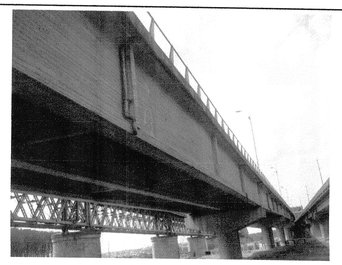
INTERVENTION WORK: C2- PRESTRESSED CONCRETE BEAMS REPAIR

The item covers the following activities:
- Sounding of concrete to locate areas of delamination;
- preparation and cleaning of surface by means of sand blasting and water washing;
- loading and transport of the material resulting from the demolition to an approved dump area;
- procurement, transport,storage and handling of all related materials and equipment;
- epoxy and polyurethane compounds application;
- verifications after execution in accordance to the design;
- sampling and laboratory testing.

DETERIORATION:

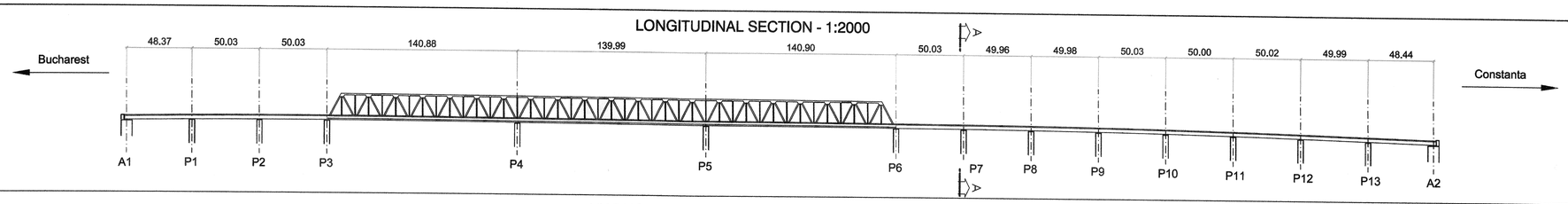


Efflorescence and uneven surface on prestressed concrete beams

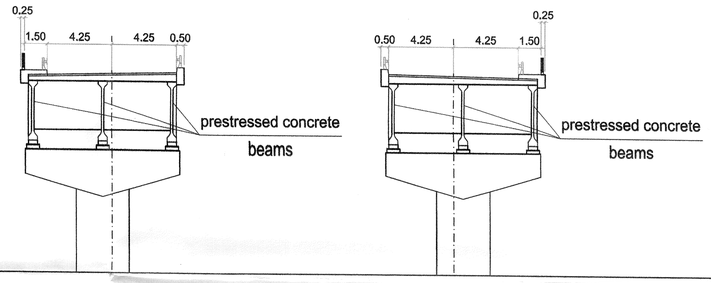
IVANESCU T. TOMA
ROMANIA
MEMBRU OCPI
NR. 445
INGINER
VERIFICATOR PROIECTE
11-11-2008

GENERAL VIEWS

LONGITUDINAL SECTION - 1:2000



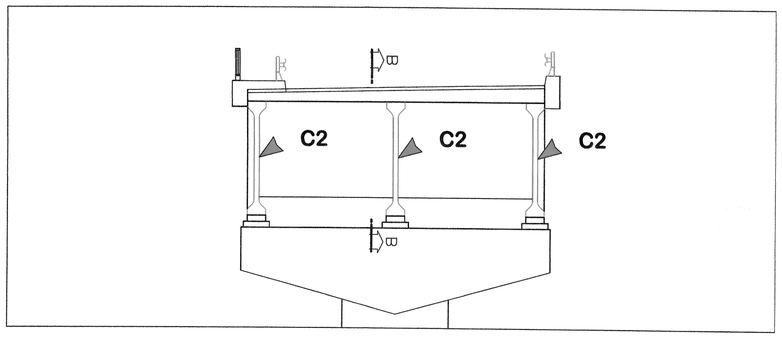
VIADUCT TRANSVERSAL SECTION (A-A) - 1:200



