Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/602 Rev A

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CAD Drawing

- CIV/SD/602

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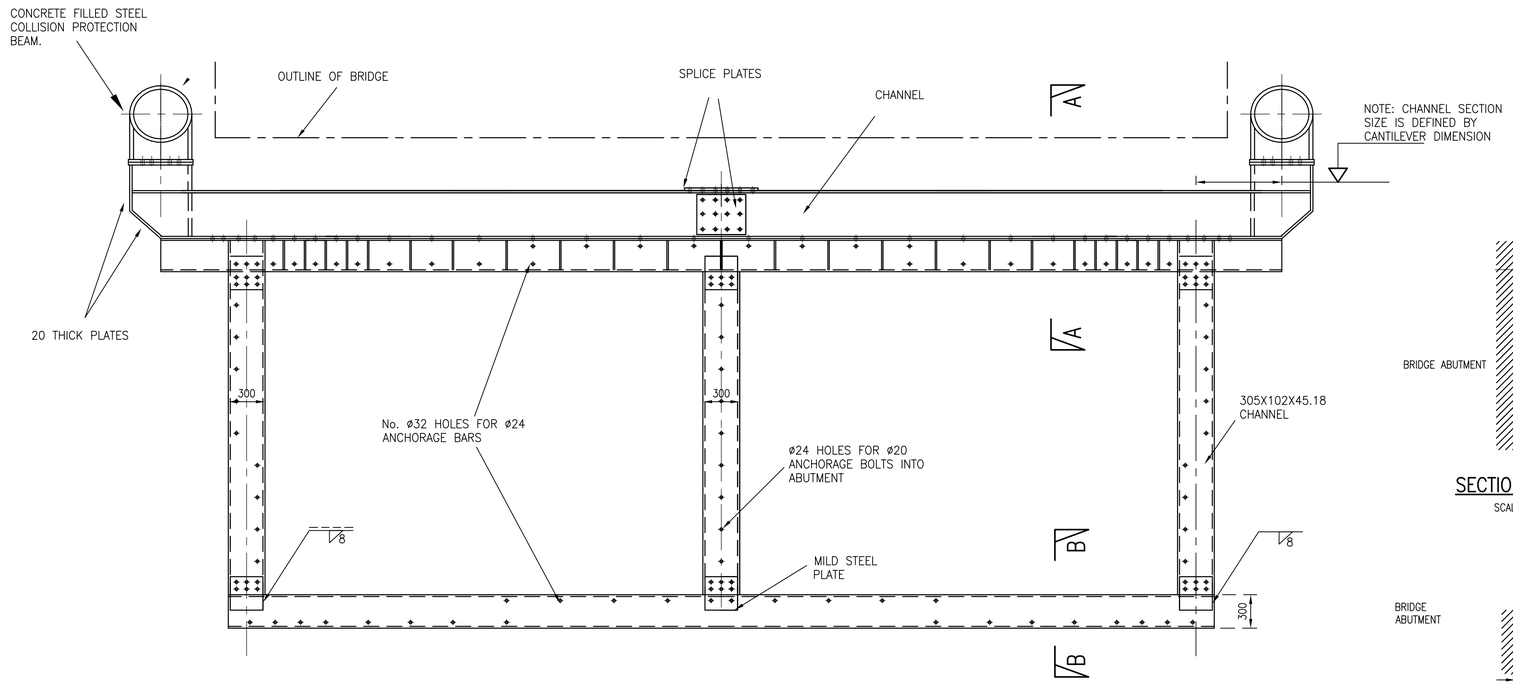
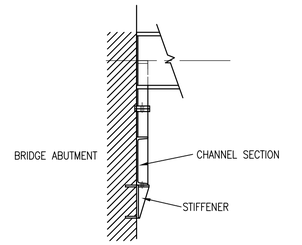


COLLISION BEAM SUPPORT STEEL ARRANGEMENT

SCALE 1 : 25



SECTION A – A

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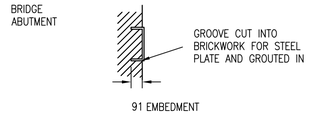

