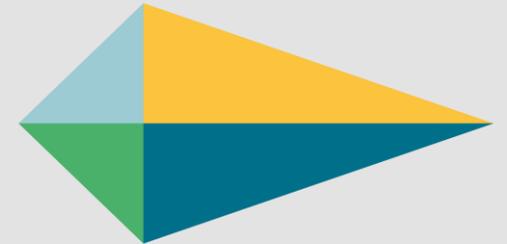


Item: 9

DC/21/5574/LBC

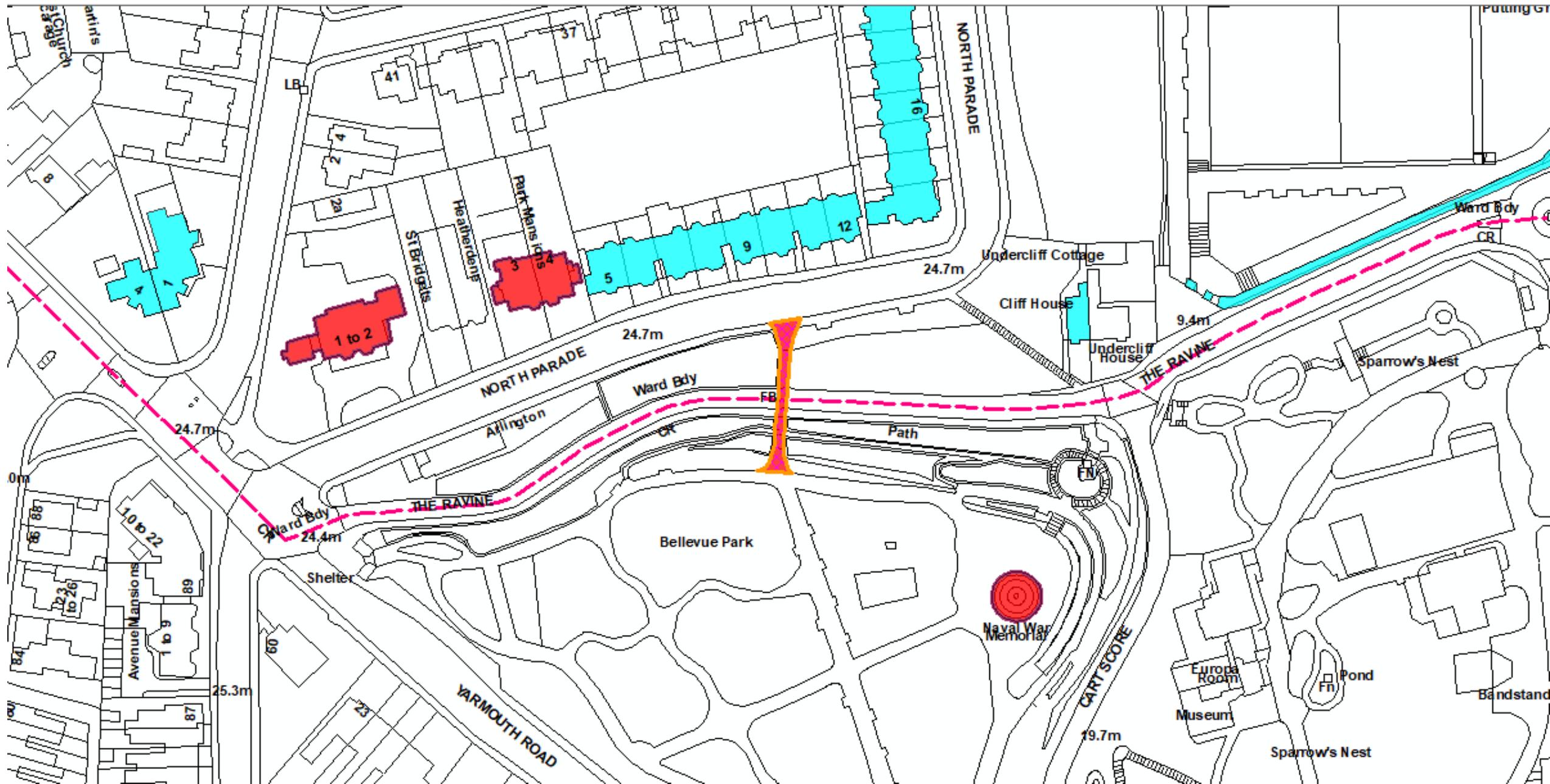
Repair & Refurbishment of Existing Pedestrian
Bridge

