the tidal flooding of a large tract of country which hitherto has been useless on account of salting. The length of the Wonnerup River structure is 140 feet, with 12 flood gates, and of the Vasse River structure 148 feet with 13 floodgates.³⁰

In 1917, high rainfall and considerable flooding was experienced in the region. Every creek and river was full, a bridge on the Capel River was washed away and another on the Preston River damaged, and many farmhouses had water lapping at the doorstep. The drains were unable to cope but the floodgates on the Capel River remained closed. One night, someone blasted open the main floodgates with gelignite, to release the floodwaters. The gates were patched up but the foundations were cracked and in high tides and heavy seas, the salt water seeped into the soil.³¹

The title to the site of Higgins Cut was returned to the Higgins brothers in 1917.³² This would indicate that Higgins Cut was not considered a useful part of the general drainage system. At least one sandbar, situated at the

²⁵ Public Works Department, Annual Report January 1905-June 1906, in *Votes & Proceedings of Parliament*, 1906, Vol. 2, p. 40.

²⁶ Public Works Department, Annual Report 1906-1907, in *Votes & Proceedings of Parliament*, 1907, Vol. 2, p. 40.

²⁷ Public Works Department Plan 12271, drawings 1-4, 1906, SROWA, CONS 4481, item 12271; photograph of the floodgates, inter-war period, from Chase, Diana & Krantz, Valerie, op cit, p. 59.

²⁸ Plan of Stirling Estate, showing drainage channels, c. 1904, SROWA, Agricultural area plans on aperture cards; Deed of Memorial Book 15 No. 320 showing sketch of DOLA diagram 9524.

²⁹ WSS&DD Plan 313, showing extension of McCourt's gates, 1925, In PWD Plan, Stirling estate drainage, Capel River levees, SROWA, CONS 4481/24191.

³⁰ Public Works Department, Annual Report 1907-08, in *Votes & Proceedings of Parliament*, 1909, Vol. 2, p. 55.

³¹ Chase, Diana & Krantz, Valerie, op cit, p. 190; Hutton, Catherine, Battye Oral History, OH2486/19. It is not certain which gates this event refers to, but was possibly McCourt's.

³² Certificate of Title Vol. 675 Fol. 189, 7 September 1917.

mouth of the channel, was already in place, preventing the back flow of saltwater.³³ In 1925, the gates and fastenings were removed from the floodgates at *Higgins Cut* and used to extend the gates at McCourt's Cut.³⁴ This was part of further drainage work undertaken in the district at this time, under the *Land Drainage Act, 1925*, and included new 'tidal gates' at the mouth of the Vasse and Wonnerup estuaries in 1928-29.³⁵

The Higgins Brothers continued to farm at Springfield. Every week, the four brothers drove 'to Sunday services, dressed in their best, boots polished, large felt hats pulled low, and white handle-bar moustaches carefully waxed'.³⁶ At the 1924 British Empire Exhibition at Wembley, London, medals were awarded to Higgins Brothers, Springfield, Capel, although the specific reason for the awards is not known.³⁷

In 1926, David Higgins died, followed by Rueben in 1928. Henry Charles Higgins was then the sole owner of Springfield and a considerable number of other properties in the district, which the brothers had acquired over the years. Henry Charles sold the properties in 1929 to local farmer, Hubert Eldred Alexander Heppingstone, and provided a fifteen-year mortgage for the purchase.³⁸ Henry Charles, Alfred and Madeline Higgins then moved to the Stirling River area. Alfred died there in 1931 and Madeline in 1934.³⁹

