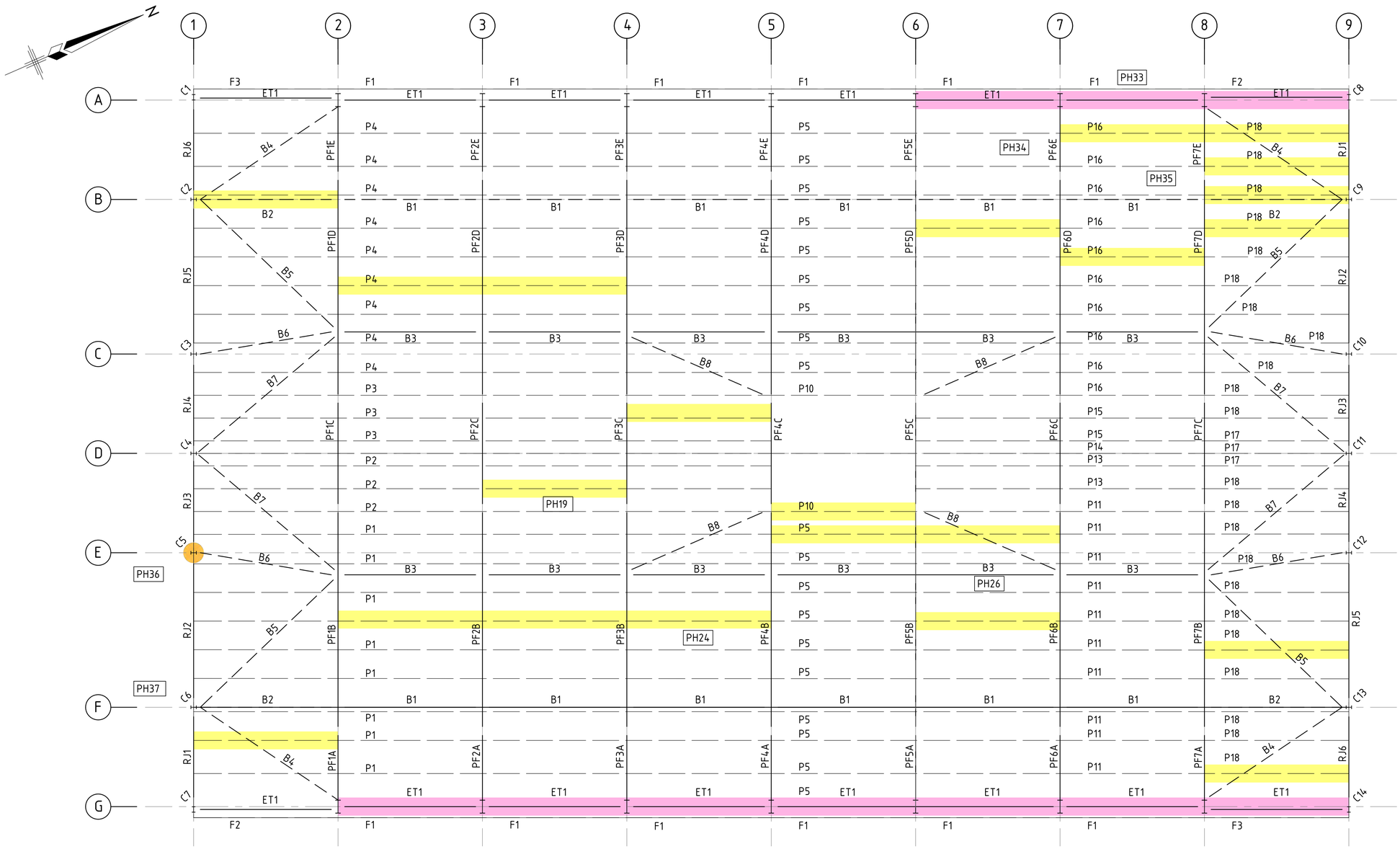
APPENDIX A

SHED PLANS



SHED No.6 - ROOF PLAN

1:100

NOTES:

1. PH37 - DENOTES PHOTOGRAPH NUMBER
2. PH25 - PHOTOGRAPH OF FASCIA PURLIN

LEGEND

- REPLACEMENT OF PURLINS
- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
- REPLACEMENT OF RAFTER
- REPAIR TO IMPACT DAMAGE COLUMN
- REPLACEMENT OF WALL/ROOF SHEETING

ALL WALL AND ROOF SHEETING TO BE REPLACED

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VERIFIED	H.AGRAWAL	JUNE'22
APPROVED	S.WOODHOUSE	JUNE'22

CLIENT: ILUKA

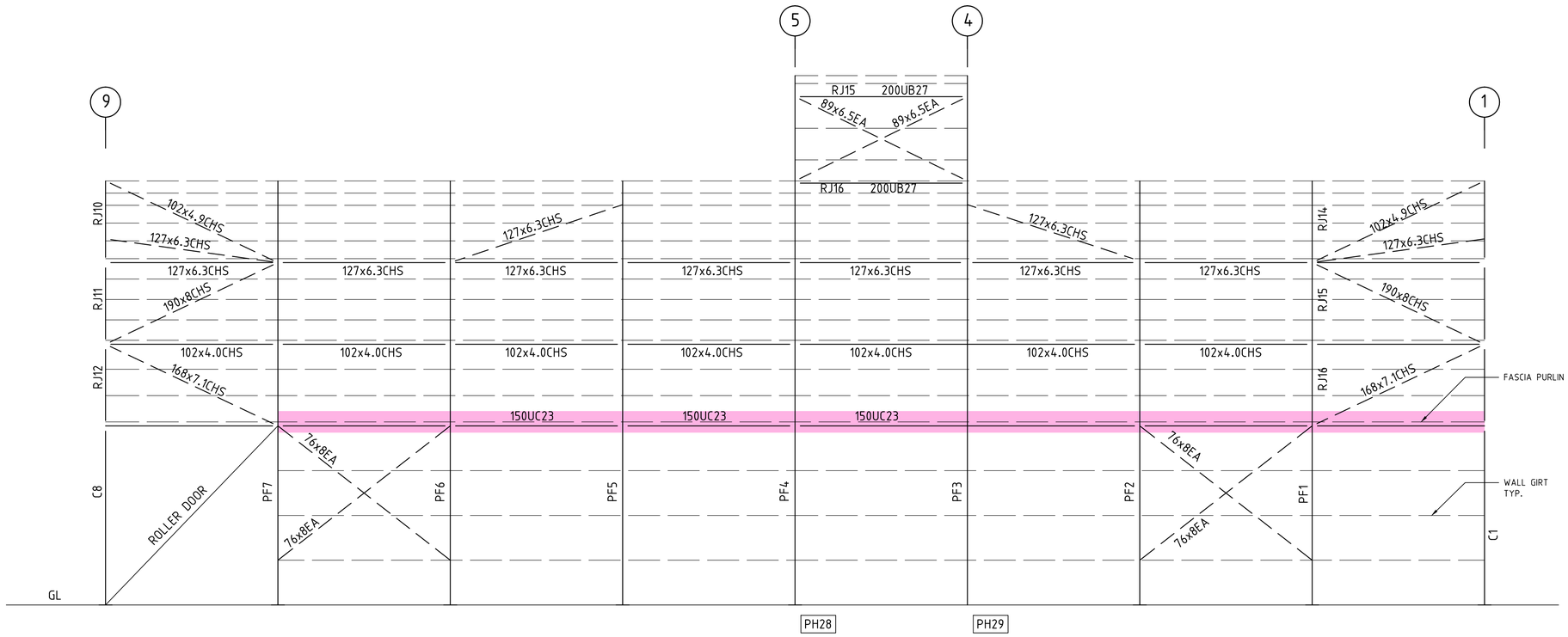
PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS
SHED No.6
ROOF PLAN

DRAWING NUMBER: 10378-S-002 A

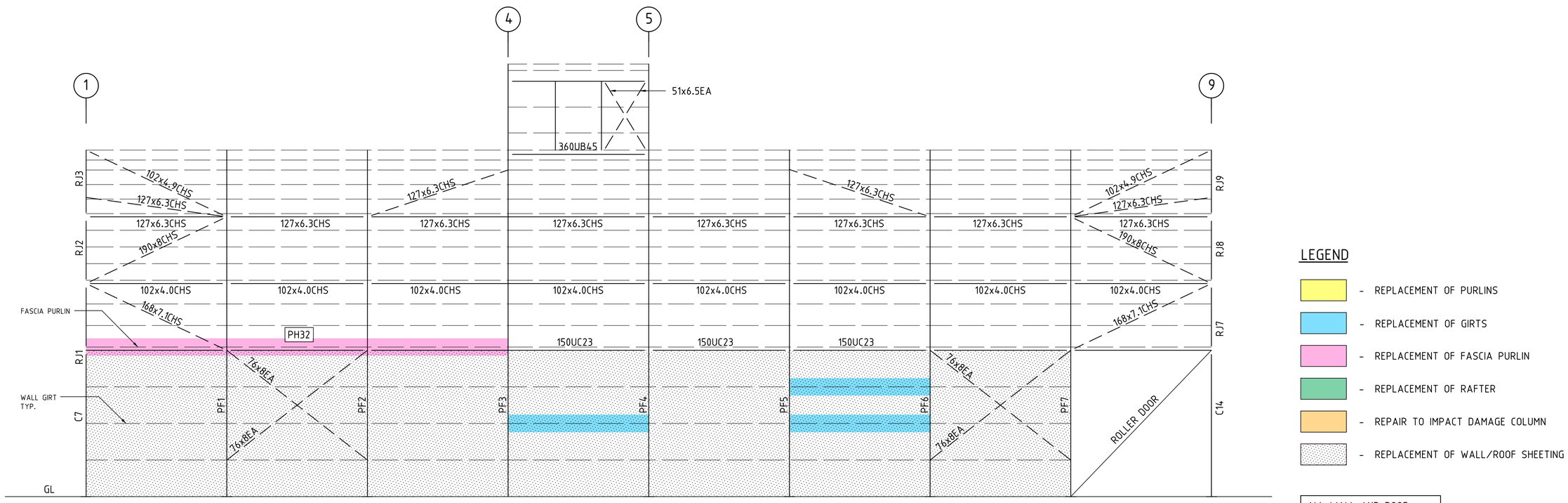
REVISION

SCALE: A1



SHED No.6 - WEST ELEVATION

1:100



SHED No.6 - EAST ELEVATION

1:100

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CLIENT: ILUKA

PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

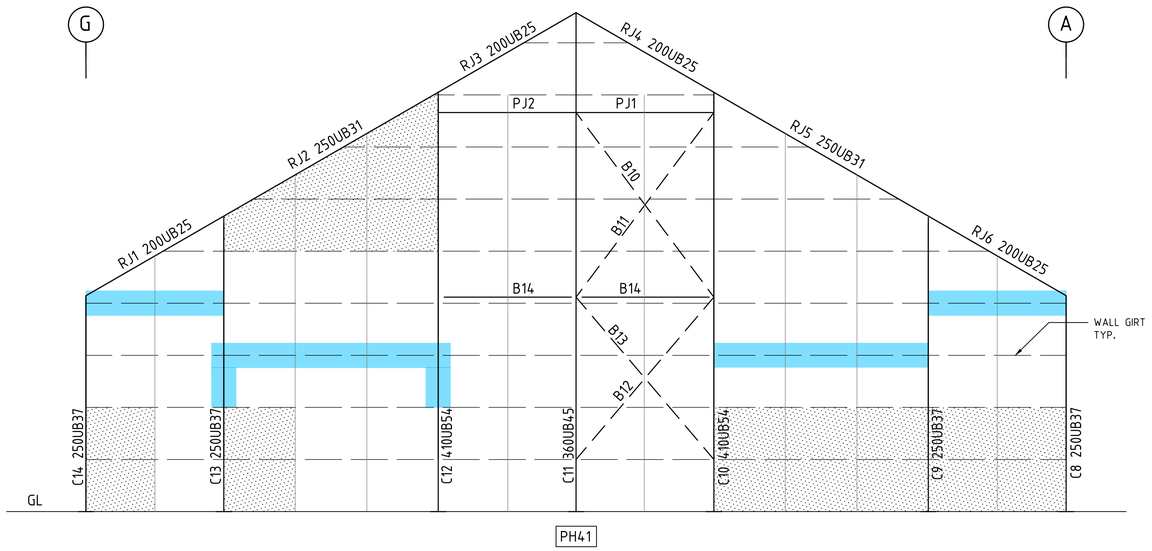
DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.6
WEST AND EAST ELEVATION

DRAWING NUMBER: 10378-S-003 A

REVISION

SCALE: A1



SHED No.6 - NORTH ELEVATION

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NOTE:

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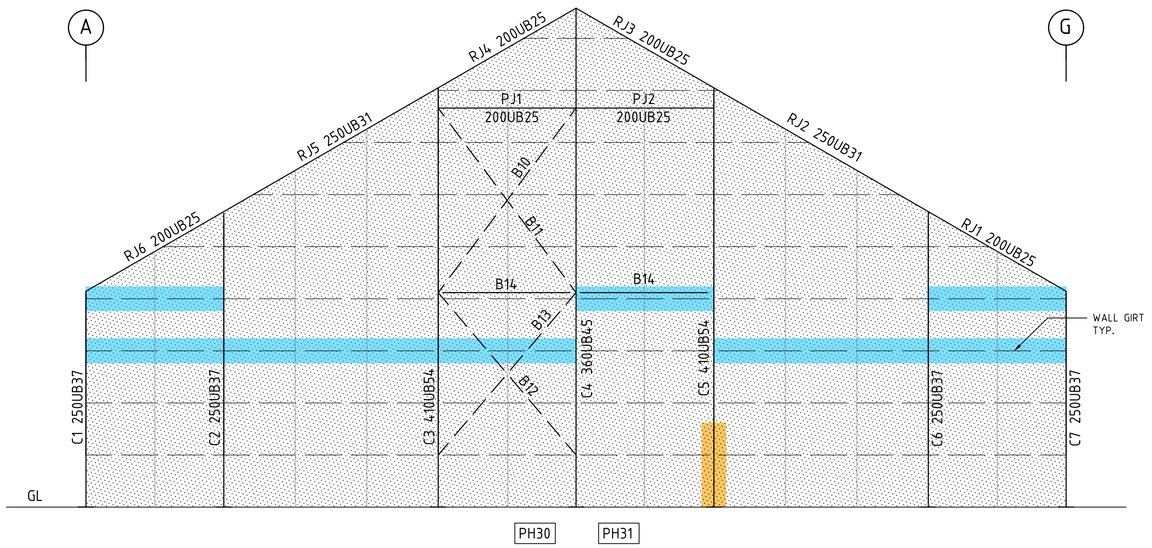

SHED No.6 - SOUTH ELEVATION

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NOTE:

PH37 - DENOTES PHOTOGRAPH NUMBER

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- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
- REPLACEMENT OF RAFTER
- REPAIR TO IMPACT DAMAGE COLUMN
- REPLACEMENT OF WALL/ROOF SHEETING

ALL WALL AND ROOF SHEETING TO BE REPLACED

SCALE A1

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APPROVED	S.WOODHOUSE	JUNE'22

CLIENT: ILUKA

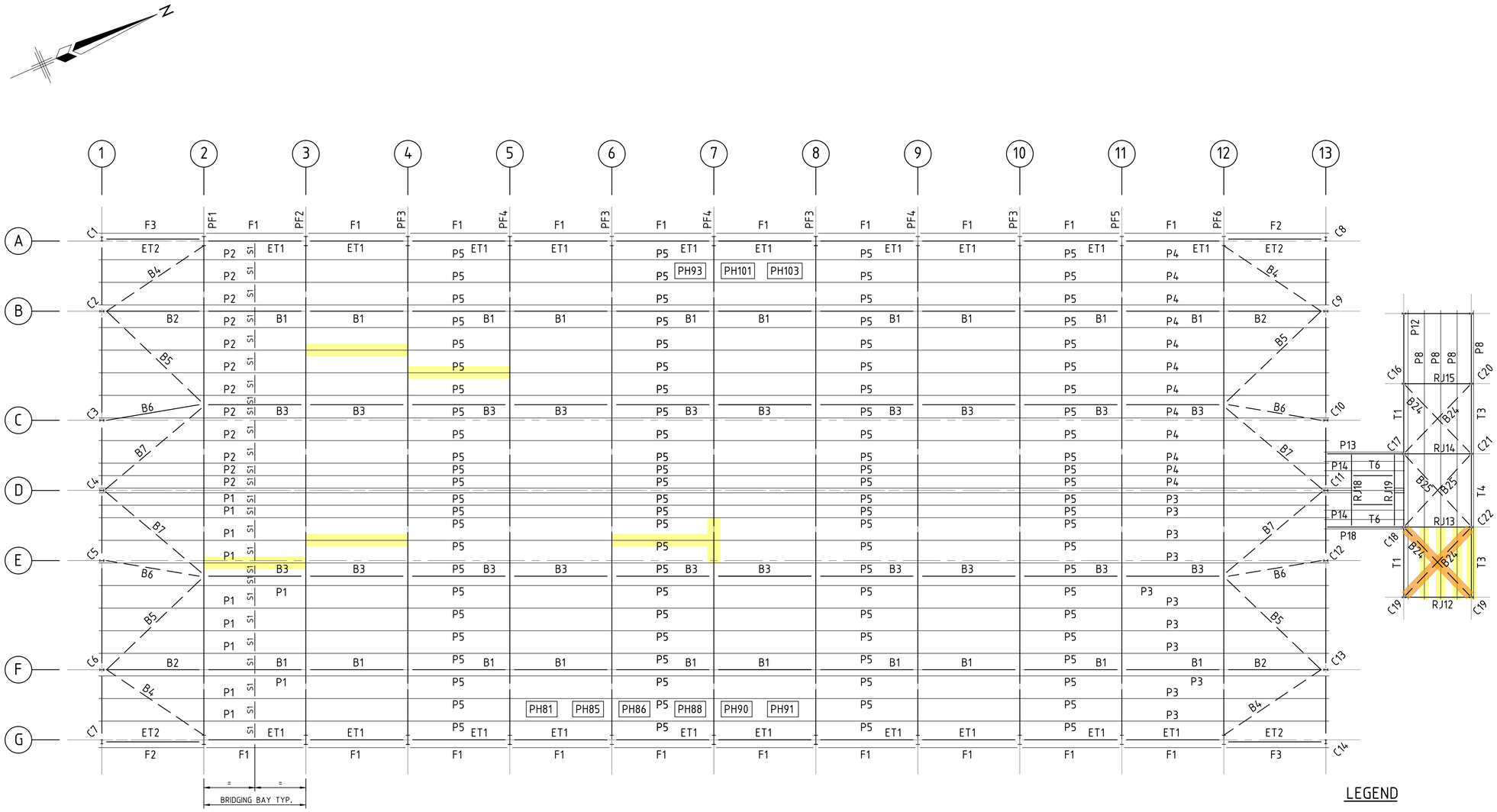
PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.6
NORTH AND SOUTH ELEVATION

