national highways

Telecommunications Mast Registration Procedure

October 2023

Contents

1 Introduction

National Highways (NH) requires that all structures erected within the highway boundary, on NH land or where they may fall onto NH land, have been designed by competent persons and are safe.

This procedure is called Technical Approval (TA) and is set out in the NH document entitled Technical Approval of Highway Structures, CG 300, which is part of NH's Design Manual for Roads and Bridges (DMRB).

NH does not require any involvement if the telecom mast is not on NH land and if the telecom mast is located beyond the 'fall distance' of NH land.
(Refer to Figure 1 on page 4)

There are two methods to gain technical approval:

- generic registration technical approval covers the design of a mast for a range of parameters that would allow it to be used at multiple locations;

OR

- site specific technical approval covers individual structures.

This procedure covers generic registration technical approval, but for site specific technical approval reference should be made to CG 300.

In order to obtain approval to erect a telecom mast on NH land, the telecom company shall apply to NH to register the mast, in accordance with this telecom mast registration procedure. This procedure requires the telecom company to demonstrate that a competent person has (or competent persons have) designed the mast, checked that it complies with the required design standards and is appropriate for the selected location.

The provision of a manufacturer's data sheet is not sufficient to comply with this telecom mast registration procedure because it does not normally confirm that the mast selected is appropriate (safe) for the proposed location.

The definitions in section 2 shall apply throughout this procedure.

2 Terms and definitions

Term	Definition
Checker	An individual or group of engineers responsible for checking the design. It may comprise an appropriate mix of specialists under the direction of a team leader.
Competent person	The person responsible for overseeing and coordinating the work of the design, or checking team and having authority to sign on behalf of the team. The competent person shall be appropriately qualified and competent in relevant fields of engineering related to the work and is expected to be a chartered member of a relevant institution or suitable equivalent.
Compliance certificate	A signed statement by the telecom company that the mast is suitable for use at a specific location.
Construction stage approval	Approval given by the local service provider for construction and erection of the telecom mast to proceed.
Data sheet	A sheet listing all the design parameters and basic structural information that have been used for the design of the telecom mast or mast system.
Designer	An individual, group or organisation of engineers responsible for the design. It may comprise an appropriate mix of specialists under the direction of a team leader.
Fall distance	The distance equal to the proposed total height of the structure (including equipment/antennae) above ground level, when laid horizontally on the ground.
Generic registration technical approval	The technical approval for a mast system to be used throughout England wherever the generic design parameters are not exceeded. NH agreement is required to confirm that the information submitted for a specific structure meets the generic design parameters submitted. Approval shall be registered with NH.
Highway structure	Structure or installation coming within the scope of this procedure and situated under, over or adjacent to a motorway, trunk road or designated road.

Term	Definition
Lighting column system	Range of combinations of column heights and lengths of brackets together with the weights and windage areas of lanterns and attachments for which the column has been designed.
Overseeing Organisation	The highway authority responsible for motorways and other trunk roads or designated roads in England, Scotland, Wales or Northern Ireland.
Proprietary manufactured structure	A structure manufactured to a system covered by a patent and/or a registered design that conforms to a technical approval procedure and TAS (see below for definition of TAS).
Service provider	The organisation contracted to be responsible for the maintenance of a highway.
Statement of registration	A certificate issued by NH representative recording the registration details of the telecom company, the mast system and a named contact.
Team leader	The person responsible for overseeing and co-ordinating the work of the design and/or checking team and having authority to sign on behalf of the team. The team leader shall be appropriately qualified and competent in relevant fields of engineering related to the work and is expected to be a chartered member of a relevant institution or suitable equivalent.
Telecom company	The owner of the mast system who is guaranteeing and taking responsibility for the validity of the information supplied to the NH representative for registering the mast in accordance with the mast registration procedure.
Telecom mast or mast system	A monopole or monopole system made from steel or composite materials used to support antennae or other telecom equipment and owned by a telecom company.

Term	Definition
Technical Approval (TA)	The submission of proposals for agreement by NH representative and the subsequent provision of a statement of registration by NH.
Technical Approval Schedule (TAS)	The schedule of documents to be used for the design or assessment of a highway structure.

