KOCKS CONSULT GMBH

KOCKS
INGENIEURE

FINAL ENGINEERING REPORT
M3 SECTION: COMRAT SOUTH TO CIUMAI

08/2009

APPENDIX: VOLUME 3, A 3.1

EUROPEAN UNION

REPUBLIC OF MOLDOVA

REHABILITATION AND EXTENSION OF THE ROAD M3 CHISINAU – GIURGIULESTI/ROMANIAN BORDER

DRAWINGS LOT 1 (PART II) COMRAT TO JUNCTION R-38 (KM 96+800- KM 135+800)

Europe Aid/125919/C/SER/MD

KOCKS
INGENIEURE
Koblenz, Germany

UNIVERSINJ
DESIGN, ENGINEERING, CONSULTING
Chisinau, Moldova

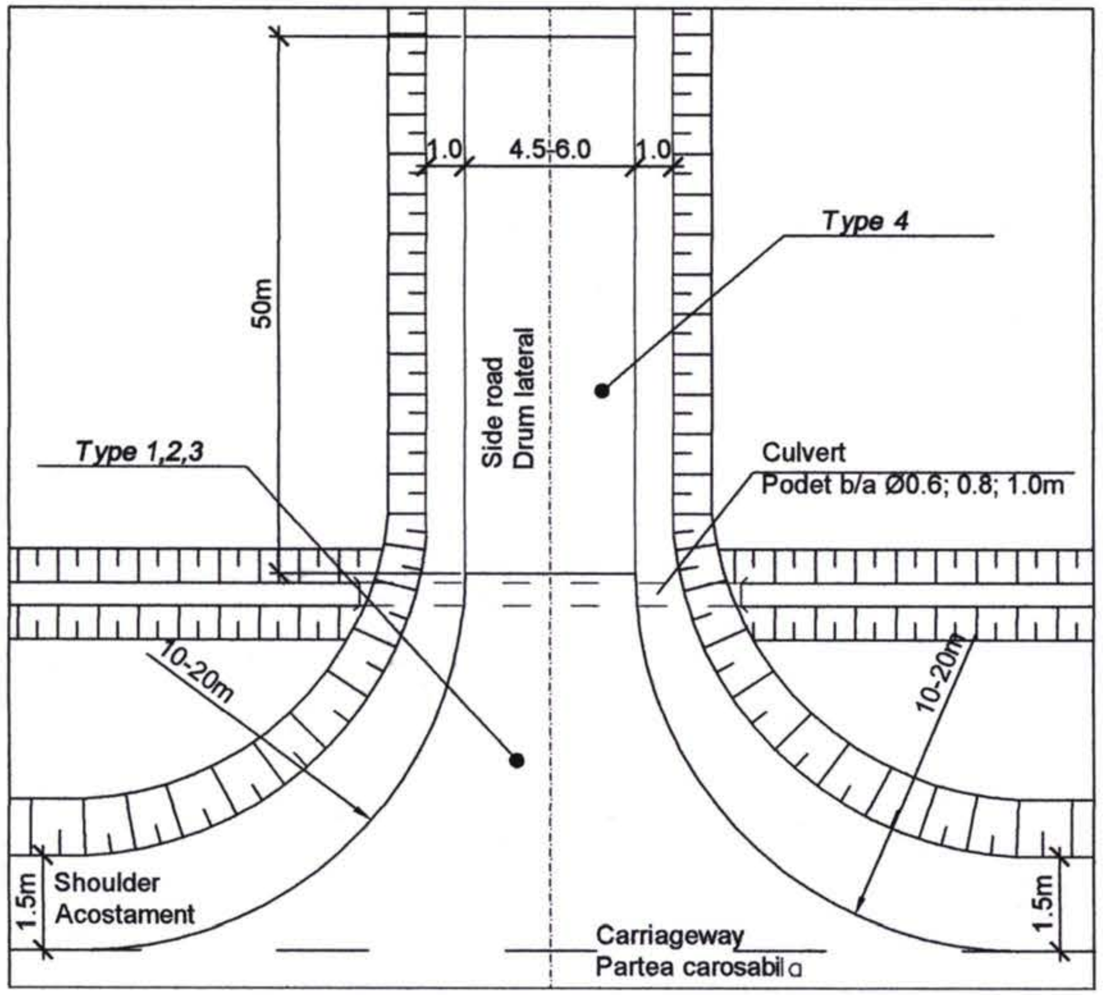
VOLUME 3 A 3.1

Drawings Lot 1 (part II)

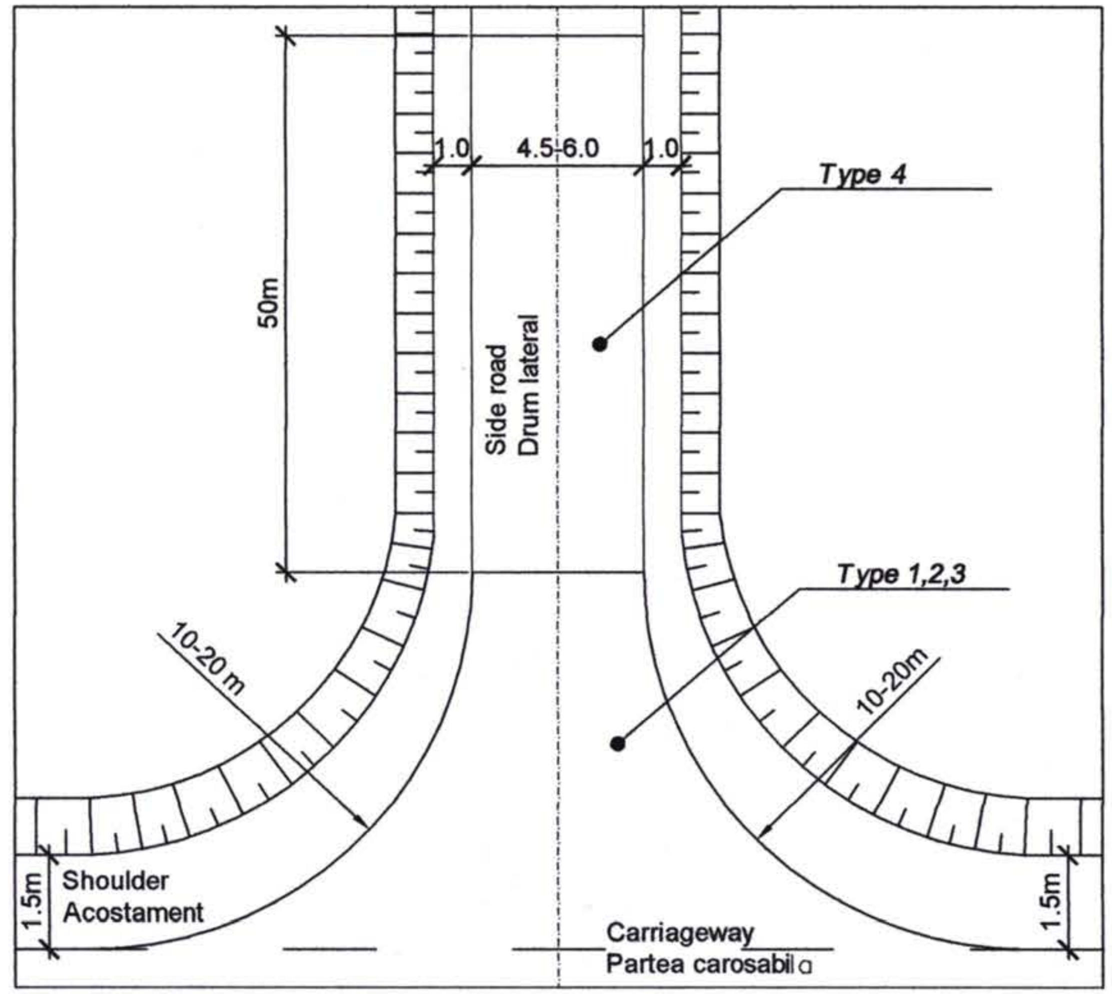
List of drawings
Borderou desene

Section 7. Comrat – Junction R38 , km 96+800- km 135+800

PLAN
LAYOUT



PLAN
LAYOUT



Road pavemcut structure
Constructia sistemului rutier

① -Wearing course made of asphalt concrete with small size particle type B MII, h-40mm
Beton asfalt cu granulatie fina dens tip B MII, h-40mm

