The following information is associated with Network Rail Standard:
NR CIV/SD/245 Rev A

Additional Content Access

Click the link below to access CAD version of this drawing.

CAD Drawing

- CIV/SD/245

If you have any questions, or need assistance, please contact **IHS Support**

Information accessed via the links above is the property of the Copyright holder

IHS Additional Content Page

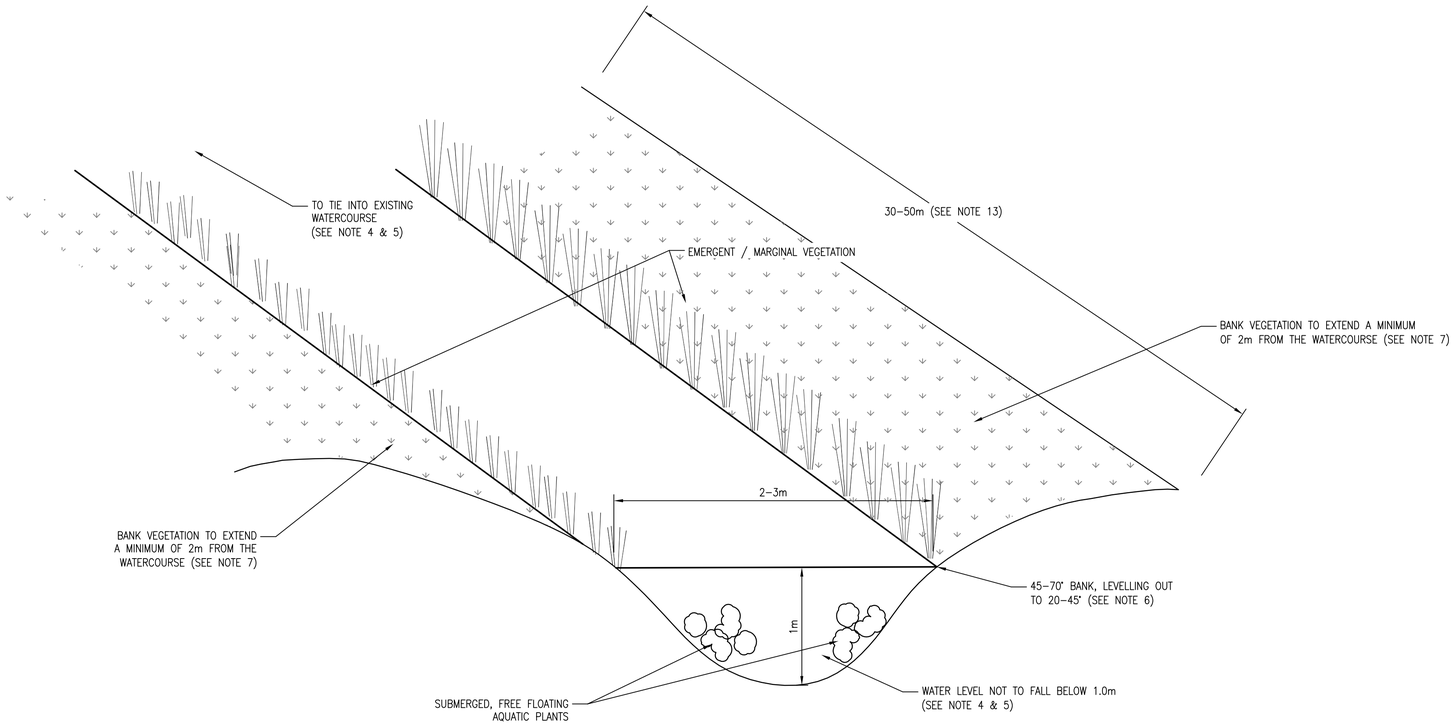
--`,,,,,`,,,,,`,,`,,,,,,,,`-`-`,,`,,`,`,,`---

Documents
Document Sharing Hub

Copyright Network Rail
Provided by IHS under license with Network Rail
No reproduction or networking permitted without license from IHS
Full document details: NR NR-CIV-SD-245 ISSUE A 2011