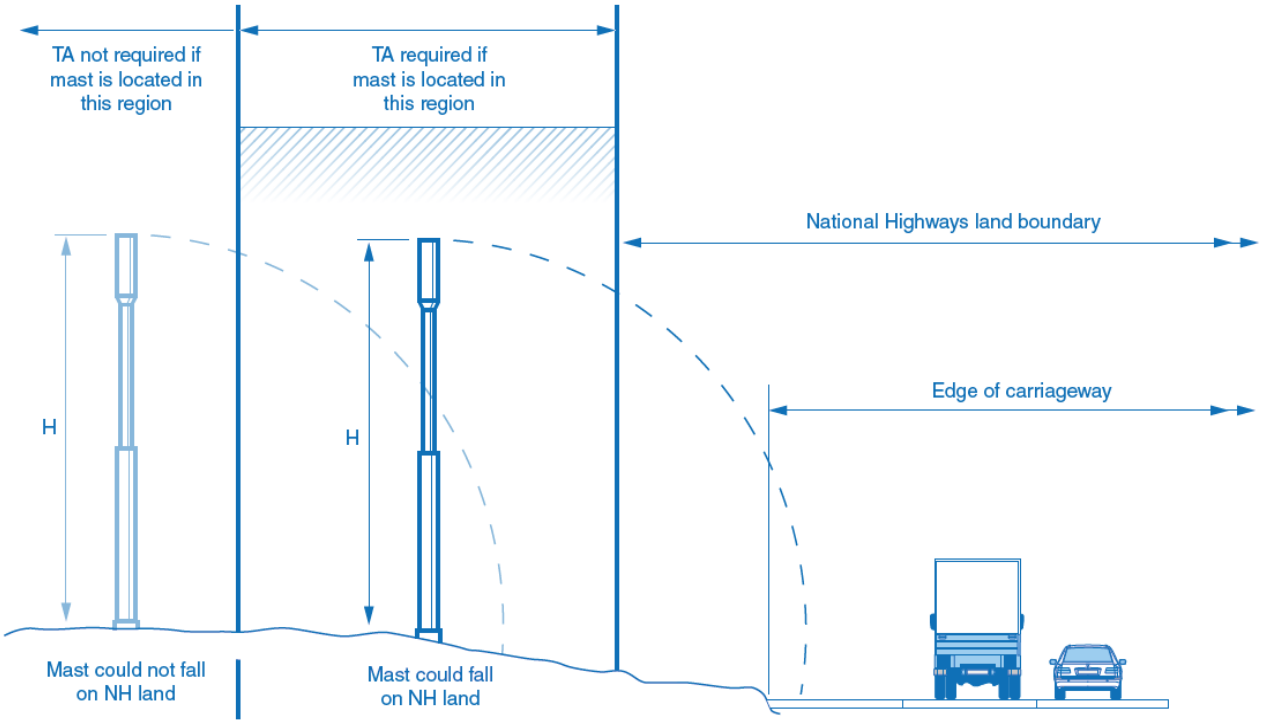


Figure 1 - Typical section showing where TA is required or not required for telecom mast installations near NH land boundary

2 Technical approval and why it is required

Technical Approval (TA) is the Overseeing Organisation's means of managing technical requirements for new and existing structures (both permanent and temporary) to ensure that designs are safe and fit for their intended purpose.

In the case of third party structures (telecom masts are in this category of structures) this appraisal will also extend to assessing the effect on NH structures and on the road network.

The fundamental objectives of the TA procedures are to ensure, as far as reasonably practicable, that highway structures are safe and serviceable in use, economic to build and maintain, sustainable and with minimal impact on the environment, and satisfactorily perform their intended functions.

The TA procedures also ensure, as far as reasonably practicable, that the highway user and any others who may be affected are protected from any adverse effects resulting from any work carried out to any highway structure and that there is adequate provision for safety under all circumstances.

TA provides procedures to safeguard the highway authority and their service provider's responsibilities, through their authority to technically approve schemes, in protecting the Secretary of State's (in Northern Ireland, the Department for Regional Development's; in Scotland, the Scottish Ministers' and in Wales, the Welsh Ministers') interests and statutory duties of public safety.

TA applies to proposals, including private development, within the highway boundary. It also applies to proposals, which are outside the highway boundary, for adoption of highway structures by NH and/or their service providers.

It is recommended that TA be applied to proposals outside the highway boundary resulting from planning applications that are referred to NH and/or their service provider for direction, as they may affect the highway. These considerations will not examine the economic aspects of building, maintaining and sustainability of third party structures.

Where the Overseeing Organisation is consulted during planning applications, this 'type approval' will be required. Where the masts are outside highway authority land, this 'type approval' is usually all that would be required (provided that the construction did not require any access and/or interfere with road users). In many cases local authorities will give conditional approval subject to obtaining this 'type approval'.

TA does not apply to cases where there are no public safety issues such as temporary works in green field sites or only in place during full road closures with no other public access. However, TA applies to temporary works where the permanent works proposal has identified the need for an independent check.

There are two types of technical approval available for telecom mast registration:

Option 1: Generic registration technical approval; and,

Option 2: Site specific technical approval.

Details of both types of technical approval are described in 2.1 and 2.2 below and are shown in Table 1 (see page 13).

2.1 Option 1: Generic registration technical approval

In order to avoid telecom companies having to submit full technical approval for each individual site, NH has agreed, in consultation with telecom companies, to a generic registration technical approval.

In summary, the designer shall certify that the mast has been designed/checked for a range of generic design parameters that will allow the proposed mast system to be used nationwide wherever those parameters are not exceeded. For each mast system, this will only have to be done once.

For each proposed new site the telecom company shall provide copies of the mast system registration documents to NH and thereby negating the need for any further checks on the structural adequacy of the mast. General arrangements and site details are not required for this technical approval (they form part of the construction stage approval).

The status of the mast registration of a particular mast system application can be confirmed by contacting:

Structures, VRS & Lighting Group
Asset Management Division
Safety, Engineering and Standards (SES).
National Highways
2 City Walk
Leeds
L11 9AR

It can also be confirmed by e-mailing: **telecom.masts@nationalhighways.co.uk**

2.2 Option 2: Site specific technical approval

Site specific technical approval is to be used for individual structures that are designed for use in only one location, for example, a mast at high altitude or subject to high wind speeds, a lattice tower or other unique structure.

The telecom company shall submit full details of the telecom mast, and confirmation that the design has been carried out to the appropriate design standards by competent named individuals with appropriate qualifications and experience in accordance with CG 300, Technical Approval of Highway Structures. This will require the submission of an Approval in Principle (AIP) document. An appropriate model AIP document is given in CG 300: Annex A1.

The AIP should provide all the relevant design parameters and end user requirements for the structure. For example, it should include appropriate statements regarding appearance, environmental and maintenance considerations. Drawings should be provided including a location plan together with any other relevant details of any possible effect on the highway network and/or anything else that may affect NH/service provider.

The following is a check list of essential requirements for an AIP (for full details, refer to CG 300):

1. location;
2. operational dimensions/levels;
3. highway loading requirements;
4. other loading requirements;
5. relevant departmental standards, British Standards, codes of practice etc.; and,
6. general arrangement drawing including the designated outline.

The following is a check list of other requirements for an AIP (or full details, refer to CG 300):

7. ground investigation data;
8. appearance of structure;
9. environmental factors;
10. constraints/external control during construction;
11. operational or user requirements;
12. special maintenance; and,
13. any other essential requirements.

