A1 Birtley to Coal House

Scheme Number: TR010031

Applicant's Responses to ExA's Second Written Questions - Appendix 2.0G - Structure Options Report 4 - Smithy Lane Overbridge

Planning Act 2008

Rule 8(1)(b)

Infrastructure Planning (Examination Procedure Rules) 2010

Volume 7

April 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure Rules) 2010

A1 Birtley to Coal House Development Consent Order 20[xx]

Applicant's Response to ExA's Second Written Questions - Appendix 2.0G - Structure Options Report 4 - Smithy Lane Overbridge

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Author:	A1 Birtley to Coal House Project Team, Highways England

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Rev 0	20 April 2020	Application Issue

A1

Birtley to Coal House Improvement Scheme

Structure Option Report 4

Smithy Lane Overbridge

Structure no. A1/442.50

STKEY 16439

Registered office Bridge House, 1 Walnut Tree Close, Guildford, GU1 4LZ
Highways England Company Limited registered in England and Wales number 09346363

March 2018

A1 BIRTLEY TO COAL HOUSE IMPROVEMENT SCHEME

STRUCTURE OPTION REPORT 4

SMITHY LANE OVERBRIDGE

Highways England

Date: March 2018

Project No: HE PIN 551462
WSP Ref: 70015226

Prepared for:

Highways England
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QUALITY MANAGEMENT

ISSUE/REVISION SUITABILITY	FIRST ISSUE P01 S1	REVISION 1	REVISION 2	REVISION 3
Remarks	Issue for comments	Final Issue – End of Stage 3 – Preliminary Design		
Date	October 2017	March 2018		
Prepared by	Shehed Al-Shalechy	Giovanna Brunetti Barchetta		
Signature	SAL	GBB		
Checked by	Hitan Mistry	Hitan Mistry		
Signature	HM	HM		
Authorised by	Nigel Rawcliffe	Nigel Rawcliffe		
Signature	NR	NR		
Project number	PIN: 551462 WSP ref: 70015226			
Report number	HE551462-WSP-SBR-BCH-RP-S-1700_067			
File reference	HE551462-WSP-SBR-BCH-RP-S-1700_067_P02			

PRODUCTION TEAM

CLIENT (HIGHWAYS ENGLAND)

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Major Projects Programme Manager	Patrick Moran
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WSP

RIS Area 14 Programme Director	Darren Powell
RIS Area 14 Programme Manager	TBA
Project Director	Darren Powell
Project Manager	Nigel Rawcliffe

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

WSP have been commissioned under the CDF contract to progress the Stage 3 Preliminary design works to increase the capacity of the route between A1 Junction 65 (Birtley) to Junction 67 (Coalhouse). The scheme involves upgrading from the existing Dual 2-Lane All-Purpose provision to a Dual 3-Lane All-Purpose Provision for this section of the road.

Smithy Lane Overbridge is included in the A1 Junction 65 (Birtley) to Junction 67 (Coalhouse) improvement scheme.

The structure comprises 3No.spans. The west spans & central span are each of 23m and is continuous over the west pier. The east span of 13.5m is simply supported between the east pier and the east bank seat.

The deck comprises precast pre-stressed concrete M and UM beams. The east end support comprises a reinforced concrete bank seat whilst the west end support is a reinforced concrete cantilever abutment wall. The central and east piers comprise reinforced concrete leaf piers.

Consideration is currently being given to increasing the capacity of the A1 running under the structure whilst remaining within the existing cross section. This will incorporate a reduction of the central reserve and verges to accommodate the new widened cross section of the A1. This may also involve the permanent removal of safety barriers (currently safeguarding supports) to provide sufficient width to increase lane capacity.

This study has shown the proposed new A1 highway alignment/cross section can be accommodated under the existing Smithy lane bridge without the need for major structural modifications.

The impact assessment of the piers undertaken in accordance with the technical approval requirements specified in BD2/12, confirms the piers are able to sustain the vehicular impact loads. Therefore it would be permissible for piers to not be safe guarded by safety barriers providing additional width for alignment modifications if required.

The review of previous inspection reports supplemented by a rudimentary survey of the structure on the 31/08/2017, showed the structure to generally be in good condition with no significant defects that may impact the integrity/loading bearing capacity of the bridge. However some outstanding maintenance actions have been identified.

It is recommended that the following be undertaken to verify the findings of this reports and identify further works required at Smithy Lane Overbridge as the scheme progresses:

- Liaison with HE regarding what outstanding maintenance items (if any) should be incorporated as part of the A1 Birtley to Coalhouse Improvement Scheme. This would ensure cost and programme implications to undertake the design and implementation of outstanding maintenance is accurately accounted for during further development of the scheme.
- Confirmation is required from the HE/Support Contractor regarding whether a structural deck assessment is required to verify the movement of abnormal loads over the structure. This would be particularly important if Smithy Lane was intended to be used for plant movement during construction.

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 WSP has been commissioned by Highways England to develop a scheme proposal for the A1 Birtley to Coal House Improvement Scheme.

1.1.2 The scheme development forms the part of Newcastle/Gateshead Western Bypass (NGWB) is located on the A1 between Junction 65 (Birtley) to Junction 80 (Seaton Burn). The scheme is the part of Highway England's strategic Road network serving the metropolitan area of Tyne and Wear.

1.1.3 The project is located between the Junction 65 and Junction 67 on the NGWB having a stretch of 4.2km in length. The existing carriageway layout is:

- Southbound: Two lanes between Junction 67 (Coal House) and Junction 66 (Eighton Lodge) with an additional approaching lane between Smithy Lane Overbridge and Junction 66. Three Lanes between Junction 66 (Eighton Lodge) and Junction 65 (Birtley). The existing speed limit is 50mph between Junction 67 (Coal House) and Smithy Lane Overbridge and 70 mph thereafter.
- Northbound: Two lanes with a lane gain/drop between Junction 65 (Birtley) and Junction 66 (Eighton Lodge) and two lanes between Junction 66 (Eighton Lodge) and Junction 67 (Coal House). The existing speed limit is 50mph throughout.

1.1.4 The A1 NGWB is one of the most congested highway links in the North- East region with more than 110,000 vehicles using the route every day on the busiest section. Therefore, the junction has been identified as requiring the improvement to its existing layout in order to achieve the scheme objective.

1.1.5 At present, the junction has a significant adverse impact on; journey time reliability at peak time, route resilience, safety and environmental impacts.

1.1.6 The scheme objectives for the Junction improvement are structured around the Government's main objectives for transport, being

- To increase the capacity of the A1 between Junction 65 (Birtley) to Junction 67 (Coalhouse) from existing two lanes to three full standard lanes – to improve the safety for all road users and contribute to the Government's current safety strategy targets.
- Lanes gain/drop between the Junctions
- Replacement of the Allerdene Bridge to achieve optimum whole life costs taking in account future maintenance and operation, and disruption to users.
- New Junction layout at Coalhouse

1.1.7 The existing Allerdene Railway Bridge has a number of inherent design/construction deficiencies which cannot be easily resolved due to the complex structural form (half joints) and site constraints. The intention is for the existing Allerdene Bridge to be replaced as part of the A1 Birtley to Coalhouse Improvement Scheme.

1.1.8 Two alignment options were assessed for the replacement of Allerdene Bridge. These are:

- Option 1A - Replacement of Allerdene Railway Bridge as close as possible to the existing structure to enable the retention of Coal House interchange.
- Option 1B - Widening/Replacement of Allerdene Railway Bridge with a wider structure in its existing location and retention of Coal House Interchange and the existing alignment as far as is possible.

1.1.9 Works undertaken during PCF Stage 2 – Route Selection, confirmed Option 1A was the preferred option to be progressed onto the next stage and beyond. Refer to Appendix A for schematic plans of the preferred route.

1.1.10 The scheme is currently progressing within PCF Stage 3: Preliminary Design. The existing Smithy Lane Overbridge, located south of the existing Allerdene bridge, is one of the many existing structures impacted by the proposed improvements to the A1 alignment which includes the upgrading from the existing Dual 2-Lane All-Purpose provision to a Dual 3-Lane All-Purpose Provision for this section of the road.

1.2 REPORT OBJECTIVES

1.2.1 This Structures Options Report has been prepared to assess the constraints/challenges associated with increasing the capacity of the A1 running under Smithy Lane Overbridge whilst remaining within the existing cross section available.

1.2.2 The report shall confirm the structural modifications (if any) required to Smithy Lane Overbridge to accommodate the new highway alignment.

1.2.3 Upon confirmation and sign off, this report shall provide Highways England with sufficient information/justification for seeking approval/funding to progress the scheme within the next stage of development.

2. EXISTING STRUCTURE

2.1 GENERAL DESCRIPTION

2.1.1 Smithy Lane Overbridge (commissioned in 1987) is defined in SMIS with the following discrete structure number and key:

- A1/442.50//
- STKEY16439

2.1.2 Smithy Lane Bridge comprises 3No.spans. The west spans & central span are each of 23m and continuous over the west pier. The east span is 13.5m and simply supported between the east pier and the east bank seat.

2.1.3 The deck comprises precast pre-stressed concrete M and UM beams. The east end support comprises a reinforced concrete bank seat whilst the west end support is a reinforced concrete cantilever abutment wall. The central and east verge pier comprise reinforced concrete leaf piers.

2.1.4 The reinforced concrete wing walls are partly cantilevered and structurally connected to the bank seat and abutments. The wing walls support the road over and are parallel with it.

2.1.5 The end (East Bank-seat/West Abutment) and intermediate pier supports are founded on raked/vertical 600mm diameter bored piles.

2.1.6 The west continuous two span deck is fixed at the west abutment by a shear pin and laterally restrained at the west piers by a single shear key at each pier allowing sliding in the longitudinal direction.

2.1.7 The east simply supported span is fixed at the east abutment by a shear pin and laterally restrained at the east pier with a single shear key allowing sliding in the longitudinal direction.

2.1.8 The record drawings indicate the existing steel parapets comprise group P2, 113kph, type parapets with mesh infill (equivalent to current N2 containment in accordance with TD19/06). The central reserve and verge pier are currently safeguarded via a tension corrugated type safety barriers.

2.1.9 Refer to Appendix B for existing As built records

2.2 STRUCTURE CAPACITY

2.2.1 Reference to the structures management information system (SMIS) records indicate the structure was originally design to sustain full HA and 30 units HB with associated HA loading.

2.2.2 The structure has not been previously assessed and the abnormal load capacity for STGO/SO remains unknown. Confirmation is required from the HE/Support Contractor regarding whether a structural deck assessment is required to verify the movement of abnormal loads over the structure. This would be particularly important if Smithy Lane is be used for plant movement during construction.

2.3 STATUTORY UNDERTAKERS INFORMATION

2.3.1 Details of existing services within the scheme boundary are shown on the following service information plans provided in Appendix C.:

- HE551462-WSP-VUT-BCH-DR-D-00001
- HE551462-WSP-VUT-BCH-DR-D-00002
- HE551462-WSP-VUT-BCH-DR-D-00003

2.3.2 Service information indicate the following service ducts are carried within the deck of Smithy Lane Overbridge.

- 2No. 100mm diameter BT ducts in both verges. 4No. BT ducts in total
- 10" (254mm diameter) private water main located within the trough of the UM beam at the southern verge end.

2.3.3 In addition to the above there is a 900mm diameter Northumbrian Water main that runs diagonally across the carriageway and path of the bridge. Record information suggest this water main is at a similar level to the pile cap for the intermediate piers. Refer to the general arrangement drawing in appendix B and the specific service plan ref 00001 included in Appendix C.

2.4 INSPECTION SUMMARY

2.4.1 The SMIS database shows records of the following inspections for the existing structure:

INSPECTION TYPE	INSPECTION DATE	AGENT
General Inspection	07.03.2014	A-One+ - Area 14
Principal Inspection	22.03.2012	A-One+ - Area 14
General Inspection	02.06.2010	A-One+ - Area 14
General Inspection	06.06.2008	A-One+ - Area 14
Principal Inspection	06.06.2006	A-One+ - Area 14
General Inspection	12.06.2003	Northumbria Trunk Rd Agency Partnership
General Inspection	08.03.2002	Northumbria Trunk Rd Agency Partnership
Principal Inspection	06.02.2000	Northumbria Trunk Rd Agency Partnership
General Inspection	30.12.1997	Northumbria Trunk Rd Agency Partnership
General Inspection	11.10.1995	Gateshead Council
Principal Inspection	28.11.1993	Gateshead Council
General Inspection	13.07.1992	Gateshead Council

2.4.2 The reports highlighted in yellow has been referred to determine the condition of the existing structure. The above has been supplemented by a rudimentary survey (equivalent to a General Inspection) undertaken on the 31/08/17. Refer to Appendix D for details of site photos/defects recorded during the survey on the 31/08/17.

2.4.3 In summary the inspection reports and survey information indicate the structure is in good condition with no significant defects that impact the integrity/load bearing capacity of the bridge. However outstanding maintenance actions have been recorded in the last GI dated 2014 that will eventually need to be addressed to prolong the service life of the structure.

2.4.4 The table below (Table 2-1) highlights the outstanding maintenance works tabulated in the latest GI dated 2014. We note that the recommended action date to complete these works was June 2016 and therefore has now lapsed. At the least it is expected some of the safety critical defects associated with the parapets/safety barriers will be rectified prior to this scheme progressing on site, March 2020.

2.4.5 Assuming most of the maintenance works are not scheduled to be completed, it would be prudent to consider incorporating some of the outstanding maintenance works to be undertaken during the A1 Birtley to Coalhouse Improvement Scheme, thereby taking advantage of the traffic management that will be required to facilitate the site works. This would need to be balanced against the potential impact on the cost/construction programme and disruption to the connecting local road network (carriageway level works).

2.4.6 Final confirmation of outstanding maintenance items to be included within the scheme will be subject to confirmation/approval from the HE.

Reviewed Maintenance Actions confirmed through this and outstanding from other Inspections

N.B. The Origin of Work for each of these Maintenance Actions is Routine Inspection (currently Principal, General, Special and Monitoring).

Maintenance Object	Parapet	**Maintenance Action**	Paint
Estimated Cost	£10,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	61
Comments	Repaint parapet		
Maintenance Object	Fixings	**Maintenance Action**	Add Additional Fixings
Estimated Cost	£7,500	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	61
Comments	Pigeons nesting to west abutment, piers and beams - clean off excrement and nests and install anti bird measures.		
Maintenance Object	Bearing	**Maintenance Action**	Replace
Estimated Cost	£30,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	57
Comments	Replace distorted bearings		
Maintenance Object	Main Beam	**Maintenance Action**	Repair
Estimated Cost	£1,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	54
Comments	Timber shuttering attached to concrete beams span 3 - remove and repair.		
Maintenance Object	Surfacing	**Maintenance Action**	Replace
Estimated Cost	£10,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	53
Comments	Repair joints, resurface carriageway and repair footway		
Maintenance Object	Concrete	**Maintenance Action**	Repair
Estimated Cost	£12,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	42
Comments	Concrete repair required to plinth, pier and abutment.		
Maintenance Object	Parapet	**Maintenance Action**	Repair
Estimated Cost	£5,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	41
Comments	Replace joint sections and mesh panels		
Maintenance Object	Safety Fence	**Maintenance Action**	Repair
Estimated Cost	£5,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	41
Comments	Impact damage to north east safety barrier adjoining north parapet - repair.		
Maintenance Object	Drainage System	**Maintenance Action**	Replace
Estimated Cost	£5,000	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	27
Comments	Span 3 drainage downcomer and pipe damaged between beams 2 & 3 - replace.		
Maintenance Object	Sealant	**Maintenance Action**	Replace
Estimated Cost	£2,500	**Recomm. Action Date**	01/06/2016
Priority Category	3	**Risk Score**	25
Comments	Mastic sealants to structure debonding - replace.		

Table 2-1: Outstanding maintenance works tabulated in the latest GI dated 2014

3. PIER IMPACT ASSESSMENT

3.1 GENERAL

3.1.1 A impact assessment of the piers was undertaken to inform the preliminary design process and confirm whether:

- The piers need to be safeguarded against impact
- The piers need to be strengthened to sustain impact loads – in the event that safety barriers cannot be deployed due to insufficient width
- The piers can sustain impact loading and therefore it would be permissible to transition safety barriers directly into the end of the piers.

3.1.2 The pier impact assessment was undertaken in accordance with the AIP countersigned by Highways England, dated (TBC).

3.1.3 Refer to the Approval in Principal for the Assessment of Smithy Lane Bridge (Report No. HA551462-WSP-SBR-BCH-RP-S-1700-067).

3.2 ASSESSMENT COMMENTARY

3.2.1 The piers were assessed for vehicle collision loads in accordance with BD48/93.

3.2.2 The piers were analysed as a free cantilever slab by hand using normal linear elastic analysis. Impact loading was derived using the Quasi-static approach provided in BD48/93.

3.2.3 Applied bending and shear effects were compared against capacities derived in accordance with BD44/15.

3.3 ASSESSMENT RESULTS

3.3.1 The assessment confirmed the piers are able to sustain the vehicle collision loads in accordance with BD48/93. Therefore:

- The piers do not require safeguarding via a safety barrier
- It would be permissible for the safety barrier to transition into the end of the piers and allow for the piers to act as a barrier against impact.

4. PROPOSED NEW HIGHWAY ALIGNMENT

4.1 GENERAL

4.1.1 Refer to Appendix E for details of the existing and proposed highway alignment through Smithy Lane Overbridge.

4.1.2 The new highway alignment comprising additional lane capacity could be accommodated within the existing clearance envelope via the following:

- Encroachment and reduction of the central reserve
- Encroachment and reduction of the verges
- Reduction in lane widths

4.1.3 The headroom clearance based on the new alignment would also be well in excess of the minimum maintained headroom of 5.03 as stipulated in Table 6.1 of TD27/05.

4.1.4 In summary the new highway alignment can be accommodated without necessitating major structural modification to Smithy Lane Overbridge. Therefore the impact on existing services within deck and in close proximity to the structure (refer to section 2.2 of the report) would be limited.

4.1.5 Construction work at the structure could potentially be limited to reconstruction of the verges and central reserve to suit the new alignment. The pier impact assessment has confirmed the piers do not require safe guarding by barriers and these could be made to transition into the supports.

4.1.6 The piers would be acceptable to act as a barrier on the basis they can sustain impact loads and they also fulfil the definition of a smooth traffic face finish as specified in TD19/06.

5. CONCLUSION & RECOMMENDATIONS

5.1 CONCLUSION

5.1.1 The study has shown the proposed new A1 highway alignment/cross section can be accommodated under the existing Smithy Lane Overbridge without the need for major structural modifications.

5.1.2 The impact assessment of the piers undertaken in accordance with the technical approval requirements specified in BD2/12, confirms the piers are able to sustain the vehicular impact loads. Therefore it would be permissible for piers to not be safe guarded by safety barriers providing additional width for alignment modifications if required.

5.1.3 The review of previous inspection reports supplemented by a rudimentary survey of the structure on the 31/08/17, showed the structure to generally be in good condition with no significant defects that may impact the integrity/loading bearing capacity of the bridge. However some outstanding maintenance actions have been identified.

5.1.4 Prior to detailed design, confirmation is required from the HE regarding outstanding maintenance items (if any) that need to be incorporated as part of the A1 Birtley to Coalhouse Improvement Scheme.

