KARARA MINING LIMITED

Karara Mining Limited

L200 Magnetic Elutriator Project

Scope of Work -
Supply and Installation of Civil, Structural, Mechanical, Piping and E&I Works

L200-GE-SOW-0001

11 June 2026

Synopsis

Karara Mining Limited (KML) has completed the detailed engineering design for a Magnetic Elutriation Project. The new Magnetic Elutriation (ME) building consists of a steel structure building housing 28 elutriators in four banks, and associated mechanical equipment, piping, electrical and instrumentation. The ME building is located at Karara mine site processing plant, north of the Clean Magnetic Separation (CMS) building.

Apart from the detailed engineering design being completed, KML has also procured some of the major equipment, including 28 elutriators, slurry pumps, VSDs, MCC, density gauges. This contract is to package all remaining works for the delivery of the ME project, including supply and construct/install civil and concrete works, steel structures, piping, electrical and instrumentation equipment and associated cable trays and supports.

This document describes the Scope of Work (SOW) of this contract for the Supply and installation of Civil, Structural, Mechanical, Piping and E&I works summarized as follows:

- Supply, construct civil earthwork and foundations for the new Magnetic Elutriator building and the new piperack.
- Supply, fabricate, freight and handle including unloading at site, assembly and erection of structural steel, either by stick build or preassembled as modules, to erect a new Magnetic Elutriator building and a new piperack.
- Supply, fabricate, freight and handle including unloading at site and erection of cable tray supports and pipe supports, to erect onto existing or new structure/piperacks.
- Handle and unloading at site, assembly and installation of free-issue elutriator vessels, pumps and distributors.
- Supply, fabricate, freight, handle including unloading at site and installation of box launders, piping launders, hoppers and other equipment.
- Supply, fabricate, freight, handle including unloading at site, assembly and installation of piping, electrical & in-line instrumentation.
- Supply, freight and handle all materials necessary for completing the installation works.
- Tie-ins to the existing process and all other necessary associated site work and off-site works for completing the Magnetic Elutriator Project at the Karara Mine site.

Disclaimer

"This document has been prepared by Karara Mining Limited for exclusive use on the Karara Iron Ore Project ("the Purpose"). Use of this document other than for the Purpose is not permitted."

L200-GE-SOW-0001

REV	DESCRIPTION	ORIG	REVIEW	APPROVED	DATE
A	Issued for Tender	SY	Chengcai Luo	Digitally signed by Chengcai Luo DN: cn=Chengcai Luo, c=AU, o=Karara Mining , email=chengcai.luo@kararamining.com.au Date: 2026.06.11 15:07:35 +08'00'	11Jun2026

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1 INTRODUCTION

1.1 Project Overview

Karara Mining Ltd ("*KML*", the "*Company*") is executing the Magnetic Elutriator Project, which is located on the Karara mine site in the Mid-West Region of Western Australia.

The Karara mine site ("*Mine Site*") is located 320 km North-North-East of Perth and 225 km East of Geraldton, at approximately 29.19º South Latitude, 116.76º East Longitude (See Figure 1).

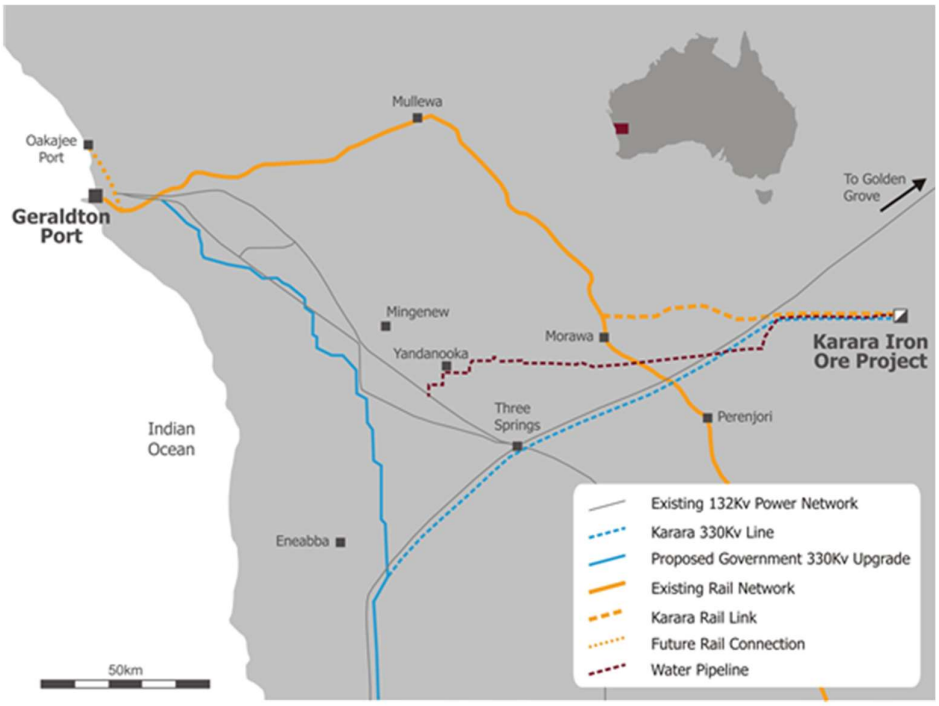


Figure 1: Location of the Karara Mine Site

The project comprises the provision of a new Magnetic Elutriator building which will house twenty-eight new elutriator vessels with associated infrastructure, a new piperack west of the existing Cleaner Magnetic Separation (CMS) building in Area 1310, piping and tie-ins to connect the new ME building into the process flow stream, and associated works.

1.2 Overview of the Magnetic Elutriation Building

The Contractor shall fully understand the scope by familiarising themselves with the existing site condition.

The Works take place in an existing brown-field operating process plant environment. Some steel, platework, equipment installations, piping and services tie-ins can only be done during a scheduled or opportunistic plant shutdown.

An overview of the new plant area looking SouthEast is shown coloured in Figure-2 below.

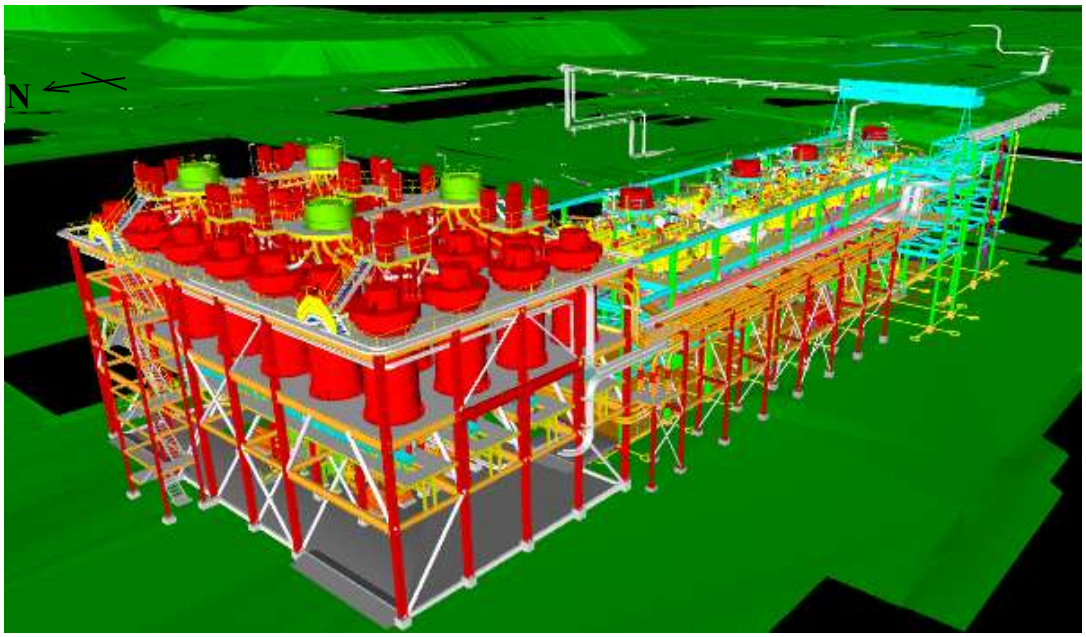


Figure 2: 3D-model overview of the Magnetic Elutriator Project, looking SE

The new Magnetic Elutriation ("ME") building is located North of the existing CMS building and is shown above in the left-foreground, with its 28 elutriator vessels in red.

The plant operates as four parallel processing streams or "banks" and in ME each bank is comprised of seven elutriator vessels. Each bank of seven elutriators is gravity-fed from a distributor located on the upper catwalk level of the new building (4-off, coloured in green). Each elutriator has an associated electrical control panel also coloured in red and located on the catwalk level near the distributors.

The new building is fed from the existing CMS building in the right-background, which also has four parallel processing streams. There are modifications and tie-in works to be carried out in the existing CMS building, which are described in detail later. Four new replacement pumps at ground floor in the CMS building pump the slurry as four independent streams from CMS to the new ME building via a new piperack to be erected west of the CMS building. The slurry concentrate produced by the new ME building is returned via the same piperack to tie-into existing piping to the next processing stage Flotation, which is located to the right of the view, off the page.

1.3 Brief Process Overview

The Magnetic Elutriation circuit consists of four banks of seven elutriation column vessels. Each bank is fed by a seven-way, atmospheric bottom-fed distributor with central feed and bottom discharge via manual dart valves. Each of the four ME feed distributors, 1310-DI-055 to 1310-DI-058 are fed by one of the four CMS Concentrate pumps 1310-PU-146 to 1310-PU-149.

The distributors feed to elutriator columns, 1310-EC-011 to 1310-EC-047. Bank-1 has tags 1310-EC-011 to –017; Bank-**2** has 1310-EC-0**2**1 to –0**2**7, etc. The feed enters the top of the Magnetic Elutriator ("ME") by a tangential connection to its feedwell that gives swirl, and is released via an internal feed pipe into the middle of the column. A pulsing magnetic field causes magnetic particles (magnetite) to clump together. Process water is flushed upwards through the column at a rate sufficient to lift non-magnetic tailings while clumped magnetic particles and denser fractions (e.g. haematite) sink. The tailings fraction overflows the top of the column into the tails overflow well. Concentrate collects at the bottom cone of the column and is discharged to concentrate launders via a pinch valve.

The ME tailings streams are laundered through the existing CMS building to the Tailings Thickener Feed Tank 1317-TK-047. The concentrate streams are laundered to the ME Concentrate Tanks 1310-TK-100 to 1310-TK-103 at ground level, from where the product is pumped to the Rougher Flotation Surge Tank 1311-TK-031 by pumps 1310-PU-560 to 1310-PU-567. Each ME concentrate tank is served by duty/standby pumps for the transfer of concentrate.

As a broad generalisation, silica (the main tailings fraction) is white, whereas magnetite (the main iron concentrate fraction) is black; the whiter the tailings and the blacker the concentrate the better the separation.

2 GLOSSARY

Wherever the words “Company, Purchaser or Buyer” are used, it shall mean Karara Mining Limited,
Wherever the words “Contractor” or “Supplier” are used it shall mean the person so named in the Contract (and its successors and permitted assigns).
Wherever the words “Company’s Representative”, “Purchaser’s Representative” or “Buyer’s Representative” are used, it shall mean the person so named in the Contract (and its successors and permitted assigns).
Any word in the table below or that is capitalised shall have the meaning ascribed to it or in the Contract.

Term	Definition
Authorities	Any statutory, public, municipal, governmental or administrative department, commission, authority, agency or entity with jurisdiction in connection with the Works Under Contract
BoD	Basis of Design
CCIWA	Chamber of Commerce and Industry Western Australia
CDRL	Contractor Data and Document Requirements List
CMS	Cleaner Magnetic Separation – an existing processing building in Area-1310
Company’s Project Requirements	Has the meaning ascribed to it in the Contract
Company’s Representative’s nominee	Means an individual appointed in writing by the Company’s Representative under the Contract
Contract	The agreement between the Company and the Contractor to which this Scope of Work pertains
D&A test	Alcohol and other Drugs (‘Drug & Alcohol’) testing
DSO	Direct Shipping Ore
Execution Date	Means the date on which the Formal Instrument of Agreement is signed by the Company
Equipment and materials	Means the goods, equipment or materials, to be installed, constructed and commissioned
EWP	any Elevated Work Platform (typically a ‘Cherry-Picker’ or a Scissors-Lift)
FAT	Factory Acceptance Testing
FEED	Front End Engineering Design
FIC	Final Inspection Certificate, or Field Inspection Checksheet
HAZOP	Hazard and Operability Review
HME	Heavy Mining Equipment
HSEC	Health, Safety, Environment and Community
HV	High Voltage
IFC	Issued For Construction.
ISOs	Piping Isometric drawings
ITP	Inspection & Test Plan
JB / JBs	Junction Box or Junction Boxes, typically Electrical JBs
JHA	Job Hazard Analysis
KML	Karara Mining Limited, the “Company”, “Purchaser” or “Buyer”
KIOP	Karara Iron Ore Project
kW	Kilowatt

Term	Definition
LV	Low Voltage
MCC	Motor Control Centre
MDR	Manufacturer's Data Report
ME	Magnetic Elutriation (the new building), or Magnetic Elutriator (the vessel)
Mine site	The location of the KIOP mine at Karara in the Mid-West Region of Western Australia, approximately 215 km East of Geraldton and 320 km North-North-East of Perth
MIS	Management Information Systems
MS	A Magnetic Separator machine
MSDS	Material Safety Data Sheet(s)
MTOs	Material Take Offs
MV	Medium Voltage
MWPA	Mid West Port Authority
NDT / NDE	Non-Destructive Testing / Non Destructive Examination
P&IDs	Piping and Instrumentation Diagrams
PCS	Process Control System
PEP	Project Execution Plan
PFDs	Process Flow Diagrams
PMC	Project Management Contracting
PLC	Programmable Logic Controller
Port Site	Export Port at Geraldton
SCADA	System Control and Data Acquisition
SDRL	Supplier Data and Document Requirements List
SoW	Scope of Work
SWIN	SouthWest Interconnected Network
Supplementary Requirements	Specifications, standards, regulations and codes of practice set out in the Appendices of this SoW
subcontractor	Has the meaning in the General Conditions of Contract
shall	Indicates a contractual requirement that the Contractor must follow
will	Indicates a contractual requirement that the Contractor will follow
should	Indicates a preferred option which the Contractor should select, otherwise substantial reasons for not selecting shall be provided in writing to the Company's Representative for approval
may	Indicates an option which the Contractor may select at its choice, but subject to approval / confirmation by the Company's Representative
Tenderer	Means a person who lodges a tender for the Works
The Works	Means the whole of the Works under Contract
TOC/TOS/TOP/BOP	Top of Concrete / Top of Steel / Top of Pipe / Bottom of Pipe
UON	Unless Otherwise Noted
Work	Includes the supply and installation of Equipment, "The Works"
VOC	Verification of Competency certification
WUC	Means the whole of the Work to be carried out under the Contract

3 GENERAL CLIMATIC INFORMATION - MEAN WEATHER DATA

The following weather conditions in the Mine Site area is provided for guidance. Refer to *CORP-GE-BOD-1001 Project Basis of Design* for further location and site data references.

The nearest Meteorological Station is that of Morawa, Bureau of Meteorology station number 008093. The synoptic station is located at 29.21ºS; 116.0089º E. The station elevation is 274m AHD.
The next approximate meteorological station is that of Paynes Find, Bureau of Meteorology station number 007139. The synoptic station is located at 29.27ºS; 117.6836º E. The station elevation is 339m AHD.

The indicative average climatic data is as follows:

Table 1: General Conditions

Climate Statistic	Annual Value, Morawa
Mean Daily Solar Exposure (MJ/m^2)	20.7
Mean Number of clear days (day)	147.4
Mean Number of cloudy days (day)	65.1

Table 2: Temperature Data

Climate Statistic	Annual Value, Morawa
Mean Maximum Temperature (°C)	27.4
Highest Temperature (°C)	47.8
Mean Number of Days ≥ 30°C (day)	135.1
Mean Number of Days ≥ 35°C (day)	73.5
Mean Number of Days ≥ 40°C (day)	20.5
Mean Minimum Temperature (°C)	12.4
Lowest Temperature (°C)	-2.2
Mean Number of Days ≤ 2°C (day)	7.6
Mean Number of Days ≤ 0°C (day)	1.5
Mean 9am Temperature (°C)	18.8
Mean 9am Wet Bulb Temperature (°C)	14
Mean 9am Dew-Point Temperature (°C)	10
Mean 9am Relative Humidity (%)	62
Mean 3pm Temperature (°C)	26.4
Mean 3pm Wet Bulb Temperature (°C)	16.6
Mean 3pm Dew point Temperature (°C)	8.7
Mean 3pm Relative Humidity (%)	37

Table 3: Rainfall Data

Climate Statistic	Annual Value, Morawa
Mean Rainfall (mm)	332.8
Highest Rainfall (mm)	580.4
Lowest Rainfall (mm)	149.1
Decile 1 month Rainfall (mm)	227.2
Decile 5 (Median) Monthly Rainfall (mm)	325.2
Decile 9 Monthly Rainfall (mm)	452.4
Highest Daily Rainfall (mm)	120
Mean Number of Days of Rain (day)	71.4
Mean Number of Days of Rain ≥ 1mm (day)	50
Mean Number of days of Rain ≥ 10mm (day)	8.7

Table 4: Wind Parameters

Climate Statistic	Annual Value, Morawa
Mean 9am Wind Speed (km/h)	11.2
Mean 3pm Wind Speed (km/h)	12.9

Structural Design to AS1170.2 Terrain Category 2, Region A4

4 FREE-ISSUE MATERIALS

The materials, equipment items and platework are indicated in Mechanical Equipment List L200-ME-LST-0001. The breakdown of client supplied, or the Contractor's supplied items are as follows. The free issued items will be made available at no direct cost to the Contractor, DDP at a location to be agreed with the Company's Representative, which will typically be the Contractor's laydown area on-site.

Table 5: Free-Issue Materials

Item Tag#	Description
1310-EC-011 to -017 1310-EC-021 to -027 1310-EC-031 to -037 1310-EC-041 to -047	28x *Jinken* Magnetic Elutriator assemblies, GA-drawing L200-EC-DRG-1001, predominantly ex 316L stainless steel, plastic-wrapped, approx. 25½ tonnes each assembly, each delivered as four separate items: vessel body drawing L200-EC-DRG-1003 21.5 tonnes overflow well drawing L200-EC-DRG-1004 2.3 tonnes feed + internals drawing L200-EC-DRG-1002, , and bottom cone, drawing L200-EC-DRG-1002 1.6 tonnes all shown on packing drawings L200-PMD-DRG-1001 & -1002, and Jinken's assembly drawing L200-EC-DRG-1009.
1310-DI-055 1310-DI-056 1310-DI-057 1310-DI-058	4x Distributor vessels, drawing L200-DB-DRG-1001, to be located on the upper level of the building, to distribute slurry feed to the elutriator vessels, each including seven dart valves, approx. 4,900kg each with dart valves fitted.
1310-PU-146 (for tank TK-027) 1310-PU-147 (for tank TK-028) 1310-PU-148 (for tank TK-029) 1310-PU-149 (for tank TK-030)	4x CMS Concentrate Slurry Feed pumps, to be located at grade under the new piperack West of CMS building; Weir-Warman 10/8 AH with 150kW belt-drive and motor, pre-mounted on baseframe, Weir-Warman drawing A441380-S1, Approx. 6,800kg each assembly
1310-PU-560 1310-PU-561 1310-PU-562 1310-PU-563 1310-PU-564 1310-PU-565 1310-PU-566 1310-PU-567	8x ME Concentrate Slurry Transfer Pumps, duty/standby pairs, to be located at grade under new ME building; Weir-Warman 8/6 AH with 110kW belt-drive and motor, pre-mounted on baseframe, Weir-Warman drawing A441419-S1, Approx. 3,800kg each assembly.
1310-PU-568	Sump Pump, Weir/Warman 100 VEH GPS, 1800mm column length, 22kW C-drive configuration (3x V-belts), as in Weir-Warman drawing A441438-S1, pump mounting frame is supplied as part of the structural steel package,
1310-PU-146 to149	4 ×200kw G150 Siemens Variable Speed Drives

Item Tag#	Description
1310-PU-560 to 567	8× 132kw G150 Siemens Variable Speed Drives
1308-MC-017 1310-MC-019	2x New MCC Tiers ***(Pre-installed by KML)*** New MCC modules *(Buckets)* to be installed into the new and existing MCC's by Contractor during construction. Refer drawings for details: • 001-1306-EL-DRG-1074 Sketch • 001-1306-EL-DRG-1071 Sketch • 001-1306-EL-DRG-1072 Sketch • 001-1306-EL-DRG-1042 Sketch • 001-1306-EL-DRG-1067 Sketch
1310- DT-4565 1310- DT-4665 1310- DT-4765 1310- DT-4865	4x Sistec SS200 Radiation Density gauges (Including radiation sources)
1310-FIT-4565 1310-FIT-4665 1310-FIT-4765 1310-FIT-4865	4× DN250 Siemens Magnetic (Magflo) Flow meters

The Contractor shall be responsible for the receivals unloading and care on site of all Company supplied materials. Once given into the Contractor's custody, the Contractor shall be responsible for the safe-keeping, inventorying, storage, handling, transportation, preservation and unpacking of these items.

- **Receipt**

The Contractor shall keep a register of all items received showing as a minimum an adequate description of the equipment, the date received, where it is located and any damage/deficiencies on receipt. A copy of these records shall be provided to the Company on request.

- **Shortages, Damages & Make-Good**

The Contractor shall inspect all free-issue materials on arrival for transfer into its custody, and shall promptly notify the Company's Representative of any damage or shortfall according to its own in-house format. Any claim for damage, shortfall or making-good subsequent to this will not be entertained by the Company.

In particular, damage to paintwork, incorrectly fabricated, or 'missing' items shall be reported promptly, with sufficient descriptive detail including clear photographs to allow the Company to expedite or place a claim against the Shipper and/or Fabricator as required. There is a limited time window during which this must occur. Any subsequent damage to surface finishes, shortfall or making-good shall be at the Contractor's cost.

The Contractor shall inspect all self-supplied materials, and shall reject and replace any defective items.

- **Handling**

All items shall be safely and suitably handled by using appropriate equipment to prevent accidents and injury to persons or damage. Any damage caused by the Contractor through mishandling shall be the responsibility of the Contractor to rectify at own cost.

- **Storage**

Equipment shall be unloaded to the designated laydown area or other storage area as may be agreed or directed by the Company. The Contractor shall be responsible for the unpacking, inspecting and checking of all Company supplied equipment and materials.

The Contractor shall be responsible for dunnage and appropriate weather protection such as tarpaulins or similar for plant and equipment where deemed necessary by the Company. The Contractor shall note that certain items such as instrumentation and electrical panels will require 'indoor' storage (sea-containers or similar); small items may require shelving or similar; Contractor shall include in their scope as required.

The Contractor shall be responsible for transferring equipment as required from laydown storage to site.

- **Spares**

The Contractor shall segregate and keep safely any commissioning spares and operational spares delivered with the various free-issue materials, and shall hand all these over to the Company, as directed by the Company or before demobilising from site.

5 CONTRACTOR-SUPPLIED MATERIALS

The following equipment and materials shall be sourced, purchased, delivered and installed directly by the Contractor. The Contractor shall purchase items as listed in CORP-GE-LST-1007_0 *Preferred Equipment List* where applicable.

Table 6: Contractor-Supplied Materials

Item Tag#	Description
Multiple structural steel items	Multiple prefabricated Structural Steel items, grid-mesh flooring panels, stair treads & components, monorail beam, guardrailing, handrailing, kickplates, comprising the structure for the new ME Building and piperack. There is no wall/roof sheeting in the scope. Steelwork items is detailed in separate Bills of Materials and Packing Lists, and shall be shipped as a number of tranches: lower levels / upper levels / piperack/ support brackets & other steelwork items. Structural steel is typically supplied in bundles of similar type or cross-section, usually in stillages within a standard 40ft sea-container (occasionally on a shipping flat-rack, or break-bulk skid), prefabricated, with cleats, bolt-holes and surface treatment as required, and identified by a hard-wired tag or hard-stamp bearing the item's piece-number. The work volume is listed in L200-ST-MTO-0001.
1310-LA-288 1310-LA-289 Bank-1	8x Concentrate box-Launders, drawing L200-ME-DRG-1037, to receive the underflow from the elutriator vessels, to be located on the EL+8.530

Item Tag#	Description
1310-LA-290 1310-LA-291 Bank-2 1310-LA-292 1310-LA-293 Bank-3 1310-LA-294 1310-LA-295 Bank-4	mezzanine level of the new ME building; comprising four long launders and four shorter launders, one of each per bank; Shop fabricated, painted and rubber-lined, delivered as multiple 2m long 'flat-packs', and to be assembled (bolting) by the Contractor, weight varies ~460 - 800kg per 2m module.
1310-TK-100 1310-TK-101 1310-TK-102 1310-TK-103	4x Concentrate Tanks ("Hoppers") and their access stair/platform, ~12m^3, approx. 2½m x 3m x 3½m high, with overflow drawing L200-ME-DRG-1036, to be located at grade under new ME building, Shop fabricated, fully welded construction, rubber-lined internally & painted, ~4½t empty & without platforms.
1310-MN-122	1x Monorail beam, serves the sump pump under the ME building, 2T capacity, part of the structural steel supply
Two (2) Stainless Steel electrical control panels	One Marshalling panel to be mounted on the top floor, and a double-size control panel to be mounted on the ground floor; to be lifted into position by this Contractor, see § 6.7, <½t ea.
1310-SS-100 to -113	Qty.14 Eyewash/safety shower stations, *Enware EC270*, drawing CORP-PI-DRG-1113, for new ME building
1310-HR-067 to -073	Qty.8 Fire Hose-reel stations, preassembled, Galvin Engineering, *382663 G3* Swivel Fire Hose Reel, w/ fixed waterway, Cabinet Item-381905, 36m hose & hose nozzle Item-383190.
1310-FH-905 to -907	Qty.3 Fire Hydrant angle Landing Valves, 90-degree, DN65
1310-US-016 to -032 [no -022 or –028]	Qty.14 Utility Stations (air, hosewater & hose bracket), (drawing CORP-PI-DRG-1187)
Piping spools	Large-bore and medium-bore piping (DN65 and larger), including valves, in-line instrumentation as listed in Instrumentation List L200-IN-LST-1001 and fittings within the battery-limits indicated on the construction drawings, supplied as flanged piping spools, prefabricated to the extent shown in individual piping isometric drawings. The majority of this piping is rubber-lined, supplied as flanged 3D-bends, flanged straight spools & flanged fittings. There will be a small amount of hot-dip galvanised firewater piping in DN65/80/100 which will be supplied prefabricated as flanged spools. Stainless steel piping for Potable Water will be supplied in full lengths (nominally 6m); valves and welding fittings 'loose', in quantities as per the BOM. Small-bore screwed piping DN50 and smaller is supplied in full lengths (nominally 6½ m); valves and fittings 'loose', in quantities as per the BOM. Detailed piping scope of work is in § 6.6.3. See also: Piping Line List L200-PI-LST-1001, Valve List L200-PI-LST-1002, Tie-in List L200-PI-LST-1003, SP-Items List L200-PI-LST-1004 Instrument List L200-IN-LST-1001 and listing of project Piping Isometric Drawings in Appendix A11.

Item Tag#	Description
Special-Piping Items	All items listed in the SP-Items list L200-PI-LST-1004.
In-Line Instruments	All items listed in the Instrument List L200-IN-LST-1001.
Pipe Supports	Pipe supports as nominated in the Piping Isometric drawings (typically fabricated brackets, U-Bolts and Shoe-type supports) will be supplied in accordance with a suite of individual detail drawings, each referenced from the Isometric drawings. Primary structures for support of piping (e.g. piperack and major supports) are included in the building steelwork supply.
Cable-ladder Supports	Approximately 220 prefabricated steel supports for cable ladders to Switchrooms -109, -102C & 102D, as indicated in the model or drawings. Other cable ladder supports withing the ME-building & new piperack, as included in the structural steel package.
Structural and equipment bolting	All structural bolting required for the erection of the building and piperack, its steelwork, for the installation of equipment and for installation of pipe supports and cable-ladder supports (any exceptions will be noted in the text of this installation scope of work)
Grating Clips	All grating clips, to suit *Webforge B325MPG* floor grating
Flange bolting, gaskets	All flange bolting, gaskets and thread-seal tape required for the erection of piping
	Supply of all cable and electrical and instrumentation equipment that is not listed as Karara supplied in the documents: • L200-EL-LST-1002_1 • L200-EL-MTO-1001_2 • L200-IN-LST-1001_2 • L200-IN-LST_1002_1 *Note these documents are provided in Excel format as well as PDF format. The PDF is the reference document. The Excel files are provided for convenience only.* The quantities of contractor supplied materials listed in the electrical and instrumentation Material Take Offs (MTOs) are a guide only. The contractor shall be responsible for confirming the items types, sizes and the quantities against the SOW, contract drawings, equipment lists and cable schedules.
Others	Incidental items or materials where described in the Scope of Work.

6 SCOPE OF WORK

6.1 Overall

This Scope of Work defines the activities to be performed by the Contractor for the supply, fabrication, erection, testing and handover of the Civil, Foundation, Structural, Mechanical, Piping and E&I Works.

All Works shall be carried out in a professional and workmanlike manner in accordance with applicable laws and regulations, the Contract documents, Procedures, Specifications and Drawings.

Obligations, goods and services not expressly shown on the Drawings or mentioned in the Contract documents but which are necessary for the proper completion of the work or for good Engineering practice, shall be supplied and executed by the Contractor at its own cost.

6.1.1 Access to Site

The Site is private property, and access onto site is subject to ongoing compliance with the requirements listed in this Scope of Work, KML's site Procedures and the Contract documents.

Maps showing driving access routes to site from Perth and from Geraldton are given in Appendix F.

Flights ex Perth and site accommodation will be provided by KML for pre-arranged site-based work crews. On arrival-day, latest flight check-in (at T2 Perth Domestic Airport) is typically at 06:45 for a 07:30 flight departure ex Perth, landing Karara at 08:30; and on departure day last check-in at the camp is typically at 15:15 for a 16:35 flight departure, arriving Perth at 17:25. Additional or alternative flight times may be arranged to cater for the additional workforce anticipated. Flights are subject to delay & variation for technical and other reasons. Baggage is limited.

Bus transport from Geraldton (airport) to Site is also available.

The Contractor shall note that the work area in the location of the new building is quite congested, with the plant's Control Room close by to the North, the Fine Grinding building nearby to the East, the Flotation building nearby to the West, and CMS directly to the South, all of which will be in continuous operation during the works and will need to be accessed on a regular basis by other non-project personnel. In particular, there are the following regular unrelated activities by others in the region:

- there is an unsurfaced roadway to the East between CMS and the Fine Grinding building which carries frequent two-way through traffic;
- the Control Room to the North needs frequent and unimpeded access. The current LV parking area is to be relocated, but a smaller parking area will remain for Control Room use, South of the Control Room
- in the Fine Grinding building to the East there is a ball-pit that receives deliveries of steel grinding balls by B-double semi-trailer on a routine basis;
  Associated with the ball pit, a loading shovel and forklift truck need unimpeded access to routinely fill and transport kibbles of balls to be raised in the Fine Grinding building.
  A traffic study has been carried out that shows that these activities remain possible with the new ME building in place, but these activities may conflict with the Contractor's movements from time to time during construction

- The corridor to the West of CMS in less frequently used, and is mainly for maintenance/crane access to Flotation and the piperacks to the South.

6.1.2 Mine Site Work Arrangement

KML currently operates a 2-weeks ON / 1-week OFF site roster. The Contractor may align with this shift pattern for site works, with rotating crews, or implement other shift pattern to provide better and continuous coverage as needed to achieve the project milestones.

Normal site working time is 6am to 6pm, 7-days per week during ON-roster.

Night-shift working is not currently foreseen or encouraged for these works, but the Tenderer may offer priced and resourced proposal option(s) for 2-shift working or for 24-hour working or similar if this can be shown to be of benefit to achieve the required project milestones or to achieve overall project savings.

The Contractor shall:

a) Provide all things necessary, including but not limited to the provision of labour, materials, equipment, tools, consumables, scaffold and temporary access, cranage, storage facilities, design, testing, NDT, flushing, commissioning, all management, administration, supervision, safety management, transport of own equipment to and from Site (includes initial mobilisation and final demobilisation), transport of personnel at Site, inductions, quality control, inspections, permits, training, VOCs, operation, maintenance and calibration of all associated own plant and equipment necessary to carry out the Works;

b) Plan resources (labour and equipment) to meet the requirements of the Contract while limiting the fatigue and heat-stress of workers. *Work-Safe* guidelines shall be used as a guide to work hours, breaks between shifts and fatigue management processes, and KML work and schedule requirements shall be adhered to;

c) Review and comply with the requirements of the KML Corporate Documents listed in the Appendices;

d) Ensure Good Industry Practice is employed and maintained in all areas in performance of Services;

e) Ensure all Services provided are read in conjunction with the referenced drawings, specifications and procedures;

f) Ensure the Supply of all Equipment is fit for purpose, in full compliance to all statutory requirements and in accordance with all applicable Company and Australian Standards;

g) Be aware that the Works take place within an operating process plant environment. Provide rigorous monitoring and conditions to ensure there is no interference with the continuous operating process plant environment.

6.1.3 Nominated Site Laydown, preassembly and the Site Office area

The Contractor shall nominate its preferred size of the area/s for its temporary site facilities, including storage, laydown areas, pre-assembly areas, parking areas and office/cribroom areas; however the ultimate size of the area allocated to the Contractor for this purpose is subject to availability and is at the sole discretion of the Company's Representative.

For the purposes of Pricing, the Company's Representative will make available to the Contractor a cleared area within the concentrate plant site for its site offices, temporary laydown, storage of materials and preassembly of steelwork and equipment. Supply and installation of security fencing should it be required shall be by the Contractor.

As per the current planning, the tentative location for the Contractor's site office and the laydown area are as follows:

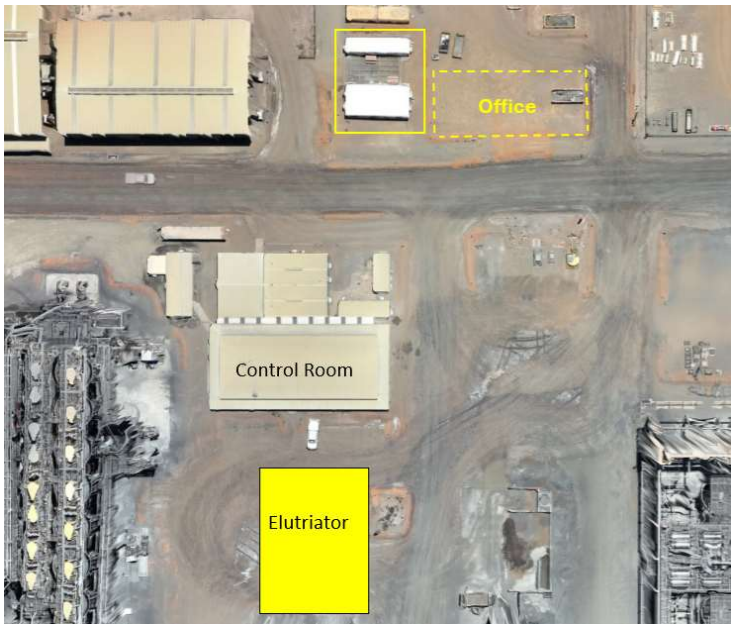


Figure 3: Contractor's Site Office

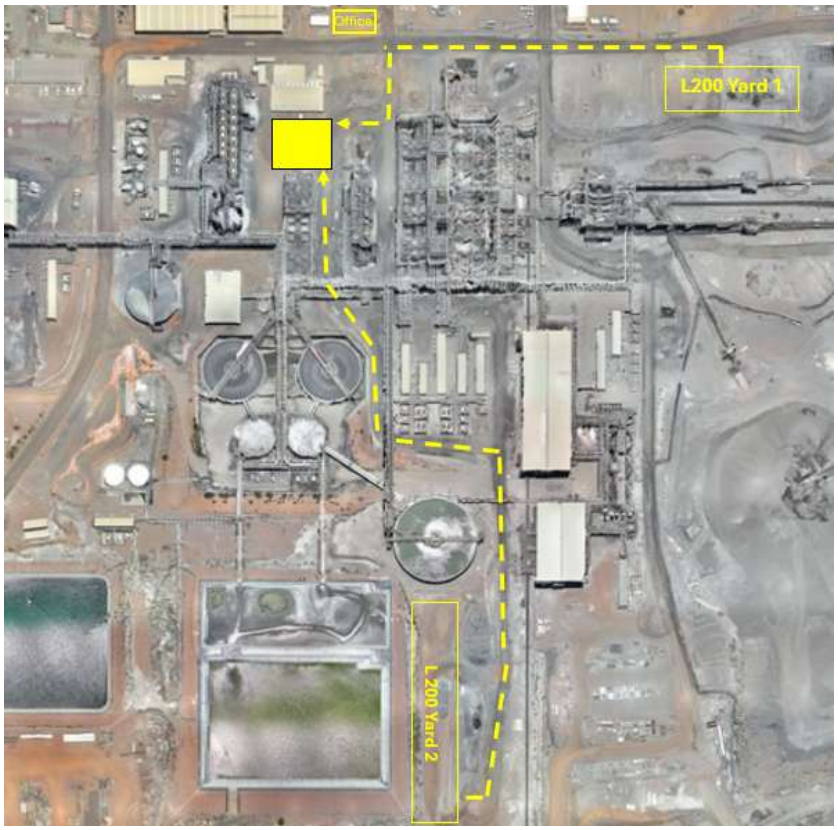


Figure 4: Contractor's Laydown & Pre-assembly yards

6.1.4 Mobilisation & Site Establishment

Shortly after Contract Award and prior to commencement of the works, the Contractor and Company shall hold Kick-off meeting/s which will include a comprehensive workshop to discuss the expectations and execution plan for construction of the Works. This meeting shall be facilitated and presented by the Contractor with the aim of demonstrating how the Works will be undertaken by the Contractor in a timely and efficient manner. The meeting agenda shall include the proposed works schedule, constructability, sequence and logic, key interfaces and necessary inputs from the Company.

Prior to mobilising to site, the Contractor shall conduct a Contractors Risk Assessment Workshop (CRAW) with key stakeholders, as further described below.

The Contractor should mobilise a small team to site initially (2-4 persons only, which should include site supervisor/s), before the main SMP works begin, so that the Contractor may:

- Establish their presence on site
- Become familiar with the location, the site, the people and the systems involved
- Discuss and agree location and size of laydown areas, site facilities etc
- Carry out own site inductions, site driving VOC tests, obtain Mines Act 'Schedule 26 qualifications'
- Become familiar with the Permit to Work systems

- Establish own site routines
- Establish site-registers as required, e.g. of personnel, VOCs, lifting equipment, etc
- Organise permitting, delivery and installation of own facilities – crib rooms, site offices, power, water, ablutions, storage, parking, vehicles, mobile plant, refueling, etc
- Be present to receive goods as they arrive on-site, carry out goods unloading, receipting and laydown as required; see §5 above
- Prepare and submit two-week manpower/workload look-ahead (see §11), to plan and schedule timely and efficient deployment and ramp-up /-down of own workforce to site.

The Contractor shall establish the Site facilities and infrastructure required to carry out the Services (together: the '*Establishment*').

a) The Contractor shall mobilise all personnel, site offices, cribrooms, toilets, ablutions, sanitary needs, facilities, workshops, stores, tools, gen-sets, Plant and Equipment, material and management systems for use by the Contractor, its approved Sub-contractors and miscellaneous services personnel necessary for the safe, proper and timely execution of the Works. The Contractor is responsible for all the mobilisation, setup, running services, maintenance and demobilisation of all Contractor facilities.

b) KML will undertake to have sewage removed from the Contractor's storage facilities near the job-front up to twice per week. KML will provide water for these facilities at a nominated location but the Contractor shall draw, transport and store this water, as needed.

c) The Contractor shall provide all necessary ancillary equipment for own use, (e.g.: transportable temporary buildings, furniture, generators, UPS, computers, software, hardware, printers, copiers, scanners, internet connections, telephone, mobile phones, two-way radios, stationery, etc.).

d) The Contractor shall supply and install all own equipment related to the Contractor's workshops, offices, plant and equipment.

e) The Contractor shall provide and maintain own-use first aid kits, trained First-Aiders, and fire extinguishers; KML maintain an on-site medical center and Fire-Fighting/Emergency Response crews. Existing plant buildings have fire hose reels installed.

f) Potable water for the Contractor's workforce will normally be available at the tentative Site Office location, see Figure 3.

g) Other utilities such as electricity to their transportables and temporary work-site power shall be provided by the Contractor. The Contractor shall provide all necessary furniture, plant, fittings, tools and infrastructure to connect, stock and / or utilise any facilities that are in addition to those provided by the Company.

   Self-powered (diesel) generators, welding sets, elevated work platforms (EWPs), lighting towers etc must be inspected, tested and tagged according to the relevant standards. Particular attention shall be given to the installation and testing of the associated generator earthing. All portable generators, welding sets, lighting towers & EWPs with electrical power outlets to be used on site shall be approved by the nominated Electrical Supervisor or nominated person before commencement of operation; see Doc no. CORP-HS-PRO-1003 *General Electrical Safety Procedure*. Petrol engines are not normally allowed on site.

   Existing plant buildings have a limited number of existing welding outlets and GPOs, which may be used by the Contractor (subject to confirmation by the Company's Representative on site).

h) If any Site facility or infrastructure is provided by the Company, these Site Facilities are to be handed back to the Company at the end of the term in a good condition acceptable to the Company, subject to fair wear and tear.

i) The Contractor shall include for off-loading (including forklift/cranage), inspection, materials control, receivals, correct handling and storage including dunnage, goods issue procedures, unpacking, loading and transportation of all materials delivered to its laydown area;

j) The Contractor shall provide suitable mine-specification vehicles and refueling facilities for commuting and transporting personnel, supervision and materials around the Site and between the village and the Site.
No private or non-mine specification vehicles will be allowed at the Site or the village.

k) The Contractor shall note that there are minimum standards, cleanliness, inspection and approval requirements to be observed for all vehicles and mobile plant (including hired plant) before they may be brought onto the site, or return to site from outside areas; see for example:
- CORP-HS-PRO-1008 Mobile plant, equipment and light vehicle procedure
- CORP-HS-FRM-1053 Mobile plant, equipment and light vehicle access request, inspection
- CORP-EN-PRO-1009 [§ 4.9.2] Environmental Procedure – Flora, Weeds & Plant Pathogens,
- CORP-EN-FRM-1009 Vehicle and mobile equipment weed inspection form.

l) The Contractor shall establish machinery parking area(s) including approved containment and storage for fuel, oil and other potential contaminants necessary for Plant, Temporary Works, equipment maintenance and operation during the period of The Works.

m) The Contractor shall in operating the Establishment:
- comply with all relevant Laws including but not limited to the Mines Safety and Inspection Act 1994, the Explosives and Dangerous Product Act, and the Company's procedures, all as may be modified from time to time;
- consider the maximum necessary amount of storage;
- consider the congestion of the area and other work areas;
- consider proximity of other buildings and facilities and any risk to those buildings and facilities;
- be responsible for maintaining the Establishment in good condition, and the Establishment shall at all times be kept in a safe and workmanlike state to the satisfaction of the Company.