DRAWING NUMBER: 10378-S-004 A

REVISION: A



SHED No.7 - ROOF PLAN

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NOTE:

PH37 - DENOTES PHOTOGRAPH NUMBER

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- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
- REPLACEMENT OF RAFTER
- REPAIR TO IMPACT DAMAGE COLUMN
- REPLACEMENT OF CROSS BRACING
- REPLACEMENT OF WALL/ROOF SHEETING

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SCALE A1

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CLIENT: ILUKA

PROJECT: BUNBURY OUTER HARBOUR ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.7 AND UNLOADING BAY ROOF PLAN

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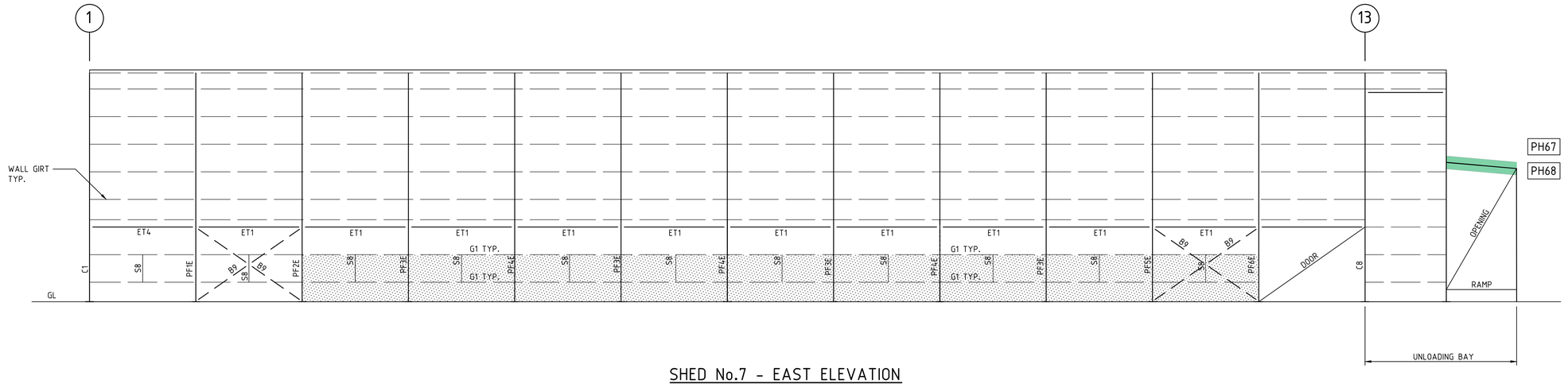
DRAWING NUMBER: 10378-S-005 A

REVISION: A



SHED No.7 - EAST ELEVATION

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NOTE:

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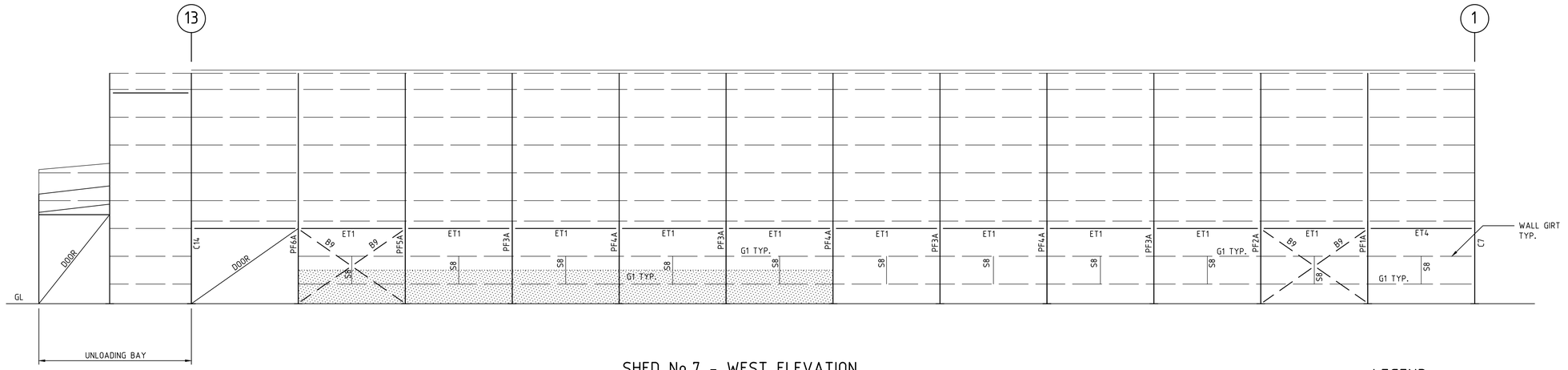

SHED No.7 - WEST ELEVATION

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LEGEND

- REPLACEMENT OF PURLINS
- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
- REPLACEMENT OF RAFTER
- REPLACEMENT OF WALL/ROOF SHEETING

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CLIENT: ILUKA

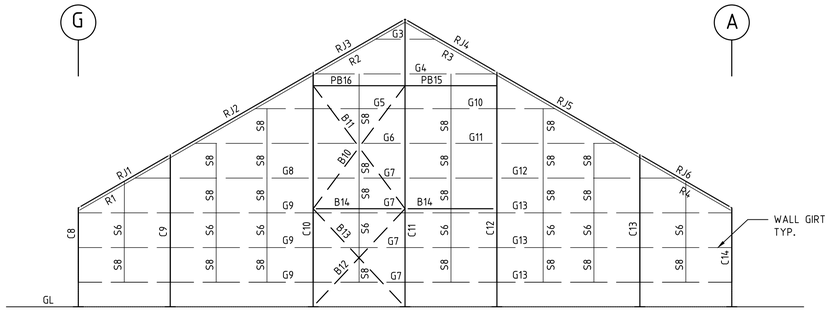
PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.7 AND UNLOADING BAY
WEST AND EAST ELEVATION

DRAWING NUMBER: 10378-S-006 A

REVISION



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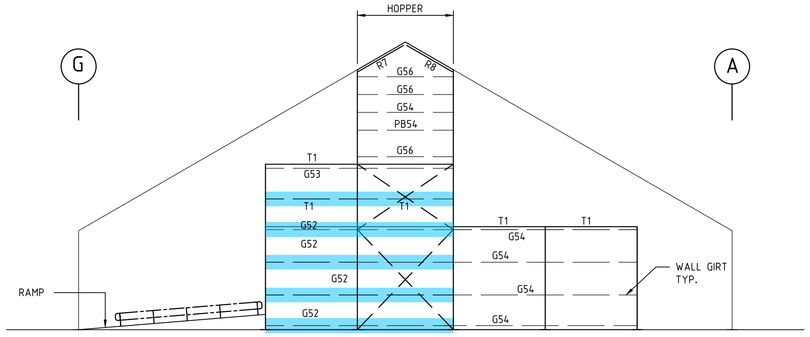

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SHED No.7 - NORTH ELEVATION - UNLOADING BAY
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NOTE:

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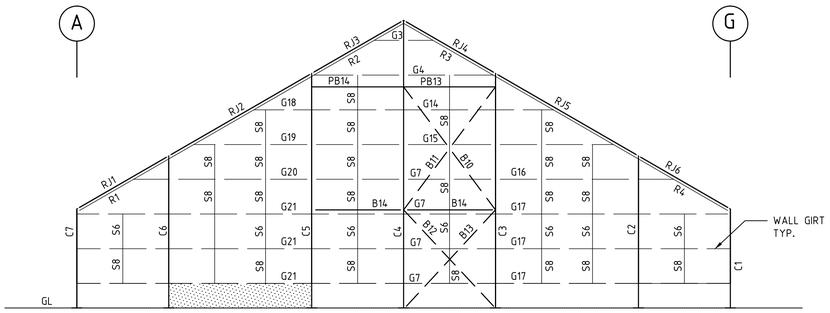

SHED No.7 - SOUTH ELEVATION
1:150

LEGEND

- REPLACEMENT OF PURLINS
- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
- REPLACEMENT OF RAFTER
- REPLACEMENT OF WALL/ROOF SHEETING

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CLIENT: ILUKA

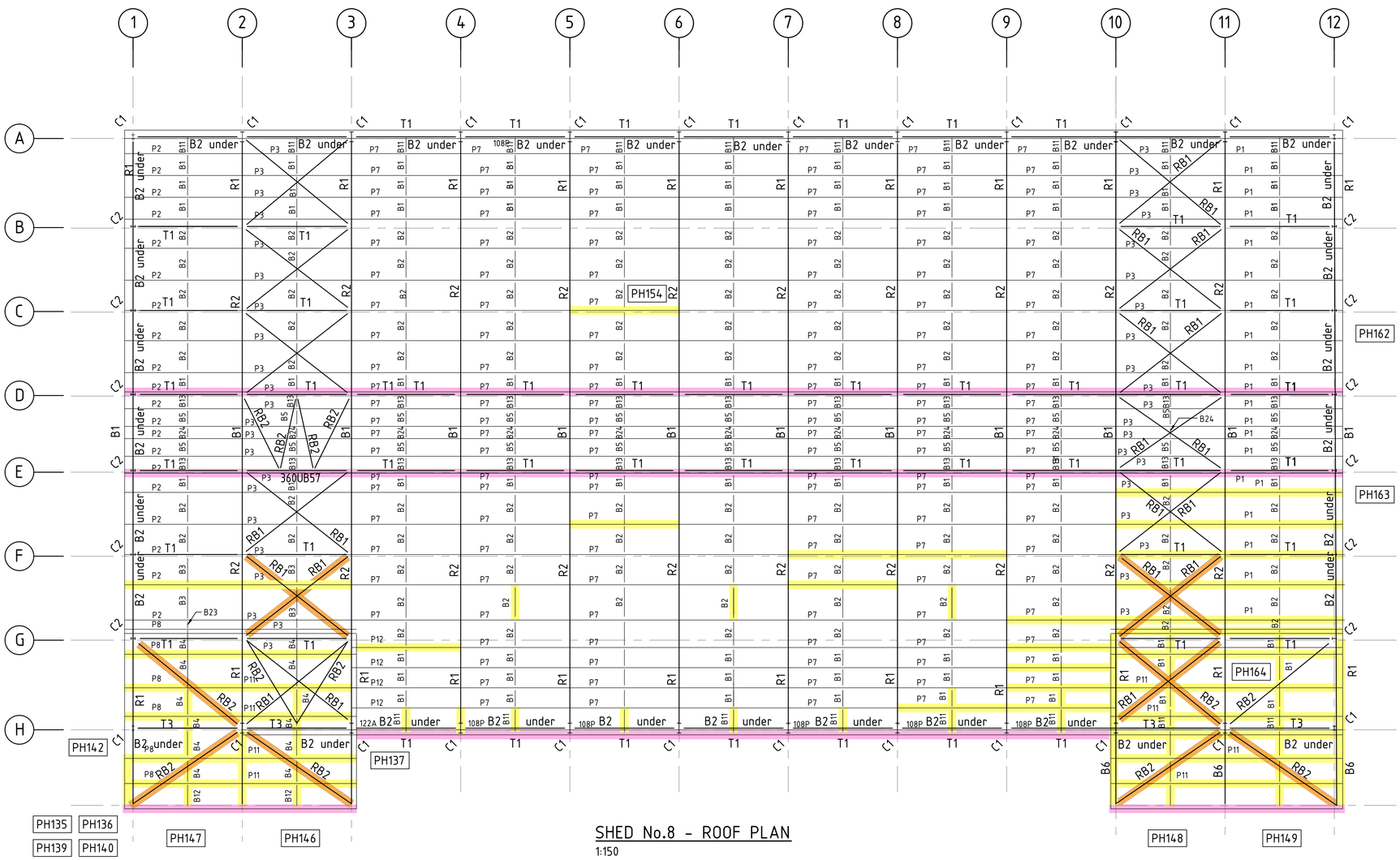
PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.7 AND UNLOADING BAY
NORTH AND SOUTH ELEVATION

DRAWING NUMBER: 10378-S-007 A

REVISION: A



SHED No.8 - ROOF PLAN

1:150

NOTE:

PH37 - DENOTES PHOTOGRAPH NUMBER

LEGEND

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- REPLACEMENT OF GIRTS
- REPLACEMENT OF FASCIA PURLIN
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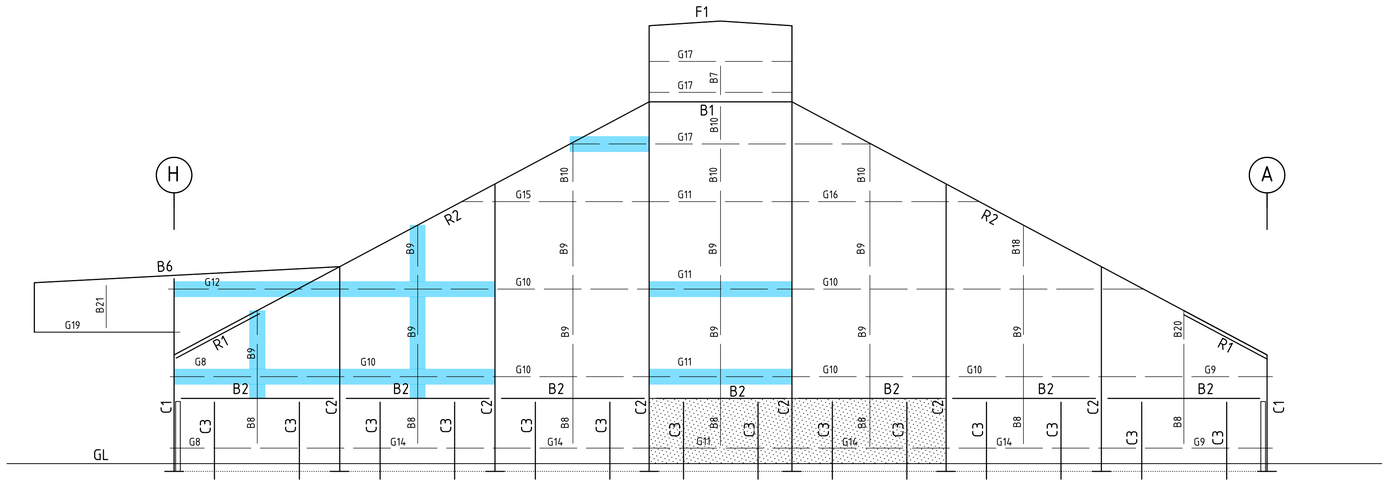
DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.8
ROOF PLAN

DRAWING NUMBER: 10378-S-008 A

REVISION: A



SHED No.8 - WEST ELEVATION

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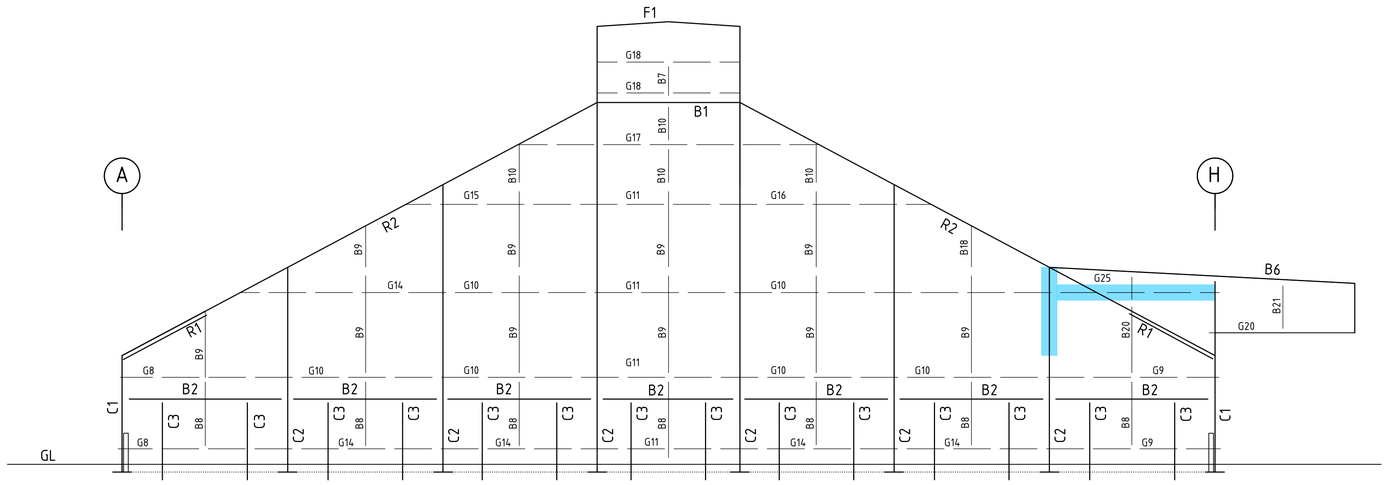

SHED No.8 - EAST ELEVATION

1:100

LEGEND

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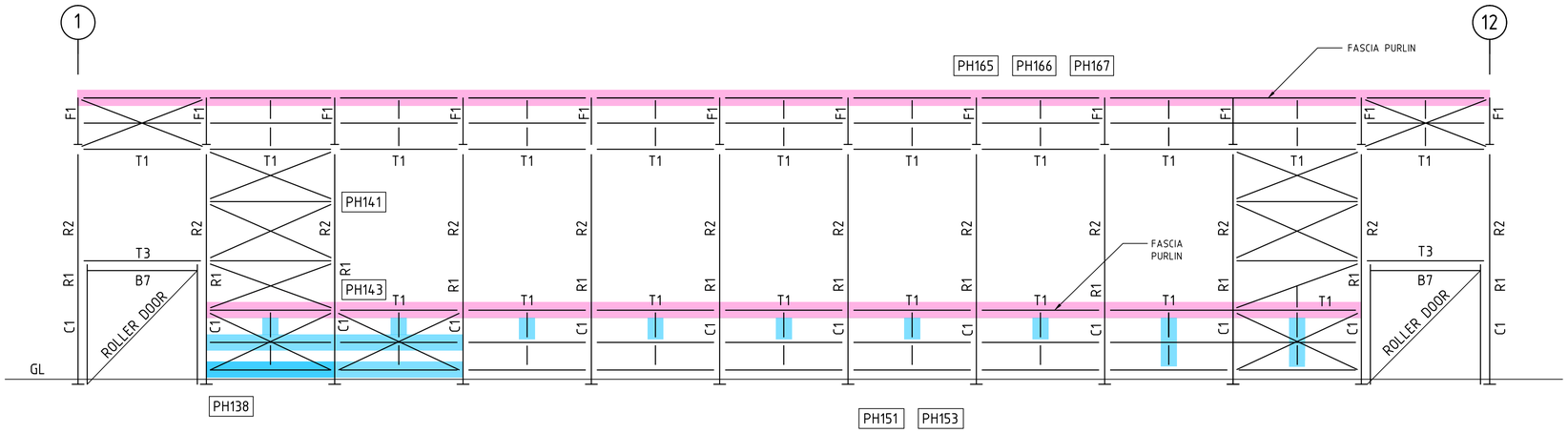
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.8
WEST AND EAST ELEVATION