SECTION B – B

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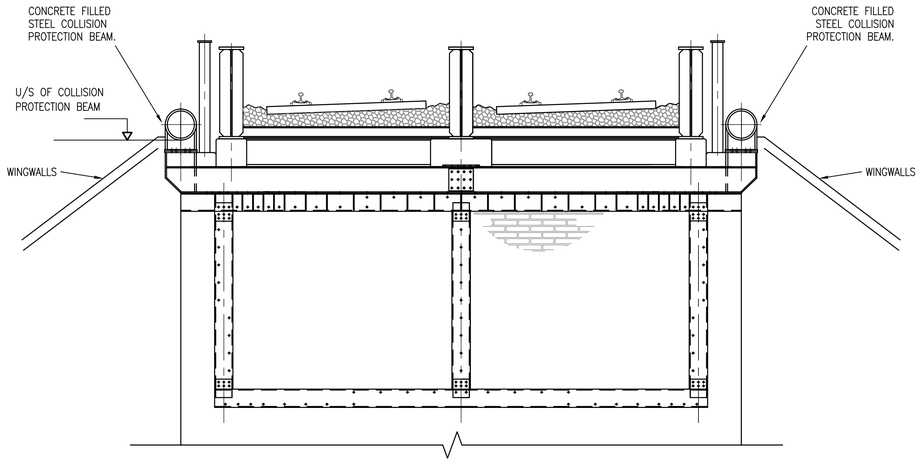
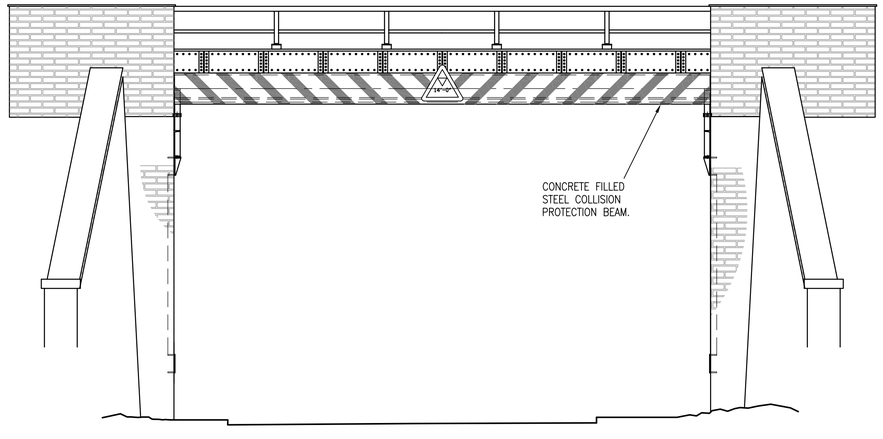


TRANSVERSE ELEVATION OF ABUTMENT

SCALE 1 : 50

CONNECTION USING STEEL FRAME



LONGITUDINAL ELEVATION OF BRIDGE

SCALE 1 : 50

DRAWING No. NR/CIV/SD/602

NOTES

D INSTALLATION GUIDANCE

D1. REFER TO DRAWING NR/CIV/SD/600.

D2. CUT GROOVES INTO THE FACE OF THE ABUTMENTS AND FIX THE SUPPORT SUB–FRAME VERTICAL AND HORIZONTAL CHANNEL MEMBERS TO THE ABUTMENT FACES USING RESIN ANCHOR STUDS.

D3. LIFT THE UPPER (PARALLEL FLANGE) CHANNEL MEMBERS INTO PLACE AND BOLT TO THE UPPER HORIZONTAL SUB–FRAME CHANNEL MEMBER.

D4. FIX SIGNAGE AND POUR GROUT (IF REQUIRED BEFORE LIFTING) INTO THE COLLISION PROTECTION BEAM.

D5. RAISE THE COLLISION PROTECTION BEAM INTO POSITION AND BOLT TO THE UPPER CHANNEL.

E DESIGN ASSUMPTIONS

E1. REFER TO DRAWING NR/CIV/SD/600.

E2. THIS SOLUTION RELIES ON THE INTEGRITY OF THE ABUTMENT AND THE INTERLOCK BETWEEN THE CHANNEL LEGS AND THE MASONRY FOR TRANSFER OF FORCES. THEREFORE THE DESIGNER SHALL ENSURE THE ABUTMENT HAS SUFFICIENT STRENGTH TO TRANSFER AND RESIST THE APPLIED LOADS.