5.1.5 This would ensure cost and programme implications to undertake the design and implementation of outstanding maintenance items is accurately accounted for during further development of the scheme.

5.1.6 Another item to be confirmed with the HE and Support Contractor relates to the capacity of the bridge superstructure. Reference to SMIS records indicate the structure was originally design to sustain full HA and 30 units HB with associated HA loading. The structure has not been previously assessed and the abnormal load capacity for STGO/SO vehicles remains unknown.

5.1.7 Confirmation is required from the HE/Support Contractor regarding whether a structural deck assessment is required to verify the movement of abnormal loads over the structure. This would be particularly important if Smithy Lane was intended to be used for plant movement during construction.

5.2 RECOMMENDATION

5.2.1 The following should be undertaken to further verify the findings of this report and any further works required to Smithy Lane Overbridge.

- Liaison with the HE to confirm outstanding maintenance actions (if any) to be included as part of this scheme and therefore developed accordingly at detailed design.
- Liaison with the HE/Support Contractor to confirm the requirements to assess the superstructure for STGO/SO and other site specific abnormal loading. If required this could be complete at detailed design.

Appendix A

INDICATIVE SCHEMATIC PLANS OF THE PREFERRED ROUTE

APPENDIX A-1

INDICATIVE SCHEMATIC PLANS OF THE PREFERRED ROUTE

DO NOT SCALE

Millimetres 100 0 10

Showing indicatively Gantries SG001&SG002 at chainages -1460 & -480 respectively
AIP - Tubular Steel Cantilever Gantries
STKEY TBC
Ref SOR09

Gantry SG003
AIP - Tubular Steel Cantilever Gantry
STKEY TBC
Ref SOR09

Retaining wall 1
AIP - Reinforced Concrete Wall
STKEY TBC
Ref SOR10

Gantry SG004
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Gantry SG005
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

Kingsway Viaduct Underbridge
OS Grid Ref: 424900E, 558550N
STKEY 16271
Structure No. A1/433.30
AIP - Kingsway Viaduct
Ref SOR01

JUNCTION 67 - COALHOUSE
(424955,558553)

Retaining wall 5
AIP - Continuous Bored Piles Retaining Wall
STKEY TBC
Ref SOR10

Gantry SG006
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Retaining wall 2
AIP - Sheet Piles Retaining Wall
STKEY TBC
Ref SOR10

CR Retaining wall 1
STKEY TBC
Ref SOR10

Retaining wall 3
AIP - Reinforced Earth Retaining Wall
STKEY TBC
Ref SOR10

Retaining wall 4
AIP - Reinforced Earth Retaining Wall
STKEY TBC
Ref SOR10

KINGSWAY SOUTH
SAINSBURY'S
CHOWDENE BANK
BANESLEY LANE
COACH ROAD
RIVER TEAM
LAMESLEY ROAD
EXTENT OF WORKS
A1 SB
A1 NB
OUTLINE A

Allerdene Culvert
OS Grid Ref: 425370E, 558520N
STKEY 8879
Structure No. A1/443.30
AIP - Allerdene Culvert
Ref SOR02

Allerdene Railway Underbridge
OS Grid Ref: 425480E, 558489N
STKEY 8880
Structure No. A1/443.00/Q
AIP - Allerdene Railway Bridge
Ref SOR03

Smithy Lane Overbridge
OS Grid Ref: 425760E, 558280N
STKEY 16439
Structure No. A1/442.50
AIP - Smithy Lane Overbridge
Ref SOR04

Gantry SG009
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Gantry SG007
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

Gantry SG008
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Gantry SG010
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

ALLERDENE CULVERT EXTENSION AND DRAINAGE DITCH TO BE REALIGNED.

PROPOSED ALLERDENE UNDERBRIDGE TO BE CONSTRUCTED OFFLINE.

EAST COAST MAINLINE
SMITHY LANE

A1

KEY
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED RETAINING WALL
- PROPOSED HIGHWAYS FENCE LINE
- RETAINED EXISTING HIGHWAYS FENCE LINE
- REMOVED EXISTING HIGHWAYS FENCE LINE
- NEW CARRIAGEWAY CONSTRUCTION
- EXISTING CARRIAGEWAY TO BE RETAINED
- PROPOSED DRAINAGE DITCH
- NETWORK RAIL LAND BOUNDARY

Rev.	Date	Description	By	Chk'd	App'd
P01	05/09/16	FOR INFORMATION	JAC		
P02	07/09/16	MINOR AMENDMENTS TO EBKS & STRUCTURES, CHAINAGE ADDED	JWL	CP	NGR
P03	07/09/16	ISSUED FOR PUBLIC CONSULTATION	JWL	SG	NGR
P04	10/02/17	DESIGN DEVELOPMENT POST PUBLIC CONSULTATION	JWL	SG	NGR

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Client
Working on behalf of highways england

Project Title
A1 BIRTLEY TO COALHOUSE

Drawing Title
OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY BRIDGE WITH RETENTION OF COAL HOUSE JCT GENERAL ARRANGEMENT SHEET 1 OF 3

Scale	Drawn	Checked	Approved	Authorised
1:1250	J.Longmore	S.Ghosh	N.Rawcliffe	---
Original Size	Date	Date	Date	Date
A1	10/02/17	10/02/17	10/02/17	---

Drawing Status: INITIAL STATUS OR WIP
Suitability: S0

Drawing Number
Project: HE551462 | Originator: WSP | Volume: HGN
Location: BCH | Type: DR | Role: D | Number: 10004
Project Ref. No.
Revision: P04

Millimetres 100 0 10

DO NOT SCALE

A1

CR Retaining wall 2
STKEY TBC
Ref SOR10

Gantry SG011
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Gantry SG013
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

Gantry SG012
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

CR Retaining wall 3
STKEY TBC
Ref SOR10

Eighton Lodge Slip Road Underbridge
OS Grid Ref: 426527E, 557592N
STKEY 16441
Structure No. A1/440.90//6
AIP - Widening of Eighton Lodge North & Slip Road Underbridges
Ref SOR05

ANGEL OF THE NORTH

A167 DURHAM ROAD

EXTENT OF WORKS

CUTTING B

CUTTING C

CUTTING D

A1 SB

A1 NB

KEY

- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED HIGHWAYS FENCE LINE
- EXISTING HIGHWAYS FENCE LINE
- REMOVED EXISTING HIGHWAYS FENCE LINE
- NEW CARRIAGEWAY CONSTRUCTION
- EXISTING CARRIAGEWAY TO BE RETAINED
- PROPOSED FOOTPATH DIVERSION
- EXISTING FOOTPATH
- PROPOSED SIGNAL
- EXISTING SIGNAL

Gantry SG014
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

Eighton Lodge North Underbridge
OS Grid Ref: 426682E, 557517N
STKEY 16440
Structure No. A1/441.00
AIP - Widening of Eighton Lodge North & Slip Road Underbridges
Ref SOR05

JUNCTION 66 - EIGHTON LODGE
(426739,557494)

Eighton Lodge South Underbridge
OS Grid Ref: 426801E, 557466N
STKEY 8883
Structure No. A1/440.90
AIP - Widening of Eighton Lodge South Bridge
Ref SOR05

Longbank Bridleway Underbridge
OS Grid Ref: 427169E, 557294N
STKEY 26280
Structure No. A1/440.80
AIP - Longbank Underpass
Ref SOR06

Gantry SG016
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

B1296 LONG BANK

A167 DURHAM ROAD

EXTENT OF WORKS

EXTENT OF WORKS

EXTENT OF WORKS

A1 SB

A1 NB

CUTTING C

CUTTING D

NORTH DENE

LONG BANK

A167 NEWCASTLE BANK

EIGHTON LODGE CULVERT; STRUCTURE KEY 15468. STRUCTURE IS APPROXIMATELY 18m BELOW GROUND LEVEL SO WILL BE UNAFFECTED.

Gantry SG015
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

CR Retaining wall 4
STKEY TBC
Ref SOR10

Gantry SG017
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Rev.	Date	Description	By	Chk'd	App'd
P01	05/09/16	FOR INFORMATION	JAC		
P02	07/09/16	MINOR AMENDMENTS TO EMKS & STRUCTURES, CHAINAGE ADDED	JWL	CP	NGR
P03	07/09/16	ISSUED FOR PUBLIC CONSULTATION	JWL	SG	NGR
P04	10/02/17	DESIGN DEVELOPMENT POST PUBLIC CONSULTATION	JWL	SG	NGR

WSP
PARSONS BRINCKERHOFF
Three White Rose Office Park,
Millshaw Park Lane,
Leeds,
LS11 0DL
Tel: +44 (0)113 395 6200
www.wsp-pb.com

Client
Working on behalf of
highways england

Project Title
A1 BIRTLEY TO COALHOUSE

Drawing Title
OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY BRIDGE WITH RETENTION OF COAL HOUSE JCT GENERAL ARRANGEMENT SHEET 2 OF 3

Scale	Drawn	Checked	Approved	Authorised
1:1250	J.Longmore	S.Ghosh	N.Rawcliffe	---
Original Size	Date	Date	Date	Date
A1	10/02/17	10/02/17	10/02/17	---

Drawing Status: INITIAL STATUS OR WIP
Suitability: S0

Drawing Number
Project: HE551462
Originator: WSP
Volume: HGN
Location: BCH
Type: DR
Role: D
Number: 10005
Project Ref. No.
Revision: P04

DO NOT SCALE

Millimetres 0 10 100

A1

North Dene Footbridge
OS Grid Ref: 427538E, 557089N
STKEY 8886
Structure No. A1/440.30
AIP - North Dene Footbridge
Ref SOR07

Gantry SG018
AIP - Long Span Truss Type Cantilever Gantry
STKEY TBC
Ref SOR09

Retaining wall 6
AIP- King Post Retaining Wall
STKEY TBC
Ref SOR10

Gantry SG020
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

Gantry SG019
AIP - Super Span Truss Portal Gantry
STKEY TBC
Ref SOR09

NEW BUILDING DEVELOPEMENT

CRATHIE

A1 SB
A1 NB
CUTLINE E
CUTLINE E
EXTENT OF WORKS

North Side Overbridge
OS Grid Ref: 428090E, 556770N
STKEY 8887
Structure No. A1/439.70
AIP - North Side Bridge
Ref SOR08

JUNCTION 65 - BIRTLEY
(428150,556714)

A1231 SB
A1231 NB
A1(M) SB
A1(M) NB
A194(M) NB

KEY

- EXISTING STRUCTURE
- PROPOSED RETAINING WALL
- PROPOSED HIGHWAYS FENCE LINE
- EXISTING HIGHWAYS FENCE LINE
- REMOVED EXISTING HIGHWAYS FENCE LINE
- NEW CARRIAGEWAY CONSTRUCTION
- EXISTING CARRIAGEWAY TO BE RETAINED
- PROPOSED FOOTPATH DIVERSION
- EXISTING FOOTPATH
- PROPOSED SIGNAL
- EXISTING SIGNAL

Rev.	Date	Description	By	Chk'd	App'd
P01	05/09/16	FOR INFORMATION	JAC		
P02	07/09/16	MINOR AMENDMENTS TO EWKS & STRUCTURES, CHAINAGE ADDED	JWL	CP	NGR
P03	07/09/16	ISSUED FOR PUBLIC CONSULTATION	JWL	SG	NGR
P04	10/02/17	DESIGN DEVELOPMENT POST PUBLIC CONSULTATION	JWL	SG	NGR

WSP PARSONS BRINCKERHOFF
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Millshaw Park Lane,
Leeds,
LS11 0DL
Tel: +44 (0)113 395 6200
www.wsp-pb.com

Client
Working on behalf of
highways england

Project Title
A1 BIRTLEY TO COALHOUSE

Drawing Title
OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY BRIDGE WITH RETENTION OF COAL HOUSE JCT GENERAL ARRANGEMENT SHEET 3 OF 3

Scale	Drawn	Checked	Approved	Authorised
1:1250	J.Longmore	S.Ghosh	N.Rawcliffe	---
Original Size	Date	Date	Date	Date
A1	10/02/17	10/02/17	10/02/17	---

Drawing Status: INITIAL STATUS OR WIP
Suitability: S0

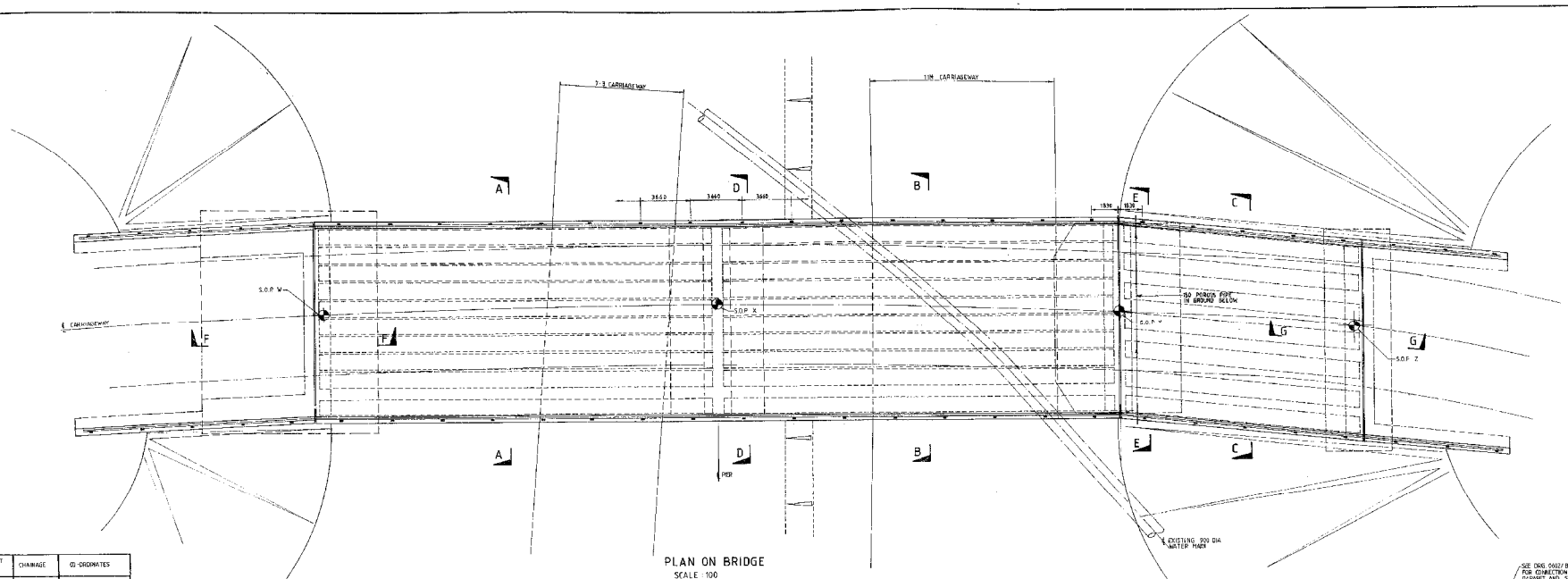
Drawing Number
Project: HE551462
Originator: WSP
Volume: HGN
Location: BCH
Type: DR
Role: D
Number: 10006
Project Ref. No.
Revision: P04

Appendix B

AS BUILT INFORMATION

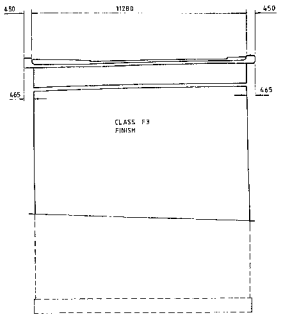
APPENDIX B-1

AS BUILT INFORMATION

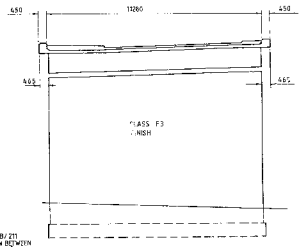


PLAN ON BRIDGE
SCALE 1:100

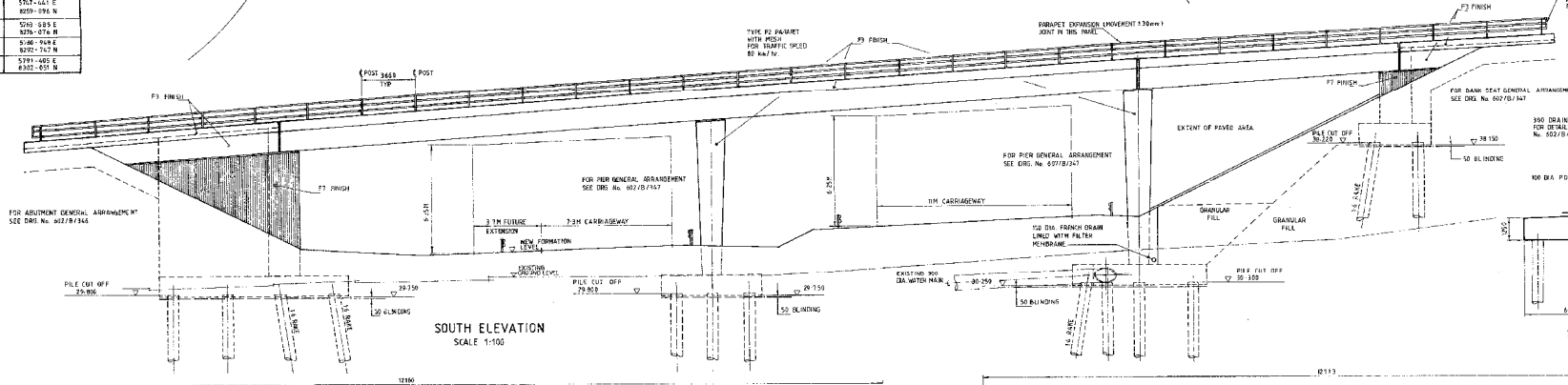
SETTING OUT POINT	CHAINAGE	CO-ORDINATES
S.O.P. W	201·5	5767·641 E 8259·096 N
S.O.P. X	325	5768·685 E 8276·876 N
S.O.P. Y	269	5740·949 E 8292·747 N
SOP Z	269	5791·465 E 8302·691 N



ELEVATION E-E
SCALE 1:100

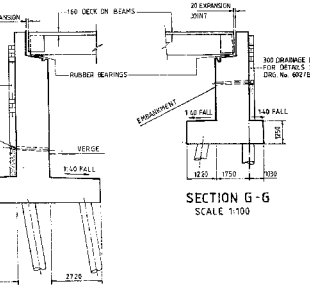


ELEVATION D-D
SCALE 1:100

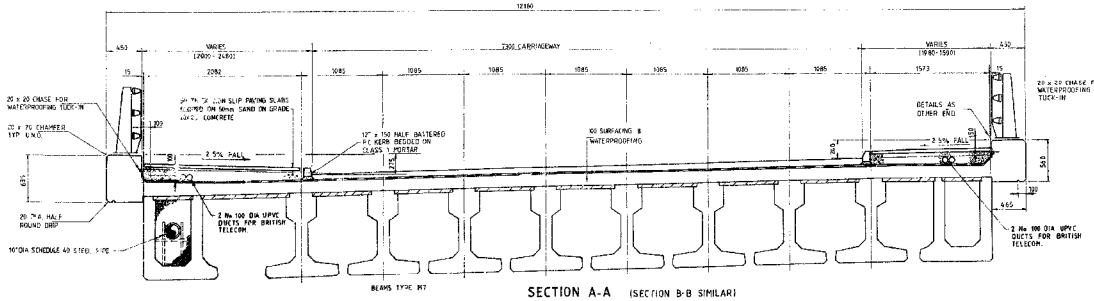


SOUTH ELEVATION
SCALE 1:100

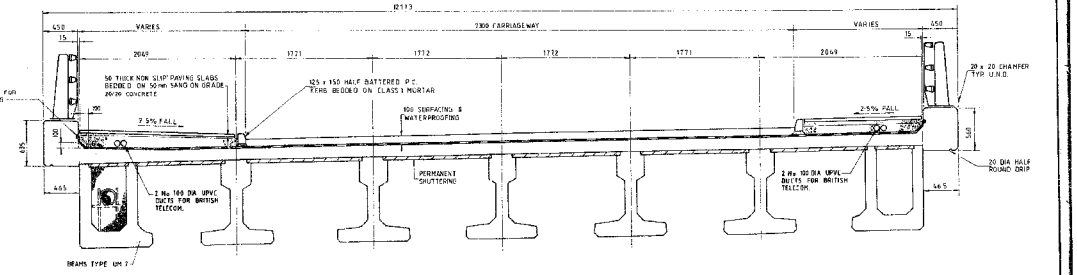
SECTION F-F
SCALE 1:100



SECTION G-G
SCALE 1:100



SECTION A-A (SECTION B-B SIMILAR)
SCALE 1:25



SECTION C-C
SCALE 1:25

CONSULTING ENGINEERS

MOTT HAY & ANDERSON

Pearl Assurance House, New Bridge Street
Newcastle upon Tyne NE1 8BH. Tel.0632 [illegible]

DEPARTMENT OF TRANSPORT
NORTHERN REGION

F.B.Whitehead B.Sc.,C.Eng., M.I.C.E.
Director of Transport — Northern Regional Office
Walker House, Gallowgate, Newcastle upon Tyne

REV.	DATE	AMENDMENT DETAILS	BY
A	24.3.87	CENTRES OF PARAPET FENCE POSTS AMENDED	M.W.
AC	DEC 87	AS CONSTRUCTED.	