NH will deal with each individual request on a ‘local basis’. The contact details of the local representative in England can be obtained by e-mailing the Structures, VRS and Lighting Group on: **technical.approval@nationalhighways.co.uk**

3 Mast registration procedure

The telecom company is required to compile details of the proposed generic mast system or site specific telecom mast and submit these to NH.

Standard pro-formas are included in Appendices A1 to A4, and if required, electronic copies of these forms can be obtained from SES - Structures, VRS and Lighting Group. The purpose of these forms is to describe the typical information required when submitting a request to NH. The forms can be replicated in a similar format provided all the required information is included.

There is no reason why these forms cannot be tailored to suit individual company requirements. This may include adding company names, logos, and extending tables to include variants in mast height, etc. If these alterations result in two pages being created for a particular certificate then it is important that particular mast reference details, for example, mast name, drawing number, manufacturer's reference number, revisions etc. are all included on both sheets.

All sheets must be signed on behalf of the telecom company.

A description of the forms is given below and the telecom mast registration procedure is illustrated on Table 1 (See page 13).

3.1 Statement of registration

A certificate issued by NH recording registration details of the telecom company and the mast system. A named contact for the telecom company is also required on the certificate.
The registration is in the name of the telecom company (not the manufacturer/designer). It is the telecom company, which is guaranteeing and taking responsibility for the validity of the information supplied. A sample statement of registration is included in Appendix A1 for information.

3.2 Design and check certificate

A form completed by the designer and the checker to confirm that they have exercised due professional skill and care in undertaking the design of the telecom mast system. A sample design and check certificate is included in Appendix A2 for information. Separate design and check certificates may be submitted for the telecom mast's structure and its foundation.

The checker should be a senior member of the design organisation, and for structures above 20 metres in height, the checker shall be independent of the design team.

3.3 Data sheet

A sheet listing all of the design parameters and basic structural information that has been used for the design of the telecom mast.
A blank sample data sheet is included in Appendix A3 and an example of a completed data sheet is included in Appendix A6 for information. It should be noted that the sample data sheet is in two parts to allow separate approval of the mast's structure and its foundation, if required.

The basic requirements, which should be included, are set out in the Notes for Guidance on the Specification for Highway Works (Series NG1300), and is part of the Manual of Contract Documents for Highway Works.

If an alternative structure type or design standard is used then the information to be submitted will be different. For example, it is expected that a steel lattice tower would be designed in accordance with BS EN 1993-3-1. The requirements must be agreed with NH.

3.4 Drawings

These should contain the basic information required to identify the telecom mast listed on the design check certificate and the data sheet.

This typically includes details of the general arrangement of the telecom mast, the attachments, the number of antennae, microwave dishes, etc.

In some instances the telecom company may wish to include additional generic details, for example, details of the foundation designs. An example general arrangement drawing which includes structure and foundation information on the same drawing is in Appendix A5. If separate approval is required it is expected that separate drawings will be submitted for the structure and foundations.

4 Construction stage approval

Following receipt of a statement of mast registration, the telecom company is required to apply for construction stage approval to the local service provider by submitting the following information in 4.1, 4.2 and 4.3.

Construction stage approval is only required if the telecom mast is to be erected on NH land or the fall distance of the mast or any part of it is onto NH land (See Figure 1 on page 4).

The telecom company shall confirm that site specific checks have been carried out to confirm that the design is suitable for use at the proposed location, including details of safety barriers and any other restrictions/planning conditions that may apply.

4.1 Compliance certificate

A signed statement by the telecom company, that the mast is suitable for use at this specific location. A sample of which is included in Appendix A4.

4.2 Construction drawings including foundations

The general arrangement of the mast, foundation layout and all other relevant information shall be included as part of this submission.

Foundations may be designed in accordance with any relevant geotechnical design standard. The actual ground/soil conditions at each site shall be confirmed as being in accordance with the foundation design which should form part of this submission.

4.3 Planning

The telecom company shall provide the following information that may assist the approval of the construction stage:

1. construction and erection programme;
2. plant movements during construction and erection stages on NH land that may affect the network;
3. details of future access requirements for the mast and equipment/antennae that may affect the network; and,
4. any other information that may assist the service provider.

Table 1- Mast registration procedure and construction stage approval

Is the telecom mast to be located on NH land or could it fall onto NH land ?

NO → No NH approval required

YES

Telecom company to decide if they require Generic Registration or Site Specific Technical Approval

Technical Approval Generic Registration or Site Specific

Option 1
Generic Registration Technical Approval

Option 2
Site Specific Technical Approval

Mast Registration Procedure

Telecom Company to submit generic mast system documents to SES - Structures for registration

Telecom Company to submit AIP to local NH representative

Statement of Registration

Statement of registration for generic mast system issued by SES - Structures to telecom company for use nationwide

Signed AIP for Site Specific telecom mast issued by local NH representative to telecom company

Construction Stage Approval

Site Specific Technical Approval and Construction Stage request submitted to local Service Provider for approval

Site Specific Technical Approval

STOP

5 References

5.1 Design Manual for Roads and Bridges (DMRB)

CG 300: Technical Approval of Highway Structures

CD 354: Design of Minor Structures

CD 622: Managing Geotechnical Risk

5.2 British Standards and BS EN Standards

EN 40: Lighting Columns

EN 1993-3-1: Eurocode 3: Design of steel structures. Towers, masts and chimneys

EN 1997: Geotechnical design

5.3 Other Documents

PD 4567: Guidance on the use of BS EN 40-3-1 and BS EN 40-3-3

Manual of Contract Documents for Highway Works

Volume 2 - Notes for Guidance on the Specification for Highway Works - Series NG1300 Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

6 Enquiries

All technical enquiries or comments on this procedure should be directed:

Structures, VRS & Lighting Group
Asset Management Division
Safety Engineering and Standards (SES)
National Highways
2 City Walk
Leeds
LS11 9AR

Email: **telecom.masts@nationalhighways.co.uk**

Appendices


national highways

Telecommunications Mast System

Appendix A1 - Statement of Registration

National Highways Reference

Name and address of registration holder

Mast information

This is to confirm that National Highways (acting on behalf of the Overseeing Organisations of the Department for Transport, for Transport Scotland, the Welsh Government, the Department for Infrastructure Northern Ireland) has registered the following Telecommunication Mast System for installation on motorways and trunk roads designated by the Overseeing Organisations.

