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412\_13\_SD04

Environment Agency

NEC3 professional services contract (PSC)

Scope

Project / contract information

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| --- | --- |
| Project name | Cut Off Channel Survey |
| Project SOP reference | ENVIMAN002161 |
| Contract reference | J00699 |
| Date | 28/11/2016 |
| Version number | 1 |
| Author | Steve Elmore |

Revision history

|  |  |  |
| --- | --- | --- |
| Revision date | Summary of changes | Version number |
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This Scope should be read in conjunction with the latest version of the current National Survey Specification at the Contract Date. In the event of conflict, this Scope shall prevail. The *services* are to be compliant with the national survey specification.

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# Introduction

## Background

**Purpose of Survey:**

A channel survey is required of the Cut Off Channel in Norfolk and Suffolk, to assess the need for maintenance work to the channel and embankments. This survey will be used in modelling software for flood risk purposes.

**Location and Extent of Survey:**

The extent of the channel survey is from the downstream confluence with the Relief Channel (TF 5905 0121) to the upstream confluence with the River Lark (TL 7312 7385), as highlighted on ‘*J00699\_A\_v1.pdf*’.

## Objectives

This contract is for the provision of a variety of survey outputs as described in Section 2.

The *Consultant* shall undertake survey as required and in all cases in accordance with the National Survey Specification. The *Consultant* shall deliver the outputs as described in Section 2 of this Scope.

The survey products delivered will be used by the *Employer* to deliver flood modelling for the Cut Off Channel in order to assess the need for maintenance works and improve the flood mapping and forecasting capabilities in this area.

These products will include;

- Installation of suitable survey control network

- Survey of river channel cross sections at 100m intervals

- Delivery of suitable outputs in line with Environment Agency Technical Survey Specification

# Specified Requirements

The *services* include, but are not limited to, the provision of the items specified in Section 2.

## Project Management

Day to day management of project delivery shall be the responsibility of the *Consultant*.

In managing the *services* the *Consultant* shall undertake the following:

1. Maintain weekly contact with the *Employer’s* Project Manager such that the *Employer* is fully informed of progress and issues.

## Product Delivery

In delivering the *services* the *Consultant* shall:

1. Ensure all relevant previous studies and work are utilised to minimise costs to the *Employer* and avoid duplication when delivering the *services*.
2. Ensure all deliverables and products show evidence of a quality control system. The *Consultant* shall define and present a detailed quality process for this commission. General quality tolerances should consist of:

a) All first draft deliverables, including the Survey Report, shall be free from significant error and be consistent with other documents while avoiding repetition.

b) All first draft products shall tell a logical story with a clear audit trail of consultation and decision making processes, supported by robust evidence, which can be easily transferred and interpreted by future users.

c) All first draft deliverables shall be grammatically correct and clearly presented, with consistent formatting.

d) All first draft deliverables shall satisfy the relevant latest guidance and legislative requirements.

e) All first draft deliverables shall conform to the latest and necessary guidance and meet the template requirements, unless otherwise agreed with the *Employer* in advance of submission.

f) Products shall be suitable for the audience and written using ‘plain English’.

1. Ensure all drawings are produced at an appropriate scale to be agreed in the product descriptions, and will be legible and understandable by the intended audience (various versions of some drawings may be required for different audiences). All efforts will be made to ensure the proposals are adequately illustrated and represented, e.g. through the use of cross sections and visualisations to show changes in topography, cut and fill etc.

## Previous Studies and Data Sources

The *Consultant* shall:

Ensure that appropriate use is made of existing survey control and data, to avoid duplicating work already undertaken.

Be responsible for any new data requirements to meet the Scope outcomes.

Order and download the required Ordnance Survey Mapping from the Partner Data Store and comply with the terms and conditions of that site.

## Survey

The *Consultant* shall

1. Obtain all consents and approvals required for the survey to be undertaken.
2. Deliver the survey to deliver the outcomes of the Scope.
3. Provide final outputs of the survey to the *Employer* in a digital format.
4. Ensure that all survey results including the Survey Report are to be delivered as a zipped file email attachment if the zipped file is smaller than 10Mb or via the DEFRA Sharefile service.

### General Requirements applicable to all surveys,

The following is to be copied and pasted into the Survey Report as a record of the survey requirement.

The *Consultant* shall:

Submit all documents with the Environment Agency job number in the file name.

Name drawing files A-J00699-BB.dwg where A may be:

|  |  |
| --- | --- |
| Letter | Meaning |
| L | Long section |
| X | Cross sections |
| T | Topographic map |
| H | Hydrographic chart |

BB is a sequential sheet number – 01, 02 etc.

Present drawings as DWG and PDF files. A georeferenced location plan should be included on each drawing.

Submit weekly progress reports to Environment Agency Project Manager by email.

### 2.4.1 Survey Control

The *Consultant* shall:

Establish suitable survey control for the project. If using Network RTK, some of the E6 stations should be permanent with description sheets supplied as deliverables.