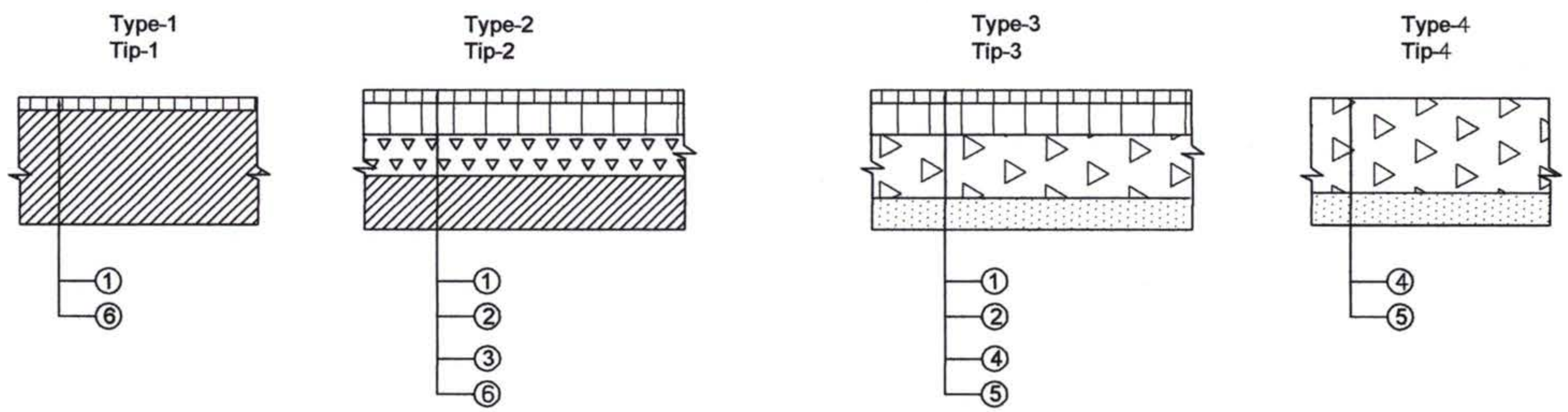
② -Binder made of porous asphalt concrete MII, h-60mm
Beton asfalt cu granulatie mare poros MII h-60mm

③ -Base course made of crushed stone M300 h-150mm
Piatra concasata M300 h-150mm

④ -Base course made of crushed stone M300 h-300mm
Piatra concasata M300 h-30cm

⑤ -Sub - base drain of sand H - 100 mm
Nisip h-10cm

⑥ -Existing road structure
Imbracaminte existenta



Inv. Nr
Semnatura si data
Schimb Inv. Nr

Rev.	Amendamente	Aprobat	Data
Rev.	Amendments	Approved	Date

Consultantii/Consultants:

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Chisinau MD 2043, Moldova

Proiectat/Designed: Lvovski I
Verificat/Checked: Vilcinschi D
Desenat/Drawn: Lvovski I
Data/Date 08.09

Aprobat/Approved
Data/Date

EU Delegation
to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3
Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3
Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Minor intersection
Intersecții minore

Drawing 12 - 1

Format A3

Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

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Chisinau MD 2043, Moldova

Proiectat/Designed: Sajin V.
Verificat/Checked: Vilcinschi D.
Desenat/Drawn: Sajin V.
Data/Date: 08.09: 08.09

Aprobat/Approved
Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 1

Format A4x4

Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

Rev.	Amendamente		Aprobat	Data
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Consultantii/Consultants:

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Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 2

Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

Format A4x4

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Data/Date: 08.09

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Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 3

Format A4x4

Inv. Nr.	Semnatura si data	Schimb Inv. Nr.

Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

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UNIVERSINJ — DESIGN, ENGINEERING, CONSULTING — Universinj Ltd., Independentei 6/1 Str., Chisinau MD 2043, Moldova

Proiectat/Designed: Sajin V.

Verificat/Checked: Vilcinschi D.

Desenat/Drawn: Sajin V.

Data/Date: 08.09

Aprobat/Approved Data/Date:

EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului / Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing

Marcaje / Indicatoare rutiere

Sc 1:1000

Drawing 13 - 4

Format A4x4

Inv. Nr.

Semnatura si data

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Rev. / Rev.	Amendamente / Amendments	Aprobat: / Approved:	Data / Date

Consultantii/Consultants:

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Proiectat/Designed: Sajin V.
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Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 5

Rev.	Amendamente / Amendments		Aprobat / Approved	Data / Date

Consultantii/Consultants:

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EU Delegation to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3
Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execuţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3
Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 6

Format A4x4

Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

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Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 7

Format A4x4

Schimb Inv. Nr.
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Inv. Nr.

Rev.	Amendamente / Amendments		Aprobat / Approved		Data / Date

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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 8

Format A4x4

Inv. Nr.	Semnatura si data	Schimb Inv. Nr.

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Data/Date:

EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 9

Format A4x4

Rev.	Amendamente / Amendments		Aprobat / Approved	Data / Date

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Data/Date:

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Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

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Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 10

Format A4x4

Inv. Nr.
Semnatura si data
Schimb Inv. Nr.

Inv. Nr. | Semnatura si data | Schimb inv. Nr.

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

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Proiectat/Designed: Sajin V.
Desenat/Drawn: Sajin V.
Verificat/Checked: Vilcinschi D.
Data/Date: 08.09

Aprobat/Approved
Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 11

Format A4x4

Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

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Proiectat/Designed: Sajin V.
Verificat/Checked: Vilcinschi D.
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Data/Date: 08.09

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Data/Date:

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 12

Format A4x4

Rev.	Amendamente	Aprobat	Data	
Rev.	Amendments	Approved	Date	

Consultantii/Consultants:

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Proiectat/Designed: Sajin V.

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Desenat/Drawn: Sajin V.

Data/Date: 08.09

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EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului / Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing

Marcaje / Indicatoare rutiere

Sc 1:1000

Drawing 13 - 13

Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

Format A4x4

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved:	Data / Date

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Proiectat/Designed: Sajin V.
Desenat/Drawn: Sajin V.
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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execu ție / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 14

Format A4x4

Rev.	Amendamente	Aprobat	Data
Rev.	Amendments	Approved:	Date

Consultantii/Consultants:

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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 15

Format A4x4

Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

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Proiectat/Designed: Sajin V.
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EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 16

Format A4x4

Rev.	Amendamente / Amendments	Aprobat: / Approved:	Data / Date

Consultanţii/Consultants:

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UNIVERSINJ — DESIGN, ENGINEERING, CONSULTING — Universinj Ltd. Independentei 6/1 Str. Chisinau MD 2043, Moldova

Proiectat/Designed: Sajin V.
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Data/Date: 08.09

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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

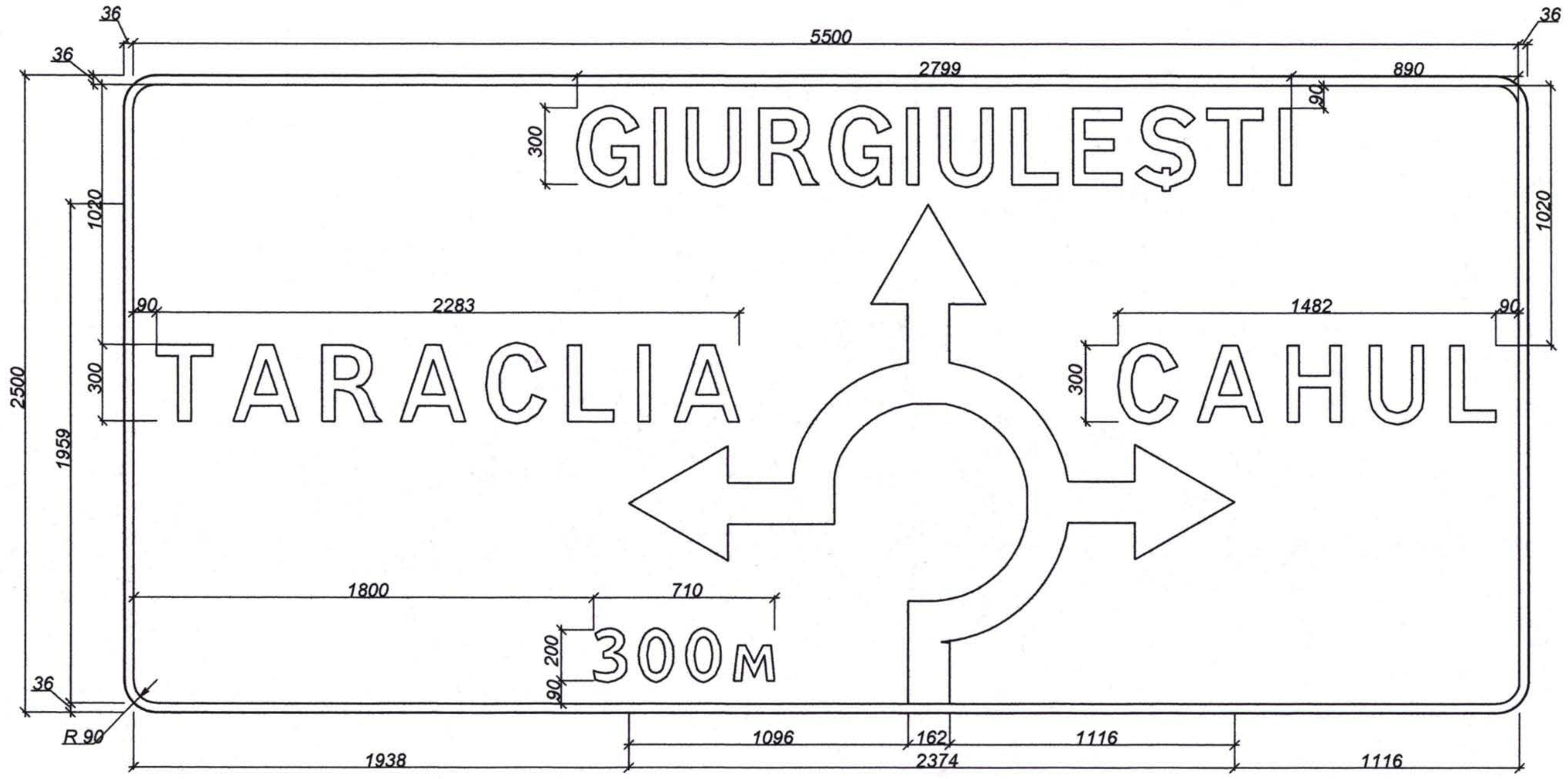
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