REV.	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES
2. ALL CHAINAGES ARE IN KILOMETRES
3. ABBREVIATIONS —
c/c - CENTRE TO CENTRE
℄ - CENTRE LINE
SOP SETTING OUT POINT

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE
GENERAL ARRANGEMENT

DRAWN	CHECKED	APPROVED	DATE
[illegible]		N.M.D.	FEBRUARY 1988

SCALE	MHA DRAWING No.	REV.
AS NOTED	602 / B / 340	AC

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Director of Transport — Northern Regional Office
Wellher House, Saltwegate, Newcastle upon Tyne

REV	DATE	AMENDMENT DETAILS	BY
A	10.12.86	DIMENSIONS CHANGED FOR BEARINGS ON SIDE SPAN	
AC	DEC 87	AS CONSTRUCTED	

REV	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

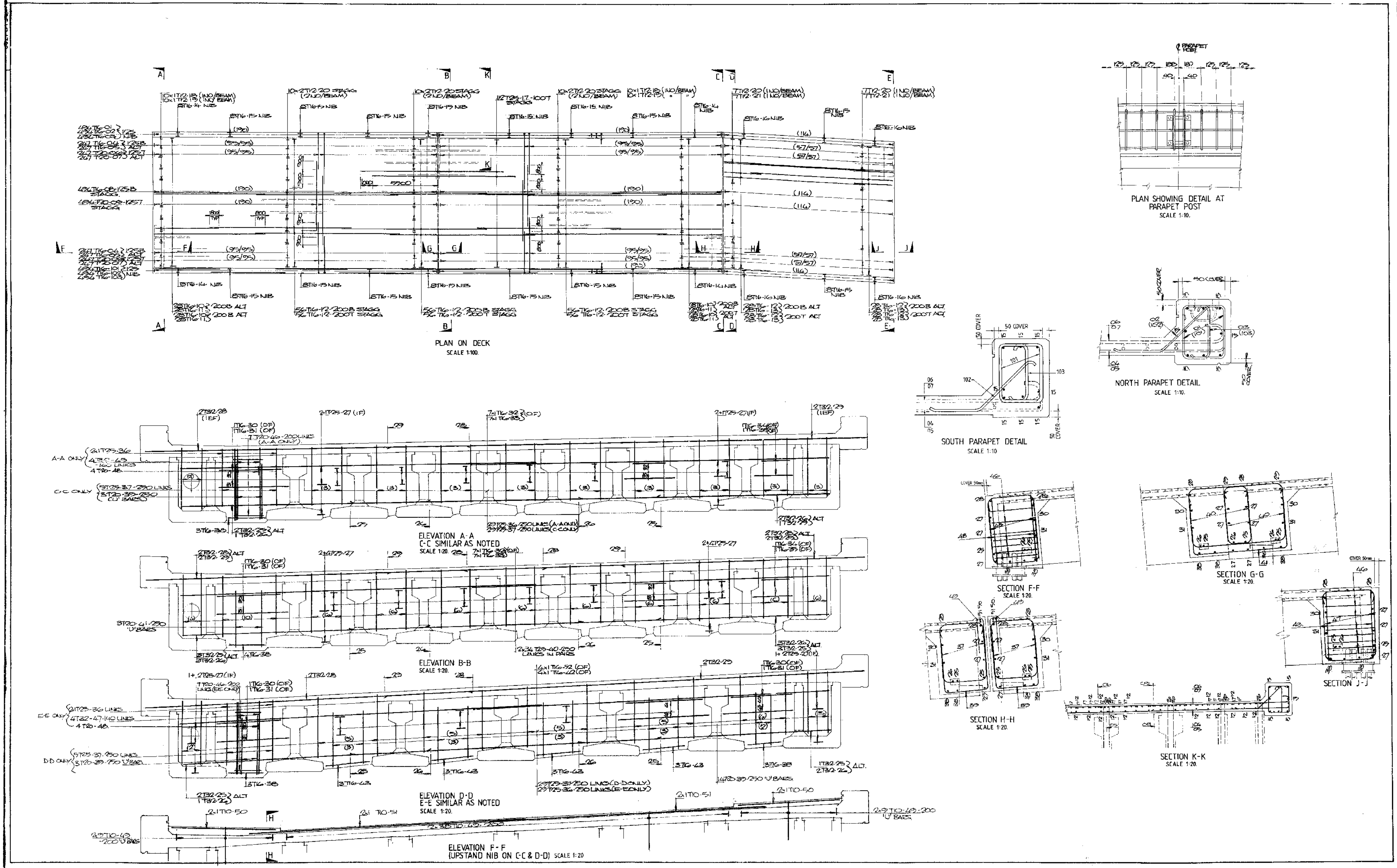
NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM
3. CONCRETE GRADE TO BE -
   INSITU DECK SLAB 40/20
   PRECAST BEAMS - SEE DRG. 602/B/343 AND 344
4. CEMENT SHALL BE ORDINARY PORTLAND CEMENT
5. FORMWORK SHALL BE -
   CANTILEVER SOFFITS AND UPSTAND - CLASS F3
   DIAPHRAGM END EXPOSED FACE - CLASS F3
   REMAINING DIAPHRAGM - CLASS F1
6. CONCRETE FINISHES ON MARGINED SURFACES TO BE
   UNDER WATERPROOFING - CLASS U2
   ELSEWHERE - CLASS U3
7. ABBREVIATIONS - SOP - SETTING OUT POINT
   - CENTRE LINE
8. NOTE - EDGE BEAMS TO BE CONSTRUCTED AFTER MAIN INSITU DECK. SEE SECTIONS A-A AND B-B
9. TESTING OF BEAMS - 1 No. BEAM OF ENGINEERS CHOICE SHALL BE TREATED IN ACCORDANCE WITH CLAUSE 2711 OF SPEC.
10. USE OF PROPRIETARY ITEMS NOTED IS NOT MANDATORY AND SUITABLE ALTERNATIVES WILL BE CONSIDERED
11. FOR DETAILS OF PARAPET POST FIXINGS SEE DRG. No 602/B/301

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

DRAWN	CHECKED	APPROVED	DATE
			FEBRUARY 1986

TITLE: SMITHY LANE BRIDGE
DECK LAYOUT

SCALE	MBA DRAWING No.	REV.
AS NOTED	602/B/341	AC



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NORTHERN REGION
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Wellbar House, Gallowgate, Newcastle upon Tyne

REV	DATE	AMENDMENT DETAILS	BY	REV	DATE	AMENDMENT DETAILS	BY	REFERENCE DRAWINGS
AC	DEC 87	AS CONSTRUCTED						

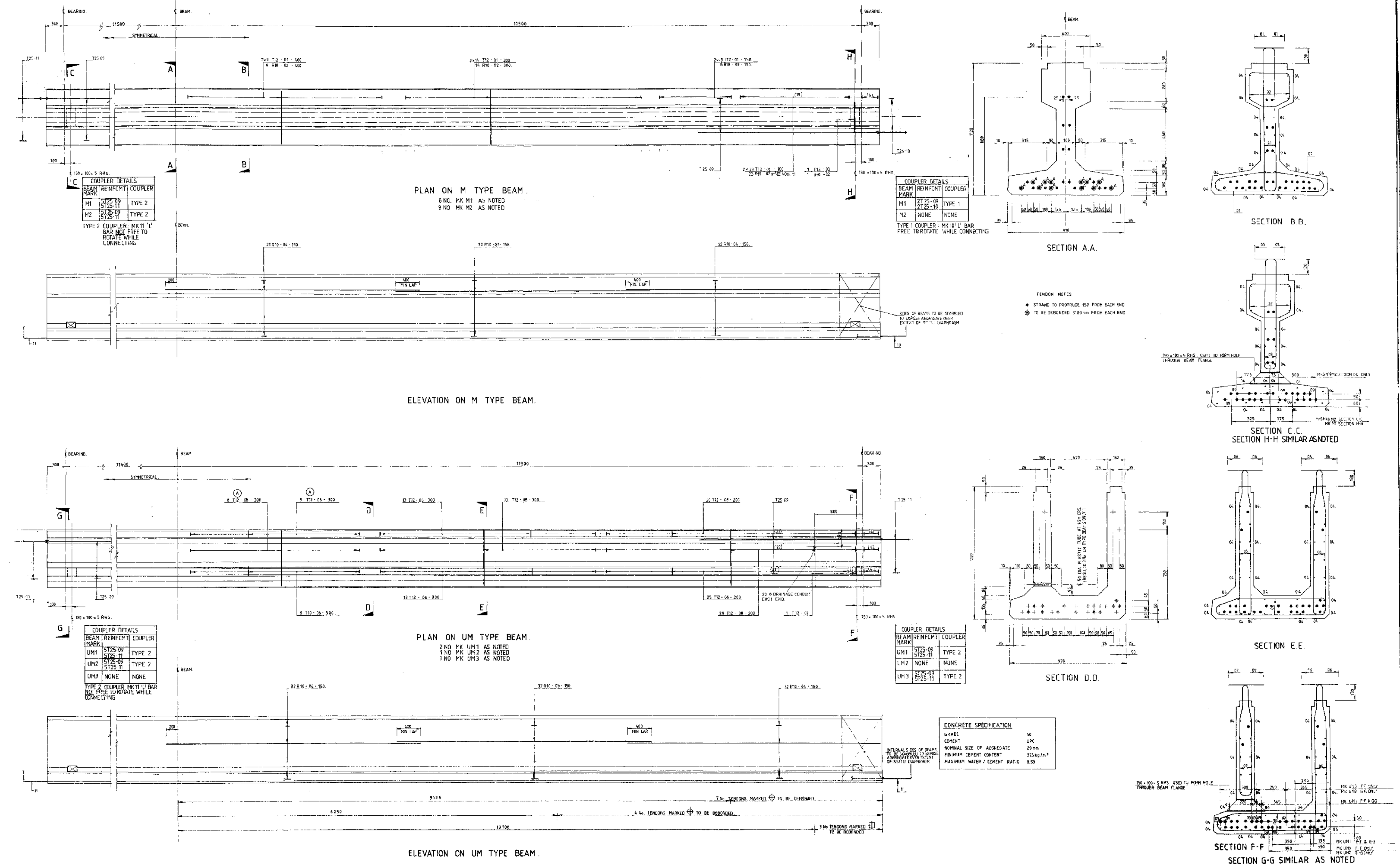
NOTES
1) FOR GENERAL ARRANGEMENT OF DECK SEE DWG. NO 602/B/341
2) MINIMUM CONCRETE COVER TO BE 50MM. U.N.O.
3) MINIMUM LAPS IN REINFORCEMENT ARE TO BE: 1350 T32, 1100 T25, 900 T20, 800 T16, 650 T12
4) ABBREVIATIONS: B - BOTTOM, T - TOP, ALT - ALTERNATE, STAGG - STAGGERED, IF - INSIDE FACE, OF - OUTSIDE FACE, EF - EACH FACE
5) REINFORCEMENT SHOWN ON THIS DRAWING IS SCHEDULED ON BENDING SCHEDULE NOS. 602/B/342 SHEETS 01 TO INC.

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE
DECK REINFORCEMENT

DRAWN	CHECKED	APPROVED	DATE
[redacted]			FEBRUARY 1986

SCALE	MHA DRAWING No.	REV.
AS NOTED	602 / B / 342	AC



COUPLER DETAILS

BEAM MARK	REINFCMT	COUPLER
M1	5T25-09 5T25-11	TYPE 2
M2	5T25-09 5T25-11	TYPE 2

TYPE 2 COUPLER: MK11 'L' BAR NOT FREE TO ROTATE WHILE CONNECTING

COUPLER DETAILS

BEAM MARK	REINFCMT	COUPLER
M1	2T25-09 2T25-10	TYPE 1
M2	NONE	NONE

TYPE 1 COUPLER: MK10 'L' BAR FREE TO ROTATE WHILE CONNECTING

COUPLER DETAILS

BEAM MARK	REINFCMT	COUPLER
UM1	5T25-09 5T25-11	TYPE 2
UM2	5T25-09 5T25-11	TYPE 2
UM3	NONE	NONE

TYPE 2 COUPLER MK11 'L' BAR NOT FREE TO ROTATE WHILE CONNECTING

COUPLER DETAILS

BEAM MARK	REINFCMT	COUPLER
UM1	5T25-09 5T25-11	TYPE 2
UM2	NONE	NONE
UM3	5T25-09 5T25-11	TYPE 2

CONCRETE SPECIFICATION

GRADE	50
CEMENT	OPC
NOMINAL SIZE OF AGGREGATE	20mm
MINIMUM CEMENT CONTENT	325kg/m³
MAXIMUM WATER / CEMENT RATIO	0.53

CONSULTING ENGINEERS

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DEPARTMENT OF TRANSPORT NORTHERN REGION

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Director of Transport — Northern Regional Office
Wellbar House, Gallowgate, Newcastle upon Tyne

REV	DATE	AMENDMENT DETAILS	BY
A		MINOR AMENDMENTS MARKED THUS (A)	
AC	DEC 87	AS CONSTRUCTED	

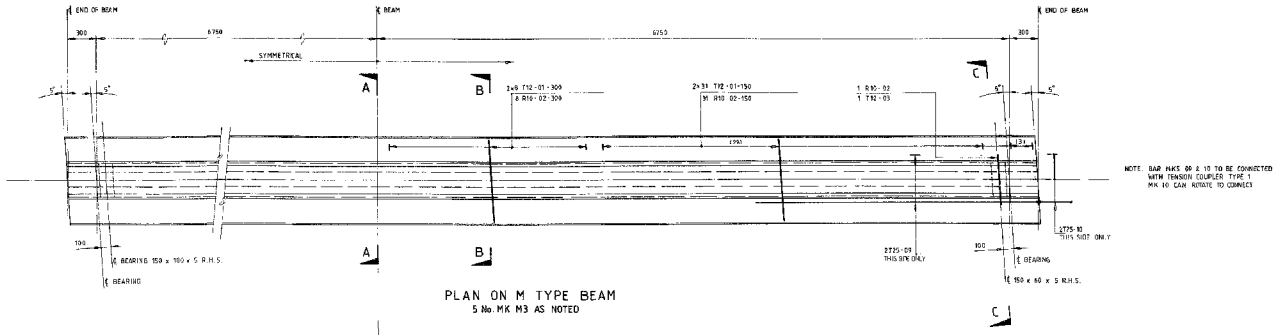
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. ABBREVIATIONS :-
   R MILD STEEL
   T HIGH YIELD STEEL
   B BOTTOM
   c/c CENTRE TO CENTRE
   RHS RECTANGULAR HOLLOW SECTION
3. FORMWORK SHALL BE :-
   ALL FORMED SURFACES - CLASS F3 UNLESS OTHERWISE NOTED
4. UNFORMED SURFACES TO TOP OF BEAMS SHALL BE LEVELLED & FOLLOWING INITIAL SET SHALL BE BRUSHED TO REMOVE LAITENCE AND EXPOSE THE LARGEST AGGREGATE.
5. CONCRETE SHALL BE :-
   ALL BEAMS - 50/20 UNLESS OTHERWISE STATED
6. CEMENT SHALL BE ORDINARY PORTLAND THROUGHOUT
7. REINFORCEMENT SHALL BE :-
   MILD STEEL TO B.S. 4449 : 1978
   HIGH YIELD TO B.S. 4449 : 1978
   DEFORMED BAR.
8. MINIMUM COVER TO REINFORCEMENT SHALL BE :-
   25mm INSIDE FACE 30mm OUTER FACE
9. REINFORCEMENT SHALL BE BENT IN ACCORDANCE WITH SERIES 15025 AND 15035.
10. PRESTRESSING (STRAND) BEAM TYPES M/UM
    a. STRAND SIZE 15.2mm DIA STABILIZED STRAND
    b. STRAND SPECIFICATION SHALL BE :-
       NOMINAL STEEL AREA 138.7/165 mm²
       MINIMUM BREAKING LOAD 232 / 300 KN
       RELAXATION (TO BS 3617) LOW
    c. CONCRETE STRENGTH AT TRANSFER TO EXCEED 40 N/mm²
    d. THE STRESSING FORCE PER STRAND SHALL BE 176 / 210 KN
    e. NUMBER OF STRAND 28/27
11. OMITTED.
12. TESTING OF BEAMS :-
    1 No M - BEAM OF THE ENGINEER'S CHOICE SHALL BE TESTED IN ACCORDANCE WITH CLAUSE 2711 OF THE SPECIFICATION. TEST LOADS ARE TO BE 260 kN APPLIED AT THIRD POINTS ON THE LENGTH OF THE BEAM
13. ALL REINFORCEMENT SHOWN IS LISTED ON BENDING SHEDULE REF 602/B/343 SHEETS 01 & 02.
14. FOR LOCATION OF BEAMS ON DECK SEE DWG NO 602/B/341

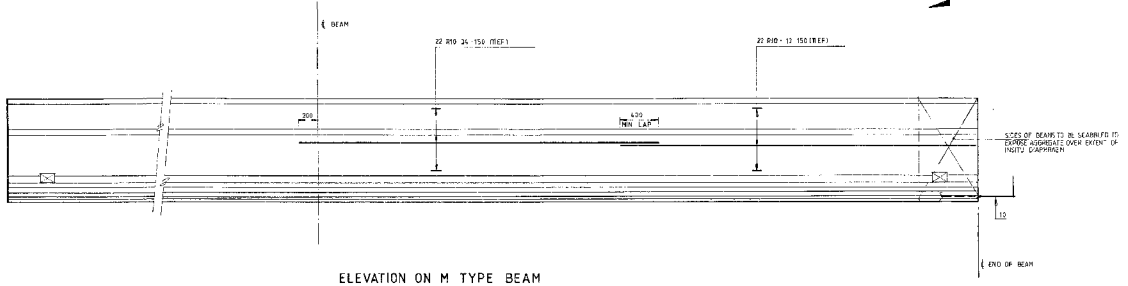
A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE PRECAST BEAMS SHEET 1.