DRAWING NUMBER: 10378-S-009 A

REVISION: A



SHED No.8 - NORTH ELEVATION

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NOTE:

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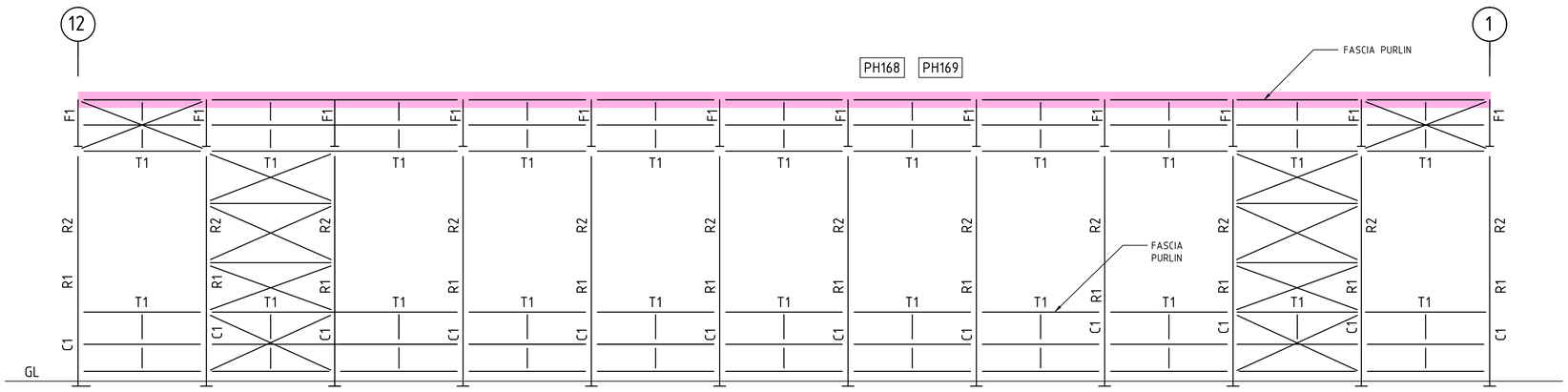

SHED No.8 - SOUTH ELEVATION

1:150

NOTE:

PH37 - DENOTES PHOTOGRAPH NUMBER

LEGEND

- REPLACEMENT OF PURLINS
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- REPLACEMENT OF FASCIA PURLIN
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SCALE A1

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PROJECT: BUNBURY OUTER HARBOUR
ILUKA SHEDS REMEDIAL WORKS

DRAWING TITLE: ILUKA SHEDS REMEDIAL WORKS

SHED No.8
NORTH AND SOUTH ELEVATION

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REVISION: A

APPENDIX B

COST ESTIMATE

Shed 6 **Ventia Australia Pty Ltd**

Remedial Works Cost Estimate **Sep-22**

						Year after 2022 when the works will be required (2020 Rates apply, no allowance for CPI increases)					
Item	Description	Unit	Quantity	Rate $	Cost $ at 2022 rates	1 Year	2 Years	5 Years	10 years	15 Years	Notes
1	Replaced damaged roof sheeting	m2	2015	$ 120.00	$ 241,800.00	$ 125,000.00	$ 50,000.00	$ 66,800.00			Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
2	Replace damaged wall sheeting	m2	1210	$ 105.00	$ 127,050.00	$ 75,000.00	$ 52,050.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
3	Replace fascia purlins	m	120	$ 180.00	$ 21,600.00	$ 12,000.00	$ 9,600.00				The entire length of the building requires replacement to both elevations.
4	Replace corroded purlins	m	1200	$ 155.00	$ 186,000.00	$ 90,000.00	$ 50,000.00	$ 46,000.00			Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
5	Replace corroded girts	m	600	$ 120.00	$ 72,000.00	$ 45,000.00	$ 27,000.00				Generally Shed 6 is in a poorer condition.
6	Replace roof sheeting in Unloading Bay	m2	250	$ 120.00	$ 30,000.00	$ 15,000.00	$ 15,000.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
7	Replace wall sheeting in Unloading Bay	m2	360	$ 105.00	$ 37,800.00	$ 20,000.00	$ 17,800.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
8	Replace corroded and damaged girts Unloading Bay	m	110	$ 120.00	$ 13,200.00	$ 7,000.00	$ 6,200.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
9	Replace corroded and damaged purlins Unloading Bay	m	50	$ 180.00	$ 9,000.00	$ 6,000.00	$ 3,000.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
10	Remediate the front frame due to impact damage Unloading Bay	item	1	$ 20,000.00	$ 20,000.00	$ 20,000.00					The frame needs immediate attension
11	New Northern door and track	item	2	$ 48,000.00	$ 96,000.00	$ 96,000.00					This door and its supporting structures requires replacement.
12	East & West Doors replace	item	2	$ 12,000.00	$ 24,000.00	$ 24,000.00					Provision to replace the doors.
13	Repair damaged column	item	2	$ 2,500.00	$ 5,000.00	$ 2,500.00	$ 2,500.00				Columns can be strengthened.
14	Blast clean and repaint all structural steel	item	1	$ 250,000.00	$ 250,000.00	$ 125,000.00	$ 75,000.00	$ 50,000.00			The steel frame internally and externally requires repainting. Internally Shed 6 is in a poorer condition.
15	Compliant fall arrest anchorage system	item	1	$ 100,000.00	$ 100,000.00	$ 100,000.00					No evidence of fall arrest. It is statutory to have a fall arrest system in place.
16	Installation of emergency lighting and exit signage	m2	1539	$ 80.00	$ 123,120.00	$ 123,120.00					Upgrading electrical services/system to current legislation
17	External lighting upgrade around building	item	1	$ 10,000.00	$ 10,000.00	$ 10,000.00					Upgrading electrical services/system to current legislation
18	Distribution witchboards	item	1	$ 20,000.00	$ 20,000.00	$ 20,000.00					Upgrading electrical services/system to current legislation
19	New cabling and cable trays	item	1	$ 25,000.00	$ 25,000.00	$ 25,000.00					Upgrading electrical services/system to current legislation
20	Fire services/system	item	1	$ 130,000.00	$ 130,000.00	$ 130,000.00					Upgrading fire services/system to current legislation
21	Miscellaneous & contingency	item	1	$ 100,000.00	$ 100,000.00	$ 35,000.00	$ 25,000.00	$ 20,000.00	$ 10,000.00	$ 10,000.00	Contingency to cover minor items.
				Total exc GST	**$ 1,641,570.00**	$ 1,105,620.00	$ 333,150.00	$ 182,800.00	$ 10,000.00	$ 10,000.00	$ 1,641,570.00
				Total inc GST	**$ 1,805,727.00**	$ 1,216,182.00	$ 366,465.00	$ 201,080.00	$ 11,000.00	$ 11,000.00	
						1 Year	2 Years	5 Years	10 Years	15 Years	

New Shed Option
Base Area = 1539m2
Demolition = $ 226,100.00
Rebuild @ $1000/m2 = $ 1,539,000.00 approx
Total = $ 1,765,100.00 approx

Shed 7 **Ventia Australia Pty Ltd**

Remedial Works Cost Estimate **Sep-22**

						Year after 2022 when the works will be required (2022 Rates apply, no allowance for CPI increases)					
Item	Description	Unit	Quantity	Rate $	Cost $ at 2022 rates	1 Year	2 Years	5 Years	10 years	15 Years	Notes
1	Replace damaged roof sheeting	m2	2965	$ 120.00	$ 355,800.00	$ 200,000.00	$ 75,000.00	$ 80,800.00			Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
2	Replace damaged wall sheeting unloading bay	m2	130	$ 105.00	$ 13,650.00	$ 13,650.00					Generally Unloading Bay is in a poorer condition
3	Replace damaged roof sheeting unloading bay	m2	85	$ 120.00	$ 10,200.00	$ 10,200.00					Generally Unloading Bay is in a poorer condition
4	Replace corroded/damaged wall sheeting	m2	1300	$ 105.00	$ 136,500.00	$ 80,000.00	$ 56,500.00				Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
5	Replace corroded/damaged fascia purlin	m	156	$ 180.00	$ 28,080.00	$ 14,000.00	$ 14,080.00				The entire length of the building requires replacement to both elevations.
6	Replace corroded/damaged purlins unloading bay	m	70	$ 155.00	$ 10,850.00	$ 10,850.00					Generally the bay is in a poorer condition.
7	Replace corroded/damaged girts unloading bay	m	170	$ 145.00	$ 24,650.00	$ 24,650.00					Generally the bay is in a poorer condition.
8	Replace corroded/damaged girts	m	645	$ 145.00	$ 93,525.00	$ 50,000.00	$ 43,525.00				Generally the shed is in a poorer condition.
9	Replace corroded/damaged purlins	m	1872	$ 155.00	$ 290,160.00	$ 150,000.00	$ 140,160.00				Generally the shed is in a poorer condition.
8	Replacement of damaged wall flashing, corners & edge	item	1	$ 1,000.00	$ 1,000.00	$ 1,000.00					Damage was noticed and need replacing
9	New door and track	item	2	$ 48,000.00	$ 96,000.00	$ 96,000.00					This door and its supporting structures requires replacement.
10	South & North Doors replace	item	2	$ 12,000.00	$ 24,000.00	$ 24,000.00					Provision to replace the doors.
11	Repair Damaged Rafter and Column in Unloading Bay	item	1	$ 20,000.00	$ 20,000.00	$ 20,000.00					Allowance has been made to replace the column and rafter.
12	Blast clean and repaint all structural steel	item	1	$ 250,000.00	$ 250,000.00	$ 125,000.00	$ 75,000.00	$ 50,000.00			The steel frame internally and externally requires repainting. Internally Shed 7 is in a poorer condition.
13	Compliant fall arrest anchorage system	item	1	$ 100,000.00	$ 100,000.00	$ 100,000.00					No evidence of fall arrest. It is statutory to have fall arrest in place.
14	Installation of emergency lighting and exit signage	m2	2417	$ 80.00	$ 193,360.00	$ 193,360.00					Upgrading electrical services/system to current legislation
15	External lighting upgrade around building	item	1	$ 10,000.00	$ 10,000.00	$ 10,000.00					Upgrading electrical services/system to current legislation
16	Distribution Switchboards	item	1	$ 20,000.00	$ 20,000.00	$ 20,000.00					Upgrading electrical services/system to current legislation
17	New cabling and cable trays	item	1	$ 25,000.00	$ 25,000.00	$ 25,000.00					Upgrading electrical services/system to current legislation
18	Fire services/system	item	1	$ 130,000.00	$ 130,000.00	$ 130,000.00					Upgrading fire services/system to current legislation
19	Miscellaneous & contingency	item	1	$ 100,000.00	$ 100,000.00	$ 35,000.00	$ 25,000.00	$ 20,000.00	$ 10,000.00	$ 10,000.00	Contingency to cover minor items.
				Total exc GST	**$ 1,932,775.00**	$ 1,332,710.00	$ 429,265.00	$ 150,800.00	$ 10,000.00	$ 10,000.00	$ 1,932,775.00
				Total inc GST	**$ 2,126,052.50**	$ 1,465,981.00	$ 472,191.50	$ 165,880.00	$ 11,000.00	$ 11,000.00	
						1 Year	2 Years	5 Years	10 Years	15 Years	

New Shed Option
Base Area = 2417m2
Demolition = $ 284,100.00
Rebuild @ $1000/m2 = $ 2,417,000.00 approx
Total = $ 2,701,100.00 approx

Shed 8 **Ventia Australia Pty Ltd**

Remedial Works Cost Estimate **Sep-22**

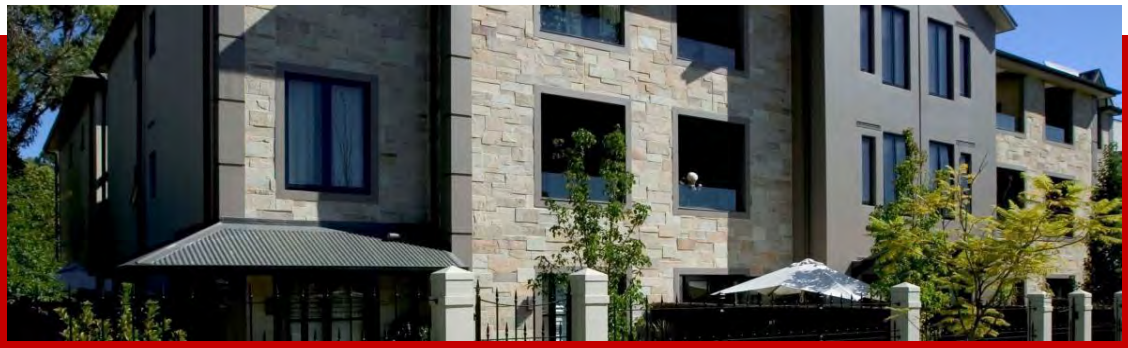
Year after 2022 when the works will be required (2020 Rates apply, no allowance for CPI increases)

Item	Description	Unit	Quantity	Rate $	Cost $ at 2022 rates	1 Year	2 Years	5 Years	10 years	15 Years	Notes
1	Replaced damaged roof sheeting	m2	1950	$ 120.00	$ 234,000.00	$ 100,000.00	$ 70,000.00	$ 64,000.00			Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
2	Replace damaged wall sheeting	m2	1120	$ 105.00	$ 117,600.00	$ 65,000.00	$ 30,000.00	$ 22,600.00			Allowance has been made to replace the worst areas first then follow later to areas currently servicable.
3	Replace corroded fascia purlin	m	195	$ 180.00	$ 35,100.00	$ 35,100.00					The entire length requires replacing on one elevation. Entire length requires replacing on both sides in the walkway and conveyor.
4	Replace corroded and damaged girts	m	175	$ 145.00	$ 25,375.00	$ 15,000.00	$ 10,375.00				Generally Shed 8 is in a poorer condition.
5	Replace corroded and damaged purlins	m	1800	$ 155.00	$ 279,000.00	$ 100,000.00	$ 64,500.00	$ 64,500.00	$ 50,000.00		Generally Shed 8 is in a poorer condition.
6	Replace corroded and deformed CHS section	item	11	$ 5,000.00	$ 55,000.00	$ 55,000.00					CHS section needs replacing.
7	New Northern door and track	item	2	$ 48,000.00	$ 96,000.00	$ 96,000.00					This door and its supporting structures requires replacement.
8	North doors replace	item	2	$ 12,000.00	$ 24,000.00	$ 12,000.00	$ 12,000.00				Provision to replace the doors.
9	Repair column damage due to impact	item	1	$ 5,000.00	$ 5,000.00		$ 5,000.00				Columns can be strengthened.
10	Blast clean and repaint all structural steel	item	1	$ 250,000.00	$ 250,000.00	$ 125,000.00	$ 75,000.00	$ 50,000.00			The steel frame internally requires repainting. Internally Shed 8 is in a poorer condition.
11	Compliant fall arrest anchorage system	item	1	$ 100,000.00	$ 100,000.00	$ 100,000.00					No evidence of fall arrest. It is statutory to have fall arrest system in place.
12	Installation of emergency lighting and exit signage	m2	2618	$ 80.00	$ 209,440.00	$ 209,440.00					Upgrading electrical services/system to current legislation
13	External lighting upgrade around building	item	1	$ 10,000.00	$ 10,000.00	$ 10,000.00					Upgrading electrical services/system to current legislation
14	Distribution switchboards	item	1	$ 20,000.00	$ 20,000.00	$ 20,000.00					Upgrading electrical services/system to current legislation
15	New cabling and cable trays	item	1	$ 25,000.00	$ 25,000.00	$ 25,000.00					Upgrading electrical services/system to current legislation
16	Fire services/system	item	1	$ 130,000.00	$ 130,000.00	$ 130,000.00					Upgrading fire services/system to current legislation
17	Miscellaneous & contingency	item	1	$ 100,000.00	$ 100,000.00	$ 35,000.00	$ 25,000.00	$ 20,000.00	$ 10,000.00	$ 10,000.00	Contingency to cover minor items.
				Total exc GST	**$ 1,715,515.00**	$ 1,132,540.00	$ 291,875.00	$ 221,100.00	$ 60,000.00	$ 10,000.00	$ 1,715,515.00
				Total inc GST	**$ 1,887,066.50**	$ 1,245,794.00	$ 321,062.50	$ 243,210.00	$ 66,000.00	$ 11,000.00	
						1 Year	2 Years	5 Years	10 Years	15 Years	

New Shed Option
Base Area = 2618m2
Demolition = $ 311,500.00
Rebuild @ $1000/m2 = $ 2,618,000.00 approx
Total = $ 2,929,500.00 approx

APPENDIX C

BCA ASSESSMENT REPORT



BCA ASSESSMENT (Existing Building)
Future Use Review

Bunbury Outer Harbour Iluka Sheds 6,7 & 8 Inspections

Tecon Australia

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Tel: (08) 6109 0468
4/29 Carey Street, Bunbury WA

SCOPE of WORK

The purpose of this report is to provide a general review of the existing storage sheds 6, 7 & 8 on the Bunbury Outer Harbor. The three steel framed sheds are currently used by Iluka for storage of product prior to being loaded onto the ships. The task is to assess the general condition of the sheds and advise what needs to be done if the sheds were to be kept and used for public space.

***Note**: No indication has been received regarding future floor plan use or layout along with any proposed floor level additions. Any additional storey or mezzanine changes will need assessment against BCA requirements and could have major design considerations for BCA compliance.*

The review will include observations and recommendations to high level changes to the buildings in regards to Building Code of Australia (BCA) Deemed to satisfy compliance requirements.

