

JOHNSON MATTHEY

Cut, Fill and Piling Mat Scope of Work

Demo Dry, Clitheroe



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Rev A

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Project Title: Demo Dry, Clitheroe

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Document History and Status

Revision	Date	Description	By	Review	Approved
A	23 rd July 2019	Issued for Review	A. McAtear	R. Somma	J. Chisholm

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NOTE:

In this Scope of Work the following definitions shall apply:

‘The **CLIENT**’ shall mean Johnson Matthey Plc.

‘The **ENGINEER**’ shall mean Worley Europe Ltd.

Worley Europe Ltd
27 Great West Road,
Brentford,
TW8 9BW.
United Kingdom.

‘The **TRADE CONTRACTOR**’ shall mean the company contracted to execute the work associated with this scope of work.

The term ‘others’ refer to other contractors engaged by the **CLIENT** or **ENGINEER** who are also working on the project.

Approved shall mean approved in writing by the **ENGINEER** after written submission by the **TRADE CONTRACTOR**.

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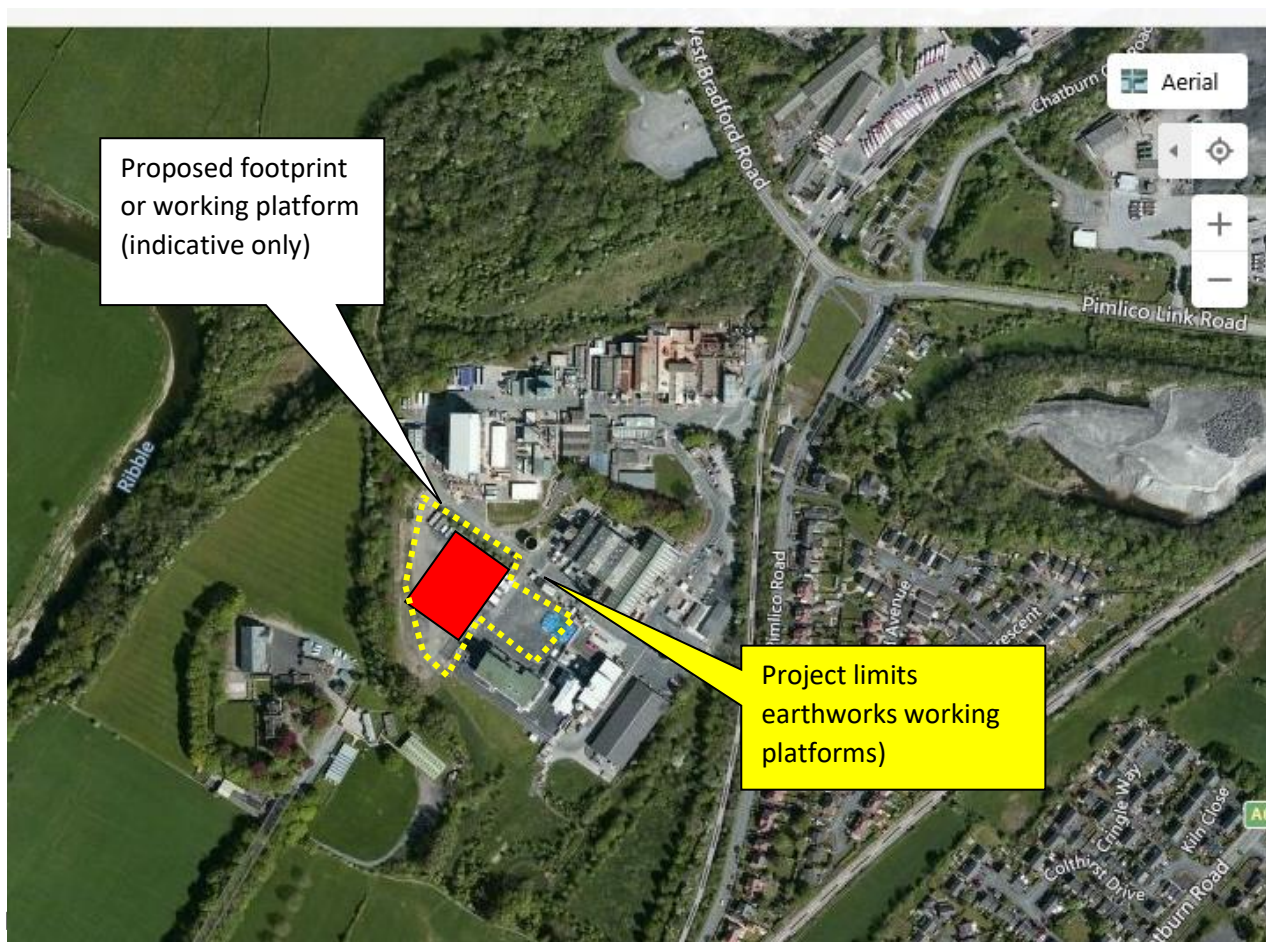
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1. Introduction