The Contractor shall:

i. allow for and ensure that site inductions, medicals and necessary training and equipping of all personnel, including Subcontractors, is in accordance with the Company's safety procedures;

ii. supply all necessary experienced and competent labour to complete the Works under the Contract, including all training, VOCs, inductions, medicals and tests required to perform the Services. This shall include direct engagement by the Contractor of specialist Sub-Contractors as required to execute the works; for example, for scaffolding, hydraulics, plumbing, cranage, heavy lifts, NDE, belt splicing, rubber lining, insulation, cladding, roofing, etc.

iii. ensure ongoing personnel compliance with necessary competencies, including but not limited to the following VOC related activities: current driving / 4WD & HR truck tickets & licenses, Confined Space testing and entry, Working at Heights, Rigging, Dogging, Crane Driving, Scaffolding, Elevated Work Platforms (EWP), etc., as required for the Works, and maintain a register of personnel on site by VOC.

iv. allow for ongoing transport and delivery of all approved Contractor’s Plant, Equipment and supplies between the Contractor’s depot and job-site including the initial mobilisation and final demobilisation from the Site.

v. ensure efficient and effective logistics solutions for transport delivery of all other support materials and equipment, including tools and equipment, staff trucks, light vehicles, consumables, PPE and any own-use spares required for commencement and ongoing provision of the Services.

vi. The Contractor shall note that FIFO personnel using the airplane service to/from site have a limited baggage allowance, typically 10kg max checked baggage with 5kg max carry-on, which may be further

reduced for operational reasons (e.g. during very hot weather). This aircraft shall not be used for transport of Contractor's materials, but may be made available on special request for very urgent delivery of small and light materials.
KML have a regular delivery service from Perth to Site (currently FLG), and the Contractor may choose to consolidate their materials with KML's materials, but the cost of transport and delivery of Contractor's materials will remain the Contractor's cost, to be negotiated and settled directly with the transport company.

6.1.5 Site Safety & Site Access (including Induction programs)

a) The Contractor shall carry out all work in a safe and professional manner and in accordance with the Mines Safety and Inspection Act and the regulations thereto as amended.

b) KML will conduct random alcohol and other drugs ('D&A') testing, which may be at any time and without notice; see CORP-HS-PRO-1052. Individuals will be selected for testing using an independent random selection process, blanket screening, or where there is reasonable cause. Any person selected for a D&A test must attend the testing venue (e.g. medical centre at the village or on the mine-site) for testing as soon as they have been notified. Failure to attend immediately without a valid reason will result in the test being recorded as a positive test.
Involvement in any reportable incident will require immediate mandatory D&A testing.
Any positive test will result in disciplinary action and immediate expulsion from site – 'Zero Tolerance' [*Reg. 4.7, Mines Safety & Inspection Regulations 1995*].

c) The Contractor shall include for and ensure that any person involved in the Works entering the Site has received and successfully passed the Company's induction program and the required on-site orientation process – [*Reg. 4.13, Mines Safety & Inspection Regulations 1995*].
The induction process is an online tutorial in several modules with interactive pass/fail tests, which must be set up in advance by arrangement with KML. Travel requests to site will not be processed without a valid induction together with a recent (<28-days) negative D&A test result.

A Visitor's Induction is also available for typically one-day only. Visitors to site cannot perform any physical work and must be accompanied on-site at all times by a fully-inducted person.

In order to be permitted to drive a vehicle on site, the Driver shall have passed KML's site driving VOC test. Speeding or traffic violations on site may result in disciplinary measures.

There are a number of prerequisites before any person may come on site; see:

- Site Entry and Security Procedure (Doc no: CORP-HS-PRO-1022)
- Personnel Compliance Verification form ("PCV" form) (Doc no: CORP-AD-FRM-1050)
- Site Entry Request form ("SERF") (Doc no: CORP-AD-FRM-1046)
- Personal Protective Equipment Procedure (Doc no: CORP-HS-PRO-1037)
- List of Banned Tooling not allowed on site (in Appendix-Appendix F)
- Site Travel & Accommodation Procedure (Doc no: CORP-AD-TMP-001).

d) The manufacturing process crushes the ore and extracts iron concentrates from an ore that is roughly 40% silica and 40% Iron. One result of this is that Silica present in the ore as quartz is comminated and concentrated to 80% or more in the tailings residue, which presents a respirable crystalline silica dust hazard to personnel (Silicosis). To address this hazard, all personnel who intend to come on site are required to be fitted for and to use a suitable dust respirator while on certain parts of the site. The map below and local signage indicate the locations where a respirator is mandatory PPE, which in general relates to most of the Crushing, Screening and Tailings areas, i.e. West of the tailings conveyor CV-041 and South of the main East-West roadway (see Appendix-F, *Safety Bulletin 0138-21 Mandatory Respiratory Protection Areas*, and *Amendment - Respiratory Program 24-05-18*).

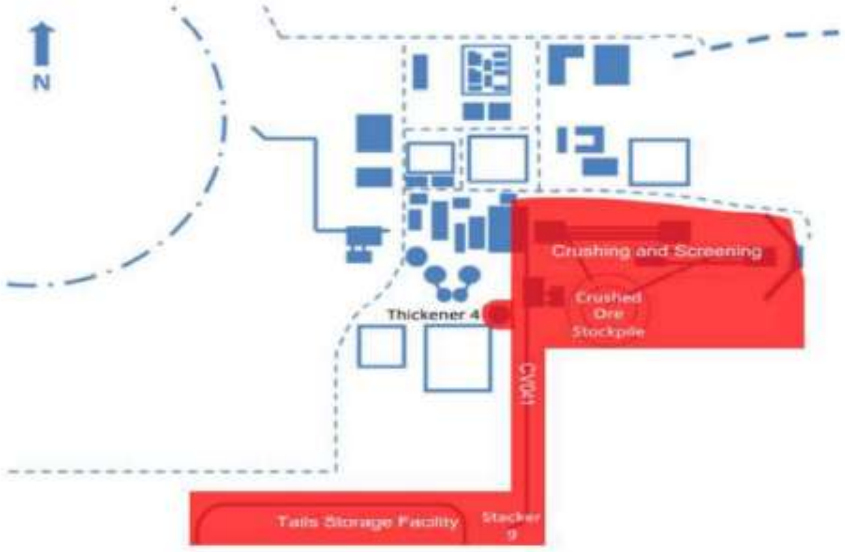


Figure 5: Mandatory respirator PPE area

The Contractor should note that the location for the new ME building and the existing CMS building are not within this mandatory respirator area, and likewise areas that may be proposed for laydown to the North of the main East-West roadway are also not within the mandatory respirator area; however, changing wind conditions may at times carry fine dust containing respirable silica to these areas, and the use of respirators may nonetheless be justified and prescribed by Site Bulletin. For short-term exposures the Contractor may choose (as an alternative to the full respirator) to self-supply and deploy a disposable P2 particulate face mask such as the *3M 9320* to employees as necessary (Note: *P2 Particulate* or better is requisite – these are not a general/nuisance dust mask).

The respirator or face mask relies upon an effective seal against the wearer's face, and beards or facial hair can render these ineffective; as a result, personnel shall be either clean-shaven (daily), or source and maintain at own cost an alternative acceptable solution (i.e. a PAPR 'Powered Air Purifying Respirator' apparatus).

A limited number of PAPR respirators may be made available by KML for Contractor's use; however, the Contractor shall adequately record user/usage per PAPR unit on a daily basis, shall maintain the units as necessary (including cleaning/sanitising, recharging, supply & changing of filters), and return them on demand in good condition. This privilege may be withdrawn by the Company at any time if considered to be abused – the default is Contractor supply.

The Contractor shall include for the supply and maintenance of suitable respirators or P2 dust masks for all their personnel and visitors on site, shall enforce their use by all such personnel, and shall include for initial respirator fit-testing and periodic (typically annual) mandatory fit validation as required.

Smoking is only permitted in designated areas, outside of the mandatory respirator zone. Smoking on the job or at the work-front is unacceptable, and will result in disciplinary measures.

See in particular:

- CORP-HS-PRO-1063 Respirator Protection Procedure,
- Safety Bulletin No.0138-21, map showing mandatory respirator areas, (in Appendix-F)
- Details of Fit Testing Providers in Perth, and 3M Dust Masks, (in Appendix-F)

- Amendment – Respiratory Program, (in Appendix-F). Note: This applies only to short-term visitors to site, not to regular rostered Contractor workforce.

The Contractor shall:

- supply, install and maintain all temporary safety equipment, PPE and materials for the protection of people and the works, for the duration of the works on site, in accordance with the Mines Safety and Inspection Act and Regulations, and KML Safety Requirements;
- Prepare and update a Traffic Management Plan as required to ensure work scopes are completed safely, including but not limited to erection and maintenance of all road traffic signs, radio call up points, Stop/Go systems, restricted entry areas etc. to ensure safe works;
- Plan the works in close consultation with the Company's Representative and others so that labour and equipment utilisation is used cost-effectively and consistent with Company requirements;
- Liaise with the Company's Representative to ensure workloads and work areas are correctly managed, and to mitigate relocation or re-work due to poor planning or design by the Contractor;
- Be responsible for the protection of all existing services and structures in the work area. Any damage to plant assets or known services caused by the Contractor shall be repaired at the Contractors expense;
- Provide materials as required to protect equipment from the elements and damage of any kind, such as impact, fire and the like by both the Contractor's personnel and that of others during the execution of the Works.
- Supply and erect all temporary guards, barriers, and handrails required for the execution of the Works.
- Where applicable, provide and maintain guarding, fencing, temporary barricades, danger signs and other items necessary to ensure the safety of all personnel, plant and equipment engaged at the Site from hazards associated with the Contractor's operations. At all times, accessways must be kept clear of objects or obstructions which could cause injury to personnel or damage to equipment and plant;
- Where applicable, provide and maintain all temporary facilities supplying power and compressed air as required during the works, which are to be regularly inspected and maintained at the required frequency as stated by the manufacturer and / or the *Health, Safety, Environment and Community Management Plan(s)* HSECMP;

  Electrical equipment, power-cords, RCDs etc.; lifting equipment (chain-blocks, slings, etc.); ladders; safety harnesses etc., are subject to a quarterly inspection and colour-tagging system; scaffold is subject to a *ScaffTag* system.
- Carry out regular clean-up of the work areas in accordance with the Health, Safety, Environment and Community Management Plan(s) (HSECMP) and / or as directed by the Company's Representative. The Contractor shall also conduct a final clean-up of the work areas upon completion of the Works;
- Undertake housekeeping of the Contractor's area and storage area to acceptable standard and to allow efficient stocktaking and auditing of Contractor's materials and equipment;
- Provide correct segregation and disposal of all waste materials on site as directed by the Company's Representative.
  The Company provides segregated waste skips at a number on locations around the site – Timber / Rubber / Steel / Hydrocarbon / General waste. The Contractor may use these skips in accordance with site procedures, viz. provided that the waste materials are correctly segregated,

and the skips are not overloaded. This privilege may be withdrawn by KML at any time if it is shown to have been abused by the Contractor, in which case the Contractor shall correctly dispose henceforth of all its waste offsite at own cost.
The Contractor shall take care to dispose properly of waste foodstuffs and related materials, so as to minimise environmental impacts such as vermin and impacts on native fauna;

- Liaise with the Company's Representative for the removal from site of tyres, bulk hydrocarbons and hazardous waste, including used or surplus chemicals, oils, paints, used chemical and hydrocarbon containers, rags, paint brushes, etc;
- Where applicable, (outside of the max. twice-weekly collection service by KML), remove and dispose correctly all Sanitary waste and Ablutions waste;
- Participate in a brief daily "Pre-start" on-site meeting with the KML Site Representative and Contractor's site supervision to plan and agree on the work program for the day/shift following.

The Contractor shall:

i. Be aware that it does not have exclusive access to any area on site. The Contractor acknowledges that it must work with other contractors and others that may need to access work areas that the Contractor also accesses. In particular, this is likely to include KML's Operations and Maintenance personnel and the Electrical Installation Contractor, and others, especially during commissioning. The Contractor shall conform to a management plan developed and implemented by the Contractor that takes into account and plans for such instances, in line with the Company's requirements for traffic management, and agreed to by the Company, as amended from time to time.

ii. Restrict the number of vehicles at the ME-building work area. This area is quite congested, and unnecessary vehicles parked-up for extended periods will aggravate this issue. Contractor's vehicles should be limited to essential construction equipment such as cranes and EWPs that are actually in use; personnel should be dropped-off / picked-up by a minibus which parks elsewhere, and supervisors' vehicles should be limited to two LVs, unless agreed by Company's Representative.

iii. Facilitate and provide weekly Tool Box meetings that shall be attended by all Contractor's site personnel, subcontractors and KML's Site Representative. Key issues discussed shall be recorded and a copy sent to KML's Site Representative;

iv. Prepare JHAs (Job Hazard Analysis) for specific tasks as required by KML safety requirements or as instructed by KML Site Representative;

6.1.6 Demobilisation

The Contractor shall include a lump sum for demobilisation and de-establishment of the Contractor's yard site/s and equipment after completion of the Services Contract, which shall include:

- Completion of a demobilisation plan for approval and to the satisfaction of the Company;
- Transport and removal of all Contractor owned items used or stored on site during the Contract;
- Demobilisation of personnel and Subcontractors;
- Removal of Contractor's Plant and Equipment;
- Remove all other support materials and equipment required for the Services;
- Decommission and remove Contractor-owned buildings, transportables and infrastructure; and
- Cleaning of the site as stipulated by the Company's environmental requirements.

6.1.7 Lighting

The Contractor shall:

a) ensure all work carried out during the hours of darkness or poor visibility can be undertaken safely;

b) provide adequate lighting in the following areas used exclusively or predominantly by the Contractor:
   - at all main work front locations;
   - for Scaffold, Cranage lifts, and Confined Spaces;
   - at the workshop, assembly yard and other maintenance areas;
   - at any other working area deemed necessary by the Company.

c) ensure all lighting is installed and used so as not to create undue environmental or social nuisance.

6.1.8 Site Supervision & Management

a) The Contractor shall always maintain full supervision of the works by a competent supervisor experienced in this type of work. The Contractor shall appoint Site Supervisor/s who will be accountable for the works and be the point of contact for the Company's Representative.

b) Supervision is not an office-based role, but shall involve active and constant presence on the job's work-fronts.

c) The Site Supervisor shall be a competent professional with significant understanding and experience of these types of works and shall have completed training as a '*Schedule 26 Compliance Supervisor*' under the *Western Australia Mines Safety and Inspection (MSI) Act 1994* and the *WA Mines Safety and Inspection Regulations 1995*. The KML Registered Mine Manager or delegate will interview suitably trained candidates before award of the required VOC letter.

d) An organisation structure indicating all supervisory personnel and key personnel (and their back-to-back alternatives where applicable) shall be submitted with the tender and updated as required in accordance with the Contractor's nomination of Key Personnel.

e) The Contractor's Supervisor is required to manage the following minimum responsibilities:
   - Supervise and manage the Contractor's own workforce, including any disciplinary requirements
   - Manage daily timesheet completion (including any overtime / leave requests);
   - Safety compliance to the Company's requirements, for example '*Take-5*', Prestart Inspections;
   - Manage Job Hazard Analysis (JHA) completion and quality with the workforce;
   - Scope jobs and provide timing estimates to the Planning or Supervisor teams;
   - Ensure equipment is maintained to an acceptable standard (i.e. Light Vehicles, Trucks, slings, etc.); and
   - Ensure personnel compliance with required competencies, including, but not limited to Driver's License, Confined Space, Working at Heights, Rigging, Scaffolding, Elevated Work Platforms (EWP), Welding Qualifications, NDE qualifications, etc. as required;

f) The Contractor shall mitigate the fatigue of workers in accordance with The KML Fatigue Management Policy CORP-HS-POL-1031 and KML Fatigue Management Procedure CORP-HS-PRO-2151.

g) The Contractor shall attend safety, progress and coordination meetings facilitated by the Company's Representative.

h) The Contractor shall provide weekly reports on safety, manpower, plant, equipment, progress and lookahead, in a format approved by the Company's Representative.

i) The Contractor shall provide monthly reports in a format approved by the Company's Representative in accordance with the Contract.

6.2 Overall Work Description

For Information, the approximate principal dimensions of the new ME building are:

- Length 35m (East-West)
- Width 20m (North-South)
- Height 21.5m (TOC to top of distributor)
- Footprint ~850 m^2.

The building is an open industrial steelwork building with no roof or wall sheeting, no guttering or drainage downpipes.

Reference zero elevation EL.+0.000 is taken as the same as was used for the construction of the adjacent CMS building, and corresponds to plant datum Reduced Level RL+336.500m. Since the ground level at the new ME location is higher than that at CMS, EL+0.000 does not correspond to any physical landmark within the ME building.

The ME building is comprised of the following building levels:

- Ground Floor: an at-grade concrete slab, elevation varies ~EL.+0.500 down to ~EL-0.050;
  Note: EL+0.000 equals RL+336.500m Plant Datum
  EL+0.500 is the highest point of the concrete slab, which is laid to falls.
  Top of Kerb is approx.EL.+0.650.
  Top of Pedestals at ground-floor level is nominally EL+0.700m;
  Underside of column Baseplates at ground-floor level is typically EL+0.730m
- Service-level: a piping/services support level without flooring and not intended for normal access, EL+6.530 TOS, (drawing L200-ST-DRG-1004)
  There is a column splice just above this level, at EL+7.130.
- 1st level A mezzanine level to provide access to the concentrate launders and ME underflows – galvanised grid-mesh flooring at EL+8.530 TOS, (drawing L200-ST-DRG-1005)
- 2nd level ME support level – the ME vessels are supported onto this level, galvanised grid-mesh flooring at EL+11.530 TOS, (drawing L200-ST-DRG-1006). There is a transition to reduced column size above this level.
- 3rd level Top of Elutriator work level – the top-most complete floor level galvanised grid-mesh flooring at EL+16.330 TOS, (drawing L200-ST-DRG-1007)
- Upper level A multi-level superstructure 'catwalk' gallery with multiple short stairways, to allow access to the distributors and to each ME's control panel, and to allow Operators to gauge performance of the equipment by looking down onto the overflows; (drawing L200-ST-DRG-1025). Galvanised grid-mesh flooring at EL+19.500 TOS & EL+20.850 TOS

In addition, there are:

- Two stairs/platforms to access the four new tanks under ME, drawing L200-ST-DRG-1026;
- a new piperack West of the existing CMS building, drawing L200-ST-DRG-1018;
- an external stair tower to the North side of ME, drawing L200-ST-DRG-1014;
- two cross-over platforms between existing CMS & new ME buildings
  one at EL.+6.53 with a platform to access Magflows at the SW-corner of ME and stairs to ME EL.+8.53, drawing L200-ST-DRG-1004; a second crossover at EL.+11.53;
- an external stairway at the SE-corner of ME to connect the EL+11.53 level to the EL+16.33 level.

All flooring and stair treads are galvanised grid-mesh flooring UON, no chequer-plate flooring is foreseen.

6.2.1 Overview

The following narrative is intended to give a simplified overview of the works, following the plant's flow-path. A more complete and detailed description of the works follows in later sections.

- The existing CMS building has four parallel flow streams or 'banks'. Each bank has a distributor vessel at the top of the building, which distributes flow to four CMS magnetic drum units, each of which comprises three magnetic drums. The scope in CMS includes to dismantle and remove two of these drums per unit along with their troughs and washwater piping, relocate the existing feed-trough to feed onto Drum-3, install additional piping spools to reconnect the distributor to the feeder in its new position, cover the resulting opening in the floor with a pre-fabricated flooring module, and make good. Each of the sixteen CMS units are to be modified thus over a period of weeks (perhaps 4~6-months) as permitted by Operations during a series of shutdowns.

  For information, the motor starters associated with the redundant magnetic drums are to be reconfigured (by others) as isolators for the next bank of Elutriator vessels. This will force a time delay between the decommissioning of drums and commissioning of subsequent ME vessels.

- On the ground floor of the existing CMS building, install one new replacement pump for each processing bank onto new concrete plinths provided by others underneath the piperack (total 4). The intent is that the new pump will align with the suction piping of the existing pump, and the new pump will be made ready for operation prior to a speedy swap-over to replace the existing pump. During a short shutdown (per bank), the existing pump shall be removed, additional piping spool/s installed to connect the existing hopper to the suction of the new pump, further new piping spools installed to connect the new pump discharge to the underside of the existing Magflow, and the new pump commissioned to pump from CMS directly to Flotation (same as the current flow-path).

- A new piperack is pre-assembled by the Contractor as modules, transported to location and installed onto concrete pedestals provided by others to the West of the existing CMS building.

- The Contractor installs prefabricated cable-ladder supports typically at high level (at approximately EL+25.5m) onto existing structural members of piperacks from the CMS/ME area to Switchroom 102C & Switchroom 102D (to the SouthEast) and to Switchroom 109 (to the West). Contractor shall site drill the bolt holes for the mounting of these supports.

- Erect the new ME building, its Equipment and Piping as described in detail elsewhere in this SoW. The equipment should be erected at the same time as the building, from the bottom-up, rather than on a bay-by-bay basis, or Structure followed later by Equipment.

- Once the new ME building is essentially complete, where a bank of ME has passed its pre-commissioning and is considered ready, flow is to be diverted during a short shutdown from CMS to ME and from ME to Flotation, by removing a small number of piping spools in the piperack and replacing them with new spools that redirect the flow, between tie-in points.
  This bank changeover procedure is carried out four times until all four banks are changed over and the ME building fully commissioned.

6.2.2 General

The services to be provided by the Contractor shall include but not be limited to the following, in accordance with the Company's Corporate Standard Specifications and § 7.

The Contractor shall:

a) Provide cranage, forklifts, telehandlers, EWPs, rigging, scaffolding, temporary access and platforming for the installation of the Works in accordance with KML's standards, in particular CORP-HS-PRO-1007 *Crane Management Procedure*, CORP-HS-STD-1046 *Lifting & Rigging Equipment standard*, and CORP-HS-STD-1041 *Scaffolding, Ladders Stairs & Walkways*.

b) Include incidental civil / concreting and grouting works where nominated in this Scope of Work. There will be an on-site Concreting Contractor available during early works, and this Contractor may use for concrete work in order to avoid additional mobilisation costs. Supply, installation and testing of all grout to underside of baseplates shall be in accordance with CORP-CI-SPC-1012. Grout shall be installed such that a forty-five degree (45˚) grout chamfer is achieved from the underside of the baseplate to the top of the concrete foundation.

c) Make good any damage caused to existing and constructed works, concrete and steel structures, equipment, services and facilities, by the Contractor during the performance of the work at own cost.

d) Include receival and unpacking of free-issue materials, including removal of stops, retainers, dunnages, anti-brinelling devices and the like. The Contractor shall be responsible for correct segregation and disposal of all packaging, wastage and removed packing materials.

6.2.3 Design Engineering and Certification for Any Temporary Works and any Materials supplied by the Contractor

The Contractor shall allow for the design development for any temporary works for ease of installation, engineering, coordination, manufacture, required for the installation of the Scope of Works to fully comply with the specification and Contract Documents including compliance with the Agreement and Karara's Project Requirements. The Contractor shall allow for full coordination of any design requirements with all Other Contractors and Consultants including but not limited to civil, structural and operation services.

Co-ordination with all Consultants, Operations and interface with other Contractors to ensure installation items are fully compliant and able to be installed to specification and design, as well as accommodate any fire, electrical, instrumentation, hydraulic, or the like that are to be housed or installed within the installation items once the installation items are installed.

The Contractor is responsible for managing and progressing the sample approval process for items supplied (e.g. Structural fasteners, grouts, safety signs, pipe insulations, special brackets, structural shims etc) providing all information and complete sample information as required for all elements of the installation scope of works and ensuring the approval of conforming and non-conforming alternative materials/finishes prior to the commencement of manufacture. The Contractor will be required to present all samples for approval at the Karara office in Perth, or where otherwise nominated by Karara, to allow consultant and client sign-off.

The Contractors understands the above scope is included within the Contract Pricing and will be undertaken by the Contractor in accordance with this scope of works.

6.2.4 Bolting

The Contractor shall note that while structural steel and similar items for the new ME Building including all bolting (other than U-bolt pipe supports as listed in the piping isometrics) is to be supplied by the Contractor.

All bolting shall be Metric, UON. Bolting shall typically be hot-dip galvanised bolting UON; zinc-plating is NOT an acceptable substitute to galvanising. The Contractor shall ensure that fasteners are of the correct length to suit, and washers shall be used where required by good engineering practice; there shall typically be between one to three full threads exposed beyond the nut. All bolt threads shall be coated with anti-seize compound prior to final installation. Bolts shall be torqued and checked according to the Contractor's approved procedure.

Tapered washers for the bolting of Chinese Tapered Flange channels are to be supplied by the Contractor as part of the bolting assemblies supply.

Shims, shim-packs, packers and spacers shall be provided by the Contractor where required for levelling and spacing. Shims ($\leq$3mm) shall be of stainless steel unless otherwise agreed by the Company's Representative. Thicker packers that will be fully encapsulated by grouting – for example underneath pump or column baseplates – may be ex carbon steel. Plastic shims may only be used under very light loading.

Cast-in hold down bolts with double-nuts per bolt will be provided as part of the foundations, and are anticipated to include a foam grouting sleeve ~75mm long to allow small lateral adjustment; any shortfall including washers, spacers and shims shall be supplied and installed by this Contractor. All other bolting, chemical anchors, *Rawlbolts*, *Tek*-Screws, J-bolts, nuts, washers, locknuts, pipe support hardware and other fixings shall be supplied and installed by the Contractor. U-Bolts and pipe-shoes nominated as pipe supports in the Materials Take-Off (MTO) on the Piping Isometric (ISO) drawings shall be supplied by the Contractor.

Structural Bolting shall be in accordance with AS1252 Grade 8.8 *High strength steel bolts, nuts & washers for structural engineering*, UON, or as shown on the drawings;
M20 bolting is preferred structural bolting size, or as shown on the drawings;
M16 bolting Grade 4.6 is preferred for Mechanical Assembly UON, or as shown on the drawings.

Bolting for mechanical assembly shall preferably be hot-dip galvanised bolting except where otherwise dictated by machined surfaces or a particular high-strength or specialist requirement, in which case stainless steel is preferred. Black steel bolting shall be a last-preference, and shall only be used following consultation and agreement with the Company's Representative.

Bolting for piping and flanges shall be complying or as a default the Line Specification of KML's Piping Specification 1300-PI-SPC-1001. Some relaxations in flange bolting may be permitted to Gr.8.8 galvanised. Flange bolting will be listed in the MTO on each piping isometric drawing and shall be supplied by the Contractor, and shall be metric Machine Bolts (rather than stud-bolts), with heavy hex nut. The equivalence between metric flange bolting and imperial UNC bolting is given in § 6 of KML's Piping Specification 1300-PI-SPC-1001.

Lug-type butterfly valves (type BF2) are supplied by the OEM with Imperial UNC bolt-hole threading only, and this will be indicated by a stainless steel tag attached to each such valve. Bolting for these valves will typically be indicated as UNC on the Piping Isometric MTOs, however the Contractor shall take due care to supply correct bolting, avoid mix-ups and note this exception, and note that the different sized spanners etc that may be required shall be included by the Contractor.

6.2.5 Cranage, & Access Equipment

Cranage shall be in accordance with CORP-HS-PRO-1007 *Crane Management procedure*, CORP-HS-STD-1033 *Lifting Equipment & Operations standard*, & CORP-HS-STD-1046 *Lifting & Rigging Equipment standard*. The Contractor shall provide a Cranage Study to the Company's Representative for prior approval, for all multi-crane lifts, oversize lifts and all lifts over 10-tonnes, all of which are considered to be 'Critical Lifts'.

All cranage, including rigging, associated personnel (including suitably qualified Crane Drivers, Riggers, Dogmen etc.), and including mobilisation and demobilisation of these to Site shall be by this Contractor. For the avoidance of doubt, this shall include all maintenance, testing and certification, the design and coordination of lifts by this Contractor (and where applicable in conjunction with any Cranage Sub-Contractor), and shall include for all lifting equipment, spreader-bars, slings, shackles, swivels, lifting eyes and the like.

The Contractor should note that there is a semi-permanent on-site presence by *Freo Cranes*, who maintain a site office at Pad-4 and an on-site fleet of typically three cranes 40T, 80T & 145T for hire for routine plant maintenance; however at times, all of these cranes will be in use by KML Maintenance (who will take precedence). The Contractor shall provide own cranage as required, but may call upon Freo Cranes on site to hire additional rigging, personnel, expertise or equipment etc if suitable and available.

Soft slings are permitted on site, but shall be subjected to very frequent inspection.

The Contractor shall supply, erect, inspect, strike and maintain all means of access, scaffold & *ScaffTags*, forklifts, transport, telehandlers etc as may be required for the works. The Contractor should note that there is a semi-permanent presence on-site by a scaffolding contractor, who may be available to assist with or supplement scaffolding requirements at the Contractor's cost. Typically, scaffolding within the construction area may be by the Contractor's own personnel, but scaffolding outside the construction zone should preferably be by the on-site contractor.

6.3 Civil & Concrete Construction works

6.3.1 General

The works generally comprises the detailed excavation, backfilling, disposal of excess material, reinforcement, concrete and associated site works for the following site areas:

- construction of pipe rack spread footings, Elutriation Building raft foundation, strip footings, pedestals, ground slab, ramps, kerbs, and sump;
- construction of slab thickenings and plinths for pumps and hoppers in the Elutriation Building;
- installation of electrical earthing grid, earth electrodes, earth pits and connection to foundation reinforcement. See 1310-EE-SKETCH-001 for location and quantities;
- construction of access covers to existing service pits within the area of the new ground slab.

An overview of the concrete foundations and pedestals is superimposed upon the job site in the image below.

Figure 6: Concrete Foundations shown superimposed upon the site plan

See L200-CI-MTO-1001 for the work volume. The Pricing Schedule for this work is included in the tender pack, doc. title “Pricing Schedule – Civil & Concrete work Construction_A”.

6.3.2 Survey

The Contractor shall be responsible for all surveying required to be set out, construct and control the works. The Works Contractor's survey work shall be tied back into the site primary control network of survey marks. The engineering control point (document: 220003 - Elutriator Project - Engineering Control.pdf) is provided to the Contractor for setting out purposes. All survey work shall be subject to review by the Company's representative.

The Contractor shall record all survey information in field books or alternative digital records and maintain a set of as built drawings which shall be made available to the Company's representative and handed over on completion of the Works. Adequate care shall be taken by the Contractor to ensure the protection of all survey marks. Destruction of these shall result in re-establishment at the expense of the Contractor.

Where survey measurement is required, survey shall be carried out by the Contractor's surveyor and jointly with the Company's surveyor. Additionally, interim stages of survey may be required, at the Contractor's discretion, for payment purposes. The Contractor shall give the Company's representative 72 hours' written notice of application for verification of quantities.

The Company's representative may undertake their own survey check of any item, either in conjunction with the Contractor, or separately. Suitable time shall be allowed by the Contractor for the Company's representative to perform checks. The Contractor and Company's representative shall agree on the results of measurement surveys that are carried out prior to any works being covered up or within 7 days of a survey being undertaken. Should agreement not be reached, the difference shall be documented such that the matter can be later resolved without disruption to the Works program.

The Contractor shall ensure all its survey measurement instrumentation is regularly calibrated and maintained by a certified laboratory.

The Contractor shall conduct the as-built survey of anchor bolts' position before the concrete works is ready for the steel erection.

6.3.3 Site Preparation, Excavation, Backfill and Fill Materials

The site preparation and earthwork for this scope are:

- The new Elutriator Building and the piperack area as shown in drawing L200-CI-DRG-1001.
- The piperack corridors leading to the substations as shown in drawing L200-CI-DRG-1002. This is for the position of EWP for cable tray support and tray installation work.
- The crane pad area for all the installation works including the provision of dunnage & ground preparation to handle the load of the outriggers derived from the Lifting Study by the Contractor. The Contractor shall allow cost for the plate load test to confirm that the soil bearing capacity at the outriggers location is meeting the requirements.

All site preparation, compaction and backfill requirements shall be in accordance with Company's Standard Specification (CORP-CI-SPC-1001) "Mine Site Earthwork and Roadwork'. The drawings and specifications provided by the Company's representative shall be referenced with respect to the scope of work. The Works will include but not limited to the following:

- Preparation and management of any borrow area (if applicable), including borrow pit management plan, site facilities, clearing, grubbing, stripping, testing, excavation and rehabilitation;
- Preparation of stockpile areas for unsuitable material and surplus material. For the purpose of pricing, the area of soil disposal is <5km from the Project area;
- Cutting and filling as required to achieve the levels as indicated on the drawings, including conditioning, compaction and testing as per the Specification;
- Proof rolling and surface preparation as indicated on the drawings;
- Removal of rock as required;
- Excavation and removal of unsuitable material;
- Construction of drainage as nominated on the drawings, including earthwork for open drains.

The Contractor shall also heed the compaction requirements and geotechnical information and ground capacity information noted on the Contract drawings, specifications and geotechnical report.

All excavation shall be free of all loose material and sludge and the foundation base shall be inspected and signed off by the Company's representative prior to casting of any blinding or concrete.

Where excavated material is not considered suitable for backfilling, the Company's will nominate sources for selection of suitable backfill. These areas will be confirmed by the company's representative before commencement of works. The Contractor shall be responsible for verifying the suitability of selected materials for the intended purposes. The Contractor shall allow to win, haul and place the selected backfill material from these sources.

The Contractor shall dispose of material unsuitable for use as backfill at a location nominated by the Company's representative before commencement of works and in accordance with the Company's policies and procedures.

The Contractor is responsible for moisture conditioning, curing of materials.

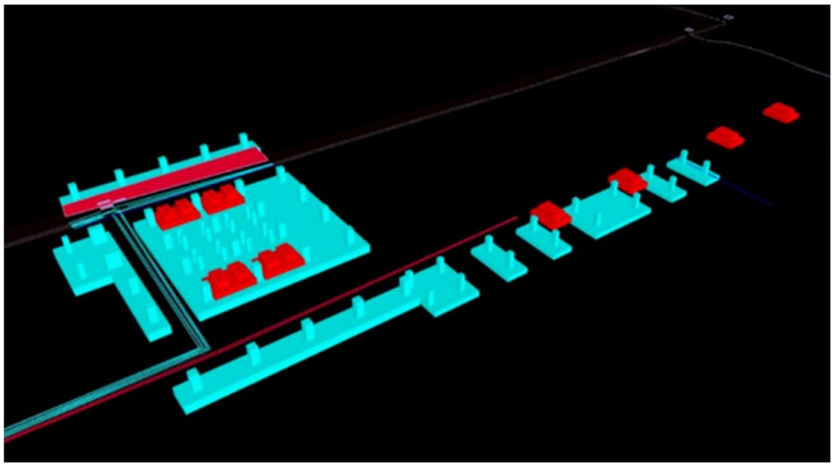


Figure 7: Foundations, looking SE.

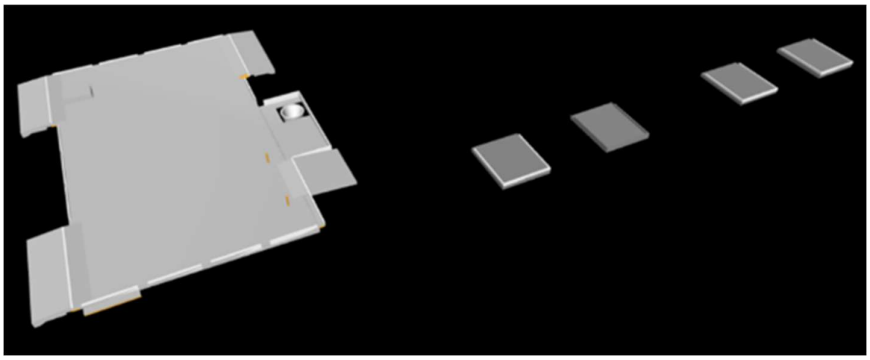


Figure 8: Ground Slabs, looking SE

The Ground Floor slabs are laid to falls, towards the sump/s. Note that the ME building slab includes ramps and is intended to be drive-through; to the East to accommodate one direction of the two-way roadway; to the West to allow access underneath ME and to the existing CMS building.

6.3.4 Management of Surface Water

The Contractor shall properly deal with and dispose of all surface process water or rainfall runoff to ensure the works are being kept sufficiently dry at all times for their proper execution. For this purpose, the Contractor shall provide temporary works as may be necessary to minimise damage, inconvenience or interference arising from surface water.

6.3.5 Foundation Works

The Contractor shall:

a) Set out all works required to be undertaken to lines, levels and grades as shown on Issued for Construction drawings. Contract drawings L200-ME-DRG-1009, L200-ME-DRG-1007, L200-ME-DRG-1004, L200-ME-DRG-1003 and all relevant drawings enclosed in Appendices.

b) Undertake all detailed excavation of earthworks by vacuum truck or by machine excavation (including backfilling) and provide all necessary shoring required for the works as shown on drawings;

c) Supply and install all materials, consumables and all other items such as hold-down bolts / anchor bolts, blockouts / void formers, dowels, cast-in items, sleeves, ferrules, plugs, waterstops, etc, and where stated as supplied and installed all items, necessary to complete the works;

d) Supply and install all reinforcement and all necessary accessories such as bar chairs, spacer blocks and purpose made support bars whether shown on the drawings or not, to enable the works to be carried out. Reinforcement shall be formed to the specific shapes and placed as shown on the drawings;

e) Liaise with the site electrical contractor if required for the attachment and bonding of electrical earthing cables to reinforcing bar cages prior to commencing concrete pours. The location of earthings will be shown on construction drawings;

f) Design, provide and construct all temporary works (e.g. falsework), formwork, access, and cranage required to complete the works;

g) Handle, place and test all concrete required for the works. The cost of the concrete supply (from batch plant to the Site) and testing shall be borne by the Contractor. All concrete batches shall be tested for strength and slump in accordance with the requirements in the Specification;

h) Supply and install all joints (eg. construction, shrinkage, expansion, shear keys etc.) and all penetrations where required in accordance with the Drawings, Specification and/or manufacturers requirements;

i) Undertake curing, stripping and finishing of all concrete surfaces in accordance with the details in drawings and Specification requirements;

j) Remove all blockouts, sleeves and inserts used to form voids in the concrete using non-chemical (mechanical) means in accordance with this SOW and the Specification;

k) Provide dust suppression on the construction site and around the laydown and office area during the period of the works. The Contractor shall allow for the collection, transport and spraying of water from a designated standpipe;

l) Make good any damage caused to existing and constructed civil works; concrete and steel structures; equipment; services and facilities by the Contractor during the performance of the work at his own cost; and

m) Co-ordinate and liaise with the relevant Structural / Mechanical / Piping Contractor for the supply of major cast-in items (if any) to ensure no delays in construction activities through late manufacture and supply of the free issue items.

6.3.6 Excavation in Rock

The Contractor shall be fully aware with the subsurface and all geotechnical condition of the Project area by reviewing the existing geotechnical report doc. No.: 1300-CI-REP-1002. The nearest borehole and the trial pit to the Project area is BH10 and TP38 respectively. The Contractor is at his own discretion to conduct additional trial excavation if necessary. The Company will not consider any reimbursement of cost to the Contractor in case of rock excavation. For the definition of rock excavation, see clause 5.4.4 of Corporate Specification CORP-CI-SPC-1001.

6.3.7 Special Consideration for Excavation Near Existing Underground Services

The Contractor shall note that there are sensitive buried services in the area (fibre-optic cables to the Control Room, HV cabling, water and other utilities) that the design has taken some trouble to avoid. The Contractor shall take particular care to avoid damage to these buried services. There are known underground services such as power and communication cables originating from the existing Control Room and routing southward towards the new Elutriator Building. These buried services are shown in the Naviswork 3D model as well as in sketch L200-ST-SKT-001, 002 & 003.

To avoid the interference with these live services, the Contractor is to exercise care and to comply with the following requirements:

- All excavations within 1m of the buried services are by vacuum truck and no machine digging is permitted.
- Existing services pits are to be filled with sand (or gravel in bulk bag) and temporarily protected by steel plate. Upon completion, remove sand, pits to be integrated with ground slab with trafficable covers Class D.
- Temporary shoring or sheet piling shall be provided during the construction of the foundation to avoid disturbance to the underground services.

Refer to sketches L200-ST-SKT-001,002 and 003 for details.

6.4 SMP Supply

6.4.1 Scope of Supply & Fabrication

In general, the scope of supply consists of the supply of all management, supervision, labour, materials, equipment, tools, consumables, inspection, testing, temporary works, surface finishing, export documentation, sea-worthy packaging, storage and transportation necessary for:

- Shop detailing and the preparation of shop drawings, including structural connection detailing;
- Supply and fabricate all structural components;
- Supply and fabricate platework items, i.e. rubber-lined launders and hoppers;
- Supply and fabricate galvanised sump-pump frame, see drawing CORP-ME-DRG-1003;
- Supply and fabricate piping as shop-fabricated piping-spool items, including rubber-lined piping spools, carbon-steel piping spools and galvanised piping, including pipe fittings and flanges;
- Supply of pre-formed flanged rubber hose items;
- Supply and fabricate of all cable tray supports and
- Supply of shipping cradles, shipping containers and pack for despatch by containerised or breakbulk shipments.

Detailed scope is as listed in the subsequent sections.

6.4.2 Structural Steel – Supply & Fabrication

The work shall include the supply of materials, labour, equipment and the fabrication of structural steelwork for:

- Building structure (ground level, launder level, elutriator support level, upper level and distributor platform level)
- Platforms, stair structures, walkways, stairs, grating, and handrails
- Piperack structure
- Cable ladder support brackets.
- Pipe support, see detail in L200-ME-MTO-1002 for the Material Take Off.

See Building and Piperack MTO in 206137-0000-DD20-MTO-0001 for the material take off.

The Supplier shall be responsible for the:

- Procurement and fabrication of all structural steel, floor grating, stair treads, handrail and kick plates and all other items necessary to complete *the Works*, in accordance with Technical Specification CORP-ST-SPC-1008 Structural Steelwork Fabrication – Chinese Supply.

- Grit blasting, surface treatment and coating of steel in accordance with Technical Specification CORP-GE-SPC-1004, Table A.1.1 Surface Treatment of Structural Steel and Pipework.
- Provision of suitably qualified personnel for Visual Testing and Non-Destructive Testing (NDT) as required by AWS D1.1. NDT reports must be China National Accreditation Service (CNAS) endorsed and be submitted to the Company within 2 weeks of completion of each component. All testing shall be done in accordance with the requirements in the Technical Specification CORP-ST-SPC-1008.
- Provision of all *temporary works* such as transport frames, internal bracing, lifting lugs and other distortion controls required for safe and effective transport and lifting of structural assemblies both for shipping and for installation on *site*.

6.4.2.1 Shop Detailing of Structural Steel

'Issued for Construction' documents

The Contractor or Supplier will be issued with the following:

- Issued for Construction (IFC) 2D Design drawings.
- Issued for Construction (IFC) 2D non-standard project specific details.
- 3D Microstation .dgn Version 8 file. 3D model including piping, cable ladders, grating and handrails (excluding connections).
- Issued for Construction (IFC) Bills of Quantities (BOQ).
- Equipment (IFC) 3D models.
- Equipment (IFC) 2D design drawings.

Connection Design

The Supplier shall detail the pinned or moment connections in accordance with the requirements shown in 2D design drawings to details in KML's Corporate Standard Drawings. The fully connected details will be submitted to the Company. The Company's design consultant to review to ensure all connections are done to the requirements.

Bolt Detailing and Bolt Lists

The bolting detailing shall be done to Australian Steel Institute Connection Bolting Guide with accurate bolt length, threaded, unthreaded length etc. A bolt set shall consist of a bolt, a nut and a washer (tapered or flat). A complete Bolt List / MTO and a Bolt-Location List shall be made available in a sortable format (Excel spreadsheet, or similar) for procurement and installation purposes.

Shop Drawings

The Supplier shall prepare shop fabrication drawings and relevant electronic data files to requirements in Technical Specification CORP-GE-SPC-1005 and to requirements in Section 6.4.2.3 of this document.