It should be noted that this report does not cover BCA compliance comment outside of the specific area identified and scope of works as discussed.

The assessment has been undertaken based on the documentation and instructions provided by the client.

It should be noted that the National Construction Codes (NCC) / BCA is a Performance Based Document and as such allows for design based on Performance rather than specific compliance with the Deemed to Satisfy (DTS) provisions of the NCC / BCA. The use of Performance can in many instances offer a broader and more innovative approach to achieving compliance. This report identifies compliance issues based on the DTS provisions of the NCC / BCA.

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QUALIFICATIONS

The following qualifications apply to this report:

- This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with briefing from the Client. Tecon accept no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.
- This report is not an assessment of a building for the purpose of providing Building Certification of compliance.
- This assessment is based on the preliminary plans provided for assessment.
- This report must be read in conjunction with Volume 1 of NCC/BCA 2019 Amd 1 for specific clause requirements.

The report specifically excludes the following aspects:

- Requirements of other legislation including, but not limited to, Occupational Health and Safety, Health Act, Town Planning requirements.

- The assessment does not consider compliance with the provisions of Disability Discrimination Act (DDA) only the requirements of the NCC/BCA.

CURRENT LEGISLATION

Building standards applicable to this building:

- National Construction Code, Building Code of Australia 2019 Amendment 1 Volume 1.
- (NCC/BCA).
- Australian Standards Adopted by Reference.
- WA Building Act 2011.
- WA Building Regulations 2012.

PROJECT TYPE & CLASSIFICATION

The following BCA criteria apply to the current buildings -

Part of Project Current	BCA Classification	Use	Approx. m2	Approx. Volume	Type of Construction
Shed 6, Shed 7, Shed 8	Class 7b Class 7b Class 7b	Warehouse/ Storage	1,890m2 2,220m2 2,310m2	9,450m3 17,438m3 13,300m3	Type C Type B Type B

Attached is Table C2.2 NCC/ BCA it is noted that proposed Class 9b building use enables Type C construction to have max floor area 3000m2 and max volume of 18,000m3.

Where Type C construction can be confirmed as applicable (floor area, volume, single storey etc) for all sheds redevelopment, this will greatly benefit the design plans as fire separation and setbacks are more readily achieved under type C Construction.

Accurate floor area and volume calculations of all three sheds will need to be undertaken as part of further document review.

The BCA requires that buildings of Type C construction be separated from a fire source feature such as storage areas or allotment boundaries and other buildings by at least 3m without requiring external walls

to be provided with a fire rating. It is assumed that each of the buildings will be Type C construction as they compromise of single storey buildings.

All three buildings are separated by distances that exceed 3m.
Shed 6 and shed 7 have separation distance of approx. 14m.
Shed 7 and shed 8 have a separation distance of approx. 19m.
Note: *Currently shed loading/transfer facilities are between sheds and at high level connecting sheds.*

PROJECT DESCRIPTION

The purpose of this report is to provide a review of the existing storage sheds 6,7 & 8 on the Bunbury Outer Harbor site. The three steel framed sheds are currently used by Iluka for port storage however it is proposed to repurpose all or some of the buildings to allow for public use.

The buildings have been used for bulk storage for many years and although generally functioning in working condition the effects of time and the environment are clear regarding the external cladding. Large sections appear to have been relatively recently replaced however there are extensive areas at ground level that are corroded through across the site.

Within the Building Act where it is proposed to change the use of a building, it is a requirement to reclassify the building for its intended use. In doing so the new classification of works must comply with the current BCA for the proposed new classification. The existing class 7b storage buildings will be required to change to a class 9b place of assembly use. All proposed works will need to comply with current BCA requirements or standards.

All the warehouse buildings are portal steel frame, sheet clad (roofs and external walls) along with concrete upstand bund walls inside the buildings to cater for internal bulk storage of loose material. Note some concrete bund walls are internal to the shed walls and some form part of the external shed walls.

It is anticipated that change of use works will incorporate building maintenance works and alterations to enable occupant usability. Details to be provided at design stage.

It is assumed that all three current sheds have BCA Specification C1.1 General concessions 2.5 being applied which exempts single storey steel column buildings within a non-load bearing external wall to not require the columns to have a FRL. Specification C1.1 specifically states:

2.5 General concessions

(a) **Steel columns** — A steel column, other than one in a *fire wall* or *common wall*, need not have an FRL in a building that contains—

(i) only 1 *storey*; or

(ii) 2 *storeys* in some of its parts and 1 *storey* only in its remaining parts if the sum of the *floor areas* of the upper *storeys* of its 2 *storey* parts does not exceed the lesser of—

(A) 1/8 of the sum of the *floor areas* of the 1 *storey* parts; or

(B) in the case of a building to which one of the maximum *floor areas* specified in Table C2.2 is applicable — 1/10 of that area; or

(C) in the case of a building to which two or more of the maximum *floor areas* specified in Table C2.2 is applicable — 1/10 of the lesser of those areas.

Furthermore, the existing shed external wall construction is considered non-combustible (steel frame and steel sheet cladding).

The above concession is still applicable to the proposed class 9b use. However, where a first floor is proposed outside of the concession areas permitted, FRL's will be applicable in accordance with BCA Specification C1.1 Table 4 Type B construction (see appendix A).

Accurate floor area and volume calculations of all three sheds will need to be undertaken as part of further document review.

Aerial Photo

All building works associated with the change of use and re classification of the current class 7b storage sheds and conversion to class 9b assembly building use must comply with the current BCA requirements.

Currently without floor plans showing proposed new use details only general statements can be made however crucially fire services lack of availability on site are a major non-compliance issue that needs to be addressed to utilise the buildings going forward.

The future use design plans (specifically if a first floor is incorporated into the design) will also dictate the BCA requirements in so far as deciding if the buildings will be Type C or Type B construction.

It is worth noting that Type B construction to be compliant requires Non-combustible external walls to be provided in accordance with Part C1.9 of the BCA and any load bearing columns and beams supporting the first floor require FRL's.

Part C1.9

C1.9 Non-combustible building elements

(a) In a building *required* to be of Type A or B construction, the following building elements and their components must be *non-combustible*.

- (i) *External walls* and *common walls*, including all components incorporated in them including the facade covering, framing and insulation.
- (ii) The flooring and floor framing of lift pits.
- (iii) Non-*loadbearing internal walls* where they are *required* to be *fire-resisting*.

(b) A *shaft*, being a lift, ventilating, pipe, garbage, or similar *shaft* that is not for the discharge of hot products of combustion, that is non-*loadbearing*, must be of *non-combustible* construction in—

- (i) a building *required* to be of Type A construction; and
- (ii) a building *required* to be of Type B construction, subject to C2.10, in—
  - (A) a Class 2, 3 or 9 building; and
  - (B) a Class 5, 6, 7 or 8 building if the *shaft* connects more than 2 *storeys*.

(c) A *loadbearing internal wall* and a *loadbearing fire wall*, including those that are part of a *loadbearing shaft*, must comply with Specification C1.1.

(d) The requirements of (a) and (b) do not apply to the following.

- (i) Gaskets.
- (ii) Caulking.
- (iii) Sealants.
- (iv) Termite management systems.
- (v) Glass, including laminated glass.
- (vi) Thermal breaks associated with glazing systems.
- (vii) Damp-proof courses.

(e) The following materials may be used wherever a *non-combustible* material is *required*.

- (i) Plasterboard.
- (ii) Perforated gypsum lath with a normal paper finish.
- (iii) Fibrous-plaster sheet.
- (iv) Fibre-reinforced cement sheeting.
- (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0.
- (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.
- (vii) Bonded laminated materials where—
  - (A) each lamina, including any core, is *non-combustible*; and
  - (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers

It is noted that it may be possible to review required Fire Resistance Levels of elements using expertise and input from a fire engineer as part of a performance-based design approach.

Equal access is also mandatory to all levels in class 9b assembly buildings therefore if a first floor is proposed a lift or ramp access will be required. The general requirement as specified within the BCA is for access to be provided to and within the building in accordance with Australian Standard 1428 Design for Access and Mobility. It is also noted that a key principle of access provisions is providing access which is considered equitable and dignified for all occupants.

BCA Compliance Comment

Fire Resistance

C 1.1 Type of Construction details will be required in design drawings

The BCA stipulates three levels of fire-resistant construction, which is based upon the rise in storeys and classification of the building. Each of these types of construction has maximum floor area and volume limitations as per BCA Table C2.2.

If the buildings remain as they are currently (floor area and volume to be confirmed) based upon the rise in storeys (single) and the proposed new use of the building (class 9b) the Shed's 6,7 and 8 are required to be Type C construction in accordance with Table 5 of Specification C1.1 (see appendix A)

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows-

Table C2.2 Maximum size of fire compartments or atria

Classification	Type A construction	Type B construction	Type C construction
5, 9b or 9c	Max *floor area*—8 000 m^2 Max volume—48 000 m^3	Max *floor area*—5 500 m^2 Max volume—33 000 m^3	Max *floor area*—3 000 m^2 max volume—18 000 m^3
6, 7, 8 or 9a (except for *patient care areas*)	Max *floor area*—5 000 m^2 Max volume—30 000 m^3	Max *floor area*—3 500 m^2 Max volume—21 000 m^3	Max *floor area*—2 000 m^2 Max volume—12 000 m^3

Fire services

Currently the three sheds have no fire services available to the buildings which is a major BCA non-compliance and leaves the building and its occupants in an exposed position. Without having water and infrastructure available to fight fires should an event occur the fire brigade will be without resources to contain any fire events on site.

Hydrant - details will be required in design drawings.

The current buildings although in excess of 500m2 floor area do not have any visible fire hydrant services available on site.

Any proposed works on site will require the installation of a hydrant system that complies with BCA E1.3 and specifically AS 2419 to facilitate the fire brigade's firefighting operations.

Details of proposed hydrant system and compliant hose coverage drawings will be required as part of any building assessment.

AS 2419 deals with all aspects of hydrant requirements including water, pressure and flow, location of services etc and consultation with a hydraulic engineer is required to consider all design requirements.

It is noted that on the approach road to the site recently installed mains water pipework is visible (see photos in appendix) to access mains water. Hydraulic consultant to review water supply for fire hydrant services etc.

Hydrant design will incorporate coverage to all three buildings in accordance with AS 2419 requirements.

Fire Hose Reels - details will be required in design drawings.
The current buildings although in excess of 500m2 floor area do not have any visible fire hose reel services available on site.

Details of proposed FHR's and compliant hose coverage drawings will be required as part of any building assessment.

Portable Fire Extinguishers
Portable Fire Extinguishers are required to be installed where necessary, to address specific hazards. The BCA references compliance with Australian Standard AS 2444.

Structural Certification details will be required in design drawings.
Structural engineer's assessments and reports will determine the structural integrity of the existing buildings and design modifications that are required to enable the changes to be made and satisfy BCA requirements. Components of new works will be designed to comply with current standards.

General Building Access Compliance details will be required in design drawings
Access is required to all proposed levels and compliance details will be required in design drawings.

State and Commonwealth legislation recognises that people with disability should have the same opportunities as others including access to most buildings other than areas where access would be deemed inappropriate because of the particular purpose and may pose health or safety risks. The Disability Discrimination Act and the Building Code of Australia are particularly relevant in providing instruction for such inclusion.

The prescribed requirements under the BCA require that occupants (including visitors) should be provided with access to and within all class 2- 9 Buildings at all levels available.

The intention of legislative requirements relating to access to and within buildings falls generally under two main categories, Access for Premises/ Buildings in accordance with the Access for Premises Standards / Building Code of Australia / NCC requirements and Disability Discrimination Act. The intent of this legislative framework is to ensure that occupants/ employees have where applicable access to and within all class 2- 9 buildings.

Employers constructing new buildings, or undertaking major refurbishments, have a responsibility to consult current accessibility guidelines and adhere to regulations.

Fire Compartmentation details will be required in design drawings.
Depending upon finalised proposed floor plans and the possibility of the addition of a second storey within the buildings, the sheds could be Type B or Type C construction (see appendix A for Type B & C requirements).

Note: *Currently the above listed buildings all form their own single fire compartments for BCA requirements Where 3m separation is provided it constitutes a separate fire compartment for Type C construction.*

No fire separation requirements are applicable to Type C construction buildings where a minimum 3m setback is confirmed from other buildings or the property lot boundary.

Facilities details will be required in design drawings.
Male and female sanitary facilities are to be provided in accordance with proposed occupant numbers. Facilities shall be 50/50 male/female split with a UAT being the first required facility followed by ambulant male and female.

BCA Table F2.3 provides facilities occupant numbers.

Energy efficiency details will be required in design drawings.
The proposed works will be considered as conditioned space (heated/cooled) therefore BCA Section J energy efficiency compliance report for the project will be required from a suitably qualified energy assessor. Design requirements will include the provision for thermal breaks with steel frame construction.

Egress details will be required in design drawings.
Number of Exits - Access and egress from buildings is a critical requirement associated with the proper functioning of the building in ensuring that occupants can safely evacuate in an emergency.

BCA requires 9m distance between required exit points and a maximum travel distance of 20m to a single exit or 40m where a choice of two exits is available.

Discharge from Exits - Required exits must not be blocked at the point of discharge and where necessary suitable barriers must be provided to prevent vehicles from blocking the exit or access to it. A bollard may be required 1m externally of PA door to prevent accidental blocking.

Operation of Latch - latching devices on all required exit doors are required to comply with Part D.21 of the NCC/BCA. Which requires that doors must be openable with a single hand downward action on a single device which is located between 900mm and 1.1m from the floor. See BCA Class 9b additional requirements.

Access within the building generally requires 1m clear path of travel and provide minimum headroom clearance (both floors) 2.4m high.

Emergency Lighting details will be required in design drawings.
The provision for emergency lighting will ensure that occupants will be able to egress the building in an emergency. Exit signage and emergency lighting is to comply with AS 2293.

Exit Signs details will be required in design drawings
Exit signs must be clearly visible to persons approaching the exit and must be installed on above or adjacent to each Required Exit.

Once detailed design documentation has been assessed, where required, consideration regarding the use of Performance Based Solutions can be reviewed.

Design documentation required for project further assessment

- Fully dimensioned architectural/project design plans including showing FFL, GL and existing contour plan of site.
- Project structural engineering construction details including an authorised letter of NCC design compliance signed by a suitably qualified structural engineer. This certification should also cover any FRL requirements of structural elements.
- Site classification report (wind and geotechnical data) signed by engineer.
- Mechanical services/air conditioning construction details including an authorised letter of NCC design compliance signed by a suitably qualified person.
- Electrical services construction details including an authorised letter of NCC design compliance signed by a suitably qualified person.
- Hydraulic services construction details including an authorised letter of NCC design compliance signed by a suitably qualified person.
- Fire services layout, coverage and construction details (hydrant, FHR) including an authorised letter of NCC design compliance signed by a suitably qualified person.
- Street/site fire hydrant water pressure and flow test to ascertain compliance requirements with NCC/As 2419 requirements.
- Section J energy efficiency compliance report by suitably qualified person.
- Project specifications incorporating wet area compliance, external wall and roof cladding technical specifications (Codemark compliance), fire separation details, facility layouts, C1.10 compliance certs, slip rating etc.

CONCLUSION

In conclusion summarising the inspection findings-

- Reclassification would require compliance with current BCA requirements for class 9b building.
- It is to be noted that all class 9b buildings require equal access to all levels if additional floor or mezzanine was to be considered.
- Fire services (hydrant system and availability of water) needs to be designed and installed to provide BCA compliant coverage for any building over 500m2.
- The proposed works will require referral to Department of Fire and Emergency services.
- Without knowing the proposed intended scope of works/floor plan of the buildings, if the buildings were to remain within the criteria of Type C construction (floor area, volume and single storey) this would undoubtably provide the most simplistic way forward in regard to BCA compliance. If however a design feature of the works was to incorporate a second storey to utilise the existing shed structures features then the requirements of Type B construction would be applicable and could be incorporated in to BCA compliance requirements e.g. FRL first floor, internal columns and beams for example.
- A further possibility/option would be to incorporate all or some of the buildings into a Large Isolated Building (LIB) which within the BCA requires a class 9b buildings to be sprinkler protected and have 18m min perimeter separation / access around the building. Further information would be required regarding buildings intended use possibilities.
- In association with the above two comments, a performance-based solution could be a possibility once design criteria has been established.
- Lot boundaries are to be identified in relation to subject buildings on site.
- No dimensioned site plan was available at the time of assessment therefore as long as the proposed structures are setback a minimum of 3m from any property boundaries no fire ratings or protection of openings is required.
- Further assessment would be required regarding floor plan layouts etc to establish travel distance and exit doors compliance.

Essentially any/all of the buildings that are to be repurposed will require confirmation of structural adequacy compliance along with providing the proposed floor plan details to enable a BCA assessment to be undertaken.

Key components that will determine BCA requirements for proposed repurposing include –

- Overall size (floor area and volume) including any connection of buildings
- Number of storeys
- Class /Use (Known factor class 9b Place of assembly)
- Fire services (Hydrant and water) are mandatory for buildings over 500m2 (where fire services are unobtainable the building can be divided into separate buildings however in large existing buildings it can be problematic but possible)

Once the above points have been established in the design criteria, a comprehensive BCA assessment can be undertaken to confirm code requirements.

The recommendations above acknowledge the operational objectives and provide high level changes information in regards to the minimum deemed to satisfy requirements of the BCA.

Should you have any further queries, please contact me on (08) 6109 0468.