1.1 General

This document is the Demolition and Clearance Scope of Works for the Demo Dry plant in Clitheroe, Lancashire. The proposed plant will be a demonstration manufacturing facility located at the existing Johnson Matthey site. It will occupy ground that is currently used as a car park. This work is enabling work associated with the Johnson Matthey Demo Dry Project at their Clitheroe site, UK.

The site is located at: Johnson Matthey, West Bradford Way, Clitheroe, Lancashire, BB7 4QA.



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2. Site Information

The **CONTRACTOR** is required to comply with and **CLIENTS** Safety procedures and must operate within the Permit for Work system operated throughout the site. All excavations shall be made to such sizes, depths and inclinations as indicated on the Drawings or as the **ENGINEER** may direct or as necessary to carry out the works.

2.1 Ground Investigation Report

The following reference documents are available for the **TRADE CONTRACTOR** to review, should they require. The documents shall not be issued as part of the works information.

- Strata Surveys Limited, Ground Investigation Report No. 13849, March 2007
- Enviro Solution, Phase 1 Environmental Site Assessment Report, June 2018
- Enviro Solution, Phase 2 geo-Environmental Site Assessment Report, July 2018
- Jacobs, Report on Ground Water Testing, October 2018

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3. Scope

The scope of this document is to define the piling mat, working platforms and cut & fill earthworks associated with the demonstration plant at the Clitheroe site. Any deviations from this scope of work are subject to approval of the **ENGINEER**.

This document must be read in conjunction with all drawings / documents referenced in Section 7.0.

The works will comprise of the following work:

1. All earthwork operations, cut & fill, mass balance, stock piling of materials including regrading of materials.
2. Testing of soil & arisings, segregation of materials for reuse and disposal, grading of material to be reused for construction.
3. Installation of piling mat & working platforms
4. Installation of geosynthetic reinforcement layers
5. All design work associated with the piling mat.
6. Preparation & supply of all design deliverables, calculations, specifications, working platform certificate and material certificates

3.1 Earthworks

- Undertake all site excavation work, including all cut and fill work and establishing new site formation elevations.
- Screening of all materials and establishing a stock pile of suitable material for reuse, typically type 1 material. Reclaimed materials to be well graded and in accordance with in accordance with Table 8/5 of the Specification for Highway Works.
- Stockpiling and transportation of all reclaimed material. Note for the purposes of this scope the only area to be scraped due to vegetation, 150mm of, is indicated as dark shaded on drawing 60-SG75-00/C.C220/0010. This is deemed unsuitable for re-use. Whereas the light shaded area requires 450mm removal. This soil is to be crushed and re-used as fill.
- Removal of all materials unsuitable for reuse. Unsuitable materials includes, but not limited to, materials in a frozen condition, clay having a liquid limit exceeding 65(in accordance with BS 1377), organic material and contaminated material.
- Chemical testing of all reclaimed material.
- Compaction of all fill material.
- Testing of all compacted fill material.
- Supply of all material certificates and quarry certificates for newly imported material.
- Supply of reports to the Engineer for the above work.

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Refer to drawing 60-SG75-00/C.C220/0010 to 0012 for details of earthwork requirements.

3.2 Piling Mat

The piling mat design is the responsibility of the Piling Contractor and will be designed in accordance with BRE BR470 Working platforms for tracked plant: Good practice guide to the design, installation, maintenance and repair of ground-supported working platforms.

The piling mat depth has been limited to 450mm deep and it has been assumed that a geosynthetic reinforcement layer will be required as part of the piling mat design.