Jubilee Bridge, The Ravine, Lowestoft, Suffolk

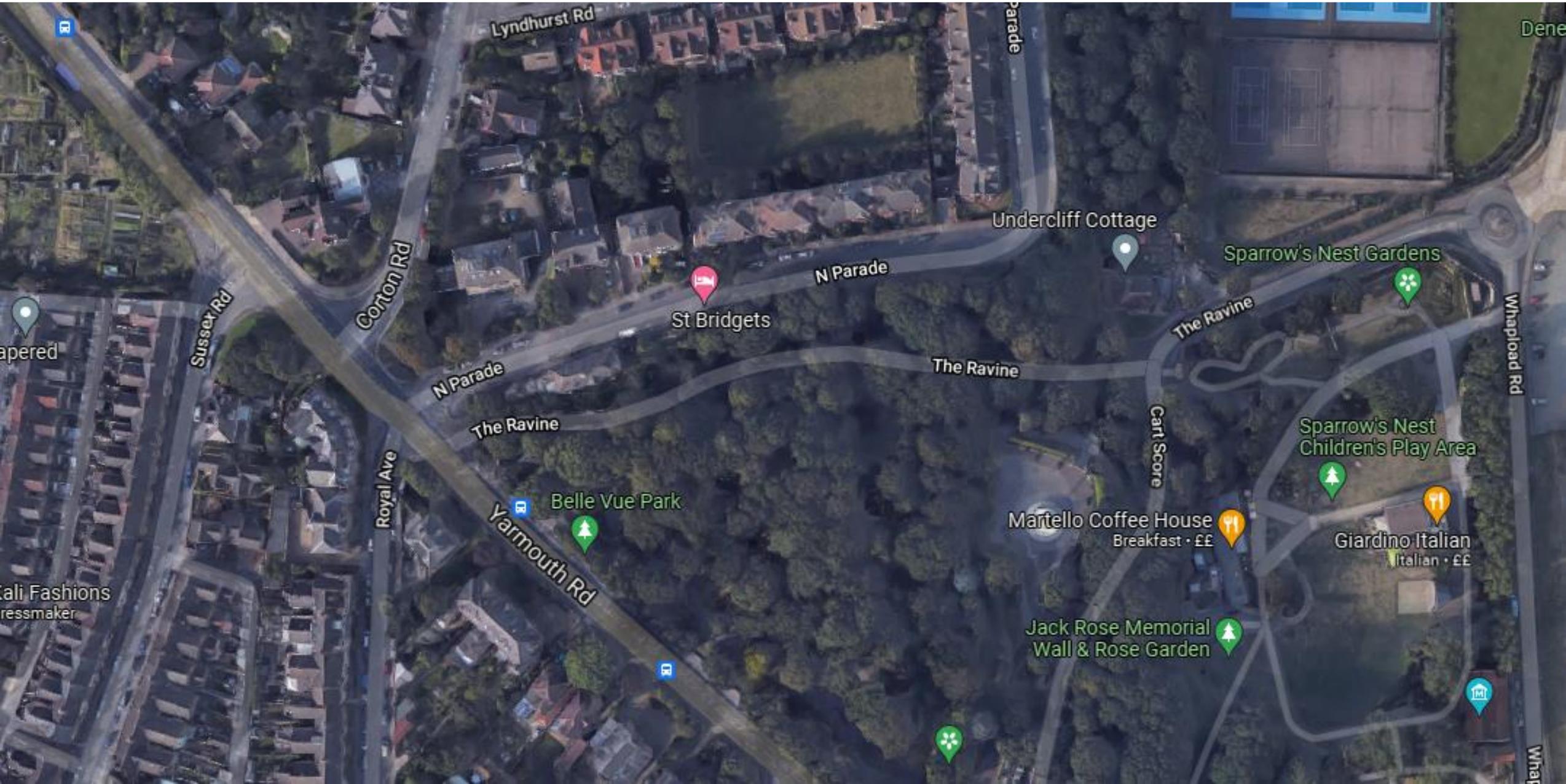


EASTSUFFOLK
COUNCIL

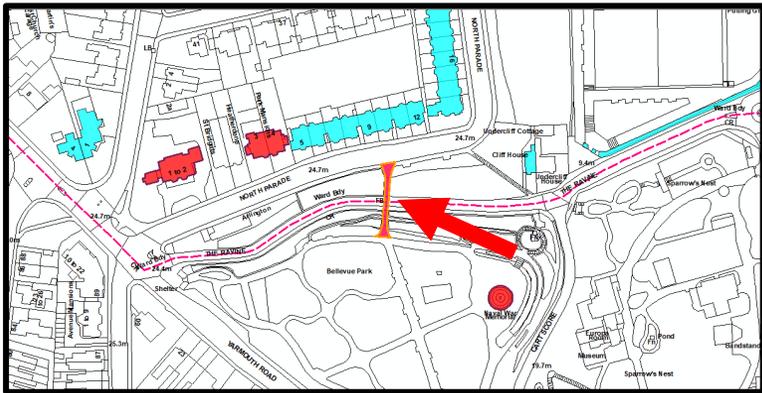
Site Location Plan



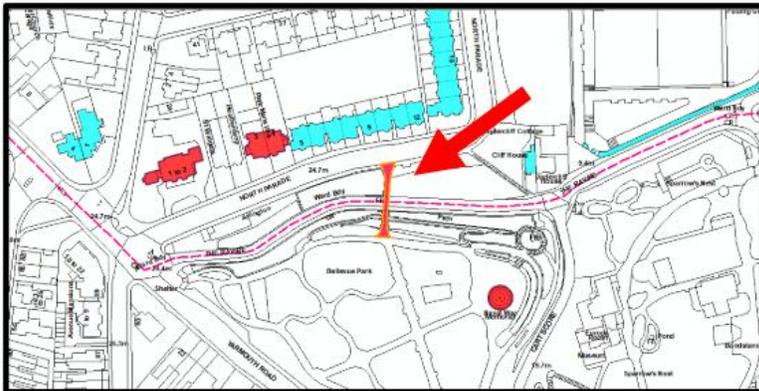
Aerial Photograph



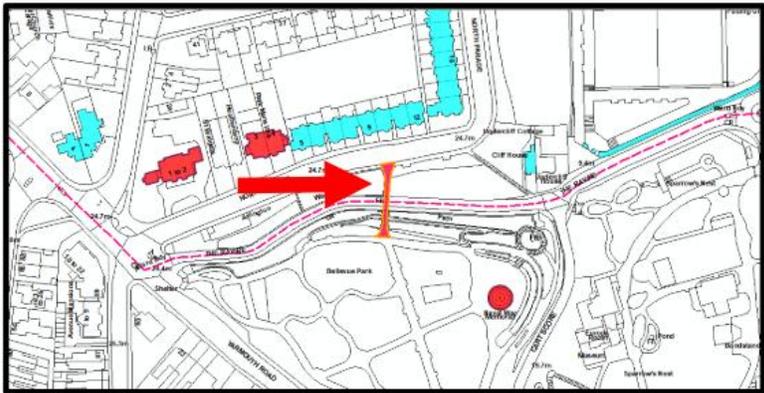
Photographs – c1910



Photographs



Photographs



Photographs – Current Condition



- WROUGHT IRON ANGLE SECTION BRIDGE BEAM BOTTOM FLANGE LATERAL RESTRAINT MEMBERS.
- BRIDGE PLAN BRACING MEMBERS COMPRISING MILD STEEL RODS WITH THREADED ENDS FOR TENSIONING.
- WROUGHT IRON FLAT BAR CROSSED DIAGONAL BRACING (VERTICAL ORIENTATION) TO ENDS OF BRIDGE.
- WROUGHT IRON FLAT BAR CROSSED DIAGONAL BRACING BETWEEN BRIDGE BEAM BEARING POINTS.
- BRICKWORK BRIDGE ABUTMENT

