



# Temporary Overflow Workers Caravan Accommodation Facility- Sewer Mains Extension

**Construction Scope of Works**

Shire Of Northampton

08 May 2024

→ **The Power of Commitment**



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**GHD Pty Ltd | ABN 39 008 488 373**

Contact: Antoinette Krause, Manager - Mid West WA | GHD

Foreshore Business Centre, Level 1, 209 Foreshore Drive

Geraldton, Western Australia 6530, Australia

T +61 8 9920 9400 | F +61 8 9920 9499 | E [getmail@ghd.com](mailto:getmail@ghd.com) | [ghd.com](http://ghd.com)

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# Contents

<b>1. General</b>	<b>1</b>
1.1 Definitions	1
1.2 Location of the Works	1
1.3 Geotechnical Investigation	1
1.4 Feature Survey	1
<b>2. Description of the Works</b>	<b>2</b>
2.1 Site Establishment	2
2.1.1 Construction Power	2
2.1.2 Construction Materials	2
2.2 Site Management	3
2.2.1 Site Access	3
2.2.2 Laydown Area	3
2.2.3 Management, HSE and supervision	3
2.2.4 Hours of work	3
2.3 Workmanship	4
2.4 Environmental Protection	4
2.5 Traffic Management	4
2.6 Vegetation clearing	4
2.7 Services	4
2.8 Quality Assurance and Quality Control	5
2.9 Construction Drawings and Technical Specifications	5

## Table index

Table 1	Definitions	1
Table 2	Construction Drawings	5

## Appendices

Appendix A	Safety in Design
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# 1. General

The project Scope of Works includes all works required to construct the 205m gravity sewer mains extension from Lot 500 Anchorage Lane along Grey Street. This project is in support of the Temporary Overflow Workers Caravan Accommodation Facility being established as part of the disaster recovery works in Kalbarri due to Severe Tropical Cyclone Seroja in April 2021.

The category 3 cyclone impacted the coastline of Western Australia which led to the declaration of disaster event AGRN965 in accordance with the Disaster Recovery Funding Arrangements of Western Australia (DRFAWA). This project is to be delivered in accordance with the DRFAWA requirements

This Scope of Works shall be read in conjunction with the contract document, tender drawings and relevant standards and specifications.

The Contractor shall ensure that all work performed, and all materials specified, at a minimum, comply with all relevant and current:

- Regulations, Codes and Australian Standards.
- Requirements prescribed by relevant regulatory authorities.
- National Construction Code (NCC).

If any items in this Scope of Works conflicts with the contract documentation, the more stringent requirement will take precedence.

## 1.1 Definitions

The following definitions shall apply for interpreting the Scope of Works.

Table 1 Definitions

Item	Description
Principal	Shire of Northampton.
Contractor	Party awarded the Contract to complete the Works.
Superintendent	The Kalbarri Coastal Remediation Project Superintendent will be overseeing the Works for the Principal.
Works	All construction works required to deliver the project as defined by the Scope of Works, Specifications, drawings, and Contract documents.

## 1.2 Location of the Works

Kalbarri, or Wutumalu, as it is known to the Nanda people, is in the Mid-West Region of Western Australia approximately 150km north of Geraldton, in the Shire of Northampton. The townsite is situated on the southern banks of the Murchison River and is bordered by the coastline to the west and is surrounded by the Kalbarri National Park to the east and south.

The proposed Temporary Workers Caravan Accommodation Facility is located on Lot 500 Anchorage Lane.

The gravity sewer main extension begins at the existing sewer main on Grey Street and extends to the corner of Lot 500 Anchorage Lane. It also includes two property connections to Lot 250 and Lot 500.

## 1.3 Geotechnical Investigation

No geotechnical investigation was undertaken for this project.

## 1.4 Feature Survey

The feature survey was undertaken by HTD Surveyors and can be provided to the successful contractor.