Fabrication Drawings shall be provided by the Supplier in both native (.dwg or .dgn) format, and as PDFs. The Fabrication Drawings (General Arrangements, Assemblies & Fittings) shall include:

- Steelwork marking plans, elevations, sections, etc.
- Grating plans and grating panel table & details.
- Handrail layout plan and detailed handrail panel drawings. The 3D model only shows the extent of handrail. Handrail panels including the pipe sockets and all bolt holes are to be detailed to KML's standard CORP-ST-DRG-1212 & -1213; including clash checking with stiffeners, gusset plates, cleats of steel assemblies to ensure no interference in steel erection. Each and every pipe socket (if any) shall be checked to ensure that the handrail stanchion can slot through.
- Electronic data in the form of DXF & NC files for fabrication processes.
- Final 3D model including all fabricated items such as bolted connections, cleats, gussets, stiffeners, grating, handrails etc shall be a deliverable provided by the Supplier in NavisWorks *.nwd* and native CAD (DWG, DGN or IFC) format. A model review session involving the Design Consultant is required before the detailing will be approved for fabrication.
- Shop assembly drawings inclusive of a material list giving the item identification number, material description, size quantity and mass of all materials required (including vendor supply items). In addition, the drawing shall give a net assembled mass for each shop assembly and an overall mass for the items shown on the drawing.
- Marking plans, elevations and 3D arrangements, required to easily identify the location, orientation and installation procedure of all shop assemblies.
- Site installation details for all site welded members/fitments including accurate location and weld preparation details.
- Handrail assembly and installation details for both shop and *site* requirements. In general, handrail will be detailed as shop-fabricated panels.
- Grating flooring details shall give as a minimum, the overall size, cut-out / notch dimensions, size and location of all structural supports, span directions, banding / kick plate locations and details, all nosing / grip-strip locations and details, and locations of any specific split line requirements in the case of pipe penetration.
- Brackets and supports for: shop spooled piping including fittings and valves; cable trays; field devices; and other miscellaneous items of equipment requiring structurally engineered support.
- Surface Preparation specification also clear indication of paint/no paint areas (if any). The preference is to eliminate all no paint areas.

Grating Panel plans and Handrail drawings or model shall be submitted to the Company for review and approval prior to fabrication. This review is to ensure compliance with Australian standards and legislative requirements, and with constructability and maintenance needs. The model review described above will include review of end connection details for compliance with KML standards, ease of erection and potential for pre-assembly on site.

6.4.2.2 Shop Detailing Phases

For the Contractor's reference, the priority of steel shop detailing and delivery may be split into 2 phases for better management and segregation of materials:

- Phase 1 ME Building
- Phase 2 Piperack

The Supplier shall ensure that steel is fabricated, packed and despatched to suit the construction sequence and to enable efficient construction at site.

Phase 1 Shop Detailing/Delivery Package

IFC design drawing deliverables and 3D model will be issued for shop detailing. Refer to Figure 9 and Figure 10 for Phase 1 scope.

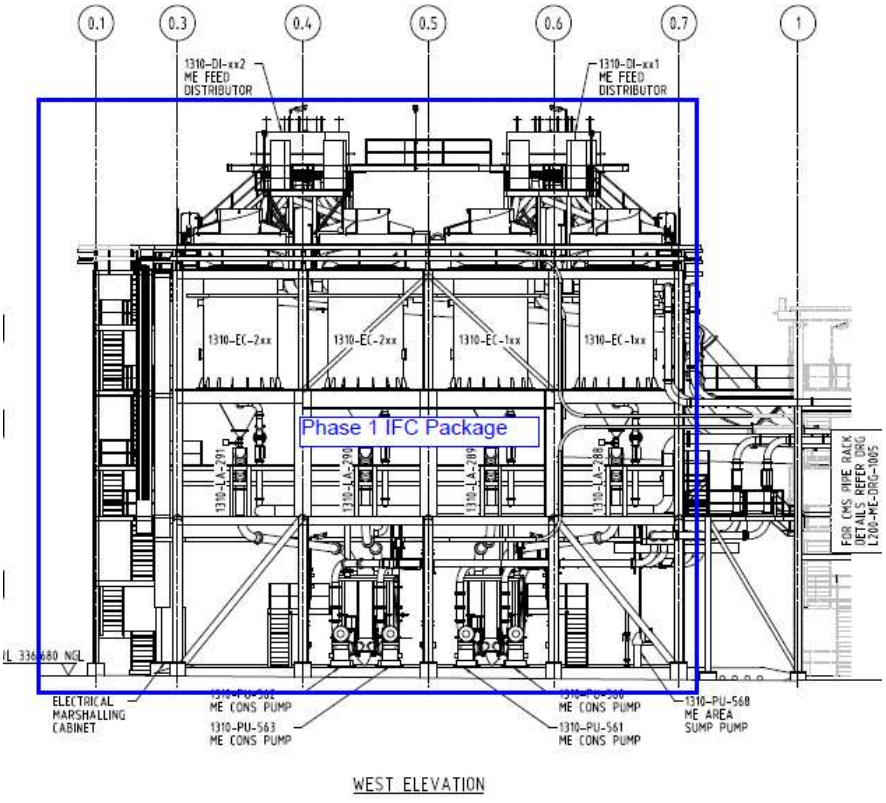


Figure 9: West Elevation View of Elutriation Building

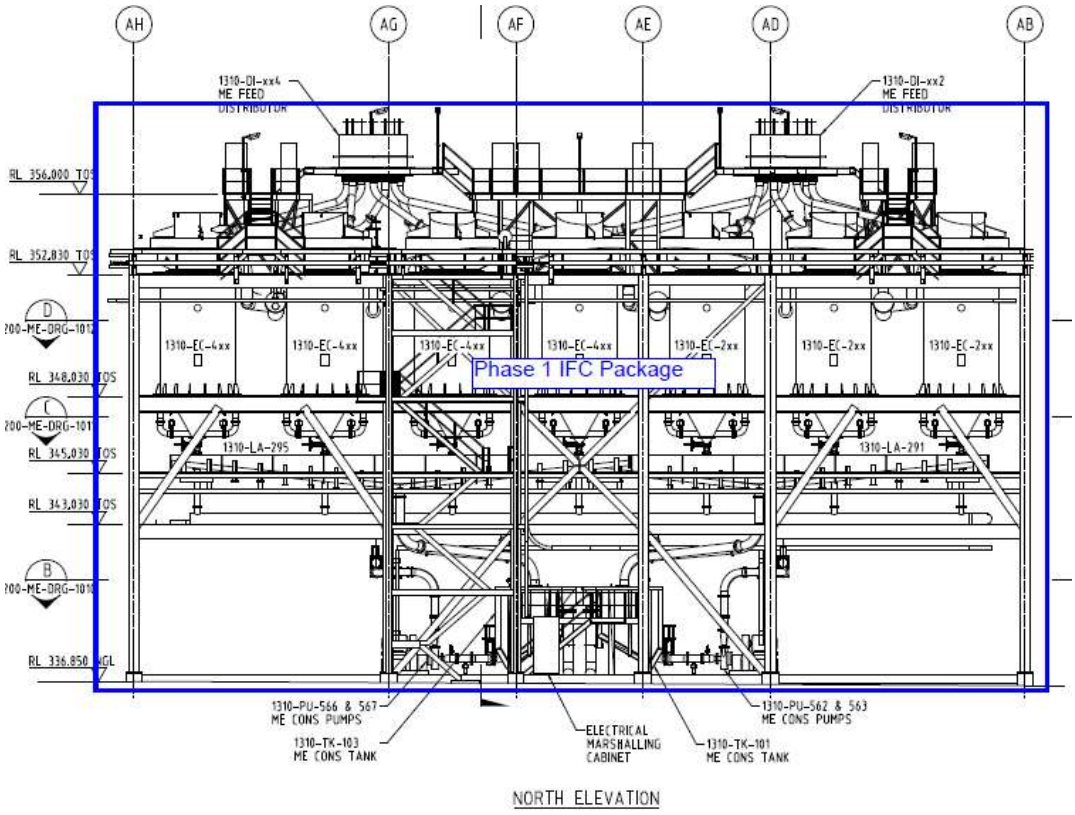


Figure 10: North Elevation View of Elutriation Building

Phase 2 Shop Detailing/Delivery Package

IFC design drawing deliverables and 3D model will be issued for shop detailing.. Refer to Figure 11 Phase 2 scope.

Note: Phase 2 scope includes approximately 50-70pcs similar cable tray support brackets, and a quantity of approximately 200-300pcs varied pipe-support brackets, not captured in the graphics.

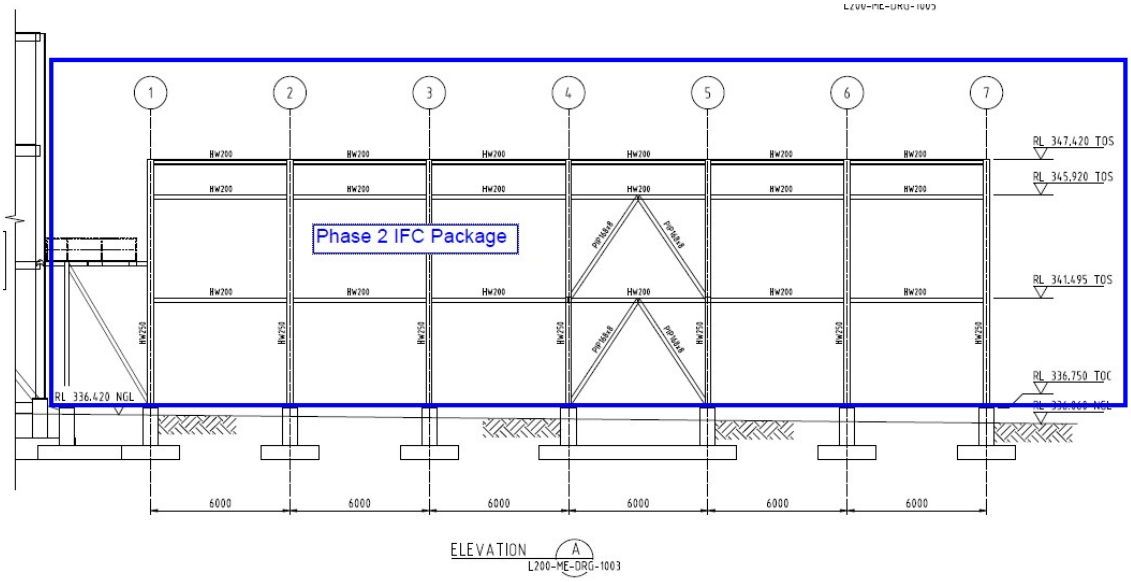


Figure 11: Sectional View of Pipe Rack

6.4.2.3 Documentation & Quality Control

The Supplier shall advise of their document control system to facilitate the receipt, checking, document control and reporting of all company supplied 2D CAD drawings, 3D model and electronic data files as detailed in this SOW.

The Supplier shall prepare and submit documents and data in accordance with the *Supplier Data Requirements List L200-SDRL-1001* for steel, platework and piping.

The *Supplier* shall complete the Supplier Data Schedule (SDS), showing the documents that the *Supplier* intends to submit in its compliance with the SDRL.

- The *Supplier* shall utilise a document control system that fulfils the following functions:
  - acknowledges the receipt of all documents from the *company*
  - tracks the revisions of all *company* supplied documents;
  - ensures that fabrication is occurring from the latest revision of *company* supplied documents;

- tracks the completion of all deliverables to the *company*;

- The *Supplier* shall submit QA documentation relating to the fabrication and supply of structural steel in accordance with CORP-QA-SPC-1001 and CORP-QA-SPC-1002. This shall include but not be limited to:

- Material certification (mill certificates and such) including any additional testing requested by the Company's representative, and traceability (including weld maps and such) for the fabrication of the steelwork and piping. Mechanical testing and lamination test reports must be CNAS endorsed.

- All welding consumables must be approved by ABS, Lloyds Register or Det Norske Veritas (DNV), and certification must be submitted for review by the Company's representative.

- Welder qualifications in accordance with AWS D1.1 or as otherwise agreed to by the Company's representative. Welder Qualification Certificates supported by CNAS endorsed reports (for NDT and Mechanical Tests) must be submitted for approval by the Company's representative. A welder qualification register must be maintained by the Contractor.

- Qualification of welding procedures in accordance with AWS D1.1 or as otherwise agreed by the Company's representative. All Procedure Qualification Record (PQR) tests including mechanical tests shall be witnessed by the Company's representative. All records must be CNAS endorsed and prepared by competent welding supervisor and submitted for approval by the Company's representative. A Welding Procedure Register must be maintained by the Contractor.

- Dimensional records including reference to allowable tolerances.

- Visual Inspection and NDT in accordance with AWS D1.1, with CNAS endorsed reports. Reports shall be submitted to the Company's representative and shall include the associated weld maps etc.

- Method statement for painting, including preparation of substrate, mixing of paints and application. Particular attention shall be paid to cleanliness, mixing and application of paint systems in temperatures below the minimum recommendations of the paint manufacturer.

- A completed Inspection & Test Plan (ITP) in accordance with CORP-QA-SPC-1001

- A completed MDR in accordance with CORP-QA-SPC-1002

- The *Company's Representative* reserves the right to request any additional information necessary to clarify the installation of structural steel.

6.4.3 Platework - Supply & Fabrication

The works include the complete supply of materials, documentation and fabrication including the furnishing of all labour, supervision, tools, consumables, supplies and services required to fabricate, rubber line, inspect and test, surface protect, storage (if required) prior to shipping, packing, transport and delivery to the nominated point of delivery for the following equipment:

Launders & Hoppers

Tag Number	Equipment Description	Quantity	Reference Sketches
1310-LA-292 1310-LA-294 & 1310-LA-291 1310-LA-289 (opposite Hand)	ME Cons Short Launder, with lids and connecting bolting	04 total (01 each tag number)	206137-0000-DE10-SKT-0002
1310-LA-288 1310-LA-293 1310-LA-290 1310-LA-295	ME Cons Long Launder, with lids and connecting bolting	04 total (01 each tag number)	206137-0000-DE10-SKT-0002
1310-TK-100 1310-TK-101 1310-TK-102 1310-TK-103	ME Cons Hopper, with internal baffle overflow pipe and bracket.	04 total (01 each tag number)	206137-0000-DE10-SKT-0003, & 206137-0000-DE10-SKT-0004 (details)

The launders are comprised of several similar flanged bolt-together modules (“Type-2”, “Type-5”, etc), as shown in the sketch. Supply includes stainless steel lids (unpainted), lid clips, and bolting for on-site connection of the various launder parts together.

A snapshot of a typical launder assembly is shown in **Figure 12**:

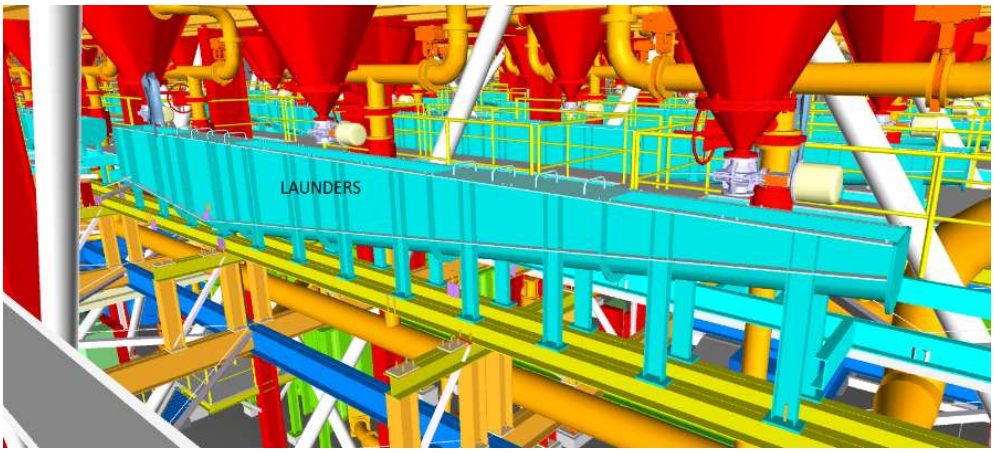


Figure 12: Launders below the Elutriators

A snapshot of the hoppers is shown by Figure 13 below:

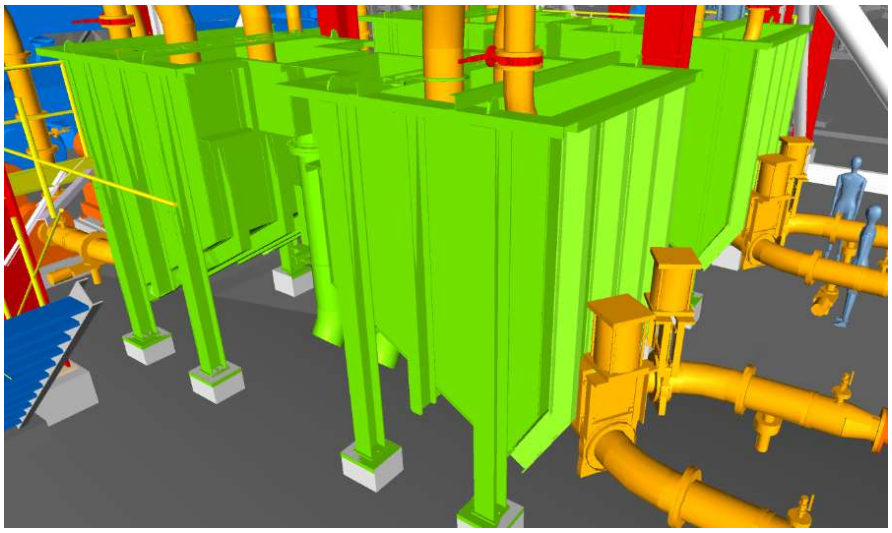


Figure 13: Hoppers

The Launders and Hoppers shall be rubber-lined internally and painted externally, by the Supplier.

The project sketches for the launders and hoppers and the corporate standards are listed in Appendices, and enclosed in the Tender package. Full details of the supply requirements for these items are given at Section 6.4.3 above.

Sump Pump Frame

- One fully shop welded sump frame assembly, hot dip galvanised, including the four grating screen panels, as per drawing CORP-ME-DRG-1003.

Piping

- Piping comprises shop-fabricated piping spools for use within the Elutriator building and its associated Piperack structure.

A 3-Dimensional *NavisWorks* model *L200-G-0005.nwd* is provided in the tender file package to assist the Supplier to understand the scope.

The *Supplier* shall provide all materials and labour (including shop fabrication drawings if necessary) to fabricate the platework items listed in Section 6.4.3 above.

Launders

The launders are comprised of multiple similar flanged bolt-together sections or modules (“Type-5”, “Type-2”, etc. increasing in depth, as shown in the sketch 206137-0000-DE10-SKT-0002), with a solid endplate at each free end.

The bottom half-pipe portion of each module shall be dimensionally the same as and interchangeable with any other (outlet nozzle excepted). Similarly, all side-panels of the same Type-number shall be identical and interchangeable with each other (Left-hand & Right-hand excepted). In particular, bolt-hole spacings shall be checked by trial fit-up and/or QA-checklist to ensure that any side-panel will fit to any bottom half-pipe. All modules with the same Type-number should be the same – i.e. all Type-2 sections when assembled should be dimensionally the same as each other and interchangeable.
Similarly, all launder covers shall be interchangeable unless otherwise approved.

The Launders and Hoppers shall be rubber-lined internally as specified in KML's Technical Specification *1300-ME-SPC-1046 Specification for Rubber Lining*, and painted externally to the same standard as the structural steel, i.e. surface treatment to Table A.1.1 of Technical Specification *CORP-GE-SPC-1004*, *Surface Treatment of Structural Steel and Pipework*.

Rubber-lining shall be minimum 6mm thickness internally, and shall extend over the face of the flanges that connect each launder part to the next launder part, such that no gasket is required for the joint. The supplier shall apply a film of a silicone-based grease to each flange face, to reduce the tendency for the rubber faces to stick together upon tightening. (Note: Silicone-based rubber grease; not lithium-based lubricant grease).

The Supplier shall have experience in fabricating rubber-lined items, and shall detail the design as necessary to achieve durable rubber-lining, for example by providing radiused corners, etc. In particular, the Supplier shall detail the rubber at the top flange of the launder to avoid the situation where the rubber peels away over time at the free edge. This may be by continuing the rubber to the underside of the top flange, or by other means. Similarly, the Supplier shall detail and supply the '*Antiluce* pins' necessary to retain the launder covers, which should be galvanised or stainless-steel and not rubber coated. The Supplier shall also include suitable lifting points for each module, which may be by a suitable hole for a D-shackle through the C16 support channel near each top corner, or by specific lifting lugs such as those shown in KML's standard drawing *CORP-ME-DRG-1041* or *CORP-ST-DRG-1218 Lifting Lug detail*. All lifting points shall be painted yellow, shall be stamped with their Working Load Limit (e.g. "WLL 500kg"), and lifting point welds shall receive 100% UT by a qualified inspector.

Typical *Antiluce* fastener

The launder outlet nozzles shall be Flat-Face flanges ANSI-150#, to suit the rubber-lining, generally as shown in KML standard drawing *CORP-PI-DRG-1170_0 FF SO Flange*.

The *Supplier* shall include lightweight folded stainless-steel covers ("lids") for the launders as shown in the sketch, which shall be of uniform length and of uniform design such that they are all interchangeable. The

Supplier should crease these lids across the diagonals from corner to corner, in order to make the lids more rigid, and shall include welded stainless-steel handles and *Antiluce* pins to retain the covers, as shown in the sketch. Spacing of the pins and their holes shall be identical for all. Spacing of the holes shall allow for the fact that creasing of the lids may change the final dimension. Since the covers are entirely ex stainless steel, no painting is required. Stainless steel Grade-304 or similar is adequate.

The *Supplier* shall supply hot-dip galvanised or stainless-steel A2 bolts nuts and washers to connect the launder sections together on site. The Supplier shall include an additional bolting allowance of approximately 5%-extra, to allow for wastage. Note: zinc-plated bolting is not an acceptable substitute for hot-dip galvanised bolting.

The *Supplier* shall include export packing suitable for sea-freight. The launders may be shipped as bundled panels, bottoms and covers, bundled on pallets, for assembly on *site*.

The outlet nozzle flanges shall be fitted with a plywood cover or similar for protection in transit, and the Supplier shall take particular care that the rubber-linings are protected from damage in transit.

Hoppers

The hoppers comprise the rectangular open-topped rubber-lined vessel with legs as shown in sketches 206137-0000-DE10-SKT-0003 and -0004, approximately 3½m x 2½m x 3½m tall, and includes a rubber-lined internal baffle, lifting lugs, an overflow pipe and its shop-welded support bracket. All lifting points shall be painted yellow, shall be stamped with their Working Load Limit (e.g. “WLL 500kg”), and lifting point welds shall receive 100% UT by a qualified inspector.

Contrary to the Note in the drawing, the overflow pipe and galvanised flange bolting shall be supplied by this Supplier as part of the supply of the hopper/s. The overflow pipe below the flanged joint does not need to be rubber lined, but shall be painted same as the vessel externally.

The Launders and Hoppers shall be rubber-lined internally as specified in KML’s Technical Specification *1300-ME-SPC-1046 Specification for Rubber Lining*, and painted externally to the same standard as the structural steel, i.e. surface treatment to Table A.1.1 of Technical Specification *CORP-GE-SPC-1004*, *Surface Treatment of Structural Steel and Pipework*.

The sketch provided has been marked-up to indicate that the hoppers required for this project shall have two discharge nozzles as shown.

The nozzles shall be Flat-Face flanges ANSI-150#, to suit the rubber-lining, generally as shown in KML standard drawing *CORP-PI-DRG-1170_0 FF SO Flange*, and shall be fitted with plywood cover/s or similar for protection in transit.

Sump-Pump Frame Assembly

One galvanised sump frame, supplied fully assembled, as described at Section 6.5.3.2 above.

6.4.4 Piping – Supply and Fabrication

The Supplier shall supply materials and shall fabricate Piping, typically comprising shop-fabricated flanged piping spools for use within the Elutriator building and its associated Piperack structure.

Piping supply is of the following types:

- Rubber-lined piping, typically piping spools or fabricated fittings, flanged both ends
- Rubber hose assemblies, flanged both ends
- Carbon-steel piping, typically shop-fabricated spools using standard forged pipe fittings and RF-flanges, flanged both ends
- Small-bore piping, supplied as lengths of galvanised pipe, and screwed galvanised fittings, loose. Small-bore piping supply and installation shall be included in this Tender.

The extent of supply is illustrated and listed in the Piping MTO L200-ME-MTO-1002, and summarised in the Piping Pricing Schedule.

The detailed specification for the purchase of piping materials is given by *Piping System Datasheets* for each Line Specification in the Company's *Piping Technical Specification 1300-PI-SPC-1001*.

In the descriptions, the designation "3D" indicates that the radius of curvature of a pipe bend or fitting shall be three-times the pipe diameter, typically 'pulled-bends' rather than standard forged elbows.

6.4.4.1 Rubber-Lined Piping

Rubber-lined piping shall be to Piping System Specification SR1 and SR2 of the Company's *Piping Technical Specification 1300-PI-SPC-1001*. Specifications SR1 and SR2 are identical as regards supply and fabrication; the differences are in operating pressures, test pressures, and duty.

Rubber-lined piping comprises straight spools flanged both ends, and fabricated fittings flanged both ends, typically to a series of standard drawings by the Company. It is intended that an item to a standard Company drawing will be interchangeable with any other of the same type, to allow for replacement from spares when required, due to wear.

Flanges for rubber-lined piping shall be Flat-Face ANSI 150# flanges (which may be machined by the Supplier from a standard Raised-Face flange by removing the raised face), as shown by the Company's standard drawing CORP-PI-DRG-1170. Overall dimensions of flanged fittings shall include the rubber-facing over the face of the flanges. Certain items are specified as requiring Rotating flange / Slip-flange / Lap flange, which is a flange that may be rotated in order to align the boltholes with the adjacent fitting, and the detail shall be as shown in the Company's standard drawing *CORP-PI-DRG-1169_0 Lap-Joint Flange*.

Rubber-lined piping shall be fully fabricated and subjected to examination and testing, before being rubber-lined in accordance with the Company's corporate standard *1300-ME-SPC-1046 Specification for Rubber Lining*.

Rubber-lined piping does not need any external painting by the Supplier, but any paint or varnish applied by the manufacturer of the pipe or fittings should be left in place.

6.4.4.2 Rubber Hose Assemblies

Rubber hose assemblies shall be to Piping System Specification MH1 of the Company's *Piping Technical Specification 1300-PI-SPC-1001*, and typically have one end with a rotating flange as per the Company's standard drawing *CORP-PI-DRG-1169_0 Lap-Joint Flange*.

6.4.4.3 Carbon Steel piping spools

Carbon steel piping assemblies shall be shop-fabricated flanged spools to Piping System Specification SC1 of the Company's *Piping Technical Specification 1300-PI-SPC-1001*.

The quantities of materials and the extent of spooling can be seen from the illustrations in the Piping MTO L200-ME-MTO-1002. It is anticipated that there will be no field-welds, and that on-site work will consist only of bolting together flanged spools. Further detail for SC1 Piping will be provided (expected to be as Piping Isometric drawings) before fabrication; the information presented should be sufficient for pricing.

Carbon steel piping assemblies do not need any external painting by the Supplier, but any paint or varnish applied by the manufacturer of the pipe or fittings should be left in place.

6.4.4.4 Small-bore piping

Small-bore piping shall be to Piping System Specification SG1 of the Company's *Piping Technical Specification 1300-PI-SPC-1001*, typically galvanised ERW pipe screwed BSP, and 3000# galvanised screwed fittings.

Small-bore piping shall be supplied in bundled pipe lengths, with fittings 'loose' for site assembly, bagged or boxed by type/size, and all crated.

6.5 Freight Forwarding

6.5.1 General

In general, the Contractor shall be responsible for all costs, planning and delivery of materials in a timely manner to suit the Project Construction Schedule in this freight forwarding scope. The freight forwarding services for all of the Contractor's supplied items *(as per the summary in Section 4 of this document)* are:

- Stick-build structural steelwork including steel gratings and handrail panels;
- Platework in the form of prefabricated launders and small rectangular tanks;
- Piping – prefabricated flanged Bends, Fittings and Spools;
- Prefabricated sump frame, and various smaller items in cartons and boxes; and

- Others

sourced in China or any other countries and to be despatched to the Karara Mine Site.

6.5.2 Work Description

The Scope of Work for the project:

- Develop logistic program
- Freight forwarding (import and export)
- Chartering passage by sea.
- Customs brokerage (import and export)
- Stock yard placement
- De-stuff of consignment and return of shipping containers to shippers at Port of Arrival
- Submit Mine-site entry request to the Company
- Inland haulage from port to Mine site
- Freight tracking and reporting
- Submit Packing List
- Obtain all insurances
- Manage and pay all import duties, Import GST or other government statutory charges for custom/DAFF clearance and as required for the Work.

The main shipping port of importation and discharge shall be decided by the Contractor. Consignments shall be delivered to the Company's Mine Site at Rothsay in Western Australia.

6.5.3 Detail of items to be shipped

6.5.3.1 Structural Steel

Structural Steel items are to be arranged and pre-packed and strapped by the Fabricator into fabricated metal stillages. Painted surfaces may be chipped/damaged by movement against other items during transit, and should be adequately protected by the Fabricator during packing. The filled stillages will be loaded by the Fabricator into the shipping containers provided and delivered by this Contractor to the nominated loading point, as agreed with the Fabricator. The Contractor may choose to oversee some or all of this packing to ensure the load is secure and unlikely to suffer damage in transit. Once packing is deemed complete, the Contractor shall review the packing arrangement, container seals may be applied, and the Fabricator will load the containers onto transport provided by the Fabricator for transport by the Fabricator to the port of departure (Fabricator's point of delivery is 'FOB port of departure'). Packing requirements of steel, grating and handrail can be referred to Section 6.5.4.

6.5.3.2 Launders, Sump Frame & other small items

The launders are comprised of multiple similar flanged bolt-together rubber-lined panels or modules, each approximately 2m x 1½m x 100mm, which will be stacked, packed and strapped onto pallets by the Fabricator.

The rubber lining surface is soft and can be easily damaged, and should be properly protected by the packaging.

There will be in addition several pallets of stainless steel lids for the launders, and a crate or carton of bolts.

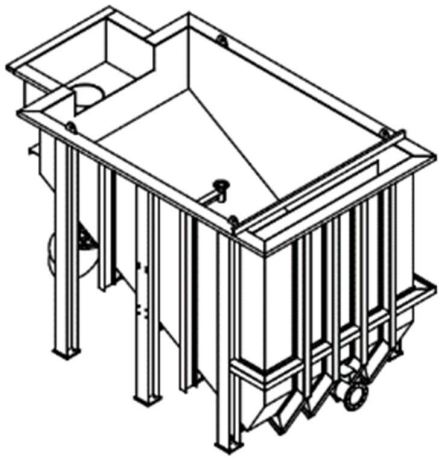
The sump frame should be fully fabricated and likely to be packed on a pallet.

There will also be several small but heavy cartons or crates of bolts associated with the piping.

It is anticipated that the loaded pallets will be stacked and filled into a standard shipping container by the Fabricator, from where the procedure will progress as described for Structural Steel items above.

6.5.3.3 Hoppers

The 'hoppers' comprise four rectangular open-topped rubber-lined vessels with legs as shown, approximately 3½m x 2½m x 3½m tall, and ~5 tonne each.



Due to their size and one-piece construction these will not fit into a standard shipping container, and top-load or break-bulk is likely to be necessary. Lashing onto a flat-rack in conjunction with top-load may provide an optimal solution. The Contractor shall advise on this point and assist the Fabricator in selecting a shipping method that is cost-effective for all but especially for the project (the Company).

The rubber lining surface is soft and can be easily damaged, and should be properly protected by the packaging.

The Contractor shall identify if these items will become an oversize load for transport to the port of export, and shall assist the Fabricator in obtaining any transport clearances (etc.) as may be required.

The Contractor shall also identify if these will become an oversize load for transport from the port of arrival to site, and shall provide any oversize transport, clearances, escorts, etc. as may be required.

6.5.3.4 Piping

Piping will comprise mainly prefabricated flanged lengths and individual flanged fittings. The piping lengths will be packed and strapped into fabricated steel stillages by the Fabricator, similar to Structural Steel items above.

It is expected that the fittings will be either strapped together into bundles and placed onto pallets by the Fabricator, or for smaller fittings or rubber hoses they may be boxed by the Fabricator.

There will be several boxes of bolts associated with piping, as described under 'smaller-items' above.

All of these piping items will be loaded into shipping containers by the Fabricator, from where the procedure will progress as described for Structural Steel items above.

6.5.4 Pack for Despatch, & Freight Forwarding

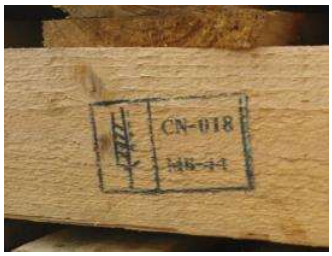
The shipment is to be as far as practicable transported inside standard 40-foot sea containers or any other mode of transport as applicable. To ensure the shipment is transported intact and undamaged, the assemblies of steel and piping shall be first stacked in secure cradles prior to being placing inside the sea containers. Packing shall be in accordance with Technical Specification CORP-GE-SPC-1002 Packaging and Marking.

The Supplier shall be responsible for:

- Supply and fabrication of shipping cradles, suitable for fork-lift and for crane handling, with certified lifting points clearly indicated, with lashing points etc to ensure steel assemblies can be bundled and securely fastened to the cradle for assemblies to stay consolidated during lifting, loading, during transit and during unloading both at export and destination. The Supplier shall include lugs on the shipping cradle ends to allow the cradle to be pulled out of the container at destination. All lifting points shall be painted yellow, stamped with their Working Load Limit (e.g. “WLL 500kg”), and welds shall receive 100% UT by a qualified inspector.
- Packing of fabricated goods shall maximise the efficiency of sea freight in accordance with Technical Specification *CORP-GE-SPC-1002 Packaging and Marking*.
- Adequate fastening of goods by using appropriate straps and packings between items within the container is required to prevent cargo movement and damage during transit.
- Coordinate, engage freight forwarder and provision of all logistical documentation to meet custom clearance and sea freight logistic requirements.
- Delivery of fabricated steels by standard 40’ containerised shipment or any other means, with possible exception of platework. Hoppers may have to be shipped ‘Top-Load’, on Flat-Racks, or by breakbulk shipment, due to size. Any goods that are not within a sea-container and are to be shipped ‘above-deck’ shall be thoroughly plastic-wrapped in robust heat-shrink plastic to fully exclude sea-spray.

The Supplier’s freight forwarder will arrange for the delivery of the requested number and type (where available) of sea-containers to the Supplier’s nominated address; the Supplier shall supply all labour and materials for cleaning, wrapping and packing the goods into the containers, and the Supplier shall arrange the loading, transport, documentation and delivery of the filled containers to the main sea-port address nominated by the freight forwarder (FOB).

The Supplier shall be aware that Australia has very strict cleanliness and quarantine requirements for shipping, and that all imported consignments are inspected by designated federal Inspectors at port of entry. Consignments that fail inspection will be impounded and subject to treatment or destruction at the sender’s cost, which can be very expensive. Containers must be clean inside, with no evidence of vermin, insects, spiders, etc. All wooden pallets or dunnage used for packing shall be fumigated or heat-treated and marked to meet *Department of Agriculture, Fisheries & Forestry* (*DAFF* https://www.agriculture.gov.au/biosecurity-trade/import) requirements.



Organic packing materials such as straw, wood-shavings or shredded paper are strictly prohibited. All openings of tubular sections shall be closed-off / sealed to meet *DAFF* requirements. All piping flanges shall be protected from damage and sealed with plywood or plastic protective cover/s.

Goods shall be stacked into their shipping cradles with their item identification / Piece-number upwards or clearly visible, not turned downwards or hidden. Each steelwork item or pipe-spool shall carry a unique identification mark to identify the item and where it fits into the overall system, and packing lists shall list these identification/piece-numbers. Each shipping cradle shall have a copy of its Packing List and certificates for any associated lifting lugs attached.

Some typical packing of steel assemblies including the cradle design are shown below:

Figure 14: Steel assemblies, stackable

Figure 15: Light steels such as handrail – non-stackables

Figure 16: Grating Panels in bundles – stackable

The Supplier should be available to provide guidance for the correct loading/lashing/securing of goods to minimize the risk of damage during transportation from China to Australia Project Site. Documentation to be provided with each delivery

The Contractor must provide all documentation required for shipping and quality assurance purposes which includes, but is not limited to, the following documents:

- Packaging of Goods for effective and safe handling, customs clearance and preservation of Goods in accordance with Company Procedures;
- Commercial Invoice;
- Packing List with goods;
- Bill of Lading (B/L);

- Packing Declaration Form;
- Certificate of Origin; and
- Related Quality Assurance/ Quality Control (QA/QC) Test Reports (If any).

The Contractor must ensure that no delays in shipping, customs clearance or quarantine are experienced due to incorrect packing, cleaning and/or documentation.

6.5.4.1 Quality Control

The Supplier shall be responsible for the:

- Provision of an in-house Quality Control system and dedicated Quality surveillance personnel.
- Provision of all necessary quality and MDR documentation and information as detailed in section 6.4.2.3 of this SOW.
- Provision of all skilled labour and equipment for QA and NDT, weld examinations, weld and Welder testing, spark-testing, surface-finish and painting inspection, etc
- Use of a suitable materials tracking system to ensure that all components are supplied, fabricated and despatched in agreed work phases and sequence of this SOW.

The Purchaser may engage a 3rd party quality surveillance team to be stationed at the Supplier's workshop to conduct quality surveillance work. This will not relieve the Supplier of their primary responsibility for the quality of the Works up to the point of despatch. The Supplier shall provide the usual facilities and extend cooperation to these surveillance personnel.

6.6 SMP Installation

6.6.1 Structural Steel Installation

An overview of the structure (only) of the new ME building is given below.

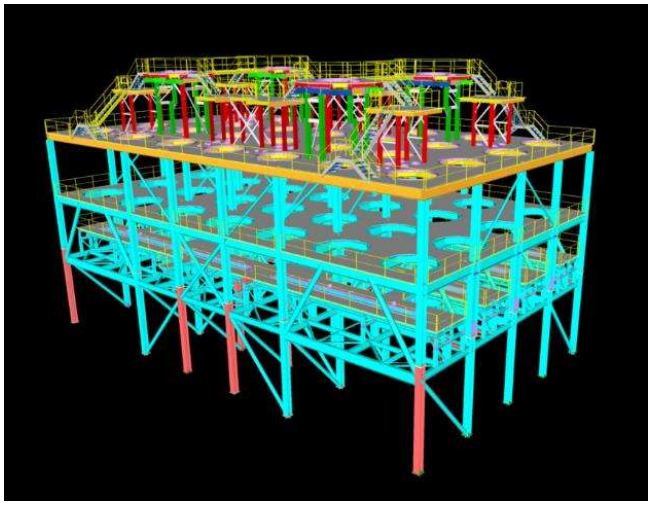


Figure 17: Overview of new ME building (structure only), looking SE.

6.6.1.1 Structural Steel Assembly & Erection

The Contractor shall:

a) Survey and set out all works required to be undertaken to lines, levels and grades as shown on the drawings.

b) Provide labour, equipment, cranage and transport as required to sort the materials as-received, by their piece-marks; sort, record, laydown and catalogue into suitable work-packs by location, to facilitate pre-assembly of modules where applicable or erection of the building. This sorting shall include checks that all needed parts are present and correct, and that correct bolting is available.

c) Transport structural materials and assemblies from storage or laydown yard, pre-assemble where applicable, transport pre-assembled modules as required, and install all these in accordance with details in drawings and specifications.

d) Supply and install all materials, consumables and all other items such as chemical anchors, structural bolts, nuts and washers (including square taper washers), grating clips, shim plates, packers etc., and all items necessary to complete the works.

e) Supply and install galvanised or Stainless-Steel grating clips to suit the nominated *Webforge B325MPG* flooring panels. Install the free-issue flooring panels as shown in the floor marking plans and adjust gaps, clearances and kickplates. The Contractor shall note that the maximum gap permitted between adjacent floor panels is 10mm, and from floor-panel to fixed equipment or structure is 100mm, as prescribed in AS1657 [AS Platform / Handrailing standard], and that flooring will be inspected against these criteria during walkdown. Site welding /spot-welding or other permanent fixing of flooring is not an acceptable alternative to proprietary flooring clips except for small areas of infill and shall be done only by agreement with the Company's Representative.

The Contractor shall include for all site-cut penetrations to Webforge flooring to be properly banded, or edged with kick-plate as required by AS1657. Specifically, flooring penetrations are not provided by others for small-bore piping, which shall be done by the Contractor as and where required.

All site modifications and site welding to galvanised items shall be touch-up painted with a *Cold-Galv* paint system approved by the Company's Representative, typically power wire-brush cleaning followed by aerosol-applied *Cold-Galv* proprietary zinc-rich paint followed by bright aluminium lacquer top-coat (or other colour where appropriate).

f) Carry out modifications as required at the existing CMS building to install and tie-in the two new walkways across to the new ME building. Tie-in shall typically require EWP or scaffold or similar for field attachment of free-issue cleats and knee-braces to the existing structure, modifications and tie-in to existing handrailing, touch-up painting and making good. In particular, the cross-over at EL.+11.53 shall include modifications overhead the existing stairwell in the NE-corner of CMS.

g) Design, provide and construct all temporary works, supports and access required for the works.

h) Supply and install all grouts below the column bases and the equipment plinths to level and heights as shown on the drawings and according to specification CORP-CI-SPC-1012. 30mm grouting allowance is typical design allowance under baseplates. Certain pedestals and baseplates also include shear keys, where shown in the drawings.

i) Prepare and carry out all site welding and site-drilling, NDE, surface coating and touch-up for the attachment of brackets, gusset plates and supports as required for the works. Site welding procedures, testing, surface treatment touch-up and make good shall be in accordance with the Painting Specification CORP-GE-SPC-1004 requirements. Welds or damage to galvanised materials shall be touch-up painted with approved *Cold-Galv* procedure described at (Section 14.3). Piping supports and similar brackets shall be attached by site-drilling and bolting in preference to site-welding.

j) Co-ordinate and liaise with the relevant Contractors and Others as required for the installation of structure, platforms, railings, flooring and equipment items at each level or work-front as work progresses.

k) The Contractor shall devise and implement a procedure whereby each floor level in the new building is progressively released for general access once safe to do so, while areas still under construction are clearly marked and barricaded as such, with general access restricted for their own safety. This shall typically involve a structural walk-down and punch-listing process with the Company's Representative, for safety, completeness of structure, bracing, bolting, flooring, floor clips, kickplates, handrails, guardrailing and guarding, to AS1657.

l) Conduct as-built survey to all structures and provide as-built drawings for the works, as per CORP-GE-PRO-1006 *As-Build Procedure*.

The Structural works generally comprise the following in the following site areas:

- Assembly and erection of all primary and tertiary steels, including stairs, platforms, pipe-supports, cable-ladder supports, and monorail for the ME Building;
- A new pipe rack structure, West of CMS, including platform for Magflow access;
- Modifications to the existing CMS building;
- Assembly and site-erection of support steels at high level onto existing piperacks for cable-ladder supports to three separate Switchrooms;
- Installation of pipe supports with minor footings for same if required, and rework of supports at tie-in locations if required. Pipe supports are described in greater detail in *§6.6.3.5* below.

6.6.1.2 Structural Member Sizing

Because the structural steel package will be fabricated overseas, the Contractor shall note that the Structural Sections provided will be predominantly **Chinese Structural Sections**, rather than Australian- / US- or BS-Standard Structural Sections. There are dimensional differences between Chinese sections and the more usual Australian-standard structural sections.