GENERAL VIEW OF SOUTHERN BRIDGE ABUTMENT SHOWING ARRANGEMENT OF WROUGHT IRON VERTICAL AND PLAN BRACING MEMBERS



- WROUGHT IRON ANGLE SECTION PRINCIPAL BRIDGE BEAM BOTTOM FLANGE LATERAL RESTRAINT MEMBERS.
- BRIDGE PLAN BRACING MEMBERS COMPRISING MILD STEEL RODS WITH THREADED ENDS FOR TENSIONING.
- FABRICATED MILD STEEL PLAN BRACING CONNECTORS ALLOW TENSIONING OF THE BRACING ROD MEMBERS.
- CORRUGATED UNDERSIDE TO EXISTING CONCRETE BRIDGE DECK

GENERAL VIEW OF UNDERSIDE OF BRIDGE DECK SHOWING PLAN BRACING MEMBER ARRANGEMENT

Photographs – Current Condition



STRUCTURAL TEE-SECTION CROSS-BEAMS PROVIDING HORIZONTAL TIE BETWEEN WROUGHT IRON BUILT-UP PRINCIPAL BRIDGE BEAMS.

WROUGHT IRON ANGLE SECTION PRINCIPAL BRIDGE BEAM BOTTOM FLANGE LATERAL RESTRAINT MEMBERS.

WROUGHT IRON BUILT-UP AND RIVETED PRINCIPAL BRIDGE BEAMS.

BRIDGE PLAN BRACING MEMBERS COMPRISING MILD STEEL RODS WITH THREADED ENDS FOR TENSIONING.

GENERAL VIEW OF UNDERSIDE OF BRIDGE DECK SHOWING PLAN BRACING MEMBER ARRANGEMENT AND BOTTOM FLANGE RESTRAINTS TO PRINCIPAL BRIDGE BEAMS

Photographs – Current Condition



SEVERELY CORRODED AND DELAMINATED WROUGHT IRON ANGLE SECTION CROSS-MEMBERS. TO BE REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

SEVERELY CORRODED AND DELAMINATED WROUGHT IRON FLAT BAR CROSSED DIAGONAL BRACING MEMBERS. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.



SEVERELY CORRODED AND DELAMINATED WROUGHT IRON FLAT BAR CROSSED DIAGONAL BRACING MEMBERS. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

SEVERELY CORRODED PLAN BRACING ROD MEMBERS SHOWING SIGNIFICANT NECKING TO ENDS OF MEMBERS. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

SEVERELY CORRODED AND DELAMINATION WROUGHT IRON PLAN BRACING TO PRINCIPAL BRIDGE BEAM CONNECTION PLATE. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.



SEVERELY CORRODED AND DELAMINATED WROUGHT IRON FLAT BAR CROSSED DIAGONAL BRACING MEMBERS. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

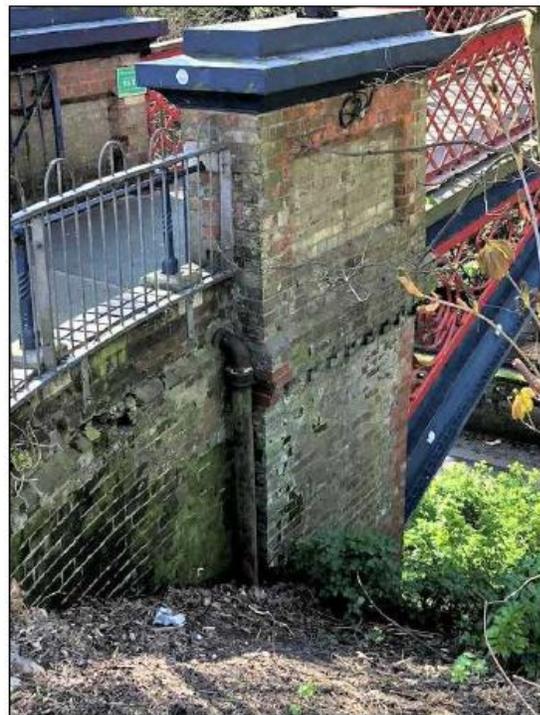
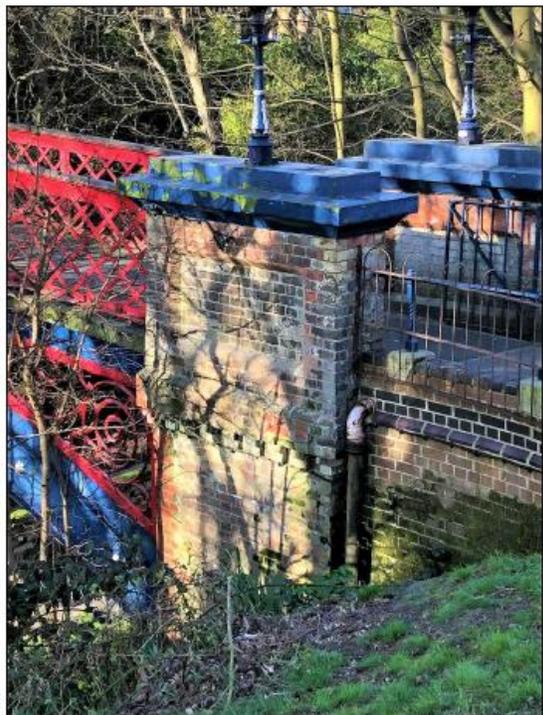
SEVERELY CORRODED PLAN BRACING ROD MEMBERS SHOWING SIGNIFICANT NECKING TO ENDS OF MEMBERS. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

SEVERELY CORRODED AND DELAMINATED WROUGHT IRON PLAN BRACING TO PRINCIPAL BRIDGE BEAM CONNECTION PLATE. TO BE REMOVED AND REPLACED WITH NEW FABRICATED S275J0 MILD STEEL MEMBERS TO MATCH SIZE AND GEOMETRY OF ORIGINAL MEMBERS WITH NEW END FIXINGS.