## 2. Description of the Works

The Works include the provision of all labour, supervision, materials, tools, equipment, and plant necessary to complete the extension of the sewer main along Grey Street. The work generally comprises the following:

- Site setup and establishment
- Survey and setout
- Provision of all Management Plans and supervision to undertake the works
- Provision of all HSE and OHS requirements
- Obtaining approvals and permits for undertaking works where required
- Locating and protecting services prior to commencing work
- Liaison with Water Corporation and attending inspections as required
- Site preparation and earthworks.
- Construction of 150mm diameter gravity sewer mains extension (approximately 205m in length).
- Two property boundary connections
- Two maintenance shafts
- Testing, Quality Control and Quality Assurance requirements
- Survey of completed works in accordance with Water Corporation requirements
- Detailed and accurate As constructed documentation in accordance with Water Corporation requirements
- Verge and road reinstatement as applicable
- All waste and debris shall be correctly disposed of at the Kalbarri Landfill facility
- Site cleanup and demobilisation
- Certification of the works

### 2.1 Site Establishment

The Contractor's site establishment shall include, but is not limited to the following:

- Mobilisation of all plant and equipment required to undertake the Works.
- Site establishment of site office, ablutions and consumables as required.
- Arrangements for suitable accommodation and messing facilities for staff.
- Positively locate, mark and protect all the assets and services.
- Survey and get approvals from all the service providers prior to commencement of the Works.
- OHS Plan, Quality Plan, Environmental Management Plan, Traffic Management Plan, Inspection and Testing plans are to be approved prior to commencement of the Works.

#### 2.1.1 Construction Power

Power required to operate any machinery during the extension of sewer line is to be supplied by the Contractor.

#### 2.1.2 Construction Materials

Generally, materials are to be obtained from commercial sources.

The Contractor is required to identify appropriate sources of the materials required to deliver the Works. The Shire Works Manager can be contacted to discuss potential sources.

## 2.2 Site Management

### 2.2.1 Site Access

Site access, including construction traffic movements, shall be coordinated in consultation with the Superintendent and included in the Contractor's Traffic Management Plan.

Nearby caravan park as well as the existing facility on Lot 500 shall be considered and interruptions shall be kept to a minimum.

A Construction Risk Assessment Workshop (CRAW) shall be completed and submitted prior to commencement.

### 2.2.2 Laydown Area

The Contractor shall be allocated a laydown area in close proximity to the work site.

The Contractor shall confine their work area to the locations agreed. No other area will be permitted for use by the Contractor unless approved by the Superintendent.

The Contractor at his own expense shall provide and maintain proper sanitary conveniences for the use of the workmen engaged on the works. Such conveniences shall be kept clean, shall comply with Local Government requirements and shall be removed at the completion of the works.

### 2.2.3 Management, HSE and supervision

The Contractor Management and Supervision shall include, but not limited to the following:

- All requirements set out in the approved Plans (Quality, HSE, TMP, Environmental etc)
- Undertake all necessary project management and obtain any necessary approvals required for the Works including traffic management plans, permits, reporting requirements and meetings (internal and external).
- Supervise construction activities.
- Supply of all safety, environmental and communication equipment required to undertake work, including PPE, and installation of appropriate temporary signage.
- Provide survey and equipment where required for the purposes of setting out, conformance checks and quantity measurement.
- Ensure plant operators have completed competency training and hold all required working certifications required for this contract in accordance with Contractor's safety management policy. This should include but not limited to the following:
  - All personnel on site to be inducted to the Contractor's safety management system.
  - All personnel on site must be trained and assessed to be competent by Contractor prior to working on site.
- Provide barricading, signage, warning lights, etc necessary to provide a safe working area for both the Contractor's workers and the pedestrians.
- All security measures required for the Works.
- Adhere to all Water Corporation and Shire of Northampton requirements for HSE.

### 2.2.4 Hours of work

The hours of work shall be restricted to 07.00 am to 18.00 pm depending on daylight conditions. A roster is to be agreed with the Principal. Should any changes to the agreed roster be required, approval is to be sought from the Principal.

## 2.3 Workmanship

The Contractor shall ensure that all Works are carried out by appropriately qualified and experienced tradesmen and supervised apprentices under direct supervision of a licensed Water Corporation approved plumbing contractor in direct accordance with the Australian Standards AS/NZS 3500 and the requirements of the Water Corporation.

The Contractor shall ensure that any material used in the Works and standard of workmanship conforms to the express requirements of the Contract or, in the absence of any such express requirements, shall be of a kind which is suitable for its intended purpose and consistent with the nature and character of the Works. This includes that the workmanship or materials meet the manufacturer's recommendations for application or installation, workmanship or materials abides by the warranty requirements, and that the warranties are supplied to the Principal.