Items that need to be covered in the piling mat design include:

- The working platform certificate
- Pile mat design to BRE BR470 Working Platforms for Tracked Plant
- Federation of Piling Specialists, (FPS), Guide to Hydraulically Bound Platforms
- Working platform design sensitivity
- Calculation of track bearing pressures

The piling mat design shall address all aspects covered in BRE BR470 and a detailed design report shall be submitted to the Engineer for review, prior to commencement of any construction work. The design report must include all checked and approved calculations, details of all plant and machinery that will be used on the piling mat, working platform certificate and installation certificate.

3.3 Working Platform Installation

The working platform can deteriorate due to use over time. Additionally, excavations, trenches or other holes dug in the platform surface must be properly backfilled to avoid creating a soft spot that might give way under the tracks of a piling rig or other plant and equipment. The edge of the platform must always be clearly defined and should be regularly inspected to ensure that there has been no degradation over time.

Installation, operation, maintenance and repair of the platform should ensure that it performs according to the design over its design life. Systems should be in place to ensure that;

- monitoring of the platform takes place regularly; this should involve visual assessment of the performance of the platform and operating plant and drainage
- regular maintenance can be carried out to keep a reasonably level surface and to maintain drainage
- repairs are carried out when problems are identified, and the platform reinstated after any excavation or damage

Site drainage requirements must also be assessed and considered in the design of the working platform, as does temperature effects, particularly if hydraulically bound materials, (HBM), are specified in the piling mat design.

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3.4 Geosynthetic Reinforcement Layers

A geosynthetic reinforcement layer shall be used in the construction of all working platforms. The reinforcement layer must be installed as it provides additional interlock to the unbound materials to produce a mechanically stabilised layer. Typically, Tensar geogrid SS-30 has been specified on the drawings, consisting of a stiff monolithic geogrid with integral junctions providing strength in two directions and a rectangular rib cross section with square edges.

Alternatively, Tensar TriAX Geogrids can be used as an alternative to Tensar geogrid SS-30.

3.5 Temporary Works

The **TRADE CONTRACTOR** will be responsible for all temporary works necessary to complete the works, including, but not limited to:

3.6 Temporary Drainage and Field Drains

The **TRADE CONTRACTOR** shall allow for all temporary drainage and field drains necessary to ensure the site is not subject to surface flooding or long-term standing water. All temporary drains / field drains shall be with Rigidrain by Polypipe.

4. Earthworks and Disposal of Material

4.1 Earthworks

Excess cut material is to be removed from site. Material is to be stockpiled to facilitate the selection of suitable fill material prior to disposal.

TRADE CONTRACTOR shall be responsible for management of all material on site and on the local road network up to the point of disposal at suitable licensed tips.

Filling is to be undertaken to End Product compaction processes. All necessary quality control including third party inspection of the formations is within the **CONTRACTOR**'s scope.

4.2 Material Testing

Any soil waste material which needs to be removed from site may be contaminated and must be tested prior to removal from site. Removal and disposal of any waste material must follow the appropriate procedures to ensure that they are not contaminated or potentially dangerous to the environment.

4.3 Disposal of Material

Surplus soil material is to be removed from site and disposed to suitably licensed tips. Refer to Geotechnical Environmental reports for information on anticipated soil types.

Materials are to be stockpiled using suitable classification criteria to assist in selection of fill material and environmental management.

The **CONTRACTOR** is to submit details of proposed landfill site for approval. No site shall be used unless approved. All haulers shall be registered and licensed with the Waste Regulation Authority.

5. Site Conditions

The **TRADE CONTRACTOR** shall acquaint himself with the site conditions and establish that access for construction operation and material storage is adequate.

Access to site entrance requires crossing a railway level crossing. The level crossing is a live railway track and scheduled train times are not known. However, it is understood that trains are generally infrequent and relate to deliveries at adjacent cement plant, (Hanson Cement). The **TRADE CONTRACTOR** will need to liaise directly with Hanson Cement to confirm train schedule and arrange site deliveries accordingly.

The **TRADE CONTRACTOR** must identify all plant that they propose to use to complete the works.

The **TRADE CONTRACTOR** shall take all due care and attention to ensure that the transportation, movement and operation of his equipment does not damage any of the existing plant equipment and services.

Access to all areas of the site shall be limited to the defined access routes and will be agreed with the **ENGINEER** at project kick off meeting.