PHOTOGRAPHS SHOWING SEVERE CORROSION AND DELAMINATION TO VERTICAL AND PLAN BRACING MEMBERS CLOSE TO SOUTHERN BRIDGE ABUTMENT

(SIMILAR LEVELS AND LOCATIONS OF CORROSION PRESENT ADJACENT NORTHERN ABUTMENT)

Photographs – Current Condition



DAMAGED AND DEFECTIVE SURFACE WATER DRAINAGE
RAINWATER DOWNPIPES AND CONNECTIONS WITH GULLY POTS ON
NORTHERN BRIDGE ABUTMENT

TO BE REPLACED WITH NEW 100mm Ø CAST IRON RAINWATER DOWNPIPES WITH NEW CONNECTIONS TO NEWLY INSTALLED uPVC GULLY POTS



COMMEMORATIVE CARVED STONE PLACARDS ON SOUTHERN
BRIDGE ABUTMENT PIERS

TO BE CLEANED AND RE-PAINTED WITH CARVED LETTERING RE-PAINTED BLUE AS EXISTING (BELIEVED TO BE SAND-STONE)

Photographs – Current Condition



TYPICAL VIEW OF EXISTING NON-ORIGINAL FABRICATED MILD STEEL HAND RAIL INFILL PANELS & BALUSTERS

EXISTING NON-ORIGINAL FABRICATED MILD STEEL LATTICE TYPE HAND RAIL INFILL PANELS (10 No. TOTAL, 5 No. PER SIDE) WITH BOLTED CONNECTIONS WITH SUPPORTING MASONRY BRIDGE ABUTMENTS AND FABRICATED MILD STEEL BALUSTERS.
REFER TO DRAWING No. 20223_EX03 FOR DETAILS.

EXISTING NON-ORIGINAL FABRICATED MILD STEEL BALUSTERS SUPPORTING HAND RAIL INFILL PANELS.
REFER TO DRAWING No. 20223_EX03 FOR DETAILS.

BOLTED CONNECTIONS (AND SPACER TUBES) SECURING BOTTOM CHORD ANGLE SECTION OF HAND RAIL INFILL PANELS TO CONCRETE BRIDGE DECK TO PROVIDING INTERMEDIATE LATERAL RESTRAINT AND VERTICAL SUPPORT.

WHEN REFURBISHED HAND RAIL PANELS ARE REPLACED PROVIDE NEW GALVANISED M12 Gr 8.8 RESIN ANCHORED FIXINGS (STUD, WASHER, NUTS & SPACERS) SECURED INTO CONCRETE USING HILT HIT-HY 200-A RESIN (OR SIMILAR EQUIVALENT) WITH MINIMUM 100mm EMBEDMENT INTO CONCRETE.



TYPICAL VIEWS SHOWING LEVELS OF SEVERE CORROSION, SECTION LOSS AND PERFORATION TO FABRICATED MILD STEEL HAND RAIL BALUSTER SECTIONS.

ALL 8 No. HAND RAIL BALUSTERS ARE TO BE REPLACED WITH NEW ITEMS FABRICATED IN GRADE S275J0 STEEL AND GALVANISED PRIOR TO PAINTING. REFER TO DETAILING AND SPECIFICATION OF NEW HAND RAIL BALUSTERS ABOVE.

TYPICAL VIEWS SHOWING SEVERE LEVELS OF CORROSION AND SECTION LOSS PRESENT IN EXISTING FABRICATED MILD STEEL HAND RAIL BALUSTERS

Proposed Works



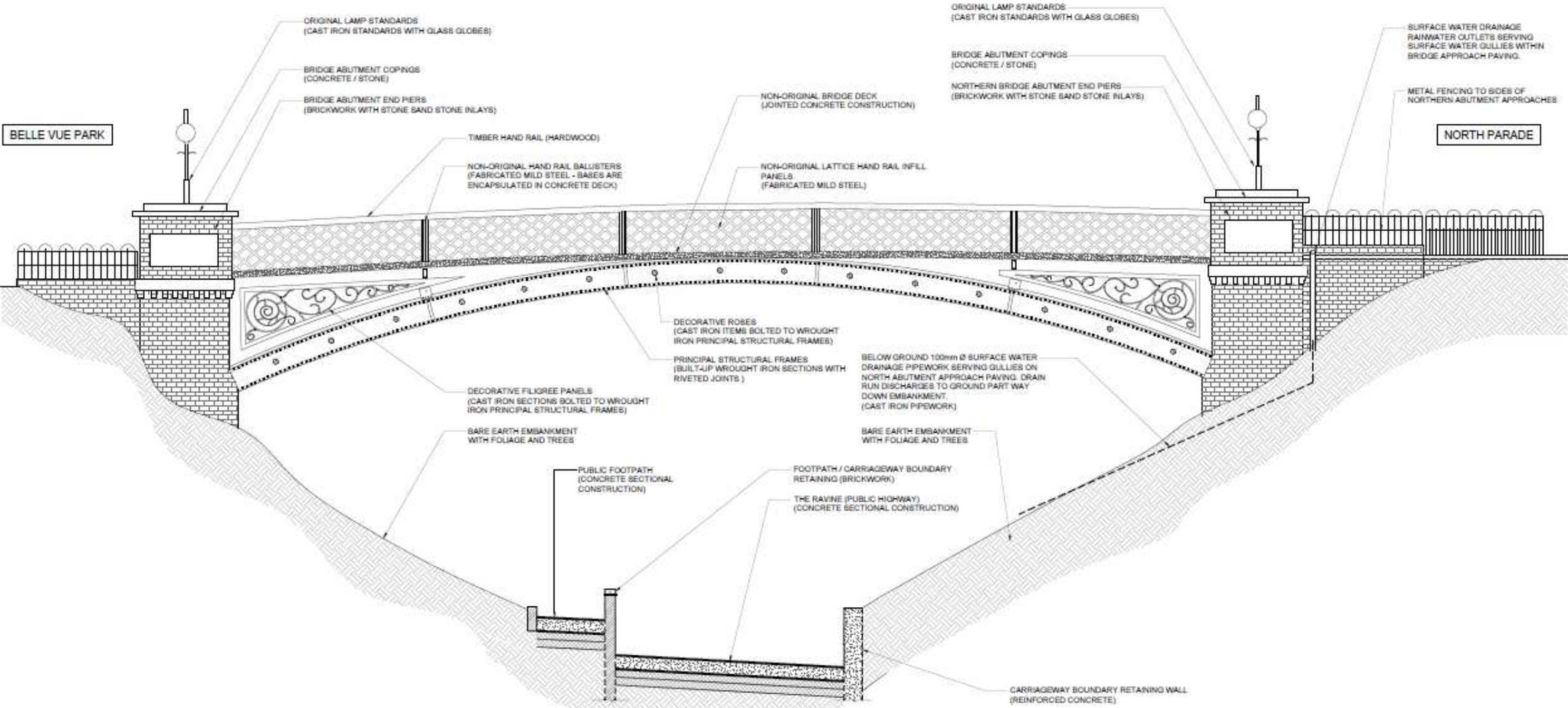
ORIGINAL LANTERNS TO BE RESTORED AND RECOMMISSIONED.
4 No. IN TOTAL, 1 No. PER ABUTMENT PIER.