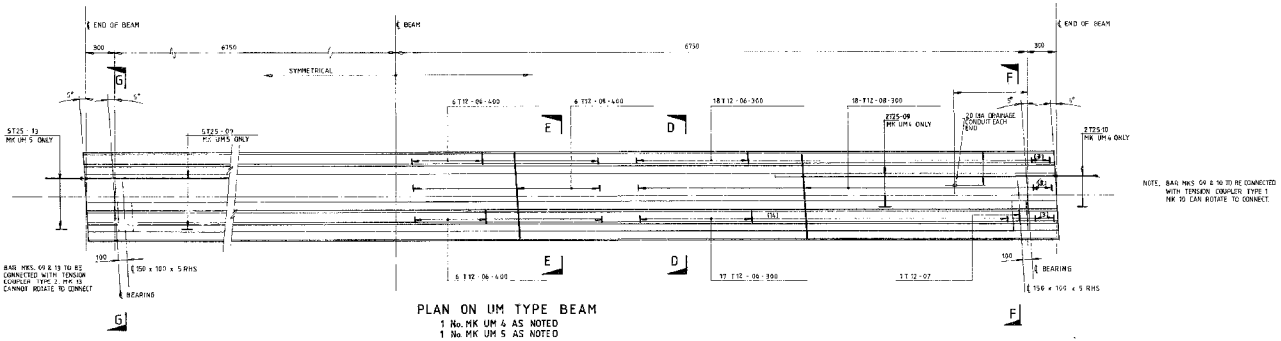
DATE: FEBRUARY 1986 | SCALE: 1:20 & 1:10 | DRAWING No. 602/B/343. | REV. AC



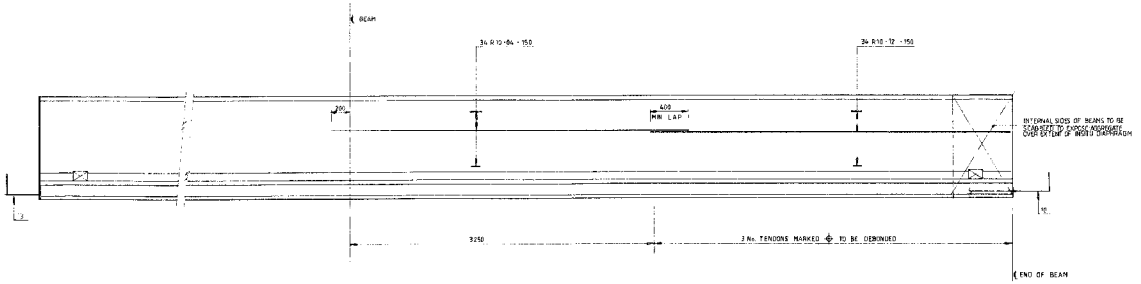
PLAN ON M TYPE BEAM
5 No. MK M3 AS NOTED



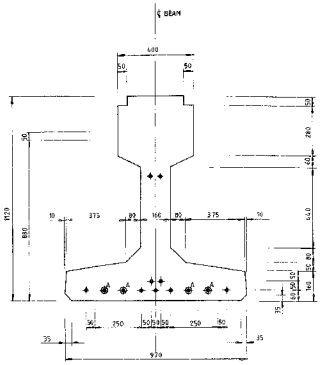
ELEVATION ON M TYPE BEAM

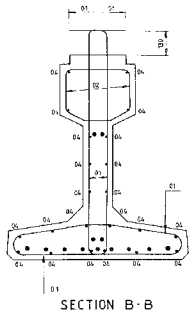


PLAN ON UM TYPE BEAM
1 No. MK UM 4 AS NOTED
1 No. MK UM 5 AS NOTED

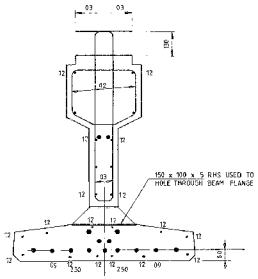


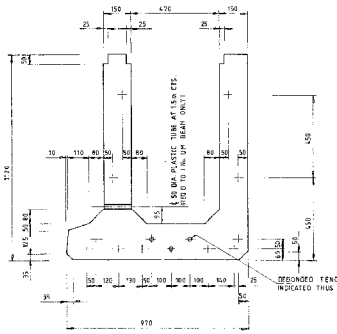
ELEVATION ON UM TYPE BEAM

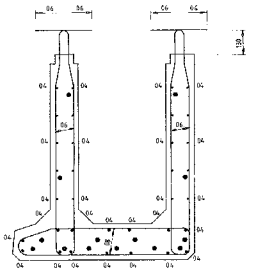


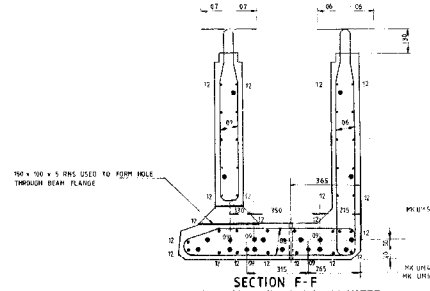


TENDON NOTES
- STRAND TO PROTRUDE 150 FROM EACH END
- TO BE DEBONDED 1450 mm FROM EACH END
NO OTHER DEBONDING REQUIRED









SECTION G-G SIMILAR AS NOTED

CONSULTING ENGINEERS
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DEPARTMENT OF TRANSPORT
NORTHERN REGION
F.B. Whitehead B.Sc., C.Eng., M.I.C.E.
Director of Transport — Northern Regional Office
Walker House, Gallowgate, Newcastle upon Tyne

REV.	DATE	AMENDMENT DETAILS	BY
AL	DEC 87	AS CONSTRUCTED	

REV.	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

NOTES
1. FOR TYPICAL NOTES SEE DRG No 0602/B/343
2. PRESTRESSING (STRAND) BEAM TYPES M/UM
   a NUMBER OF STRANDS 13/14

CONCRETE SPECIFICATION
BEAMS
GRADE	50
CEMENT	OPC
NOMINAL MAX SIZE OF AGGREGATE	20 mm
MINIMUM CEMENT CONTENT	325 kg/m³
MAX WATER/CEMENT RATIO	0.53

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

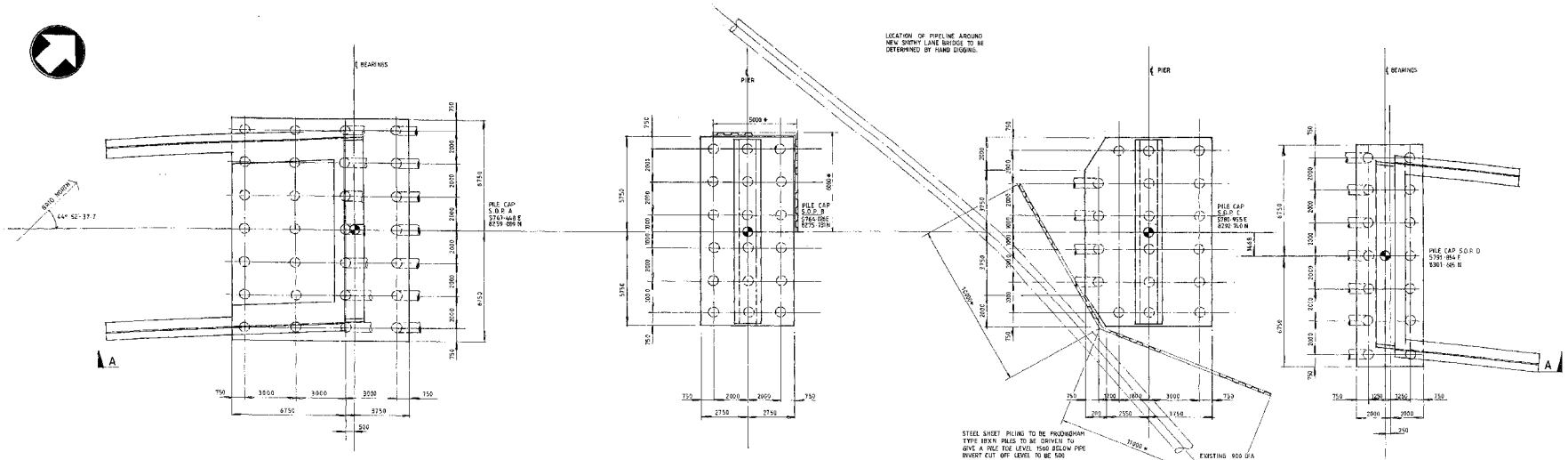
TITLE
SMITHY LANE BRIDGE
PRECAST BEAMS
SHEET 2

DRAWN	CHECKED	APPROVED	DATE
MB		H.M.B.	FEBRUARY 1986

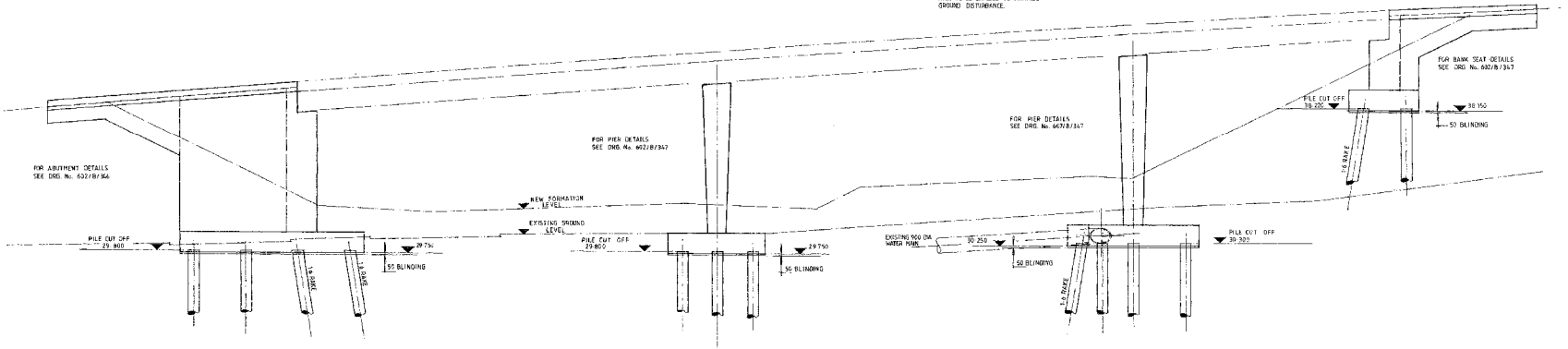
SCALE 1:20, 1:10

MHA DRAWING No. 602/B/344

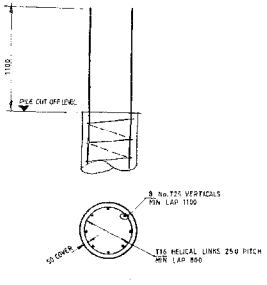
REV. AC



LAYOUT PLAN
600 DIA. BORED PILES



ELEVATION A - A



TYPICAL PILE REINFORCEMENT

NOTE - HELICAL REINFORCEMENT
1. PILES AT BOTH PIERS AND ABUTMENT T16 @ 250 PITCH FOR FIRST 4 METRES FROM CUT OFF LEVEL THEREAFTER T16 @ 750 PITCH.
2. PILES AT BANK SEAT T16 @ 250 PITCH FOR FIRST 12 METRES FROM CUT OFF LEVEL THEREAFTER T16 @ 750 PITCH.

CONSULTING ENGINEERS
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Newcastle upon Tyne NE1 8BH. Tel. 0632 26000

DEPARTMENT OF TRANSPORT
NORTHERN REGION
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Director of Transport — Northern Regional Office
Walker House, Saffronsgate, Newcastle upon Tyne

REV	DATE	AMENDMENT DETAILS	BY
AC	DEC 87	AS CONSTRUCTED	

REV	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

NOTES
1. WORKING LOAD CAPACITY OF PILES - 100 TONNES
2. LENGTH OF PILE TO BE SOCKETED INTO SOUND ROCK = 3 × DIAMETER
3. LENGTH OF PILES FOR ABUTMENT AND PIERS HAVE BEEN ESTIMATED AT 10 METRES
4. LENGTH OF PILES FOR BANKSEAT HAVE BEEN ESTIMATED AT 15 METRES.

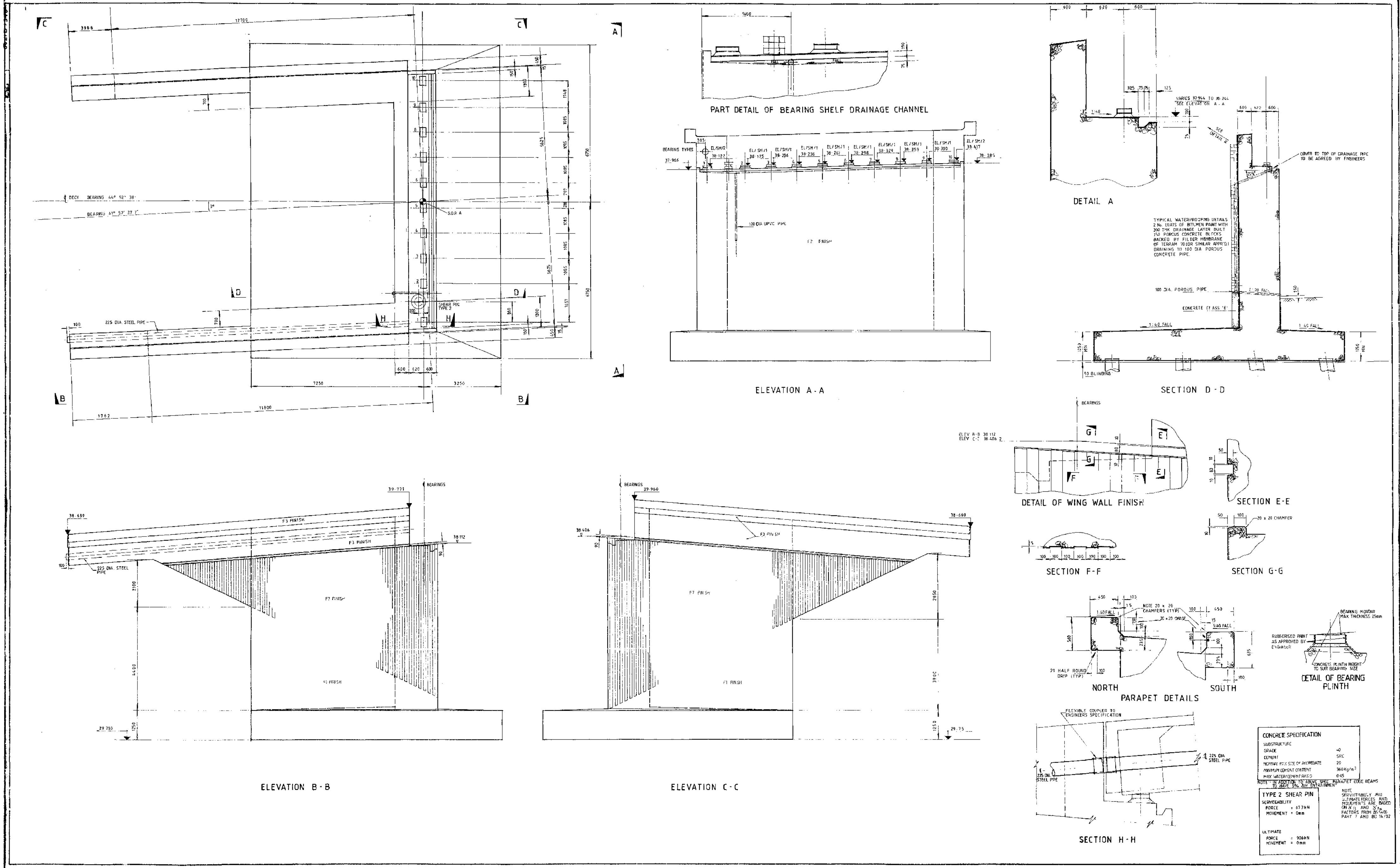
CONCRETE SPECIFICATION
PILES

GRADE	30
CEMENT	S.R.C
NOMINAL MAX SIZE OF AGGREGATE	20mm
MINIMUM CEMENT CONTENT	390 kg / m³
MAX. WATER/CEMENT RATIO	0.45

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE
GENERAL ARRANGEMENT OF
SUBSTRUCTURE

DATE: FEBRUARY 1988
SCALE: 1:100 & 1:20
NRA DRAWING No: 602/B/345
REV: AC



CONCRETE SPECIFICATION

SUBSTRUCTURE	
GRADE	40
CEMENT	SRC
NOMINAL MAX SIZE OF AGGREGATE	20
MINIMUM CEMENT CONTENT	360 Kg/m³
MAX WATER/CEMENT RATIO	0·45

NOTE:- IN ADDITION TO ABOVE SPEC. PARAPET EDGE BEAMS TO HAVE 5% AIR ENTRAINMENT

TYPE 2 SHEAR PIN

SERVICEABILITY
FORCE = 673kN
MOVEMENT = 0mm

ULTIMATE
FORCE = 926kN
MOVEMENT = 0mm

NOTE
SERVICEABILITY AND ULTIMATE FORCES AND MOVEMENTS ARE BASED ON γ_{fL} AND γ_{f3} FACTORS FROM BS 5400 PART 2 AND BD 14/82

CONSULTING ENGINEERS
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DEPARTMENT OF TRANSPORT
NORTHERN REGION
F.B. Whitehead B.Sc.,C.Eng., M.I.C.E.
Director of Transport — Northern Regional Office
Wellbar House, Gallowgate, Newcastle upon Tyne

REV	DATE	AMENDMENT DETAILS	BY
A	24.3.87	WING WALLS AMENDED TO SUIT SAFETY FENCING	W.J.W.
B	15.4.87	PARAPET HEIGHT AMENDED	W.J.W.
AC	DEC 87	AS CONSTRUCTED	

REV	DATE	AMENDMENT DETAILS	BY	REFERENCE DRAWINGS

NOTES

1. FOR SETTING OUT DETAILS SEE DRG 602/B/345
2. LEVELS SHOWN AT BEARINGS ARE THE SOFFIT LEVELS OF THE PRECAST BEAMS AT BEARING CENTRE LINE POSITION.
   U/S OF BEAM — 150
3. STRUCTURE ABOVE FOUNDATION SLAB TO BE AIR ENTRAINED CONCRETE - AIR ENTRAINMENT 5%
4. LEVELS OF BEARING SHELF AT ℄ OF BEARING POSITIONS
5. 2 COATS OF BITUMINOUS EMULSION WATERPROOFING APPLIED TO
   a. ALL PIER AND ABUTMENT BEARING SHELVES.
   b. ALL CURTAIN WALLS
   c. ALL STRUCTURAL CONCRETE BELOW GROUND LEVEL
6. CONCRETE TO WINGWALLS ABOVE THE INCLINED CHAMFERED FEATURE IS CLASS 40/20 OPC WITH 5% AIR ENTRAINING AGENT