## 2.4 Environmental Protection

- The Contractor shall minimise damage to the environment as detailed within this Scope of Works. The Contractor shall:
- Comply with all the applicable Environmental Laws and shall adopt methods in the performance of the Works that shall reduce to the greatest possible extent practicable, disruption or damage to the environment caused by or during the performance of the Works.
- Effect and maintain all approvals, licences, permits and other authorisations required under State and Commonwealth Laws, safeguards and standards, to conduct the Works.
- Take such measures as may be necessary to prevent contamination, destruction or impairment of the environment.
- Where the Contractor does not take effective action to minimise damage to the environment, the Superintendent may direct the Contractor to undertake specific measures within such time as may be deemed as necessary to ensure compliance with the provisions of the Scope of Works. Where the Contractor fails to take action within the time specified by any direction, the PM may take such actions as may be necessary to minimise damage to the environment.

## 2.5 Traffic Management

The Contractor shall undertake all necessary traffic management requirements including:

- Submit a TMP in accordance with the Shire of Northampton's traffic management requirements for review and approval prior to mobilisation.
- Provide traffic management as per the approved TMP.

## 2.6 Vegetation clearing

All clearing shall be in accordance with Shire of Northampton's requirements and as directed by the Superintendent. The Contractor shall clear what is reasonable to undertake the Scope of Works. Clearing permits and requirements to be confirmed with Shire of Northampton prior to commencement of any clearing activities.

## 2.7 Services

The Contractor shall submit a Before You Dig Australia inquiry to cover the actual period of the Works, locate any services on site, liaise with necessary service providers and protect services as necessary to undertake the Works.

The Contractor shall confirm levels of services where it may interfere or be affected by the proposed Works. The levels of the services and survey of existing services shall be submitted to Superintendent prior to commencing Works in order that any potential clashes or interference are identified early to prevent from asset strikes.

## 2.8 Quality Assurance and Quality Control

The Contractor shall undertake all testing, Quality Control (QC) and Quality Assurance (QA) requirements as per the Technical Specifications and this Scope of Works.

## 2.9 Construction Drawings and Technical Specifications

The below list of drawings set out the construction works and contains reference to the relevant technical specifications. These are to be read in conjunction with this Scope of Work document, the Technical Specifications and contract documents.

*Table 2 Construction Drawings*

<b>Drawing no./ Document ref.</b>	<b>Description/Title</b>
12596020-GHD-HY-100	SEWER RETICULATION PLAN SITE PLAN
12596020-GHD-HY-001	SPECIFICATION NOTES



# Appendices

# Appendix A

**Safety in Design**



# HSE040 Safety in Design Risk Assessment



Notes: \*Designs with significant quantities of dangerous goods may require detailed risk assessments under Dangerous Goods or Major Hazard legislation  
 \* Most industrial processes will require an industry specific assessment, e.g. HAZOP and/or Quantitative Risk Assessment for facilities that have chemical or high-pressure processes under Dangerous Goods or Major Hazard legislation.