LOCATION OF ORIGINAL WROUGHT IRON ACCESS GATES TO BE REMOVED, BLAST CLEANED, REPAIRED AND REFITTED.

EXISTING DAMAGED SURFACE DRAINAGE GULLYS TO BE REMOVED AND REPLACED WITH NEW uPVC TRAPPED YARD GULLY POTS WITH GALVANISED STEEL GRATINGS CONNECTED TO NEW RAIN WATER DOWNPIPES.
CONCRETE PAVING TO MADE GOOD TO MATCH EXISTING ONCE GULLIES HAVE BEEN INSTALLED.

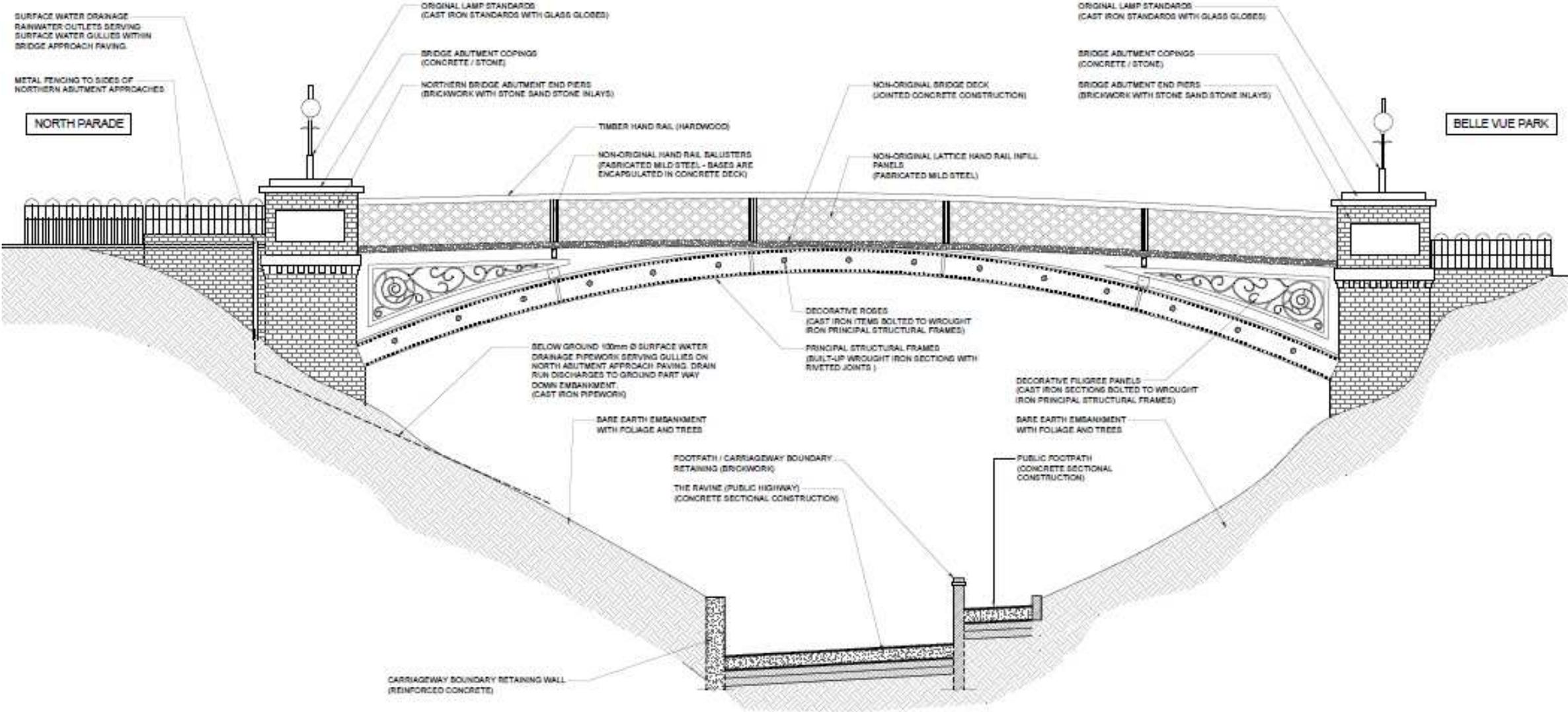
NORTHERN BRIDGE APPROACH FROM NORTH PARADE
SHOWING LOCATION OF ORIGINAL ACCESS GATES

Existing Elevations



EAST ELEVATION
SCALE 1:50

Existing Elevations



WEST ELEVATION
SCALE 1:50

Proposed Elevations

22000 APPROX.

CONSTRUCTION JOINT:

PROVIDE DOWELLED FREE-MOVEMENT JOINT AT JUNCTION BETWEEN EXISTING PAVEMENT CONSTRUCTION SUPPORTED BY BRICKWORK BRIDGE ABUTMENTS AND NEWLY CAST BRIDGE DECK CONSTRUCTION.
 PROVIDE 4 No. EQUALLY SPACED SLEEVED PROPRIETARY STAINLESS STEEL DOWEL BARS AT JOINT (ANCON ESD10 400 + ESD SLEEVE OR SIMILAR EQUIVALENT) LOCATED AT MID-DEPTH OF NEW DECK SLAB. SLEEVED END TO BE CAST INTO EDGE OF NEW CONCRETE BRIDGE DECK. OTHER END OF DOWEL BARS TO BE POST DRILLED AND RESIN ANCHORED INTO CUT EDGE OF EXISTING PAVEMENT CONSTRUCTION USING A SUITABLE RESIN TO SUIT THE SUBSTRATE MATERIAL (ALLOW FOR USING HILTI HIT-HY 200-A RESIN FOR CONCRETE SUBSTRATE).