Regards

David Brightwell - Senior Building Surveyor
Tecon Australia

See *attached:* ***Appendix A -Type B & C construction FRL requirements***
Appendix B - Site Photos
Appendix C - Site plan

Appendix A – Type C & B construction FRL requirements

Table 5 Type C construction: FRL of building elements

Building element	Class of building—FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS—				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS

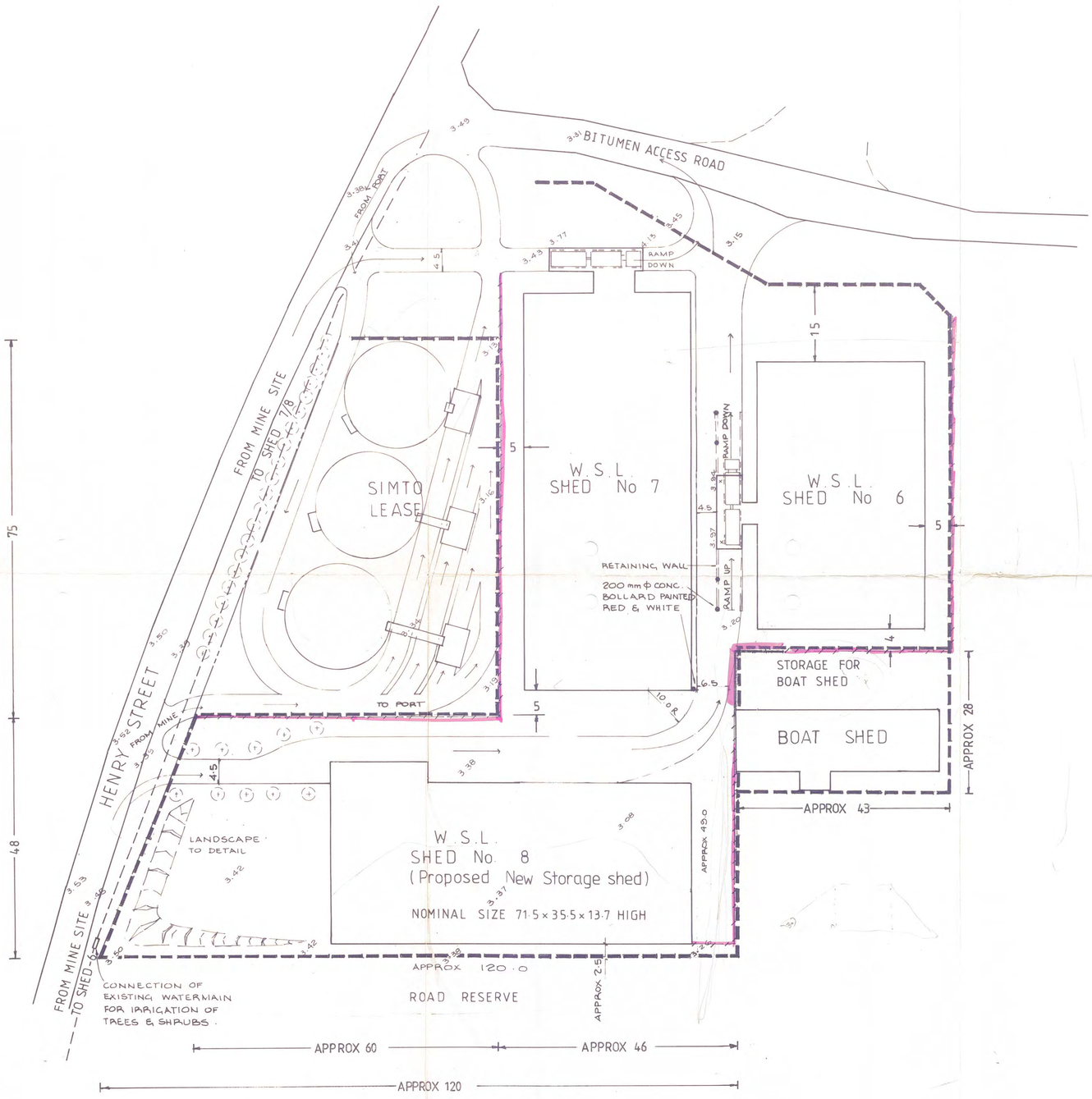
Building element	Class of building—FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/–	120/ 30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–

Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS — continued

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* columns—				
less than 18 m	90/–/–	120/–/–	180/–/–	240/–/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Fire-resisting stair *shafts*—				
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Appendix B Photos

Appendix C Site Plan



N

KEY

- LEASE BOUNDARY
- EXISTING SEALED PAVEMENT.
- NEW SEALED PAVEMENT.
- EXISTING WATERMAIN
- 3.15 EXISTING GROUND LEVELS
- 200 mm DIA. CONCRETE BOLLARD PAINTED RED & WHITE (400 mm STRIPES)
- SELECTED TREES PLANTING STRIP.
- 2400 x 50 x 2500 P.V.C. COATED LINK MESH FENCE.
- ZINCALUME SCREEN FENCE x 2400 HIGH.

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRWGS. 2326-02, 03 AND THE BUILDING CONSTRUCTION DRWGS. 1423-11 A & 1537-12 A
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
3. SPECIES OF TREES & PLANTS TO W.S.L. SPECIFICATION.

SCOTT & FURPHY PTY. LTD.
CONSULTING ENGINEERS
31 ALBERT ST., BUSSELTON, W.A. 6280
TELEPHONE (097) 52 2680

PROJECT MANAGER	R.O'Sullivan	S.A.F. DRWG Nº 2326-05
DESIGNED	R.O.K.	
DRAWN	M.M.H.	

NOTES	REFERENCE DRAWINGS	DRG No.	No.	DATE	REVISION	BY	CHK	APP	DATE

ISSUED FOR		DATE
PRELIMINARY	☐	
QUOTATION	☐	
CONSTRUCTION	☐	
PURCHASING	☐	
APPROVAL	☑	14/4/89

DRAWN BY
CHECKED BY
ENGINEER
APPROVED
DATE

WESTRALIAN SANDS LIMITED

PROPOSED ADDITIONAL STORAGE FACILITY AT BUNBURY HARBOUR SHED Nº 8 LEASE BOUNDARIES

SCALE	DATE	DRG No.	REV. No.
1:500	7.4.89		

APPENDIX D

QUANTITY SURVEYOR REPORT

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
	EXECUTIVE SUMMARY				
	DEMOLITION COSTS				
1	Building 06	1,539	m2	146.91	226,100
2	Building 07	2,417	m2	117.54	284,100
3	Building 08	2,618	m2	118.98	311,500
4	Ancillary / Miscellaneous Structures				120,800
5	External Works and Services				957,700
	Subtotal				**1,900,200**
6	Locality Factor	5	%		95,010
	Subtotal				**1,995,210**
7	Site Contingencies	5	%		99,770
8	Headworks and Statutory Charges				Excl
9	Approvals - Allowance	1	%		21,000
10	Professional Fees	5	%		105,800
	NET PROJECT COST (At Current Prices)				**2,221,780**
11	Escalation Allowance to tender - Closing Tender Date Feb 2023 (CCIF 2022 Q1)	4.30	%		96,000
	ESTIMATED FINAL PROJECT COST (Excl GST)				**2,317,780**
	NOTES & EXCLUSIONS				
12	This Opinion of Probable Cost is preliminary and may vary substantially depending on the detail and final scope of works.				
13	The rates used in this OPC are based on the works being procured via a conventional, competitive tendering process				
14	We have not received any advice from the Services Consultants and it is advisable that further costings be obtained to establish the limit of cost on the nature of this project.				
	This OPC has been based on the following documentation and assumptions:				
15	Drawings provided as per email from WML Consulting Engineers dated 16/05/22 & 18/05/22				
	The following has been specifically excluded from this OPC for which separate provision should be made as required				
16	- Works outside the site boundaries				
17	- Dewatering				
18	- Removal of contaminated soils and/or hazardous materials				
19	- Rock excavation				
20	- Soil remediation				
21	- Power and water infrastructure, headworks charges and service fees				
22	- Escalation beyond Feb 2023				
23	- Goods and Services Tax				

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
	Risk and Security				
24	We note the following potential risks due to the current Global pandemic:				
25	- Any restrictions, conditions or requirements imposed by any authority				
26	- The cessation or delay in the procurement of any goods or materials coming from overseas, interstate or locally if transport and logistics are impacted				
27	- Closure of all or part of the site due to infection or exposure (or a reasonable suspicion of infection or exposure) to site staff, subcontractors, suppliers and visitors, or from a requirement or directive from an Authority requiring closure of all or part of the site, or the cessation of all or part of the works under construction				
28	- The unavailability or diminished availability of site staff, subcontractors and suppliers due to infection or exposure to the virus				
29	- Escalation in prices of materials, transport or labour due to any of the above outcomes.				

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
1	**Building 06**				
1.1	Preliminaries				
1.1.1	Allowance for Preliminaries	5.00	%		10,800
	Total				
1.2	Demolition and Alterations				
	Substructure				
1.2.1	Allowance for demolition of ground slab	1,539	m2	50.00	76,950
1.2.2	Allowance for demolition of strip footings & retaining walls around perimeter of buildings	253	m	90.00	22,770
	Walls				
1.2.3	Allowance for demolition of external walls	1,294	m2	25.00	32,350
1.2.4	Allowance for demolition of columns including pad footings and pedestals	26	No	350.00	9,100
	Roof				
1.2.5	Allowance for demolition of 30 degree roofing including structure, sheeting etc.	1,757	m2	20.00	35,140
1.2.6	Allowance for demolition of additional upper roofing including structure, sheeting etc.	31	m2	30.00	930
	Outbuildings				
1.2.7	Allowance for demolition of external Tower Structure	1	Item		20,000
1.2.8	Allowance for demolition of external Bridge Structure	1	Item		18,000
	Total				**215,240**

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
2	**Building 07**				
2.1	Preliminaries				
2.1.1	Allowance for Preliminaries	5.00	%		13,600
	Total				
2.2	Demolition and Alterations				
	Substructure				
2.2.1	Allowance for demolition of ground slab	2,417	m2	50.00	120,850
2.2.2	Allowance for demolition of strip footings and retaining walls around perimeter of buildings	218	m	100.00	21,800
	Walls				
2.2.3	Allowance for demolition of external walls	1,259	m2	25.00	31,475
2.2.4	Allowance for demolition of columns including pad footings and pedestals	36	No	350.00	12,600
	Roof				
2.2.5	Allowance for demolition of 30 degree roofing including structure, sheeting etc.	2,936	m2	20.00	58,720
	Outbuildings				
2.2.6	Allowance for demolition of external Tower Structure	1	Item		17,000
2.2.7	Allowance for demolition of external Bridge Structure	1	Item		8,000
	Total				**270,445**

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
3	**Building 08**				
3.1	Preliminaries				
3.1.1	Allowance for Preliminaries	5.00	%		14,900
	Total				
3.2	Demolition and Alterations				
	Substructure				
3.2.1	Allowance for demolition of ground slab	2,618	m2	50.00	130,900
3.2.2	Allowance for demolition of strip footings and retaining walls around perimeter of buildings	225	m	90.00	20,250
	Walls				
3.2.3	Allowance for demolition of external walls	1,809	m2	25.00	45,225
3.2.4	Allowance for demolition of columns including pad footings and pedestals	40	No	350.00	14,000
	Roof				
3.2.5	Allowance for demolition of 4 degree upper roofing including structure, sheeting etc.	388	m2	30.00	11,640
3.2.6	Allowance for demolition of 25 degree roofing including structure, sheeting etc.	2,527	m2	20.00	50,540
	Outbuildings				
3.2.7	Allowance for demolition of external Bridge Structure	1	Item		24,000
	Total				**296,555**

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
4	**Ancillary / Miscellaneous Structures**				
4.1	Preliminaries				
4.1.1	Allowance for Preliminaries	5.00	%		5,800
	Total				
4.2	Demolition and Alterations				
4.2.1	Allowance for demolition and removal of lifts & lift pits (2 No.)	1	Item	60,000.00	60,000
4.2.2	Allowance for demolition and removal of dump hoppers & pits (2 No.)	1	Item	40,000.00	40,000
4.2.3	Allowance for demolition and removal of conveyor belts	1	Item	15,000.00	15,000
	Total				**115,000**

OPINION OF PROBABLE COST

PROJECT: Bunbury Outer Harbour Shed Demolition **OPC - Rev1**

Item	Description	Qty	Unit	Rate	Total
5	**External Works and Services**				
5.1	Preliminaries				
5.1.1	Allowance for Preliminaries	5.00	%		24,700
	Total				
5.2	Site Preparation				
5.2.1	Site Clearance	14,082	m2	5.00	70,410
	Total				**70,410**
5.3	Demolition and Alterations				
5.3.1	Allowance to remove existing piling (Assumed 600 dia at 3500 ctrs)	677	No	650.00	440,050
5.3.2	Allowance for removal of unknown services	14,082	m2	25.00	352,050
5.3.3	Allowance for demolition of hard landscaping	1,780	m2	15.00	26,700
5.3.4	Allowance for demolition of plants, shrubs, trees etc.	1,658	m2	25.00	41,450
5.3.5	Allowance for demolition of external retaining walls	148	m2	15.00	2,220
	Total				**862,470**

APPENDIX E

CIVIL CONDITION REPORT

CONDITION REPORT - CIVIL

BUNBURY OUTER HARBOUR
ILUKA SHED 6, 7 AND 8

CASUARINA DRIVE, BUNBURY

VENTIA AUSTRALIA PTY LTD

WML
Consulting Engineers

Distribution Record

Revision	Reviewed By	Date Issued	Purpose of Issue	Issued To
A	T.F. Kruger	31/05/2022	Client Review	Himanshu Agrawal

Prepared by:	Naoki Tanaka
Signed:	*Naoki Tanaka*
Date:	23 June 2022
WML Name:	Outer Harbour Iluka Shed Condition Report
WML Project No:	10378

WML Consultants Pty Ltd
ABN 36 092 471 531
Level 3
1 Prowse Street West Perth WA 6005
(08) 9722 3566 wml@wml.com.au
wml.com.au

CONTENTS

1 INTRODUCTION

WML Consultants (WML) were engaged by the Ventia Australia Pty Ltd to undertake a condition report for the Bunbury Outer Harbour Iluka Sheds site (Figure 1). There are three framed sheds in the Outer Harbour previously used by Iluka for storage of products prior to being loaded onto the ship. The task is to assess the condition of the various elements and advise what work needs to be undertaken if the sheds were kept and used for a public open space.

Figure 1: Site Map

The site was inspected on 09 May 2022 by a representative from WML and TECON Australia and in wet condition on 12 May 2022 by a representative from WML. This report contains details of the inspection and photographs illustrating the condition of the civil element for the site. This includes visual observations of damage and cracking of civil infrastructure, roads and pavements, concrete paths and kerbing, and visual observations of surface drainage and condition. Our comments and observations are limited to the area in yellow (Figure 1) which was visible and accessible at the time of the inspection.

2 OBSERVATIONS

The site was in good condition with no severe damage. Most damage can be easily repaired by a Civil Construction contractor.

At the time of initial inspection, it was sunny, so no drainage issues were observed and according to the site supervisor, the site generally drains well.

During the second inspection, it was wet and drizzling conditions, and there were a few puddles throughout the site, but no major pooling of water was observed at the time. Currently, stormwater flows to the verges and soaks through the soil. One thing to note is that water currently flows off the road where there are no kerbs. Consideration can be given to providing a kerb and kerb opening to help control discharge from road runoff and installing soakwells at the low points.

The main access road (Casuarina Drive), which is not part of the scope has lots of cracks and pot-holes throughout.

There are a few locations where kerbs are damaged or missing. When replacing kerbs, consideration can be given to kerb openings or drainage pits to control water run-off from the road.

The road surface is in good condition with some minor repairs required, such as pot-holes and cracks in areas of the bitumen surface. Consideration can be given to applying asphalt corrector or mill out and replace to smoothen the surface and then resurfacing only the area required to meet the needs of the future developments.

The surface drainage and grated inlet pits are in good condition with only one needing the grated pit lid replaced near shed 6. There is settlement around the pits at other locations. Consideration can be given to replacing grated pit lids with heel guard anti-slip grates if pedestrians will be accessing the area.

There are no immediate repairs or maintenance required along the concrete paths, but some paths have cracks that may require scheduled inspections to avoid trip-hazards developing. A new concrete path may be required to replace the damaged one at some point in the future.

DRAWING

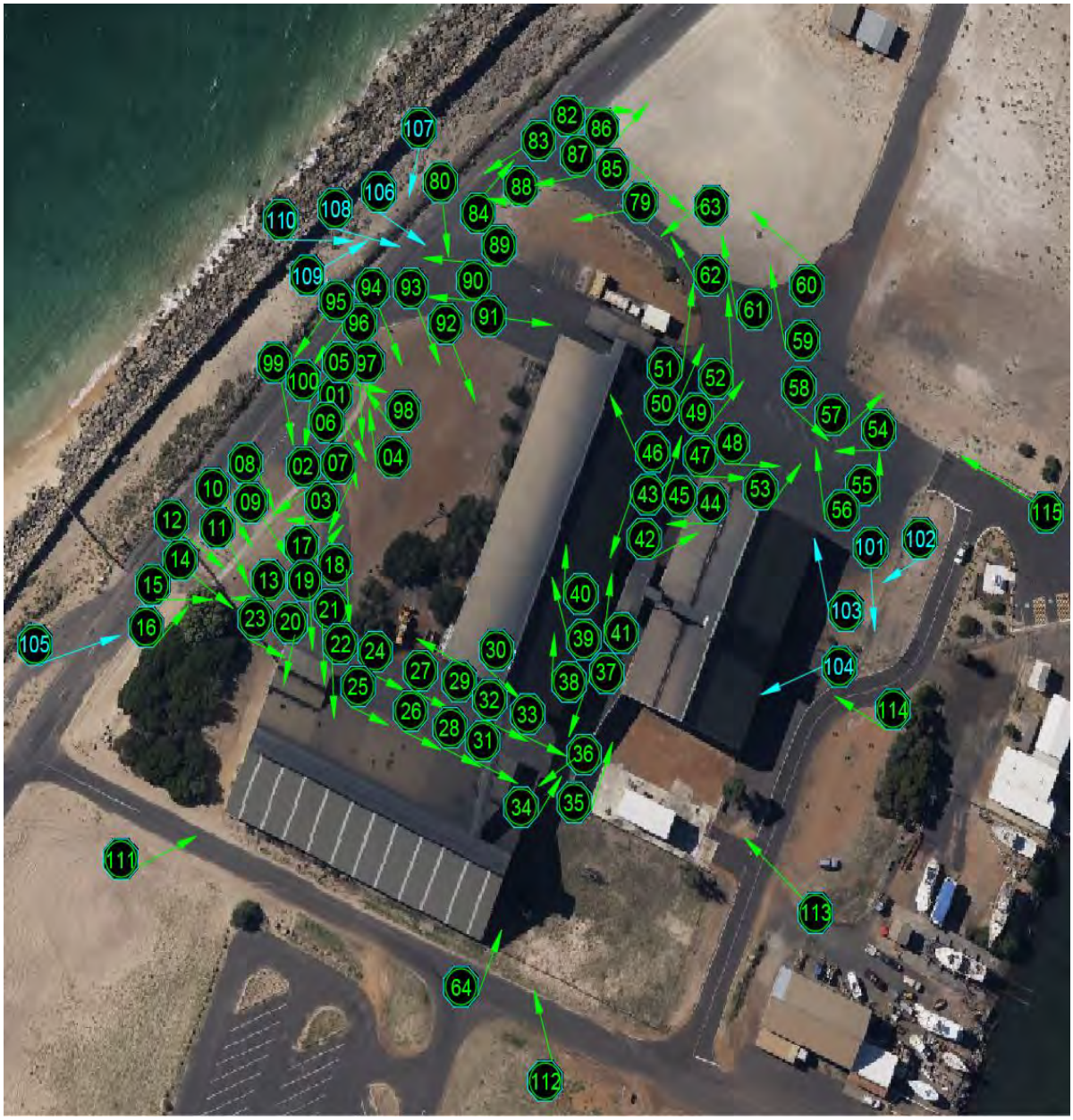


Figure 2: Photo Locations

PHOTOGRAPHS

Photo 01: View to Shed 8 (right) Shed 7 (left)