Design Life Cycle:	Investigation and Design	Setup, Construction and Commissioning	Operation	Maintenance	Disposal	Date:	2/05/2024	Revision No:							
Job Name:	Water Corporation Sewer Mains Extension		Job No:	61/12596020	Client	Shire of Northampton	Design:	Anchorage Lane Caravan Accommodation Facility - Sewer Extension - Detailed Design							
People involved in Risk Assessment:	Sam Mosaval, Antoinette Krause														
Design Ref	Design Life Cycle Stage (Select from Drop Down Box)	Hazards What could cause injury or ill health, damage to property or damage to the environment	Risk What could go wrong and what might happen as a result	Existing Control Measures	Initial Risk Rating			Potential Control Measures <small>(Consider Hierarchy of Control - Elimination, Substitution, Isolation, Engineering Controls, Administrative Controls, PPE)</small>	Respons-ibility	By When	Decision / Status	Residual Risk Rating			Comments
					C	L	RR				C	L	RR		
	Setup, Construction and Commissioning	Community/public interaction/access	Works occurring in road reserve. Vehicular and pedestrian traffic could be present. Risk of injury from passing vehicles or pedestrians wandering into construction zone could be injured by machinery or materials.	Scope of Work instructs contractor to limit public access.	C - Severe	3 - Possible	Moderate	The site must be securely fenced with warning signs throughout construction. Allow for road closures as needed if works impact thoroughfare	Contractor	Before commencing / During construction	Open	C - Severe	1 - Very Unlikely	Low	
	Setup, Construction and Commissioning	Services	Risk of encountering / hitting other utility main infrastructure which could cause personal injury or disruption to surrounding neighbourhood (ie, blackouts if power cables were damaged)	Dial before you dig completed by GHD Contract Docs state Contractor must confirm all existing services prior to commencement of works.	D - Critical	2 - Unlikely	Moderate	Scanned services survey by Contractor to verify existing services	Contractor	Before commencing	Open	C - Severe	1 - Very Unlikely	Low	
	Setup, Construction and Commissioning	Dust/fumes/vapours	Dust and exhaust causing a nuisance to residents, neighboring caravan park and businesses.	Standard dust control measures in Scope of Work .	B - Major	5 - Almost Certain	Moderate	Wet down dusty soils where possible.	Contractor	During construction activities.	Open	B - Major	2 - Unlikely	Negligible	
	Setup, Construction and Commissioning	Noise	Machinery causing disturbance to residents, neighboring caravan park and businesses.	Work hours specified in Scope of Work	B - Major	5 - Almost Certain	Moderate	Adhere to Scope of Work and/or Technical Specification.	Contractor	During construction activities.	Open	B - Major	3 - Possible	Low	
	Setup, Construction and Commissioning	Construction method	Daily, normal construction activities introduce hazards such as lifting, manual handling, slips/trips/falls that may cause injury or fatalities.	Legally required job training and job safety analysis processes and procedures. Contractor required to provide SWMS.	E- Catastrophic	2 - Unlikely	Significant	Ensure all workers are properly trained for their tasks. Have a designated first aid officer on site at all times.	Contractor	During construction activities.	Open	D - Critical	1 - Very Unlikely	Moderate	
	Setup, Construction and Commissioning	Excavation	Risk of trench collapse causing encapsulation of worker resulting in injury/fatality	Instructions in Specification notes regarding shoring and support of trench walls . Contractor required to provide SWMS.	D - Critical	2 - Unlikely	Moderate	Ensure proper training, and follow all worksafe guidelines. Employ additional support measures, benching and or battering	Contractor	During construction activities.	Open	C - Severe	2 - Unlikely	Low	
	Setup, Construction and Commissioning	Excavation	Slips, trips and falls from height into trench resulting in injury or fatality.	Instructions in Specification notes about barriers to excavations and trench filling as soon as is practicable. Contractor required to provide SWMS.	D - Critical	2 - Unlikely	Moderate	Ensure proper training, and follow all worksafe guidelines. Allow for backfilling as work progresses. No unnecessary open trenchess	Contractor	During construction activities.	Open	C - Severe	2 - Unlikely	Low	
	Setup, Construction and Commissioning	Extreme Weather	Flooding or severe storms, bushfire.	DFES warning system	D - Critical	3 - Possible	Significant	Pay attention to weather warnings, including heavy rain in the catchment. Prepare the site for poor weather when DFES sends out warnings.	Contractor	During construction activities.	Open	D - Critical	2 - Unlikely	Moderate	
	Maintenance	Laydown areas	If equipment or materials need to be brought to site during maintenance work, and are placed on the sloping ground, they may collapse and roll, causing injury to workers or general public.		D - Critical	2 - Unlikely	Moderate	Provide a flat and secure laydown area.	Contractor	As required	Open	D - Critical	1 - Very Unlikely	Moderate	
	Maintenance	Slips/Trips/Falls	General public falling into / over work areas.		D - Critical	2 - Unlikely	Moderate	Provide clear signage and barriers during any maintenance works	Contractor	As required	Open	C - Severe	2 - Unlikely	Low	



## GHD RISK ASSESSMENT MATRIX



Risk Assessment Matrix		CONSEQUENCE				
		MINOR	MAJOR	SEVERE	CRITICAL	CATASTROPHIC
		A	B	C	D	E
LIKELIHOOD						
<b>ALMOST CERTAIN</b>	5	Low	Moderate	Significant	Extreme	Extreme
<b>LIKELY</b>	4	Low	Low	Moderate	Significant	Extreme
<b>POSSIBLE</b>	3	Negligible	Low	Moderate	Significant	Extreme
<b>UNLIKELY</b>	2	Negligible	Negligible	Low	Moderate	Significant
<b>VERY UNLIKELY</b>	1	Negligible	Negligible	Low	Moderate	Moderate



# GHD SAFETY IN DESIGN RISK ASSESSMENT CONSEQUENCE & LIKELIHOOD DESCRIPTORS



## GHD CONSEQUENCE DESCRIPTORS

Select the **MOST LIKELY/PROBABLE** consequence descriptor for the information available).