This registration relates only to the mast system that is named above and is described on the appropriate data sheets and the design/check certificates. Any parameters exceeding those on the data sheets would require a separate registration.

For any particular site the registration holder (or agent) will be required to obtain the necessary planning approvals and to liaise with the Overseeing Organisations or the regional representative to agree the terms and conditions of the installation and maintenance of the system including any control equipment on the ground. The requirements for a suitable vehicle restraint system to be agreed on a site specific basis with the Overseeing Organisations or the regional representative.

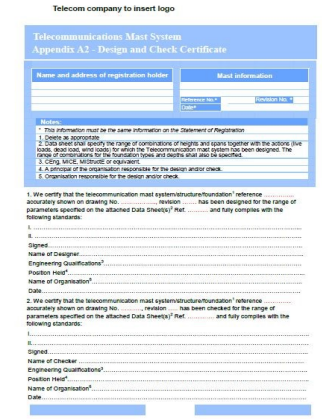
Copies of the date sheets and design/check certificate approved at registration shall be provided to the Overseeing Organisation for the particular site where the registered product is proposed for use.

* This information shall be the same as that on the Data Sheet and the Design/Check Certificate

Asset Management Division
Safety Engineering and Standards (SES)
National Highways
2 City Walk
Leeds
LS11 9AR

Signature
A. Persons Name (including qualifications)
Position held
Date:

Appendix A1 — Statement of Registration


Telecom company to insert logo

Telecommunications Mast System

Appendix A2 - Design and Check Certificate

Name and address of registration holder

Mast information

Notes:

* This information must be the same information on the Statement of Registration

1. Delete as appropriate
2. Data sheet shall specify the range of combinations of heights and spans together with the actions (live loads, dead load, wind loads) for which the Telecommunication mast system has been designed. The range of combinations for the foundation types and depths shall also be specified.
3. CENs, MHDE, MIDHAVE or equivalent.
4. A principal of the organisation responsible for the design and/or check.
5. Organisation responsible for the design and/or check.

1. We certify that the telecommunication mast system/structure/foundation[1] reference ..... accurately shown on drawing No. ..... revision ..... has been designed for the range of parameters specified on the attached Data Sheet(s)[2] Ref. ..... and fully complies with the following standards:

i. .....
ii. .....

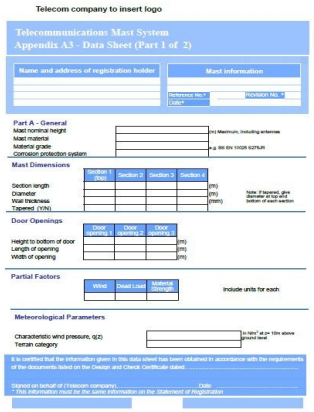
Signed .....
Name of Designer .....
Engineering Qualifications[3] .....
Position Held[4] .....
Name of Organisation[5] .....
Date .....

2. We certify that the telecommunication mast system/structure/foundation[1] reference ..... accurately shown on drawing No. ..... revision ..... has been checked for the range of parameters specified on the attached Data Sheet(s)[2] Ref. ..... and fully complies with the following standards:

i. .....
ii. .....

Signed .....
Name of Checker .....
Engineering Qualifications[3] .....
Position Held[4] .....
Name of Organisation[5] .....
Date .....

Appendix A2 — Design and Check Certificate


Telecom company to insert logo

Telecommunications Mast System

Appendix A3 - Data Sheet (Part 1 of 2)

Name and address of registration holder

Mast information

Part A - General

Mast nominal height
Mast material
Material grade
Corrosion protection system

Mast Dimensions

Section length
Diameter
Wall thickness
Tapered (Y/N)

Door Openings

Height to bottom of door
Length of opening
Width of opening

Partial Factors

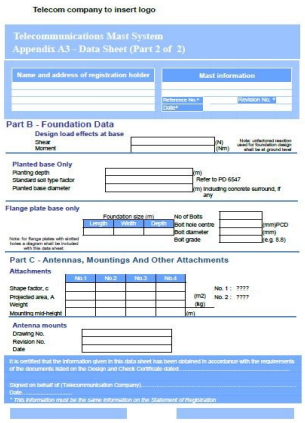
Wind
Dead Load
Material Strength

Include units for each

Meteorological Parameters

Characteristic wind pressure, q(z)
Terrain category

Appendix A3 — Sample Data Sheet (Part 1of 2)


Telecom company to insert logo

Telecommunications Mast System

Appendix A3 - Data Sheet (Part 2 of 2)

Name and address of registration holder

Mast information

Part B - Foundation Data

Design load effects at base

Shear
Moment

Planted base Only

Planting depth
Standard soil type factor
Planted base diameter

Refer to PD 6547

Flange plate base only

Foundation size (m)
No of Bolts
Bolt hole centre
Bolt diameter
Bolt grade

Part C - Antennas, Mountings And Other Attachments

Attachments

No.1
No.2
No.3
No.4

Shape factor, c
Projected area, A
Weight
Mounting mid-height

Antenna mounts

Drawing No.
Revision No.
Date

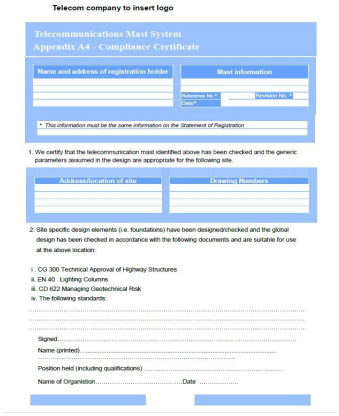
It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated .....