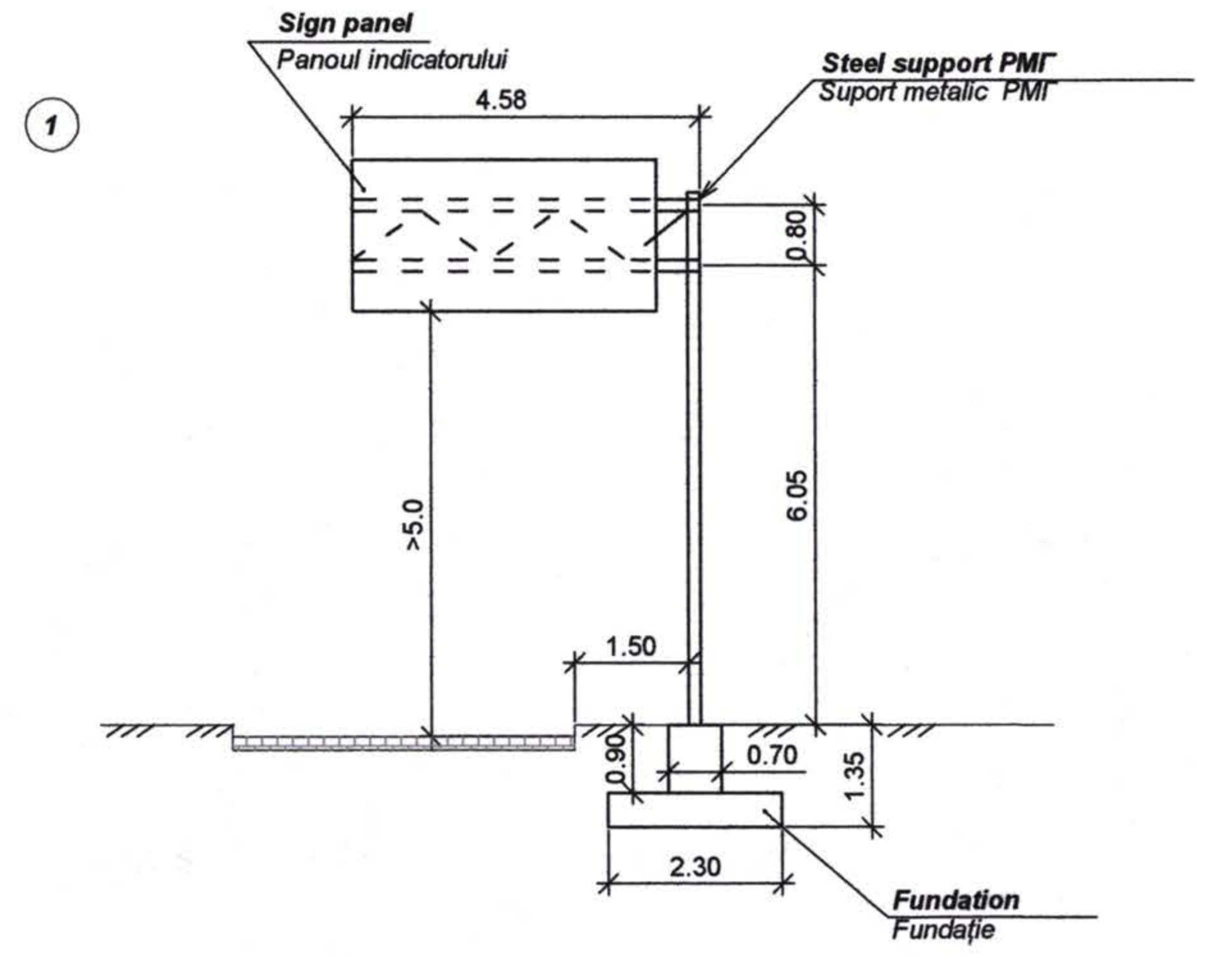
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

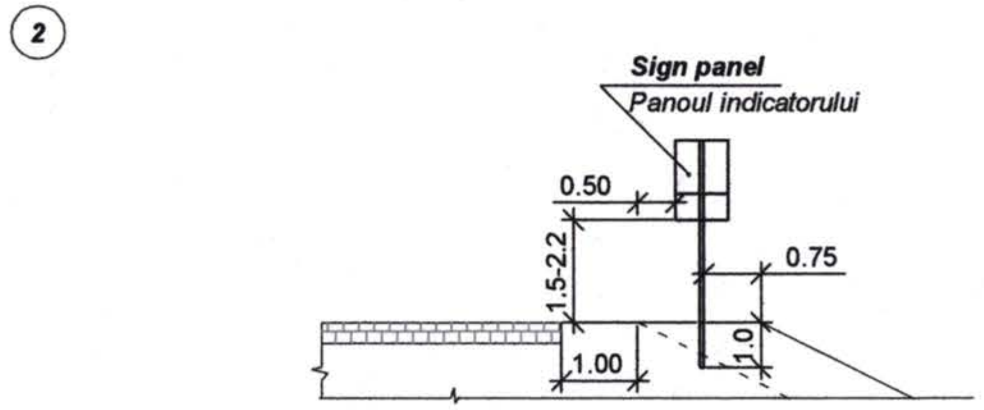
Road marking / Signing
Marcaje / Indicatoare rutiere
Sc 1:1000

Drawing 13 - 17

Format A4x4







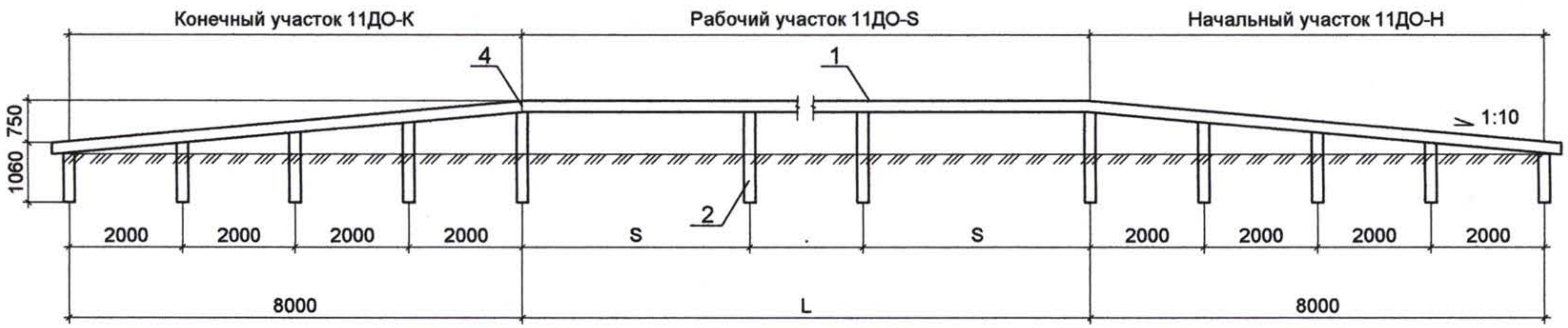
Numărul indicatorului: 5.58.2 Presemnalizarea direcţiilor de deplasare
Panou: 5500 x 2500 mm
Fonul: Albastru
Suprafaţa: 13.75 m²
Scara: 1 : 18

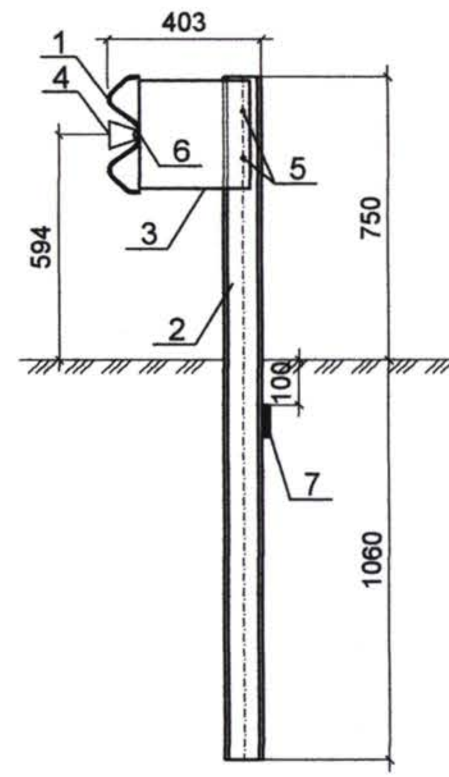
Sign number: 5.58.2 Preliminary directions indicator
Board: 5500 x 2500mm
Background: blue
Area: 13.75 m²
Scale: 1 : 18