Risk Consequence	Design Consequence Descriptors
E- Catastrophic	Could result in fatality.
D – Critical	Could result in permanent total disability.
C- Severe	Could result in permanent partial disability, injuries or illness that may result in hospitalisation of persons.
B - Major	Could result in injury or illness resulting in one or more lost work days(s)
A – Minor	Could result in injury or illness not resulting in a lost work day.

## GHD LIKELIHOOD DESCRIPTORS

Select the best likelihood descriptor for the information available).

Likelihood Descriptor	Design Likelihood Descriptors
5 – Almost Certain	Industry experience suggests design failure is almost certain to occur during the life of the product.
4 – Likely	Industry experience suggests design failure is likely to occur during the life of the product.
3 – Possible	Industry experience suggests design failure is possible some time during the life of the design.
2 – Unlikely	Industry experience suggests design failure is unlikely to occur in the life of design.
1 – Very Unlikely	Industry experience suggests design failure is very unlikely. It can be assumed failure occurrence may not be experienced,



## HIERARCHY OF CONTROLS



Having established a level of risk for a hazard, it is then necessary to determine and implement an appropriate control (or combination of controls if no single measure is sufficient). Below is a guide from most preferred to least preferred control measures.

<b>ELIMINATE THE HAZARD</b>	<b>ELIMINATE</b> - Get rid of the hazard out of the workplace.	<ul style="list-style-type: none"> <li>▶ Redesign the work process to remove the hazard</li>   <li>▶ Redesign of the work process to eliminate exposure</li> </ul>		
<b>CHANGE THE WAY WORK IS DONE</b>	<b>SUBSTITUTE</b> - Try to replace or change plant, substances or materials to lower the risk from the hazard.	<ul style="list-style-type: none"> <li>▶ Consider using air-powered instead of electric powered tools</li>   <li>▶ Consider using water based paints rather than solvent based ones.</li> </ul>		
	Try to <b>ISOLATE</b> the hazard	<ul style="list-style-type: none"> <li>▶ Insulation (i.e. sound proofing or insulation from the heat)</li>   <li>▶ Guarding on machines.</li> </ul>		
	<b>ENGINEERING CONTROL</b> - Design and install equipment to counteract the hazard	<ul style="list-style-type: none"> <li>▶ Lifting devices</li>   <li>▶ Exhaust ventilation system to extract dangerous fumes or dust.</li> </ul>		
	<b>ADMINISTRATIVE CONTROL</b> Arrange work so people spend less time around the hazard and monitor their understanding of the hazard and the controls	<ul style="list-style-type: none"> <li>▶ Health and safety related Training;</li>   <li>▶ Develop Service Line JSEA for staff to follow</li> <li>▶ Restricted access to certain work areas, i.e. confined space</li> <li>▶ Operator certification for plant</li> <li>▶ Job rotation.</li> </ul>		
<b>PPE</b>	<b>PPE</b> Have people wear protective equipment and clothing while near the hazard	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>▶ Is it appropriate for the staff member?</li> <li>▶ Does it control the risk for that staff member?</li> <li>▶ Does it control the risk?</li> <li>▶ Is the staff member informed of any limitations?</li> <li>▶ Has the staff member been given instruction and training on the proper use of PPE?</li> </ul> </td> <td style="vertical-align: top; padding-left: 20px;"> <ul style="list-style-type: none"> <li>▶ Examples of PPE</li> <li>▶ Clothes</li> <li>▶ Respirator</li> <li>▶ Gloves</li> <li>▶ Helmets</li> <li>▶ Wide-brimmed hats Goggles</li> <li>▶ Safety Footwear</li> <li>▶ High visibility vests</li> <li>▶ Ear plugs and ear muffs</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>▶ Is it appropriate for the staff member?</li> <li>▶ Does it control the risk for that staff member?</li> <li>▶ Does it control the risk?</li> <li>▶ Is the staff member informed of any limitations?</li> <li>▶ Has the staff member been given instruction and training on the proper use of PPE?</li> </ul>	<ul style="list-style-type: none"> <li>▶ Examples of PPE</li> <li>▶ Clothes</li> <li>▶ Respirator</li> <li>▶ Gloves</li> <li>▶ Helmets</li> <li>▶ Wide-brimmed hats Goggles</li> <li>▶ Safety Footwear</li> <li>▶ High visibility vests</li> <li>▶ Ear plugs and ear muffs</li> </ul>
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