In 1930, Heppingstone sold the Capel properties to Percival Harrington Kerr, financing Kerr's purchase. Kerr worked the properties, his payments to Heppingstone providing the funds for Heppingstone to make the mortgage payments to Henry Higgins. During the Depression, the mortgage was rearranged several times, until in 1945, Percy Kerr surrendered the land to Heppingstone, who arranged finance with the Bank of New South Wales and paid out the mortgage to Henry Higgins.⁴⁰ Title was transferred to Heppingstone, and the following year, Springfield was purchased by Wilfred Frank Roberts, son of Frank and Mary Jane Roberts (nee Higgins) and grandson of Henry and Lavinia Higgins.⁴¹

The Roberts family had settled in the district around the same time as William and Sarah Higgins. William Jenkin Roberts was employed as supervisor of Sir James Stirling's land at Minninup from c. 1842. William Roberts' son was Charles Fox Roberts of Capel Farm and Charles' son was Frank Albert Roberts, who married Mary Jane Higgins in 1894. Wilfred Roberts farmed Springfield in association with his other landholdings in the

33 Drainage map of Stirling Estate, PWD Plan 12271, op cit, drawing 1, 1906.

34 WSS&DD Plan 313, showing extension of McCourt's gates, 1925, op cit.

35 LePage, J. S. H., op cit, pp. 443-444.

36 Chase, Diana & Krantz, Valerie, op cit, pp. 252-253.

37 Battye Private archives, ACC812A. This refers to 2 items, which are missing from the collection so no further details are known at this time.

38 Deed of Memorial, Book 20, No. 476, 8 June 1929.

39 Chase, Diana & Krantz, Valerie, op cit, pp. 252-253; Erickson, Rica, op cit, pp. 1472-1475.

40 Erickson, Rica, op cit, p. 1472; Certificate of Title, Vol. 675 Fol. 189, 12 April 1945; Deeds of Memorial, Book 20, No. 476, 663, 947 & 1172 & Book 22 No. 589-592.

41 Certificate of Title, Vol. 675 Fol. 189, 1 November 1946; Erickson, Rica, op cit, pp. 1474, 2636-7.

district, but did not occupy the property. Following Wilfred's death in 1960, title passed to his son, Gordon Levine Roberts.⁴² A new house was built at Springfield for the occupation of Gordon and his family, as the old Springfield house was in total disrepair and had not been occupied for many years. Gordon's son, Mark Roberts currently farms at Springfield.⁴³

Gordon Roberts commented that during their family's involvement with the property there had been ongoing problems with salt water seeping back through *Higgins Cut* and into the surrounding farmland. In the middle of the Twentieth Century a number of earth banks were constructed across the cut to try and prevent this occurring. In the 1950s the first earth bank was constructed, this was located on the seaward side, adjacent to the site of the former 1906 gates and bridge. In the 1960s a second earth bank was constructed further downstream, this bank is now used as a causeway linking the paddocks on either side of the cut. Later in the 1960s the Public Works Department constructed two more earth banks, one near the mouth of the cut and the other downstream from the causeway. In the 1960s Gordon Roberts relocated the western boundary fence of Springfield in from the property boundary to the base of the dunes to protect the primary dune area.⁴⁴

Higgins Cut (fmr), on Wellington Location 3126, has been fenced off from the rest of the Springfield farm. The drainage installations in the district have successfully prevented the flooding from the river that occurred, but have also ended the regular flushing of the land with fresh water and nutrients, resulting in less productive land and in the death of the remaining paperbarks (those that were not deliberately removed to clear the land). This has in turn caused the water table to rise, bringing salt to the surface. Due to the diversion of the Capel River and the over pumping of groundwater by neighbouring market gardeners, the original wells on the property have gone to salt and artesian ground water is now used for the cattle troughs.⁴⁵

In 1999, *Higgins Cut (fmr)* was entered on the Shire of Capel Municipal Heritage Inventory with a category 1 management rating, and a recommendation for entry on the State Register.⁴⁶

In 2003, *Higgins Cut (fmr)* is not in use as a drainage channel.