Use OSGM/TN15 to convert GNSS observations to British National Grid and ODN.

Submit RINEX data for all reference and rover observations.

Contact the Environment Agency Project Manager for EACS reference numbers before office processing commences, so that the final reference will be used throughout processing.

Provide EACS description cards as .DOC and .PDF format files with the EACS reference as the file name.

Include in the Survey Report details regarding the location, description, and checks carried out on the survey control, providing suitable information for use in a validation survey if required.

### 2.4.2 Channel Surveys

The *Consultant* shall:

Survey open channel and floodplain cross sections at 100m intervals. Long sections should include bed levels at 25m intervals and at low spots where applicable.

Survey channel hard bed, soft bed, and water levels. Separate digital data files are to be provided for hard and for soft bed data.

Survey river banks in accordance with Clause 10.5 of the specification and additionally at any channel banks where there are no raised defences. The crest level of these river banks shall be surveyed at 25m intervals and at any low points. Surveyed points shall be accurate to within 1m in plan and 0.02m r.m.s.e in height above ODN. The crest level string data shall be supplied as separate comma separated ASCII data in the long section data points of the EACSD format. Raised river bank data shall be incorporated within the long section. The ‘crest’ is defined as the level at which water will flow over the defence to lower ground beyond.

Take the crest level of wall defences on top of the coping and at the base of coping.

Extend cross sections from the channel to at least 20m into the floodplain or to the true land level on each side, or 10m beyond the landward toe of any raised embankment or flood defence where possible.

Survey cross sections of the upstream and downstream faces of all major structures, with additional sections both upstream and downstream showing where the channel returns to its normal shape.

Show the downstream soffit, top of parapet, invert, bed level and bank crests as ghosted on the section drawing for upstream elevations of bridges and culverts.

Survey the complete elevation with its cross section where a structure extends 20m beyond the top of the bank. Where a bridge spans the floodplain, then all relevant flood arches must be included in the cross section. If the cross section is excessive then a plot of the immediate channel will be drawn to the specified scale. The complete cross section will be plotted at a reduced scale and provided on a separate sheet and cross-referenced to the channel plot.

Survey weirs and drop structures if their head of water is 0.1m or greater.

Survey a structure section shall for all pipes crossing the watercourse which have a diameter greater than 0.15m.

Survey outfalls entering the watercourse of 250mm diameter or greater and show them on the long profile.

Number cross sections using the section chainage prefixed with initials of the watercourse (e.g. for the Great Ouse, ‘GO 12345’).

Present cross sections at 1:100 natural scale. Longitudinal sections shall be drawn at 1:2500 horizontal and 1:100 vertical scale.

Supply channel survey data in DWG, PDF, ASCII, ISIS (.DAT), and EACSD v3.2 format. EACSD shall be passed through the Environment Agency’s on-line validator program and the validation certificate presented in the Survey Report.

Produce gaugeboard description cards using template gaugeboard\_blank.doc.

Produce a photographic report of the site, including photographs at each section.

Produce a comprehensive Survey Report.

# Health and Safety

1. Health and safety is of the highest priority for the *Employer*. The *Consultant* shall promote and adopt safe working practices for their own activities and Subconsultants working for them and shall, in consultation with the *Employer*, deliver surveys that take due regard for health and safety in their performance with regard to the public and anyone else concerned.
2. The *Consultant* shall demonstrate that they have followed the principles of hazard identification, elimination and management in their survey work.
3. The *Consultant* shall ensure that their staff are suitably trained and equipped to carry out survey work in and alongside water.
4. The *Consultant* shall ensure that they comply with the specific health and safety requirements of landowners and occupiers along the river (e.g. Network Rail)

# Risk Management

The *Consultant* shall take the lead in project risk management throughout the survey.

# Specifications and Guidance

## Guidance documents

The *Consultant* shall undertake the appraisals in accordance with the specifications and guidance listed below.

|  |  |  |
| --- | --- | --- |
| **Ref** | **Report Name** | **Where Used** |
|  | National Technical Specification for Surveying Services. | Topographic survey |

# Programme

## Requirements of the Programme

In delivering the *services* the *Consultant* shall submit all products to the *Employer* initially as ‘draft for review’ followed by ‘final for acceptance’.

# Services and other things provided by the *Employer*

## Data and information management and intellectual property rights

All of the data listed as being supplied to the *Consultant* as part of this study remains the Intellectual Property (IP) of the *Employer*.

## Data custodianship

The data custodian for project deliverables from this commission will be the *Employer’s* Partnership & Strategic Overview team.

## Licensing information

Licences for Ordnance Survey mapping data will be provided to the *Consultant* upon award of this commission.

## Data management and metadata

The Consultant must provide the project deliverables using the template file structure and formats as supplied by the *Employer*.

## Data security

Project deliverables must be provided to the *Employer* in an encrypted format using WinZip 128 bit encryption.