Photo 02: Outside of scope of works – full of cracks and pot-holes through the road

Photo 03: Outside of scope of works – full of cracks and pot-holes through the road

Photo 04: Outside of scope of works – full of cracks and pot-holes through the road

Photo 05: Cracks through the concrete path

Photo 06: Cracks through the concrete path

Photo 07: Cracks through the concrete path

Photo 08: Cracks through the concrete path

Photo 09: Cracks through the concrete path

Photo 10: Cracks through the concrete path

Photo 11: Cracks through the concrete path

Photo 12: Cracks through the concrete path

Photo 13: Pedestrian access gate to the site

Photo 14: Cracks through the concrete path

Photo 15: View to Shed 8 (right) and Shed 7 (left)

Photo 16: Cracks through the concrete path

Photo 17: Shed 8 (right) Shed 7 (left)

Photo 18: Road surface to Shed 8 in good condition

Photo 19: Road surface to Shed 8 in good condition

Photo 20: Damage on road edge and standing water in front of shed 8

Photo 21: Damage on road edge and standing water in front of shed 8

Photo 22: Damage on road edge and standing water in front of shed 8

Photo 23: Require gravel top-up on road edge

Photo 24: Wet road surface from roof shedding

Photo 25: Wet road surface from roof shedding

Photo 26: Damage to road edge

Photo 27: Damage to road edge

Photo 28: Settling around drainage pit

Photo 29: Settling around drainage pit

Photo 30: Road surface in good condition

Photo 31: Road surface in good condition

Photo 32: View to Shed 8 (right) Shed 7 (left) Shed 6 (middle)

Photo 33: View to Shed 8 (right) Shed 7 (left) Shed 6 (middle)

Photo 34: View to Shed 7 (left) Shed 6 (right)

Photo 35: Surface grated inlet pit lid in good condition

Photo 36: Require weed control, hump near road edge good condition

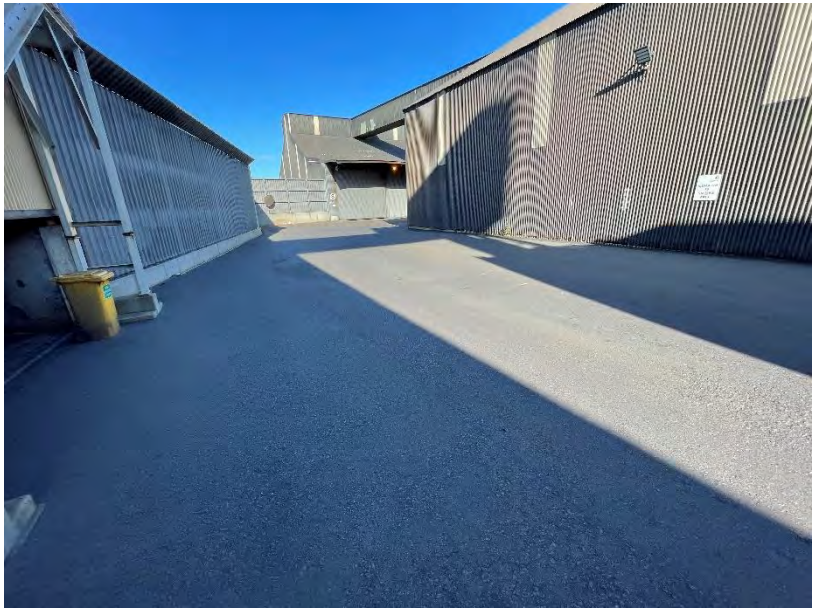


Photo 37: View to Shed 8 (middle), Shed 7 (right) Shed 6 (left)

Photo 38: View of road hopper and Shed 7 (left) Shed 6 (right)

Photo 39: View of road hopper, steep slope between Shed 6 and road hopper

Photo 40: View to Road Hopper, roller shutter on north side only

Photo 41: steep slope at Shed 6, surface grated inlet pit lid in good condition

Photo 42: View to Shed 7 (left) Shed 6 (right), steep slope at Shed 6

Photo 43: View to Shed 7 (right) Shed 6 (left), steep slope at Shed 6

Photo 44: Steep slope at Shed 6

Photo 45: Uneven surface near roller shelter at Shed 6

Photo 46: Surface grated inlet pit lid in good condition

Photo 47: Road surface in good condition with some minor repair required.

Photo 48: Small pot-hole

Photo 49: Small pot-hole

Photo 50: Generally drains well (By site supervisor)

Photo 51:

Photo 52: Small pot-hole

Photo 53: Damaged drainage pit

Photo 54: Damage to the road surface

Photo 55: Damage to the road surface

Photo 56: Reinstate linemarking (if required for new proposal)

Photo 57: Missing kerb

Photo 58: Missing kerb

Photo 59: Surface grated inlet pit lid in good condition

Photo 60: Damage to kerb

Photo 61: kerb and Road surface have moved

Photo 62: Road surface is in good condition.

Photo 63: View of Shed 7 and site shed (right) Shed 6 (left)

Photo 64: Surface water grated inlet pit lid outside Shed 6

Photo 79: Damaged kerb due to heavy vehicle sweeping through kerb

Photo 80: Damaged kerb due to heavy vehicle sweeping through kerb

Photo 82: Missing kerb due to heavy vehicle sweeping through kerb

Photo 83: Outside of scope of works – full of cracks and pot-holes through the road

photo 84: Outside of scope of works – full of cracks and pot-holes through the road

Photo 85: Outside of scope of works – full of cracks and pot-holes through the road

Photo 86: Outside of scope of works – full of cracks and pot-holes through the road

Photo 87: Outside of scope of works – full of cracks and pot-holes through the road

Photo 88: Outside of scope of works – full of cracks and pot-holes through the road

Photo 89: Outside of scope of works – full of cracks and pot-holes through the road

Photo 90: Outside of scope of works – full of cracks and pot-holes through the road

Photo 91: Missing kerb

Photo 92: Road surface is generally in good condition

Photo 93: Within the scope of works road surface is generally in good condition

Photo 94: Damaged kerb

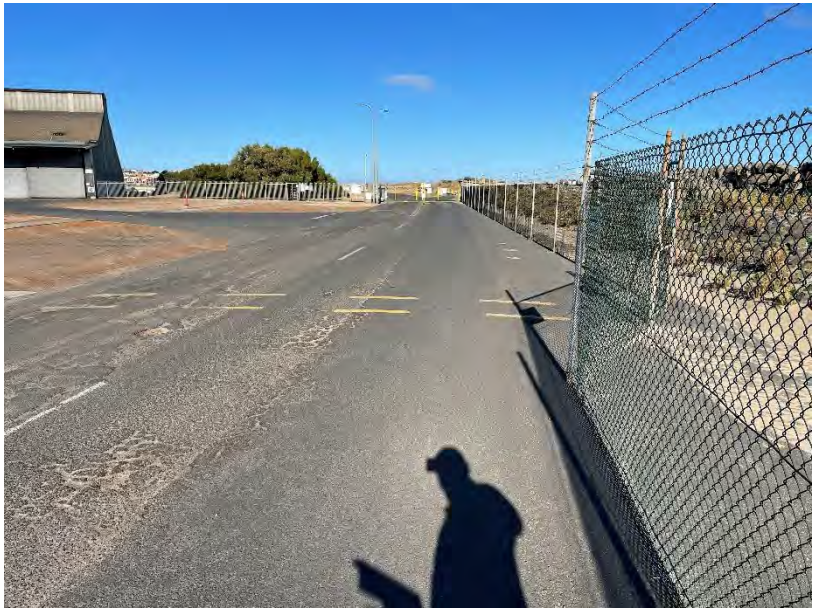


Photo 95: Re-fresh pedestrian linemarking

Photo 96: Outside of scope of works – full of cracks and pot-holes through the road

Photo 97: Concrete path in good condition

Photo 98: Grab rail requires refurbishment or consider removal.

Photo 99: Access road to Shed 8 is in good condition.

Photo 100: Re-fresh linemarking

Photo 101: View to back of Shed 6, well draining soil (Wet condition)

Photo 102: View to back of Shed 6, well draining soil (wet condition)

Photo 103: View to Shed 6, well draining soil with some small puddles

Photo 104: View to back of Shed 6, well draining soil with some small puddle

Photo 105: Not in the scope – big puddles at entrance to site

Photo 106: Localised ponding on the road

Photo 107: Localised ponding on verge

Photo 108: Localised ponding on road and verge

Photo 109: Localised ponding on the road

Photo 110: Localised ponding in verge

Photo 111: From outside to Shed 8

Photo 112: From outside to Shed 8 (left) and Shed 6 (right)

Photo 113: From outside to Shed 7 (left) and Shed 6 (right)

Photo 114: From Outside to Shed 6)

Photo 115: From outside to Shed 6 (left) and Shed 7 Right)

APPENDIX F

HYDRAULIC AND FIRE SERVICES REPORT

TJ PEACH & ASSOCIATES
HYDRAULIC SERVICES & FIRE PROTECTION CONSULTANCY

HYDRAULIC & FIRE SERVICES DUE DILIGENCE & FEASIBILITY INVESTIGATION REPORT

CLIENT: WML Consultants

PROJECT: Hydraulic & Fire Services Due Diligence Investigation
Existing Sheds 6, 7 & 8 – Outer Harbour Bunbury
Casuarina Drive, Bunbury WA

REFERENCE: 2022-102

DATE: 2 June 2022

Date	Revision	Author	Reviewed
02/06/2022	A	T. Peach	T. Peach

Contents

1. Introduction

TJ Peach & Associates have been engaged by WML Consultants to provide hydraulic and fire services consultancy in regards to the existing sheds 6, 7 and 8 located at the Outer Harbour, Casuarina Drive, Bunbury WA. We understand that the sheds are currently occupied by Iluka Resources and are used for stockpiling of resource material prior to shipping.

The existing shed plans and aerial photo are depicted in Appendix A. We understand that the Port Authority intend to repurpose these sheds for an alternate use at the end of the current lease period. The purpose of this investigation is to assess the condition and capacity of the existing hydraulic and fire services infrastructure and make recommendations with regards to the proposed repurposing of the shed structures.

This report has been formulated using the following information:

a. Actual data obtained on site;
b. Architectural drawings provided by WML Consultants;
c. Relevant Australian Standards AS/NZS3500 and AS2419.1;
d. Local Authority requirements and legislation;
e. As constructed drawings;
f. Design charts and spreadsheets; and
g. Information provided by utility services organisations.

2. Limitations

a. Any intellectual property contained within this report remains the property of TJ Peach & Associates and may not be reproduced or used without written consent from the author.
b. The report must only be reproduced in full.
c. The report must only be used for the purpose for which it was originally intended and in accordance with the terms and conditions contained within the fee submission for this project.
d. There was no as constructed information available for this site in relation to parts of the hydraulic and fire services installation.
e. TJ Peach & Associates have exercised professional discretion in determining the areas of compliance and non-compliance, as documented within this report.
f. Water Corporation have a statutory obligation to provide each property connected to their infrastructure with a water supply capable of providing a minimum flow rate of twenty (20) litres per minute at fifteen (15) metres head. This minimum supply guarantee is far below the minimum requirement for any fire service connection to a property as noted in the National Construction Code and AS2419.1. At any time, Water Corporation have the capability to lower the supply pressure and/or flow rate to this area without notice. Should this occur, the land owner or building occupier would be fully responsible for employing the relevant measures to ensure the minimum flow rate and residual pressure requirement can be achieved from the onsite fire system.
g. The capacities within the existing onsite system and the utility services infrastructure supplying this site are based on existing levels of development on this site and within the area. Should further development occur and an increased demand be imposed on the Water Corporation infrastructure, this performance may be impacted.
h. The test data contained within this report shall not be relied upon at a later date for design purposes.
i. This investigation did not involve detailed potholing of exposure of existing underground services to ascertain the exact locations of all existing services.
j. Other services consultants should be engaged by the Client to comment and advise on other services which may impact on the hydraulic and fire services. This includes but is not limited to:
    i. BCA Compliance – Building Surveyor;
    ii. Electrical Services – Electrical Engineer; and
    iii. Mechanical Services & Ventilation – Mechanical Engineer.

3. Existing Infrastructure

3.1 Domestic cold water service

Other than the existing transportable offices to the north of shed 7, there is currently no domestic water service connections to sheds 6, 7 or 8. There is an existing DN150 cold water service connection which enters the Port Authority land to the south of the access gates along Casuarina Drive. This connection is fitted with a backflow prevention device. It is assumed that this connection services all lease areas within the Port Authority land. This connection is not currently indicated on Aqwest's mapping.

3.2 Fire services

There are currently no wet fire services installed to any of the sheds.

3.3 Natural gas

There is currently no natural gas service connection to the Port Authority land. There is a newly installed 160ØPE gas main located along Casuarina Drive, south of the Port Authority access gates.

3.4 Sewer drainage

There is currently no reticulated gravity sewer connection to the Port Authority land. It is assumed that the existing buildings have septic systems installed. The nearest Water Corporation reticulated sewer is located south of the Port Authority land, in 'The Strand'.

3.5 Stormwater drainage

The existing sheds are not fitted with guttering or rainwater pipe connections. The existing pavement surrounding the sheds appears to be drained via grated gullies / soak wells. Refer to WML Consultants' report for pavement and civil site drainage information.

4. Proposed Infrastructure

4.1 Domestic cold water service

As part of any future development, it would be intended to service the sheds from the existing DN150 main supply into the site, with a separate backflow prevention device and sub water meter assembly to service the redeveloped buildings. We do not anticipate any issues with capacity with respect to this existing supply. Water supply pressure and flow rate should be verified by a Contractor at the time of detailed design to ensure the calculated demand can be met.

4.2 Fire services

As the existing buildings are >500m2 in total floor area, fire hydrant and fire hose reel protection will be required to be installed. A flow and pressure test will need to be carried out at the time of detailed design to determine the available flow rate and residual pressure from the town's main. This will confirm whether fixed on site tanks and pumps are required to service the fire hydrant system or not.

Consideration will need to be given to the water supply configuration. Should the existing DN150 main be a domestic supply as currently assumed, a separate fire service connection will likely need to be established at the boundary, independent of the domestic water supply, to comply with the requirements of AS2419.1 and AS/NZS3500.

Advice will be required from a Building Certifier to accurately determine the building floor areas and volume also, to confirm whether fire sprinkler protection will be required to the sheds as part of any future redevelopment. The total floor area of the largest fire compartment within each shed/s will determine the required fire hydrant flow rate and residual pressure. Additional PA doors will be required to facilitate entry points for fire hydrant hose lengths, as well as supporting exit travel distances for egress purposes.

4.3 Natural gas

Should natural gas be required for the future development of the sheds, Atco Gas Australia will need to be consulted by the Design Consultant about extending the existing gas main down Casuarina Drive, in order for a gas meter set to be installed at the boundary of the Port Authority land. This will typically involve a cost sharing arrangement with Atco Gas Australia to cover the expense of the mains extension. We do not envisage any issues with capacity in the gas network in this regard.

4.4 Sewer drainage

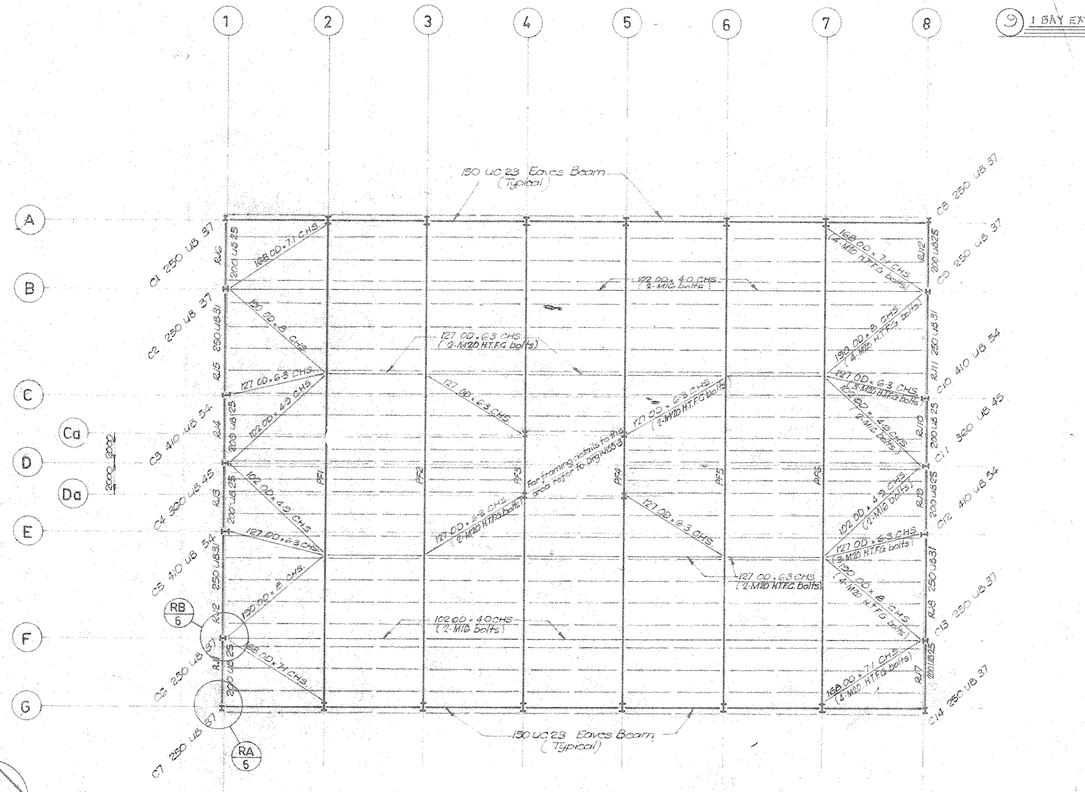
Due to the required setbacks from the ocean to any on site wastewater treatment system (minimum 100m buffer) it is recommended that a private sewerage pumping station and private rising main is considered for the future development of these buildings, to convey wastewater back into the nearest Water Corporation reticulated sewer network. The design of this system will be undertaken by a Civil Engineer and will involve approval from Water Corporation for the pumped sewerage discharge to reticulate down Casuarina Drive and into the nearest approved point of discharge.