6.6.1.3 Pre-assembly of Structural Modules

Due to the very compact work site at the ME building location the Company's expectation is that the Contractor shall carry out as much pre-assembly as possible in an assembly work area away from the site of erection, to facilitate more efficient and faster installation. The design has allowed for pre-assembly where possible, and the construction logic and sequence will be described for each level where applicable in the erection narrative. It is expected that a more detailed discussion will be held upon award and prior to construction so that this requirement shall be implemented.

The steelwork assembly should occur on-site, and not at an off-site yard.

Equipment and large-bore Piping should be installed progressively as the building is being erected.

For structural steel despatched from the overseas Fabricator's workshop, the Contractor shall advise the priority of delivery for lower floors' steelwork, up to first floor level in distinct tranches: lower building level, mid-levels and piperack, followed by top two building levels and all other steelwork.

The Contractor shall be responsible for all handling at the laydown and assembly yards including goods receivals, off-loading, unpacking, inspection, sorting, cataloguing and tracking whilst within the Contractor's care, loading onto transport before and after preassembly, transport to and erection at the work-front, and documentation (e.g. Receivals dockets, Packing Lists, etc), as required.

The Contractor shall note that the modular installation method may pose some difficulties; therefore the Contractor shall preassemble and install a typical module before proceeding to preassemble all of the similar modules. This is to familiarise all involved with the installation steps and to overcome rather than duplicate any installation difficulties.

The Contractor shall work closely with the Company's Representative for the confirmation of the lifting plans and the bolt tightening inspection before and during installation.

6.6.1.4 First Structural lift (to Service Level)

The Contractor should position the ground floor mechanical equipment (4x hoppers & 8x pumps) in place on their concrete pedestals before raising the structural steel, as cranage will be much simpler at this time.

The First Structural lift is from top of concrete pedestal EL+0.700 to the column splice at EL+7.130. The Contractor may consider this first-lift of columns to be pre-assembled and installed as shown below. Alternatively, the Contractor can stick built the 1st level of steel.

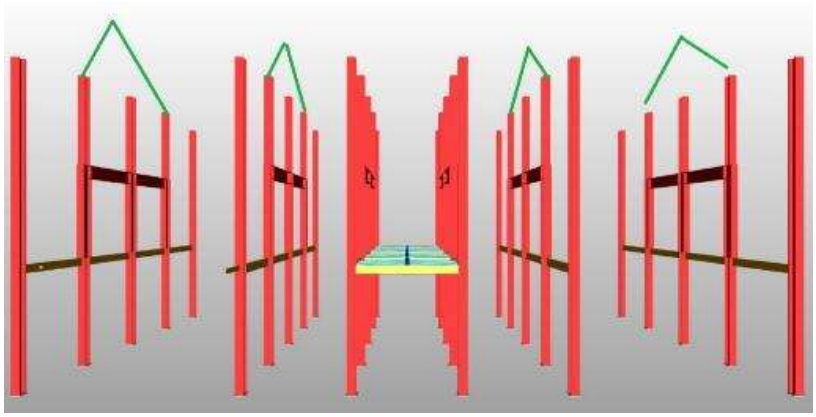


Figure 18: Preassembly of 1st-Lift columns of Elutriator Building

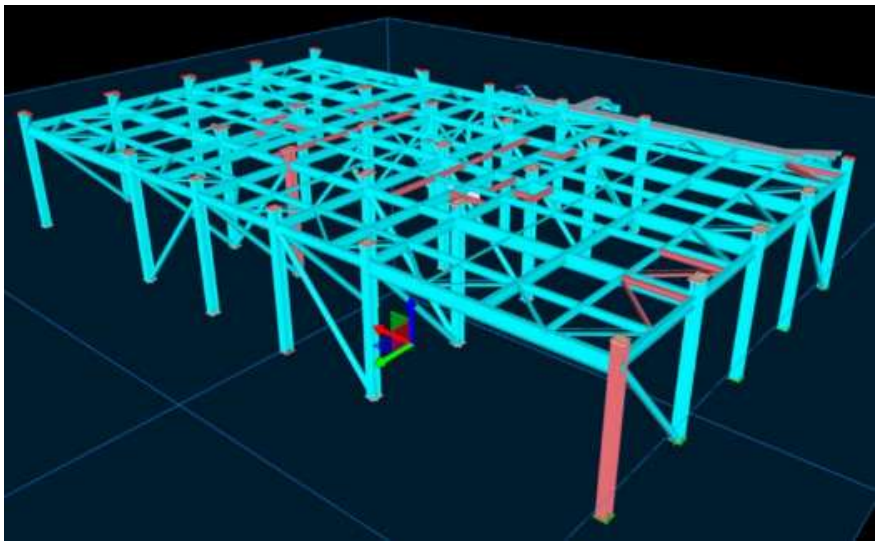


Figure 19: Ground-Floor columns and Service-Level of Elutriator Building, looking SE

Note that the Eastern-most bays and the Western-most bays are of portal-frame construction deliberately without bracing, to allow drive-through of these bays.

The Service-Level at EL+6.530 TOS as shown in GA-Plan on drawing L200-ST-DRG-1004 has no flooring or handrail and is not intended for personnel access – its function is to support large Process Water piping and other services and piping, and to support the launders and platforms on the level above. The Contractor should install where possible the large piping supported onto this level (e.g. Process Water piping, if available) before installing the next structural level, as crane access will be simpler at this stage.

The Service-Level at EL+6.530 TOS as shown in GA-Plan on drawing L200-ST-DRG-1004 includes a short flight of stairs up from 1st-floor level in the existing CMS building onto an East-West platform to access Magflows at the North end of the piperack, and a flight of stairs from EL+6.530 up to ME launder level EL.+8.530.

6.6.1.5 Stair tower

The stair tower to the North of the new building shown on drawing L200-ST-DRG-1014 is independent of the main building structure and may be pre-assembled as two modules. The stair tower columns have a splice at EL+7.130.

The Contractor should pre-assemble the stair tower module up to EL+7.130 in a location remote from the ME building, transport it to position and install it around the same time as the service floor at EL+6.530 TOS is being installed, as it will facilitate personnel access to this level and to the next launder level at EL+8.530 TOS.

The Contractor should consider pre-assembling the remainder of the stair tower as a single module and installing it as a unit; however size, weight, cranage and space constraints may make this difficult, and the Contractor may instead elect to nominate an alternative method. As a minimum, the Contractor shall pre-assemble flights of stairs and landings, which may be progressively installed into the stair tower as each building level is added.

The Contractor shall note that the location between the ME building and the Control Room will be congested and busy, and a construction crane and associated barricading in this location for extended periods will not be favoured.

6.6.1.6 First-Floor level EL+8.530 TOS - Launder Level

A grid-mesh floored mezzanine level is provided for access to the concentrate launders and ME vessel underflows, at EL+8.530 TOS as shown in GA-Plan on drawings L200-ST-DRG-1005 and L200-ME-DRG-1022.

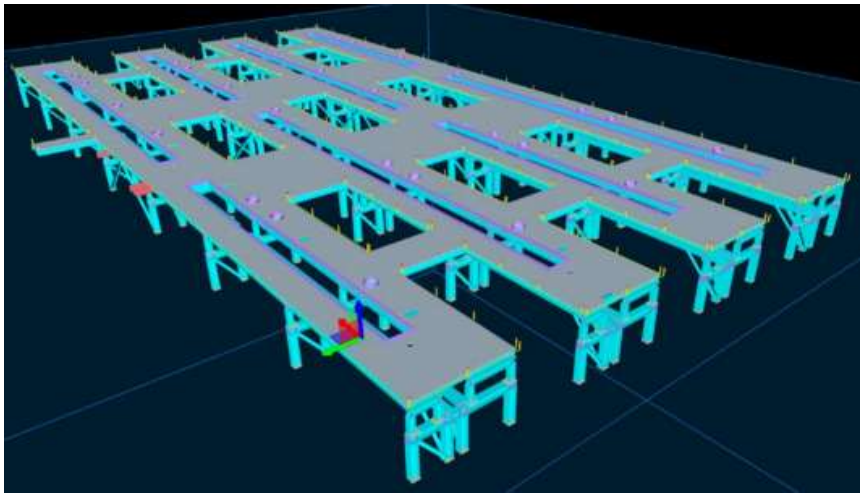


Figure 20: Launder-Level of Elutriator Building EL+8.530 TOS, looking SE

The Launder level steel is fabricated with a number of fully welded structural flat-pack frames and is intended to be pre-assembled as modules complete with most of its flooring panels kickplates and handrailing in a

remote yard, transported to the work front and installed onto the Service-Level steel at EL+6.530 TOS. A typical module is shown in Figure 21 which follows below.

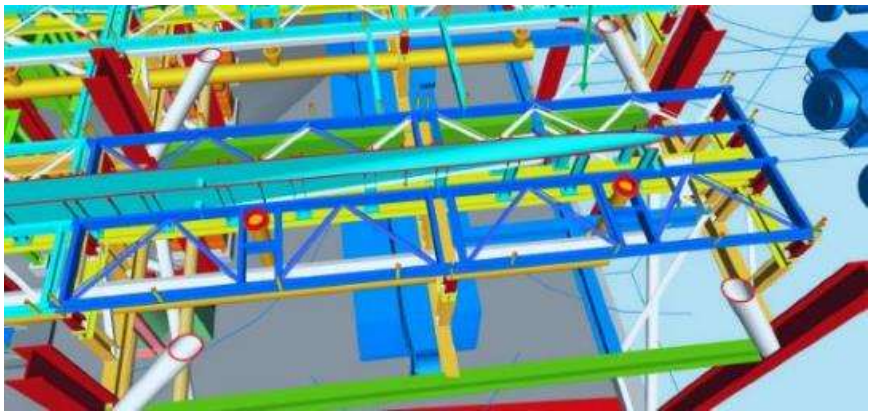


Figure 21: Pre-assembly scheme – a typical launder walkway frame

Note that some of the handrailing on these platforms is extra-high (three-level), to address the potential risk to service personnel accessing the check-valve in Process Water piping or the cone of each ME vessel.

The Concentrate Launders bear onto this level and should preferably be assembled and installed before the next level is raised, as crane access will be simpler at this stage.

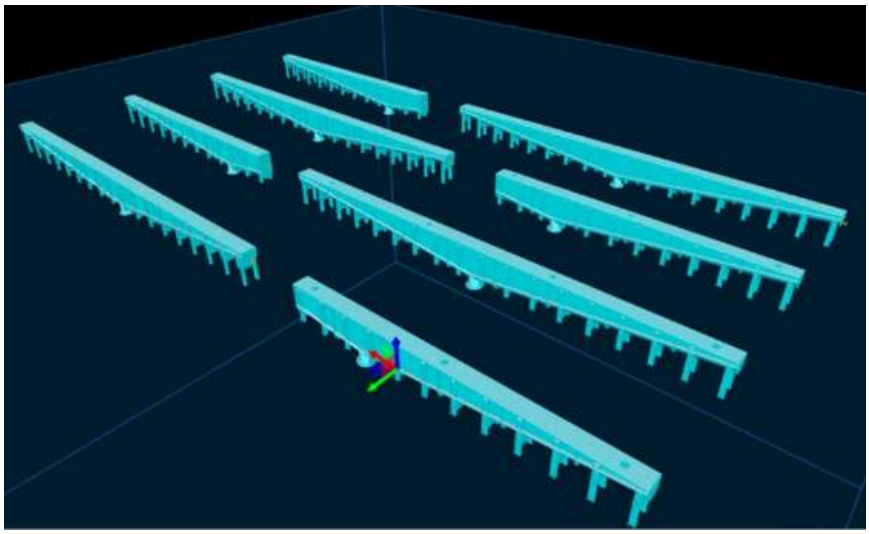


Figure 22: Concentrate Launder assemblies, looking SE

This level shall include installation of grid-mesh flooring, guardrailing and kickplates.

6.6.1.7 Second-Floor level EL+11.530 TOS – ME-Vessel support level

The weight of all twenty-eight vessels bears onto this level, and accordingly its columns are considerably larger, its beams are deeper, and there is considerably more steel in this level than other levels, and is shown in GA-Plan on drawing L200-ST-DRG-1006.

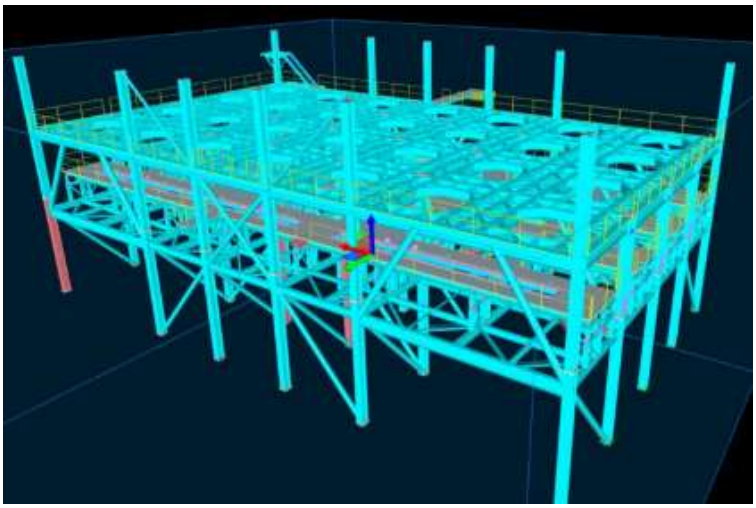


Figure 23: ME-building up to Elutriator support level EL+11.530 TOS, looking SE

This level has been designed to be partially pre-assembled as panels, as shown blue in Figure 24 below.

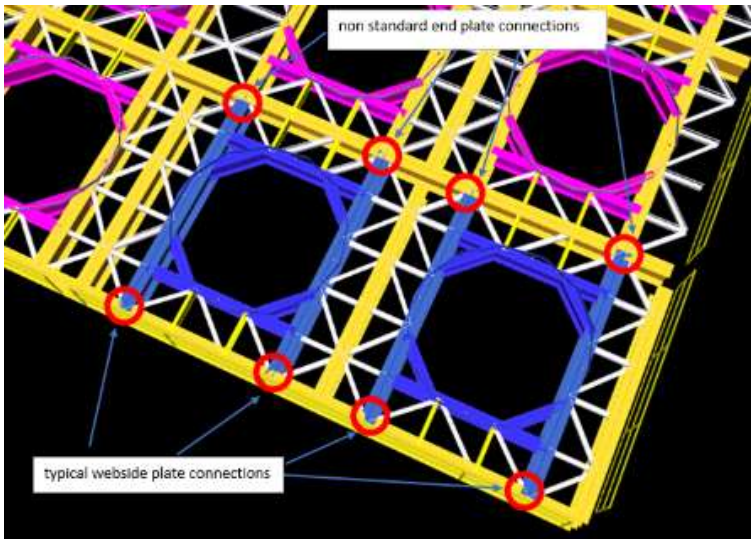


Figure 24: Preassembly scheme for Elutriator support frames

Note that beams in these panels have a 'standard' web side-plate connection at one end, and an extra-long web side-plate connection other-end.

The main columns are stick-built onto top of splice at EL+7.130, and the main framework beams stick-built to these columns. The support frames shown in Figure 24 shall be pre-assembled by the Contractor at a location away from the ME building. By lowering each preassembled frame at an incline, the standard web side-plate connection end may be inserted firstly into the recess of the beam onto its cleat, top bolt/s may be inserted loosely as a pivot-point, following which the other end with extended web plate cleat may be lowered into position, and all bolts installed. The smaller bracing members should be subsequently stick-built into the structure.

The Elutriator vessel shells should be installed onto this level at this stage. Although they will fit through the openings in the floor level above, they are a tight fit, and wind may make later installation difficult. The other three main parts of the Elutriators (Overflow weir, Feeder & Bottom Cone) may be installed at a later stage. The Contractor shall note that correct orientation of the vessel shells is important, and they shall be oriented as described later at *§ 6.6.2.4.*

This level shall include installation of grid-mesh flooring, guardrailing and kickplates around the periphery.

6.6.1.8 Third-Floor level EL+16.330 TOS – Top working level

This level has been designed to be pre-assembled as panels, as shown blue in Figure 25**Error! Reference source not found.** below and as shown in GA-Plan on drawing L200-ST-DRG-1007.

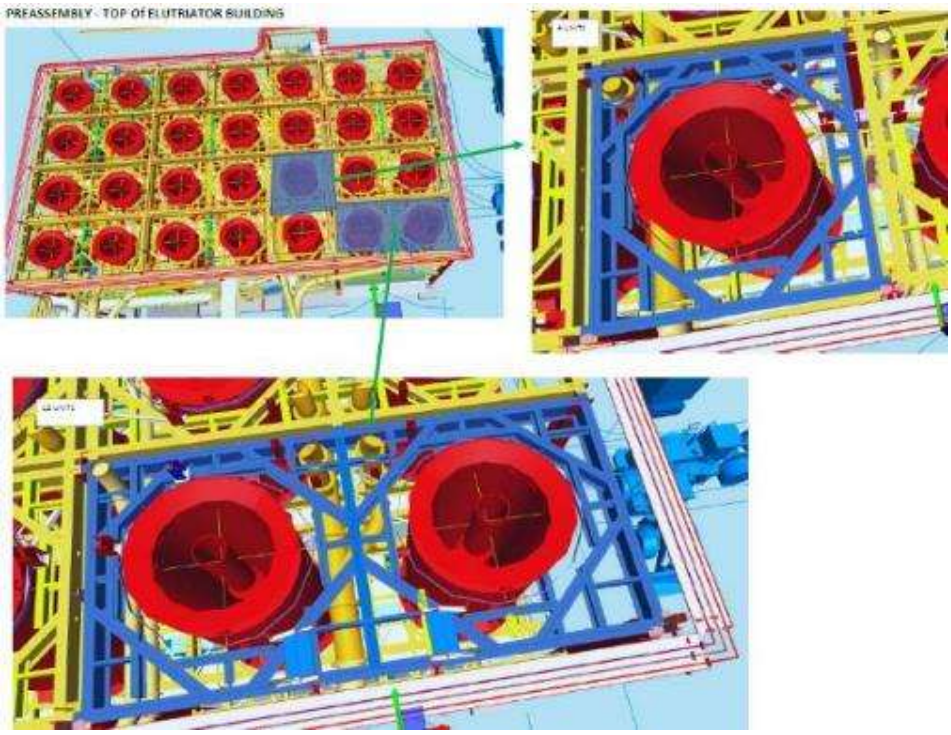


Figure 25: Preassembly scheme for top floor level of ME building

There are two types of floor frames, 4x single & 12x double, as shown. The floor frames shown in Figure 25 shall be pre-assembled by the Contractor at a location away from the ME building, transported to the building and installed as modules.

This level shall include installation of grid-mesh flooring, guardrailing and kickplates around the periphery.

There is a significant quantity of pipe-launders for tailings and their supports to be installed just underneath this floor level, and the Contractor shall consider if this is more efficiently installed from below, or in conjunction with and coordinated with the installation of the grid-flooring.

The Contractor should install the ME Overflow Wells and the Feed Assemblies onto the top of the 28 Elutriator vessels as further described by *§ 6.6.2.4* at this stage, as crane access may be hindered later by the catwalks. The Overflow Wells connect onto the top of the vessels by a large diameter flange. The Contractor shall note that correct levelling and orientation of the overflow weirs is important, and they shall be installed and oriented as described later at *§ 6.6.2.4.* Correct orientation of the Feed inlet nozzle is also important, but this assembly may be rotated later if necessary.

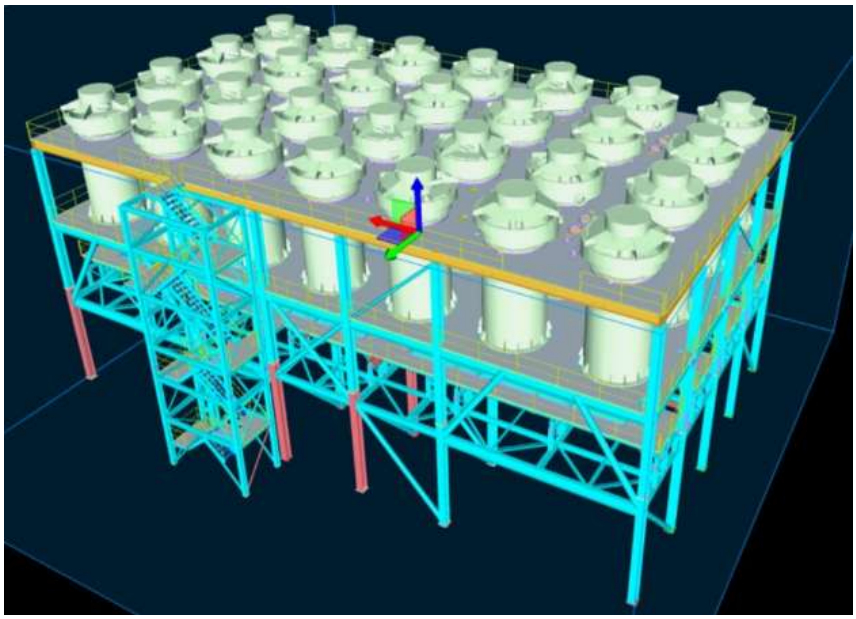


Figure 26: Install Overflow Wells & Feed assemblies; looking SE

6.6.1.9 Upper Catwalk Level – Distributor & Control Panel access

This steelwork is at several levels, interconnected by short flights of stairs, has been designed to be pre-assembled as multiple modules, and is shown in GA-Plan on drawing L200-ST-DRG-1025.

There are four Distributor support platforms, with a roughly circular walkway and guardrailing all round. These shall be pre-assembled by the Contractor at a location away from the ME building, transported to the building and installed as modules. Note that each of these platforms is different, as the support legs onto steelwork at EL+16.330 TOS need to pick up support from beams below which vary by location, and bracing is located to facilite passage of the piping which varies. These platforms are deliberately designed to be bolted together such that they may be partially removed in the future if necessary to allow cranage access should an Elutriator vessel need to be lifted out of the building; the Contractor shall not weld these connections.

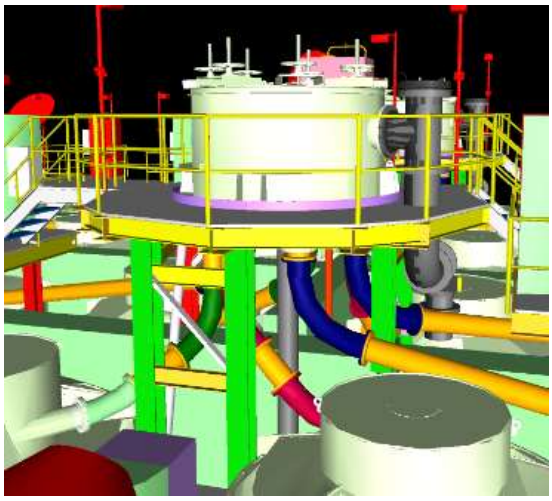


Figure 27: Preassembly of Distributor platform including handrails

The four Distributor support platforms are interconnected by catwalks, which also connect with platforms to support the electrical control panels, one panel per elutriator vessel. The twenty-eight panels are in clusters of two or four, and shall be lifted and secured in place by the Contractor onto these platforms for the benefit of the Electrical trade, as described at § 6.7.2.

The platforming for the electrical panels, the interconnecting catwalks, stairs and landings shall be pre-assembled by the Contractor at a location away from the ME building, transported to the building and installed as modules. This level shall include installation of grid-mesh flooring, stair treads guardrailing and kickplates.

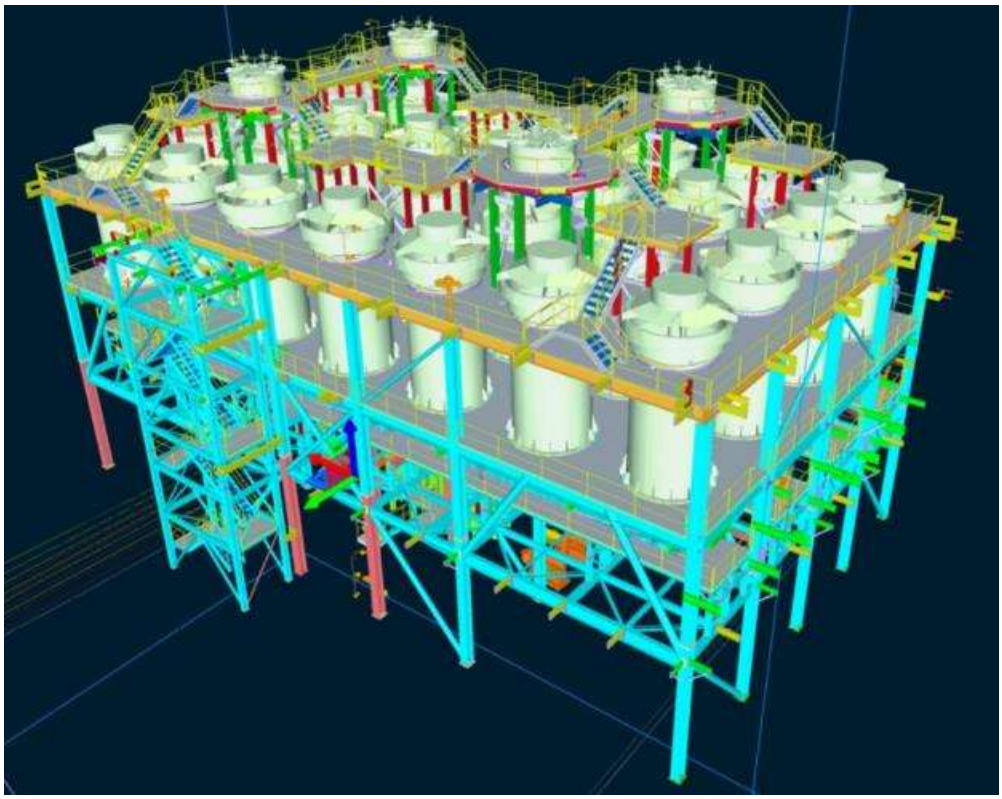


Figure 28: Install Superstructure & Distributors; looking SE

6.6.1.10 Piperack

A new free-standing Piperack as shown on drawing L200-ST-DRG-1018 shall be installed to the West of the CMS building.

This has been designed as shown in Figure 29 below to be pre-assembled as four modules, with temporary bracing to allow modules to be safely lifted and transported. Once the modules are placed onto their concrete pedestals, they shall be interconnected by the remaining stick-build members, and the temporary bracing which is painted in a distinctive colour removed.

The piperack shall be pre-assembled by the Contractor at a location away from the ME building, transported to the building and installed as modules as described above, and the interconnecting steelwork shall be installed.

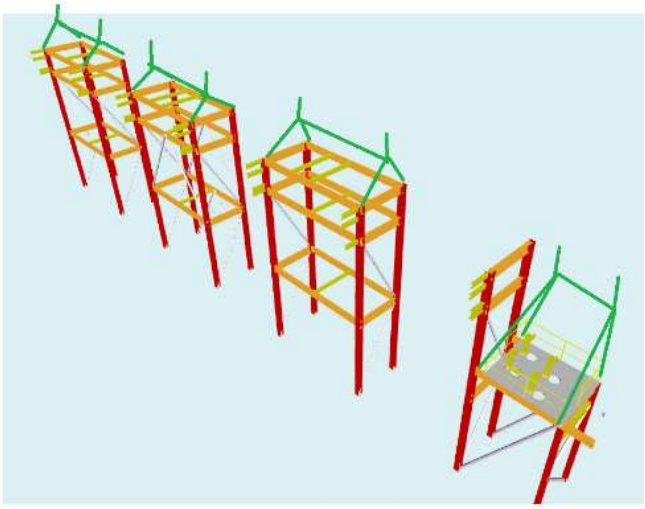


Figure 29: Preassembly scheme for piperack modules

6.6.1.11 Crossovers & Incidental Stairways

There are:

- two stairways and platforms at the slurry hoppers at ground floor level, shown on drawing L200-ST-DRG-1026;
- a stairway and landings at the South East corner of ME to interconnect two levels EL+11.530 TOS to EL+16.330 TOS, and is shown on drawings L200-ST-DRG-1006 and L200-ST-DRG-1007.
- two interconnecting walkways between ME and the existing CMS building:
  - one shown on drawing L200-ST-DRG-1006 is all at level EL+11.530, and involves modifications in the CMS building overhead the existing stairwell ;
  - the second connects EL+6.530 in CMS onto a level platform that connects to the West with a platform to access Magflows between the piperack and the ME building, and connects to the East with a flight of stairs to EL+11.530 in ME.

These platforms, stairways, landings and associated handrailing and kickplates shall be pre-assembled by the Contractor at a location away from the ME building, transported to the building and installed as modules.

6.6.1.12 Handrail as Barrier above RC Kerb

Handrails at ground level are required at the sump pump and the CMS pump area due to height difference from Top of Kerb to ground level. These handrails are detailed to be mounted onto top of RC kerbs and shall be installed by the Contractor using chemi-anchors. See images below:

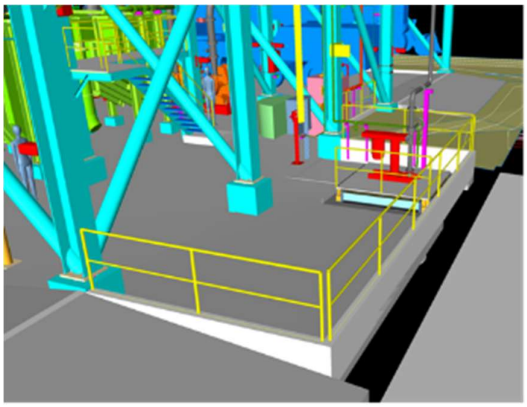


Figure 30: Handrail near sump pump area

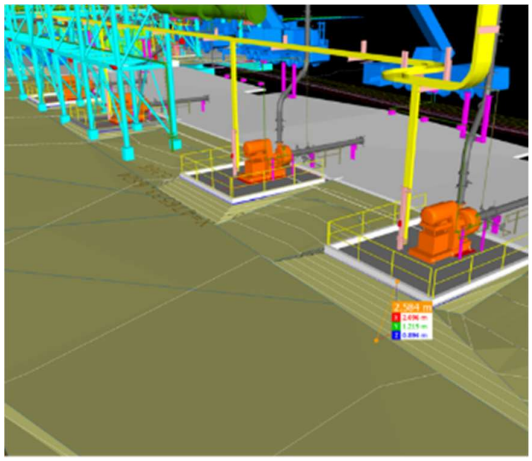


Figure 31: Handrail at CMS pumps (all four similar)

6.6.1.13 Cable Tray Support Installation

The Contractor shall install prefabricated cable-ladder supports (~220 supports) typically at high level (at approximately EL+25.5m) onto existing structural members of piperacks from the CMS/ME area to Switchroom 102C (to the SouthEast) & Switchroom 102D and to Switchroom 109 (to the West). Contractor shall site drill the bolt holes for the mounting of these supports. The layout of the cable tray support to 102C & D is as follows:

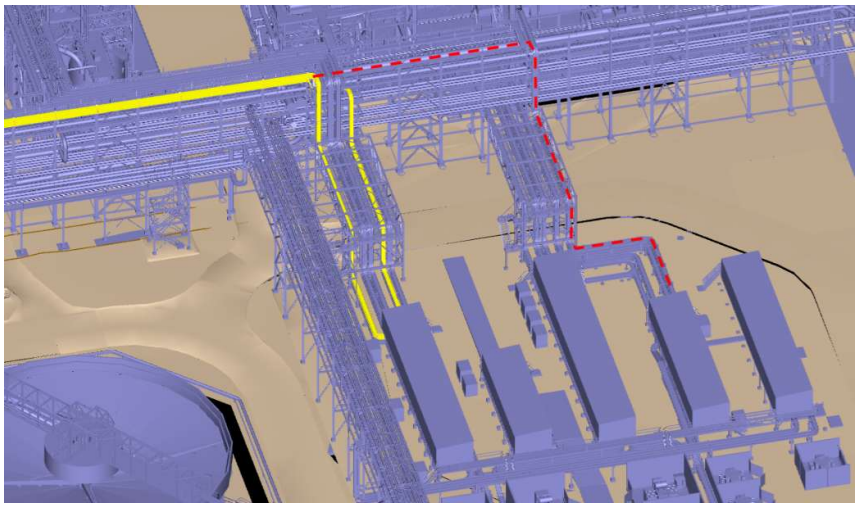


Figure 32: Cable Tray Route to 102C & 102D

6.6.2 Mechanical & Equipment Installation

Mechanical Equipment shall be Company supply unless otherwise noted. Please refer Mechanical Equipment List L200-ME-LST-0001 and §4 above for details of the free issued mechanical equipment.

Mechanical installation shall be generally in accordance with the Company's General Notes standard drawing CORP-ME-DRG-1002_RDL, UON.

6.6.2.1 General

The works shall include but not necessarily be limited to:

- Assembly, placement, installation, alignment and pre-commissioning of all mechanical equipment and platework in accordance with the Contract Drawings, 3D-model, standard drawings, Specifications and OEM documentation including installation of all ancillary items (e.g., sealants, gaskets, etc.).
- Supply of packers and shimming materials for packing and shimming of structural assemblies, mechanical equipment, base plates and platework to cover any shortfall in the materials supplied with equipment.
- Supply and installation of grout for all baseplates and equipment.

The Company strongly recommends that equipment items should be put in place onto their hold-down bolts, levelled & shimmed, but not grouted or finally fixed in place until after its associated piping has been attached or offered up. This is because much of the piping is supplied as prefabricated spools, and the flexibility of a few millimetres in the positioning of equipment may be helpful in achieving alignments without excessive cold-spring or rework of the piping.

The Contractor shall keep records and verify installation of all structure and equipment by performing regular surveys during each stage of installation.

6.6.2.2 Major Equipment Items

The following major items of equipment as listed in § 4 shall be transported from the laydown area for unloading, assembly and installation into the building by the Contractor as described further below.

6.6.2.3 Feed Distributors

There are four (4) Feed Distributors shown by drawing L200-DB-DRG-1001, approx. 4900kg, each containing seven (7) dart valves, to be installed at the top of the building as part of the Works. Bottom-inlet piping, overflow and outlets shall be piped as per *§ 6.6.3 Piping* below.

The Contractor shall install, shim and level the distributors, install the overflow piping, and shall ensure the correct orientation of each distributor as per the drawings and 3D-model supplied.

Dart valves are pre-installed by the supplier.

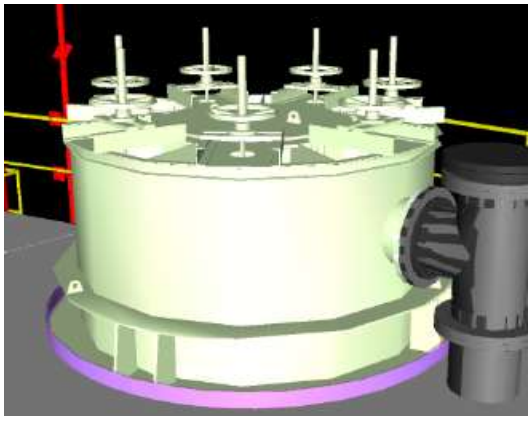


Figure 33: Typical View of Feed Distributor

6.6.2.4 Elutriation Columns

There are twenty-eight (28) Magnetic Elutriation Columns, their associated PLC/control panels and related auxiliary equipment to be installed as part of this works. All Elutriation columns will be transported to site as four separate items - Vessel (21500kg), overflow well (2300kg), feeder assembly & bottom cone assembly (1555kg), as depicted in drawing L200-EC-DRG-1009.

Figure 34: Typical View of a similar Elutriation Column

The orientation for each elutriator part can vary by position in the building - the Contractor shall ensure the orientation of each part of each column is as per the drawings and 3D-model supplied.

The Elutriators are fabricated predominantly in 316L stainless steel, unpainted; however its large diameter flanges are in carbon steel and coated in polyureathane for corrosion protection. The Contractor shall take care not to damage the surface finish of the stainless steel by scratches or dents with chains, slings, etc.

The main vessel body is shown by drawing L200-EC-DRG-1003 and comprises stainless steel inner and outer shells, with magnetic coils factory-installed between both shells, welded to a bottom cone with two DN200 water inlet nozzles which connect internally to two water distributor pipes inside the vessel. The elutriator PLC uses control valves on each of these water inlets to control the swirl of the liquid inside the vessel, and the Contractor shall note that one of these internal pipes is longer than the other; it makes a difference which way around the vessel is oriented. The Contractor shall install the elutriator vessels such that the longer internal pipe is to the East for all 28 vessels, as shown in orange in the sectional view below:

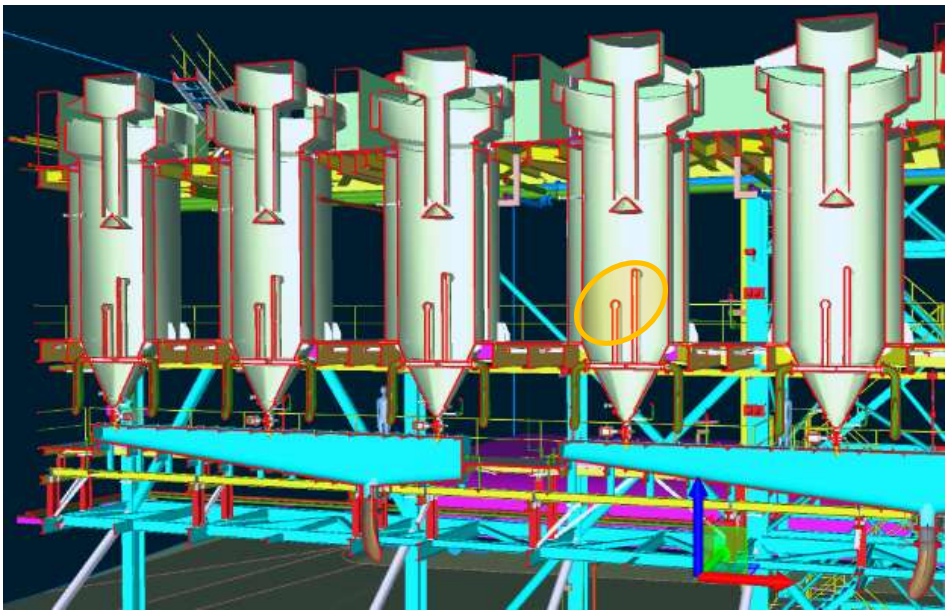


Figure 35: Sectioned View of Elutriation Columns, looking North-West

The vessels bear onto EL+11.530 TOS by a wide CS flange with multiple gusset plates, just above the vessel cone. This flange has four ø40 slotted fixing holes. The Contractor shall supply M36 Grade 8.8 High Strength galvanised bolts, nuts and washer assemblies for vessel hold-down. A washer shall be used on the slotted hole of the vessel and also at underside of steel.

Each vessel has two DN50 flanged nozzles mid-way up the vessel body, for a pressure sensor. Only one of these nozzles is used, the other shall be blanked with the blind flange supplied. At the edge of the building due to the orientation of the vessels, one of these nozzles may be almost overhead the handrail, in which case this nozzle shall be blanked. The other nozzle will be fitted with the pressure transmitter.

The main vessel shells should all be put in place by the Contractor once the steelwork has been erected to EL+11.530 TOS, before raising the next structural level, as vessel cranage will be much easier at this stage. The Contractor shall install the 28 bottom cones at any subsequent time by agreement that suits. The overflows and feed assemblies should be placed later, once steel at EL+16.330 TOS has been erected.

The bottom cone is rubber-lined for wear resistance, shown by drawing L200-EC-DRG-1002 with its flange & bolting shown on drawing L200-EC-DRG-1003, and is attached to the bottom of the vessel cone by a flange with 12-off ø20 holes. It has a side nozzle and pressure transducer nozzle that shall be aligned correctly, as shown in the 3D-model.

The overflow well assembly is shown by drawing L200-EC-DRG-1004 and is attached to the top of the vessel shell by a large flange with 40-off ø36 holes. The outlet nozzle of each well needs to be oriented such that its piping will discharge through the floor penetration into the tailings launder under EL+11.530 floor level, which means that the overflows will have varying orientations, as shown in the floorplan.

For all 28 vessels, the Contractor shall lift each overflow well, supply bolting and install it in its correct orientation onto the vessel shell using the rubber gasket provided with each vessel. The Contractor shall level the top of the overflow weir to within ±1mm.

The Feed assembly is shown by drawing L200-EC-DRG-1002, and comprises a feedwell with tangential inlet nozzle, and a large diameter central feed pipe that reaches down into the vessel, with a bell-mouth at the bottom, which distributes the slurry into an upward flow of process water.

The feed assembly rests onto the top rim of the overflow weir assembly by five radial legs, and may be rotated in place to adjust alignment. There are bolt holes provided to fix it in place to the rim of the overflow well, but it is recommended that these are not fitted until after the piping has been installed. The Contractor shall bolt the five support legs to the feedwell.

Each feed assembly comes with five mesh guards supplied loose, which the Contractor shall install by bolting onto angle brackets provided on the support legs. Four of the guards are inclined at an angle, while the fifth under the inlet nozzle is horizontal. These guards are intended to deflect tools or personnel from falling into the deep liquid of the vessel – they are not intended for standing upon, and warning signs to this effect should be already fixed to the vessel.

Mounting of the control cabinets and junction boxes in position shall be by the contractor, as described at 6.7.2.

6.6.2.5 Elutriation Concentrate Launders

There are a total of eight Concentrate Launders which are fed from the four banks of Elutriation Columns. These launders are rubber-lined internally & painted externally, shown by drawings L200-ME-DRG-1037 & -1038 and will be supplied flat-packed on pallets in sections ~2m long, for bolting-assembly and installation by the Contractor. Each bank has one short and one long launder, shown in drawing L200-ME-DRG-1011.

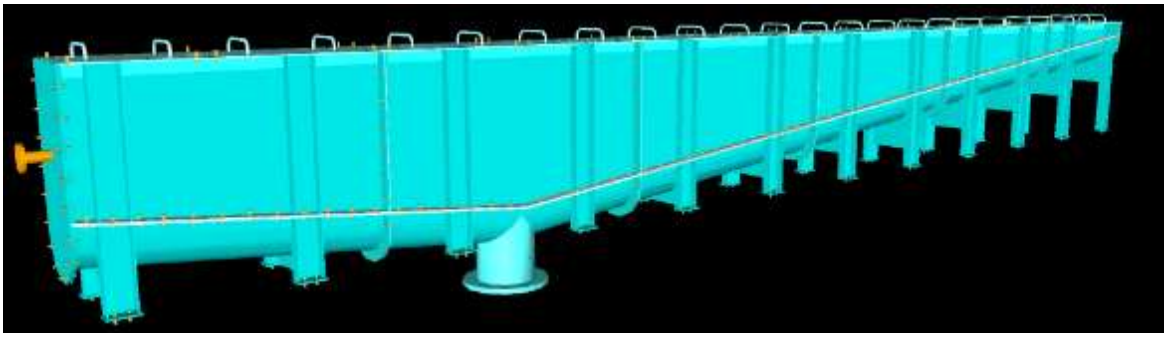


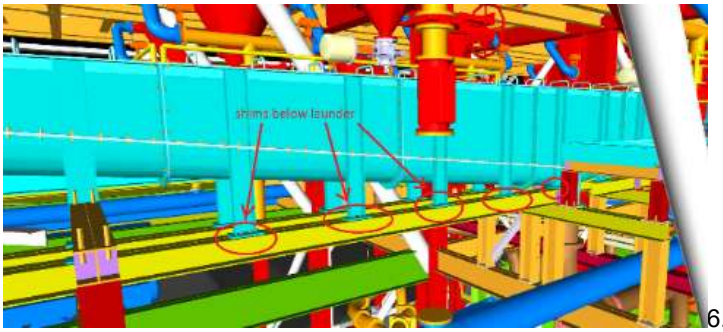
Figure 36: Typical view of short Concentrate Launder

The launders are supplied as flat side panels and half-pipe troughs, which shall be bolted together by the Contractor in 2-metre modules to form the launder. Due to the varying depth of the launder there are five types of side panels (each in lefthand and righthand), and the intent is that any lefthand type-3 panel (for example) will be interchangeable with any other lefthand type-3 panel (i.e. they are not match-marked).