13.2 PHYSICAL EVIDENCE

Higgins Cut (fmr), an unused drainage channel constructed in 1865 by Henry Higgins, with the remains of a floodgate installed by the Public Works

⁴² Certificate of Title, Vol. 675 Fol. 189,6 April 1960, 9 April 1962; Erickson, Rica, op cit, pp. 2635 & 2642.

⁴³ Information provided by Roberts family during physical inspection of the place.

⁴⁴ Information provided by Roberts' family, op cit.

⁴⁵ Information provided by Roberts' family, op cit.

⁴⁶ Gray, Laura, *Shire of Capel Municipal Inventory of Heritage Places*, September 1999, Entry no. 3.

Department in 1906, is located on Springfield, a privately owned farm approximately nine kilometres from Capel.

The northwest boundary of Springfield is formed by Forrest Beach, one of the many long sandy beaches that line Geographe Bay. The farm consists of the dunes lining the beach and the low-lying land inland that was originally the fertile flood plain of the Capel River.

The land to the southwest, south and east of Springfield has also been developed for agricultural purposes but to the northeast of the property is the residential subdivision of Peppermint Grove Beach.

Higgins Cut (fmr) is a former drainage channel that winds through a low point in the sand dunes of Forrest Beach and into the former flood plain of the Capel River. The sand dunes and the remnants of *Higgins Cut (fmr)* have been fenced off from the farm paddocks with stock fencing.

The mouth of the cut is blocked by a sandbar but occasionally salt water from the ocean flows into the cut at high tide during storms and remains in the deadwater. The shallow salty deadwater behind the sandbar is roughly seven meters wide but varies along its length. The deadwater is surrounded by low-lying primary sand dunes vegetated with the coastal scrub endemic to the area.

An earth fill barrier has been constructed at the first bend in the cut, at the base of the larger secondary sand dunes. The earth barrier is approximately three meters wide and the top of the barrier is approximately one meter higher than the water level. Here the channel is approximately six meters wide but again it varies in width along the cut. The channel has steeply sloping earth banks, which have been vegetated by Peppermint Trees, the coastal scrub endemic to the area and pasture grasses.

Behind the earth fill barrier is a second deadwater that appears to be saltier than the first deadwater adjacent to the ocean. Coatings of salt crystals have formed on dead trees and branches on the banks of the cut and in shallow areas where the sand bed protrudes through the water.

On the inland side of the secondary dunes a second earth barrier has been constructed across the cut. The earth barrier is approximately three meters wide and the top of the barrier is approximately one meter higher than the water level. The top of the barrier is level with the surrounding ground and it is currently being used to store round hay bales. Gates in the stock fences on either side of the cut allow access to this area.

Adjacent to the inland (south-west) side of the second earth barrier are remnants of the timber floodgates. These remnants are unstable and are leaning precariously upstream. Most of the timber boards that formed the deck to the bridge above the gates are missing or are partly collapsed and the timber posts supporting the edge beams are leaning sideways and are rotted in places. Rusted cast iron bed frames and sheets of corrugated iron are lying on the remnants of the deck and were possibly used in the past to reinforce the structure or make the deck trafficable. There is no evidence of the earlier handrails to the deck.

Several iron rods are located in a row under the bridge, they project upwards from the bed of the cut but are not attached to the underside of the bridge. A second row of iron rods is located several meters upstream from the floodgates and bridge. None of these rods are shown on the original drawings and their purpose has not been established. It is likely that they were a later addition.

The low banks of third deadwater have been planted with couch grass to prevent erosion. Sheets of corrugated iron have also been used to stabilise these banks. A large roll of old fencing wire has been dumped in the salty deadwater near the remnants of the floodgates.

Further upstream is a third earth barrier. Like the second barrier, it is approximately three meters wide and the top of the barrier is level with the surrounding ground, which is located about one meter above water level. There are gates in the stock fences on either side earth barrier to provide and it is used as a causeway to provide vehicle access between the paddocks separated by the cut.