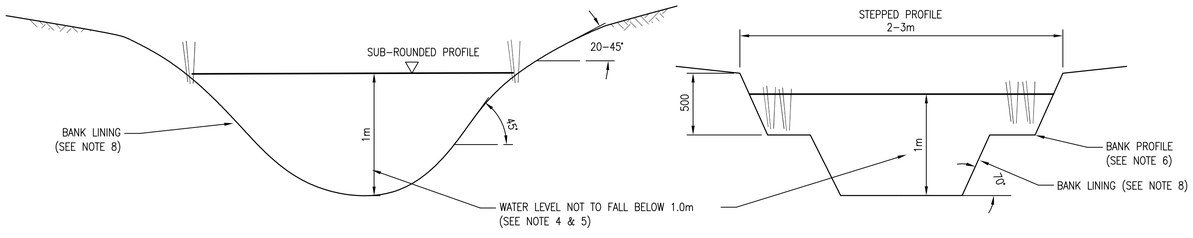
Licensee=Weston Williamson/5989497001, User=sam, albett
Not for Resale, 03/27/2016 20:52:53 MDT

Full document details: NR NR-CIV SD 245 ISSUE A 2011



WATER VOLE ALTERNATIVE HABITAT CREATION

N.T.S



TYPICAL BANK PROFILES

N.T.S

OUTLINE CONSTRUCTION SEQUENCE

a) QUALIFIED ECOLOGIST TO UNDERTAKE AN ECOLOGICAL SURVEY OF THE SITE TO IDENTIFY THE PRESENCE OF ANY PROTECTED SPECIES.

b) ECOLOGICAL REPORT OF THE SITE TO BE ISSUED AND APPROVED PRIOR TO COMMENCEMENT OF ANY PHYSICAL WORKS.

c) DRAINAGE SURVEY AND CONSULTATION WITH EA/SEPA TO ASSESS THE SUSTAINABILITY AND LONG TERM DRAINAGE PERFORMANCE AND IMPACT OF THE ALTERNATIVE HABITAT SITE.

d) LOCATE AND MARK OUT SERVICES PRESENT ON THE ALTERNATIVE HABITAT SITE.

e) SECURE PERIMETER FENCING TO PROTECT THE SITE.

f) MOBILISE AND ESTABLISH ALL REQUIRED SAFETY/WELFARE FACILITIES, STORES, COMPOUND AND SITE OFFICES.

g) UNDERTAKE SITE DE–VEGETATION WORKS AS REQUIRED.

h) CONSTRUCT THE NEW WATERCOURSE OVER A 30–50M LENGTH, WITH THE REQUIRED BANK PROFILE.

i) LINE THE NEW WATERCOURSE WITH A 200–300MM THICK LAYER OF PUDDLE CLAY IF THE EXISTING GROUND CONDITIONS ARE NOT SUITABLE TO HOLD WATER.

j) FILL THE WATERCOURSE OR ALLOW TO FILL NATURALLY TO DESIGN LEVELS.

k) UNDERTAKE PLANTING WITHIN AND AROUND THE NEW HABITAT (SEE NOTE 16)

l) DEMOBILISE.

TABLE 1

SUITABLE SPECIES FOR INCLUSION IN THE WATERCOURSE AND BANKSIDE HABITATS

FREE FLOATING PLANTS

BLADDERWORT (UTRICULARIA SPP)
FROG–BIT (HYDROCHARIS MORSUS–RANAE)
HORNWORT (CERATOPHYLLUM DEMERSUM)

SUBMERGED ROOTED PLANTS

CURLED PONDWEED (POTAMOGETON CRISPUS)
STARWORT (CALLITRICHE SPP)
WATER–CROWFOOT (RANUNCULUS AQUATILIS)
WATER–MILFOIL (MYRIOPHYLLUM SPICATUM; MYRIOPHYLLUM VERTICILLATUM; OR FOR LOW ALKALINITY SITES – MYRIOPHYLLUM ALTERNIFLORUM)
WATER VIOLET (HOTTONIA PALUSTRIS)
FLOATING–LEAVED ROOTED PLANTS
BROAD–LEAVED PONDWEED (POTAMOGETON NATANS)
FRINGED WATER–LILY (NYMPHOIDES PELTATA)