CONCRETE DECK FREE-MOVEMENT JOINTS:

PROVIDE FORMED AND DOWELLED FREE-MOVEMENT JOINTS IN NEWLY CAST REINFORCED CONCRETE BRIDGE DECK SLAB AT APPROX. 4.3m CENTRES.
 PROVIDE 4 No. EQUALLY SPACED SLEEVED STAINLESS STEEL PROPRIETARY DOWEL BARS AT EACH JOINT POSITION (ANCON ESD10 400 + ESD SLEEVE OR SIMILAR EQUIVALENT) LOCATED AT MID-DEPTH OF NEW DECK SLAB. CARE TO BE TAKEN TO ENSURE SLEEVED DOWEL BARS ARE HELD IN ALIGNMENT AND POSITION DURING CASTING OF THE CONCRETE DECK SECTIONS TO ENSURE THEY'RE FREE-MOVING ONCE INSTALLED.

EXISTING BRIDGE DECK REMOVAL:

SHADING DENOTES EXTENT OF EXISTING CONCRETE BRIDGE DECK TO BE REMOVED TO ALLOW FULL INSPECTION AND REPAIR OF SUPPORTING IRONWORK BELOW.
 BRIDGE DECK CONCRETE VOLUME = 7.3m³ (APPROX.)

CONSTRUCTION JOINT:

PROVIDE DOWELLED FREE-MOVEMENT JOINT AT JUNCTION BETWEEN EXISTING PAVEMENT CONSTRUCTION SUPPORTED BY BRICKWORK BRIDGE ABUTMENTS AND NEWLY CAST BRIDGE DECK CONSTRUCTION.
 PROVIDE 4 No. EQUALLY SPACED SLEEVED PROPRIETARY STAINLESS STEEL DOWEL BARS AT JOINT (ANCON ESD10 400 + ESD SLEEVE OR SIMILAR EQUIVALENT) LOCATED AT MID-DEPTH OF NEW DECK SLAB. SLEEVED END TO BE CAST INTO EDGE OF NEW CONCRETE BRIDGE DECK. OTHER END OF DOWEL BARS TO BE POST DRILLED AND RESIN ANCHORED INTO CUT EDGE OF EXISTING PAVEMENT CONSTRUCTION USING A SUITABLE RESIN TO SUIT THE SUBSTRATE MATERIAL (ALLOW FOR USING HILTI HIT-HY 200-A RESIN FOR CONCRETE SUBSTRATE).



HEALTH & SAFETY NOTE:

Provision of Temporary Crash Deck:

It is the Principal Contractors responsibility to provide a designed structurally robust crash deck and containment / encapsulation provisions to ensure no debris, aggregate or other concrete fragments are able to fall onto the road, footpath or embankments below during the deck removal works.

NORTH PARADE

BELLE VUE PARK

NEW CONCRETE BRIDGE DECK SPECIFICATION:

ERECT TEMPORARY FORMWORK AND SHUTTERING AND CAST 125mm THICK REINFORCED CONCRETE BRIDGE DECK SLAB SPANNING BETWEEN SUPPORTING AND FULLY REPAIRED WROUGHT IRON PRINCIPAL STRUCTURAL FRAMES. SLAB TO BE REINFORCED WITH 1 LAYER OF B785 FABRIC IN BASE (BARS AT 100mm CENTRES SPANNING PERPENDICULAR TO BRIDGE SPAN) WITH 50mm COVER TO UNDERSIDE AND EDGES, 40mm TO TOP.

SLAB TO HAVE FREE-MOVEMENT JOINTS AT APPROXIMATELY 4.3m CENTRES TO ALIGN WITH HAND RAIL BALUSTER POSITIONS.