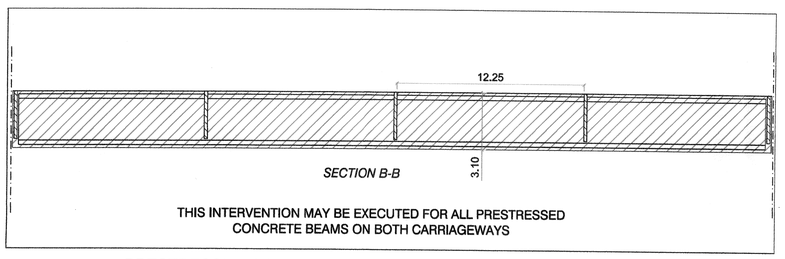
WORKING CODE LIST

CODE	MAINTENANCE AND REHABILITATION WORKS	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
	ROAD FINISHES AND EQUIPMENT										
A1	Painting of pedestrian parapet										
A2	Replacement of pedestrian parapet										
A3	Guard rail replacement										
A4	Electrical equipment replacement										
A5	Walkway slab substitution										
	PAVEMENTS										
B1	Roadway pavement and waterproofing replacement										
B2	Roadway superficial drainage rehabilitation										
B3	Walkway pavement replacement										
B4	Expansion joints replacement										
B5	Bearings replacement										
	CONCRETE REPAIR										
C1	Deck slab repair										
C2	Prestressed concrete beams repair								■		
C3	Pier caps concrete repair										
C4	Piers concrete repair										
C5	Tower leg concrete repair										
C6	Structural strengthening										
C7	Superstructure replacement										
	STEEL WORKS										
D1	Painting of steel structures										
D2	Stay cables maintenance										
D3	Strengthen of anchor bolts										
D4	Rehabilitation of inspection gantry and rails										
	EARTHWORKS										
E1	Ashlar stoneworks repair										
E2	Repair of strutture connection with embankment										
E3	Cone quarters rehabilitation										
E4	Rehabilitation of storm water collecting system										
E5	River bank improvement										

INTERVENTION DETAILS



INTERVENTION ON VIADUCT PRESTRESSED CONCRETE BEAMS - 1:100



THIS INTERVENTION MAY BE EXECUTED FOR ALL PRESTRESSED CONCRETE BEAMS ON BOTH CARRIAGEWAYS

PRESTRESSED CONCRETE BEAMS INTERVENTION SCHEME - 1:200

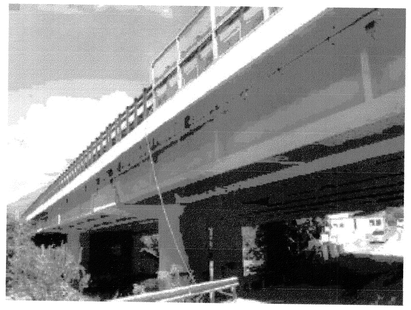
INTERVENTION C2 SEQUENCE :
1 - Sounding of concrete to locate areas of deterioration (spalling, honeycomb, corrosion);
2 - Concrete sand blast cleaning to prepare the surface for receiving protective materials;
3 - Concrete water washing with 1500 psi of pressure to remove oils, grease or other substances;
4 - Application of an epoxy resin primer coat like MASTERSEAL PRIMER PU from BASF or similar;
5 - Application of a polyurethane resin protective coat like MASTERSEAL FORMULA PU from BASF or similar;

MASTERSEAL PRIMER PU

Is a solvent-borne two-pack epoxy resin with low viscosity acting as primer for the elastomeric polyurethane coating MASTERSEAL FORMULA PU ans as curing agent for the mortars of the EMACO FORMULA range.
Stir the 2 parts separately, then pour part B (hardener) into part A (base) and use a low-speed mechanical mixer to obtain a smooth mix.
The product must not be diluted; it may be applied by spraying or by roller (for limited areas).

MASTERSEAL FORMULA PU

Is a two-pack elastic solvent-borne polyurethane resin with high solids content by volume, forms a film coating with satin finish having a crack bridging ability and high protective capacity against agents that cause damage to reinforced concrete.
Stir part A well in its can using a low-speed mechanical mixer; ensure that all of part B is emptied into part A and blend together for a couple of minutes, using the mechanical mixer, before application.
The product may be applied by short pile roller or by spray. When using a hand roller, it is advisable to apply 2 sucessive coats at least 12-18 hours apart in excellent environmental conditions (20°C and 65% r.h.).
In airless spraying, the recommended dry thickness of 200-300 µm (micron) may be applied in a single coat.



INTERVENTION AND PRODUCTS DESCRIPTION

INVESTOR/INVESTITOR

ROMANIAN NATIONAL COMPANY OF MOTORWAYS AND NATIONAL ROADS
COMPANIA NATIONALA DE AUTOSTRAZI SI DRUMURI NATIONALE DIN ROMANIA

DESIGNER/PROIECTANT

LOUIS BERGER GROUP inc.

CONSULTING SERVICES FOR DESIGN AND WORKS SUPERVISION OF 10 BRIDGES IN DOBROGEA AREA

TECHNICAL DESIGN

B08-BRIDGE A2 BORCEA

TD - B08 - 10

DESIGN TEAM LEADER
Vittorio Ascoli Marcheria

CONCRETE REPAIR

CONSULTANTS
SOLIDUS s.r.l. - Roma Italia
Francesco Del Tosto
Romano Tucci

C2
PRESTRESSED CONCRETE BEAMS REPAIR

scale	various	file name TD - B08 - 10				
data / date	rev.	revision title	des	ver/chk	CP / PC	APPR. AUTHORITY
08 aug 2008	0	issue	SOLIDUS	ASCOLI		