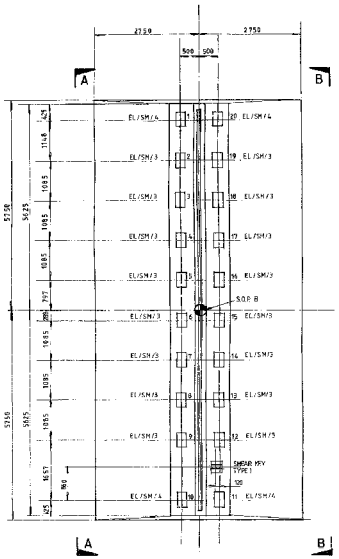
A69 EIGHTON LODGE JUNCTION IMPROVEMENT

[redacted] EBRUARY 1986

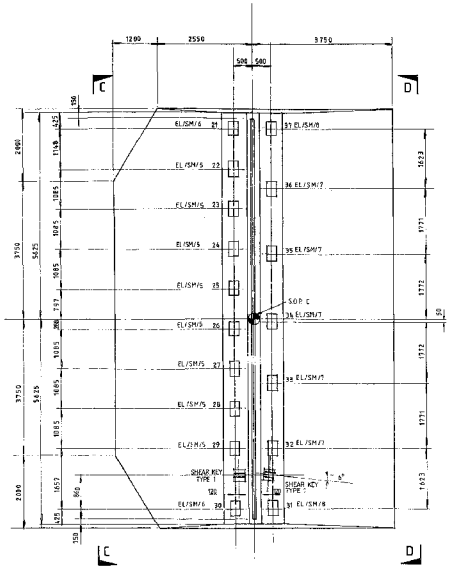
TITLE: SMITHY LANE BRIDGE — ABUTMENT DETAILS

SCALE	MHA DRAWING No.	REV.
1:50, 1:20 & 1:10	602/B/346	AC

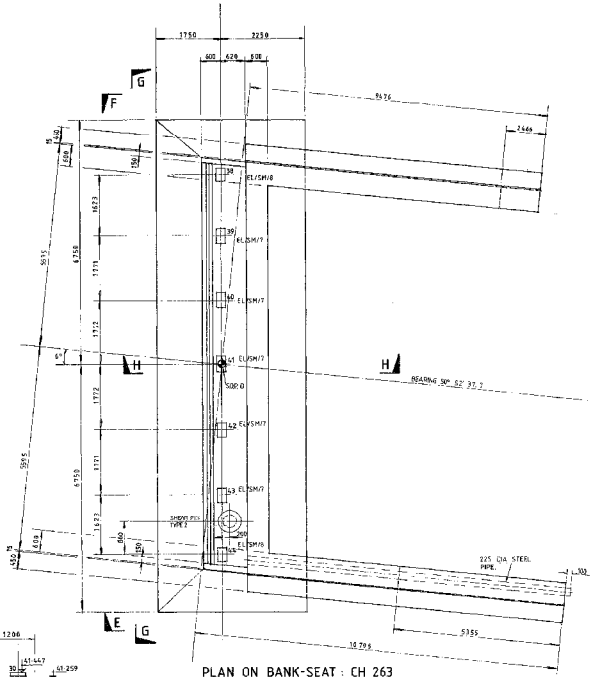
DRG No. 602/B/347



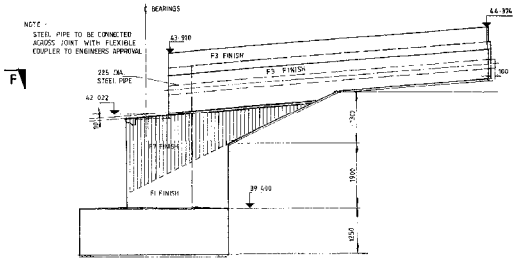
PLAN ON PIER : CH 225



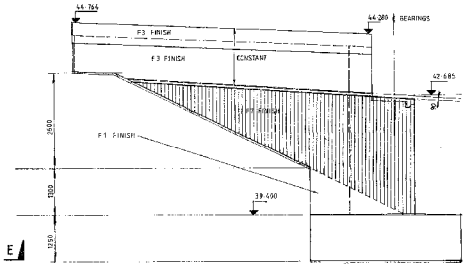
PLAN ON PIER : CH 249



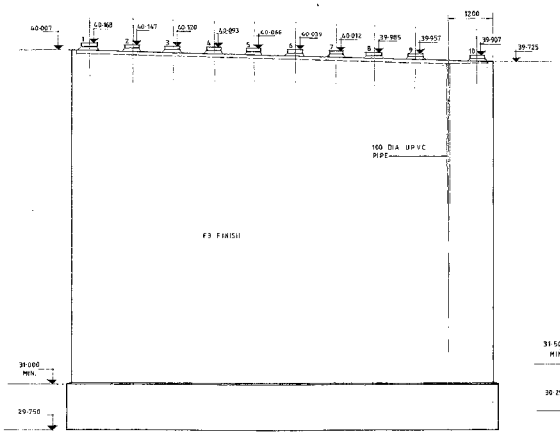
PLAN ON BANK-SEAT : CH 263



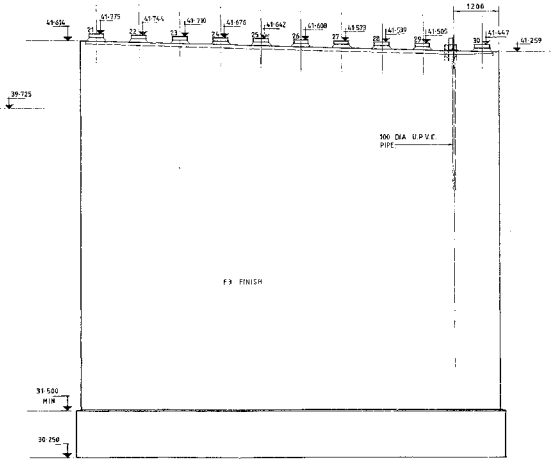
ELEVATION E-E



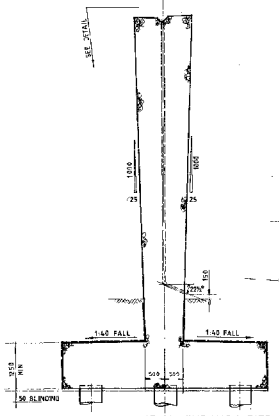
ELEVATION F-F



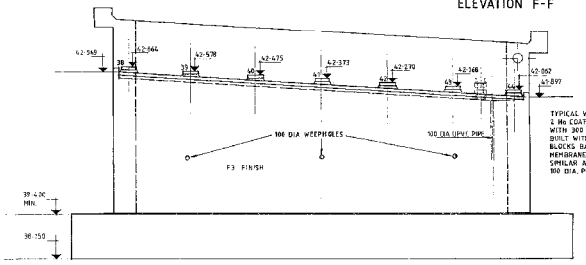
ELEVATION A-A



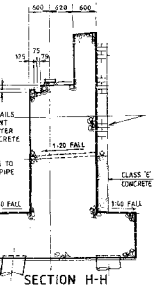
ELEVATION C-C



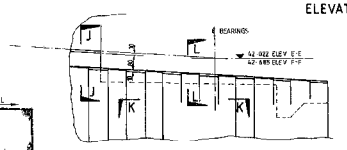
TYPICAL SECTION THROUGH PIER



ELEVATION G-G

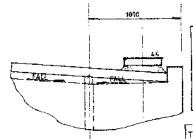


SECTION H-H



DETAIL OF WING WALL FINISH

SECTION J-J



BANK SEAT BEARING SHELF PART DETAIL OF DRAINAGE CHANNEL

CONCRETE SPECIFICATION

SUBSTRUCTURE	
GRADE	40
CEMENT	S.R.C.
NOMINAL MAX SIZE OF AGGREGATE	20mm
MINIMUM CEMENT CONTENT	360 Kg/m³
MAX WATER/CEMENT RATIO	0.45

TYPE 1 SHEAR KEY

SERVICEABILITY

LONGITUDINAL FORCE	= 0 kN
LATERAL FORCE	= 400kN
LONGITUDINAL MOVEMENT	= ± 50mm
LATERAL MOVEMENT	= 0mm

ULTIMATE

LONGITUDINAL FORCE	= 0 kN
LATERAL FORCE	= 558 kN
LONGITUDINAL MOVEMENT	= ± 75mm

TYPE 2 SHEAR PIN

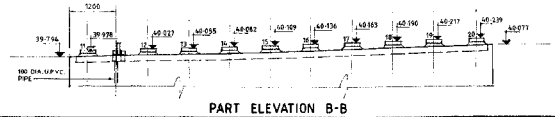
SERVICEABILITY

FORCE	= 473kN
MOVEMENT	= 0mm

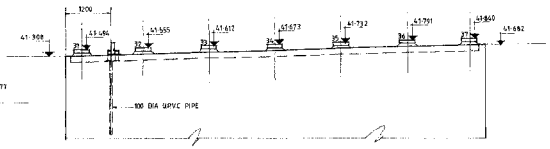
ULTIMATE

FORCE	= 926kN
MOVEMENT	= 0mm

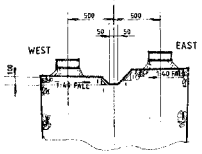
NOTE:
SERVICEABILITY AND ULTIMATE FORCES AND MOVEMENTS ARE BASED ON 8 Fi AND 8 Fu FACTORS FROM BS 5400 PART 2 AND BD 14/82.



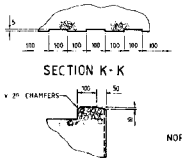
PART ELEVATION B-B



PART ELEVATION D-D

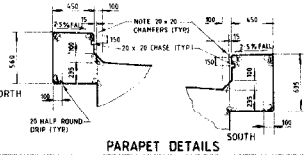


TYPICAL DETAIL AT PIER HEAD

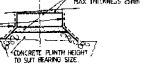


SECTION K-K

SECTION L-L



PARAPET DETAILS



DETAIL OF BEARING PLINTH

REV	DATE	AMENDMENT DETAILS	BY
A	10.11.86	DIMENSIONS CHANGED FOR BEARINGS ON SIDE SPAN.	
B	24.3.87.	WING WALLS AMENDED TO SUIT SAFETY FENCING.	W.J.W.
C	15.6.87	PARAPET HEIGHTS AMENDED.	W.J.W.
AC	DEC 87	AS CONSTRUCTED	

REV.	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

NOTES
1. FOR SETTING OUT DETAILS SEE DRG 602/B/345
2. LEVELS SHOWN AT BEARINGS ARE THE SOFFIT LEVELS OF THE PRECAST BEAMS AT BEARING CENTRE LINE POSITION.
3. PARAPET EDGE BEAMS AND STEMS OF PIERS TO BE AIR ENTRAINED CONCRETE - AIR ENTRAINMENT 5%
4. LEVELS OF BEARING SHELF AT (OF BEARING POSITIONS
5. 2 COATS OF BITUMINOUS EMULSION WATERPROOFING APPLIED TO :-
   a. ALL PIER AND ABUTMENT BEARING SHELVES
   b. ALL CURTAIN WALLS
   c. ALL STRUCTURAL CONCRETE BELOW GROUND LEVEL
6. CONCRETE TO WINGWALLS ABOVE THE INCLINED CHAMFERED FEATURE IS CLASS 40/20 OPC WITH 5% AIR ENTRAINING AGENT

CONSULTING ENGINEERS
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Pearl Assurance House, New Bridge Street
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DEPARTMENT OF TRANSPORT
NORTHERN REGION
F.B.Whitehead B.Sc.,C.Eng., M.I.C.E.
Director of Transport — Northern Regional Office
Walker House, Bellowgate, Newcastle upon Tyne

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

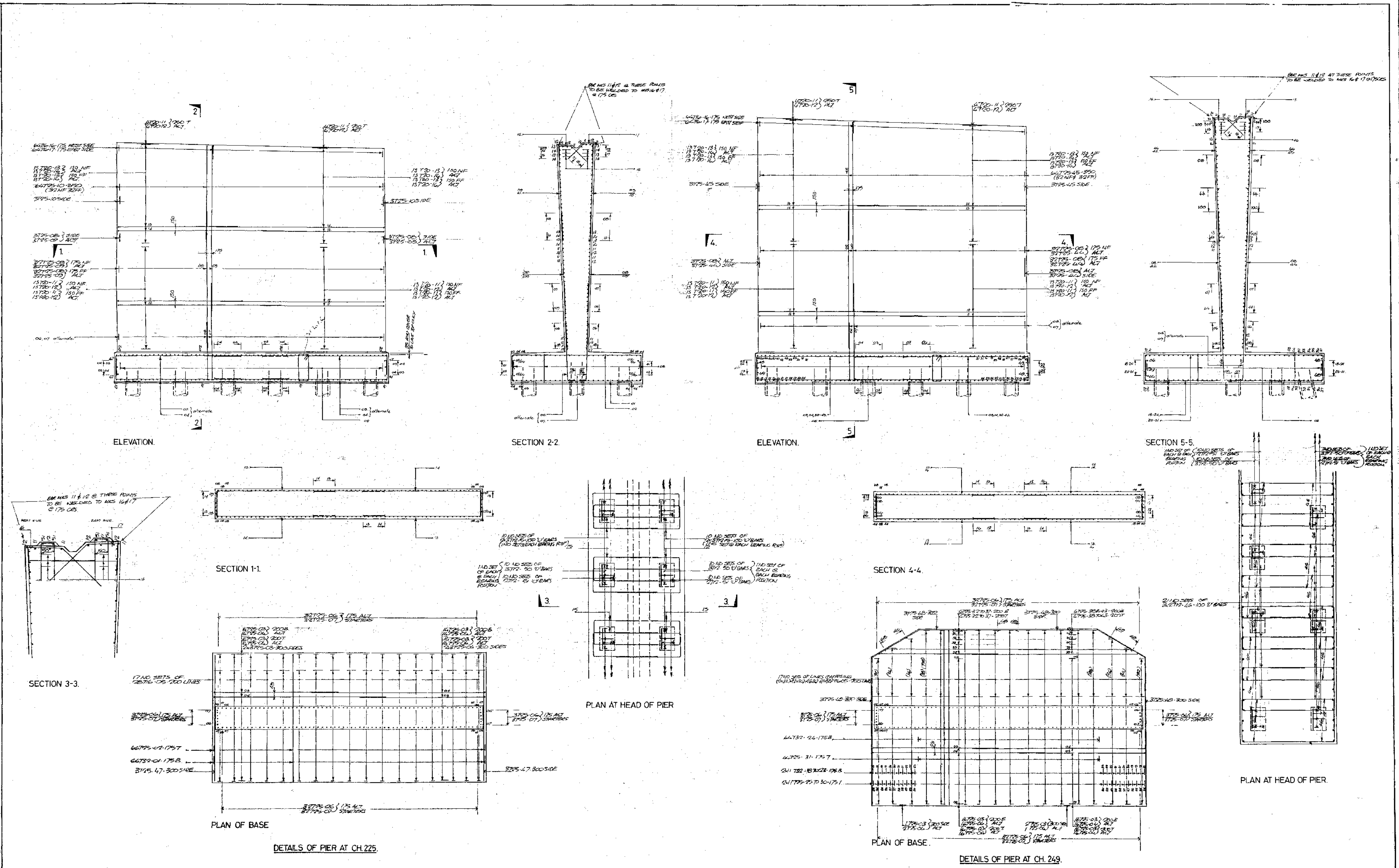
DATE FEBRUARY 1986

TITLE
SMITHY LANE BRIDGE
PIER AND BANK-SEAT DETAILS

SCALE 1:50, 1:20 & 1:10

MPA DRAWING No. 602 / B / 347

REV. AC



DETAILS OF PIER AT CH. 225.

DETAILS OF PIER AT CH. 249.

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DEPARTMENT OF TRANSPORT
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Director of Transport – Northern Regional Office
Wellbar House, Gallowgate, Newcastle upon Tyne

REV.	DATE	AMENDMENT DETAILS	BY	REV.	DATE	AMENDMENT DETAILS	BY	REFERENCE DRAWINGS
AC	DEC 87	AS CONSTRUCTED.						

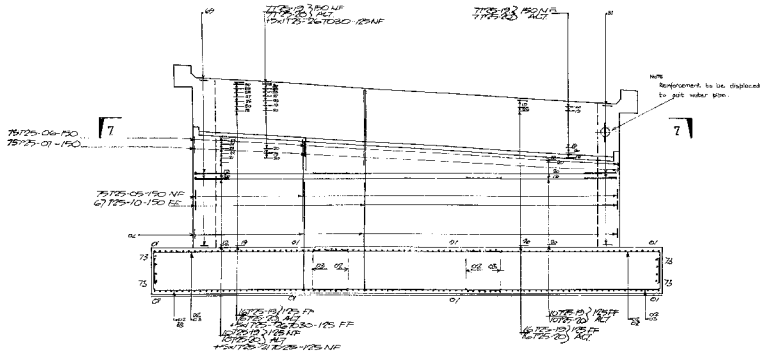
NOTES
1) FOR GENERAL ARRANGEMENT SEE DWG NO 602/B/347
2) REFER TO BENDING SCHEDULE NOS 602/368 SHTS 01 TO 03 INC
3) REINFORCEMENT COVER IS TO BE 50MM U.N.O.
4) MINIMUM LAPS TO REINFORCEMENT ARE TO BE

T32	1350
T25	1100
T20	900
T16	800

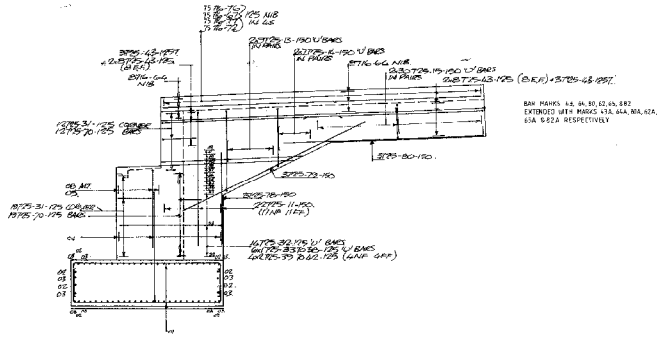
A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE PIERS REINFORCEMENT

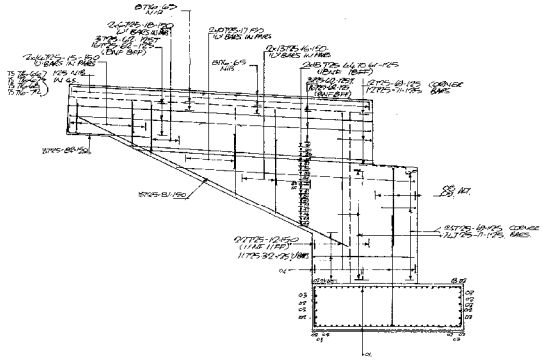
DRAWN	CHECKED	APPROVED	DATE	SCALE	MHA DRAWING No	REV.
[redacted]			FEBRUARY 1986	1:50 1:20	602/B/348	AC



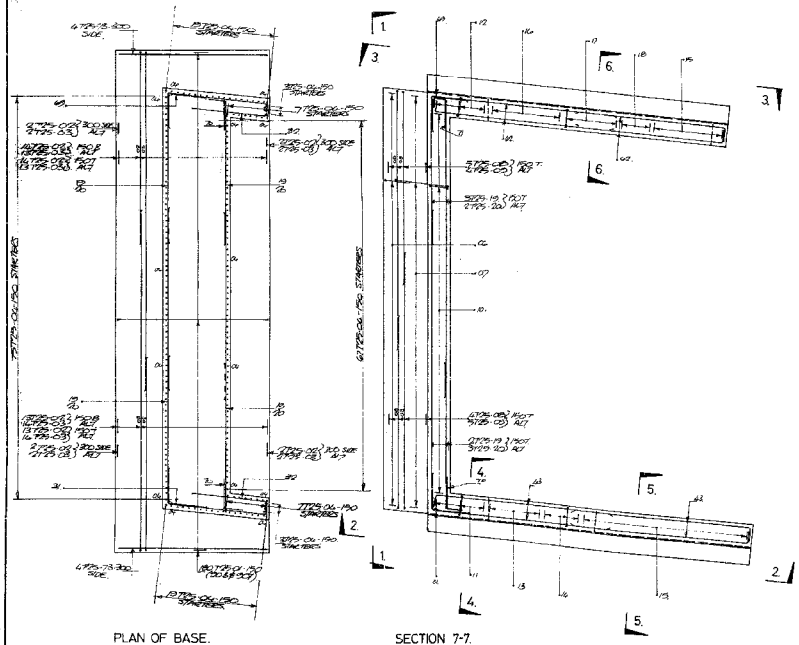
ELEVATION 1-1.