Signed on behalf of (Telecommunication Company) .....

Date .....

* This information must be the same information on the Statement of Registration

Appendix A3 — Sample Data Sheet (Part 2 of 2)


Telecom company to insert logo

Telecommunications Mast System

Appendix A4 - Compliance Certificate

Name and address of registration holder

Mast information

* This information must be the same information on the Statement of Registration

1. We certify that the telecommunication mast identified above has been checked and the generic parameters assumed in the design are appropriate for the following site.

Address/location of site

Drawing Numbers

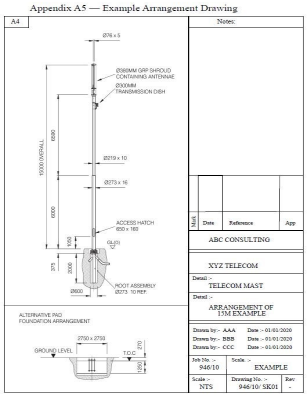
2. Site specific design elements (i.e. foundations) have been designed/checked and the global design has been checked in accordance with the following documents and are suitable for use at the above location:

i. CG 300 Technical Approval of Highway Structures
ii. EN 40 Lighting Columns
iii. CD 622 Managing Geotechnical Risk
iv. The following standards:

.....
.....

Signed .....
Name (printed) .....
Position held (including qualifications) .....
Name of Organisation .....Date .....

Appendix A4 — Compliance Certificate


Appendix A5 — Example Arrangement Drawing

A4

Notes:

Ø76 x 5

Ø368MM GRP SHROUD CONTAINING ANTENNAE

Ø300MM TRANSMISSION DISH

Ø219 x 10

Ø273 x 16

ACCESS HATCH 600 x 180

Gk(0) 12

ROOT ASSEMBLY Ø273 TO REF.

Ø600

ALTERNATIVE PAD FOUNDATION ARRANGEMENT

GROUND LEVEL

T.O.C

Mark | Date | Reference | App

ABC CONSULTING

XYZ TELECOM

Detail :-
TELECOM MAST

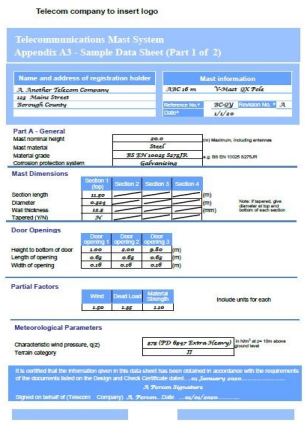
Detail :-
ARRANGEMENT OF 15M EXAMPLE

Drawn by :- AAA Date :- 01/01/2020
Drawn by :- BBB Date :- 01/01/2020
Drawn by :- CCC Date :- 01/01/2020

Job No. :- 946/10
Scale :- EXAMPLE

Scale :- NTS
Drawing No. :- 946/10/ SK01
Rev: -

Appendix A5 — Example Arrangement Drawing


Telecom company to insert logo

Telecommunications Mast System

Appendix A3 - Sample Data Sheet (Part 1 of 2)

Name and address of registration holder

A. Another Telecom Company
123 Main Street
Borough County

Mast information

RBC 16 m
Steel
BS EN 10025 S275JR
Galvanising

Part A - General

Mast nominal height
Mast material
Material grade
Corrosion protection system

Mast Dimensions

Section length
Diameter
Wall thickness
Tapered (Y/N)

Door Openings

Height to bottom of door
Length of opening
Width of opening

Partial Factors

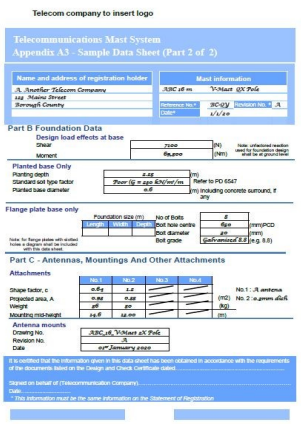
Wind
Dead Load
Material Strength

Include units for each

Meteorological Parameters

Characteristic wind pressure, q(z)
Terrain category

Appendix A6 — Example Data Sheet (Part 1 of 2)


Telecom company to insert logo

Telecommunications Mast System

Appendix A3 - Sample Data Sheet (Part 2 of 2)

Name and address of registration holder

A. Another Telecom Company
123 Main Street
Borough County

Mast information

RBC 16 m
Steel
BS EN 10025 S275JR
Galvanising

Part B Foundation Data

Design load effects at base

Shear
Moment

Planted base Only

Planting depth
Standard soil type factor
Planted base diameter

Refer to PD 6547

Flange plate base only

Foundation size (m)
No of Bolts
Bolt hole centre
Bolt diameter
Bolt grade

Part C - Antennas, Mountings And Other Attachments

Attachments

No.1
No.2
No.3
No.4

Shape factor, c
Projected area, A
Weight
Mounting mid-height

Antenna mounts

Drawing No.
Revision No.
Date

It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated .....

Signed on behalf of (Telecommunication Company) .....

Date .....

* This information must be the same information on the Statement of Registration

Appendix A6 — Example Data Sheet (Part 2 of 2)

Telecommunications Mast System

Appendix A1 - Statement of Registration

National Highways Reference

Name and address of registration holder	Mast information
	Reference No.* Revision No. *
	Date*

This is to confirm that National Highways (acting on behalf of the Overseeing Organisations of the Department for Transport; for Transport Scotland; the Welsh Government; the Department for Infrastructure Northern Ireland) has registered the following Telecommunication Mast System for installation on motorways and trunk roads designated by the Overseeing Organisations.