The Contractor shall apply a thin smear of silicone-base grease to the full face of each mating rubber face (both faces) prior to assembly, so that the rubber will not bind and tear on disassembly. No other gaskets are

required. The Contractor shall pre-assemble and trial-fit up the launder modules at a location away from the ME building, transport them to the building and install the launders as modules. However, the Contractor shall note that the entire launder is not designed to be lifted as a complete unit and would buckle under its own weight. The Contractor shall install the stainless steel launder lids onto the *anti-luce* fasteners provided. Bolts should not be fully tightened until adjacent items have been offered-up, for alignment.

There is provision for shimming under the legs of the launders as shown in Figure 37 below; however the flexibility of the rubber lining, the bolted construction and trial fit ups should allow the same shims or minimal shimming to be used.



6.7.2

Figure 37: Typical shimming at the underside of the launder column bases

6.6.2.6 ME Concentrate Tanks

Each bank has one short and one long launder, with run-down piping to a concentrate tank at ground level. There are four new rubber-lined concentrate tanks (“Hoppers”) which shall be installed at ground level in the Elutriation building as part of the project.

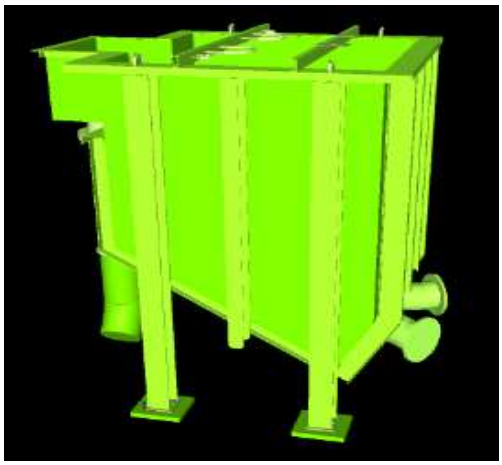


Figure 38: Typical view of Concentrate Tank

Four (4) new fully-welded shop-fabricated rubber-lined rectangular Concentrate Tanks (12m^3, ~4½t each), 1310-TK-100 / -101 / -102 / -103, shown on drawings L200-ME-DRG-1036 and -1039, with their access stairs

and platform (drawing L200-ST-DRG-1026), shall be installed onto concrete pedestals shown in drawing L200-ST-DRG-1020/ -1021/ -1024 at grade (EL+0.700) under the new ME building, generally as shown in GA drawing L200-ME-DRG-1001. This Contractor shall install, level and grout each tank onto 8-No M24 cast-in hold down bolts provided by others.
The Contractor shall rotate and re-support the DN400 overflows to Nozzle N3 of each of these tanks, shown on drawing L200-ME-DRG-1036, such that the discharge bend shall be oriented towards the building's sump. The overflow piping is not rubber lined. The overflow is pre-fitted and provided with the support shown, but its orientation is likely to be incorrect.

6.6.2.7 CMS Concentrate Pumps

Four new CMS concentrate pumps shall be installed in the CMS building as shown on drawings L200-ME-DRG-1030 & -1031. These pumps shall be installed early in the works programme and will be required to be commissioned early, before the new building is complete. Construction and change-over concept for these is described at § 6.2.1 above. Final connection and changeover of the piping and these pumps shall be coordinated one bank at a time with Operations during shutdown/s or at an opportune window to minimise disruption to the operations of the plant.

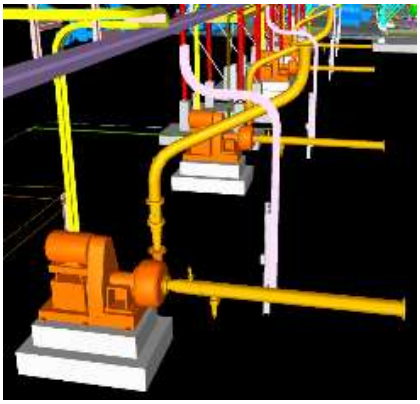


Figure 39: Typical view of CMS Concentrate Pump/s

Four (4) new Warman 10/8AH CMS Concentrate Transfer Pumps 1310-PU-146 / -147 / -148 / -149 including their pre-assembled 150kW motor, belt-drive and base frame as shown on vendor drawing A441380-S1 shall be installed levelled and grouted onto 6-No M42 hold-down bolts per pump, which are cast into concrete plinths provided by others at grade under the new piperack West of the CMS building, as shown in drawing L200-ME-DRG-1030 and -1031. The Contractor shall supply and install shims, bolting, grout and chemical anchors as required, align the drive , fit the guards, install and connect the gland water.

The Contractor shall install a completely new gland water arrangement at each new pump in order to facilitate a quick shutdown and changeover from existing pump to new. This shall include pre-installing gland water piping back to a point close to the existing valved tie-in (e.g. TP-046 for Bank-4); the final connection at the tie-in shall be made during shutdown.

The Contractor shall pre-install new pump discharge spools from the discharge of the new pump to a point close to the tie-in at the underside of the existing Magflow & Density meter on the platform overhead (e.g. TP-039 for Bank-4), in order to facilitate a quick shutdown and changeover from existing pump to new. Changeover during shutdown should be limited to removing one or two spools from the existing pump and replacing with one or two alternative spools to connect the new pump to the Magflow at the tie-in point. The remainder of the redundant piping from the existing pump may be removed later, after the shutdown, and shall be transported to an on-site laydown area for relining by others.

During the shutdown, the Contractor shall disconnect the existing pump's suction & discharge piping, and remove the existing pump from its concrete and hold-down bolts with minimal damage to the pump, piping and baseframe. Portions of the suction piping shall be re-installed – see below. The pump and redundant piping spools shall be transported and laid-down by the Contractor at an on-site laydown area to be nominated by the Company's Representative. The concrete plinth shall be made good and remains in place.

During the shutdown, the Contractor shall disconnect the DN300 standard suction spool 'PSD005' (drawing CORP-PI-DRG-1142) complete with its drain valve at the tank discharge nozzle (e.g. TP-014 for Bank-4) and at the *Straub* coupling, for re-use. The Contractor shall install and support the new straight spool onto the tank nozzle (TP-014), re-install the standard suction spool PSD005 its drain valve and Straub coupling, and the new PSD010 spool to connect to the suction of the pre-installed new pump. A new Straub coupling and PSD005 spool will be available if the existing are not re-useable; existing drain valve shall be reused.

6.6.2.8 ME Concentrate Pumps

Eight new ME concentrator pumps to be installed as duty/standby pairs on the ground level in the Elutriation building as part of the project.

Eight (8) new Warman 8/6 AH ME concentrate Transfer Pumps 1310-PU-560 to -567 as shown on vendor drawing A441419-S1 including their pre-assembled 110kW motor, belt-drive and base frame, shall be installed levelled and grouted onto 6-No M36 hold-down bolts per pump, which are cast into concrete plinths provided by others at grade under the new ME building, as shown in drawing L200-ST-DRG-1022 and L200-ME-DRG-1001. The Contractor shall supply and install shims, bolting, grout and chemical anchors as required, align the drive, fit the guards, install and connect the gland water.

The Contractor shall note that the pump plinths are deliberately set at an angle to the East-West axis to increase space between the pumps, and the cable-entries and gland water arrangements have been located outside this space to reduce clutter and improve access. Pumps have left-hand / right-hand characteristics.

6.6.2.9 Sump Pump

The Contractor shall assemble and install one sump pump base frame and sump pump in the ME Building.

One (1) new Warman GPS100-VEH-C Sump Pump assembly 1310-PU-568 with 22kW motor and belt-drive as shown in vendor drawing A441438-S1 shall be installed onto the sump frame and installed into the concrete sump pit shown in drawing L200-ST-DRG-1020 as part of the concrete slab of the new building. This includes supply of chemical anchors, assemble install level and grout the free-issue pump mounting frame drawing CORP-ME-DRG-1003 with mesh side guards onto the concrete, installation of the pump onto the frame, alignment of the belt drive, refitting the guard, installing and connecting the gland water.

6.6.2.10 Sump Monorail

The Contractor shall install one monorail and its end-plates in the ME building over the location of the sump. This monorail is part of the structural steel package.

6.6.2.11 Electrical Control Panels & JBs

The Contractor shall supply bolting, lift position and fix twenty-eight elutriator control cabinets onto the upper catwalk level EL+19.5, one 1310-MP-030 Marshalling Panel onto top steelwork level EL+16.33, and one 1310-PC-210 Control Panel at ground level as shown on the GA drawing L200-ME-DRG-1025 and as further described at 6.7.2.

The Contractor shall provide mountings (*Unistrut* or similar, as per corporate standard installation drawings) and shall put in place twenty-eight (28) Junction boxes ("JBs") 1310-JB1-211 xx near the bottom cone of each elutriator vessel as directed by the Electrical Contractor, and as further described at 6.7.2. For information, there is a further JB pre-fitted to each elutriator vessel for termination of the magnetic coils.

Inline instruments such as Magflow flow meters, control valves and the like shall be installed by the Contractor as part of the piping run. Refer Instrumentation list L200-IN-LST-1001.

Electrical cabling or connections are included in SOW.

Any structural supports or brackets whose purpose is to support electrical items such as cable ladders or enclosures shall be installed by the Contractor.

6.6.2.12 Grouting

Contractor shall scabble top of concrete as necessary, provide all materials and perform grouting of the structural column bases and mechanical equipment bases to details on the relevant drawings and specifications.

The Contractor shall supply, install and bench grouting to fill the pump base frames after pump installation, both to provide mass for stability and reduce vibration, but also to assist with housekeeping.

6.6.3 Piping Installation

Piping shall be installed by the Contractor; this shall include any fabrication, welding, supports, insulation, cladding, flushing, inspection, testing, hydro-testing and NDE required per the Piping Line Specification or AS4041 for that piping class and KML's *Piping Fabrication and Installation Specification* 1300-PI-SPC-1002.

The Contractor shall:

a) Install piping, pipe fittings, flanges, valves, in-line instrumentation, SP-Items, all piping supports, pipe insulation and cladding (if nominated in the piping Line-Specification), as per the requirements in the drawings and specifications
b) Supply any additional materials not indicated by the piping isometrics.
c) Carry out Tie-ins to the existing process as described in 6.6.3.7.
d) Installation, inspection, testing, finishing and identification of piping shall be as carried out as per KML's Piping Fabrication and Installation Specification 1300-PI-SPC-1002.
e) Installation of all materials including piping, pipe fittings, flanges, valves, gauges, gaskets, sealants, bolts, nuts, washers, brackets, hangers and pipe supports required to complete the Works.
f) Installation of pipe supports in accordance with the Pipe support Standard drawings, the piping Isometric drawings ('ISOs') and Engineering Specifications even if not shown on the General Arrangement drawings;
g) Piping, in particular instrument air lines, shall be "blown through" prior to installation of the filter/ regulators.
h) When installing valves, the Contractor shall be alert to the arc of swing of manual valve handles or rising valve stems and shall ensure that the valve does not clash in operation with other adjacent items such as flooring or piping and does not intrude excessively (create a safety hazard) into walkways. It is permissible to roll a valve through one or more boltholes to achieve this, although orientations with valve stem downwards are non-preferred. The Contractor should seek guidance from the Company's Representative where doubt exists. Valve handles that clash or present a safety hazard shall be rectified at the Contractor's expense. Where practicable, valve handles should point in the direction of flow when the valve is opened.
i) Mark all pipelines including colour coding and hazardous identification labelling in accordance with the specifications. Labels and markers shall be supplied by the Contractor.
j) Route, design, fabricate and install all field run small bore piping and its pipe supports or structures. The Contractor shall provide the necessary equipment for fabrication, threading, and installation of threaded piping.
k) The Contractor shall prepare and submit As-Built drawings for site run small bore piping.

Please refer below documents (and the drawings referenced within), and the 3D-model for the extent of piping works for this project.

Document Number	Description
L200-PI-DRG-1005	SERVICES & SMALL BORE TIE IN DETAILS
L200-PI-DRG-1006	PUMP SUCTION & FLUSHING DETAILS
L200-PI-DRG-1008	TAILINGS LAUNDER DETAILS & TIE IN
L200-PI-DRG-1009	MAG FLOW PLATFORM ARRANGEMENT
L200-PI-LST-1001	Piping line list
L200-PI-LST-1002	Valve list
L200-PI-LST-1003	Tie in list
L200-PI-LST-1004	SP items list
L200-ME-MTO-1002	Piping MTO

Rubber lined piping spools, fittings and bends are typically flanged both ends and as listed in document L200-ME-MTO-1002.

Non-rubber lined piping, fittings and bends of size DN65 and above as listed in document L200-ME-MTO-1002 will typically be pre-fabricated into flanged spools to the maximum dimensions that will fit into a sea-container. There is expected to be minimal site fit-up or site welding required for these.
Stainless steel potable water piping is supplied as stock lengths of Sch.40S pipe (nominally 6m) with all valves, flanges and fittings supplied loose. The Contractor shall fabricate stainless steel piping by welding, and install on shoe-type supports.
The Contractor will supply standard stock lengths of medium-wall pipe (nominally 6½m) for small bore piping (DN50 and smaller) of line specs SC1 & SG1. The Contractor shall fabricate (typically by threading), support and install these small-bore piping runs onsite. This includes gland water piping, plant air piping, process water piping and fire water piping. Fabrication and installation of small-bore piping shall be carried out as per KML's *Piping Specification* 1300-PI-SPC-1001 and *Piping Fabrication and Installation Specification* 1300-PI-SPC-1002.

Piping DN50 and smaller will not normally have isometric drawings provided or pipe support details nominated by the Company, but routing will typically be indicated on Plan, Elevation and Sectional drawings, or by means of the NavisWorks 3D-model; Piping DN32 and smaller shall be site-run to a routing to be agreed with the Company's Representative. The Contractor shall prepare and submit an isometric drawing routing proposal, as described in § 4.6 of the Piping Installation Specification 1300-PI-SPC-1002. For piping DN50 and smaller the Contractor shall supply, fabricate, paint and install pipe supports according to the suite of Corporate Standard Piping Support drawings indexed on drawing CORP-PI-DRG-1034, or as agreed with the Company's Representative on site.

Installation of piping spools shall typically require assembly and erection of pipe supports. Pipe supports will include U-bolts where applicable, and bolt-on shoe type supports will include the clamp bolting. All other pipe support bolting such as structural bolts to secure a pipe support baseplate to existing steelwork, or hardware such as turnbuckles shall be by the Contractor. All pipe flange bolting, gaskets, thread-seal tape etc shall be by the Contractor.

Material Certificates - typically EN10204 Type 3.1 certificates - shall be provided for any Contractor-supplied materials where required by the Piping Line Specification or AS4041 *SAA Pressure Piping Code*.

Valves, loose pipe fittings, SP-Items , instruments and flanges are so indicated in the Piping Isometric drawings, but will be supplied bulked together and crated; valves and instruments will be tagged, packaging to be advised via the Packing Lists issued during shipping. The Contractor shall allow for handling, sorting, storage and installation of these as required. In-line Instrumentation will be advised via a separate Instrument List L200-IN-LST-1001 (i.e. these are itemised in § 4). In-line Instrumentation shall be installed in accordance with KML specification CORP-IN-SPC-1007.

The Contractor shall include installation of any incidental drain legs and vent lines where shown on the drawings or P&IDs.

The Contractor shall note that several KML piping line specifications use the proprietary Victaulic grooved pipe-end fitting system extensively, but its use has been discontinued for all new work on site, and Victaulic locations will instead use flanges or butt-weld fittings.

Other than above-ground Potable Water lines (which shall be insulated '-C' to restrict solar heat gain), insulation is not foreseen in this project; see 1300-PI-SPC-1004 *Thermal Insulation Specification*. Pipe will be supplied without insulation or cladding. The Contractor shall supply fabricate and install all insulation and cladding required by the Line-Specifications of KML's Corporate Piping Specifications.

Since a major proportion of the piping is supplied as pre-fabricated rubber lined flanged spools, it is strongly recommended that the Contractor should install all of each run of piping (e.g. from pump to tank), holding-back on installing pipe anchors until it can be established that the piping will align and connect. It is often possible to "shuffle" piping along in the piperacks to achieve alignments before it is locked in place, rather than resort to spacers or field-welded 'special' spools. Anchors etc shall be installed once alignment is achieved.

6.6.3.1 Flange Bolting & Gaskets

Flange bolting shall be Contractor supply and shall be galvanised Metric Hex-Head Machine Bolts UON, (as opposed to stud-bolts). Accepted metric equivalent sizes for the usual Imperial inch-size bolts are given in § 6 of Piping Spec 1300-PI-SPC-1001.

Lug-type Butterfly valves "BF2" are only supplied to suit Imperial [UNC] bolting according to the native ANSI B16.5 150# flange specification, and the valves are to be fitted with a SS tag by their supplier to highlight this exception. The Contractor shall note this exception, shall supply appropriate UNC bolting and tooling to suit, and shall take care to avoid confusion on this point.

The piping specification typically specifies ASTM A193M Gr.7B flange bolts & A194M 2H nuts for SC1, SG1 & SR rubber-lined piping. Since the operating fluid pressures on the KML site are relatively low (by comparison to oil & gas plants for example), the bolting specification may be relaxed to galvanised machine bolts & nuts Grade 8.8, which are likely less expensive and on faster lead-times.

The Contractor shall supply & install a thin flat washer under at least one of the ends of the bolting (usually under the rotated element, typically the nut). The KML Piping Specification has omitted this. Washers need not be thick, preferably galvanised, but zinc-plated might be considered (black CS is unacceptable).

The Contractor shall include for provision and implementation of a suitable Flange Management procedure including checking and signoff, for installation.

Note that Warman pump suction and discharge flanges are vendor 'specials', i.e. not standard ANSI 150# flanges, gaskets or bolting; see pump drawings or CORP-PI-DRG-1128. Mating flanges are provided pre-welded as part of the prefabricated piping spools.

All gaskets and thread-seal tape etc shall be by the Contractor.

Klinger-C4243 gasket material as nominated in the Piping specification 1300-PI-SPC-1001 has been replaced by Klinger-C4430.

Contrary to the Piping specification 1300-PI-SPC-1001, Klinger-type gaskets are not required between rubber-lined piping flange faces. The Contractor shall instead apply a thin smear of silicone-based grease (such as "*Red Rubber*") to prevent the rubber faces binding to each other; (note: not a Lithium-based lubricant grease).

6.6.3.2 Special Piping (SP) Items

SP-items typically include items such as Straub couplings, flexible hoses, hose clamps, spray nozzles, Camlock couplings, Minsup couplings, air trap/drains, and the like.

Special Piping (SP) items, as specified in L200-PI-LST-1003 shall be supplied and installed by the Contractor.

6.6.3.3 Small-Bore (<DN50) Piping

Galvanised pipe and fittings line spec SG1 in place of plain carbon-steel pipe and fittings of line spec SC1 for small-bore piping.

Equally, the Contractor may choose to provide galvanised pipe or fittings for any small-bore materials that the Contractor may be required to supply.

6.6.3.4 Rubber-Lined Piping SR1 & SR2

Rubber-lined piping SR1, SR2 & SR3 are all fabricated from the same materials and to the same dimensions; the difference is in their working pressure and test-pressures. SR1 is for normal duty; SR2 is for gravity-flow and atmospheric launder flow; SR3 is a higher-pressure system that is not used in this project.

Rubber-lined piping SR1 & SR2 are spooled items, flanged both ends, with no site welds foreseen.

Straight spools are 6m max, flanged both ends. There was an effort to standardise straight spools into standard 1m / 2m / 3m / 6m lengths, which should all be interchangeable, but this was not always possible and each run will include a straight spool of other length to make up the distance required.

Fittings & bends are typically to standardised dimensions, flanged both ends, and fittings of the same size/type are intended to be interchangeable. For example, all DN400 SR1 bends should be interchangeable - not unique or dimensionally different to another - although each supplied will have a unique piece-mark (for shipping purposes, & to relate to the relevant ISO drawing).

Not all –ST- and –SF- lines are fully rubber-lined; drains, vents & sump lines and the like may be SC1 carbon steel after a spec-break [this is indicated on the ISO-drawings].

A small proportion of the rubber-lined piping is comprised of semi-flexible mining hose, line spec MH1 of specification 1300-PI-SPC-1001, which allows for some flexibility in installation. These hoses typically have a slip-flange (lap-flange or rotatable flange) one end.

Some of the rubber lined spools and fittings are supplied with a slip-flange one end, where it has been identified that this is necessary to accommodate falls in the piping run.

The Contractor shall correctly orient any hose or spool with a slip-flange to make use of the slip-flange to best advantage.

Contrary to the Piping specification 1300-PI-SPC-1001, Klinger-type gaskets are not required between rubber-lined piping flange faces. The Contractor shall instead apply a thin smear of silicone-grease to prevent the rubber faces binding to each other.

Any existing rubber-lined piping that becomes redundant during the tie-in or installation of the project shall be removed without damage and transported to an on-site laydown area nominated by the Company's representative, for relining by others.

6.6.3.5 Pipe Supports

Major pipe supports such as pipe-racks, pipe bridges, large T-posts and 'goal-post' style pipe supports will be supplied and erected by the Contractor. The Contractor should note that pipe supports that are included in the Structural steel package will not include any hardware such as bolting, PTFE sliding surfaces, pipe-hangers, pipe shoes or chairs, chains, hammer-lock fittings, turnbuckles, shackles, etc., which shall be supplied and installed by the Contractor.

KML have the quantities of U-Bolts and bolt-on Pipe Shoe supports/stops/guides as indicated by the Isometrics at May-2023 to be fabricated by Contractor.

The basic brackets shown in these drawings comprising structural section and plate weldments will be hot-dip galvanised and are expected to arrive with the third delivery of structural steel (ex-China,). Note that bolting / hardware including U-bolts indicated on these drawings shall be supplied by the Contractor.

All other pipe supports shall be supplied, painted and installed by the Contractor. This shall include all mounting hardware, site-welding painting touch-up and making good as required.

It is anticipated that attachment points for secondary steelwork such as platforms, walkways, handrails, bracing, pipe supports, cable ladders and electrical/Instrumentation cabinets will be by bolted attachment to the main steel, not site-weld and not site-drilled, and the bolt-holes required for this will be included in the 3D-model, so that the primary steel (or equipment) will be supplied with these bolt holes shop-drilled.

Any additional piping supports deemed necessary shall be selected/designed by the Contractor according to the support style nominated on the drawings or the KML pipe-support Corporate Standard drawings (indexed on drawing CORP-PI-DRG-1034). The Contractor shall supply materials, fabricate, paint, install and make good after installation, which shall include site-welding and site-drilling where required.

The Contractor shall note that the suite of KML Corporate Standard Pipe-Supports are based upon Australian structural sections and sizes, and that the majority of structural steel supplied will be to Chinese standards and

dimensions. The Contractor may use Australian sections when supplying materials, but shall accommodate the dimensional differences that may be found, especially at connections (gussets, cleats, bolt-holes, etc.).

Pipe Supports for Small-bore threaded piping may be a clamp-on support system such as *Unistrut*.

Pipe Supports for Stainless-Steel SS1 piping

Stainless steel welding piping is used for Potable Water (-WO-) to the eyewash stations, is mostly DN50 within this work scope, and needs to be insulated, hence is supported on bolt-on pipe shoes J-060C.

6.6.3.6 Piping - Detail

The following (non-exhaustive) narrative provides additional detail of the Piping scope of work, generally following the plant's flow-path; and see also the Piping Line List L200-PR-LST-1001.

The Contractor shall supply & install the following piping:

1. Install DN250 rubber-lined feed piping spools and supports, four separate lines in total, from Tie-in point TP-11/-12/-13/-14 at the CMS slurry tanks at ground level to the suction flange of their respective new CMS pump. These shall be installed during shutdown of each bank, while the existing pump is changed-over to the new larger pump. An existing suction spool and the existing DN100 drain valve shall be reused. Installation comprises primarily the installation of one new straight spool, relocate the existing spool & drain, realign/adjust the existing *Straub* coupling, and support.

   Install DN250 Rubber-lined piping spools and supports, four separate lines in total, from the CMS pump discharge flange up to Tie-in point TP-39/-40/-41/-42 typically on the underside of the existing Magflow on the walkway overhead. Due to physical layout the piping arrangement varies for each CMS Bank.

   The Contractor shall verify the new and existing spools dimensionally and the site dimensions to ensure correct fit before the shutdown is begun. Further detail for the installation of this suction/discharge piping and how it is to be co-ordinated during shutdown for changeover from existing pump to new pump is given at § 6.6.2.7 for the pump install. This work item shall also include pre-installing gland water piping for the new pump up to its tie-in point TP-43/-44/-45/-46 and final connection during the changeover shutdown. Fabricate, install and support the glandwater arrangements shown in standard drawings CORP-PI-DRG-1127, CORP-PI-DRG-1198 and CORP-PI-DRG-1200 for each pump, which includes several SP-Items.

2. Install DN250 rubber-lined feed piping spools and supports, four separate lines in total, from Tie-in point TP-01/-03/-05/-06 after the Magflow/Density Meter in CMS (drawing L200-ME-DRG-1005) through the new piperack into the ME building, to connect to the underside of each Distributor at the top of the building. Due to physical layout the piping arrangement varies for each Bank. Banks -3 and -4 at CMS reuse some existing piping from the Magflow/Density Meter to the tie-in points TP-05/-06, which should be left undisturbed. The final connection at TP-01/-03/-05/-06 can only be made during shutdown when the ME building is complete and ready for change-over.

3. Install DN250 rubber-lined feed piping spools and supports, seven separate lines for each of the four distributors (total 28-off lines), from the dart-valve discharge on the underside of the distributor to the feed nozzle of each Elutriator.

Install DN400 overflow Tee and discharge line from each distributor (x4) through the platform to discharge into the top of an adjacent elutriator weir. Most of this piping is plain carbon steel SC1.

4. Install the DN100 pinch valve onto the bottom discharge cone of each elutriator vessel. Install the DN100 tailpipe (SP-Item) from the underside of each pinch valve to discharge into the top of the concentrate launders. This may require trimming of the launder lids.

   Install DN50 valve and flushing water piping to the nozzle in the bottom cone of each elutriator vessel. Needs to be removable for removing bottom cone.

5. Install the DN50 *Maric* flow-control wafer (SP-Item) and piping to the nozzle in the endplate at each end of each concentrate launder. Note that the flow capacity of the Maric into the long launder is larger than the flow capacity of the Maric into the short launder – the Contractor shall ensure the correct Maric is fitted, and fitted the correct way around (flow arrow).

6. Install DN400 Rubber-lined piping spools and supports, eight lines in total, from the outlet of each concentrate launder (8-off) to discharge into the top of each concentrate tank (4-off).

7. Install DN300 Rubber-lined piping spools and supports, eight lines in total, from the outlet of each concentrate tank (4-off) to connect to the suction flange of the corresponding ME-Pumps. This item includes installation of Straub fitting and drain valve.

8. Install DN250 Rubber-lined piping spools and supports, eight lines in total, from the discharge flange of each ME-Pump to include isolation valves at high level, to connect to a flanged lateral fitting where the duty/standby lines join.

9. Install DN250 Rubber-lined piping spools and supports, four lines in total, from the fitting where the duty/standby lines join, to the Magflows in a platform at the North end of the new piperack, and onward through the piperack to connect to existing piping runs across from CMS to the Flotation building at Tie-ins TP-02/-04/-07/-08. The final connection at TP-02/-04/-07/-08 can only be made during shutdown when the ME building is complete and ready for change-over.

10. At the top of each elutriator vessel, install DN250 Rubber-lined tailings piping spools and supports from the overflow well discharge flange through a floor penetration to discharge into the tailings launder under floor level. The connection between each discharge and the launder shall be sealed against splashing by a rubber split-ring and plate flange arrangement as shown on the drawings.

11. Install four common rubber-lined tailings launders and their supports to falls under the floor level EL+16.3m TOS. These launders are comprised of flanged piping sections which increase in diameter as they collect flow from each elutriator. Launders are not dedicated to any bank of elutriators, but run North-South through the building.

12. Install flushing water piping and breather piping at the North end of the four ME-tailings launders

13. Install large diameter rubber-lined bends, laterals and transitions where the four tailings launders drop down at the South edge of the ME building and join to become two launders, and continue to the South to connect into the existing DN750 CMS tailings launders at TP-09 & TP-10.

14. Install modifications to the flushing water piping and breather piping adjacent the end of the existing CMS tailings launders at TP-09 & TP-10.

15. In the piperack junction from CMS to Flotation, install new DN600 SC1 piping spools and supports to complete the tie-in point to the existing main Process Water header and provide for future tie-in to a modification to be made subsequently to the main header, as shown in drawing L200-PI-DRG-1006. This includes removing an existing blind flange at TP-38A to connect the new spool and side-arm onto an existing BF2 butterfly valve, installing a new DN600 BF2 butterfly valve onto the end of the side arm, and blinding this off with the DN600 blind removed earlier. The main water header behind the valve may be live at the time when the blind is removed from the valve, in which case the valve is only rated to 6-Bar.g; otherwise a shutdown will be required for this work. Once the new spool is installed onto the BF2 butterfly valve it is rated to 10-Bar and it is safe to work behind a closed & isolated water valve.

16. Install DN600 SC1 Process Water piping comprising long flanged prefabricated spools in the new piperack from near TP-38 to the new ME building, where it splits into two DN400 headers that run East-West on TOS at EL+6.53. This header serves two rows of elutriators (14-off), in two banks.

17. Install DN200 SC1 Process Water piping as flanged prefabricated spools from the two DN400 headers on EL+6.53 through floor penetration and check valve, to split into two DN200 legs which connect to the two water nozzles on the cone of each of 14 elutriator vessels. Each of these DN200 legs includes a proprietary Jinken flow control valve, and connects to the ME nozzle by a bespoke short-radius elbow. The Contractor shall note that clearance between the back of these elbows and the flange of the floor beams is tight at ~25mm. The elbows shall not be installed before lifting the vessels into place.
    At the interface between the Stainless-Steel vessel nozzle and the carbon-steel water piping, the Contractor shall install a free-issue flange insulating kit, comprising electrically-insulating gasket, insulating bolt sleeves and insulating washers for under each bolt head.

18. Install DN100 & DN50 SC1 Process Water piping as flanged prefabricated spools from the two headers on EL+6.53 to connect to the Maric flow wafers at each end of each concentrate launder, DN50 to the flushing water nozzle on the cone of each of 14 elutriators, and to reticulate hose water to nearby utility stations.

19. At high level at the NE-corner of the CMS building, the Contractor shall remove a blind flange at TP-34 to connect new DN600 SC1 Process Water piping spools onto an existing BF2 butterfly valve. As for TP-38, the water header behind the valve may be live at the time when the blind is removed from the valve, in which case the valve is only rated to 6-Bar.g; otherwise a shutdown will be required for this work. Once the new spool is installed onto the BF2 butterfly valve it is rated to 10-Bar and it is safe to work behind a closed & isolated water valve.

20. Install DN600 SC1 Process Water piping comprising flanged prefabricated spools from TP-34 into the new ME building, where it splits into two DN400 headers that run East-West on TOS at EL+6.53. This header serves the other two rows of elutriators (14-off), in two banks.

21. As for the other DN400 Process Water headers above, install DN200 SC1 Process Water piping as flanged prefabricated spools from the two DN400 headers on EL+6.53 to two DN200 legs which connect to the two water nozzles on the cone of each of 14 elutriator vessels. This shall include check valves, Jinken flow control valves, short-radius elbows and flange insulating kits, all as described above.

22. Install DN100 & DN50 SC1 Process Water piping as flanged prefabricated spools from the other two headers on EL+6.53 to connect to the Maric flow wafers at each end of each concentrate launder, DN50 to the flushing water nozzle on the cone of each of 14 elutriators, and to reticulate hose water to nearby utility stations.

23. Install DN100 & DN50 SC1 Process Water piping to the flushing water connections at the end of each tailings launder under the EL+16.3 level.

24. At 1st-Level at the NW-corner of the CMS building, remove the existing blind flange and install DN50 Gland Water piping header onto the existing gate valve at TP-31, continue onwards North into the new ME building, and reticulate gland water to each pump in DN50 and DN25 SG1 piping. Fabricate, install and support the gland water arrangements shown in standard drawings CORP-PI-DRG-1127, CORP-PI-DRG-1198 and CORP-PI-DRG-1200 for each pump, which include several SP-Items.

25. At 1st-Level at the NW-corner of the CMS building, remove the existing threaded plug and install DN50 SG1 Compressed Air piping header into the existing valve at TP-32, continue onwards into the new ME building, and reticulate air piping to each Utility Station and pneumatic junction box in DN50 and DN25 SG1 piping. This shall include any air-trap/water drainage arrangements shown on the drawings.

26. Install the terminal valves and *Minsup* fittings onto the Compressed Air and Hose Water piping, and install the free-issue hose cradles to complete each of the Utility Stations, as shown in drawings CORP-PI-DRG-1187 and CORP-PI-DRG-1171.

27. At 1st-Level at the NW-corner of the CMS building, remove the existing threaded plug and install DN50 stainless steel Potable Water piping header into the existing valve at TP-33, continue onwards into the new ME building, and reticulate water piping to each Eyewash/Safety Shower in DN50 and DN25 SS1 piping. This piping shall be fabricated by the Contractor by welding from stock Sch.40S piping lengths and 'loose' butt-welding fittings, supported, installed, insulated and clad to reduce solar heat gain, and shall be supported on shoe-type supports to accommodate the insulation & cladding.

28. Install the DN25 isolation valve and install the Eyewash/Safety Showers, as shown in drawing CORP-PI-DRG-1113.

29. At the West of the CMS building, connect to the DN100 valved offtake TP-35 from the plant's Fire Water system near ground level, which will be provided by KML's Site Services. New DN100 galvanised piping will be supplied and shall be installed to rise from the valved connection into the new piperack, where it

turns North to the new ME building. At the ME building the header splits into a header across the South side of the building and a larger header across the North side of the building. The southern header reticulates firewater to several fire hose reel cabinets at various levels located near that side of the building; the northern header rises adjacent the stair tower, where it reticulates to several fire hose reel cabinets at various levels on the North side of the building and to three DN65 flanged angle-pattern Landing Valves. The Contractor shall provide supports and shall connect to and install these hose reel cabinets and hydrants.

6.6.3.7 Other Plant Tie-In works

Most of the shutdowns to break into existing live utilities are already done during MPO Mar2023. Tie-ins comprise connecting to existing valved utility connection points, and connecting at nominated locations for change-over / plant-flow diversions for commissioning.

The Contractor shall carry out tie-in works to connect the new plant to existing infrastructure. There are a number of piping and equipment tie-ins to the existing process plant, listed in the Tie-In schedule L200-PI-LST-1003, which can only be carried out under an approved isolation, during either a planned or unplanned (opportunistic/breakdown) plant stoppage. Isolations are obtained by the KML Operations personnel under approved isolation procedures, typically resulting in a direct loss of production, and accordingly their duration shall be minimised. The Contractor and Contractor's personnel are required to participate in the equipment isolations by tagging-out or locking-on according to the procedure.

Tie-ins and associated works shall be coordinated and implemented by the Contractor and agreed by the Company. Contractor shall liaise with the appropriate KML personnel, the Company's Representative and other Contractors as necessary in planning and executing these shutdowns and tie-ins, so as to minimise downtime. Some isolations can be obtained relatively easily; however there may be some that require a plantwide outage, and the Contractor shall respond to the best of its ability in those cases, especially should an unplanned opportunistic shutdown (breakdown) occur at short notice.

The Contractor shall note that safety and the continued operation of the plant shall take priority over all types of construction activities. The Contractor shall perform as much pre-work as possible outside shutdowns, whether by prefabrication, pre-assembly, installing temporary barriers and protective covers or otherwise. This may include for example guards, protective barriers (planked scaffolding) when working above and below equipment, etc. In carrying out this work, the Contractor shall at all times allow adequate access to existing plant and equipment for Operations personnel.

The Potable Water tie-in point TP-33 shall require the existing flanged tee spool to be rotated to a horizontal position during a planned shutdown, following which the Contractor may proceed with installing new piping.

Figure 40: TP-32 (Air, left) & TP-33 (WO) to be rotated

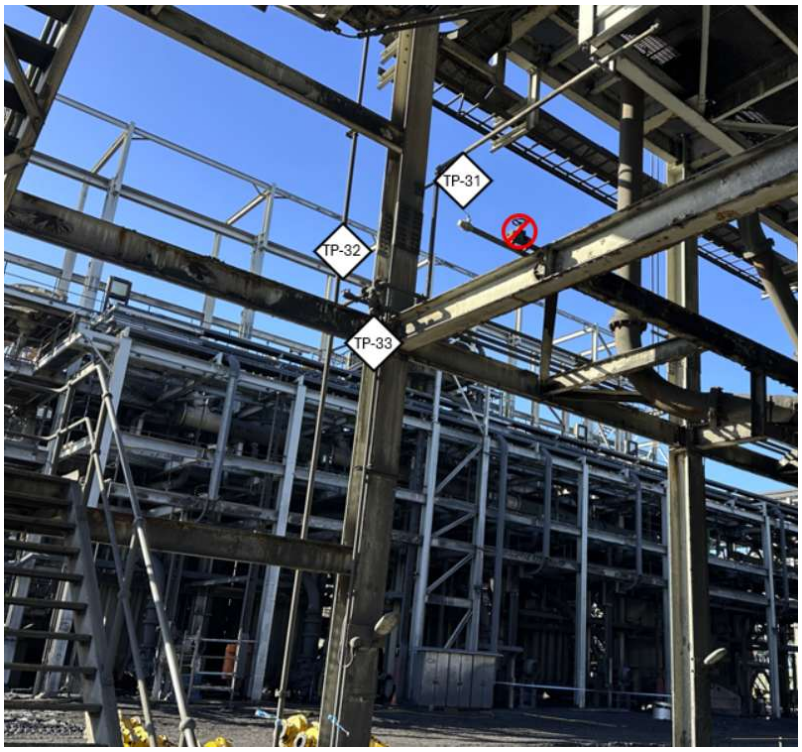


Figure 41: Tie in points

The Company has verified that two of the DN600 valves (HV2134 & HV2129) have been installed. See below:

Figure 42: Installed DN600 Valve

Figure 43: Installed DN600 valve

6.7 Electrical and Instrumentation supply and installation

6.7.1 Statutory Requirements

The contractor shall comply with the following statutory requirements:

6.7.1.1 Electrical Licenses

All electrical work shall be carried out or directly supervised by licensed electrical tradespeople holding current WA Electrical Workers Licenses (as per the Western Australian Electricity (Licensing) Regulations). A copy of

the Electrical Workers License and residential address of each electrical tradesperson shall be submitted to the company's representative prior to them commencing work.

6.7.1.2 Mines Electrical Log Book

The contractor shall make entries into the existing Electrical Log Book applicable to their area of control. The Electrical Log Book shall conform to the requirements of Part 5 of the Mines Safety and Inspection Regulations.

Information within the area of control that shall be recorded will include:

- Name of the Electrical contractor including EC license details.
- Mobilisation date.
- Name, residential address and license number of each electrician on site.
- All electrical incidents/accidents.
- All electrical test results.
- Date when each major piece of equipment is energised.
- Certification from the in-house nominee or Contactor nominee that the Works are complete and installed in accordance with all relevant standards and electrical licensing regulations.

The log book shall be available for review at all times by the company's representative or LGIRS Electrical Inspectors.

6.7.1.3 Statutory Notices and Certificates

The contractor shall submit Preliminary and Completion Notices and certificates of compliance (Electrical Safety Certificate) for the electrical work carried out under this Scope of Work in accordance with the requirements of Electricity (Licensing) Regulations, Regulations 51, 52, 52A and 52B.

6.7.2 Electrical and Instrumentation Installation Work

6.7.2.1 General

The Works shall be carried out in accordance with the listed standards, specifications, schedules and drawings listed in this scope of work.

A description of the work included for the common types of installation is given below. The areas of work covered by this scope and additional work specific to a particular installation are given in Section 6.7.3.

Wherever possible, the contractor shall install electrical and instrumentation equipment into modules on the ground, prior to lifting into position to reduce the requirement for working at height.

The Contractor shall include for attendance for other Trades, generally the Contractor's appointed Electrical Sub-Contractor (generally called Electrical Contractor), under its on-site guidance and direction and for the benefit of the Electrical trade, as follows:

a) Cable-Ladder Supports to Switchrooms -109 & -102C
Install prefabricated cable-ladder supports typically at high level onto existing piperacks from the CMS/ME area to Switchrooms 102C and 102D (to the SouthEast) and to Switchroom 109 (to the West). This shall include transport, cranage, handling, assembly (if required), access and erection of the supporting steel/brackets. These steelwork items is a part of the overall Structural Steel package, and are typically to be attached to the existing piperack steelwork by site-drilling & bolting, rather than by site-welding. Contractor shall supply all galvanised structural bolting for this work item.

[Note that there are other Switchroom -"102's" on-site; please do not abbreviate Switchroom-**102C or 102D**].

This installation shall include provision of all cranage, transport, telehandlers, EWPs or scaffold or any other means of access as required, *Working at Height* skills and equipment. The Contractor will provide graded, levelled and compacted ground for EWPs as indicated on drawing L200-CI-DRG-1002. Any additional or further ground compaction or earthworks that may be required shall be by the Contractor at own cost.

The installation of these supports shall be carried out by the Contractor early in the works schedule, as it is an essential enabling work for the Contractor's Electrical Sub-Contractor to begin cable installation.

b) Other Cable-Ladder Supports
There are other structural supports for cable ladders included within supply package of structural steel for the new building and piperack, and these shall be supply and installed by the Contractor. Typically these will be supports for the major cable runs, 600mm ladders. Supports for smaller cable ladders (≤300mm), cable-trays and conduit will be by the Contractor's Electrical Sub-Contractor.

c) Control Cabinets
The Contractor shall provide transport, cranage and handling, and shall lift, position, supply bolting and shims and secure in place:

i. Twenty-eight (28) elutriator control cabinets 1310-PC-2xx, each approximately 950mm (W) x 700 (D) x 2200mm high similar to that shown below onto the upper catwalk level EL+19.5m,

ii. One similar 1310-PC-210 Control Panel onto top steelwork level EL+16.33m, generally as shown on GA drawing 1210-EL-DRG-2823 and

iii. Place and grout one double-width 1310-MP-030 Marshalling Panel at ground level, generally as shown on GA drawings L200-ME-DRG-1025 and 1310-EL-DRG-2820.Note that each of these panels is configured differently to the others, one dedicated to each elutriator vessel, and each has a 44kg air-conditioning unit pre-mounted into the panel's sidewall, which may cause the centre of gravity to be off-centre. Handing of the air conditioner units and the front doors is unique to each. Panels are fitted with two top lifting lugs.