The **TRADE CONTRACTOR** will need to make allowance for a banksman for all site deliveries. The banksman must escort each delivery from plant entrance to site area and exit from site area to Plant entrance. Two banksman should be allowed for the duration of the works.

Note: Generally all forms of hot work will not be permitted on site. However, if hot work is required the **TRADE CONTRACTOR** shall notify the **CLIENT** accordingly and obtain the appropriate **CLIENT** hot work permit.

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6. Programme

The **TRADE CONTRACTOR** must confirm to the **ENGINEER** his acceptance of the conditions, scope and programme.

The planned sequence of work to be carried out will be developed by the **TRADE CONTRACTOR** and submitted to the **ENGINEER** for review prior to commencing any work on site. The **TRADE CONTRACTOR** must submit documentation a minimum of 2 weeks before proposed start date on site. Work can only commence on site once the planned sequence of works has been agreed in advance with the **ENGINEER**.

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7. Related Documentation/Drawings

7.1 Documentation

The **TRADE CONTRACTOR** must confirm to the **ENGINEER** his acceptance of the conditions, scope and programme.

The planned sequence of work to be carried out will be developed by the **TRADE CONTRACTOR** and submitted to the **ENGINEER** for review prior to commencing any work on site. The **TRADE CONTRACTOR** must submit documentation a minimum of 2 weeks before proposed start date on site. Work can only commence on site once the planned sequence of works has been agreed in advance with the **ENGINEER**.

- Health and Safety at Work Act 1974
- Construction (Design & Management) Regulations 2015
- Construction (Health, Safety & Welfare) Regulations 1996
- Provision and Use of Work Equipment Regulations 1998
- Lift Operations and Lift Equipment Regulations 1998
- Management of Health and Safety at Work Regulations 1999
- HS(G) 150 Health and Safety in Construction

7.2 Reference Drawings

Worley Documents / Drawings (The **TRADE CONTRACTOR** shall work to current issue of 'Approved for Construction' Documents / Drawings).

Item	Drawing Number	Title
1	60-SG75-00/C.C220/0010	ENABLING WORKS INITIAL REGRADED SITE PLAN SHOWING SECTION LOCATIONS
2	60-SG75-00/C.C220/0011	ENABLING WORKS SECTIONS THROUGH SITE LOOKING NORTH
3	60-SG75-00/C.C220/0012	ENABLING WORKS SECTIONS THROUGH SITE LOOKING WEST
4	60-SG75-00/C.C220/0013	ENABLING WORKS PILING AND WORKING PLATFORMS

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8. Contractor Deliverables

The **TRADE CONTRACTOR** shall be responsible for undertaking all design activities and grading of materials associated with the work.

The following provides a list of information that would be expected to be recorded for a site dig and is for illustrative purposes only. Similar information would be required for manhole surveys, pipe and valve flange surveys.

8.1 Calculations and Documentation

FORMAT A4 document – single or double sided, MS word document / excel

INFORMATION REQUIRED

- All calculations in accordance with BRE BR470 Working platforms for tracked vehicles
- Working platform certificate
- Maintenance & repair procedure for working platform
- Material certificates
- Confirmation that material certificates reflect design pile mat characteristics
- Confirmation of geosynthetic reinforcement material installed
- Grading certificates for reclaimed materials
- Volumes of material reclaimed
- Volumes of material disposed off site
- Material test certificates for reclaimed materials

All calculations to be provided in excel format – native file (*.xls)

All calculations to be independently checked and signed off by another engineer.

Note: unchecked calculations will automatically be rejected by the **ENGINEER**.

8.2 As Built Drawings

FORMAT A3 document – single sided, AutoCAD 2016 format

INFORMATION REQUIRED

Plans and sections of each site dig at appropriate scale that includes Northings, Eastings, dimensions and elevations for all cut and fill work and working platforms.

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8.3 Quality Assurance

All documentation associated with **TRADE CONTRACTOR**, or their sub-contractor to have a title box that contains site location, project title, project number, date, by, checked and approved boxes.

8.4 Delivery of all Documentation

TRADE CONTRACTOR to provide 3 bound hard copies of all calculations, drawings, certificates, supplied in colour and bound in A4 folders. The contractor shall also provide 3 USB data sticks with all electronic files, word / excel files, AutoCAD files and photographs.