Amendamente Amendments	Aprobat Approved	Data Date	Consultantii/Consultants: KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany; UNIVERSINJ DESIGN, ENGINEERING, CONSULTING — Universinj Ltd., Independentei 6/1 Str., Chisinau MD 2043, Moldova	Aprobat/Approved Data/Date:	EU Delegation to Moldova; Republic of Moldova Ministry of Transport	Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector R38 - Ciumai	Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
			Proiectat/Designed: Sajin V. — Desenat/Drawn: Sajin V.		Marimea originala a desenului Original Drawing Size	*Specific road signs*	*Indicaroare rutiere individuale*
			Verificat/Checked: Vilcinschi D. — Data/Date: 08.09			Drawing 13 - 18	

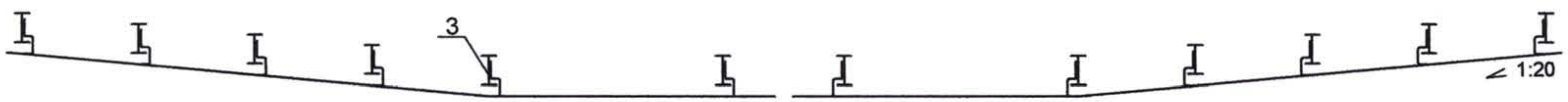
Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

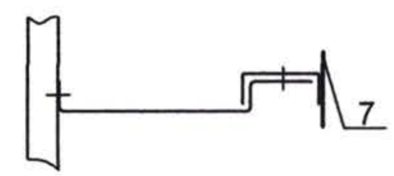
Guard Rails/Grilaj de protecție





Plan





1 - Grindă/Beam СБ - 1
2 - Stîlp/Pile СД-1,8Ш12
3 - Consolă-amortizor КН
4 - Element reflector/Reflecting element ЭС - 1
5 - Înşurubă/Screw M16x30 ГОСТ 7798 Piuliță/Screw nut M16 ГОСТ 5915
6 - Înşurubă/Screw M16x45 ГОСТ 7802 Piuliță/Screw nut M16 ГОСТ 5915
7 - Placă/Plate 4x300x300
L - Length of the operational section/Lungimea sectorului operațional

Schimb Inv. Nr | Semnatura si data | Inv. Nr

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

UNIVERSINJ — Design, Engineering, Consulting — Universinj Ltd. Independentei 6/1 Str. Chisinau MD 2043, Moldova

Proiectat/Designed: Lvovski I
Verificat/Checked: Vilcinschi D
Desenat/Drawn: Lvovski I
Data/Date 08.09

Aprobat/Approved Data/Date

EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

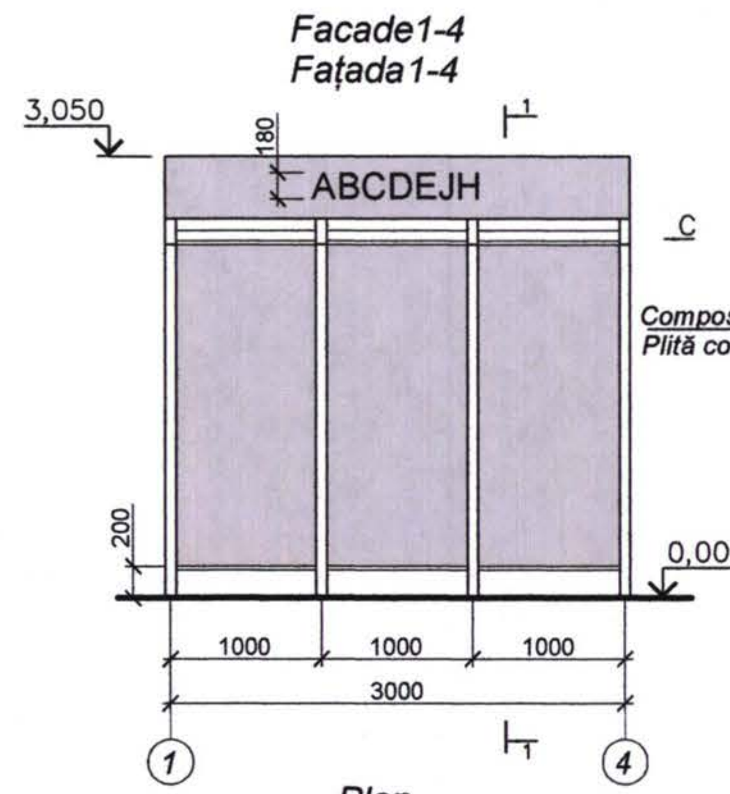
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ție / Sector Comrat - R38

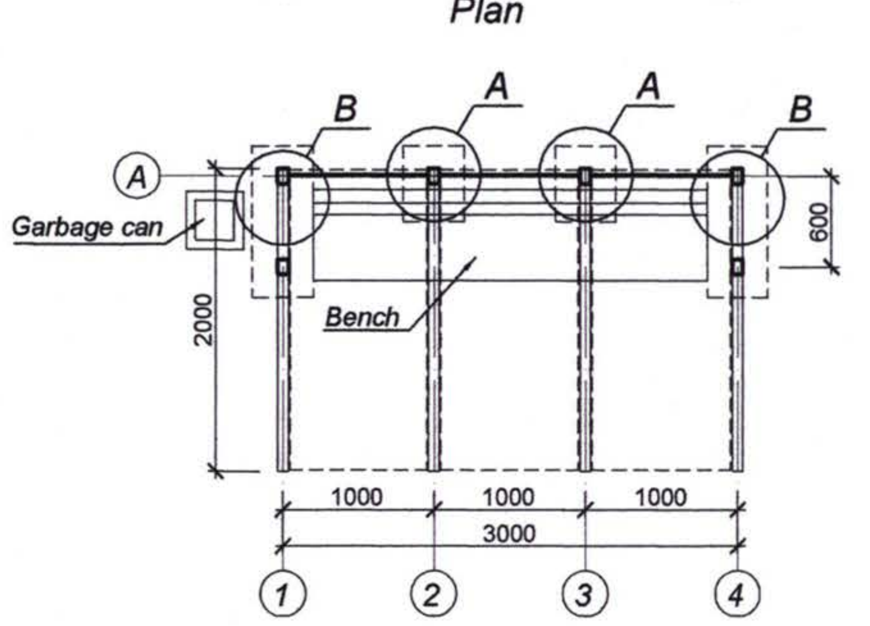
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