EMERGENT/MARGINAL PLANTS

AMPHIBIOUS BISTORT (POLYGONUM AMPHIBIUM)
ARROWHEAD (SAGITTARIA SAGITTIFOLIA)
BOGBEAN (MENYANTHES TRIFOLIATA)
BROOKLIME (VERONICA BECCABUNGA)
BUTTERBUR (PETASITES HYBRIDUS)
CREEPING JENNY (LYSIMACHIA NUMMULARIA)
FLOWERING RUSH (BUTOMUS UMBELLATUS)
GIPSY–WORT (LYCOPUS EUROPAEUS)
KINGCUP OR MARSH MARIGOLD (CALTHA PALUSTRIS)
LESSER SPEARWORT (RANUNCULUS FLAMMULA)
LESSER WATER–PLANTAIN (BALDELLIA RANUNCULOIDES)
MARSH CINQUEFOIL (POTENTILLA PALUSTRIS)
MARSH PENNYWORT (HYDROCOTYLE VULGARIS)
RUSHES (JUNCUS SPP)
SEDGES (CAREX SPP)
SWEET–FLAG (ACORUS CALAMUS)
WATER FORGET–ME–NOT (MYOSOTIS SCORPIOIDES)
WATER MINT (MENTHA AQUATICA)
WATER PLANTAIN (ALISMA PLANTAGO–AQUATICA)
WATERCRESS (RORIPPA NASTURTIUM–AQUATICUM)
YELLOW FLAG (IRIS PSEUDACORUS)
YELLOW LOOSESTRIFE (LYSIMACHIA VULGARIS)

BANK / RIPARIAN MIXTURE

BETONY (STACHYS OFFICINALIS)
COMMON BENT (AGROSTIS CAPILLARIS)
COMMON KNAPWEED (CENTAUREA NIGRA)
COMMON SORREL (RUMEX ACETOSA)
COWSLIP (PRIMULA VERIS)
CRESTED DOGSTAIL (CYNOSURUS CRISTATUS)
GREAT BURNET (SANGUISORBA OFFICINALIS)
GREATER BIRDSFOOT TREFOIL (LOTUS PEDUNCULATUS)
LADY'S BEDSTRAW (GALIUM VERUM)
MEADOW BUTTERCUP (RANUNCULUS ACRIS)
MEADOW FOXTAIL (ALOPECURUS PRATENSIS)
MEADOWSWEET (FILIPENDULA ULMARIA)
OXEYE DAISY (LEUCANTHEMUM VULGARE)
PEPPER–SAXIFRAGE (SILAUM SILAUS)
QUAKING GRASS (BRIZA MEDIA)
RAGGED ROBIN (LYCHNIS FLOS–CUCULI)
RED FESCUE (FESTUCA RUBRA)
RIBWORT PLANTAIN (PLANTAGO LANCEOLATA)
SELFHEAL (PRUNELLA VULGARIS)
SWEET VERNAL–GRASS (ANTHOXANTHUM ODORATUM)
TUFTED HAIR–GRASS (DESCHAMPSIA CESPITOSA)
TUFTED VETCH (VICIA CRACCA)
YARROW (ACHILLEA MILLEFOLIUM)
YELLOW RATTLE (RHINANTHUS MINOR)

DRAWING No. NR/CIV/SD/245

NOTES

1. THIS DRAWING FORMS A STANDARD DETAIL FOR WATER VOLE ALTERNATIVE HABITATS AND SHOULD BE READ IN CONJUNCTION WITH THE GENERAL REQUIREMENTS OF DRAWING SD/240.

2. REFERENCE SHOULD ALSO BE MADE TO THE SCHEME SPECIFIC DRAWINGS AND SPECIFICATIONS FOR DETAILS OF THE WORKS TO BE UNDERTAKEN.

3. THE PRECISE DESIGN OF AN ALTERNATIVE WATER VOLE HABITAT DEPENDS ON THE POTENTIAL IMPACTS TO AND THE SIZE OF THE WATER VOLE POPULATION.

4. WATER VOLES FAVOUR SITES WITH SLOW–MOVING WATER AND NO EXTREME FLUCTUATIONS IN WATER LEVEL, WHERE CHANNEL WIDTH IS LESS THAN 3m AND DEPTH AROUND 1m.