Further upstream again is the fourth earth barrier that separates the fourth and fifth of the deadwaters. This earth barrier is similar to the third barrier but is lower and it is not used as a causeway. The fifth deadwater is not contained by raised banks and it spreads out across the surrounding low-lying paddocks. The land adjacent to this deadwater is covered with salt resistant Samphire bushes.

With the exception of the area of land covered with Samphire bushes, the flood plain is subdivided into paddocks and used as pasture land. Along the edges of the former Capel River bed there are clusters of stumps from the dead paper bark trees and river gums that originally flourished on this flood plain. An open agricultural drain supplying water from the Harvey irrigation system runs parallel with the dunes through the centre of the paddocks.

Higgins Cut (fmr) is in poor condition and it no longer serves to drain the flood plain of the Capel River. While the channel has been filled in a number of places with earth barriers creating a series of salty deadwaters, the extent and location of the original drainage channel is still legible.

The remnants of the floodgates and bridge are in very poor condition. A large portion of the original deck to the bridge above the gates is missing and the remaining structure is tilting precariously. The only remnants of the gates themselves are the rusted metal bars that held the gates.

13.3 COMPARATIVE INFORMATION

There have been considerable drainage programmes undertaken by the Public Works Department from the early 1900s in various agricultural areas in Western Australia's south-west, including the Stirling Estate, the Harvey District, Waroona, Brunswick, Wagerup, Busselton District and the Ferguson River. The Stirling Estate drainage system was the first major drainage project in the South West.⁴⁷

⁴⁷ Le Page, J. S. H., op cit, p. 361.

Ballarat Railway Bridge, Vasse Floodgates & Wonnerup Floodgates (Place 16727) is located at Wonnerup. The place was entered on the Shire of Busselton's Municipal Inventory in 1996. These floodgates were part of the Stirling Estate Drainage system established by the PWD, and appear to have made use of the existing railway bridge. The floodgates are in poor condition.

Harvey Diversion Drain was created to alleviate the winter flooding of the Harvey flats, which occurred because the gradient of the lower Harvey River was insufficient to carry the volume of water to the sea. In the 1930s, hundreds of sustenance workers dug the diversion channel, creating an additional course for the Harvey River, which is used only in the winter. Floodgates control the flow and the connection with the river. The diversion drain is part of a system of drainage on the Harvey flats. *Harvey Diversion Drain* (Place 11980) is entered on the Shire of Harvey Municipal Inventory, has a high degree of integrity and authenticity but is in need of maintenance.

Another place in the Shire of Harvey is *Hard's Cut* (Place 03181). This is entered in the HCWA database, but no information is given for the place. It is not entered on the Shire's Municipal Inventory.

More recent floodgates were installed at Point MacLeod, Leschenault Inlet c.1979, following extensive sea flooding of 300 homes during cyclone Alby, April 1978. *Floodgate-storm surge barrier* (Place 5674) protects against high tides and severe storms. It is entered on the City of Bunbury Municipal Heritage Inventory. No details are provided regarding condition, but the gates continue to function and have high authenticity.

Munday's Brook Diversion Channel (Place 10376) is a water collecting channel built by the PWD in 1897 in connection with the construction of the Victoria Reservoir. It diverts the water from Munday's Brook to the Reservoir. It is entered on the Shire of Kalamunda Municipal Inventory and is recorded as being in poor condition but with high integrity.

Drainage/Irrigation Channels, Muchea South (Place 14256) is a site only, and is entered on the Chittering Shire Municipal Inventory.

McCourt's Cut created the mouth of the Capel River. A reference in a local history of Busselton was found to Molloy's Ditch, indicating that there may have been other early attempts at draining farm land in the Capel-Vasse district, but no other information is available on this particular place.

Higgins Cut (fmr) is one of a very few remaining examples of early land drainage undertaken by an individual.

13.4 REFERENCES

No key references.

13.5 FURTHER RESEARCH