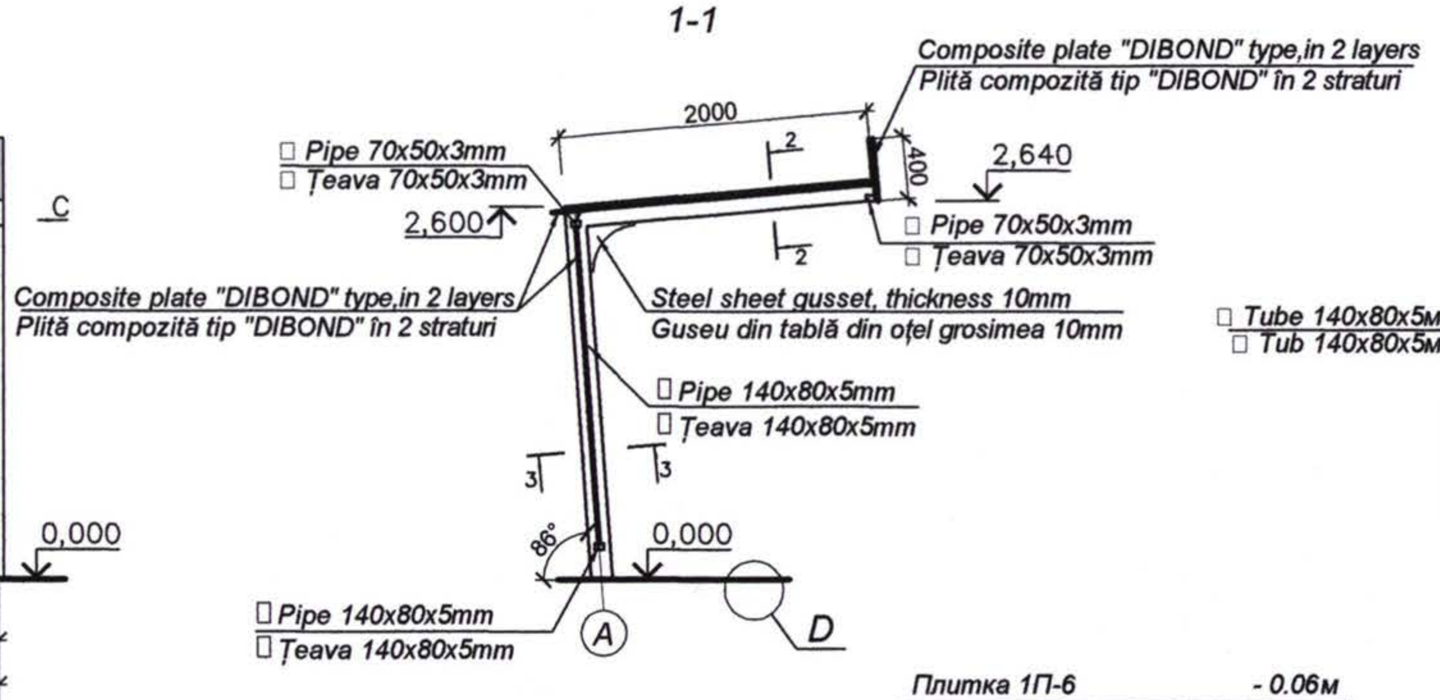
Guardrail/Parapet metallic

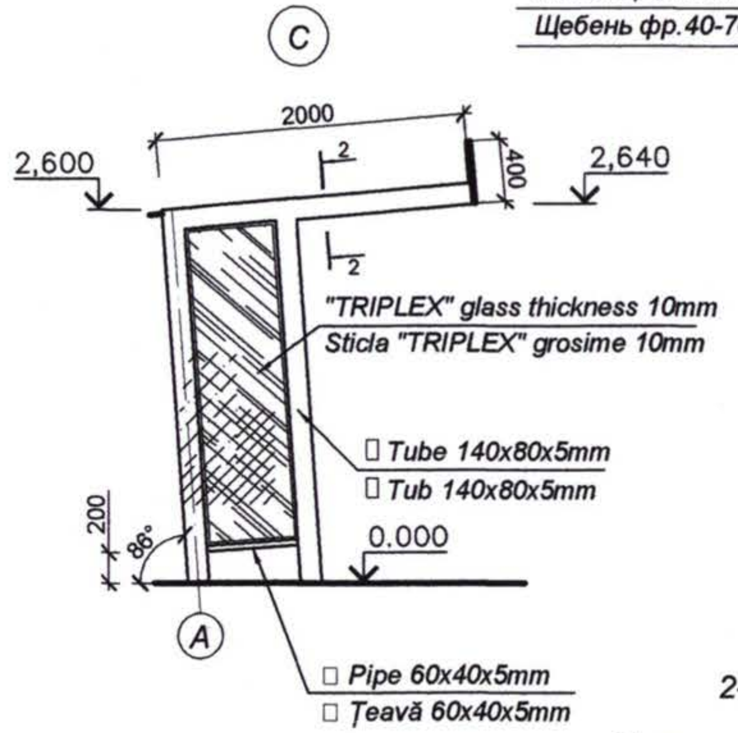
Drawing 14 - 1

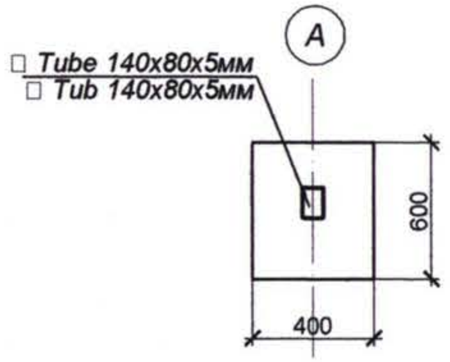
Format A3

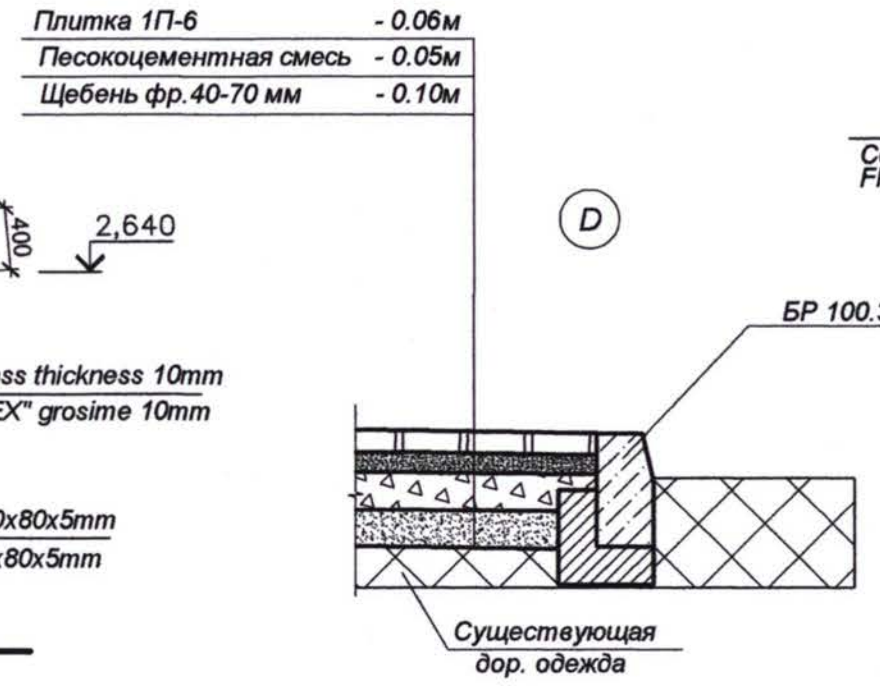


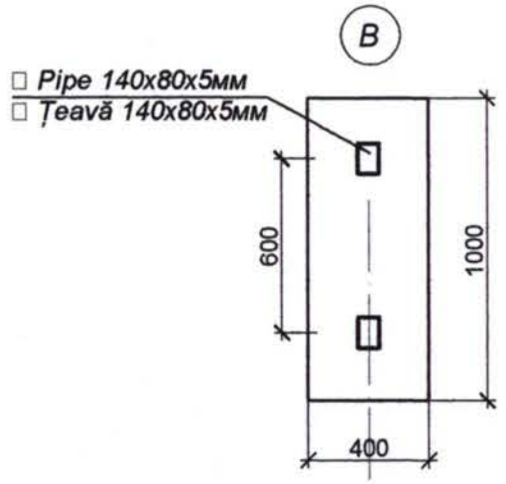


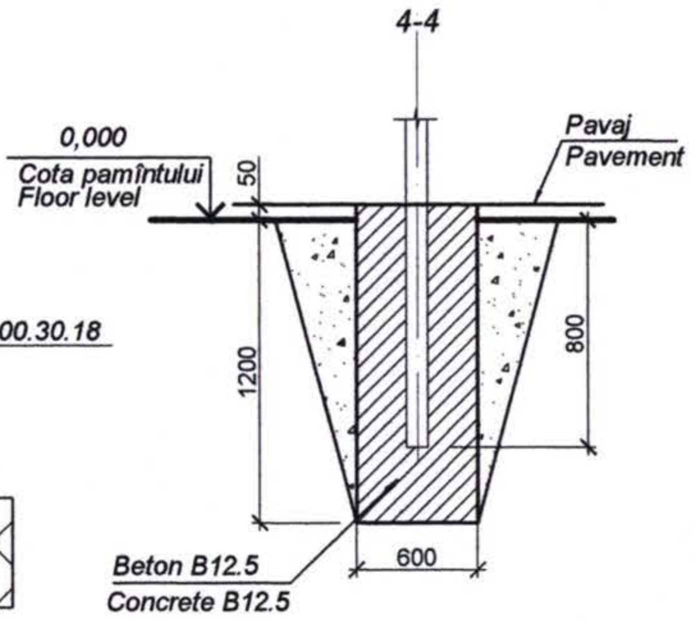


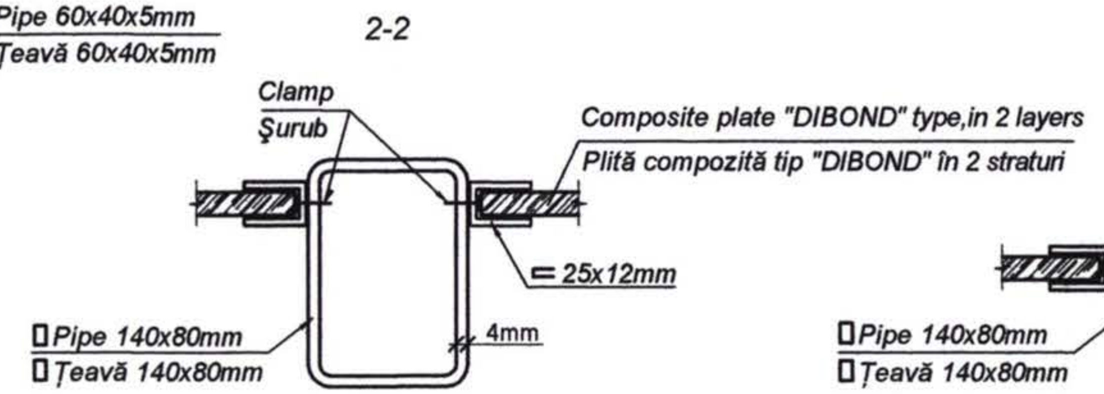


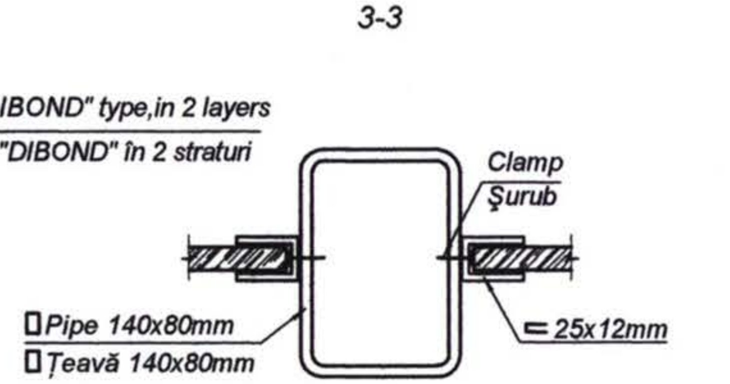












1. Arbour metallic structures shall be carried out from rectangular steel pipes GOST 8639-68 and GOST 8645-68.
2. Consumption of the pipes for one arbour shall be 140x80x5mm - 28,4m.l. (488,5kg);
70x50x3мм - 10,2m.l. (51,7кг).
3. Fencing the structure shall be carried out from "TRIPLEX" glass with the thickness of 10mm, consumption - 2,7m², and composite plates "DIBOND", consumption - 28,5m²
4. Metallic structures shall be painted with dark blue sticker.
5. The profile for fixing the windproof screens shall be carried out from stainless steel, consumption - 48,9m.l.
6. The bases shall be carried out from concrete of B12,5 category. Consumption-1,54m³