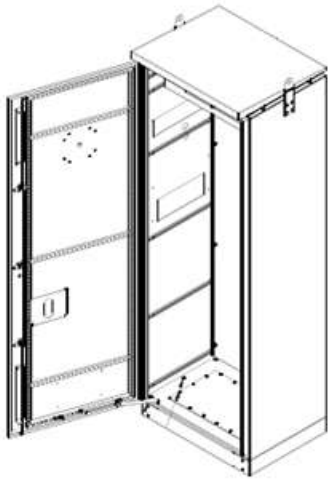


Figure 44: Typical view of an Elutriation Column Control Panel

d) ME Junction boxes

Transport, handling, supply of mountings, place into position and secure twenty-eight (28) electrical junction boxes about 300mm x 300mm x 200mm deep onto steelwork near the bottom cone of each Elutriator vessel, in locations nominated by the Company's Representative and the Electrical Contractor. These JBs may be mounted using a proprietary clamp-on system such as *Unistrut* or similar. For information, these JBs are for the two electrical Process Water control valves per vessel, its pinch valve, and bottom cone pressure transducer; there is another JB pre-fitted to each elutriator vessel for coil terminations that needs no SMP input.

e) Solenoid valve pneumatic Junction boxes

Transport, handling, supply of mountings, place into position and secure four (4) pneumatic/electrical junction boxes about 900mm H x 400mm W x 200mm deep, one mounted onto each slurry tank (hopper) near ground level, for the two pneumatic knife-gate suction valves, two drain valves ('scuttle valves') on the suction of each duty/standby pair of ME-Concentrate pumps, and the two pump discharge valves, in locations nominated by the Electrical Contractor and agreed by the Company's Representative. This item shall include the supply, fabrication and installation of suitable brackets and bolting for mounting of the JBs. These JBs may be mounted using a proprietary clamp-on system such as *Unistrut* or similar. The Contractor shall include connection of Plant Air to the main inlet connection; air tubing to each valve will be by the Contractor Electrical Sub-Contractor.

f) Removal of guards and drive components and subsequent re-installation and alignment, to allow direction of rotation motor check for the Electrical trades, as part of commissioning.

6.7.2.2 Substations

6.7.2.2.1 Switchrooms

Note works associated with the installation for Magnetic Elutriation Concentrate Pumps are to be considered priority works (including modifications to 1308-MC-017 (installed), 1310-MC-019 (installed), 1311-MC-045 and 1305-MC-010)

a) Completion of switchroom modifications, reconnection and testing of light and small power circuits, fire system circuits, inter switchboard wiring and control system wiring.
b) Modify MCC module layouts to accommodate new Elutriator power supply modules, including adjustment/extension of the relevant Profibus DP segments
c) Installation of VSD's
d) Supply and installation of switchroom air conditioning compressors on to concrete pads (Pads installed by Civil works scope).
e) Supply, installation and termination of power and control cabling as per cable schedules.
f) Supply and installation of an ablative fire-retardant coating (KBS Coating or similar) to power cables in underfloor cable ladder in accordance with 1300-EL-SPC-1001 Specification for Electrical Equipment Installation.
g) Supply and installation of piping between the outdoor compressor units and indoor air conditioning units. The contractor shall engage a company approved air conditioning sub-contractor to install the piping and test and commission each switchroom air conditioning system.
h) Drilling of gland plates for contractor installed cables.

6.7.2.2.2 Substation Cable Ladder and Conduit

a) Design, supply and installation of all cable ladder supports (where required) under the switchroom and between the switchroom and plant (supports equal to or greater than 300mm by Contractor). The contractor shall ensure that all cable ladders are supported in accordance with the requirements of NEMA standard VE2. The supports shall conform to the standard structural detail drawings or contractor submitted drawings approved by the company's representative.
b) Supply and installation of all cable ladder and above ground conduit under the switchroom (including underfloor cable ladder) and between the switchroom and plant.
c) Sealing of underground conduits with fire rated mortar (KBS Mortar or equivalent).

6.7.2.2.3 Substation Cabling

a) Supply, installation and termination of all LV, instrumentation and fibre optic cables that leave the switchroom and as detailed in the cable schedules. This shall include supply of all termination kits, lugs, heat shrink, shrouds, flags, markers, ferrules etc necessary to terminate the cables to the equipment. Note that the installation and termination of all VSD main power cables, including those internal to the switchrooms between MCCs and VSDs, shall form part of this scope.

b) Testing of fibre optic cables in accordance with Section 9.16 of the Technical Specification – Instrumentation Installation CORP-IN-SPC-1007 and Chapter 9 of Fibre Optic Cabling Specification 1400-TE-SPC-1006.

6.7.2.3 Field Electrical Installation

6.7.2.3.1 Local Control Stations and Field Junction Boxes

a) Supply and installation of local control stations and emergency stops, associated mounting supports and labels where nominated in the SOW and equipment lists.

b) Supply and installation of field junction boxes including mounting support, internal terminal rail, terminals and earth bar and labels where nominated in SOW and equipment lists or shown on the drawings.

6.7.2.3.2 Slurry Pumps

a) Supply and installation of local control stations and associated mounting supports and labels.

b) Supply and installation of earth connection to the earthing boss on the pump motor frame.

c) Supply, installation and termination of power and instrument cables to the pump motor.

6.7.2.3.3 Sump Pump

a) Supply and installation of a local control station and associated mounting supports and labels.

b) Supply and installation of decontactor socket and associated mounting supports and labels, plug and flexible power cable.

c) Supply and installation of an instrument field junction box and associated mounting supports and labels.

d) Supply and installation of an ultrasonic level transmitter and associated mounting supports and labels.

e) Supply, installation and termination of power and instrument cables to the sump pump equipment.

6.7.2.3.4 Cable Ladder and Conduit

a) Supply and installation of all cable ladder supports within plant areas for cable ladder smaller than 300mm. The supports shall conform to the standard structural detail drawings or contractor submitted drawings approved by the company's representative. Supports for ladder 300mm and larger will be supplied and installed by others where indicated on the structural cable ladder support drawings. Note that supports provided by others will be tapered flange channel (TFC) type and will require tapered washers to be fitted to the fixing bolts. The contractor shall ensure that all cable ladders are supported in accordance with the requirements of NEMA standard VE 2 and shall supply and install additional supports where required to ensure this standard is met. All supports supplied and installed by the contractor shall conform to the standard structural detail drawings or contractor submitted drawings approved by the company's representative.

b) Supply and installation of all conduit supports.

c) Supply and installation of all cable ladders and above ground conduits within the plant areas including final runs not shown on drawings. This shall include supply and installation of all fixings, barrier, lid, draw boxes and miscellaneous equipment required to complete the cable ladder and conduit installation.

d) Cutting and welding of floor penetrations through gridmesh where required for cable ladder and conduit (by SMP). The company's representative shall approve any cutting of floor panels prior to cutting. The SMP contractor shall cut the gridmesh, supply, install and fully weld the kick plate surround to the cut edges and apply touch up paint in accordance with CORP-GE-SPC-1004 Technical Specification for Surface Treatment of Structural Steelwork and Pipework. The kick plate surround shall conform to the requirements of CORP-ST-DRG-1002 Structural Steel Standards Structural General Notes.

e) Sealing of underground conduits with fire rated mortar (KBS Mortar or equivalent).

f) Sealing of cable ladder penetrations through walls with fire rated mortar (KBS Mortar or equivalent) where required.

6.7.2.3.5 Cabling

a) Supply of all LV and instrumentation cables and installation and termination of all LV and instrumentation as detailed in the cable schedules. This shall include supply of all termination kits, lugs, heat shrink, cable glands, shrouds, flags, markers, ferrules etc necessary to terminate the cables to the equipment.

b) Drilling of all gland plates for contractor installed cables.

c) Testing of fibre optic cables in accordance with Section 9.16 of the Technical Specification – Instrumentation Installation CORP-IN-SPC-1007 and Chapter 9 of Fibre Optic Cabling Specification 1400-TE-SPC-1006.

6.7.2.3.6 Earthing

a) Supply and installation of plant earthing including:

i. Buried grids.
ii. Earth pits and electrodes including connections to grid and earth bars and labels.
iii. Connections to concrete steel reinforcing ground plates.
iv. Cable ladder earthing.
v. Field earth bars.
vi. Connections to structural bonding tags (tanks, support columns, stairways, rail and landings).
vii. Plant earth ring.
viii. Connections to motor earth studs.
ix. Structural column earthing tags (where not shown on structural drawings).

6.7.2.3.7 Light and Small Power

a) Supply and installation of field welding and small power outlets and associated mounting supports and stainless steel (304) IP66 junction boxes. The welding outlet junction boxes shall be supplied complete with terminals and overcurrent protection for each welding outlet. All equipment shall be in accordance with the types listed in the project preferred equipment list.
b) Installation of company supplied field light and small power distribution boards and supply and installation of associated mounting supports and protective covers.
c) Supply and installation of battery backed emergency shower light fittings and support poles.
d) Supply, installation and termination of field lighting (including safety showers) and small power circuits, including determination of cable sizes and circuit configuration where not specified in the Contract documentation.
e) Cleaning of light fittings prior to energisation and testing.
f) Alignment of floodlights and testing of lighting levels following energisation.
g) Testing of emergency lighting in accordance with AS2293.

6.7.2.4 Field Instrument Installation

6.7.2.4.1 Field Marshalling Panels/Junction Boxes

a) Supply and assembly of sunshields and mounting brackets on company supplied field marshalling panels.
b) Installation of field marshalling panels and supply and installation of associated supports.
c) Supply (where nominated in the Schedules as contractor supply) and installation of field junction boxes and associated mounting supports and labels

6.7.2.4.2 Field Instrumentation

a) Supply (where nominated in the area instrument lists), installation (where nominated in the area instrument lists) and cabling of instruments in accordance with this SOW, the cable schedules, the drawings and the specifications.

b) Testing of instrumentation cabling and loops in accordance with Technical Specification – Instrumentation Installation CORP-IN-SPC-1007.

6.7.2.4.3 Communications

a) Installation and termination of all fibre optic cables within process areas as detailed in the cable schedules. This shall include supply of all connectors, heat shrink, cable glands, shrouds, flags, markers, ferrules etc necessary to terminate the cables to the equipment. All fibre cable will be free-issued to the contractor by the company.

b) Testing of fibre optic cables in accordance with Section 9.16 of the Technical Specification – Instrumentation Installation CORP-IN-SPC-1007 and Chapter 9 of Fibre Optic Cabling Specification 1400-TE-SPC-1006.

6.7.2.4.4 Control System Integration

Integration of the stand-alone Elutriator control system with the existing process control system consisting of GE PLCs (CPE330) and Cimplicity SCADA ver. 2024.. This includes system integration design, communication cables supply and installation, communication modules supply, and installation and the supply and installation of any other equipment required.

Additionally, the electrical contractor shall be responsible for the design and integration of the SCADA control pages including screens and tags for the Elutriator along with the PLC code integration into the existing control system.

6.7.3 Areas Of Electrical And Instrumentation Work

Following is a brief summary of the areas covered by this scope and associated equipment to be installed. It is not conclusive and should not be considered as such. Issued for Construction (IFC) revisions of all drawings and the electrical and instrumentation lists will be issued to the contractor prior to scheduled installation activities.

6.7.3.1 Area 1310 – Cleaner Magnetic Separators (CMS)

6.7.3.1.1 Magnetic Elutriation Area Field Installation and Demolition

The contractor shall complete the electrical installation work for the Magnetic Elutriation area as described below and as detailed in the cable schedules, equipment lists and layout drawings and in Section 6.7.

The Magnetic Elutriation area equipment is associated with Substations 1306-SR-102C, 1306-SR-102D and 1311-SR-109 and includes:

- Cleaner Magnetic Separators demolition (1310-MS-041 to 056)
- CMS Concentrate Feed Pumps demolition and installation (1310-PU-146 to 149)
- Magnetic Elutriation Concentrate Pumps installation (1310-PU-560 to 567)
- Magnetic Elutriation Area Sump Pump installation (1310-PU-568)
- MCC modifications
- Field Marshalling Panel
- Field Instrumentation
- Area cable ladder and conduit
- Area earthing
- Area light and small power

6.7.3.1.1.1 Cleaner Magnetic Separators (1310-MS-041 to 056)

- Demolition of the local control stations for each CMS motor (two per magnetic separator) including mounting steelwork.
- Disconnect, heat shrink cap and recoil back into cable ladder all power and control cables to the motors and local control stations.

6.7.3.1.1.2 CMS Concentrate Pumps (1310-PU-146 to 149)

- Demolition of the existing local control stations for each Concentrate Pump including mounting steelwork.
- Disconnect, heat shrink cap and recoil back into cable ladder all power and control cables to the motors, VSD's and local control stations.
- Supply, install and terminate the power cables within the switchroom from the MCC to the CMS Concentrate Pump VSD's.
- Supply and install the local control stations for each pump motor and associated mounting steelwork.
- Supply, install and terminate all power and control cables to the motors, VSD's and local control stations.

6.7.3.1.1.3 Magnetic Elutriation Concentrate Pumps (1310-PU-560 to 567)

Note works associated with the installation for Magnetic Elutriation Concentrate Pumps are to be considered priority works.

- Install and terminate the power cables within the switchroom from the MCC to the Magnetic Elutriation Concentrate Pump VSD's.
- Install the local control stations and associated supports for each pump motor.
- Install and terminate all power and control cables to the motors, VSD's and local control stations.

6.7.3.1.1.4 Magnetic Elutriation Area Sump Pump (1310-PU-568)

- Supply and install the sump pump local control station, decontactor, junction box and cabling at each sump pump as per Section 6.6 (including associated mounting structures).
- Supply and install the level transmitter and the mounting structure at each sump pump.
- Supply, install and terminate cables to the junction box and level transmitter at each sump pump.

6.7.3.1.1.5 Field Marshalling Panel

- Assemble, install and cable (including fibre and Copper communications) the Magnetic Elutriation area field marshalling panel 1310-MP-030 as described in Section 6.7. Note: supports and initial bolting down by SMP contractor.

6.7.3.1.1.6 Field Control Cabinets

- Assemble, install and cable (including fibre and Copper communications) the Magnetic Elutriation area field Control Cabinets 1310-PC-210 to 1310-PC-247 (29 cabinets) as described in Section 6.7. Note: supports and initial bolting down by SMP contractor.

6.7.3.1.1.7 Field Instrumentation

- Supply (where nominated), install and cable the Magnetic Elutriation area instrumentation listed in L200-IN-LST-1001 Magnetic Elutriation Upgrade Instrument List as described in Section 6.7.

6.7.3.1.1.8 Magnetic Elutriation Area cable ladder and conduit

- Supply and install all cable ladder, conduit and associated structural supports except where shown on the structural drawings.

6.7.3.1.1.9 Magnetic Elutriation Area earthing

- Supply and install all earthing as described in Section 6.7 and the layout drawings.

6.7.3.1.1.10 Magnetic Elutriation area light and small power

- Supply and install socket and welding outlets, light fittings, control gear, poles, lighting towers, tower foundations, junction boxes, light and small power distribution boards and support frames as described in Section 6.7.
- Test the completed installation as described in Section 6.7.

6.7.4 Areas 1300/1400 – Communications

6.7.4.1 Process Plant Communications Installation (Area 1300)

a) Installation and termination of fibre optic communications cables as outlined in the Instrumentation Cable Schedule.

b) Installation and termination of power relay fibre cables between the switchrooms.

c) Testing of fibre optic cables in accordance with Section 9.16 of the Technical Specification – Instrumentation Installation CORP-IN-SPC-1007 and Chapter 9 of Fibre Optic Cabling Specification 1400-TE-SPC-1006.

6.7.5 Area 1300 – Process Plant Fire Detection System

6.7.5.1 Magnetic Elutriation

a) Additional VESDA piping supplied and tied into existing system in 1306-SR-102C, 1306-SR-102D and 1311-SR-109.

b) The contractor shall install and terminate the nominated field mounted fire detection devices and cabling in the Magnetic Elutriation areas of the process plant as outlined in the project documents and drawings (3-off break glasses in the Magnetic Elutriation area).

The contractor shall install and test the fire detection equipment and cabling in accordance with AS1670.

6.7.6 Free Issued Equipment

6.7.6.1 Electrical

The following electrical equipment will be available on site for free-issue to the contractor by the specified dates.

- Electrical equipment as noted in L200-EL-MTO-1001. (Column “Supplied By” = “Karara”)

6.7.6.2 Instrumentation

The following instrumentation equipment will be available on site for free-issue to the contractor by the specified dates.

- Instrumentation as noted in Instrumentation List L200-IN-LST-1001. (Column “Supplied By” = “Karara”)

6.7.7 Testing and Commissioning Requirements

The contractor shall be responsible for the performance of all quality control and acceptance testing as specified in the contract, including the provision of suitably qualified testing personnel, equipment and facilities.

The contractor shall, as part of this Scope of Work:

- Complete Stage 1 (Construction Verification) of the commissioning process in accordance with the Specification for Testing and Commissioning of Electrical and Instrumentation Systems 1300-EL-SPC-1011, relevant supplier procedures and Completions Process Specification 1000-CO-SPC-1001.
- Complete all rectification and punchlist items identified in the Works to Go (WTG) Register compiled by the contractor and the company’s representative.
- Assist with the remaining Commissioning Stages (2-5) as determined by the company’s representative in accordance with Completions Process Specification 1000-CO-SPC-1001 and Testing and Commissioning of Electrical and Instrumentation Systems 1300-EL-SPC-1011. The contractor shall provide test equipment and suitably qualified personnel for the works, which will be performed on day rates on an as needs basis.
- Forward all test records to the company’s representative in the timeframe.

The contractor shall be responsible for rectifying any faults that are identified during later commissioning stages, on equipment covered under this contract at the contractor's expense.

Any materials, items and equipment supplied by the contractor that are revealed as faulty shall be replaced prior to further commissioning at the contractor's expense.

The contractor shall be responsible for any rectification work, made necessary by the contractor. Such work shall be undertaken in such a manner as to minimise the disruption of all other company activities.

All works are required to be carried out under an approved isolation. Isolations are obtained by the KML Operations personnel under approved isolation procedures.

6.8 Demolition Works at CMS

The demolition scope is described below:

6.8.1 Introduction

The CMS building has 4 banks. Each bank has 4 sets of CMS, and each set of CMS has 3 drums.

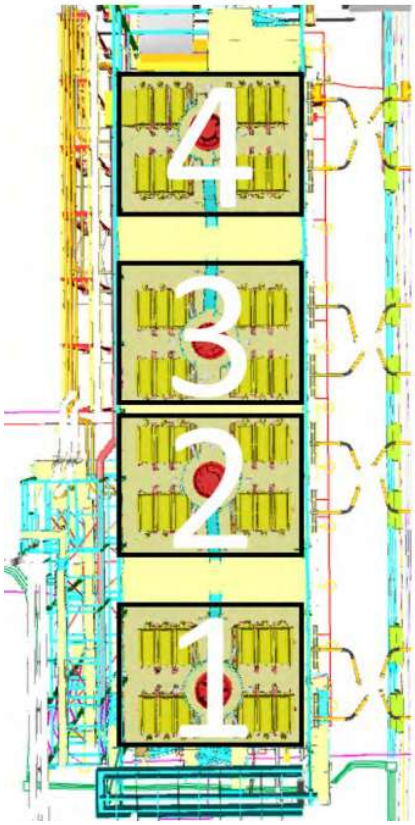


Figure 45: Layout of Drums at CMS

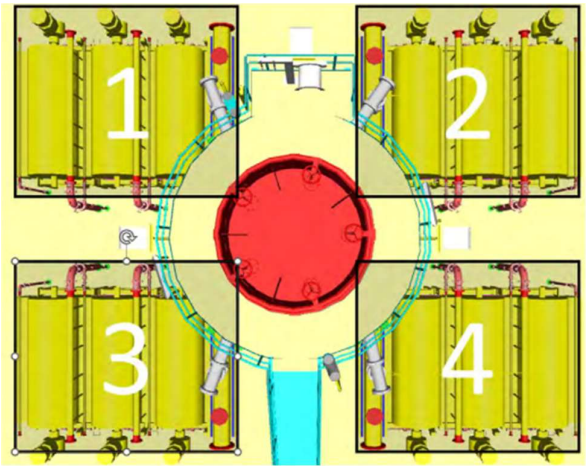


Figure 46: Plan View - Drums at CMS

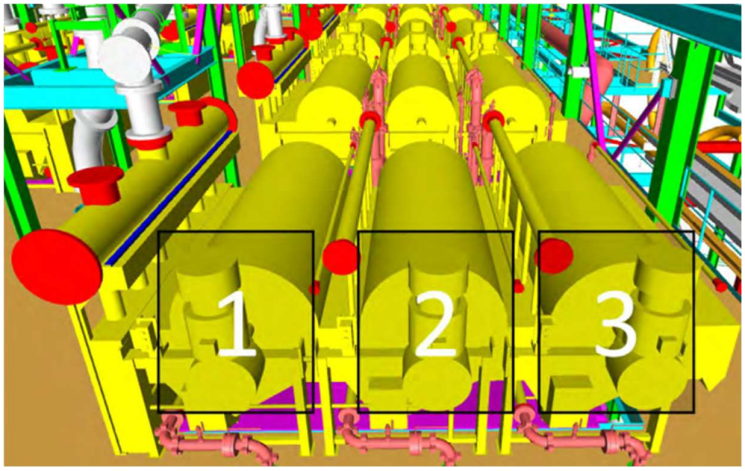


Figure 47: Elevation View of Drums at CMS

The Scope includes demolition of 2 drums with associated piping and relocation of few existing lines to new location. It also required addition of feed piping spool/launder to third drum.

The proposed modifications would be implemented to one set of CMS of 1 bank initially. Upon successful completion and operation, the same scope would be implemented to all banks with lesson learned from the first CMS.

The reference drawings are L200-ME-DRG-1013 & 1014.

6.8.2 Scope Description

6.8.2.1 Scope for 1 CMS unit

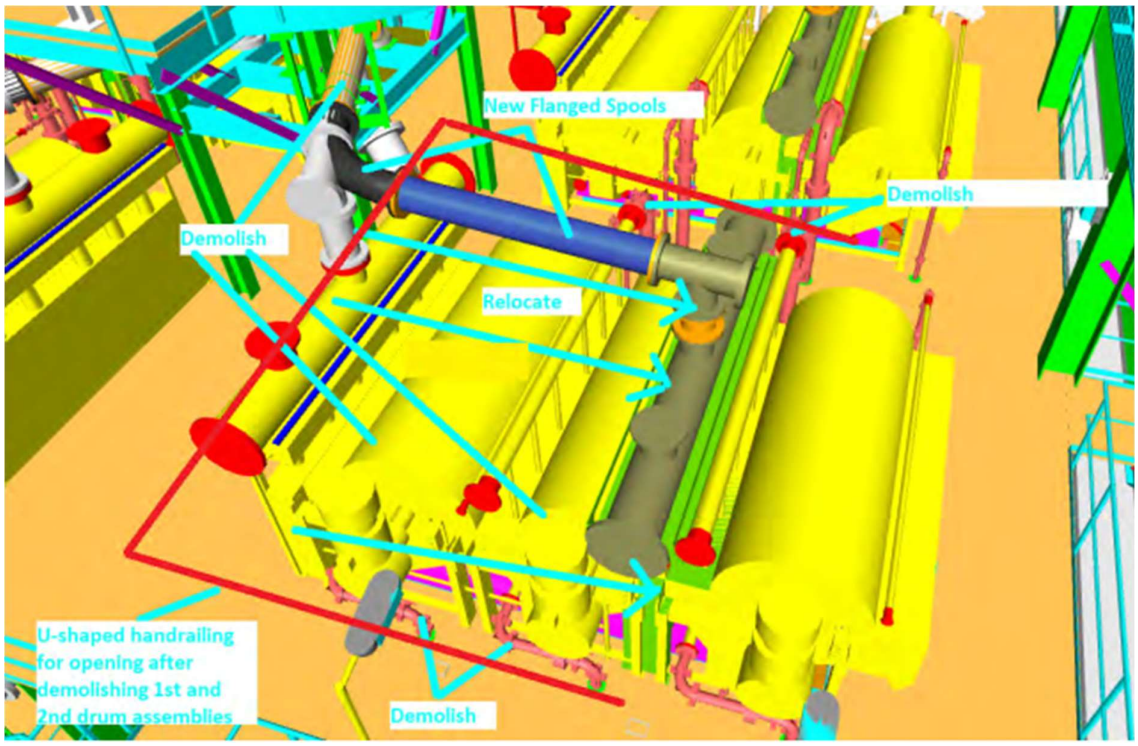


Figure 48: Summary of Modifications

6.8.2.2 Detailed Demolition Scope

Below scope of work is for 1 set of CMS. There are total sixteen (16) set of CMS for four (4) banks.

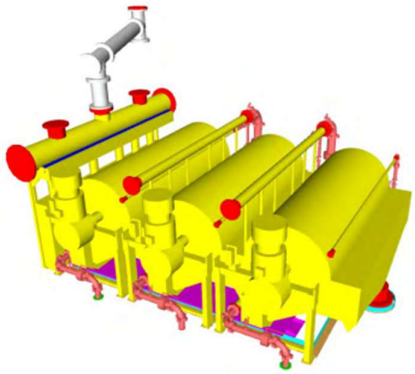


Figure 49: CMS assemblies

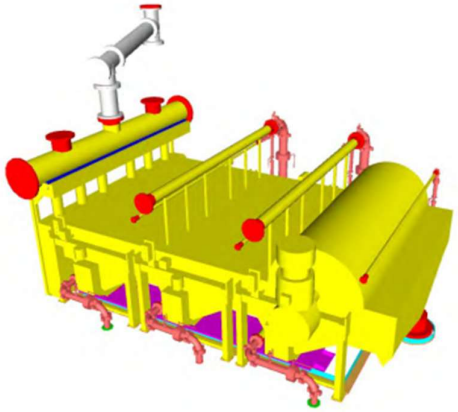


Figure 50: Drums removal

- 2-off existing, 1st and 2nd drum assemblies to be removed.

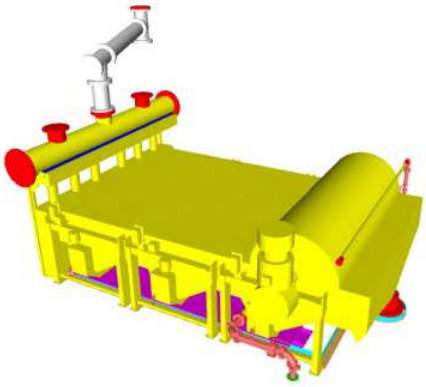


Figure 51: Spray waters removals

- 2 -off existing spray water lines (DN80), from spray water header to 1st and 2nd drum assemblies to be removed and remaining existing lines to be blanked off.
- 2-off existing wash water lines (DN150), from wash water header to 1st and 2nd drum assemblies to be removed and remaining existing lines to be blanked off.
- 2-off existing wash water lines (DN50), from wash water header to 1st and 2nd drum assemblies to be removed and remaining existing lines to be blanked off.

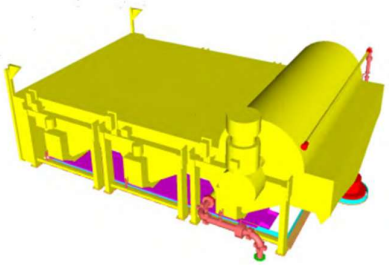


Figure 52: Feed header removals

- 1-off existing CMS feed header (DN450) and 1-off existing overflow tank to be relocated to 3rd drum assembly.
- 1-off existing CMS feed launder (DN250) to be removed.

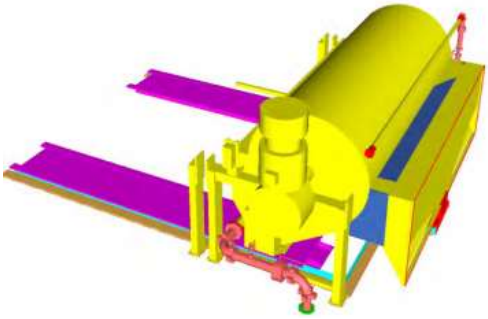


Figure 53: Trough sections Removals

- 2-off existing CMS trough sections to be removed.

6.8.2.3 New and Relocation Scope

Below scope is for 1 set of CMS. There are 16 set of CMS for 4 banks.

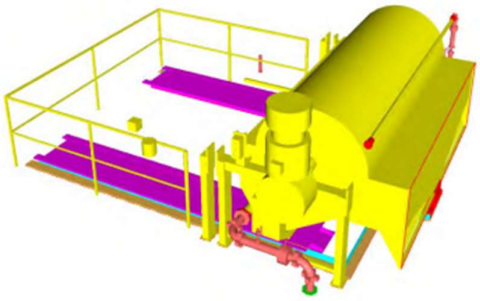


Figure 54: New handrailing

- 1-off new handrailing (u-shaped, total length ~15m) around the opening in the floor created by demolishing 1st and 2nd drum assemblies.

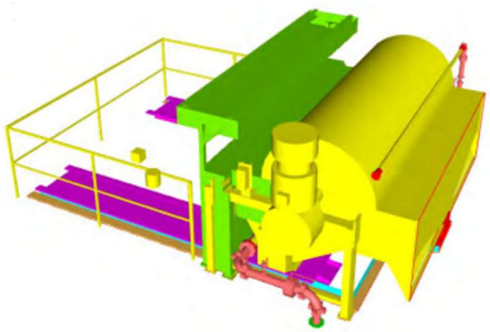


Figure 55: Relocation of feed tee and feed header

- 1-off existing deg feed tee (DN250), together with 1-off existing CMS feed header (DN450) and 1-off existing overflow tank to be relocated to 3rd drum assemblies.

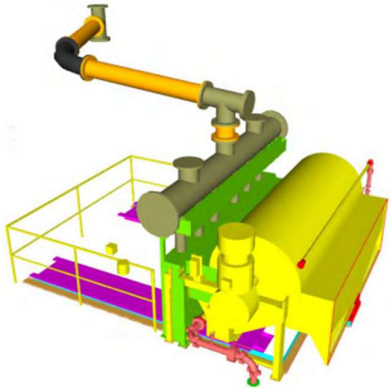


Figure 56: Piping spools installation

- 2-off new flanged pipe spools (DN250, 150#, CS, ~1.6m length and ~2.2m length resp) with 1-off new flanged bend spool (DN250, 150#, CS, ~1.5m length, ~120 degree) from CMS main feed to relocated 5 deg feed tee (DN250) to be installed.

6.9 Interface with other Contractors

Given that this is a brownfields project within an operating plant, the Contractor will not be provided with continuous unrestricted access for all the various activities of its work under the Contract.

The Contractor will participate in weekly planning meetings with the Company, Company's Representative and other contractors to identify, discuss and plan the scheduled activities to be performed by the Contractor and others in the area. The Contractor is required to plan the sequence of its work activities around the activities to be performed by others such that interference and or delay to others is minimised.

The nature of the Contract Works and its interface with the Company's and other contractors' work will require the Contractor to adopt a flexible approach in sequencing its various work activities. The Contractor shall allow in the pricing for flexibility in the sequencing of its planned work activities.

The sequence of the activities to be performed by others (as established in weekly planning meetings) may change from time to time, possibly at relatively short notice. The Contractor shall adapt to and incorporate such changes, and proceed with alternative work activities if it cannot gain access to its previously planned activities.

6.10 Quality, Inspection, Construction Verification, Testing & Pre-Commissioning

The Contractor shall:

a) Comply with the requirements of the *Contractor Quality Requirements Specification* (CORP-QA-SPC-1003), and *Supplier Quality Requirements Specification* (CORP-QA-SPC-1001).

b) Provide all equipment, personnel and other items necessary to carry out all testing required for the works including, but not limited to:
   - Foundation (subgrade) testing
   - Compaction testing for fill
   - Concrete sampling and testing for slump and compressive strength
   - Thermal temperature monitoring in large concrete pours
   - Weld and Welder qualification and testing
   - NDT
   - Materials testing

   as nominated on the drawings or in the specifications. The costs of the testing and reporting shall be borne by the Contractor.

c) Provide all labour and equipment to conduct verticality and position survey and conduct structural adjustment/rectification to ensure structure are erected within the construction tolerances.

d) Ensure the Works are in accordance with the Contractor's QA assurance procedures, Company specifications and nominated standards.

e) Ensure Construction Verification is carried out at the completion of each part of the Construction work. This shall include punch-listing, walkdowns and completions activities such as pipe flushing and purging of lines prior to connection and start of commissioning activities, Field Inspection Checksheets (FICs), Inspection and Test Plans (ITPs), testing, NDT and pre-commissioning activities.

f) The Company will require to witness the verification checks, following the completion of all outstanding punchlist items.

g) Allow for removal of guards and drive components and subsequent re-installation and alignment, to allow direction of rotation motor check for the Electrical trades as part of commissioning.

6.11 Commissioning

The Contractor shall provide suitable personnel, labour, plant and supervision to assist the Company with wet commissioning activities, at the direction of the Company's Project Representative.

The Contractor shall submit a itemise fixed lump sum cost in the Pricing Schedule.

The Contractor shall note that normal post-installation completion activities such as P&ID walk-downs, punch listing and rectification, NDE, inspection, documentation, flushing, cleaning, hydrostatic testing and finishing of piping as described in §s 5&6 of the *Piping Installation Specification* 1300-PI-SPC-1002 shall be considered to be included in the Contractor's basic Scope of Work, and will not be considered as 'Commissioning' at unit rates.

Tasks to be carried out by the Contractor are anticipated to include:

- Flow testing of piping, vessels, tankage, valves, in-line instrumentation and equipment during wet commissioning to initialise, test and bring the plant on-line.

Should leaks/defects be identified by this testing that are attributable to the installation of these by the Contractor, then this will be considered to be rectification, and the Contractor shall remedy the defects to the satisfaction of the Company's Representative at the Contractor's cost.

- The Contractor shall submit detailed hot and cold commissioning procedures and checklists for approval by the Company's Representative.
- The Contractor shall perform hot and cold commissioning in accordance with the Company Representative's approved procedures, together with appointed, suitably qualified and equipped personnel.
- The Company's Representative will witness all stages of commissioning and reject results that do not comply with the approved procedures in accordance with the Contract.
- The Contractor shall be responsible for the hand-over of successfully commissioned Equipment.

7 HEALTH, SAFETY & ENVIRONMENT MANAGEMENT

All work must comply with the requirements of document CORP-HS-PLN-1001 Occupational Health and Safety Plan and document CORP-EN-PLN-1001 Construction Environmental Management Plan.

The Contractor shall be required to include in all site based tender documents the above HSE documents and have all successful Contractors prepare a Project Specific Health Safety and Environment Management Plan that aligns with project and KML requirements prior to mobilisation to site.

7.1 HSEC Management

a) All work undertaken for this project shall be carried out with the greatest regard and attention to safety issues. The *Health and Safety Management Plan* document number CORP-HS-PLN-1001 outlines the minimum safety and health requirements to be implemented in delivery of services to KML for the project. The Contractor shall comply with all safety requirements of the relevant Acts, Regulations, By-Laws, Codes of Practice, Standards and other regulatory requirements.
b) The safety and health of personnel shall be considered in the design and planning stage, and managed accordingly in the execution phase. Hazards considered shall include those that may be encountered during site and field works, and during travel. Particular attention shall be paid when choosing locations for equipment to providing safe access and egress of personnel.
c) As a minimum the Contractor must have in place safety management systems that utilise risk based assessments on all equipment, products, services and personnel that are brought on Site to supply the Services.
d) Prior to mobilising to site, the Contractor is required to conduct a Contractors Risk Assessment Workshop (CRAW) with key stakeholders to further identify and assess hazards and determine management controls. Hazards identified and outputs from the CRAW are incorporated into the Safety / Environmental Management Plan, whereby further policies and procedures are implemented accordingly to ensure safe and efficient delivery of the Services.
e) Notwithstanding any other conditions of the Contract the Contractor shall conduct its operations in accordance with the Company's *Health and Safety Management Plan* (CORP-HS-PLN-1001) for the KML operation.

7.1.1 Site Safety Requirements

The Contractor shall:

a) Take all care and necessary precautions in planning and execution of the Site Services and as a minimum institute such measures, as detailed within this SOW and KML Corporate Standards, to manage Site safety and ensure a safe working environment. All elements of the Site Services shall conform to the Company's *Health and Safety Management Plan* (CORP-HS-PLN-1001), relevant Codes of Practice, By-Laws, Acts, Regulations and statutory requirements.
b) Prepare and submit a Project Site Health and Safety Management Plan, Environmental Management Plan and HSE Risk Register to the Company's Representative for approval within the time period specified in the Contract. The plans shall include, but not be limited to, the provisions of this SOW and the specifications.

c) Conduct inductions, training for high risk work licenses, certificates of competency and verifications of competency. The Contractor shall provide a copy of the following information for each person inducted in a form acceptable to the Company:
   i. Personal details
   ii. Medical examination results
   iii. Driver's license
   iv. Certificates of competency issued, incl. date the competency / skill was verified by the Contractor, and the name and qualification of the assessor.

7.1.2 During Site Works

The Contractor shall:

a) Hold a brief daily "start of shift" on-site meeting with the Company's Representative and Contractor's key personnel responsible for site supervision to plan the work for the day/shift following;

b) Hold weekly toolbox meetings that shall be attended by all site personnel, Contractor, sub-Contractors and Company's Representative. Key issues discussed shall be recorded by the Contractor and a copy sent to Company's Representative ;

c) Hold a weekly construction meeting with the Company and any Company-engaged consultants with the Company's Representative or delegate, record minutes of meeting and submit a draft minutes to the Company's Representative for review within 48 hours; as a minimum, the Contractor's site superintendent and safety officer shall attend all weekly construction site meetings;

d) Prepare JHA's (Job Hazard Analysis) for specific tasks as per Company safety requirements or as instructed by the Company's Representative. Where in the opinion of Company's Representative, an existing Safe (or Standard) Work Instruction (SWI) is not adequate to cover risks on a particular job, the Contractor will prepare the JHA or conduct a risk assessment for the work;

e) Provide weekly and monthly safety reports;

f) Attend monthly safety meetings;

g) Be required to attend special meetings from time to time to discuss issues relating to the construction and development of progress ideas, cost saving and safety initiatives to ensure project success. The Contractor's key personnel and Representatives of the Contractor's senior corporate management will attend this meeting if required by the Company's Representative;

h) Where, in the opinion of the Company's Representative, any of the Contractor's personnel including supervisors frequently or repeatedly undertake works in an unsafe manner, the Contractor will be required to remove such personnel from the site immediately;

i) Where, in the opinion of the Company's Representative, site safety focus is deteriorating, the Company's Representative may direct the Contractor to stop work and the Contractor will be required to stop work and undertake a minimum of half day safety briefing to refocus before work can re-commence. The Contractor is responsible for all additional costs and any program delay resulting from such work stoppages and the Contractor is not entitled to make any Extension of Time (EOT) or other claim against the Company arising from the direction or stoppage of work.

7.1.3 Safety Representative

a) In respect of all matters concerning the safety of the Site Services and personnel on the Site, the Safety Representative shall be deemed to have the responsibility and authority of the Contractor's Management in accordance with the Contract.

b) The Safety Representative may consist of the Contractor's senior representative on site or designate.

7.1.4 Safe Working Area

a) The Contractor shall maintain safe systems of working over the duration of the Site Services.

b) Within the areas of the Site Services, in addition to the requirements of the Company's *Health and Safety Management Plan* (CORP-HS-PLN-1001), the Contractor shall be responsible for:

i) Providing all necessary safe work equipment, and establishing all safe methods (safe operating procedures, SOPs) necessary to carry out the Site Services.

ii) Obtaining all necessary permits (e.g. hot works, working at heights, etc.) prior to the commencement of the relevant Site Services activity as applicable.

iii) Maintaining the safe and secure storage of any dangerous or potentially harmful substances in accordance with statutory requirements and the Company's *Health and Safety Management Plan* (CORP-HS-PLN-1001) so as to prevent access and use by unauthorized persons. MSDS shall be kept on Site for all dangerous or potentially harmful substances.

iv) Effective control of dust and wind-borne material emanating from the Site as a result of the Site Services.

v) Provision of floodlighting at all areas and levels to the satisfaction of the Company's Representative where the Site Services is occurring outside of daylight hours, or in areas where natural light is inadequate.

vi) Maintaining communication and liaison with the Company's Representative and other contractors on the Site to ensure the Site Services are coordinated and undertaken to maintain safety of all persons on the Site and assist the performance of the project.

vii) Keeping the Site Services and access ways in a safe condition from the time of handover to the Contractor, until the Site Services are handed back to the Company's Representative after completion of the Site Services.

7.1.5 COVID 19, Gastroenteritis, & similar infections

The emergence of Covid 19 as a major disruptive influence resulted in the need for measures to be willingly put in place by all parties for mutual protection and to minimise potential impact. The effect of a Covid, Influenza, 'Gastro' or similar outbreak on site can be serious, not only to the Contractor's and the Purchaser's budgets/schedule and operations, but at a personal level can have health effects on a large number of people and their extended families.

The Company's intent is to exclude Covid and similar infections from site rather than attempt to manage or limit them within the site.

The Contractor will already be aware of the need for cleanliness and hygiene, which shall be supplemented or reinforced as may be required from time to time in line with the contemporary risk, KML's Safety Bulletins, government guidelines and public health directive/s. This may for example include requirements for physical isolation or distancing, the compulsory use of face masks and other PPE, mandatory vaccinations, mandatory Covid testing, hand washing, sanitising, restricting/excluding personnel from affected regions and States/Territories, the use of QR codes and vaccination certificates, temperature measurements, or other measures, as required.

Rather than present to work with symptoms, personnel shall isolate, report the matter to their supervisor and request testing and further instructions if feeling unwell. In particular, personnel at start of their swing should not report for FIFO/DIDO if feeling unwell, but should instead report the matter to their Supervisor.

7.1.6 Environmental Requirements

7.1.6.1 General

The Company has an obligation to comply with all statutory environmental requirements in regard to all Site activities for the project. This responsibility devolves to the Contractor for site activities within its remit.

The Contractor shall:

a) Comply with all relevant requirements and obligations applicable to the Site Services and the Minesite.

b) Comply with the requirements of Company's specification "Environmental Management Plan" (CORP-EN-PLN-1020) and as required by this SOW.

c) Nominate a member of its Site workforce as the Contractor's environmental representative.

d) Notify the Company's Representative in writing of the name of the nominated Contractor's environmental representative. The Contractor shall obtain approval of the nominated representative from the Company's Representative prior to commencing the Site Services on the Site.

7.1.6.2 Specific Environmental Considerations & Compliance

a) The specific environmental requirements are detailed in the Contract including the Company's *Environmental Management Plan* document CORP-EN-PLN-1020.

b) The Contractor acknowledges and agrees that the respective lump sums, rates and prices for payment for the execution of the work in the pricing schedule and the program include allowance for compliance with the all requirements including environmental requirements of the Contract including the following:

   i) Unauthorized vegetation disturbance;

   ii) Uncontrolled/unauthorised release of fuel/lubricants from equipment;

   iii) Uncontrolled release of dust;

   iv) Uncontrolled/unauthorised release of any substance that will damage the environment;

   v) Protection of wildlife.

8 PLANNING, SCHEDULING & REPORTING

8.1 Planning, Scheduling & Reporting

Prior to commencing work under the contract, the Contractor shall submit its Project Execution Plan to the Company's Representative for review and approval. The plan shall cover the following:

- Project Organisational structure
- A fully resourced and micro-detailed level 6 Project Schedule, in particular inclusive of all:

  (i) The Contractor's projected timeline for the progress of each micro-detailed activity;

  (ii) Basis of Schedule that defines the basis for the development of the project schedule and assists the project team in identifying any key elements, issues and special considerations (assumptions, exclusions, etc.);

  (iii) Construction Methodology that plans, executes, monitors, and controls the outcomes of the work under then Contract;

  (iv) a resource schedule that nominates the quantity of [own] persons anticipated on-site per week, by Trade, related to each micro-detailed activity, to facilitate Company's forward planning for accommodation and flights

  (v) a resource schedule that for all off-site and on-site;

  - direct and indirect manning levels and classes,
  - plant and equipment names, types and sizes etc.

- Contractor is to assure that the Project Schedule incorporates all the resources, commodities and quantities used to populate and establish the Pricing Schedule and to complete the works as described in the Scope of Services and under the Contract.
- Document control
- Progress reporting (including all Day Work Sheets in form that is approved by the Company)
- Financial Cashflow Forecast
- Quality management

- Risk management
- Health and safety management
- Subcontractor management
- Completion of remedial repairs as a result of inspections
- Certification & Final documentation.