ELEVATION 2-2

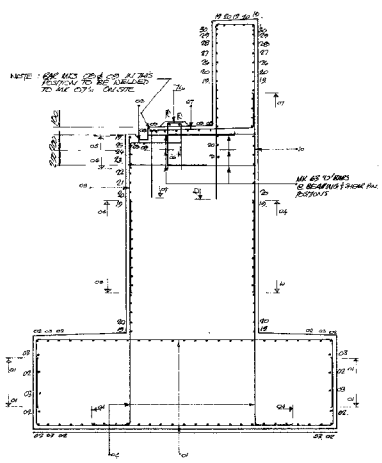


ELEVATION 3-3.

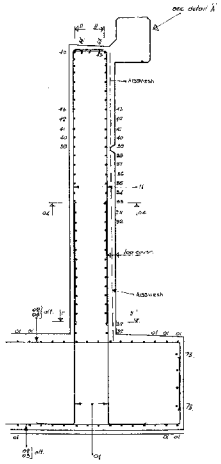


PLAN OF BASE.

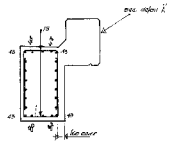
SECTION 7-7.



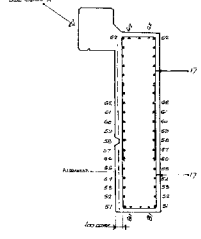
TYPICAL SECTION.



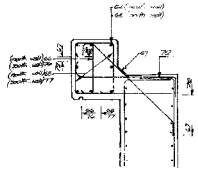
SECTION 4-4.



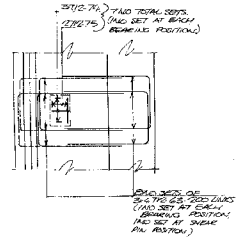
SECTION 5-5.



SECTION 6-6.



DETAIL A



CONSULTING ENGINEERS	DEPARTMENT OF TRANSPORT
MOTT HAY & ANDERSON	**NORTHERN REGION**
Pearl Assurance House, New Bridge Street Newcastle upon Tyne NE1 8BH. Tel.0632 [illegible]	F.B.Whitehead B.Sc.,C.Eng.,M.I.C.E. Director of Transport — Northern Regional Office Wellbar House, Gallowgate, Newcastle upon Tyne

REV.	DATE	ARRANGEMENT DETAILS	BY
AC	DEC 87	AS CONSTRUCTED	

REV.	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

NOTES
1. for general arrangement : see drawing no. 602/B/347.
2. refer to bending schedule no 602 348 sheets 01-03 incl.
3. cover to reinforcement to be 50mm unless noted otherwise.

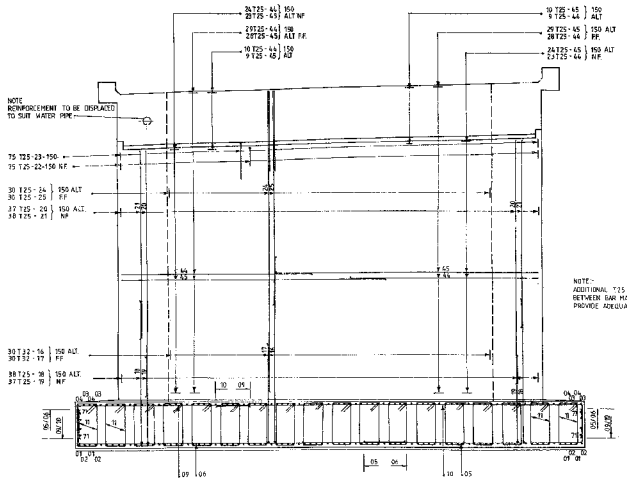
A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE BANKSEAT REINFORCEMENT

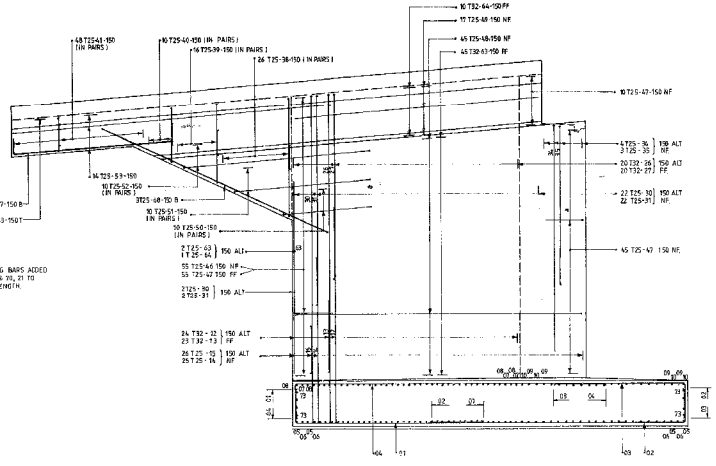
DRAWN	CHECKED	APPROVED	DATE
			FEBRUARY 1986

SCALE 1:50 1:25 | MBA DRAWING No. 602/B/349 | REV. AC

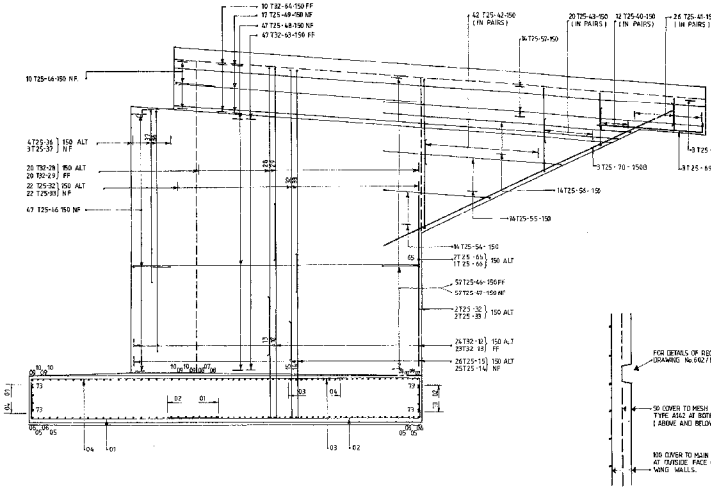
602/B/350



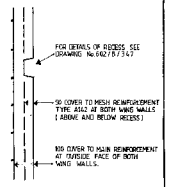
ELEVATION 1-1.
SCALE 1:50



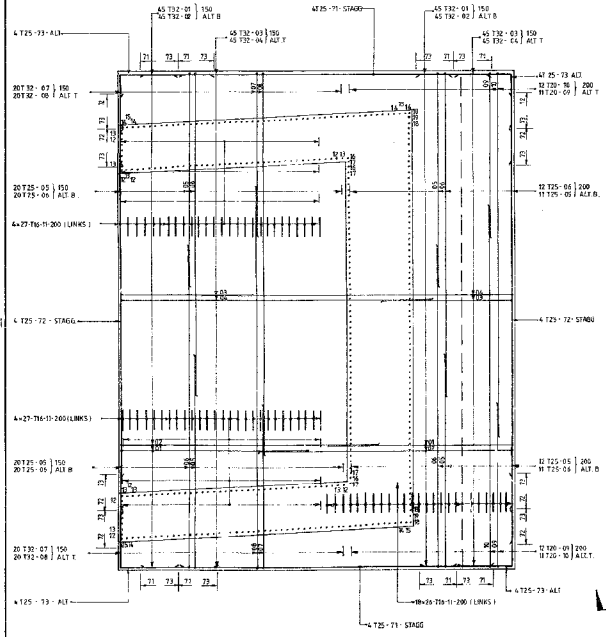
ELEVATION 2-2
SCALE 1:50



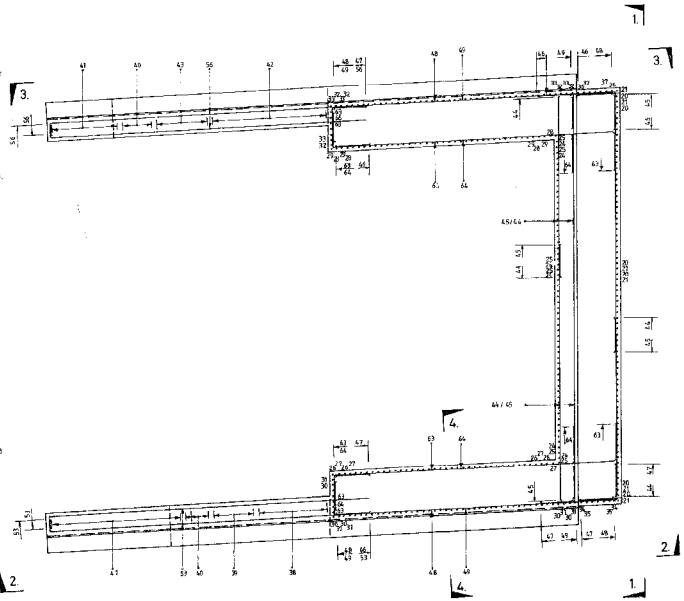
ELEVATION 3-3
SCALE 1:50



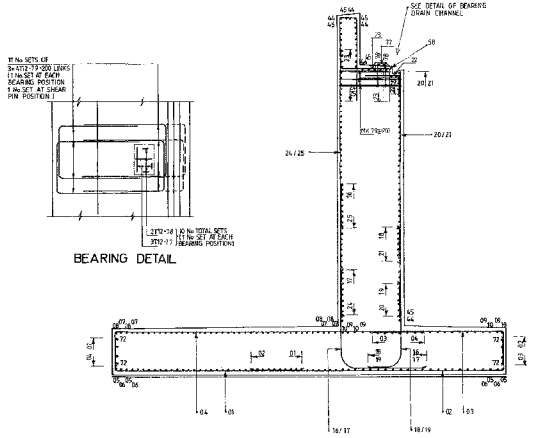
DETAILS OF COVER TO REINFORCEMENT AT NORTH AND SOUTH WING WALLS (OUTSIDE FACE ONLY).



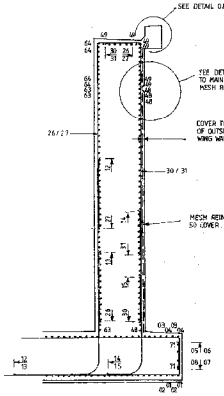
PLAN OF BASE
SCALE 1:50

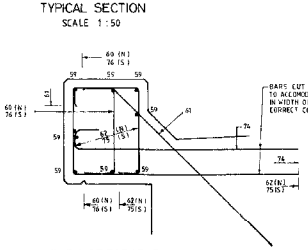


PLAN OF WALLS
SCALE 1:50



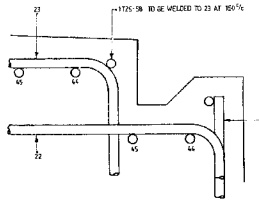
BEARING DETAIL





TYPICAL SECTION
SCALE 1:50

DETAILOF PARAPET
SCALE 1:10



SECTION 4-4
SCALE 1:50

DETAIL AT BEARING DRAIN CHANNEL
SCALE 1:5

CONSULTING ENGINEERS
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DEPARTMENT OF TRANSPORT
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Director of Transport — Northern Regional Office
Walker House, Gallowgate, Newcastle upon Tyne

REV.	DATE	AMENDMENT DETAILS	BY
AC	DEC 87	AS CONSTRUCTED.	

REV.	DATE	AMENDMENT DETAILS	BY

REFERENCE DRAWINGS

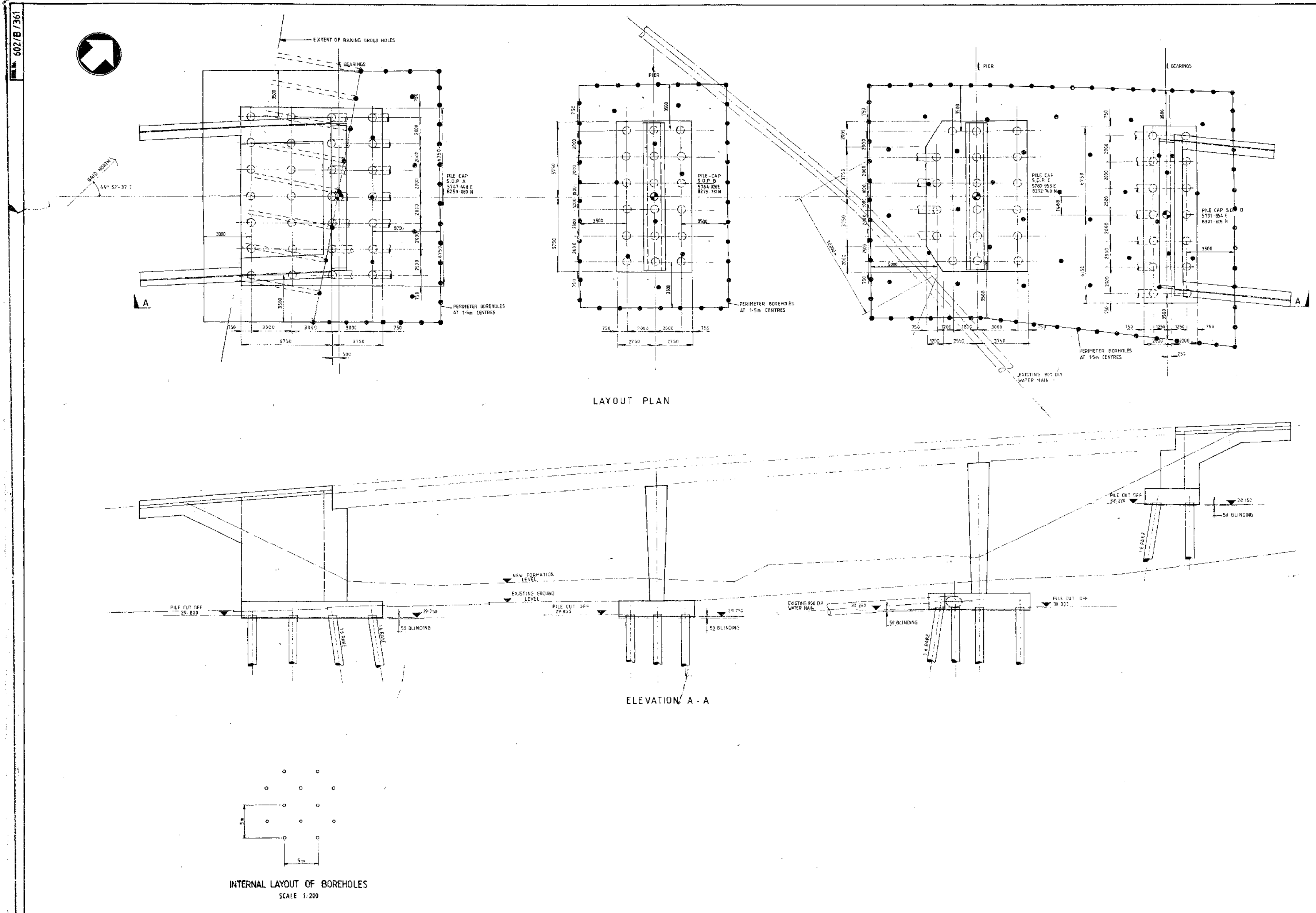
NOTES
1. for general arrangement - see drawing no. 602/B/346
2. refer to bending schedules no. 602-280 sheets 01-04 incl.
3. cover to reinforcement to be 50 mm except where noted.
4. for pile reinforcement - see drawing no. 602/B/345

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE
SMITHY LANE BRIDGE
ABUTMENT
REINFORCEMENT

DRAWN	CHECKED	APPROVED	DATE
[redacted]			FEBRUARY 1988

SCALE	MHA DRAWING No.	REV.
1:50	602 / B / 350	AC



CONSULTING ENGINEERS
MOTT HAY & ANDERSON
Pearl Assurance House, New Bridge Street
Newcastle upon Tyne NE1 8BN.