4.5 Stormwater drainage

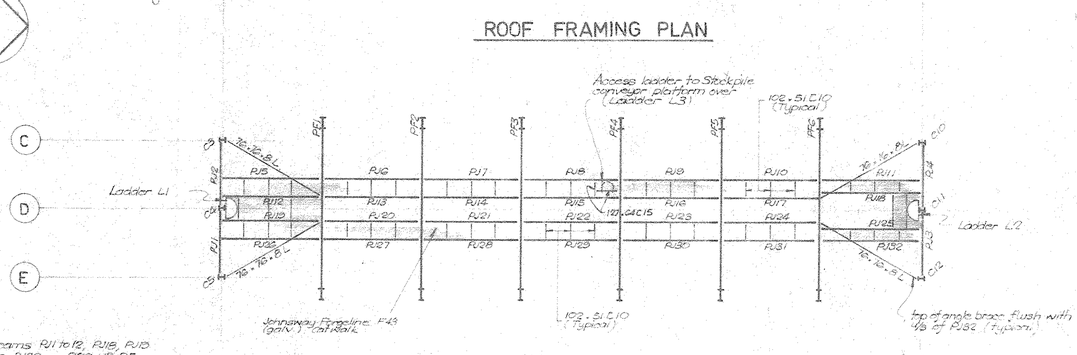
It is recommended that guttering and rainwater pipes are fitted to the sheds as part of any future development. These rainwater pipes shall be connected below ground to the civil site drainage system. Threshold drainage protection shall be provided to doorways and opening as required. Refer to WML Consultants' report for pavement and civil site drainage information.

Appendix A – Existing Shed 6, 7 & 8 Plans

W155-2

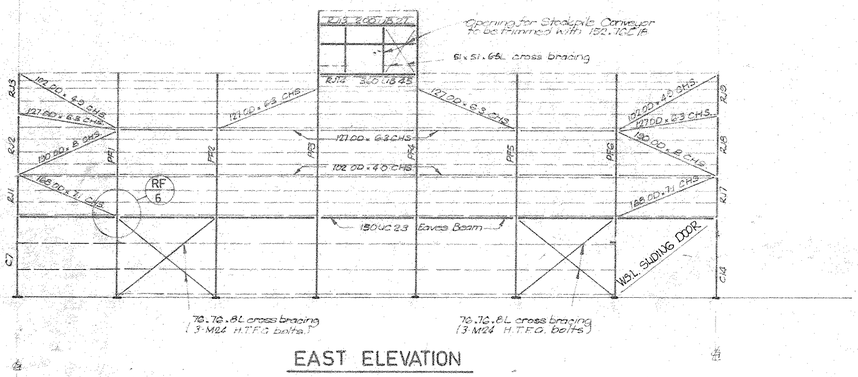


ROOF FRAMING PLAN

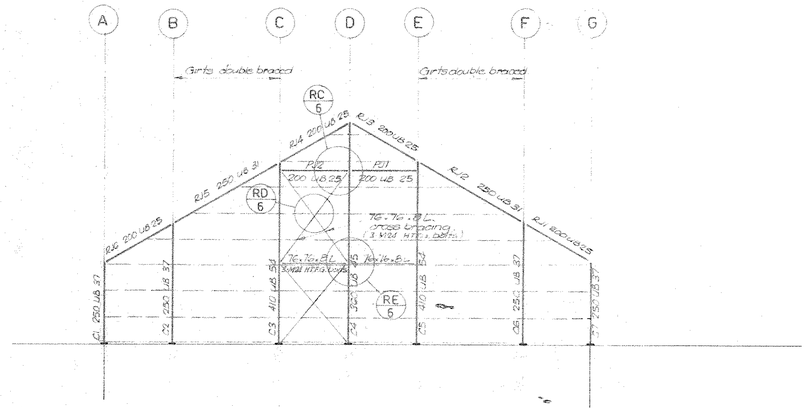


Note:- Platform Beams RJ1 to 12, RJ18, RJ19 and RJ25 to RJ32 — 200 UB 25
RJ13 to RJ17 and RJ20 to RJ24 — 360 UB 45 + 22 kg Rail. (45# Rail)
For details refer to Drg.

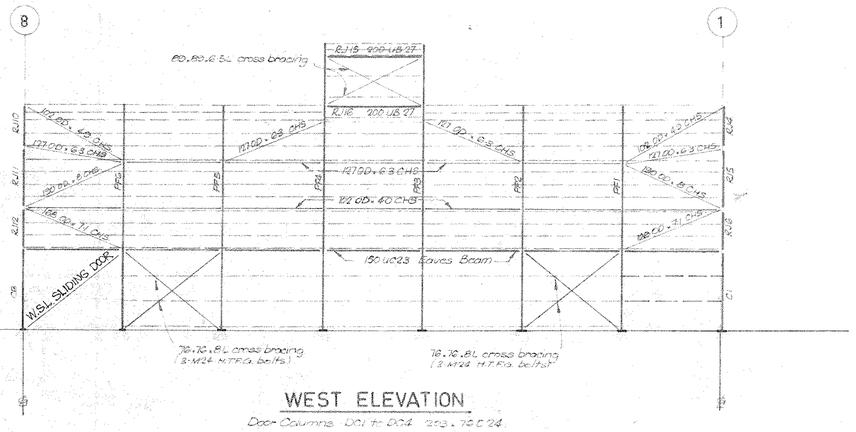
FRAMING PLAN AT PLATFORM LEVEL



EAST ELEVATION



SOUTH ELEVATION
NORTH ELEVATION SIMILAR (Opposite Hand)



WEST ELEVATION
Door Columns DC1 to DC4 - 152 x 76 C 24

PURLINS & GIRTS

O.M.I. 200 P - single braced throughout except as noted.
All to O.M.I. standard details, including ridge t.c.
205 O.M.I. fascia purlin on grid lines A & G from grid 1 to grid 8.
175 O.M.I. fascia purlin on grid lines 1a & 1b, from grid 4 to grid 5.
Finish — Galvanised.
51 x 51 x 6.5 L raking girt at gable ends grids 1 & 8 (from grid A to C) and grids 4 & 5 (from Ca to Da).
Finish — as selected.
For details and spacing of purlins and girts to Upper Frame refer to Drg. W155-3.

REV.	BY	DATE	DESCRIPTION
C.	J.M.	27-10-81	AS BUILT ELEVATIONS NOW NO DOORS.
B.	J.M.	27-10-81	COLUMNS SHORTENED BY 625mm.
A.	J.M.	27-10-81	NEW S/D BY W.S.L. E & W. ELEVATIONS.

QTY.	ITEM	DESCRIPTION	WT.

JENNINGS MINING LIMITED
ENEABBA HEAVY MINERAL SANDS

HEAVY MINERAL STORE
NARNGULU W.A.

JOHN CONNELL & ASSOCIATES
CONSULTING ENGINEERS
10 KINGS PARK ROAD WEST PERTH

A.V. JENNINGS INDUSTRIES (AUST.) LTD
BUILDERS

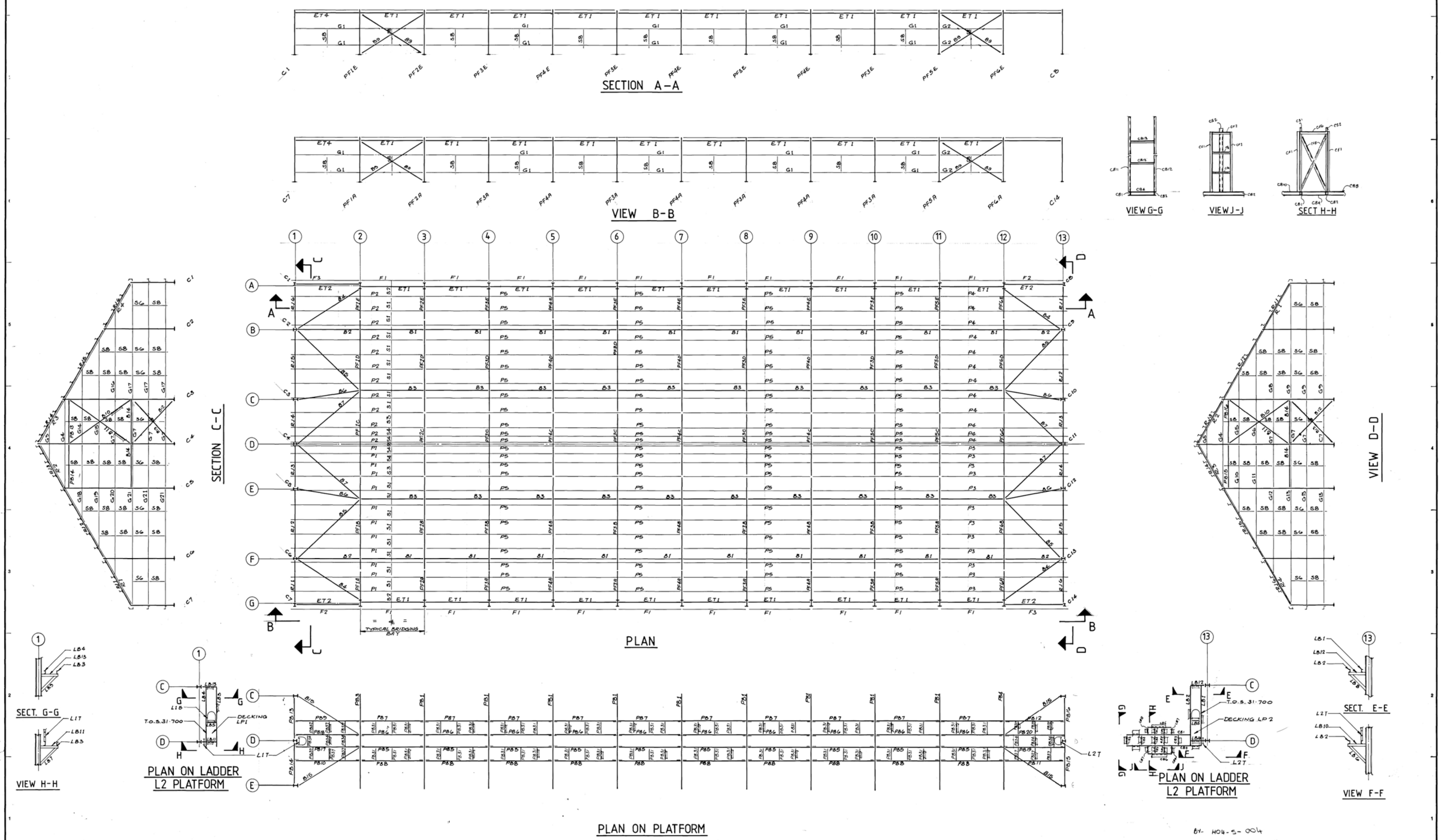
DATE August '76 | SCALE 1:200

DRAWN J.P. | CHECKED L.B.A. | PASSED | APPROVED

DRAWING No. EP-43-197

REV.

TITLE
ROOF FRAMING & ELEVATIONS



BY- H04-5-004

ORIGINAL DRAWING No 2501

+CP-065-10-023

REVISIONS		REVISIONS		REVISIONS			
12		8		4		INITIATOR	
11		7		3		DESIGN	
10		6		2		DRAWN	CHAN
9		5		1		APPROVED	

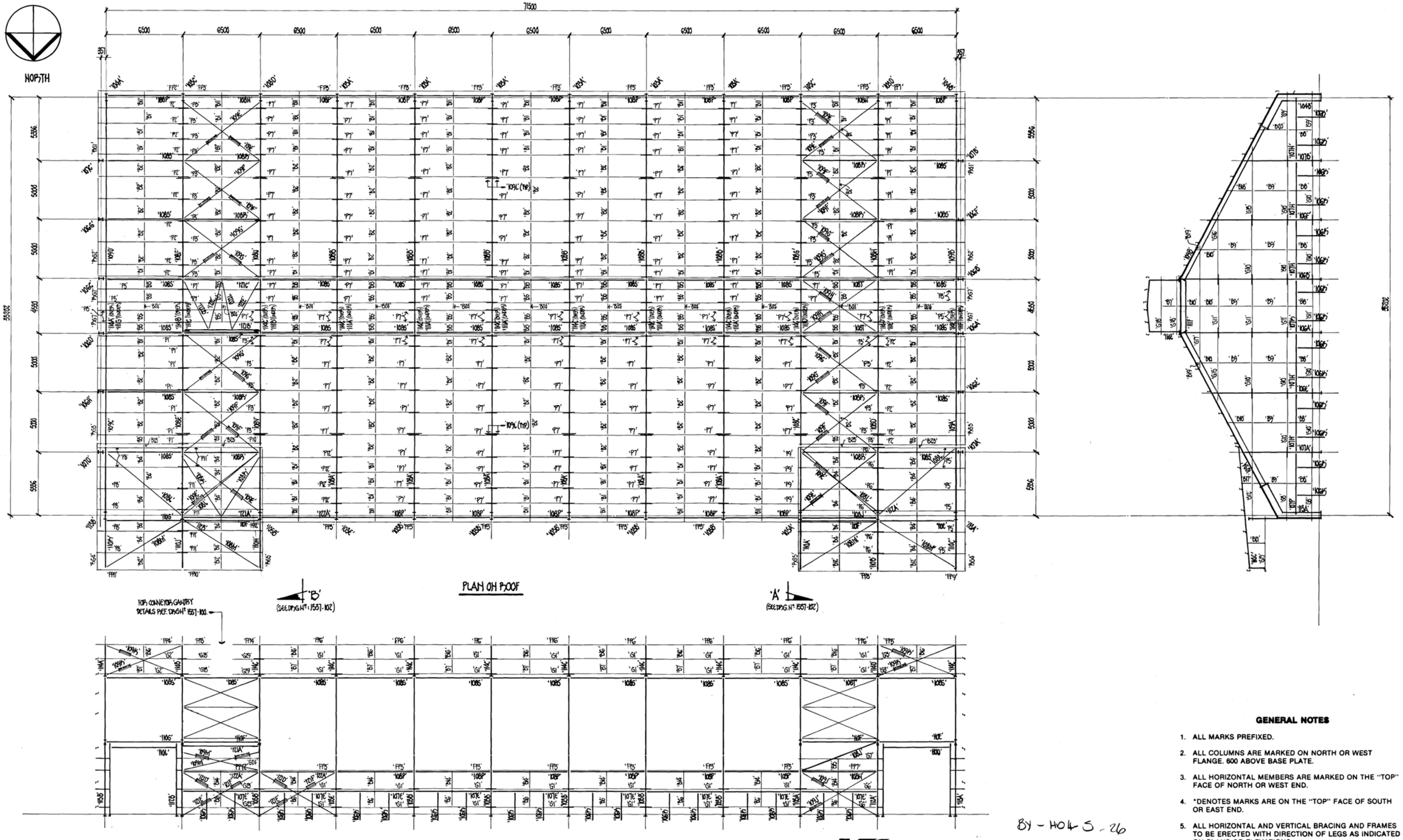
WESTERN MINERAL SANDS PTY. LTD.
CAPEL, WESTERN AUSTRALIA

DESCRIPTION:

SCALE | AS DRAWN: | REDUCED:

DRAWING No.

AO



BY - HOLS - 26

GENERAL NOTES

1. ALL MARKS PREFIXED.
2. ALL COLUMNS ARE MARKED ON NORTH OR WEST FLANGE. 600 ABOVE BASE PLATE.
3. ALL HORIZONTAL MEMBERS ARE MARKED ON THE "TOP" FACE OF NORTH OR WEST END.
4. *DENOTES MARKS ARE ON THE "TOP" FACE OF SOUTH OR EAST END.
5. ALL HORIZONTAL AND VERTICAL BRACING AND FRAMES TO BE ERECTED WITH DIRECTION OF LEGS AS INDICATED ON PLANS OR ELEVATIONS.
6. ALL STAIRS ARE MARKED AT TOP END.
7. READ THIS DRG. IN CONJUNCTION WITH DRG Nº: 1557-102.

KERMAN CONTRACTING PTY LTD
896 CANNING HIGHWAY, APPLECROSS, WESTERN AUSTRALIA
P.O. BOX 135, INGLEWOOD, W.A. 6052. TELEPHONE (09) 364 8466 FAX (09) 364 7296

NOTES	REFERENCE DRAWINGS	DRG No.	No.	DATE	REVISION	BY	CHK	APP	DATE

ISSUED FOR		DATE
PRELIMINARY	☐	
QUOTATION	☐	
CONSTRUCTION	☐	
PURCHASING	☐	
APPROVAL	☐	

K.C. DRG Nº: 1557-101.