This registration relates only to the mast system that is named above and is described on the appropriate data sheets and the design/check certificates. Any parameters exceeding those on the data sheets would require a separate registration.

For any particular site the registration holder (or agent) will be required to obtain the necessary planning approvals and to liaise with the Overseeing Organisations or the regional representative to agree the terms and conditions of the installation and maintenance of the system including any control equipment on the ground. The requirements for a suitable vehicle restraint system to be agreed on a site specific basis with the Overseeing Organisations or the regional representative.

Copies of the data sheets and design/check certificate approved at registration shall be provided to the Overseeing Organisation for the particular site where the registered product is proposed for use.

** This information shall be the same as that on the Data Sheet and the Design/Check Certificate*

Asset Management Division
Safety Engineering and Standards (SES)
National Highways
2 City Walk
Leeds
LS11 9AR

Signature

A. Persons Name (including qualifications)

Position held

Date: ……

Telecom company to insert logo

Telecommunications Mast System
Appendix A2 - Design and Check Certificate

Name and address of registration holder	Mast information
	Reference No.* Revision No. *
	Date*

Notes:
* *This information must be the same information on the Statement of Registration*
1. Delete as appropriate
2. Data sheet shall specify the range of combinations of heights and spans together with the actions (live loads, dead load, wind loads) for which the Telecommunication mast system has been designed. The range of combinations for the foundation types and depths shall also be specified.
3. CEng, MICE, MIStructE or equivalent.
4. A principal of the organisation responsible for the design and/or check.
5. Organisation responsible for the design and/or check.

1. We certify that the telecommunication mast system/structure/foundation[1] reference …….. accurately shown on drawing No. …….., revision ……. has been designed for the range of parameters specified on the attached Data Sheet(s)[2] Ref. ……. and fully complies with the following standards:

i. ……..

ii. ……..

Signed……..

Name of Designer……...

Engineering Qualifications[3]……..

Position Held[4]……...

Name of Organisation[5]……..

Date……

2. We certify that the telecommunication mast system/structure/foundation[1] reference ……. accurately shown on drawing No. ……., revision ….. has been designed for the range of parameters specified on the attached Data Sheet(s)[2] Ref. ……. and fully complies with the following standards:

i……..

ii……

Signed……..

Name of Checker ……

Engineering Qualifications[3]……..

Position Held[4]……..

Name of Organisation[5]……..

Date……

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Telecommunications Mast System
Appendix A3 - Data Sheet (Part 1 of 2)

Name and address of registration holder	Mast information
	Reference No.* Revision No. *
	Date*

Part A - General

Mast nominal height		(m) Maximum, including antennas
Mast material		
Material grade		e.g. BS EN 10025 S275JR
Corrosion protection system		

Mast Dimensions

	Section 1 (top)	Section 2	Section 3	Section 4	
Section length					(m)
Diameter					(m)
Wall thickness					(mm)
Tapered (Y/N)					

Note 1: Section 1 is the top section

Note: 2 If tapered, give diameter at top and bottom of each section

Door Openings

	Door opening 1	Door opening 2	Door opening 3	
Height to bottom of door				(m)
Length of opening				(m)
Width of opening				(m)

Partial Factors

Wind	Dead Load	Material Strength

Include units for each

Meteorological Parameters

Characteristic wind pressure, q(z)		in N/m^2 at z= 10m above ground level
Terrain category		

It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated…….....

Signed on behalf of (Telecom company)……Date ……..

** This information must be the same information on the Statement of Registration*

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Telecommunications Mast System
Appendix A3 - Data Sheet (Part 2 of 2)

Name and address of registration holder	Mast information
	Reference No.*
	Date*

Revision No. *

Part B - Foundation Data

Design load effects at base

Shear		(N)
Moment		(Nm)

Note: unfactored reaction used for foundation design shall be at ground level

Planted base only

Planting depth		(m)
Standard soil type factor		Refer to PD 6547
Planted base diameter		(m) Including concrete surround, if any

Flange plate base only

Foundation size (m)

Length	Width	Depth

No of Bolts		
Bolt hole centre		(mm) PCD
Bolt diameter		(mm)
Bolt grade		(e.g. 8.8)

Note: for flange plates with slotted holes a diagram shall be included with this data sheet.

Part C - Antennas, Mountings And Other Attachments

Attachments

	No.1	No.2	No.3	No.4	
Shape factor, c					
Projected area, A					(m2)
Weight					(kg)
Mounting mid-height					(m)

No. 1 : ????
No. 2 : ????

Antenna mounts

Drawing No.	
Revision No.	
Date	

It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated…….....

Signed on behalf of (Telecommunication Company)……
Date……..

** This information must be the same information on the Statement of Registration*

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Telecommunications Mast System
Appendix A4 - Compliance Certificate

Name and address of registration holder	Mast information
	Reference No.* Revision No. *
	Date*

* *This information must be the same information on the Statement of Registration*

1. We certify that the telecommunication mast identified above has been checked and the generic parameters assumed in the design are appropriate for the following site.

Address/location of site	Drawing Numbers

2. Site specific design elements (i.e. foundations) have been designed/checked and the global design has been checked in accordance with the following documents and are suitable for use at the above location:

i . CG 300 Technical Approval of Highway Structures
ii. EN 40 Lighting Columns
iii. CD 622 Managing Geotechnical Risk
iv. The following standards:

……
……
……

Signed…….