- Submission of weekly progress reports shall address:
  - Progress summary - %completion, S-curve based on performed services (quantities planned & actual), histogram based on man-hours planned/ expended, broken down by major work front
  - Variations Register
  - Delays & EOT Register
  - Correspondence Register
  - Financial Cashflow Forecast
  - Daily Work Sheets incorporated into the Weekly Work Sheet
  - Bullet-lists of work progressed, and work completed during the period
  - Work planned for the next period, including 2-week proposed Manning Schedule look-ahead, for approval and for coordination of flights and accommodation
  - Subcontractor progress if applicable, work planned/work completed,
  - All injuries, incidents, illnesses, Medical Treatment Injury, Lost-Time Injuries, near-misses, and all recordable obligations
  - Areas of concern
  - Technical Queries and RFIs, and their status
  - Quality (issues reported during the period, non-conformance, audit results, NDT results, additional Welder's qualifications and test results).

- Timing for submittal of Progress data program shall be 12-Noon on every Friday of the week.

- The Contractor shall be available to participate in weekly construction meetings as required, including video and telephone conferences.

8.2 Performance Assessment & Auditing

The Contractor shall:

- Conduct regular Financial, Commercial, Project Controls, HSECQ audits and inspections of their areas.
- Identify corrective actions to address non-conformance or hazards and document any corrective actions in an action register, including assignment of responsibilities and time frames.
- Participate in audits conducted by the Company where requested by the Company Representative.

8.3 Documentation & Drawings

In the event of any conflict between the contract documents, documents shall take the following priority:

1. The Contract, as executed between the parties and as subsequently amended
2. This Scope of Work document
3. Project drawings
4. KML-standard drawings, specifications, procedures, and the like
5. Written Technical Query replies, Site Instructions & Site Bulletins
6. Australian Standards
7. Best industry practice
8. Relevant International standards.

The Contractor shall furnish all drawings and data as required by the CDRL in § 13 below and in accordance with the Contract requirements, including the requirements of CORP-AD-SPC-1002 and L200-SMP-CDRL-1001.

The Company's Representative reserves the right to request any additional information necessary to clarify the installation, operation and maintenance of The Equipment.

The Contractor shall mark-up and submit Contract and Referenced Drawings with 'AS BUILT' information.

The Contractor shall prepare and submit as-built drawings for site run small bore piping.

9 WORK EXCLUDED

The following are the work exclusions. These works are either already completed at Site or they are deemed not necessary to be carried out by the Contractor.

9.1 General

- The provision of water cart for dust suppression.

9.2 Engineering

- Preparation of construction drawings, isometrics drawings and 3D models.
- Preparation of any standard drawings and construction specifications. The Company's Corporate Standard Drawings and Specifications shall be used.

9.3 Civil and Foundation

- Conduct new geotechnical investigation works.

9.4 E & I

- Installation of New MCC tiers MC-017 & 019 into SR-102C and connection of main power Bus Bars.

- Installation of isolation valves for services listed below, interfacing between the existing plant and the Magnetic Elutriator building including:

- Process water (HV2134 and HV2129)

- Gland Water (HV2119)

- Plant Air (HV2128)

- Potable Water(HV2121)

  NOTE: Fire Water connection and isolation valve (HV2201) have NOT been fitted.

10 COMPANY'S PROVISIONS

The above is a general outline of the works; however, the Contractor shall be responsible for the performance of the whole of the Works including such work as may be required but not specifically described herein, except for specific Company's provisions detailed below.

- Provision of serviced accommodation and messing for personnel at the KML village in accordance with the Company's site procedures and the pre-approved manning schedule.
- Provision of air travel between Perth and the KML village in accordance with the Company's site procedures and pre-approved manning schedule.
- Provision of diesel fuel (only – no petrol) for use on the Karara Minesite in accordance with KML's procedures. The Contractor shall provide own refuelling facilities/mobile tanker/pumps/service truck etc.
- Provision of Site and Area Inductions at no direct cost to the Contractor.
- Portable Water, from the Company's water storage sites in accordance with KML's procedures.
- Provision of a staffed medical facility at the Village and Operations Site; and
- Provision of emergency response facilities including firefighting capability.

11 INSTALLATION SCHEDULE

The Contractor shall supply DRAFT level 5 resource loaded construction schedule during tender and once award and schedule approved; update and maintain it during construction in accordance with the Agreement and this Scope of Work.

12 RESPONSIBILITY MATRIX

The following Responsibility Matrix summarises the responsibilities of the Company and the Contractor. In the event of an inconsistency between the Responsibility Matrix and the rest of this Scope of Work, the rest of the Scope of Work will take precedence.

ITEM	COMPANY	CONTRACTOR
Messing and Accommodation at Karara Site Camp	X	
Contractor's Communications facilities and maintenance		X
Construction Site office, Ablution and Crib supply, operation & maintenance.		X
Arrange for removal of sewage from job-front toilets and ablutions maximum twice per week	X	
Construction site security		X
Supply of Free-Issue Material and Equipment, UNO	X	
Supply of all required labour		X
Management plans		X
All permits required by the Contractor for the Works (i.e. fuel farm, crane, hazardous waste, surface water usage, etc.)		X
Contractor's Personnel transport (on site transport)		X
Constructional Equipment supply, all consumables and maintenance		X
Provision of on-site construction facilities area (as is where is)	X	
Quality system		X
Risk Assessments		X
Site based first aid facilities and medic	X	
Health and safety management		X
Provision of Project Specifications	X	
Survey – measurement for payment & as-built		X
Civil & Concrete Works		X
Grouting work to equipment & column bases		X
Steel, piping & platework supply & fabrication		X
Freight forwarding of all Contractor's supplied items		X
Testing & Commissioning		X
Monthly Meeting, including Minutes of Meeting	X	X
Reporting		X
Position and Verticality survey of erected structures		X
Preparation of As-Built Drawings		X
Completion of Works as per approved drawings		X
Provide existing Radio Channel	X	
Provide Fuel to Contractor's fuel truck/storage facility	X	
Site inductions	X	X

13 CONTRACTOR DATA & DOCUMENT REQUIREMENTS LIST - "CDRL"

The following documents shall be provided by the Contractor within the timeframe/s indicated.

The Contractor shall furnish all drawings and data as required by the Contractor Data Requirements Specification and in accordance with the Contract requirements, including the requirements of L200-SMP-CDRL-1001.

The Company's Representative reserves the right to request any additional information necessary to clarify the installation, operation and maintenance of The Equipment.

The Contractor shall mark-up and submit Contract and Referenced Drawings with 'AS BUILT' information.

The Contractor shall prepare and submit as-built drawings for site run small bore piping.

14 PROVISION SUMS ON ADDITIONAL WORKS

The Contractor will also be responsible for the supply and installation of the following additional works. Detailed Engineering is in progress and the IFC drawings will be made available to the Contractor upon the completion of engineering by the Company's appointed consultant. The Contractor is to submit Provisional sum for these works. The final cost is to be agreed when the IFC drawings are available.

14.1 Additional Magnetic Coils

The scope of this addition work is:

1) Delivery the engineering study report for adding 7 de-mag coils to Karara for review and approval.
2) Supply additional 7 de-mag coils as per the specifications.
3) Install the de-mag coils as per the engineering design drawings including all associated work.
4) Provide red-line mark-up drawings associated with the de-mag coils.

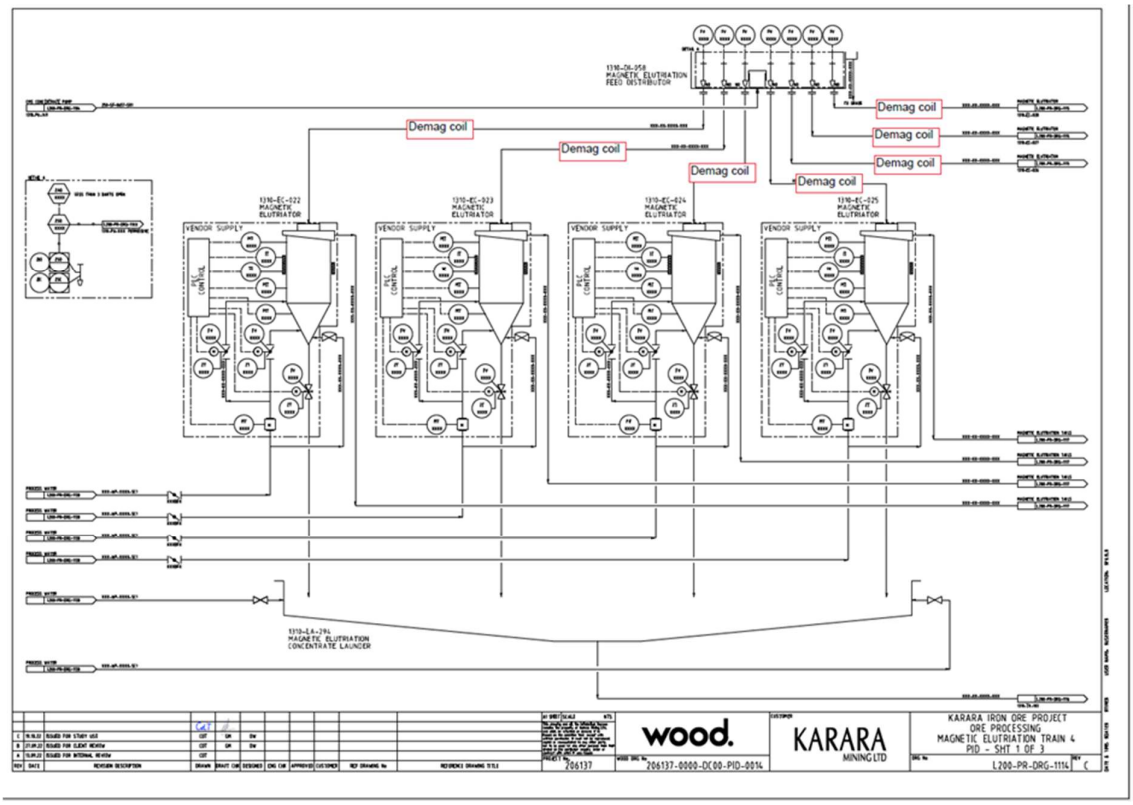


Figure 57: Location of Demag Coils

14.2 Extension of the elutriators concentrate discharge pipe to concentrate thickener feed tank TK041

The current design is for the elutriation concentrate discharge pipe to feed into flotation surge tank TK031. This additional work is to extend the existing concentrate pipes from the branch off to TK031 to the concentrate thickener feed tank TK041. The extension of the four pipes is shown in the red mark-up PID and plant 3D drawings below.

The scope of work for this pipe extension is summarized below.

1) Supply pipework, pipe support and steel structure, valves, and deliver to mine site for installation.
2) Install the pipework, structure steel and valves, including modification of existing pipework, structure steel and valves, as per the approved engineering design drawings.
3) Provide red-line mark-up drawings associated with the pipe extension.

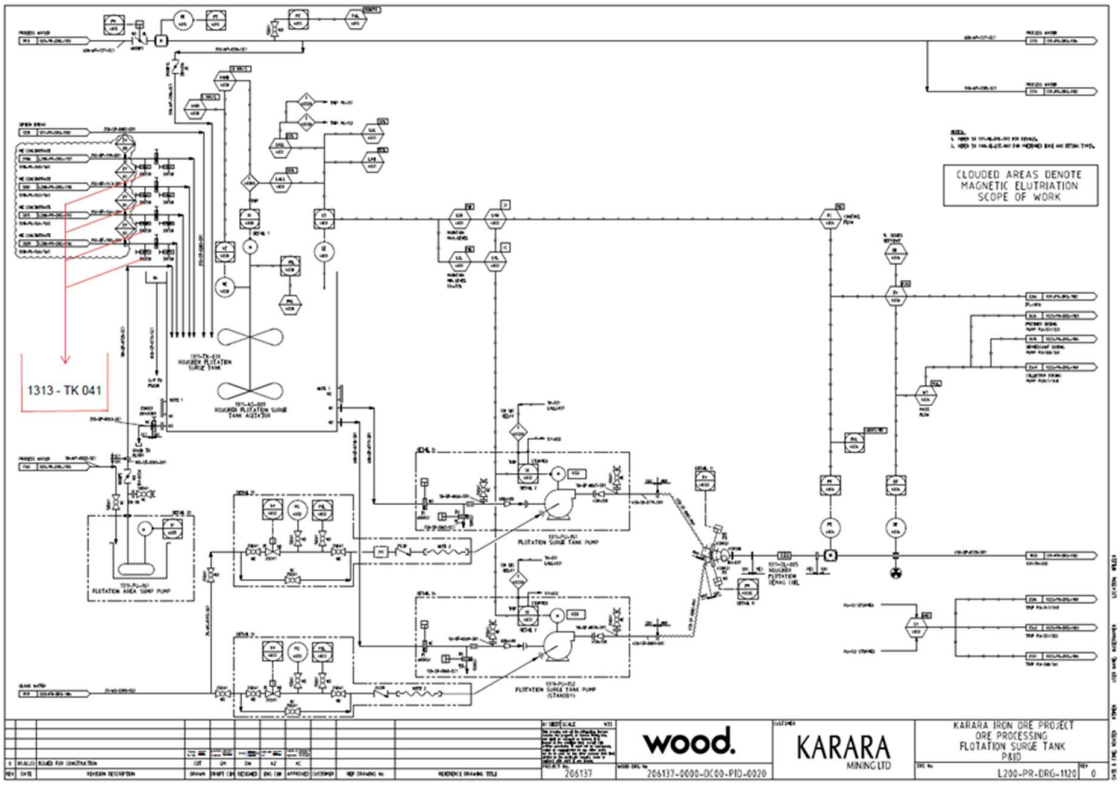


Figure 58: Concentrate pipe extension to concentrate thickener feed tank TK041

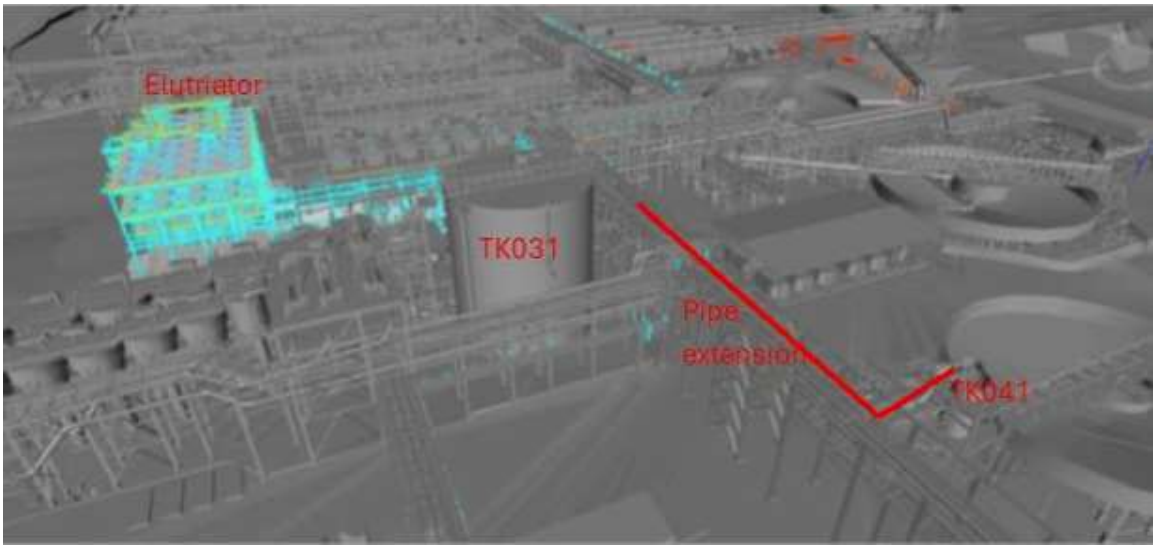


Figure 59: Pipe Extension Route

15 CONTRACT PRICING

The Contractor shall submit a Fixed Lump Sum Price for completing the whole SoW.

There are Pricing Schedules provided in this tender package. It shall be noted that the Pricing Schedules provided in the Appendices of the SoW are for reference only. The pricing schedules are tools facilitating the formation of the Fixed Lump Sum Price. The Company does not guarantee the completeness and accuracy of the information in the Pricing Schedules provided. The Contractor is responsible for validating the accuracy and completeness of the information in the Pricing Schedules based on the Project Drawings and Documents, and the information in this SoW.

The Fixed Lump Sum Price shall include provisions for minor modifications, reworks and associated costs arising from design errors in IFC drawings and other design document. The Contract is responsible for reviewing design drawings and documents in advance of commencement of construction works. If there are any issues identified during the reviewing, the Contract shall notify the Company of such issues. The Company will resolve the issues with the designer promptly upon receiving such notifications to minimise any re-works. The Contractor is to itemise and present this item in the Pricing Schedule.

Appendix A. Referenced Project Documents and Drawings

The following documents & drawings are referenced in this SoW and are applicable to this work. These will be issued electronically to the Contractor separately under transmittal via Document Control:

MTOs

Document Number	*Document Title*
L200-CI-MTO-1001_D	Civil Earthwork (MTO)
206137-0000-DD20-MTO-0001_RevD	Elutriator Building & Piperack MTO - Structural
L200-EL-MTO-1001_2	Electrical Equipment List (MTO)
L200-EL-MTO-1002_0	Electrical Bulk Materials (MTO)
L200-ME-MTO-1001 - 206137-0000-DE10-MTO-0001_C	Material Take Off Platework MTO
L200-ME-MTO-1001_rC_P SQ+	Material Take Off Platework MTO (Mark-up)
L200-ME-MTO-1002 - 206137-0000-DE20-MTO-0001_D	Piping MTO_AB Markup
L200-PI-LST-1002 - 206137-0000-DE20-LST-0002_C	Valve List
L200-ST-MTO-0001_B BOQ	Freight Forwarding MTO

Pricing Schedules

Document Number	*Document Title*
-	Pricing Schedule - Civil & Concrete Work Construction Rev A
-	Pricing Schedule - Piping Rev A 221206
-	Pricing Schedule - Platework Rev A
-	Pricing Schedule - Structural Steel Rev 0
-	Pricing Schedule - SMP Installation Rev A
-	Schedule of Rates - Piping Rev A 221208
-	Schedule of Rates - Structural Steel Rev A
-	Schedule of rates- Civil & Concrete Work Construction_B April 2023

Sketches

Document Number	*Document Title*
206137-0000-DE10-SKT-0001_A	Pre-formed and 3D bend details
206137-0000-DE10-SKT-0002_A	Launder Arrangement Sketch

206137-0000-DE10-SKT-0003_A	Concentrate Hopper – GA Sketch
206137-0000-DE10-SKT-0004_A	Concentrate Hopper – Detail Sketch
206137-0000-DE10-SKT-0005_A	Overflow Launder Spools
L200-ST-SKT-001	Buried services 1
L200-ST-SKT-002	Buried services 2
L200-ST-SKT-003	Buried services 3
1310-EE-SKETCH-001	Sketch – Electrical Earthing Layout
1310-ME-SK-0005	Overflow Launder Spools

SDRL/CDRL

Document Number	*Document Title*
L200-SDRL-1001	SDRL (for steel fabrication)
L200-SMP-CDRL-1001	CDRL for Installation Contractor

3D Model

Document Number	*Document Title*
L200-G-0005_K	3D Model – *Navisworks* also a *MicroStation* model
L200-ST-MDL-1001_Master	3D Model – Microstation Structural model

Civil

Drawing Number	*Document Title*
L200-CI-DRG-1001	Elutriation Building - Earthworks - General Arrangement
L200-CI-DRG-1002	Cleaner Mag Sep (CMS) - Earthworks - General Arrangement

Concrete

Drawing Number	*Document Title*
L200-ST-DRG-1020	Elutriation Blg & Pipe Rack Concrete Ground Slab G.A
L200-ST-DRG-1021	Elutriation Building And Pipe Rack - Foundation General Arrangement
L200-ST-DRG-1022	Pump Foundations - General Arrangement And Pipe Rack
L200-ST-DRG-1023	Elutriation Building - Trafficable Pit Cover Details
L200-ST-DRG-1024	Elutriation Building And Pipe Rack - Foundation Details

Equipment and Line List

Document Number	*Document Title*
L200-EL-LST-1001	Electrical load list
L200-EL-LST-1002	Cable schedule
L200-IN-LST-1001	Instrument Index / List

Document Number	*Document Title*
L200-IN-LST-1002	Input/Output list
L200-IN-LST-1003	Cable Schedule – I &C
L200-ME-LST-1001	Mechanical Equipment List (MEL)
L200-ME-MTO-1002	Piping Bulk MTO
L200-PI-LST-1001	Piping line list
L200-PI-LST-1002	Valve list
L200-PI-LST-1003	Tie in list
L200-PI-LST-1004	SP items list

Datasheets

Document Number	*Document Title*
L200-IN-DAS-1001	Datasheet – Magflow meters
L200-IN-DAS-1002	Datasheet – Density meters
L200-IN-DAS-1003	Datasheet - ME Tank Level Transmitter
L200-IN-DAS-1004	Datasheet - Sump pit level Transmitter
L200-ME-DAS-1001	Datasheet - Magnetic Elutriation Column
L200-ME-DAS-1003	Datasheet – Centrifugal Slurry Pumps
L200-ME-DAS-1004	Datasheet - Centrifugal Slurry Pumps
L200-ME-DAS-1005	Datasheet - Centrifugal Sump Pumps
L200-PI-DAS-1001	Datasheet – Preformed Mining Hose Bend
L200-PI-DAS-1002	Datasheet – ME Distributor Feed Reducer

Steel, Piping & Platework despatch priority

Drawing Number	*Drawing Title*
L200 PI Priority 1	Suggested despatch priority for Piping
L200 PL Priority 1	Suggested despatch priority for Platework
L200 SS Priority 1	Suggested despatch priority 1 for Steel
L200 SS Priority 2	Suggested despatch priority 2 for Steel
L200 SS Priority 3	Suggested despatch priority 3 for Steel

OEM-Supplier (Jinken) Drawings

Drawing Number	*Drawing Title*
L200-EC-DRG-1001	Auto Magnetic Elutriation Column Arrangement
L200-EC-DRG-1002	Auto Magnetic Elutriation Column Feed Tank
L200-EC-DRG-1003	Auto Magnetic Elutriation Column Main Body
L200-EC-DRG-1004	Auto Magnetic Elutriation Column Overflow Well
L200-EC-DRG-1009	Auto Magnetic Elutriation Column Assembly Diagram

E&I Drawings

Drawing/Doc Number	*Title*
001-1306-EL-DRG-1074 Sketch	Ball Mill Area Substation 1306-SR-102C Floor Plan
001-1306-EL-DRG-1071 Sketch	Ore Processing Grinding RMS & IMS 415V MCC 1310-MC-017 of 1306-SR-102C General Arrangement
001-1306-EL-DRG-1072 Sketch	Ore Processing-Grinding, RMS & IMS 415v MCC 1310-Mc-019 of 1306-SR-102C General Arrangement
001-1306-EL-DRG-1042 Sketch	Ball Mill area substation 1306-SR-102D Floor Plan
001-1306-EL-DRG-1067 Sketch	Grinding, RMS & IMS 415V MCC 1305-MC-010 of 1306-SR-102D General Arrangement
1306-EL-DRG-1071	Ore Processing Grinding RMS & IMS 415V MCC 1310-MC-017 of 1306-SR-102C General Arrangement
1306-EL-DRG-1072	Ore Processing-Grinding, RMS & IMS 415v MCC 1310-Mc-019 of 1306-SR-102C General Arrangement
1306-EL-DRG-1074	Ball Mill Area Substation 1306-SR-102C Floor Plan
1306-EL-DRG-2159	Ore Processing-Grinding, RMS & IMS Substation 1306-SR-102C Services Db 1306-DB-015 Single Line Diagram
1306-IN-DRG-1035	PLC Cabinet PC066 General Arrangement 1 Of 3
1306-IN-DRG-1036	PLC Cabinet PC066 General Arrangement 2 Of 3
1306-IN-DRG-1039	PC066 PLC Cabinet DC Power Schematic
1306-IN-DRG-1041	1306-CP-061 Comms Cabinet AC Power Schematic
1306-IN-DRG-2124	13010-MC-017 Profibus Block Diagram - DP Data Segments
1306-IN-DRG-2125	13010-MC-019 Profibus Block Diagram - DP Data Segments
1306-IN-DRG-2550	1306-SR-102 Comms Termination Summary
1306-IN-DRG-2551	1306-CP-060 Comms Cabinet (1306-SR-102) FO Termination
1306-IN-DRG-2553	1306-CP-061 Comms Cabinet (1306-SR-102) FO Termination (2 of 3)
1306-IN-DRG-2554	1306-CP-061 Comms Cabinet (1306-SR-102) FO Termination (3 of 3)
1306-IN-DRG-2557	PC066 Comms Cabinet (1306-SR-102) FO Termination
1306-IN-DRG-2951	General Arrangement
1308-EL-DRG-2053	Single Line Diagram Sheet 3 of 3
1310-EL-DRG-2054	Single Line Diagram Sheet 1 of 7
1310-EL-DRG-2055	Single Line Diagram Sheet 2 of 7
1310-EL-DRG-2056	Single Line Diagram Sheet 3 of 7
1310-EL-DRG-2057	Single Line Diagram Sheet 4 of 7
1310-EL-DRG-2060	Single Line Diagram Sheet 6 of 7
1310-EL-DRG-2061	Single Line Diagram Sheet 7 of 7
1310-EL-DRG-2214	1310-EC-021 Schematic Diagram
1310-EL-DRG-2215	1310-EC-022 Schematic Diagram
1310-EL-DRG-2217	1310-EC-023 Schematic Diagram

Drawing/Doc Number	*Title*
1310-EL-DRG-2218	1310-EC-024 Schematic Diagram
1310-EL-DRG-2220	1310-EC-025 Schematic Diagram
1310-EL-DRG-2221	1310-EC-026 Schematic Diagram
1310-EL-DRG-2223	1310-EC-027 Schematic Diagram
1310-EL-DRG-2226	1310-EC-031 Schematic Diagram
1310-EL-DRG-2227	1310-EC-032 Schematic Diagram
1310-EL-DRG-2229	1310-EC-033 Schematic Diagram
1310-EL-DRG-2230	1310-EC-034 Schematic Diagram
1310-EL-DRG-2232	1310-EC-035 Schematic Diagram
1310-EL-DRG-2233	1310-EC-036 Schematic Diagram
1310-EL-DRG-2235	1310-EC-037 Schematic Diagram
1310-EL-DRG-2238	1310-EC-041 Schematic Diagram
1310-EL-DRG-2239	1310-EC-042 Schematic Diagram
1310-EL-DRG-2241	1310-EC-043 Schematic Diagram
1310-EL-DRG-2242	1310-EC-044 Schematic Diagram
1310-EL-DRG-2244	1310-EC-045 Schematic Diagram
1310-EL-DRG-2245	1310-EC-046 Schematic Diagram
1310-EL-DRG-2247	1310-EC-047 Schematic Diagram
1310-EL-DRG-2272	1310-PU-560 Schematic Diagram
1310-EL-DRG-2273	1310-PU-561 Schematic Diagram
1310-EL-DRG-2274	1310-PU-562 Schematic Diagram
1310-EL-DRG-2275	1310-PU-563 Schematic Diagram
1310-EL-DRG-2276	1310-EC-011 Schematic Diagram
1310-EL-DRG-2277	1310-EC-012 Schematic Diagram
1310-EL-DRG-2278	1310-EC-013 Schematic Diagram
1310-EL-DRG-2279	1310-EC-014 Schematic Diagram
1310-EL-DRG-2280	1310-EC-015 Schematic Diagram
1310-EL-DRG-2281	1310-EC-016 Schematic Diagram
1310-EL-DRG-2282	1310-EC-017 Schematic Diagram
1310-EL-DRG-2304	1310-PU-148 Schematic Diagram
1310-EL-DRG-2305	1310-PU-149 Schematic Diagram
1310-EL-DRG-2306	1310-PU-564 Schematic Diagram
1310-EL-DRG-2307	1310-PU-565 Schematic Diagram
1310-EL-DRG-2308	1310-PU-566 Schematic Diagram
1310-EL-DRG-2309	1310-PU-567 Schematic Diagram
1310-EL-DRG-2310	1310-PU-146 Schematic Diagram
1310-EL-DRG-2311	1310-PU-147 Schematic Diagram
1310-EL-DRG-2312	1310-PU-568 Schematic Diagram

Drawing/Doc Number	*Title*
1310-EL-DRG-2572	1310-PU-560 Connection Diagram
1310-EL-DRG-2573	1310-PU-561 Connection Diagram
1310-EL-DRG-2574	1310-PU-562 Connection Diagram
1310-EL-DRG-2575	1310-PU-563 Connection Diagram
1310-EL-DRG-2604	1310-PU-146 Connection Diagram
1310-EL-DRG-2605	1310-PU-147 Connection Diagram
1310-EL-DRG-2606	1310-PU-148 Connection Diagram
1310-EL-DRG-2607	1310-PU-149 Connection Diagram
1310-EL-DRG-2608	1310-PU-564 Connection Diagram
1310-EL-DRG-2609	1310-PU-565 Connection Diagram
1310-EL-DRG-2610	1310-PU-566 Connection Diagram
1310-EL-DRG-2611	1310-PU-567 Connection Diagram
1310-EL-DRG-2612	Connection Diagram
1310-EL-DRG-2813	CMS Building Earthing Layout
1310-EL-DRG-2820	Electrical Lighting and Small Power Layout - ME Building Sheet 1 of 4
1310-EL-DRG-2821	Electrical Lighting and Small Power Layout - ME Building Sheet 2 of 4
1310-EL-DRG-2822	Electrical Lighting and Small Power Layout - ME Building Sheet 3 of 4
1310-EL-DRG-2823	Electrical Lighting and Small Power Layout - ME Building Sheet 4 of 4
1310-IN-DRG-1008	Ore Processing 1310-MP-030 DC Power Schematic Diagram
1310-IN-DRG-1009	Ore Processing 1310-MP-030 AC Power Schematic Diagram
1310-IN-DRG-1012	Ore Processing Magnetic Elutriation Area Network Block Diagram
1310-IN-DRG-1013	Ore Processing 1310-MP-030 Field Profibus and PA Block Diagram
1310-IN-DRG-1015	1310-MP-030 Marshalling Panel (1306-SR-102) FO Termination
1310-IN-DRG-1019	Marshalling Panel 1310-MP-030 General Arrangement
1310-IN-DRG-2104	Instrument Segment Diagram 1310-JB-802
1310-IN-DRG-2105	Instrument Segment Diagram 1310-JB-803
1310-IN-DRG-2106	Instrument Segment Diagram 1310-JB-804
1310-IN-DRG-2233	1310-FV-4565A Pump 560 Valve Instrument Loop Diagram
1310-IN-DRG-2234	1310-FV-4565B Pump 560 Valve Instrument Loop Diagram
1310-IN-DRG-2235	1310-FV-4593 Pump 560 Valve Instrument Loop Diagram
1310-IN-DRG-2242	1310-FV-4566A Pump 561 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2243	1310-FV-4566B Pump 561 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2244	1310-FV-4594 Pump 561 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2245	1310-FV-4665A Pump 562 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2246	1310-FV-4665B Pump 562 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2247	1310-FV-4593 Pump 562 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2248	1310-FV-4666A Pump 563 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2249	1310-FV-4666B Pump 563 Drain Valve Instrument Loop Diagram

Drawing/Doc Number	*Title*
1310-IN-DRG-2250	1310-FV-4694 Pump 563 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2251	1310-FV-4765A Pump 564 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2252	1310-FV-4765B Pump 564 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2253	1310-FV-4793 Pump 564 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2254	1310-FV-4766A Pump 565 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2255	1310-FV-4766B Pump 565 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2256	1310-FV-4795 Pump 565 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2257	1310-FV-4865A Pump 566 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2258	1310-FV-4865B Pump 566 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2259	1310-FV-4893 Pump 566 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2260	1310-FV-4866A Pump 567 Inlet Valve Instrument Loop Diagram
1310-IN-DRG-2261	1310-FV-4866B Pump 567 Drain Valve Instrument Loop Diagram
1310-IN-DRG-2262	1310-FV-4894 Pump 567 Outlet Valve Instrument Loop Diagram
1310-IN-DRG-2263	Pump 560 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2264	Pump 561 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2265	Pump 562 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2266	Pump 563 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2267	Pump 564 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2268	Pump 565 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2269	Pump 566 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2270	Pump 567 Gland Water Manifold Instrument Loop Diagram
1310-IN-DRG-2550	Ore Processing Marshalling Panel 1310-MP-030 Termination Diagram Sheet 1 of 2
1310-IN-DRG-2551	Ore Processing Marshalling Panel 1310-MP-030 Termination Diagram Sheet 2 of 2
1311-EL-DRG-1042	Ore Processing Primary Crushing & Sec Screening Substation 1311-Sr-109 Floor Plan
1311-EL-DRG-1143	Ore Processing- Flotation & Reagents 415v MCC 1311-MC-045 for 1311-SR-109 General Arrangement
1311-EL-DRG-1198	1310-DB-002 Single Line Diagram
1311-EL-DRG-2061	Single Line Diagram Sheet 2 of 2
1311-EL-DRG-2153	1311-DB-008 Single Line Diagram
1311-EL-DRG-2155	1311-DB-006 Single Line Diagram
1311-IN-DRG-2121	1306-SR-109 Block Diagram - DP Data Segments

Commissioning documents

Drawing Number	*Drawing Title*
CORP-CO-PRO-1003	Completion Energisation Process_36520_1
-	Electrical Stage 1 Checksheet – LV Control Cable

Drawing Number	*Drawing Title*
-	Electrical Stage 1 Checksheet – VSD Check
-	Electrical Stage 2 Checksheet - Motor Test
-	WAY Electrical ITR Register

HAZOP documents

Drawing Number	*Drawing Title*
L200-SR-REP-1002-03	Act_03 - EIC Hazop Action Close-out
L200-SR-REP-1002-05	Act_05 - EIC Hazop Action Close-out
L200-SR-REP-1002-06	Act_06 - EIC Hazop Action Close-out
L200-SR-REP-1002-08	Act_08 - EIC Hazop Action Close-out
L200-SR-REP-1002-10	Act_10 - EIC Hazop Action Close-out
L200-SR-REP-1002-16	Act_16 - EIC Hazop Action Close-out
L200-SR-REP-1002-25	Act_25 - EIC Hazop Action Close-out
L200-SR-REP-1002-29	Act_29 - EIC Hazop Action Close-out
L200-SR-REP-1002-46	Act_46 - EIC Hazop Action Close-out
L200-SR-REP-1002-47	Act_47 - EIC Hazop Action Close-out
L200-SR-REP-1002-52	Act_52 - EIC Hazop Action Close-out
L200-SR-REP-1002-53	Act_53 - EIC Hazop Action Close-out

Mechanical Drawings

Drawing Number	*Drawing Title*
L200-ME-DRG-1020	Project Plot Plan
L200-ME-DRG-1021	Mechanical - Plan at Grade
L200-ME-DRG-1022	Mechanical - Plan at RL.345.030
L200-ME-DRG-1023	Mechanical - Plan at RL.348.030
L200-ME-DRG-1024	Mechanical - Plan at RL.352.830
L200-ME-DRG-1025	Elevation & Section - Sheet 1
L200-ME-DRG-1026	Elevation & Section - Sheet 2
L200-ME-DRG-1027	Elevation & Section - Sheet 3
L200-ME-DRG-1028	Elevation & Section - Sheet 4
L200-ME-DRG-1029	ME Tails Launder Plan
L200-ME-DRG-1030	CMS Drum Demolition Plan
L200-ME-DRG-1031	CMS Drum Demolition Details
L200-ME-DRG-1032	CMS Modification Arrangement
L200-ME-DRG-1033	CMS Modification Details & Sections
L200-ME-DRG-1034	Pump and Hopper Arrangement
L200-ME-DRG-1035	Pump and Hopper Details
L200-ME-DRG-1036	ME Concentrate Hopper - GA
L200-ME-DRG-1037	Launder Arrangement
L200-ME-DRG-1038	Launder Details
L200-ME-DRG-1039	ME Concentrate Hopper - Details
L200-ME-DRG-1040	Fire Water Coverage Plan & Details
L200-ME-DRG-1041	Fire Water Coverage Plan

Structural Drawings

Drawing Number	*Drawing Title*
L200-ST-DRG-1002	CMS Building Infill Panels Top Level
L200-ST-DRG-1003	Steelwork Baseplate General Arrangement
L200-ST-DRG-1004	Steelwork General Arrangement Sht.1 Bottom Level
L200-ST-DRG-1005	Steelwork General Arrangement – Launder Access Platform
L200-ST-DRG-1006	Steelwork General Arrangement – Vessel Support
L200-ST-DRG-1007	Steelwork General Arrangement – Top Modularise Steel
L200-ST-DRG-1008	Steelwork Elevation Gridline A-D Sht.1
L200-ST-DRG-1009	Steelwork Elevation Gridline A-D Sht.2
L200-ST-DRG-1010	Steelwork Elevation Gridline 1-7 Sht.1
L200-ST-DRG-1011	Steelwork Details Sheet 1
L200-ST-DRG-1012	Steelwork Details Sheet 2
L200-ST-DRG-1013	Steelwork Details Sheet 3

Drawing Number	*Drawing Title*
L200-ST-DRG-1014	Steelwork Stair tower General Arrangement
L200-ST-DRG-1018	Piperack general arrangement
L200-ST-DRG-1025	Steelwork General Arrangement Sht.5 Distributor & Electrical Access Platforms
L200-ST-DRG-1026	Hopper Access Platforms General Arrangement
L200-ST-DRG-1027	Steelwork elevation GL.1-7, Sht.2

Piping Drawings

Drawing/Doc Number	*Drawing/Document Title*
L200-PI-DRG-1003	Elutriation Building ME Tail Launders Details
L200-PI-DRG-1004	Elutriation Building ME Tail Launders Arrangement
L200-PI-DRG-1005	Services & Small Bore Tie In Details
L200-PI-DRG-1006	Process Water Tie-In Details
L200-PI-DRG-1007	Elutriation Building Tail Launders Tie-in Details
L200-PI-DRG-1008	CMS Building Tie In Details
L200-PI-DRG-1009	CMS Piping Tie-In Arrangement

Piping Isometric Drawings

Drawing/Doc Number	*Drawing/Document Title*
1310-AV-0001-SC1-01_0cp1	Isometric Pipeline 1310-AV-0001-SC1-01
1310-AV-0002-SC1-01_0cp1	Isometric Pipeline 1310-AV-0002-SC1-01
1310-AV-0005-SC1-01_0cp1	Isometric Pipeline 1310-AV-0005-SC1-01
1310-AV-0006-SC1-01_0cp1	Isometric Pipeline 1310-AV-0006-SC1-01
1310-AV-0007-SC1-01_0cp1	Isometric Pipeline 1310-AV-0007-SC1-01
1310-AV-0008-SC1-01_0cp1	Isometric Pipeline 1310-AV-0008-SC1-01
1310-SF-0021-SC1-01_0cp1	Isometric Pipeline 1310-SF-0021-SC1-01
1310-SF-0037-SC1-01_0cp1	Isometric Pipeline 1310-SF-0037-SC1-01
1310-SF-0038-SC1-01_0cp1	Isometric Pipeline 1310-SF-0038-SC1-01
1310-SF-0044-SC1-01_0cp1	Isometric Pipeline 1310-SF-0044-SC1-01
1310-SF-0623-SR2-01_0cp1	Isometric Pipeline 1310-SF-0623-SR2-01
1310-SF-0624-SR2-01_0cp1	Isometric Pipeline 1310-SF-0624-SR2-01
1310-SF-0625-SR2-01_0cp1	Isometric Pipeline 1310-SF-0625-SR2-01
1310-SF-0626-SR2-01_0cp1	Isometric Pipeline 1310-SF-0626-SR2-01
1310-SF-0638-SR1-01_0cp1	Isometric Pipeline 1310-SF-0638-SR1-01
1310-SF-0639-SR1-01_0cp1	Isometric Pipeline 1310-SF-0639-SR1-01
1310-SF-0639-SR1-02_0cp1	Isometric Pipeline 1310-SF-0639-SR1-02
1310-SF-0639-SR1-03_0cp1	Isometric Pipeline 1310-SF-0639-SR1-03
1310-SF-0639-SR1-04_0cp1	Isometric Pipeline 1310-SF-0639-SR1-04
1310-SF-0641-SR2-01_0cp1	Isometric Pipeline 1310-SF-0641-SR2-01

Drawing/Doc Number	*Drawing/Document Title*
1310-SF-0642-SR2-01_0cp1	Isometric Pipeline 1310-SF-0642-SR2-01
1310-SF-0643-SR2-01_0cp1	Isometric Pipeline 1310-SF-0643-SR2-01
1310-SF-0644-SR2-01_0cp1	Isometric Pipeline 1310-SF-0644-SR2-01
1310-SF-0656-SR1-01_0cp1	Isometric Pipeline 1310-SF-0656-SR1-01
1310-SF-0657-SR1-01_0cp1	Isometric Pipeline 1310-SF-0657-SR1-01
1310-SF-0657-SR1-02_0cp1	Isometric Pipeline 1310-SF-0657-SR1-02
1310-SF-0657-SR1-03_0cp1	Isometric Pipeline 1310-SF-0657-SR1-03
1310-SF-0657-SR1-04_0cp1	Isometric Pipeline 1310-SF-0657-SR1-04
1310-SF-0659-SR2-01_0cp1	Isometric Pipeline 1310-SF-0659-SR2-01
1310-SF-0660-SR2-01_0cp1	Isometric Pipeline 1310-SF-0660-SR2-01
1310-SF-0661-SR2-01_0cp1	Isometric Pipeline 1310-SF-0661-SR2-01
1310-SF-0662-SR2-01_0cp1	Isometric Pipeline 1310-SF-0662-SR2-01
1310-SF-0674-SR1-01_0cp1	Isometric Pipeline 1310-SF-0674-SR1-01
1310-SF-0675-SR1-01_0cp1	Isometric Pipeline 1310-SF-0675-SR1-01
1310-SF-0675-SR1-02_0cp1	Isometric Pipeline 1310-SF-0675-SR1-02
1310-SF-0675-SR1-03_0cp1	Isometric Pipeline 1310-SF-0675-SR1-03
1310-SF-0677-SR2-01_0cp1	Isometric Pipeline 1310-SF-0677-SR2-01
1310-SF-0678-SR2-01_0cp1	Isometric Pipeline 1310-SF-0678-SR2-01
1310-SF-0679-SR2-01_0cp1	Isometric Pipeline 1310-SF-0679-SR2-01
1310-SF-0680-SR2-01_0cp1	Isometric Pipeline 1310-SF-0680-SR2-01
1310-SF-0692-SR1-01_0cp1	Isometric Pipeline 1310-SF-0692-SR1-01
1310-SF-0693-SR1-01_0cp1	Isometric Pipeline 1310-SF-0693-SR1-01
1310-SF-0693-SR1-02_0cp1	Isometric Pipeline 1310-SF-0693-SR1-02
1310-SF-0693-SR1-03_0cp1	Isometric Pipeline 1310-SF-0693-SR1-03
1310-SF-1100-SR2-01_0cp1	Isometric Pipeline 1310-SF-1100-SR2-01
1310-SF-1101-SR2-01_0cp1	Isometric Pipeline 1310-SF-1101-SR2-01
1310-SF-1102-SR2-01_0cp1	Isometric Pipeline 1310-SF-1102-SR2-01
1310-SF-1103-SR2-01_0cp1	Isometric Pipeline 1310-SF-1103-SR2-01
1310-SF-1104-SR2-01_0cp1	Isometric Pipeline 1310-SF-1104-SR2-01
1310-SF-1105-SR2-01_0cp1	Isometric Pipeline 1310-SF-1105-SR2-01
1310-SF-1106-SR2-01_0cp1	Isometric Pipeline 1310-SF-1106-SR2-01
1310-SF-1107-SR2-01_0cp1	Isometric Pipeline 1310-SF-1107-SR2-01
1310-SF-1108-SR2-01_0cp1	Isometric Pipeline 1310-SF-1108-SR2-01
1310-SF-1109-SR2-01_0cp1	Isometric Pipeline 1310-SF-1109-SR2-01
1310-SF-1111-SR1-01_0cp1	Isometric Pipeline 1310-SF-1111-SR1-01
1310-SF-1111-SR1-02_0cp1	Isometric Pipeline 1310-SF-1111-SR1-02
1310-SF-1112-SC1-01_0cp1	Isometric Pipeline 1310-SF-1112-SC1-01
1310-SF-1114-SR1-01_0cp1	Isometric Pipeline 1310-SF-1114-SR1-01