DRAWN BY G MAY '89

CHECKED BY PB AUG 89

ENGINEER

APPROVED

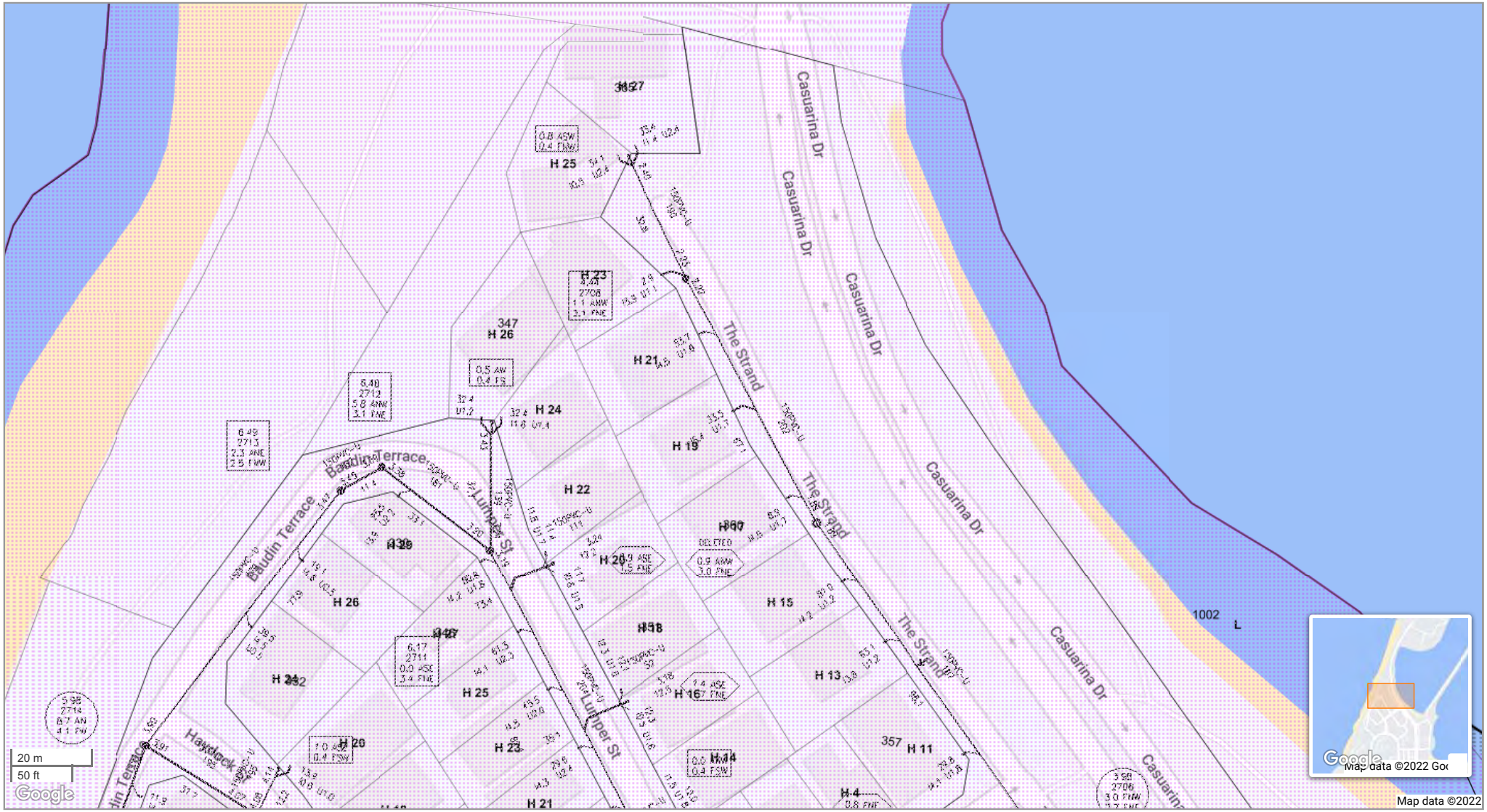
DATE

WESTRALIAN SANDS LIMITED

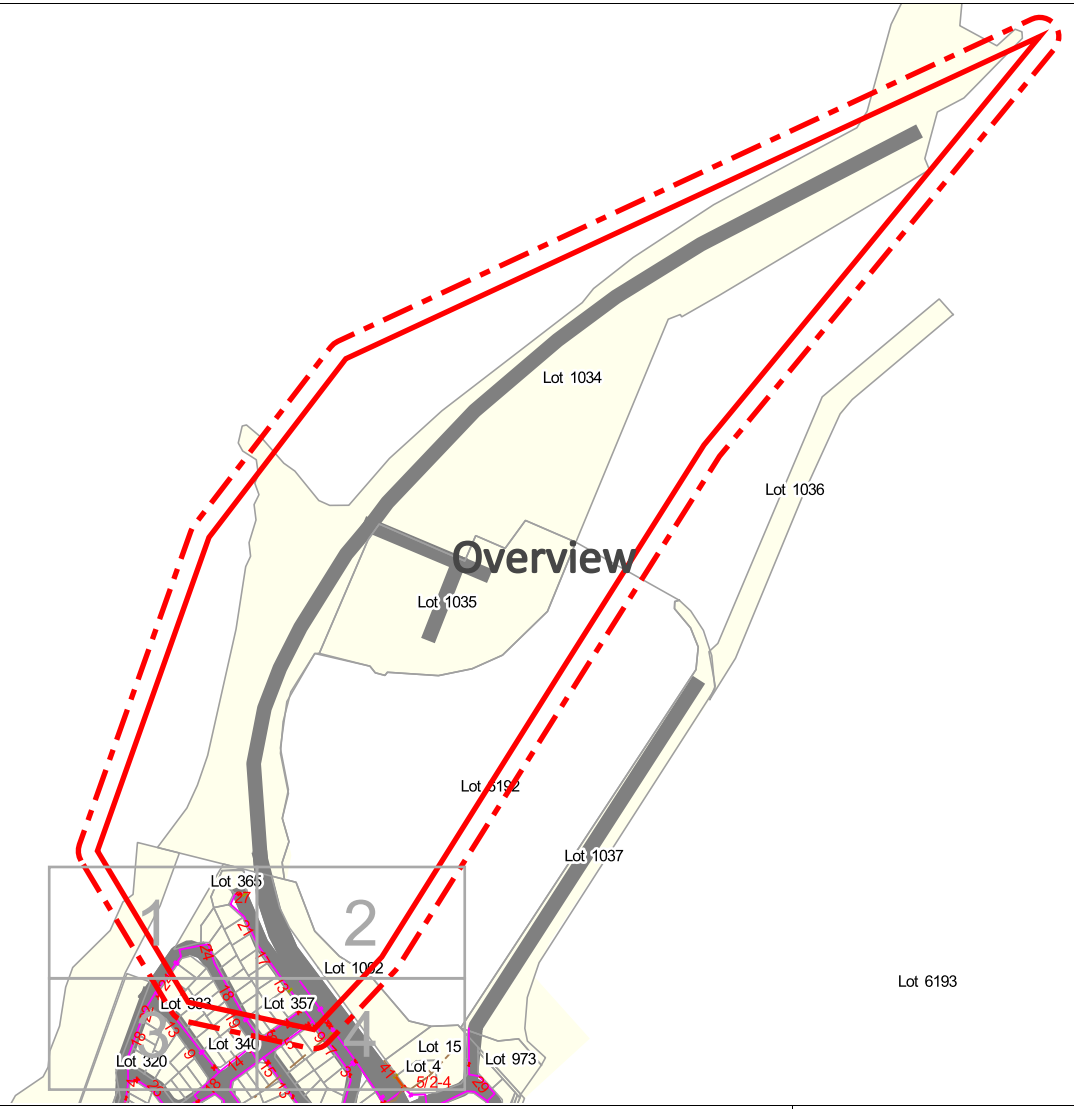
ILMENITE STORAGE BIN - BUNBURY
GENERAL ARRANGEMENT.

SCALE | DATE | DRG No. | REV. No.

Appendix B – Water Corporation Infrastructure Mapping



Appendix C – Aqwest Infrastructure Mapping



"YOUR LOCAL WATER SUPPLIER" AQWEST

PIPE
- BELOW Ø100mm
- Ø100mm TO Ø250mm
- Ø100mm TO Ø250mm HIGH
- Ø300mm & ABOVE
- CROSS-OVER
- DEAD / REDUNDANT
- PIPE SIZE & MATERIAL

AC100

VALVES
- NEW (RSV)
- OLD
- CLOSED
- ANTI-CLOCKWISE
- AIR
- SCOUR

HYDRANTS
- NEW
- OLD

REDUCER
GIBAULT
FLUSHING POINT

Location: Lot 1035 Casuarina Drive
Bunbury, WA, 6230

N

Company: TJ Peach & Associates

Sequence: 212111175

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither AQWest or PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

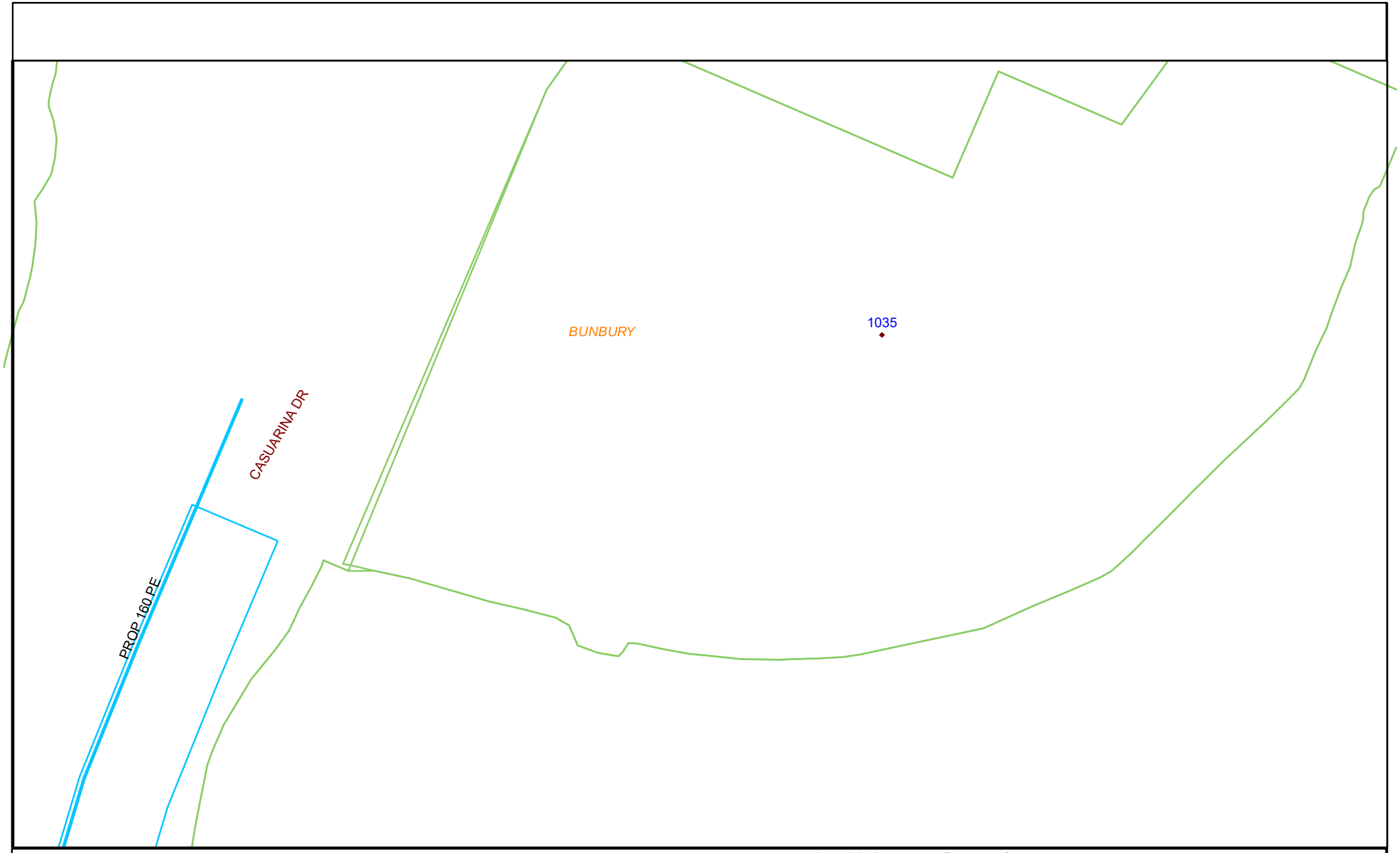
Name: Tim Peach

Scale: 1:9873

Date: 02/06/2022

A4

Appendix D – Atco Gas Australia Infrastructure Mapping



Sequence No: 212111179 Map Tile: 10 Scale: 1:1500

Job No: 32069224 Date:2/06/2022 Location: Lot 1035 Casuarina Drive, Bunbury 6230

N
W E
S

ATCO

Please read all **warnings**, conditions and information on the attached "Underground Asset Details" information sheet. This plan is issued subject to that information and those conditions and **warnings** (including, but not limited to, the "NO HOT WORKS" warning). Plans are current for only **30 days** from date of request, indicative only and not warranted to be accurate. It is your responsibility to carefully locate underground assets and follow safe work practises and procedures (eg pot-holing). ATCO Gas Australia will seek compensation for damage caused to assets.

Appendix E – Site Photos

APPENDIX G

ELECTRICAL SERVICES REPORT

Our ref 22_12_c1

INKOSI DESIGN

June 02, 2022

WML
1st Floor 62 Wittenoom Street
Bunbury
W.A. 6230

Attention: Mr. Himanshu Agrawal

Dear Himanshu,

RE: BUNBURY OUTER HARBOUR ILUKA LEASE SHEDS
ELECTRICAL SERVICES REVIEW

Executive Summary

We confirm our attendance to the Iluka lease storage sheds at the Bunbury Outer Harbour to review the installed electrical services and make the following comment for your consideration.

The existing electrical services are of a capacity and condition that is not suitable for the redevelopment of the buildings to cater for public access.

Subject to the final building usages, a power supply upgrade to the buildings will be required to cater for the new services.

The redevelopment will trigger a number of 'National Construction Code' requirements with regards to fire safety that will have an impact to the required electrical systems. We note that there is no fire safety systems installed and expect as a minimum, a fire detection and emergency warning system will be required. This will also require the connection to the NBN network for monitoring and Fire Brigade notification.

There is some NBN infrastructure in the area, however there will be a cost to extend the infrastructure to the buildings.

The redevelopment of the buildings will require a new electrical services systems installed throughout, including new feeders into the building from the area power supply infrastructure.

General

We note that the intent of this report is to comment on the suitability of the installed electrical services to cater for the shed's conversion to a public space, either leased retail, display areas (museums and the like) or food and beverage areas.

It is assumed that the conversion to a new use will include new cladding and insulation installed to comply with the current requirements of the National

RMB 200B WESTDALE ROAD
BEVERLEY
WA 6304

4 LEO PLACE
SPEARWOOD
WA 6163
MOB: 0438 864618

INKOSI DESIGN

Construction Code. In addition we assume that the new spaces would require mechanical ventilation and air conditioning.

We have not made any comment with regards to the lease conditions with regards to 'Make Good' requirements, however we assume that the Motor Control Centres, bucket elevators and conveyors will be removed on vacation of the tenancy.

Existing Site

The area power supply is located to the north of the shed site.

We note that the area power supply arrangement is currently being upgraded / replaced with the installation of new high voltage ring main units.

Adjacent to the high voltage ring main units are two buildings, one of which contains a transformer of Westralian manufacture.

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During our site visit, we could not obtain access to the building adjacent the high voltage ring main units, therefore we cannot make comment with regards to the power supply capacity.

We note that the main distribution switchboard is fitted with a 250 amp three phase main switch. If the redevelopment of the buildings includes the requirement of air conditioning to be installed, the existing power supply will not be of sufficient capacity.

Therefore, a new incoming feeder from the area distribution switchboard will be required.

Sheds installed Electrical Services

The existing site contains three large sheds. The sheds are named shed six, shed seven and shed eight.

The sheds are primarily utilised for storage of minerals prior to export.

The main distribution switchboard for the electrical reticulation to the shed distribution switchboards is located in a small room behind the loading bay of Shed 7.

The switchboard is fitted with a 250 amp main switch, and provides power to the transportable offices, the light and power distribution switchboard for shed 7 & 8 and the distribution switchboard for Shed 6.

The switchboard is in good condition however due to the capacity (250 amps per phase), will not be suitable use if the buildings are converted to a public area facility.

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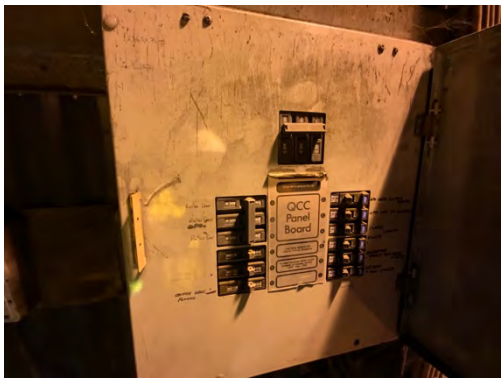
This room also contains a motor control centre (MCC) for the conveyors and controls.

At the time of our inspection we could not determine the power supply origins for the MCC (please see comments regarding the area power supply above).

The Shed 7 light and power distribution switchboard is located in the bucket elevator area.

The switchboard appears to be of original install with some of the final sub circuit protection devices being upgraded with residual current devices.

The switchboard is in poor condition and due to the environment has a large amount of minerals on and within the switchboard.



The Shed 6 light and power distribution switchboard is located in a room adjacent to the loading bay associated with this building.

The switchboard appears to be of original install with some of the final sub circuit protection devices being upgraded with residual current devices.

The switchboard is in poor condition and due to the environment has a large amount of minerals on and within the switchboard.

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Light and Power Installation

All three sheds are similar with regards to the lighting and power installation.

The lighting installations do not comply with the Australian Standards with regards to the illumination levels.

In addition, there is no emergency or emergency evacuation lighting systems installed.

The installed light fittings are of a discharge lamp style and will not be suitable for the refurbishment of the facility.

This room also contains a motor control centre (MCC) for the conveyors and controls.

At the time of our inspection we could not determine the power supply origins for the MCC (please see comments regarding the area power supply above).

The power reticulation is limited throughout the installation and is poorly maintained.

The roller door controls require extensive maintenance to ensure they comply with current standards.

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Our ref 22_12_c1

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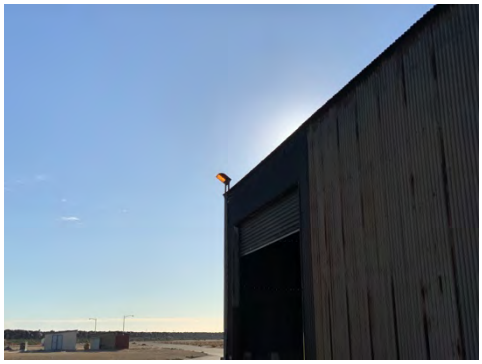
The final subcircuit cabling is of an age and condition that would require replacement to provide ongoing reliable service. It is also noted that the amount of minerals present on the final sub circuit cabling systems would inhibit the expected life period of the cables.

External lighting to the surrounds of the buildings is limited and does not comply with the relevant Australian Standards with regards to illumination levels.



The light fittings are of a condition and age that indicates that they have reached their life expectancy and will not be suitable for any redevelopment.

We note that there is a substantial hard stand area that could be utilised for car parking. This area has no lighting installed and will require new light fittings mounted on poles.

We trust the above is acceptable however if you require any further information please contact the writer on 9646 0668.

Yours faithfully
Inkosi Design

Graeme McDonald

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WA 6304

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