NOTES

A GENERAL

A1. THIS DRAWING SHOWS A SOLUTION FOR FIXING A CPB TO AN EXISTING BRIDGE AND ABUTMENT. THE DESIGN REQUIRES CAREFUL ASSESSMENT OF THE CAPACITY AND CONDITION OF THE EXISTING ABUTMENT TO RESIST THE APPLIED LOADS.

B SPECIFICATION

B1. PRIOR TO INSTALLATION OF THE STEEL FRAME THE ABUTMENT SHALL BE ASSESSED AND REPAIRS SPECIFIED TO ENSURE THAT IT IS CAPABLE OF RESISTING THE LOCAL AND GLOBAL LOADS APPLIED BY THE STEEL FRAME.

B2. WHERE NECESSARY BRICKWORK REPAIRS AND REPOINTING SHALL BE CARRIED OUT ON ABUTMENTS IN ACCORDANCE WITH NR/GN/CIV/008 SECTION 153.

B3. ALL STEELWORK SHALL BE IN ACCORDANCE WITH BS EN:10025 :2004, GRADE TO BE SPECIFIED BY THE DESIGNER IN THE PARTICULAR SPECIFICATION.

B4. ALL CONNECTION WELDS SHALL BE 8MM CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE, WELDS TO INNER AND OUTER STIFFENERS TO BE ALL ROUND, ALL IN ACCORDANCE WITH BS EN 1011–1:1998.

B5. ALL HSFG BOLTS SHALL BE GENERAL GRADE IN ACCORDANCE WITH BS 4395 PART 1.

B6. FABRICATION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS DOCUMENT NR/GN/CIV/008 SECTIONS 90 AND 170.

B7. ALL STEELWORK SHALL HAVE SHOP APPLIED SURFACE PROTECTION TO TYPE N1 FULL SYSTEM IN ACCORDANCE WITH THE NETWORK RAIL COMPANY STANDARD NR/GN/CIV/002 "APPLICATION & RE–APPLICATION OF PROTECTIVE TREATMENT TO METALLIC STRUCTURES" TO PROVIDE A SERVICE LIFE TO FIRST MAINTENANCE OF 25 YEARS. COLOUR TO BE SPECIFIED BY NETWORK RAIL EXCEPT AS NOTED BELOW.

B8. FAYING SURFACES FOR HSFG BOLTS SHALL BE IN ACCORDANCE WITH CLAUSE 9.7.2 OF NR/GN/CIV/002.

B9. AREAS PARTIALLY EMBEDDED IN CONCRETE SHALL BE BLAST CLEANED AND PRIMED ONLY. NO METAL COATING SHALL BE APPLIED AND METALLIC PRIMERS SUCH AS ZINC RICH SHALL BE AVOIDED.

B10. STEELWORK EMBEDDED IN MASONRY SHALL HAVE THE FULL PROTECTIVE TREATMENT APPLIED WITH THE EXCEPTION OF THE TOP COAT.

B11. FULL PAINT SYSTEM SHALL BE APPLIED ON SITE TO COMPLETED BOLTED JOINTS.

C RISK ASSESSMENT

C1. REFER TO TABLE 1 OF DRAWING NR/CIV/SD/600.

C2. NOTE THAT THE INSTALLATION OF THESE FRAMES WILL REQUIRE A LARGE AMOUNT OF CUTTING, CHASING AND DRILLING OF MASONRY. WHEN ASSESSING THIS SOLUTION THE DESIGNER SHALL REVIEW ALTERNATIVES AND ALSO HIGHLIGHT TO THE CONTRACTOR THE HEALTH AND SAFETY RISKS. THE CONTRACTOR SHALL CARRY OUT A RISK ASSESSMENT TO USE NON HAND HELD EQUIPMENT WHERE POSSIBLE TO AVOID HAND/ARM VIBRATION.

Rev	Date	Description of revision	Design'd	C'kd
A	31.03.08	FIRST ISSUE	HCHS	NGAY
P2	10.03.08	FORM B APPROVAL	HCHS	NGAY
P1	04.10.06	FORM A APPROVAL	GPR	NGAY

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

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STRUCTURES MISCELLANEOUS

COLLISION PROTECTION BEAM STEEL FRAME OPTION

Scale: AS SHOWN

Drawing Number: NR/CIV/SD/602

REV. A

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