Drawing/Doc Number	*Drawing/Document Title*
1310-SF-1116-SR1-01_0cp1	Isometric Pipeline 1310-SF-1116-SR1-01
1310-SF-1116-SR1-02_0cp1	Isometric Pipeline 1310-SF-1116-SR1-02
1310-SF-1117-SC1-01_0cp1	Isometric Pipeline 1310-SF-1117-SC1-01
1310-SF-1119-SR1-01_0cp1	Isometric Pipeline 1310-SF-1119-SR1-01
1310-SF-1119-SR1-02_0cp1	Isometric Pipeline 1310-SF-1119-SR1-02
1310-SF-1119-SR1-03_0cp1	Isometric Pipeline 1310-SF-1119-SR1-03
1310-SF-1121-SR1-01_0cp1	Isometric Pipeline 1310-SF-1121-SR1-01
1310-SF-1122-SC1-01_0cp1	Isometric Pipeline 1310-SF-1122-SC1-01
1310-SF-1122-SC1-02_0cp1	Isometric Pipeline 1310-SF-1122-SC1-02
1310-SF-1123-SC1-01_0cp1	Isometric Pipeline 1310-SF-1123-SC1-01
1310-SF-1124-SR2-01_0cp1	Isometric Pipeline 1310-SF-1124-SR2-01
1310-SF-1125-SR2-01_0cp1	Isometric Pipeline 1310-SF-1125-SR2-01
1310-SF-1126-SR2-01_0cp1	Isometric Pipeline 1310-SF-1126-SR2-01
1310-SF-1127-SR2-01_0cp1	Isometric Pipeline 1310-SF-1127-SR2-01
1310-SF-1128-SR2-01_0cp1	Isometric Pipeline 1310-SF-1128-SR2-01
1310-SF-1129-SR2-01_0cp1	Isometric Pipeline 1310-SF-1129-SR2-01
1310-SF-1130-SR2-01_0cp1	Isometric Pipeline 1310-SF-1130-SR2-01
1310-SF-1131-SR2-01_0cp1	Isometric Pipeline 1310-SF-1131-SR2-01
1310-SF-1132-SR2-01_0cp1	Isometric Pipeline 1310-SF-1132-SR2-01
1310-SF-1133-SR2-01_0cp1	Isometric Pipeline 1310-SF-1133-SR2-01
1310-SF-1135-SR1-01_0cp1	Isometric Pipeline 1310-SF-1135-SR1-01
1310-SF-1135-SR1-02_0cp1	Isometric Pipeline 1310-SF-1135-SR1-02
1310-SF-1136-SC1-01_0cp1	Isometric Pipeline 1310-SF-1136-SC1-01
1310-SF-1138-SR1-01_0cp1	Isometric Pipeline 1310-SF-1138-SR1-01
1310-SF-1140-SR1-01_0cp1	Isometric Pipeline 1310-SF-1140-SR1-01
1310-SF-1140-SR1-02_0cp1	Isometric Pipeline 1310-SF-1140-SR1-02
1310-SF-1141-SC1-01_0cp1	Isometric Pipeline 1310-SF-1141-SC1-01
1310-SF-1143-SR1-01_0cp1	Isometric Pipeline 1310-SF-1143-SR1-01
1310-SF-1143-SR1-02_0cp1	Isometric Pipeline 1310-SF-1143-SR1-02
1310-SF-1143-SR1-03_0cp1	Isometric Pipeline 1310-SF-1143-SR1-03
1310-SF-1143-SR1-04_0cp1	Isometric Pipeline 1310-SF-1143-SR1-04
1310-SF-1145-SR2-01_0cp1	Isometric Pipeline 1310-SF-1145-SR2-01
1310-SF-1146-SR2-01_0cp1	Isometric Pipeline 1310-SF-1146-SR2-01
1310-SF-1147-SR2-01_0cp1	Isometric Pipeline 1310-SF-1147-SR2-01
1310-SF-1148-SR2-01_0cp1	Isometric Pipeline 1310-SF-1148-SR2-01
1310-SF-1149-SR2-01_0cp1	Isometric Pipeline 1310-SF-1149-SR2-01
1310-SF-1150-SR2-01_0cp1	Isometric Pipeline 1310-SF-1150-SR2-01
1310-SF-1151-SR2-01_0cp1	Isometric Pipeline 1310-SF-1151-SR2-01

Drawing/Doc Number	*Drawing/Document Title*
1310-SF-1152-SR2-01_0cp1	Isometric Pipeline 1310-SF-1152-SR2-01
1310-SF-1153-SR2-01_0cp1	Isometric Pipeline 1310-SF-1153-SR2-01
1310-SF-1154-SR2-01_0cp1	Isometric Pipeline 1310-SF-1154-SR2-01
1310-SF-1156-SR1-01_0cp1	Isometric Pipeline 1310-SF-1156-SR1-01
1310-SF-1156-SR1-02_0cp1	Isometric Pipeline 1310-SF-1156-SR1-02
1310-SF-1157-SC1-01_0cp1	Isometric Pipeline 1310-SF-1157-SC1-01
1310-SF-1159-SR1-01_0cp1	Isometric Pipeline 1310-SF-1159-SR1-01
1310-SF-1161-SR1-01_0cp1	Isometric Pipeline 1310-SF-1161-SR1-01
1310-SF-1161-SR1-02_0cp1	Isometric Pipeline 1310-SF-1161-SR1-02
1310-SF-1162-SC1-01_0cp1	Isometric Pipeline 1310-SF-1162-SC1-01
1310-SF-1164-SR1-01_0cp1	Isometric Pipeline 1310-SF-1164-SR1-01
1310-SF-1164-SR1-02_0cp1	Isometric Pipeline 1310-SF-1164-SR1-02
1310-SF-1164-SR1-03_0cp1	Isometric Pipeline 1310-SF-1164-SR1-03
1310-SF-1166-SR2-01_0cp1	Isometric Pipeline 1310-SF-1166-SR2-01
1310-SF-1167-SR2-01_0cp1	Isometric Pipeline 1310-SF-1167-SR2-01
1310-SF-1168-SR2-01_0cp1	Isometric Pipeline 1310-SF-1168-SR2-01
1310-SF-1169-SR2-01_0cp1	Isometric Pipeline 1310-SF-1169-SR2-01
1310-SF-1170-SR2-01_0cp1	Isometric Pipeline 1310-SF-1170-SR2-01
1310-SF-1171-SR2-01_0cp1	Isometric Pipeline 1310-SF-1171-SR2-01
1310-SF-1172-SR2-01_0cp1	Isometric Pipeline 1310-SF-1172-SR2-01
1310-SF-1173-SR2-01_0cp1	Isometric Pipeline 1310-SF-1173-SR2-01
1310-SF-1174-SR2-01_0cp1	Isometric Pipeline 1310-SF-1174-SR2-01
1310-SF-1175-SR2-01_0cp1	Isometric Pipeline 1310-SF-1175-SR2-01
1310-SF-1177-SR1-01_0cp1	Isometric Pipeline 1310-SF-1177-SR1-01
1310-SF-1177-SR1-02_0cp1	Isometric Pipeline 1310-SF-1177-SR1-02
1310-SF-1178-SC1-01_0cp1	Isometric Pipeline 1310-SF-1178-SC1-01
1310-SF-1180-SR1-01_0cp1	Isometric Pipeline 1310-SF-1180-SR1-01
1310-SF-1182-SR1-01_0cp1	Isometric Pipeline 1310-SF-1182-SR1-01
1310-SF-1182-SR1-02_0cp1	Isometric Pipeline 1310-SF-1182-SR1-02
1310-SF-1183-SC1-01_0cp1	Isometric Pipeline 1310-SF-1183-SC1-01
1310-SF-1185-SR1-01_0cp1	Isometric Pipeline 1310-SF-1185-SR1-01
1310-SF-1185-SR1-02_0cp1	Isometric Pipeline 1310-SF-1185-SR1-02
1310-SF-1185-SR1-03_0cp1	Isometric Pipeline 1310-SF-1185-SR1-03
1310-ST-0961-SR2-01_0cp1	Isometric Pipeline 1310-ST-0961-SR2-01
1310-ST-0961-SR2-02_0cp1	Isometric Pipeline 1310-ST-0961-SR2-02
1310-ST-0970-SR2-01_0cp1	Isometric Pipeline 1310-ST-0970-SR2-01
1310-ST-0970-SR2-02_0cp1	Isometric Pipeline 1310-ST-0970-SR2-02
1310-ST-0988-SR2-01_0cp1	Isometric Pipeline 1310-ST-0988-SR2-01

Drawing/Doc Number	*Drawing/Document Title*
1310-ST-0988-SR2-02_0cp1	Isometric Pipeline 1310-ST-0988-SR2-02
1310-ST-0989-SR2-01_0cp1	Isometric Pipeline 1310-ST-0989-SR2-01
1310-ST-0990-SR2-01_0cp1	Isometric Pipeline 1310-ST-0990-SR2-01
1310-ST-0990-SR2-02_0cp1	Isometric Pipeline 1310-ST-0990-SR2-02
1310-ST-0991-SR2-01_0cp1	Isometric Pipeline 1310-ST-0991-SR2-01
1310-WF-0072-FMP-01_0cp1	Isometric Pipeline 1310-WF-0072-FMP-01
1310-WF-0478-SG1-01_0cp1	Isometric Pipeline 1310-WF-0478-SG1-01
1310-WF-0478-SG1-02_0cp1	Isometric Pipeline 1310-WF-0478-SG1-02
1310-WF-0478-SG1-03_0cp1	Isometric Pipeline 1310-WF-0478-SG1-03
1310-WF-0478-SG1-04_0cp1	Isometric Pipeline 1310-WF-0478-SG1-04
1310-WF-0484-SG1-01_0cp1	Isometric Pipeline 1310-WF-0484-SG1-01
1310-WF-0487-SG1-01_0cp1	Isometric Pipeline 1310-WF-0487-SG1-01
1310-WF-0487-SG1-02_0cp1	Isometric Pipeline 1310-WF-0487-SG1-02
1310-WF-0490-SG1-01_0cp1	Isometric Pipeline 1310-WF-0490-SG1-01
1310-WP-0051-SC1-01_0cp1	Isometric Pipeline 1310-WP-0051-SC1-01
1310-WP-0051-SC1-02_0cp1	Isometric Pipeline 1310-WP-0051-SC1-02
1310-WP-0051-SC1-03_0cp1	Isometric Pipeline 1310-WP-0051-SC1-03
1310-WP-1530-SC1-01_0cp1	Isometric Pipeline 1310-WP-1530-SC1-01
1310-WP-1530-SC1-02_0cp1	Isometric Pipeline 1310-WP-1530-SC1-02
1310-WP-1532-SC1-01_0cp1	Isometric Pipeline 1310-WP-1532-SC1-01
1310-WP-1532-SC1-02_0cp1	Isometric Pipeline 1310-WP-1532-SC1-02
1310-WP-1533-SC1-01_0cp1	Isometric Pipeline 1310-WP-1533-SC1-01
1310-WP-1533-SC1-02_0cp1	Isometric Pipeline 1310-WP-1533-SC1-02
1310-WP-1559-SC1-01_0cp1	Isometric Pipeline 1310-WP-1559-SC1-01
1310-WP-1564-SC1-01_0cp1	Isometric Pipeline 1310-WP-1564-SC1-01
1310-WP-1564-SC1-02_0cp1	Isometric Pipeline 1310-WP-1564-SC1-02
1310-WP-1570-SC1-01_0cp1	Isometric Pipeline 1310-WP-1570-SC1-01
1310-WP-1570-SC1-02_0cp1	Isometric Pipeline 1310-WP-1570-SC1-02
1310-WP-1572-SC1-01_0cp1	Isometric Pipeline 1310-WP-1572-SC1-01
1310-WP-1572-SC1-02_0cp1	Isometric Pipeline 1310-WP-1572-SC1-02
1310-WP-1586-SC1-01_0cp1	Isometric Pipeline 1310-WP-1586-SC1-01
1310-WP-1612-SC1-01_0cp1	Isometric Pipeline 1310-WP-1612-SC1-01
1310-WP-1638-SC1-01_0cp1	Isometric Pipeline 1310-WP-1638-SC1-01
1310-WP-1639-SC1-01_0cp1	Isometric Pipeline 1310-WP-1639-SC1-01
1310-WP-1640-SC1-01_0cp1	Isometric Pipeline 1310-WP-1640-SC1-01
1310-WP-1641-SC1-01_0cp1	Isometric Pipeline 1310-WP-1641-SC1-01
1310-WP-1642-SC1-01_0cp1	Isometric Pipeline 1310-WP-1642-SC1-01

Drawing/Doc Number	*Drawing/Document Title*
1310-WP-1643-SC1-01_0cp1	Isometric Pipeline 1310-WP-1643-SC1-01
1310-WP-1644-SC1-01_0cp1	Isometric Pipeline 1310-WP-1644-SC1-01
1310-WP-1644-SC1-02_0cp1	Isometric Pipeline 1310-WP-1644-SC1-02
1310-WP-1644-SC1-03_0cp1	Isometric Pipeline 1310-WP-1644-SC1-03
1310-WP-1677-SC1-01_0cp1	Isometric Pipeline 1310-WP-1677-SC1-01
1310-WP-1678-SC1-01_0cp1	Isometric Pipeline 1310-WP-1678-SC1-01
1310-WP-1679-SC1-01_0cp1	Isometric Pipeline 1310-WP-1679-SC1-01
1310-WP-1680-SC1-01_0cp1	Isometric Pipeline 1310-WP-1680-SC1-01

Process Drawings

Drawing/Doc Number	*Drawing/Document Title*
L200-PR-DRG-1001	PFD - CMS Sht.1 of 2
L200-PR-DRG-1002	PFD - CMS Sht.2 of 2
L200-PR-DRG-1003	PFD - ME Sht.1 of 4
L200-PR-DRG-1004	PFD - ME Sht.2 of 4
L200-PR-DRG-1005	PFD - ME Sht.3 of 4
L200-PR-DRG-1006	PFD - ME Sht.4 of 4
L200-PR-DRG-1007	PFD - Rougher Flotation
L200-PR-DRG-1008	PFD - Process Water System
L200-PR-DRG-1101	P&ID - CMS Sht.1 of 4
L200-PR-DRG-1102	P&ID - CMS Sht.2 of 4
L200-PR-DRG-1103	P&ID - CMS Sht.3 of 4
L200-PR-DRG-1104	P&ID - CMS Sht.4 of 4
L200-PR-DRG-1105	P&ID - ME Bank 1 Sht.1 of 3
L200-PR-DRG-1106	P&ID - ME Bank 1 Sht.2 of 3
L200-PR-DRG-1107	P&ID - ME Bank 1 Sht.3 of 3
L200-PR-DRG-1108	P&ID - ME Bank 2 Sht.1 of 3
L200-PR-DRG-1109	P&ID - ME Bank 2 Sht.2 of 3
L200-PR-DRG-1110	P&ID - ME Bank 2 Sht.3 of 3
L200-PR-DRG-1111	P&ID - ME Bank 3 Sht.1 of 3
L200-PR-DRG-1112	P&ID - ME Bank 3 Sht.2 of 3
L200-PR-DRG-1113	P&ID - ME Bank 3 Sht.3 of 3
L200-PR-DRG-1114	P&ID - ME Bank 4 Sht.1 of 3
L200-PR-DRG-1115	P&ID - ME Bank 4 Sht.2 of 3
L200-PR-DRG-1116	P&ID - ME Bank 4 Sht.3 of 3
L200-PR-DRG-1117	P&ID - ME Tailings Distribution
L200-PR-DRG-1120	P&ID - Flotation Surge Tank
L200-PR-DRG-1130	P&ID - ME Process Water Distribution

Drawing/Doc Number	*Drawing/Document Title*	
L200-PR-DRG-1131	P&ID - Gland Water Distribution	Sht.1 of 2
L200-PR-DRG-1132	P&ID - Potable Water Distribution	Sht.3 of 4
L200-PR-DRG-1133	P&ID - Plant Air Distribution	Sht.2 of 5
L200-PR-DRG-1134	P&ID - ME Plant Air Distribution	
L200-PR-DRG-1135	P&ID - Fire Water Distribution	Sht.3 of 6
L200-PR-DRG-1136	P&ID – Wash Down Stations	
L200-PR-DRG-1140	P&ID - Process Water Distribution	Sht.2 of 4

Appendix B. KML Corporate Standard Specifications

The following KML standard specifications are applicable to this work. These specifications will be issued electronically to the Contractor separately under transmittal via Document Control:

Document Number	*Title*
1000-CO-SPC-1001	Completions Process Specification
1000-EL-SPC-1017	Standard Specification for The Supply of Cables
1300-EL-SPC-1001	Specification For Electrical Equipment Installation
1300-EL-SPC-1004	Technical Specification – Electrical Requirements for Mechanical Package
1300-EL-SPC-1011	Specification For Testing and Commissioning of Elect & Instrumentation Systems
1300-EL-SPC-1017	Specification For Low Voltage Switchboards & Motor Control Centres
1300-EL-SPC-1019	Requirements for Electrical and Instrumentation
1300-ME-SPC-1002	Specification for Magnetic Separators
1300-ME-SPC-1003	Specification for Installation of Mechanical Equipment
1300-ME-SPC-1046	Rubber Lining specification
1300-PI-BOD-1001	Piping Design Criteria
1300-PI-SPC-1001	Piping Technical Specification
1300-PI-SPC-1002	Piping Fabrication & Installation Specification
1300-PI-SPC-1003	Technical Specification of Pipe Support Manufacture
1300-PI-SPC-1004	Thermal Insulation Specification
1300-PI-SPC-1005	Hydraulic Piping Specification
1300-PI-SPC-1007	Pipe Testing Requirements – Site Installation
1400-TE-SPC-1006	Fibre Optic Cabling Specification
CORP-AD-FRM-1002	Document & Revision Numbering System
CORP-AD-FRM-1057	KML Capital Project Documents - Document & Revision Numbering System ***For Capital Projects Only***
CORP-AD-SPC-1001	Supplier Data Instruction Specification
CORP-AD-SPC-1002	Contractor Data Instruction Specification
CORP-CI-SPC-1001	Technical Specification for Minesite Earthworks and Roadwork
CORP-CI-SPC-1011	Technical Specification for Concrete Supply
CORP-CI-SPC-1012	Specification for Grouting Under Structural Baseplates and Equipment
CORP-CI-SPC-1013	Specification for Anchor Bolts
CORP-CI-SPC-1014	Technical Specification for Steel Reinforcing Bars & Wire Fabrics
CORP-CI-SPC-1015	Technical Specification for Construction of Concrete Works
CORP-GE-BOD-1001	Basis of Design
CORP-GE-MAN-1001	CAD Manual

CORP-GE-PLN-1002	Document & Data Management Plan
CORP-GE-SPC-1001	Equipment Labelling Specification
CORP-GE-SPC-1002	Specification for Packing, Marking and Documentation Specification
CORP-GE-SPC-1004	Specification for Surface Treatment of Structural Steelwork and Pipework
CORP-GE-SPC-1005	Specification for Shop Detailing of Structural and Mechanical Items
CORP-IN-BOD-1001	Controls & Instrumentation Design Criteria
CORP-IN-SPC-1001	Specification for General Instruments
CORP-IN-SPC-1002	Specification for Control and Instrumentation for Packages
CORP-IN-SPC-1003	Specification for Instrumentation Installation
CORP-IN-SPC-1007	Specification for Installation of Instrumentation
CORP-PI-DRG-1034	Site-Standard Piping Supports Index drawing for a set of 74 standard support configurations
CORP-PR-DRG-1018	Gland Water standard P&ID detail
CORP-QA-SPC-1001	Supplier Quality Requirements Specification
CORP-QA-SPC-1002	Requirement for Compilation of Manufacturer's Data Report (MDR) by Contractors
CORP-QA-SPC-1003	Contractor Quality Requirements specification
CORP-ST-SPC-1001	Specification for Platework Fabrication
CORP-ST-SPC-1002	Specification for Structural Steelwork Erection
CORP-ST-SPC-1005	Specification for Structural Steelwork Fabrication
CORP-ST-SPC-1008	Specification for Structural Steelwork Fabrication – Chinese Supply

Appendix C. Corporate and HSE Documents

The following KML Corporate and HSE documents are applicable to this work. These specifications will be issued electronically to the Contractor separately under transmittal via Document Control:

Document Number	*Rev* *Title*
1000-CO-PRO-1002	Construction Verification Process procedure
1000-CO-SPC-1001	Completions Process specification
1000-EN-PLN-1001	Construction Environmental Management Plan
1000-HS-FRM-1011	(CRAW) Critical Risk Assessment Workshop
1000-HS-PLN-1001	Project Health & Safety Management Plan
1000-HS-STD-1035	Machine Guarding Standard
1000-PC-SPC-1002	Contractor progress reporting and planning
CORP-AD-FRM-1046	Site Entry Request Form User Guide
CORP-AD-FRM-1050	KML personnel compliance verification
CORP-EN-FRM-1009	Vehicle and mobile equipment weed inspection form
CORP-EN-FRM-1021	Chemical Notification Form
CORP-EN-PLN-1008	Environmental plan - fauna management
CORP-EN-PLN-1010	Environmental plan - dust management plan
CORP-EN-PLN-1011	Flora and vegetation management plan
CORP-EN-PLN-1013	Environmental waste management plan
CORP-EN-PLN-1020	Environmental management plan
CORP-EN-PRO-1004	Environmental Procedure – Approval Request & Ground Disturbance
CORP-EN-PRO-1009	Environmental Procedure – Flora, Weeds & Plant Pathogens
CORP-GE-PRO-1001	Village Rules and Regulations
CORP-GE-LST-1007	Preferred Equipment / Vendor List
CORP-HS-FRM-1016	Working at Heights Permit
CORP-HS-FRM-1023	Hot Work Permit
CORP-HS-FRM-1024	Hot Work Checklist
CORP-HS-FRM-1026	Excavation & Penetration Permit Form
CORP-HS-FRM-1028	Grid Mesh & Flooring Removal Permit
CORP-HS-FRM-1052	Permit Scope for Shutdown Work
CORP-HS-FRM-1053	Mobile plant, equipment & light vehicle access request, inspection & risk assessment form
CORP-HS-FRM-1062	Job Hazard Analysis
CORP-HS-FRM-1064	Light Vehicle Inspection Report Form

Document Number	*Rev* *Title*
CORP-HS-FRM-1065	Work Box Permit
CORP-HS-FRM-1067	Leader Fatigue Checklist
CORP-HS-FRM-1068	Personal Fatigue Checklist
CORP-HS-FRM-1071	Confined space entry permit
CORP-HS-FRM-1075	Critical Lift calculation form – Dual Crane Lift
CORP-HS-FRM-1085	HSE contractor pre-qualification questionnaire
CORP-HS-FRM-1093	Confined space rescue plan
CORP-HS-FRM-1096	Conditions of Entry Truck Drivers
CORP-HS-FRM-1105	Lifting Study – crane lift
CORP-HS-FRM-1106	Critical Lift calculation form – Single Crane Lift
CORP-HS-FRM-1122	Lifting Equipment Register template
CORP-HS-FRM-1146	Load Assessment Form
CORP-HS-FRM-1153	Notice of Energisation Form
CORP-HS-FRM-1160	Critical procedure audit (CPA) confined space entry
CORP-HS-FRM-1176	Itinerant Classified Plant Inspection Checklist
CORP-HS-FRM-1180	Working in Heat Checklist
CORP-HS-FRM-1187	Fixed Plant Critical Lift Plan
CORP-HS-FRM-1199	Banned and Restricted Tools
CORP-HS-PLN-1001	Health & Safety Management Plan
CORP-HS-PLN-1003	Emergency Response plan
CORP-HS-PLN-1008	Traffic Management Plan
CORP-HS-PLN-1011	Health, Safety & Training Pre-Mobilisation Requirements
CORP-HS-POL-1001	Karara Health & Safety policy
CORP-HS-POL-1031	Fatigue Management Policy
CORP-HS-POL-1032	KML Contractor HSEQ Guidelines
CORP-HS-PRO-1003	General Electrical Safety procedure
CORP-HS-PRO-1004	Working at Height procedure
CORP-HS-PRO-1005	Confined Space Entry procedure
CORP-HS-PRO-1006	Isolation & Tagging procedure
CORP-HS-PRO-1007	Crane Management procedure
CORP-HS-PRO-1008	Mobile Plant, Equipment & Light Vehicle procedure
CORP-HS-PRO-1012	Classified Plant Management Procedure
CORP-HS-PRO-1015	Excavation and Penetration Procedure

Document Number	*Rev* *Title*
CORP-HS-PRO-1020	Job Hazard Analysis (JHA) procedure
CORP-HS-PRO-1022	Site Entry and Security procedure
CORP-HS-PRO-1027	Fitness for work procedure
CORP-HS-PRO-1032	HSE Performance Reporting Procedure
CORP-HS-PRO-1036	Manual Handling Procedure
CORP-HS-PRO-1037	PPE Procedure
CORP-HS-PRO-1041	OH&S Risk Management
CORP-HS-PRO-1042	Mobile and EWP Procedure
CORP-HS-PRO-1043	Gridmesh and Flooring installation and removal procedure
CORP-HS-PRO-1046	Incident Management Procedure
CORP-HS-PRO-1052	Alcohol and other Drug Policy procedure
CORP-HS-PRO-1063	Respirator Protection Procedure
CORP-HS-PRO-1071	Minimum Test Inspection and Tagging Requirements Procedure
CORP-HS-PRO-1072	Covid-19 Management Procedure
CORP-HS-PRO-1073	Scaffolding Procedure
CORP-HS-PRO-1080	Bulletin Notification Procedure
CORP-HS-PRO-2151	Fatigue Management Procedure
CORP-HS-STD-1011	Material Transportation Standard
CORP-HS-STD-1012	Steel Erection and Rigging Standard
CORP-HS-STD-1020	Barricades & Barriers standard
CORP-HS-STD-1021	Confined Space Entry standard
CORP-HS-STD-1024	Excavation & Penetration Standard
CORP-HS-STD-1025	Fall Prevention-Protection & Recovery Standard
CORP-HS-STD-1027	Flammable & Combustible Liquid Standard
CORP-HS-STD-1028	Grinder Safety Standard
CORP-HS-STD-1029	Hand Tools Standard
CORP-HS-STD-1030	Hot Work Standard
CORP-HS-STD-1033	Lifting Equipment & Operations standard
CORP-HS-STD-1036	Permit To Work Standard
CORP-HS-STD-1041	Scaffolding, Ladders, Stairs & Walkways standard
CORP-HS-STD-1042	Storage & Use of Hazardous Substances standard
CORP-HS-STD-1043	Welding Health & Safety Standard
CORP-HS-STD-1044	Working at Height Standard

Document Number	*Rev* *Title*
CORP-HS-STD-1046	Lifting & Rigging Equipment standard
CORP-HS-STD-1049	Risk Management Standard
CORP-HS-STD-1050	Alcohol and Other Drug Standard
CORP-HS-STD-1051	Karara Employment Medical Standard
CORP-HS-STD-1052	Fitness for Work Standard
CORP-TR-PRO-1001	Training and Competency Procedure
Motelling Room Sharing	Implementation Plan - Motelling Room Sharing

Appendix D. Corporate Standard Drawings

The following corporate standard drawings are applicable in this SOW and will be issued electronically to the Contractor separately under transmittal via Document Control.

Document Number	*Rev* *Drawing Title*
CORP-CI-DRG-1101	Concrete Standard Index of Concrete Standards
CORP-CI-DRG-1102	Concrete Standard General Concrete Notes
CORP-CI-DRG-1103	Concrete Standard Typ Concrete Details
CORP-CI-DRG-1104	Concrete Standard Typ Concrete Details
CORP-CI-DRG-1105	Concrete Standard Typ Concrete Details
CORP-CI-DRG-1106	Typical Blockwork Details Sheet 1
CORP-CI-DRG-1107	Typical Blockwork Details Sheet 2 Of 2
CORP-CI-DRG-1108	Concrete Standard Typ Pad Footing and Pedestal Arrangements
CORP-CI-DRG-1109	Concrete Standard Shear Key Recess Details
CORP-CI-DRG-1110	Concrete Standard Standard Pedestals
CORP-CI-DRG-1111	Concrete Standard Cast in Items – Typ Details
CORP-CI-DRG-1112	Concrete Standard Service Pits and Cover Plates Typ Details
CORP-CI-DRG-1113	Concrete Standard Typ Sump Details – Cast in Situ
CORP-CI-DRG-1114	Drive In Sump - Typical Details
CORP-CI-DRG-1115	Concrete Standard Typ Sump Details - Precast
CORP-CI-DRG-1116	Concrete Standard Typ Anchor Bolt Details
CORP-CI-DRG-1118	Concrete Standard Bollards & Signage
CORP-CI-DRG-1119	Concrete Standard Reinforcement Bar Bending Shape Details
CORP-EL-DRG-1003	Electrical Standards Typical Labels Arrangement and Details Sh 1
CORP-EL-DRG-1004	Electrical Standards Typical Labels Arrangement and Details Sh 2
CORP-EL-DRG-1011	Electrical Standards Field Equipment Installation Details Cable Ladder Sh 1
CORP-EL-DRG-1012	Electrical Standards Field Equipment Installation Details Cable Ladder Sh 2

Document Number	*Rev*	*Drawing Title*
CORP-EL-DRG-1013		Electrical Standards Field Equipment Installation Details Motors
CORP-EL-DRG-1014		Electrical Standards Field Equipment Installation Details Junction Box Type 1
CORP-EL-DRG-1015		Electrical Standards Field Equipment Installation Details Junction Box Type 2
CORP-EL-DRG-1016		Electrical Standards Field Equipment Installation Details Junction Boxes
CORP-EL-DRG-1017		Electrical Standards Field Equipment Installation Details Equipment Panels
CORP-EL-DRG-1018		Electrical Standards Field Equipment Installation Details Distribution Boards
CORP-EL-DRG-1019		Electrical Standards Field Equipment Installation Details Local Control Stations
CORP-EL-DRG-1020		Electrical Standards Field Equipment Installation Details Welding and Socket Outlets
CORP-EL-DRG-1021		Electrical Standards Field Equipment Installation Details Underground Cables
CORP-EL-DRG-1022		Electrical Standards Field Equipment Installation Details Lighting Sh 1 Of 5
CORP-EL-DRG-1023		Electrical Standards Field Equipment Installation Details Lighting Sh 2 Of 5
CORP-EL-DRG-1024		Electrical Standards Field Equipment Installation Details Lighting Sh 3 Of 5
CORP-EL-DRG-1025		Electrical Standards Field Equipment Installation Details Lighting Sh 4 Of 5
CORP-EL-DRG-1026		Electrical Standards Field Equipment Installation Details Lighting Sh 5 Of 5
CORP-EL-DRG-1030		Electrical Standards Typical Earthing Installation Connection Details Sheet 1
CORP-EL-DRG-1031		Electrical Standards Typical Earthing Installation Connection Details Sheet 2
CORP-EL-DRG-1032		Equipotential (Earth) Bonding, Installation/connection details
CORP-EL-DRG-1033		Electrical Standards Typical Earthing Installation Connection Details Sheet 3
CORP-EL-DRG-1035		Electrical Standards Typical Earthing Cable Ladder and Tank Details
CORP-EL-DRG-1039		Electrical Standards Earthing Installation Typical Plant Layout
CORP-EL-DRG-1041		Electrical Standards Earthing Installation General Embedded Earthing Details
CORP-EL-DRG-1099		Electrical Standards Field Equipment Installation Details Underground Cables Sheet 2
CORP-EL-DRG-1100		Electrical Standards Field Equipment Installation Details Underground Cables Sheet 3
CORP-IN-DRG-1070		Instrument Stands Standard Details
CORP-IN-DRG-1071		Instrument Supports Standard Details
CORP-IN-DRG-1072		Magnetic Flow Meter Remote Transmitted Instrumentation Installation Detail
CORP-IN-DRG-1073		Flow Transmitter DP Type Annubar and Pilot Tube Instrument Installation Detail
CORP-IN-DRG-1074		Flow Transmitter DP Type Dry Air and Gas (Below Tap) Instrument Installation Detail

Document Number	*Rev*	*Drawing Title*
CORP-IN-DRG-1075		Flow Transmitter DP Type Clean Liquid or Steam (Below Tap) Instrument Installation Detail
CORP-IN-DRG-1076		Flow Transmitter DP Type Clean Liquid or Steam (Directly Mounted) Instrument Installation Drawing
CORP-IN-DRG-1077		Flow Transmitter DP Type Dry Air or Gas (Above Tap) Instrument Installation Drawing
CORP-IN-DRG-1078		Pressure Gauge / Transmitter Direct Mount with Bleed Instrument Installation Detail
CORP-IN-DRG-1079		Pressure Gauge / Transmitter Direct Mount Without Bleed Instrument Installation Detail
CORP-IN-DRG-1080		Pressure Gauge / Transmitter with Diaphragm Seal Instrument Installation Detail
CORP-IN-DRG-1081		Overall Single Block Segment Protection Instrument Junction Box
CORP-IN-DRG-1083		Overall Single Block Segment Protection Instrument Junction Box
CORP-IN-DRG-1084		Diff Press – Gauge and Transmitter Clean Liquids Instrument Installation Detail
CORP-IN-DRG-1086		Differential Transmitter Diaphragm Seal with Capillary Detail Tube Instrument Installation Detail
CORP-IN-DRG-1087		Level Indicator Non-Pressurised Tank Instrument Installation Detail
CORP-IN-DRG-1088		Level Transmitter - Ultrasonic and Radar Instrument Installation Detail
CORP-IN-DRG-1089		Level Transmitter/Switch Nucleonic Instrument Installation Detail
CORP-IN-DRG-1090		Nucleonic Density Transmitter Instrument Installation Detail
CORP-IN-DRG-1091		Temperature Transmitter Indicator Flange Mounted Instrument Installation Detail
CORP-IN-DRG-1092		On/Off or Modulating Valve Instrument Installation Detail
CORP-IN-DRG-1093		Sonar Flowmeter (Remote Transmitter) Instrument Installation Detail
CORP-IN-DRG-1100		Overall, One Terminal Strip Instrument Junction Box
CORP-ME-DRG-1001		Mechanical Standards – Index drawing
CORP-ME-DRG-1002		Standard Mechanical General Noters
CORP-ME-DRG-1003		Sump Pump standard Mechanical details
CORP-ME-DRG-1033		Standard Tank Lining detail
CORP-ME-DRG-1034		Tank Standard Nameplate
CORP-ME-DRG-1040		Packer and Shim Sets
CORP-ME-DRG-1041		Lifting Lug Details
CORP-PI-DRG-1034		Standard Pipe Supports [Index of 73 standard support configurations]
CORP-PI-DRG-1111		Rubber Lined Lateral Tee

Document Number	*Rev*	*Drawing Title*
CORP-PI-DRG-1113		Standard drawing, Safety Shower
CORP-PI-DRG-1127		Typical Gland Water Installation
CORP-PI-DRG-1128		Special [*Warman*] Flanges
CORP-PI-DRG-1134		Blind Flange with Drilled Holes
CORP-PI-DRG-1135		Sump Pump discharge spool, rubber lined
CORP-PI-DRG-1142		Pump Suction Arrangement
CORP-PI-DRG-1161		Pump Discharge Arrangement
CORP-PI-DRG-1162		Sump Pump discharge
CORP-PI-DRG-1163		15° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1164		22½° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1165		30° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1166		45° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1167		60° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1168		90° Rubber Lined Pulled Bend 3D/5D
CORP-PI-DRG-1169		Lap Flange for SR1 piping
CORP-PI-DRG-1170		Full-Face Slip-On Flange for SR1 Piping
CORP-PI-DRG-1171		Utility Station
CORP-PI-DRG-1172		Vents & Drains
CORP-PI-DRG-1177		Rubber lined fabricated Tees
CORP-PI-DRG-1178		Rubber Lined Reducing Spools
CORP-PI-DRG-1179		Rubber Lined Spools
CORP-PI-DRG-1180		Rubber Lined Y-Piece
CORP-PI-DRG-1187		Utility Station
CORP-PI-DRG-1189		Rubber Lined Lateral Reducing Tee
CORP-PI-DRG-1198		Gland Water Assembly - Regulated
CORP-PI-DRG-1200		Typical Gland Water Assembly
CORP-ST-DRG-1001		Structural Steel Standards – Australian sections – Drawing index
CORP-ST-DRG-1002		Structural Steel Standards – Australian sections – General Notes
CORP-ST-DRG-1003		Structural Steel Standards – Australian sections – Base Plate Details
CORP-ST-DRG-1004		Structural Steel Standards – Australian sections – Shear Keys for Base Plates
CORP-ST-DRG-1005		Structural Steel Standards – Australian sections – Beam and Bracing Connections sheet 1 of 2
CORP-ST-DRG-1006		Structural Steel Standards – Australian sections – Beam and Bracing Connections sheet 2 of 2

Document Number	*Rev*	*Drawing Title*
CORP-ST-DRG-1007		Structural Steel Standards – Australian Sections – Column Splices - UC & UB Column Sections
CORP-ST-DRG-1008		Structural Steel Standards – Australian Sections – Column Splices - WC Column Sections
CORP-ST-DRG-1010		Structural Steel Standards – Australian Sections – Horizontal Bracing Details
CORP-ST-DRG-1011		Structural Steel Standards – Australian Sections – Pipe Bracing Details Sht.1 of 2
CORP-ST-DRG-1012		Structural Steel Standards – Australian Sections – Pipe Bracing Details Sht.2 of 2
CORP-ST-DRG-1013		Structural Steel Standards – Australian Sections – Open Section Bracing Details
CORP-ST-DRG-1014		Structural Steel Standards – Australian Sections – Miscellaneous Details
CORP-ST-DRG-1015		Structural Steel Standards – Australian Sections – Knee Bracing Details
CORP-ST-DRG-1016		Structural Steel Standards – Australian Sections – WC Bracing Details
CORP-ST-DRG-1017		Structural Steel Standards – Australian Sections – Welded Connections
CORP-ST-DRG-1101		Structural Steel Standards - Chinese Sections - Drawing Index
CORP-ST-DRG-1102		Structural Steel Standards - Chinese Sections - General Notes
CORP-ST-DRG-1103		Structural Steel Standards - Chinese Sections - Steel Member Legend Sht.1 of 2
CORP-ST-DRG-1104		Structural Steel Standards - Chinese Sections - Steel Member Legend Sht.2 of 2
CORP-ST-DRG-1105		Structural Steel Standards - Chinese Sections - Base Plate Details
CORP-ST-DRG-1106		Structural Steel Standards - Chinese Sections - Shear Keys for Base Plates
CORP-ST-DRG-1110		Structural Steel Standards - Chinese Sections - Beam & Bracing Connections Sht.1 of 2
CORP-ST-DRG-1111		Structural Steel Standards - Chinese Sections - Beam & Bracing Connections Sht.2 of 2
CORP-ST-DRG-1112		Structural Steel Standards - Chinese Sections - Horizontal Bracing Details
CORP-ST-DRG-1113		Structural Steel Standards - Chinese Sections - Pipe Bracing Details Sht.1 of 2
CORP-ST-DRG-1114		Structural Steel Standards - Chinese Sections - Pipe Bracing Details Sht.2 of 2
CORP-ST-DRG-1115		Structural Steel Standards - Chinese Sections - Open Section Bracing Details
CORP-ST-DRG-1116		Structural Steel Standards - Chinese Sections - Miscellaneous Details
CORP-ST-DRG-1117		Structural Steel Standards - Chinese Sections - Knee Bracing Details
CORP-ST-DRG-1118		Structural Steel Standards - HW Bracing Details

Document Number	*Rev*	*Drawing Title*
CORP-ST-DRG-1119		Structural Steel Standards - Chinese Sections - Chinese Fabrication Welded Connections
CORP-ST-DRG-1120		Structural Steel Standards - Chinese Sections - Column Splices - HM & HW Sections
CORP-ST-DRG-1121		Structural Steel Standards - Chinese Sections- Column Splices - WH Column Sections
CORP-ST-DRG-1160		Structural Steel Standards - Chinese Sections - Cable Tray Support Details, Sht.1 of 5
CORP-ST-DRG-1161		Structural Steel Standards - Chinese Sections - Cable Tray Support Details, Sht.2 of 5
CORP-ST-DRG-1162		Structural Steel Standards - Chinese Sections - Cable Tray Support Details, Sht.3 of 5
CORP-ST-DRG-1163		Structural Steel Standards - Chinese Sections - Cable Tray Support Details Sht.4 of 5
CORP-ST-DRG-1164		Structural Steel Standards - Chinese Sections - Cable Tray Support Details, Sht.5 of 5
CORP-ST-DRG-1165		Structural Steel Standards - Chinese Sections - Cable Tray Support Connection Details
CORP-ST-DRG-1166		Structural Steel Standards - Chinese Sections – Pipe & Cable Tray Support Details
CORP-ST-DRG-1200		Structural Steel Standards - Index
CORP-ST-DRG-1203		Structural Steel Standards - Monorail & Support Details
CORP-ST-DRG-1210		Structural Steel Standards - Stairway Details Sht.1 of 2
CORP-ST-DRG-1211		Structural Steel Standards -Stairway Details Sht.2 of 2
CORP-ST-DRG-1212		Structural Steel Standards - Handrail - Webforge Monowills System
CORP-ST-DRG-1213		Structural Steel Standards - Handrail Hot Rolled Angle System Details
CORP-ST-DRG-1215		Structural Steel Standards - Standard Floor Plate & Grating Details Sht.1 of 2
CORP-ST-DRG-1216		Structural Steel Standards - Standard Floor Plate & Grating Details Sht.2 of 2
CORP-ST-DRG-1218		Structural Steel Standards - Lifting Lug Details

Appendix E. Other Standards Referenced

The following Standards (typically national Standards) are referenced in this SoW and any other standards referenced in other documents such specifications, procedures, standards etc are applicable to this work. For copyright reasons, KML cannot issue these to the Contractor, but the Contractor shall become familiar with the relevant content of the Standard and shall obtain a copy at its own cost if necessary for the proper execution of the works:

Standard Number	Standard Title
AS/NZS 1200	SAA Pressure Equipment standard
AS/NZS 1210	SAA Pressure Vessel code
AS 1418 set	SAA Cranes standard
AS/NZS 1554 set	Welding of Structural Steel
AS 1657	Platforms, Walkways, Stairs & Ladders
AS/NZS 4041	SAA Pressure Piping code
AS/NZS 4343	SAA Pressure Equipment Hazard Levels

Appendix F. Other Project Documents

The following documents & drawings are referenced in this SoW and are applicable to this work.

1. Geraldton to Karara route map
2. Perth to Karara route map
3. Perth to Karara alternative route map
4. KML Safety Bulletin No.0138-21 incl. Map of mandatory respirator PPE areas on site
5. Details of respirator Fit Testing Providers in Perth, and 3M Dust Masks
6. Amendment – Respiratory Program
7. Construction Sequence and Structural Preassembly Plan
8. Geotechnical Investigation Report 1300-CI-REP-1002
9. Survey - 220003 - Elutriator Project - Engineering Control
10. Survey - ACAD-AOI1 Surface