DEPARTMENT OF TRANSPORT
NORTHERN REGION
F.B. Whitehead B.Sc., C.Eng., M.I.C.E.
Director of Transport — Northern Regional Office
Wellbar House, Gallowgate, Newcastle upon Tyne

REV.	DATE	AMENDMENT DETAILS	BY	REV.	DATE	AMENDMENT DETAILS	BY	REFERENCE DRAWINGS
AC	[illegible]	AS CONSTRUCTED						

NOTES:-
1. AT EXISTING SERVICES RAKING BOREHOLES TO BE USED.
2. GROUT MIXES USED
a) 6:1:1 PFA/CEMENT/SAND (48 TONNES)
b) 12:1 PFA/CEMENT (5 TONNES)

A69 EIGHTON LODGE JUNCTION IMPROVEMENT

TITLE: SMITHY LANE BRIDGE
GROUTING OF COAL WORKINGS

[redacted] DATE	SCALE	DRAWING No.	REV.
JULY 1986	1:100 & 1:20	602/B / 361	AC

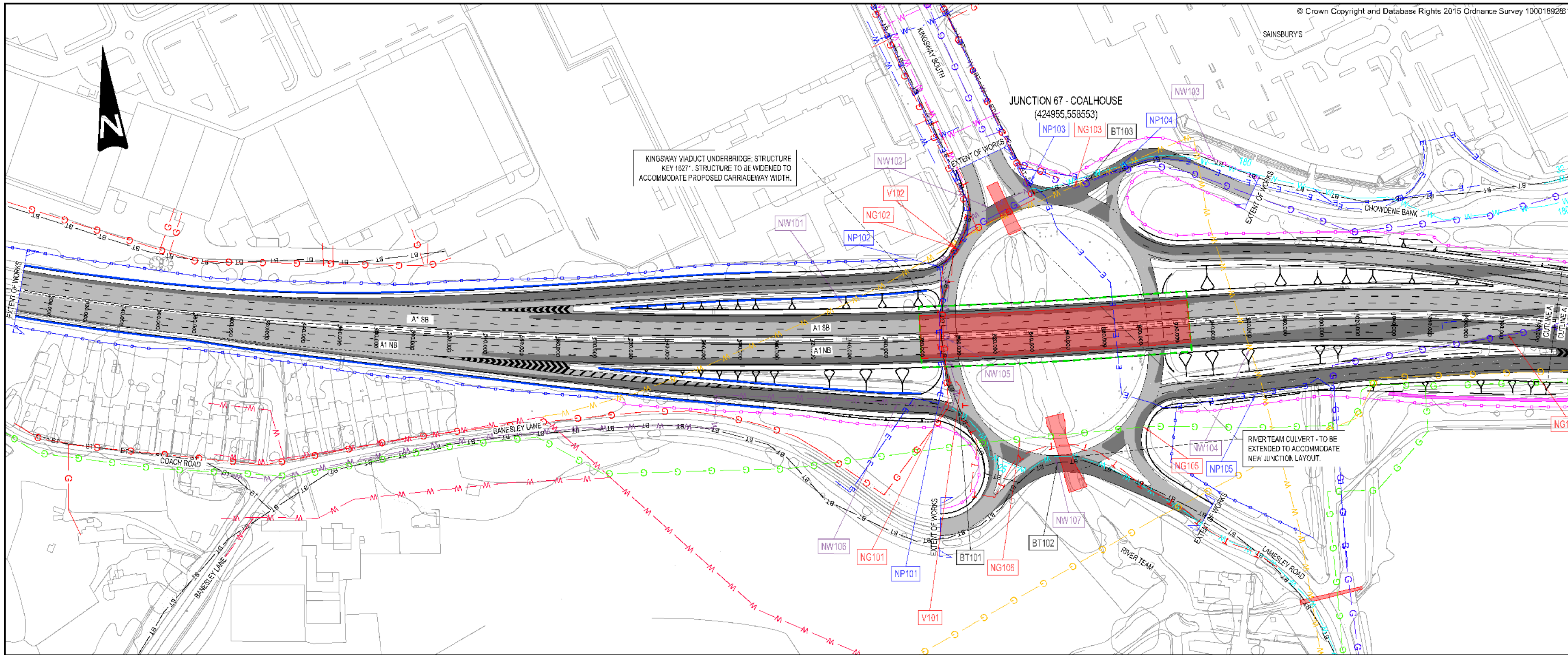
Appendix C

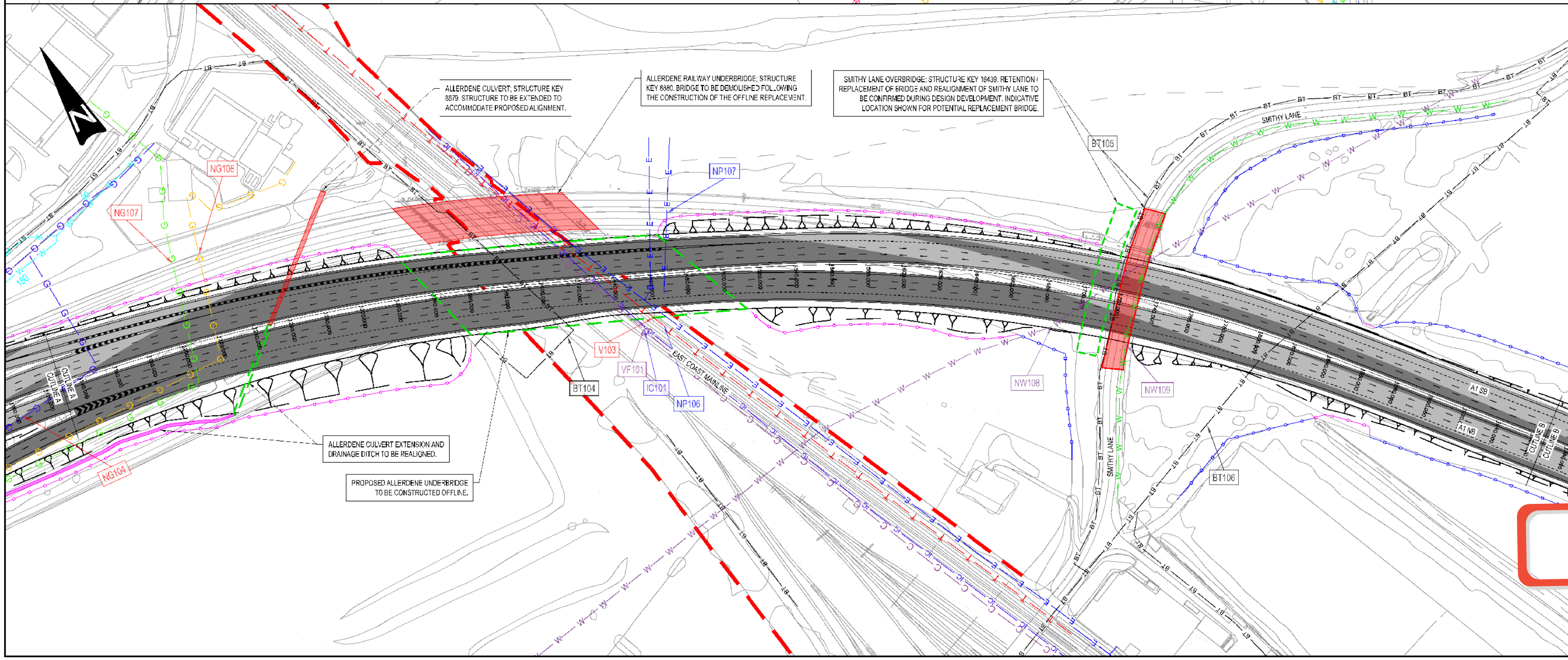
STATUTORY UNDERTAKES INFORMATION

APPENDIX C-1

STATUTORY UNDERTAKERS DRAWINGS

DO NOT SCALE





A1

KEY

(red fill)	EXISTING STRUCTURE
(green dashed)	PROPOSED STRUCTURE
(blue line)	PROPOSED RETAINING WALL
(black fence)	PROPOSED HIGHWAYS FENCE LINE
(blue fence)	EXISTING HIGHWAYS FENCE LINE
(dark grey)	NEW CARRIAGEWAY CONSTRUCTION
(light grey)	EXISTING CARRIAGEWAY TO BE RETAINED
(red dashed)	NETWORK RAIL LAND BOUNDARY
(magenta)	PROPOSED DRAINAGE DITCH
(orange)	PROPOSED FOOTPATH DIVERSION
(green)	EXISTING FOOTPATH
/	PROPOSED SIGNAL
/	EXISTING SIGNAL
BT	BT DUCT
IC	INSTALCOM
W	NORTHUMBRIAN WATER COMBINED
W	NORTHUMBRIAN WATER FOUL
W	NORTHUMBRIAN WATER ABANDONED
W	NORTHUMBRAIN WATER SURFACE
W	NORTHUMBRIAN WATER TREATED
W	NORTHUMBRIAN WATER DISTRIBUTION
W	NON NORTHUMBRIAN WATER PRIVATE
G	NORTHERN GAS LOW PRESSURE
G	NORTHERN GAS MEDIUM PRESSURE
G	NORTHERN GAS INTERMEDIATE PRESSURE
G	NORTHERN GAS REGIONAL HIGH PRESSURE
T	VIRGIN MEDIA CABLE
E	NORTHHERN POWER GRID CABLE
C	VODAFONE CABLE
IC01	UTILITY REFERNCE

NOTES

1. LOCATION OF SERVICE PLANT SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM C2 STATUTORY UNDERTAKERS RETURNS AND IS SHOWN INDICATIVELY. THE STATUTORY UNDERTAKERS ARE TO SATISFY THEMSELVES OF THE LOCATION AND EXTENTS OF SERVICE PLANT.
2. REFER TO SECTION 3.10 OF THE TECHNICAL APPRAISAL REPORT FOR DETAILS OF THE DIVERSION WORKS PROPOSED.
3. ALL DIAMETERS OF WATER MAINS ARE MEASURED IN MILLIMETERS UNLESS OTHERWISE STATED.

Rev.	Date	Description	By	Chk'd	App'd
P01.1	14/12/16	DRAFT	--	--	--

WSP
PARSONS BRINCKERHOFF

Three White Rose Office Park,
Millshaw Park Lane,
Leeds,
LS11 0DL

Tel: +44 (0)113 395 6200

www.wsp-pb.com

Client
Working on behalf of highways england

Project Title
A1 BIRTLEY TO COALHOUSE

Drawing Title
OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY BRIDGE EXISTING STATUTORY UNDERTAKERS APPARATUS

DRAFT

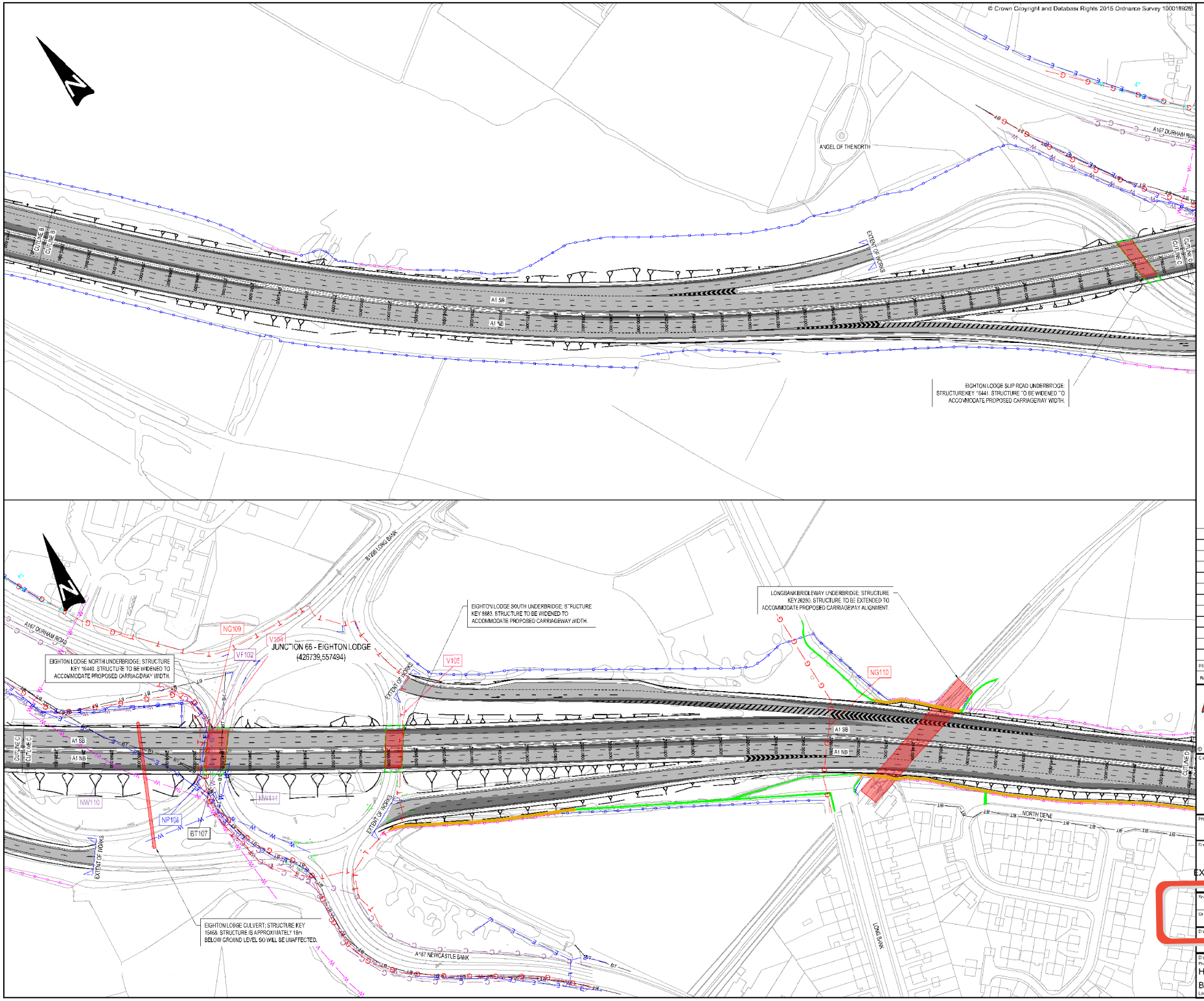
Scale: 1:12[illegible] | Drawn: --- | Checked: --- | Authorised: ---
Original Size: A1 | Date: --- | Date: --- | Date: ---

Drawing Status: Initial Status of WIP | Suitability: S0

Drawing Number
Project: HE551462 | Originator: WSP | Volume: VUT
Location: BCH | Type: DR | Role: D | Number: 00001

Project Ref. No.

Revision: P01.1


© Crown Copyright and Database Rights 2015 Ordnance Survey 100018928
DO NOT SCALE
Millimetres
A1
ANGEL OF THE NORTH
A167 DURHAM ROAD
A1 SB
A1 NB
EXTENT OF WORKS
EIGHTON LODGE SLIP ROAD UNDERBRIDGE: STRUCTURE KEY 16441. STRUCTURE TO BE WIDENED TO ACCOMMODATE PROPOSED CARRIAGEWAY WIDTH.
B1288 LONG BANK
EIGHTON LODGE SOUTH UNDERBRIDGE: STRUCTURE KEY 6683. STRUCTURE TO BE WIDENED TO ACCOMMODATE PROPOSED CARRIAGEWAY WIDTH.
LONGBANK BRIDLEWAY UNDERBRIDGE: STRUCTURE KEY 26280. STRUCTURE TO BE EXTENDED TO ACCOMMODATE PROPOSED CARRIAGEWAY ALIGNMENT.
EIGHTON LODGE NORTH UNDERBRIDGE: STRUCTURE KEY 16440. STRUCTURE TO BE WIDENED TO ACCOMMODATE PROPOSED CARRIAGEWAY WIDTH.
JUNCTION 65 - EIGHTON LODGE
(426739,557494)
NG109
VF102
V1041
V105
NG110
NW110
NW111
NP108
BT107
NORTH DENE
LONG BANK
A167 NEWCASTLE BANK
EIGHTON LODGE CULVERT: STRUCTURE KEY 16468. STRUCTURE IS APPROXIMATELY 18m BELOW GROUND LEVEL SO WILL BE UNAFFECTED.
KEY
EXISTING STRUCTURE
PROPOSED STRUCTURE
PROPOSED RETAINING WALL
PROPOSED HIGHWAYS FENCE LINE
EXISTING HIGHWAYS FENCE LINE
NEW CARRIAGEWAY CONSTRUCTION
EXISTING CARRIAGEWAY TO BE RETAINED
NETWORK RAIL LAND BOUNDARY
PROPOSED DRAINAGE DITCH
PROPOSED FOOTPATH DIVERSION
EXISTING FOOTPATH
PROPOSED SIGNAL
EXISTING SIGNAL
BT DUCT
INSTALCOM
NORTHUMBRIAN WATER COMBINED
NORTHUMBRIAN WATER FOUL
NORTHUMBRIAN WATER ABANDONED
NORTHUMBRIAN WATER SURFACE
NORTHUMBRIAN WATER TREATED
NORTHUMBRIAN WATER DISTRIBUTION
NON NORTHUMBRIAN WATER PRIVATE
NORTHERN GAS LOW PRESSURE
NORTHERN GAS MEDIUM PRESSURE
NORTHERN GAS INTERMEDIATE PRESSURE
NORTHERN GAS REGIONAL HIGH PRESSURE
VIRGIN MEDIA CABLE
NORTHERN POWER GRID CABLE
VODAFONE CABLE
IC01 UTILITY REFERENCE
NOTES
1. LOCATION OF SERVICE PLANT SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM C2 STATUTORY UNDERTAKERS RETURNS AND IS SHOWN INDICATIVELY. THE STATUTORY UNDERTAKERS ARE TO SATISFY THEMSELVES OF THE LOCATION AND EXTENTS OF SERVICE PLANT.
2. REFER TO SECTION 3.16 OF THE TECHNICAL APPRAISAL REPORT FOR DETAILS OF THE DIVERSION WORKS PROPOSED.
3. ALL DIAMETERS OF WATER MAINS ARE MEASURED IN MILLIMETERS UNLESS OTHERWISE STATED.
P01.1 14/12/16 — — — —
Rev. Date Description By Chkd Appd
WSP
PARSONS BRINCKERHOFF
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200
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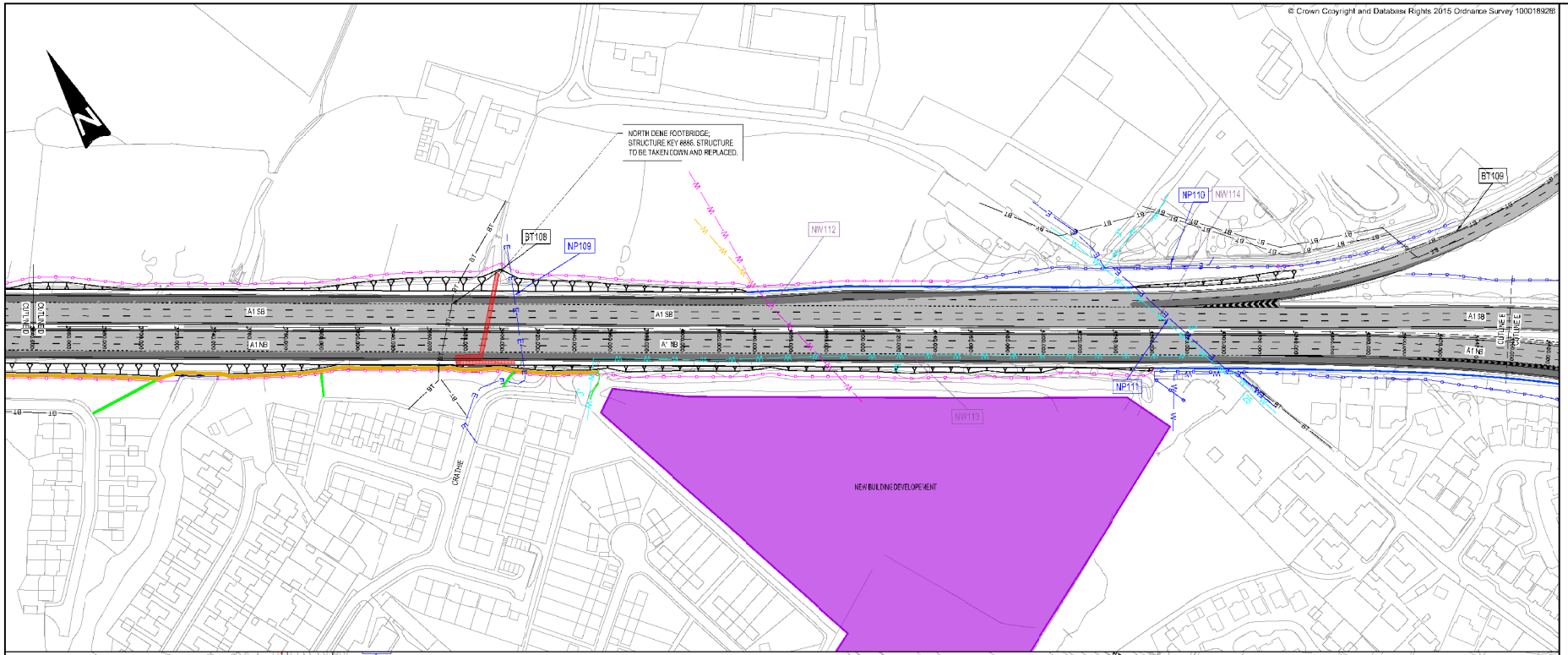
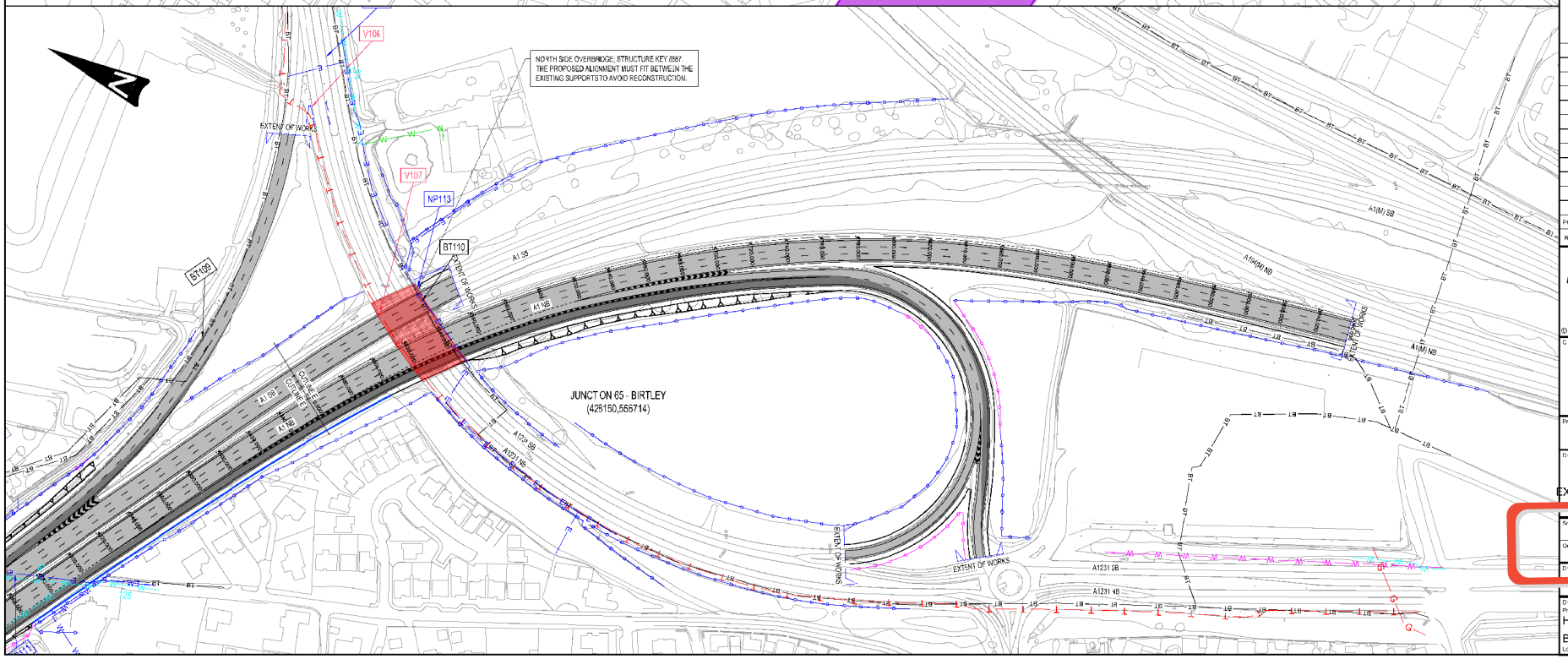
www.wsp-pb.com
Client
Working on behalf of
highways england
Project Title
A1 BIRTLEY TO COALHOUSE
Drawing Title
OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY
EXISTING STATUTORY UNDERTAKERS APPARATUS
DRAFT
Scale 1:1250
Original Size A1
Drawing Status Initial Status of WIP
Authorised —
Date —
Suitability S0
Drawing Number HE551462
Originator WSP
Volume VUT
Locality BCH
Type DR
Role D
Number 00002
Project Ref. No. —
Revision P01.1