1. Structurile metalice a pergolei se vor îndeplini din tuburi din oțel dreptunghiular ГОСТ 8639-68 și ГОСТ 8645-68.
2. Consumul conductelor pentru o peroglă 140 x80x5mm - 28,4m.l. (488,5kg);
70 x50x3мм - 10,2m.l. (51,7 кг).
3. Îngrădirea structurilor se va efectua din sticla "TRIPLEX" cu grosimea 10mm, consum - 2,7m², și plăci compozite "DIBOND", consum - 28,5m²
4. Structurile metalice se vopsesc cu vopsea indicatoare de temperatură de culoare albastru închis.
5. Profilul pentru fixarea ecranelor de protecție contra vîntului se execută din oțel inoxidabil, consum - 48,9m.l.
6. Fundamentele se execută din beton clasa B12,5. Consum 1,54m³

GENERAL INSTRUCTIONS

1. Working drawings of the hall were developed based on the construction plan
2. The following standard loads were adopted for the Project:
   - wind pressure - 30kg/m² (0.30kPa)
   - snow load - 50kg/m² (0.50kPa)
   -open air specified temperature:
   the coldest days and nights - 24°C;
   the coldest 5 days period - 18°C.
3. Freezing depth of the soil -0,80m.
4. Operation conditions of the hall according to the weather conditions - IIIB
5. Seismicity of the locality - 7 degrees
6. Relative altitude 0.000 it is considered the stationing platform level.
7. The hall frame is carried out from steel rectangular pipes.
8. Windproof screens shall be carried out from 2 layers of composite plates "DIBOND" and glass "TRIPLEX"
9. The roof covering shall be carried out from 2 layers of composite plates "DIBOND".
10. Unorganised outside roof covering drain
11. Instructions for hall facade finishing works:
    - Metallic structures shall be painted with dark blue sticker.
    - Windproof screens shall be carried out from "DIBOND" plates of yellow colour.
    - Glass screen "TRIPLEX" shall be tinted with yellow colour.
    - Inscription letters shall be carried out from pressure sensitive adhesive of black colour.
12. For concreting in winter time plasticizing agents shall be used
    (SNiP 3.03.01-87 "Bearing and walling").
13. Production and acceptance of works shall be carried out according to:
    - SNiP III-4-80* "Safety during construction"
    - SNiP 12.01-04 "Organisation of construction production"
    - Decree of RM №285 at 23rd May 1996.
    - SNiP 3.03.01-87 "Bearing and walling"
    - SNiP 3.04.01-87 "Isolating and finishing covers»
14. List of works which require inspection reports:
    - establishing the sand mattress for the base;
    - filling the base gullets with sand;
    -shuttering works and concreting

INSTRUCȚIUNI GENERALE

1. Desene de lucru a pavilionului concepute în baza sarcinei de proiectare.
2. În proiect sunt adoptate următoarele sarcini normative:
   - presiunea vîntului - 30kg/m ² (0.30kPa)
   - sarcina din zăpadă - 50kg/m ² (0.50kPa)
   - temperatura de calcul a aerului exterior :
   cele mai reci zile și nopți- 24° C;
   cea mai rece perioadă de cinci zile- 18° C.
3. Adîncimea de îngheț a pămîntului -0,80m.
4. Regimul de exploatare a pavilionului după cum prevăd condițiile climaterice - III B
5. Seismicitatea localității - 7 baluri
6. Cota relativă 0.000 se consideră nivelul platformei de staționare.
8. Cadrul pavilionului se realizeză din tuburi din oțel dreptunghiulare.
9. Măștile de etanșare de protecție contra vîntului se realizează din 2 straturi de plite compozite de tip "DIBOND" și sticlă "TRIPLEX".
10. Învelitoarea din 2 straturi de plite compozite tip "DIBOND".
11. Drenajul învelitorii dinafara neorganizat.
12. Indicații pentru finisarea fațadelor a pavilionului:
    - Structurile metalice se vopsesc cu vopsea indicatoare de temperatură de culoare albastru închis.
    - Măștile de etanșare din plite tip "DIBOND" de culoare galbenă.
    - Măștile de etanșare din sticlă "TRIPLEX" se tonează în culoarea galbenă.
    - Literele din inscripție se îndeplinesc din banda adezivă de culoare neagră.
13. La lucrările de betonare pe timp de iarnă se întrebuințează adaosuri plastifianți
    (СНиП 3.03.01-87 " Несущие и ограждающие конструкции)".
14. Producerea și darea în primire a lucrărilor de executat în conformitate cu:
    - СНиП III-4-80* " Техника безопасности в строительстве "
    - СНиП 12.01-04 " Организация строительного производства "
    - Постановления РМ №285 от 23 мая 1996г.
    - СНиП 3.03.01-87 " Несущие и ограждающие конструкции "
    - СНиП 3.04.01-87 " Изоляционные и отделочные покрытия "
15. Lista lucrărilor pentru care este necesară întocmirea actelor de examinare:
    - amenajarea stratului de bază pentru fundament;
    -umplerea golurilor fundațiilor cu nisip;
    -lucrări de betonare și lucrări de cofraje;

Rev. Rev.	Amendamente Amendments		Aprobat Approved:		Data Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

UNIVERSINJ — Universinj Ltd., Independentei 6/1 Str., Chisinau MD 2043, Moldova

Proiectat/Designed: Carauș C.
Verificat/Checked: Vilcinschi D.
Desenat/Drawn: Cucu E.
Data/Date 08.09

Aprobat/Approved
Data/Date 08.09

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuție / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Bus station. Plan
Statie de autobus. Plan