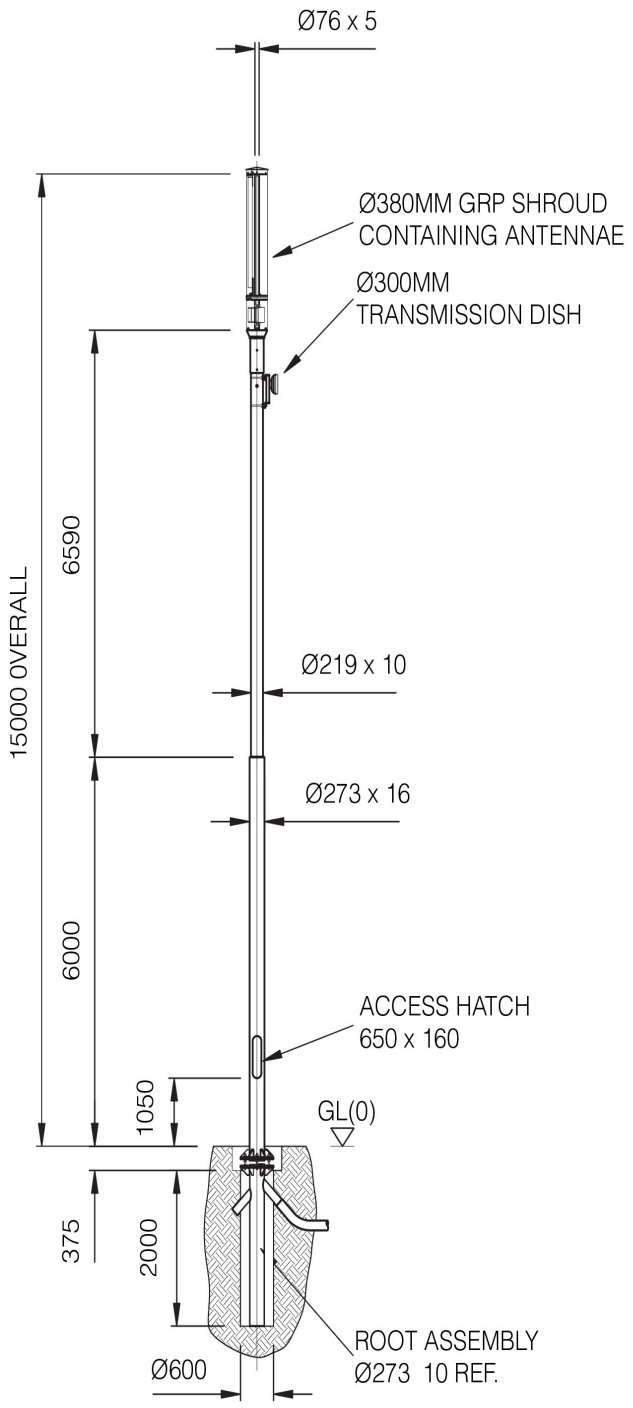
Name (printed)…..
……..

Position held (including qualifications) ……

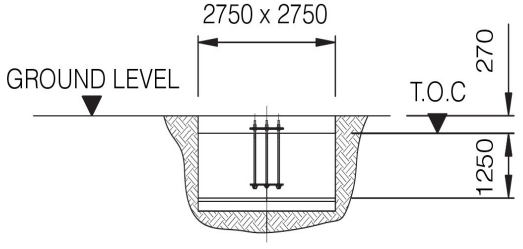
Name of Organisation……Date ……..

Appendix A5 — Example Arrangement Drawing

A4



ALTERNATIVE PAD
FOUNDATION ARRANGEMENT



Notes:

Mark	Date	Reference	App

ABC CONSULTING

XYZ TELECOM

Detail :-
TELECOM MAST

Detail :-
ARRANGEMENT OF
15M EXAMPLE

Drawn by:- AAA Date :- 01/01/2020
Drawn by:- BBB Date :- 01/01/2020
Drawn by:- CCC Date :- 01/01/2020

Job No. :-	Scale. :-	
946/10	EXAMPLE	
Scale :-	Drawing No. :-	Rev
NTS	946/10/ SK01	-

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Telecommunications Mast System
Appendix A3 - Sample Data Sheet (Part 1 of 2)

Name and address of registration holder
A. Another Telecom Company
123 Mains Street
Borough County

Mast information			
ABC 16 m	*V-Mast QX Pole*		
Reference No.*	*BC-QY*	Revision No. *	*A*
Date*	*1/1/20*		

Part A - General

Mast nominal height	*20.0*	(m) Maximum, including antennas
Mast material	*Steel*	
Material grade	*BS EN 10025 S275JR*	e.g. BS EN 10025 S275JR
Corrosion protection system	*Galvanising*	

Mast Dimensions

	Section 1 (top)	Section 2	Section 3	Section 4	
Section length	*11.50*				(m)
Diameter	*0.324*				(m)
Wall thickness	*12.5*				(mm)
Tapered (Y/N)	*N*				

Note: if tapered, give diameter at top and bottom of each section

Door Openings

	Door opening 1	Door opening 2	Door opening 3	
Height to bottom of door	*1.00*	*2.00*	*9.80*	(m)
Length of opening	*0.65*	*0.65*	*0.65*	(m)
Width of opening	*0.16*	*0.16*	*0.16*	(m)

Partial Factors

Wind	Dead Load	Material Strength
1.50	*1.35*	*1.10*

Include units for each

Meteorological Parameters

Characteristic wind pressure, q(z)	*575 (PD 6547 Extra Heavy)*	in N/m^2 at z= 10m above ground level
Terrain category	*II*	

It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated….*01 January 2020*.....

A Person Signature

Signed on behalf of (Telecom Company) *A. Person*...Date ...*01/01/2020*.....