KEY

- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED RETAINING WALL
- PROPOSED HIGHWAYS FENCE LINE
- EXISTING HIGHWAYS FENCE LINE
- NEW CARRIAGEWAY CONSTRUCTION
- EXISTING CARRIAGEWAY TO BE RETAINED
- NETWORK RAIL LAND BOUNDARY
- PROPOSED DRAINAGE DITCH
- PROPOSED FOOTPATH DIVERSION
- EXISTING FOOTPATH
- PROPOSED SIGNAL
- EXISTING SIGNAL
- BT — BT DUCT
- IC — INSTALCOM
- W — NORTHUMBRIAN WATER COMBINED
- W — NORTHUMBRIAN WATER FOUL
- W — NORTHUMBRIAN WATER ABANDONED
- W — NORTHUMBRIAN WATER SURFACE
- W — NORTHUMBRIAN WATER TREATED
- W — NORTHUMBRIAN WATER DISTRIBUTION
- W — NON NORTHUMBRIAN WATER PRIVATE
- G — NORTHERN GAS LOW PRESSURE
- G — NORTHERN GAS MEDIUM PRESSURE
- G — NORTHERN GAS INTERMEDIATE PRESSURE
- G — NORTHERN GAS REGIONAL HIGH PRESSURE
- T — VIRGIN MEDIA CABLE
- E — NORTHERN POWER GRID CABLE
- C — VODAFONE CABLE
- IC01 — UTILITY REFERENCE

NOTES

1. LOCATION OF SERVICE PLANT SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM C2 STATUTORY UNDERTAKERS RETURNS AND IS SHOWN INDICATIVELY. THE STATUTORY UNDERTAKERS ARE TO SATISFY THEMSELVES OF THE LOCATION AND EXTENTS OF SERVICE PLANT.
2. REFER TO SECTION 3.10 OF THE TECHNICAL APPRAISAL REPORT FOR DETAILS OF THE DIVERSION WORKS PROPOSED.
3. ALL DIAMETERS OF WATER MAINS ARE MEASURED IN MILLIMETERS UNLESS OTHERWISE STATED.

Rev.	Date	Description	By	Chkd	Appd
P01.1	14/12/16	[illegible]	---	---	---

WSP
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Tel: +44 (0)113 395 6200
www.wsp-pb.com

Client

Working on behalf of highways england

Project Title

A1 BIRTLEY TO COALHOUSE

Drawing Title

OPTION 1A - OFFLINE REPLACEMENT OF ALLERDENE RAILWAY BRIDGE
EXISTING STATUTORY UNDERTAKERS APPARATUS

DRAFT

Scale	Drawn	Checked	Authorised
1:1	---	---	---
Original Size	Date	Date	Date
A1	---	---	---
Drawing Status			Suitability
Initial Status of WIP			S0

Drawing Number	Originator	Volume	Project Ref. No.
Project HE551462	WSP	VUT	
Locality BCH	Type DR	Role D	Number 00003
			Revision P01.1

DO NOT SCALE

Millimetres 0 10 100

A1

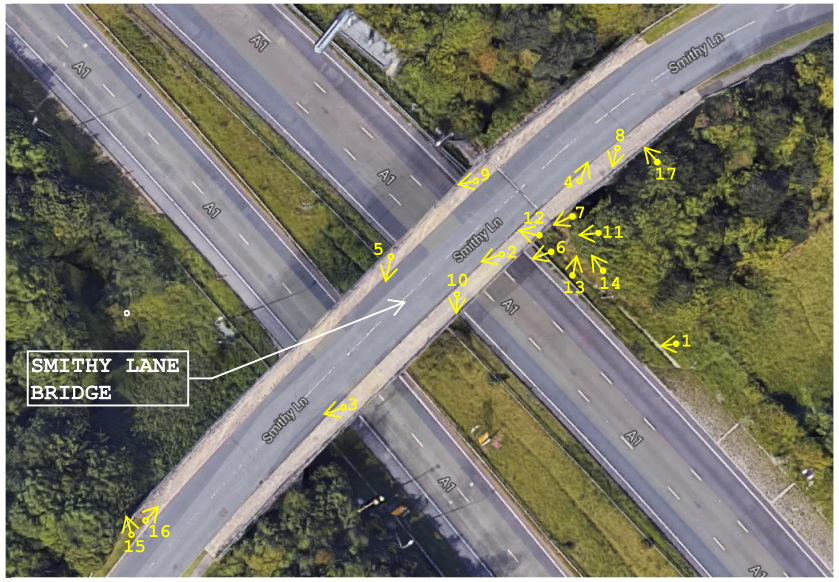
Appendix D

SITE SURVEY (DATED 31/08/17) PHOTOGRAPH PLAN

highways england

APPENDIX D-1

SITE SURVEY (DATED 31/08/17) PHOTOGRAPH PLAN



Plan View

1. East Elevation

2. View of carriageway looking West showing joint

3. View of carriageway looking West

4. View of carriageway looking NE

5. View of carriageway showing map cracks

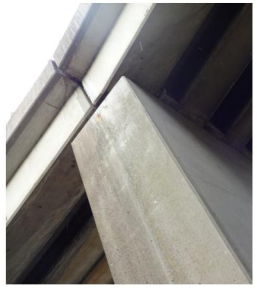
6. General view of soffit showing graffiti on piers and abutment

7. General view showing cracks & graffiti

8. View showing damaged mesh along railings

9. View showing missing mesh panel along railing

10. View showing typical rusting of bolts and railings



11. View of pier connection

12. View of soffit showing unknown object between beams

13. View showing graffiti at NE abutment

14. View of NE pier showing graffiti

15. View showing missing bolts at parapet/barrier connection

16. Overgrown vegetation on footway

17. Typical view of bearing

Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200. Fax: +44 (0)113 395 6201
http://www.wsp.com

Project:
A1 BIRTLEY TO COAL HOUSE IMPROVEMENT SCHEME

Key
- Underside
- Above

Title:
Smithy Lane Bridge Photos taken from rudimentary survey taken on 31/08/2017

Appendix E

EXISTING AND PROPOSED CROSS SECTIONS

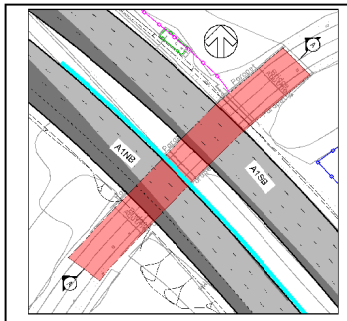
highways england

APPENDIX E-1

EXISTING AND PROPOSED CROSS SECTIONS

DO NOT SCALE

Millimetres 0 10 100



KEY PLAN
NOT TO SCALE

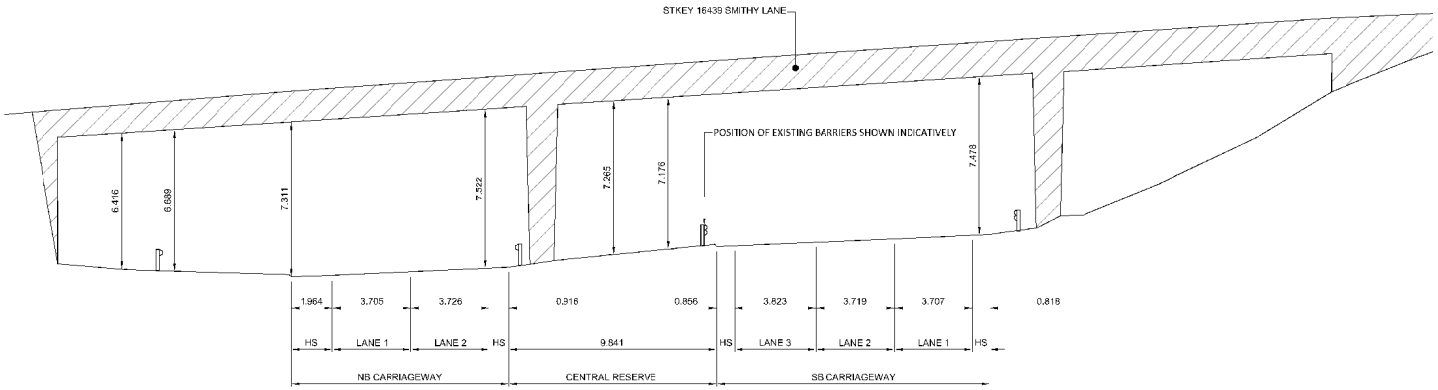
LEGEND
- EXISTING CARRIAGEWAY
- PROPOSED CARRIAGEWAY
- SMITHY LANE BRIDGE

1) ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE

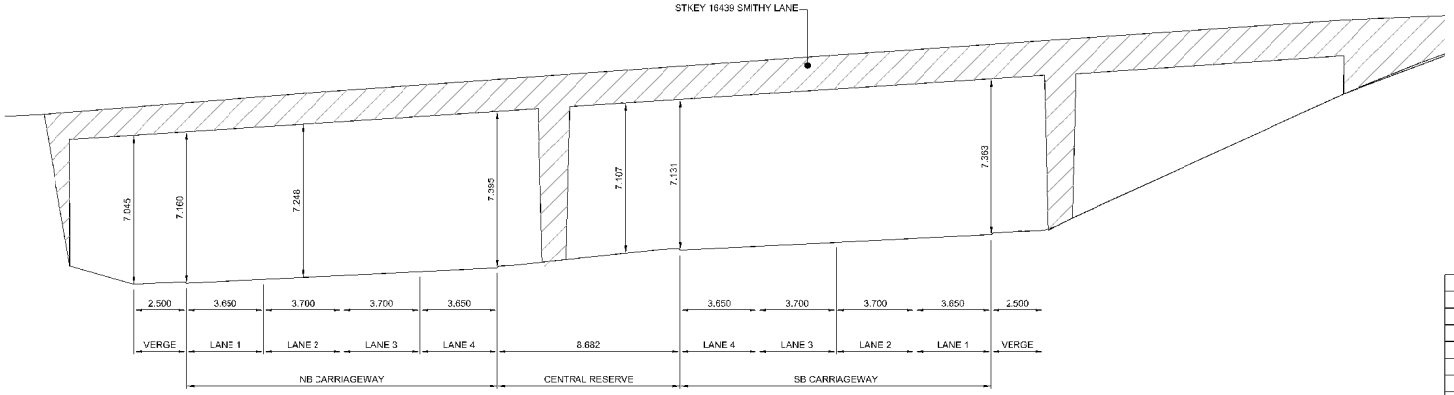
2) DO NOT SCALE IN CASE OF DOUBTS, OMISSIONS OR ERRORS SEEK CLARIFICATION FROM THE DESIGN

3) THIS DRAWING PROVIDES DETAILS OF THE EXISTING SMITHY LANE BRIDGE AND IS BASED ON THE FOLLOWING INFORMATION
- TOPOGRAPHICAL SURVEY
  HE551462-WSP-HGN-BCH-M2-C-00036
  BY LONGDIN AND BROWNING (SURVEYS) Ltd. APRIL 2016

4) PROPOSED HIGHWAY CROSS SECTION IS BASED ON PRELIMINARY DESIGN INFORMATION. FINAL ALIGNMENT YO BE CONFIRMED AT DETAILED DESIGN



EXISTING LONG SECTION A-A
NOT TO SCALE



PROPOSED LONG SECTION A-A
NOT TO SCALE

SOUTH ELEVATION
NOT TO SCALE

NORTH ELEVATION
NOT TO SCALE

Rev.	Date	Description	By	Chkd	Apprd
P01.1	12/10/17		---	---	---

wsp
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL, UK
Tel 44 (0) 113 395 6200. Fax 44 (0) 113 395 6201
wsp.com

Client: Working on behalf of highways england

Project Title: A1 BIRTLEY TO COALHOUSE

Drawing Title: STKEY 16439 SMITHY LANE OVERBRIDGE EXISTING AND PROPOSED HIGHWAY ALIGNMENT SECTIONS

Scale	Drawn	Checked	Approved	Authorised
NOT TO SCALE	CCu	HMI	HMI	---
Original Size	Date	Date	Date	Date
	---	---	---	---

Drawing Status: INITIAL STATUS OR WIP
Suitability: S0

Drawing Number: Project	Originator	Volume
HE551462	WSP	SBR
BCH -BRO3	DR	S 00001
Location	Type	Role Number

Project Ref. No.
Revision: P01.1

Appendix F

WSP/HE KEY CORRESPONDENCE

APPENDIX F-1

WSP/HE KEY CORRESPONDENCE

Brunetti Barchetta, Giovanna

From:	Sunderland, Martin <Martin.Sunderland@highwaysengland.co.uk>
Sent:	20 November 2017 14:35
To:	Mistry, Hitan
Cc:	Al-Shalechy, Shehed; Mulla, Imtiaz; Gladstone, Peter; Akram, Irfan; Mehta, Rakesh; Wilkes, Nicola; Dennis, Stephen
Subject:	RE: A1B2CH - Smithy Lane SOR 27-10-17 First Issue for HE SES Comments/Approval 27-10-17

Hitan

Good afternoon to you, and thank you for the enclosed Structures Options Report for Smithy Lane Overbridge.

I confirm acceptance of this Structures Options Report for Smithy Lane Overbridge, with the following comments:

Outstanding Maintenance Actions
Ideally we would like to incorporate some of the maintenance actions highlighted in the table under item 2.4.6 your report.
As stated in the report we would like to take full advantage of the traffic management that will be required to facilitate the works on the SRN, and in particular items such as distorted bearing replacement, and any concrete repairs to the sub structure.

Assessment for STGO/SO vehicles
I have liaised with the Area 14 Structures Advisor, there is no requirement to assess this structure for STGO/SO vehicles at this time, if there was a requirement by the appointed contractor to use this bridge for plant movement during the scheme then such an assessment could be carried out by a consultant appointed by the contractor at that time.

Regards

Martin Sunderland
Safety, Engineering & Standards
Senior Structures Advisor
Highways England | Lateral | 8 City Walk | Leeds | LS11 9AT
Tel: 0300 470 6165 | [redacted]
Web: http://www.highways.gov.uk

Learn more about Structures Delivery by visiting our Portal Homepage
A web version of this Homepage is currently unavailable.

highways england

From: Mistry, Hitan [mailto:Hitan.Mistry@wsp.com]
Sent: 27 October 2017 14:34
To: Sunderland, Martin
Cc: Al-Shalechy, Shehed; Mulla, Imtiaz; Gladstone, Peter; Akram, Irfan; Mehta, Rakesh; Wilkes, Nicola; Dennis,

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This document is also available on our website at www.gov.uk /highways

If you have any enquiries about this document A1BirtleytoCoalhouse@highwaysengland.co.uk or call 0300 470 4580*.

*Calls to 03 numbers cost no more than a national rate call to an 01 or 02 number and must count towards any inclusive minutes in the same way as 01 and 02 calls.
These rules apply to calls from any type of line including mobile, BT, other fixed line or payphone. Calls may be recorded or monitored.

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Highways England Company Limited registered in England and Wales number 09346363