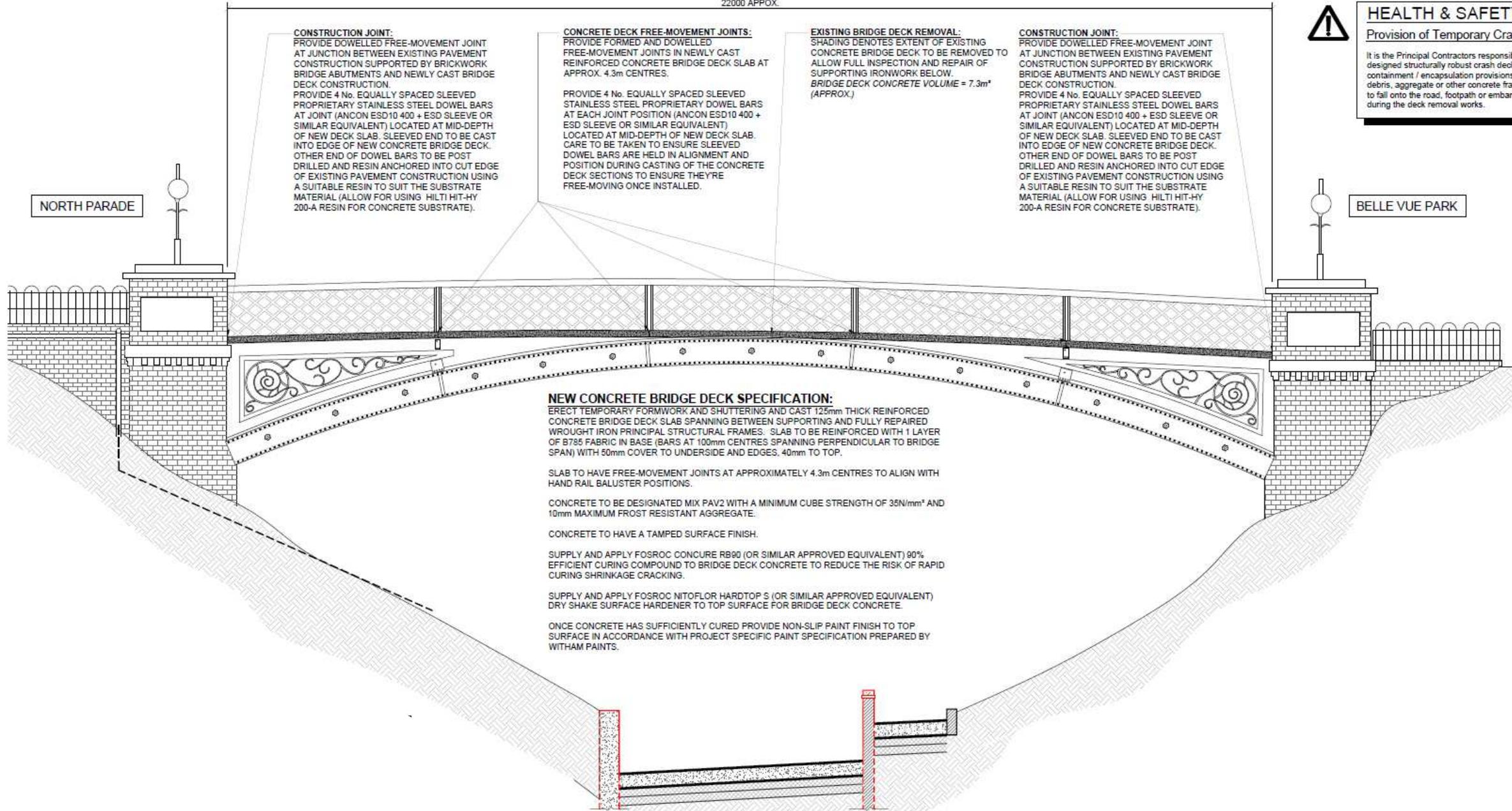
CONCRETE TO BE DESIGNATED MIX PAV2 WITH A MINIMUM CUBE STRENGTH OF 35N/mm² AND 10mm MAXIMUM FROST RESISTANT AGGREGATE.

CONCRETE TO HAVE A TAMPED SURFACE FINISH.

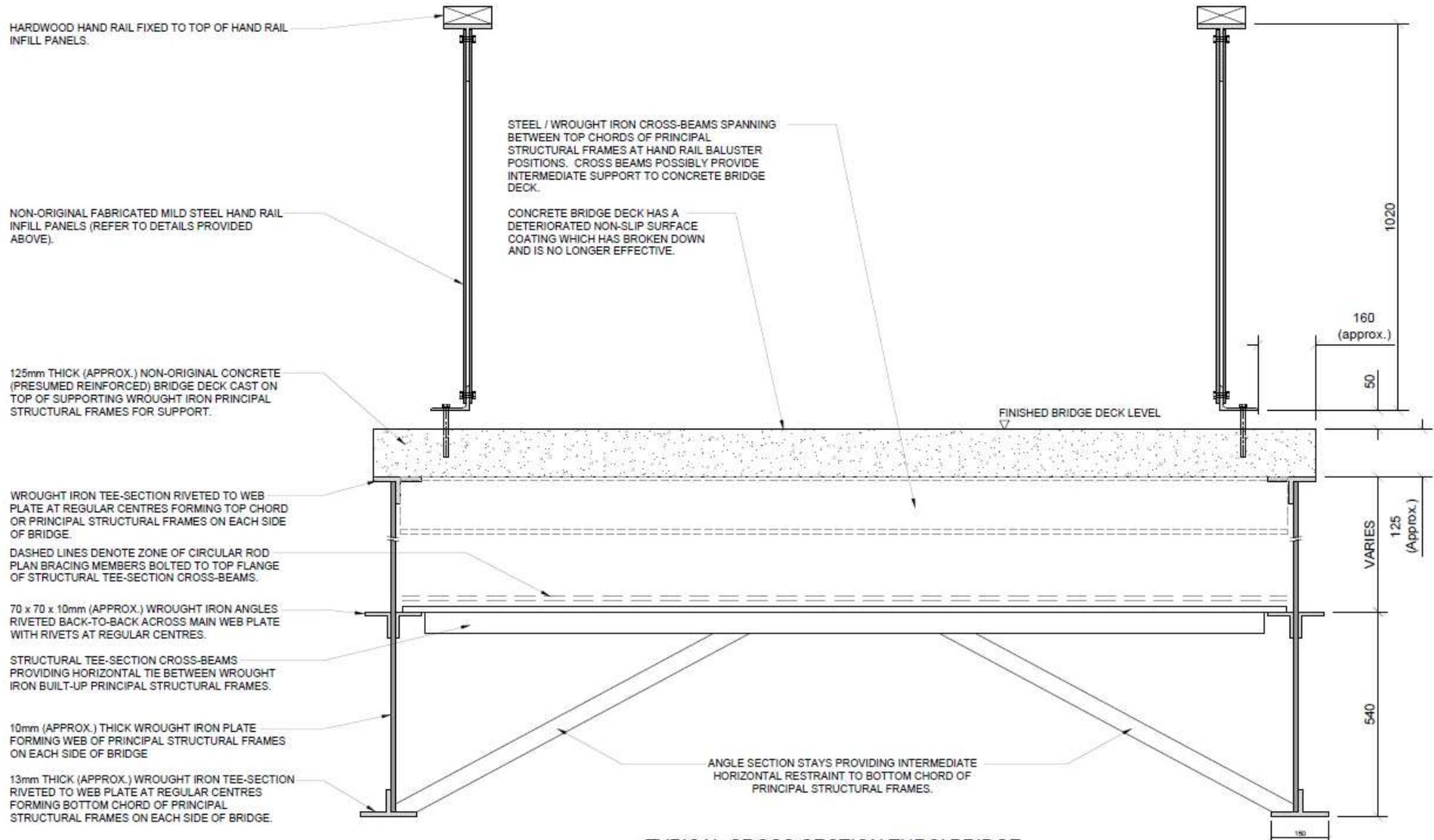
SUPPLY AND APPLY FOSROC CONCURE RB90 (OR SIMILAR APPROVED EQUIVALENT) 90% EFFICIENT CURING COMPOUND TO BRIDGE DECK CONCRETE TO REDUCE THE RISK OF RAPID CURING SHRINKAGE CRACKING.