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Telecommunications Mast System
Appendix A3 - Sample Data Sheet (Part 2 of 2)

Name and address of registration holder
A. Another Telecom Company
123 Mains Street
Borough County

Mast information			
ABC 16 m	*V-Mast QX Pole*		
Reference No.*	*BC-QY*	Revision No. *	*A*
Date*	*1/1/20*		

Part B Foundation Data

Design load effects at base

Shear	*7100*	(N)	Note: unfactored reaction used for foundation design shall be at ground level
Moment	*69,500*	(Nm)	

Planted base only

Planting depth	*2.25*	(m)
Standard soil type factor	*Poor (G = 230 kN/m²/m*	Refer to PD 6547
Planted base diameter	*0.6*	(m) Including concrete surround, if any

Flange plate base only

Foundation size (m)

Length	Width	Depth

No of Bolts	*8*	
Bolt hole centre	*650*	(mm) PCD
Bolt diameter	*30*	(mm)
Bolt grade	*Galvanised 8.8*	(e.g. 8.8)

Note: for flange plates with slotted holes a diagram shall be included with this data sheet.

Part C - Antennas, Mountings And Other Attachments

Attachments

	No.1	No.2	No.3	No.4		
Shape factor, c	*0.64*	*1.2*				No.1 : *An antena*
Projected area, A	*0.93*	*0.35*			(m2)	No. 2 :*0.3mm dish*
Weight	*56*	*50*			(kg)	
Mounting mid-height	*14.6*	*13.00*			(m)	

Antenna mounts

Drawing No.	*ABC_16_V-Mast 2X Pole*
Revision No.	*A*
Date	*01ST January 2020*

It is certified that the information given in this data sheet has been obtained in accordance with the requirements of the documents listed on the Design and Check Certificate dated…….

Signed on behalf of (Telecommunication Company)……

Date…….

** This information must be the same information on the Statement of Registration*

? Appendix B – Frequently Asked Questions

The telecom companies have powers under the Telecommunication Act to erect masts. Why should we have to go through this procedure?

Highways authorities are empowered by the Secretary of State to ensure the safety of the road network. The Telecommunications Act does not overrule this.

Why does the registration have to be in the name of the telecom company, I want to register it under my company so I can sell it to any telecom operator?

The masts are being erected under the permissions granted to telecom companies under the Telecommunications Act. Therefore they are underwriting the validity of the design process and accepting liability for the design. This responsibility cannot be delegated. However, it is possible for a designer/checker to agree in principle a 'pro-forma' design for a generic mast. This could then be re-badged by each telecom company for formal submission to NH. The format and details should be agreed with NH.

I have selected the mast from the manufacturer's data sheet why do I need registration?

Many data sheets will relate to the mast and not the specific combination of components (antenna configuration, shroud, microwave dish etc.) that is proposed. In addition, the designer/checker will not be identified and responsibility for the design will be unclear.
Most data sheets contain caveats restricting use or design limitations. What is required is for the highways authorities to be sure that the mast selected has been designed by a competent person. It is permissible to ask the manufacturer to provide the design check certificate and documentation required.

What standards should be used for the design?

All designs shall be in accordance with relevant British standards, BS EN standards, DMRB and other relevant published documents as appropriate for the structure.

My designer is not MICE/MIStructE but has 20 years experience is this acceptable?

The object of this is to confirm that the person designing the structure is competent.
An engineering qualification will prove that the designer will have an appreciation of the design principles and be covered by the firm's professional indemnity insurance. Without specific qualifications, it will be necessary to check/confirm that professional indemnity insurance covers the named person as competent for carrying out this design work. A team leader should be overseeing and co-ordinating the design and shall have the authority to sign on behalf of the team. Generally this is expected to be a partner or director of the design organisation.

? Appendix B – Frequently Asked Questions

Why do I need to provide drawings?

To assist identification and to ensure that the mast constructed is that described on the statement of registration.

The data sheet specifies a specific product type antenna, can I use a different one?

The purpose of this information on the data sheet is purely for identification. If the antenna will be contained within the shroud and/or provided it does not exceed the weight limits specified it will be acceptable to change the type. If the antenna is not protected by a shroud, but it is the same general dimensions as that previously specified (or smaller) then it will be acceptable. If it is larger or a different shape then a new application will need to be submitted. When filling in this box include the term (or similar) after the type to allow for this.

The proposed mast will be behind a tree (or other obstruction like a fence) therefore it will not fall onto NH land, do I need registration?

Yes, it cannot be guaranteed that this tree will be in place throughout the whole design life of the mast, therefore registration is necessary.

How much will this registration cost?

For the registration process there are no charges associated, however there may be some site specific charges if the telecom company needs to arrange easements, traffic control etc.

How long will this process take?

Generic type approval:

That depends on the complexity of the scheme and the information provided. Assuming proposals are clearly set out, the information required is provided and there are no mistakes or conflicting information then you should allow 30 days for registration.

Site specific technical approval:

Where proposals will directly affect road users/operation of the network, restrictions may be imposed and in some cases permission will not be given. It is important to give as much notice as possible to allow proposals to be considered. It is expected that AIPs should be submitted for agreement; these will be either be agreed or returned with comments within 6 weeks. Submission of check certificates and other details will follow that and formal agreement will be given within 5 weeks of receipt of acceptable completed documents.

Telecom companies must not assume completion within a shorter time.

? Appendix B – Frequently Asked Questions

How long is this registration valid?

The telecom company can withdraw a mast design at any time. This may occur where the designer considers that the design is no longer valid/applicable, if the structure has been replaced by a different type, or if the design standards used have been superseded.

It is important to understand that the responsibility for this structure rests with the telecom company. If design standards have been superseded invalidating design assumptions then as the owners of the structure they are liable. For that reason the telecom company should regularly review the status of their registered structures and inform NH if they wish to withdraw that structure. It is assumed that once registered, a product will continue to be used until NH is notified that it should be withdrawn.

Does this mean that the telecom company can erect this mast on the motorway?

No, motorways and protected streets are excluded from the powers granted under the Telecommunications Act.