5. THE SITE SHOULD LINK INTO EXISTING WATERWAYS, WHERE IT IS KNOWN THE WATER LEVELS DO NOT FALL BELOW 1m.

6. WATER BANKS MUST BE SUITABLE FOR BURROWING, BEING MADE UP OF SOIL OR CLAY WITH A STEPPED OR STEEPLY INCLINED BANK OF 45–70°.

7. BANK SIDES WILL CONTAIN A CONTINUOUS STRETCH OF TALL RIPARIAN PLANTS, WITH A MINIMUM OF AT LEAST 60% VEGETATION COVERAGE.

8. BANKS SHALL BE LINED WITH A 200–300mm THICK LAYER OF PUDDLED CLAY IF THE EXISTING SUBSOIL GROUND CONDITIONS ARE NOT SUITABLE.

9. THE BANKS OF THE WATER COURSE SHALL BE FENCED TO PREVENT POACHING FROM LIVESTOCK AND ENCOURAGE TALL MARGINAL VEGETATION TO PROVIDE REFUGES AND FOOD.

10. A LICENCE IS REQUIRED PRIOR TO ANY IMPACT ON A WATER VOLE POPULATION.

11. SITING AND CONSTRUCTION OF A WATER VOLE HABITAT SHOULD BE UNDERTAKEN IN CONSULTATION WITH A SUITABLY QUALIFIED ECOLOGIST.

12. DETAILS OF THE INFLOW AND OUTFLOW ARRANGEMENTS TO THE NEW WATERCOURSE WILL REQUIRE A SITE SPECIFIC APPRAISAL AS DETAILED ON THE SCHEME SPECIFIC DRAWINGS.

13. CURRENT GUIDELINES REQUIRE 30–50m STRETCH OF WATERCOURSE FOR EACH BREEDING PAIR OF WATER VOLES. THE ACTUAL LENGTH OF HABITAT PROVISION SHALL BE CONFIRMED ON THE SCHEME SPECIFIC DRAWINGS IN CONSULTATION WITH A SUITABLY QUALIFIED ECOLOGIST.

14. TABLE 1 PROVIDES A LIST OF SUITABLE SPECIES OF VEGETATION FOR EACH HABITAT. AN APPROVED QUALIFIED ECOLOGIST SHALL ASSESS EACH SPECIFIC SITE TO PROVIDE FURTHER GUIDANCE ON EXACT SPECIES TO BE USED AND THE DENSITY OF PLANTING REQUIRED.

15. ADEQUATE SIGNAGE INDICATING A WATER HAZARD IS TO BE PROVIDED TO WARN CONSTRUCTION AND FUTURE OPERATIONAL STAFF.

16. THE SITE SHOULD BE SCREENED FROM PUBLIC RIGHTS OF WAY, PREFERABLY BY HAWTHORN HEDGING TO DISCOURAGE ACCESS AND NOT NEAR ANY ROADS, WHERE FLY TIPPING MAY OCCUR. LOCKABLE GATES MAY BE REQUIRED TO ALLOWED CONTROLLED ENTRY.

Rev	Date	Description of revision	Design'd	C'kd
A	MAY 2011	FIRST ISSUE	CAM	GJPT

Network Rail

Network Rail Infrastructure Ltd. Registered Office: Kings Place, 90 York Way, London, N1 9AG

	Name	Position	Signature	Date
Approved	P CLARK	Senior Prog. Eng. Manager Investment Projects Building & Civils	PC	MAY 2011

Master copy with original signatures held by Network Rail HQ CIVIL ENGINEERING STANDARD DESIGN

© COPYRIGHT NETWORK RAIL 2011

STANDARD ECOLOGICAL DETAIL

WATER VOLE ALTERNATIVE HABITAT CREATION

Scale	NOT TO SCALE (N.T.S)	
Drawing Number	NR/CIV/SD/245	REV. A

Licensed copy from the Network Rail Standards Website. Uncontrolled when printed. Licence number: WI0000-0000/0000/001. User-name: allan.
Copyright Network Rail
Provided by IHS under licence with Network Rail
No reproduction or distribution permitted without authorisation
Licensee from IHS

AVA Documents
Document Sharing Hub