SUPPLY AND APPLY FOSROC NITOFLOL HARDTOP S (OR SIMILAR APPROVED EQUIVALENT) DRY SHAKE SURFACE HARDENER TO TOP SURFACE FOR BRIDGE DECK CONCRETE.

ONCE CONCRETE HAS SUFFICIENTLY CURED PROVIDE NON-SLIP PAINT FINISH TO TOP SURFACE IN ACCORDANCE WITH PROJECT SPECIFIC PAINT SPECIFICATION PREPARED BY WITHAM PAINTS.



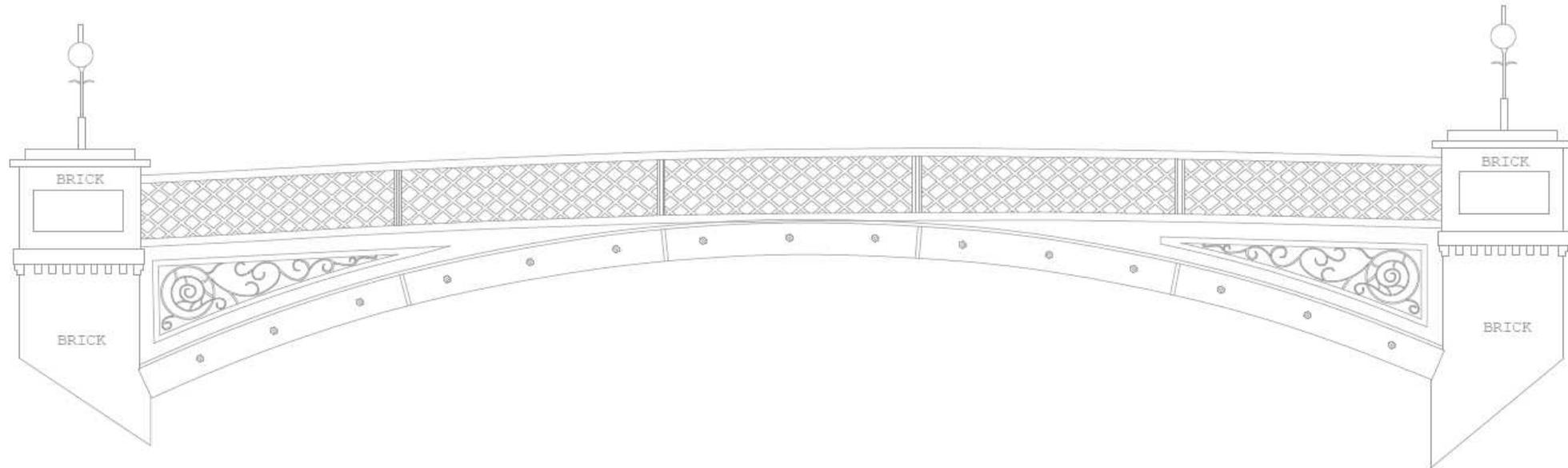
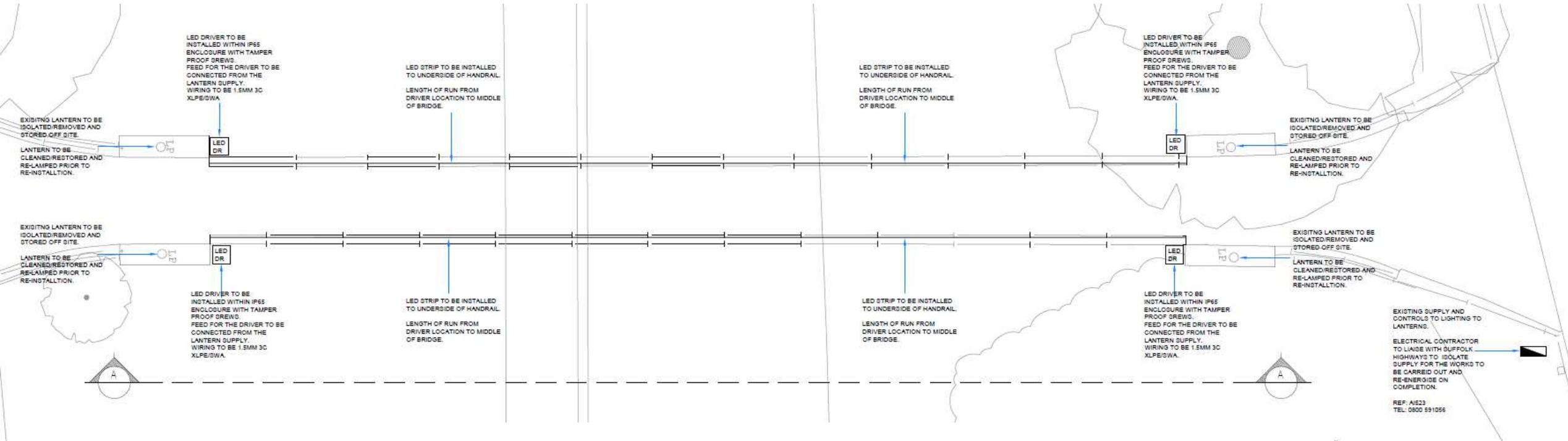
Proposed Cross Section



TYPICAL CROSS-SECTION THRO' BRIDGE
DECK & HAND RAILS

SCALE 1:10

Proposed Lighting



Material Planning Considerations and Key Issues

- Impact on Listed structure
 - Registered Park and Garden
 - North Lowestoft Conservation Area
- 

Recommendation

Recommended for approval subject the conditions as outlined within the report – summarised below, and subject to the submission of an amended drawing to detail the exact location and size of the proposed enclosure:

- **Standard Time limit**
- **Approved Plans**
- **Colour details**
- **Details of proposed rail replacements**

(As per Page 186 - 187 of the report)



Slides from Objector



Slides from Town/Parish Council



Slides from Agent/Applicant



Slides from Ward Member