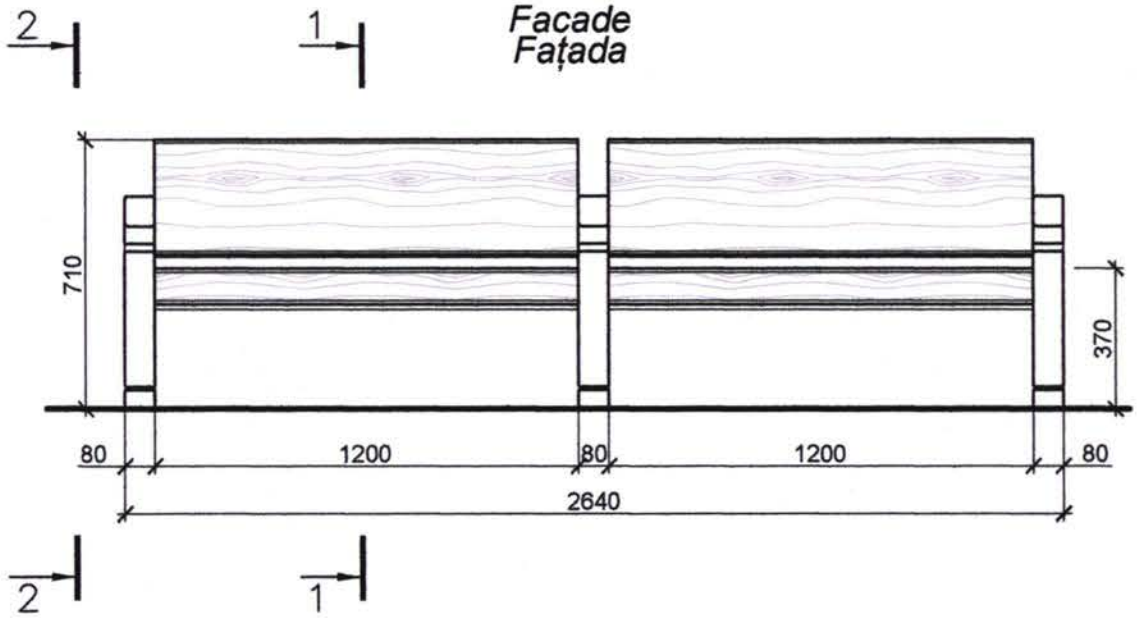
Drawing 15-1

Format A4x3

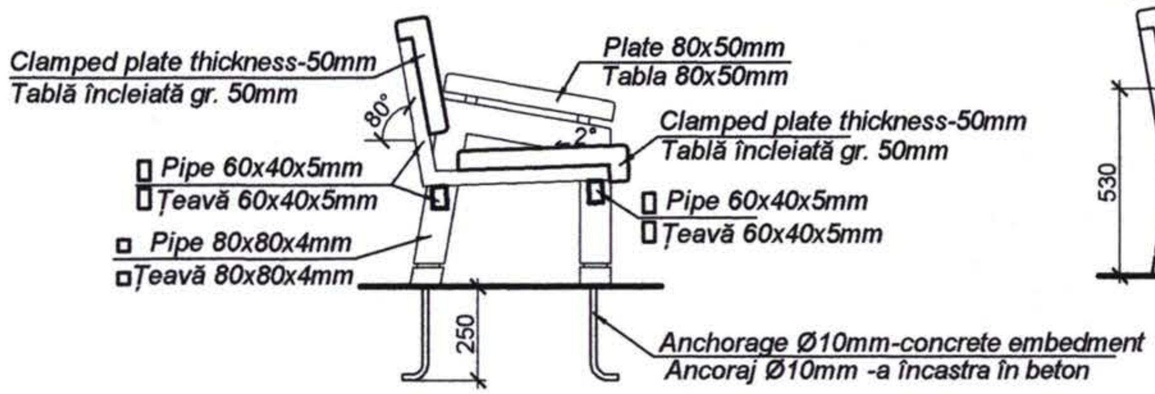
Inv. Nr.	Semnatura si data	Schimb Inv. Nr.

Double bench
Banchetă dublă

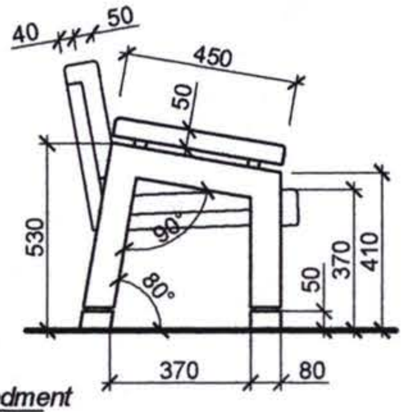
Facade
Fațada



Section 1-1
Secțiune 1-1

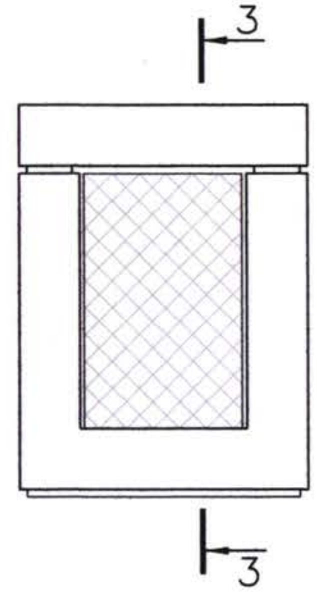


View 2-2
Vedere 2-2

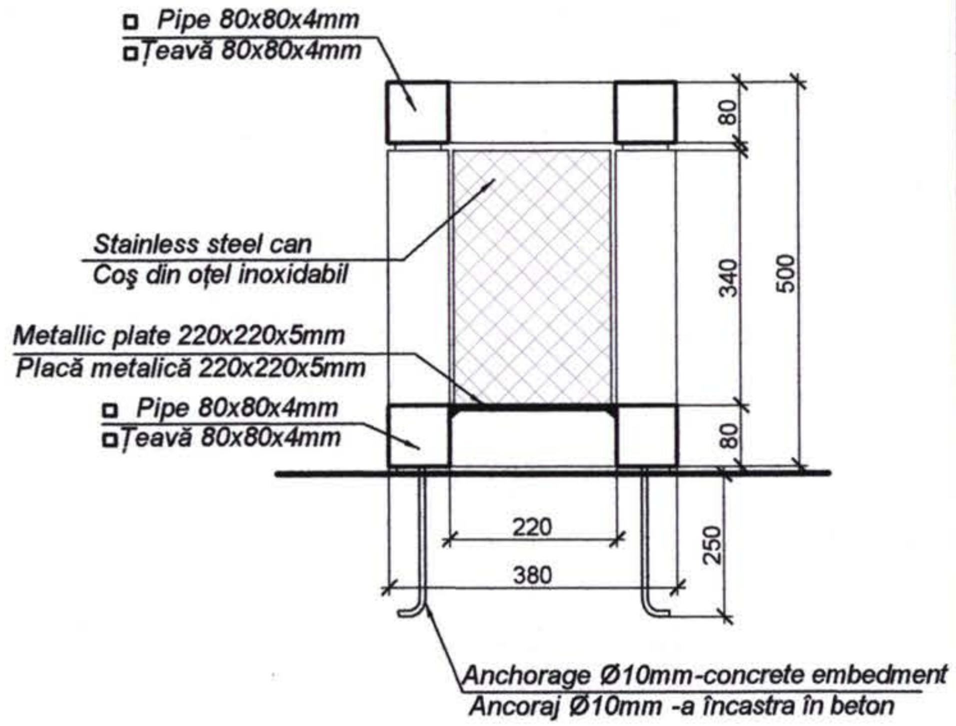


Garbage can
Urnă

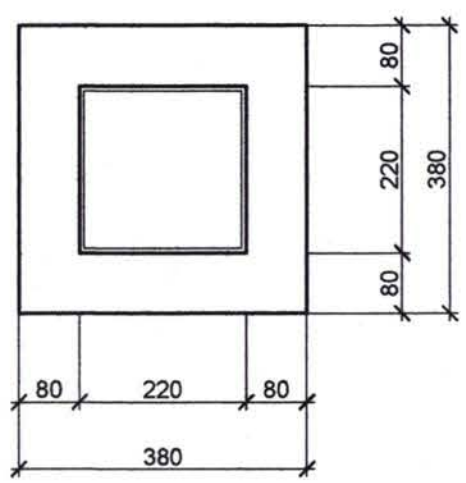
Facade
Fațada



Section 3-3



Plan



All steel constructions of the bench shall be carried out from square and rectangular iron pipes GOST 8639-68 and GOST 8645-68.
Consumption of pipes for one bench 80x80x4mm - 4,2m.l (40,0kg);
60x40x5mm - 8,4m.l (59,4kg)
The seat and the back rest shall be carried out from clamed board 50mm thick, from hard core wood.
Use - 0.12m³
Steel constructions shall be painted with dark blue sticker.
Wood constructions shall be burnished and covered with yellow colour lacquer.
Quantity of benches - 15 pieces

Toate construcțiile din oțel a banchetei se vor executa din țevi din fier pătrat si dreptunghiular ГОСТ 8639-68 и ГОСТ 8645-68.
Cheltuielile țevilor pentru o bancheta 80 x80x4mm - 4,2m.l. (40,0kg);
60 x40x5mm - 8,4m.l. (59,4kg).
Scaunul si spătarul se vor executa din scîndură încleiată cu grosimea 50mm, din lemn de esență tare.
Consum - 0.12m³
Conctrucțiile din oțel se vor vopsi cu vopsea indicatoare de temperatură de culoare albastru închis.
Construcțiile din lemn se vor şlefui şi se vor acoperi cu lac de culoare galbenă.
Cantitatea scaunelor - 15buc.

Metallic construction of the bean shall be carried out from square iron pipes GOST 8639-68.
Consumption of pipes for one bean 80x80x4mm - 4,5m.l (42,8kg)
The bean shall be carried out from stainless steal
Metallic constructions will be painted with dark blue sticker.
Quantity of beans - 15 pieces

Construcțiile metalice a urnei se vor executa din țevi din fier patrat ГОСТ 8639-68.
Cheltuielile de țeava pentru o urna 80 x80x4mm - 4,5m.l. (42,8kg).
Coşul se va executa din oțel inoxidabil.
Construcțiile metalice se vor vopsi cu vopsea indicatoare de temperatura de culoare albastru închis.
Cantitatea urnelor - 15buc.

Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved
Data / Date		

Consultantii/Consultants:
KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany
UNIVERSINJ DESIGN, ENGINEERING, CONSULTING — Universinj Ltd. Independentei 6/1 Str. Chisinau MD 2043, Moldova
Proiectat/Designed: Carauş C.
Verificat/Checked: Vilcinschi D.
Desenat/Drawn: Cucu E.
Data/Date 08.09
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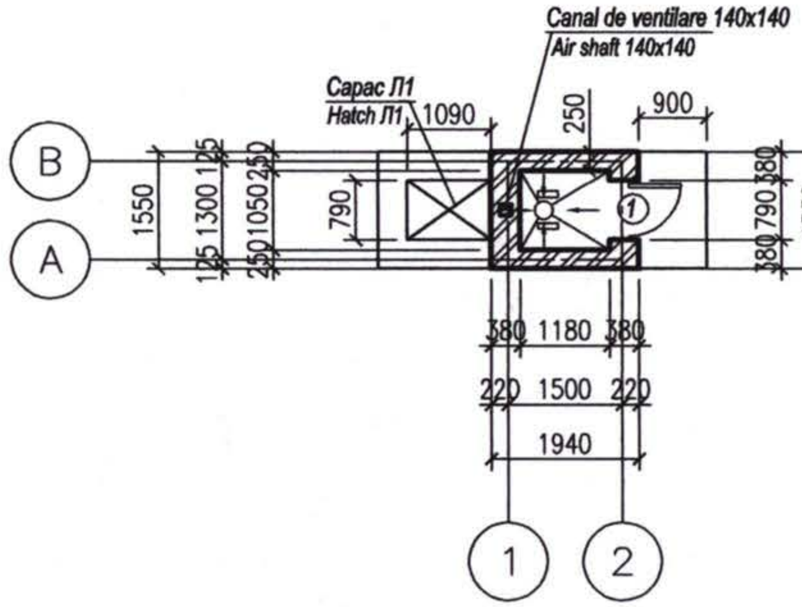
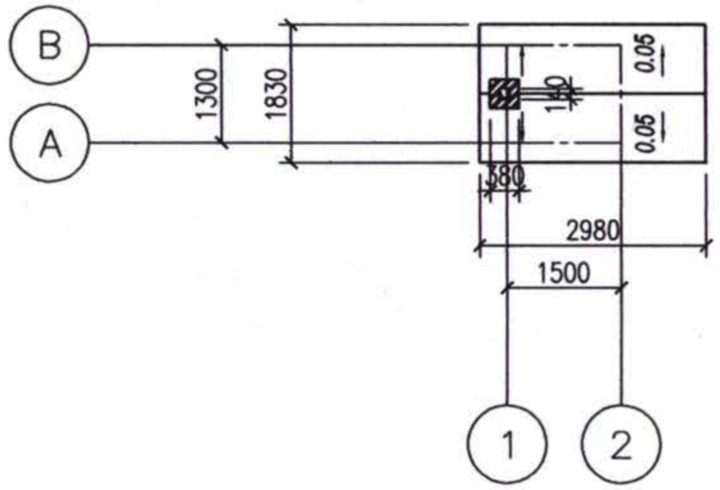
EU Delegation to Moldova
Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuție / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Bus station. Garbage can
Statie de autobus. Urna
Drawing 15-2
Format A3

Benchmark 0,000
Plan cota 0,000



Roof plan
Plan acoperiş



SPECIFICATION OF THE DOOR FILLING ELEMENTS
SPECIFICAȚIA ELEMENTELOR DE COMPLETARE A GOLURILOR

Marca	Marking Semnificaţie	Name Denumire	Quantity Cant.	Furnishings Materiale accesorii	Note Notă
Д1	**Scheme 1** **Schema 1**	Right Steel Door with sill,mortise lock and bolt Uşa dreaptă din oţel cu prag cu broască înecată şi lacăt	1	1	
Л 1	**Scheme 2** **Schema 2**	Steel door with look Capac din oţel cu lacăt	1	1	
OK1	**Scheme 3** **Schema 3**	Steel window with single glazing with terroglass Fereastră din oţel cu montarea geamurilor pe un rînd cu geam armat	1	1	

GENERAL INSTRUCTIONS

1. Working drawings of the hall were developed based on the construction plan
2. The following standard loads were adopted for the Project:
   - wind pressure - 30kg/m² (0.30kPa)
   - snow load - 50kg/m² (0.50kPa)
   - open air specified temperature:
   the coldest days and nights - 24°C;
   the coldest 5 days period - 18°C.
3. Freezing depth of the soil -0,80m.
4. Operation conditions of the hall according to the weather condition - IIIB
5. Seismicity of the locality - 7 degrees
6. Benchmark 0.000 it is considered the stationing platform level.
7. 380mm thick walls shall be carried out from M 75 bricks based on M 50 compo on white cement for jointing; bond reinforcement using reinforcing fabric over 8 levels height.
8. Composite membrane
9. Unorganised outside roof covering drain
10. Waterproof horizontal isolation of the walls from soil moisture, to be carried out from cement mortar over foundations with the thickness 20mm, with the composition 1:2
11. Around the WC to be carried out blind area from fine bituminous concrete with the width - 1.2 m
12. Indications for finishing works of the facades are shown on the Sheet No. 2
13. When bonding stone walls and during concreting in winter time, plasticizing agents shall be used (SNiP 3.03.01-87 "Bearing and walling)"
14. Production and acceptance of works shall be carried out according to:
   - SNiP III-4-80* "Safety during construction"
   - SNiP 12.01-04 "Organisation of construction production"
   - Decree of RM №285 at 23rd May 1996.
   - SNiP 3.03.01-87 "Bearing and walling"
   - SNiP 3.04.01-87 "Isolating and finishing covers»
15. List of works which require inspection reports:
   - establishing the sand mattress for the base;
   - filling the base gullets with sand;
   - shuttering works and concreting

INSTRUCŢIUNI GENERALE

1. Desene de lucru a WC concepute în baza sarcinei de proiectare.
2. În proiect sunt adoptate următoarele sarcini normative:
   - presiunea vîntului - 30kg/m ² (0.30kPa)
   - sarcina din zăpadă - 50kg/m ² (0.50kPa)
   - temperatura de calcul a aerului exterior:
   cele mai reci zile şi nopţi - 24° C;
   cea mai rece perioadă de cinci zile - 18° C.
3. Adîncimea de îngheţ a pămîntului -0,80m.
4. Regimul de exploatare a pavilionului după cum prevăd condiţiile climaterice - III B
5. Seismicitatea localităţii - 7 baluri
6. Cota relativă 0.000 se consideră nivelul platformei de staţionare.
7. Pereţii cu grosimea 380mm se execută din caramidă M75 pe baza de mortar M50 din ciment alb pentru umplerea rosturilor; consolidarea zidăriei cu folosirea plaselor de armatură peste 8 rînduri pe înalţime.
8. Învelitoarea combinată în role
9. Drenajul învelitorii dinafara neorganizat.
10. Izolarea hidrofugă orizontală a pereţilor de umiditatea solului de executat din mortar de ciment deasupra fundaţiilor cu grosimea 20mm în proporţia 1:2
11. Împrejurul veceului de executat pereu din beton asfaltic compact cu granulaţie mică, lăţimea 1.2m
12. Indicaţiile ce conţin lucrările de finisaj a faţadelor sunt date pe coala2
13. La zidirea pereţilor de piatră şi la lucrările de betonare pe timp de iarbă de folosit adaosuri plastifiante (СНиП 3.03.01-87 "Несущие и ограждающие конструкции)"
14. Producerea şi darea în primire a lucrărilor de executat în conformitate cu:
   - СНиП III-4-80* " Техника безопасности в строительстве "
   - СНиП 12.01-04 " Организация строительного производства "
   - Постановления РМ №285 от 23 мая 1996г.
   - СНиП 3.03.01-87 " Несущие и ограждающие конструкции "
   - СНиП 3.04.01-87 " Изоляционные и отделочные покрытия "
15. Lista lucrărilor pentru care este necesară întocmirea actelor de examinare:
   - amenajarea stratului de bază pentru fundament;
   - umplerea golurilor fundaţiilor cu nisip;
   - lucrări de betonare şi lucrări de cofraje;

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Consultantii/Consultants:

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UNIVERSINJ — DESIGN, ENGINEERING, CONSULTING — Universinj Ltd., Independentei 6/1 Str., Chisinau MD 2043, Moldova

Proiectat/Designed: Carau ş C.
Verificat/Checked: Vilcinschi D.
Desenat/Drawn: Cucu E.
Data/Date 08.09

Aprobat/Approved
Data/Date 08.09

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Bus station. WC. Plan
Statie de autobus.Veceu. Plan

Drawing 15-3

Format A3

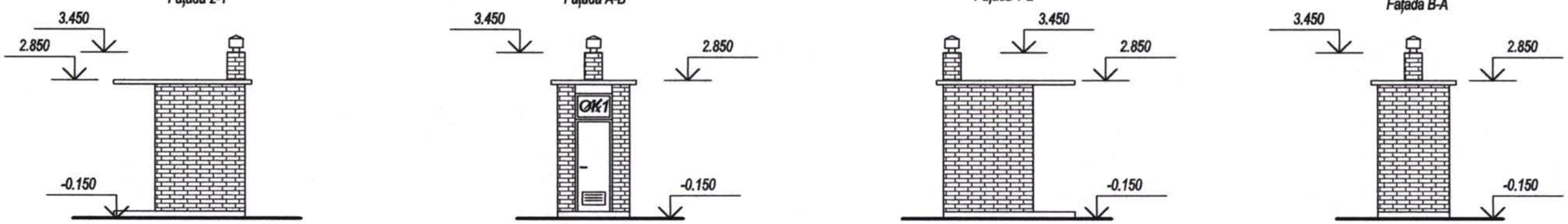
Inv. Nr. | Semnatura si data | Schimb Inv. Nr.

Facade 2-1
Fațada 2-1

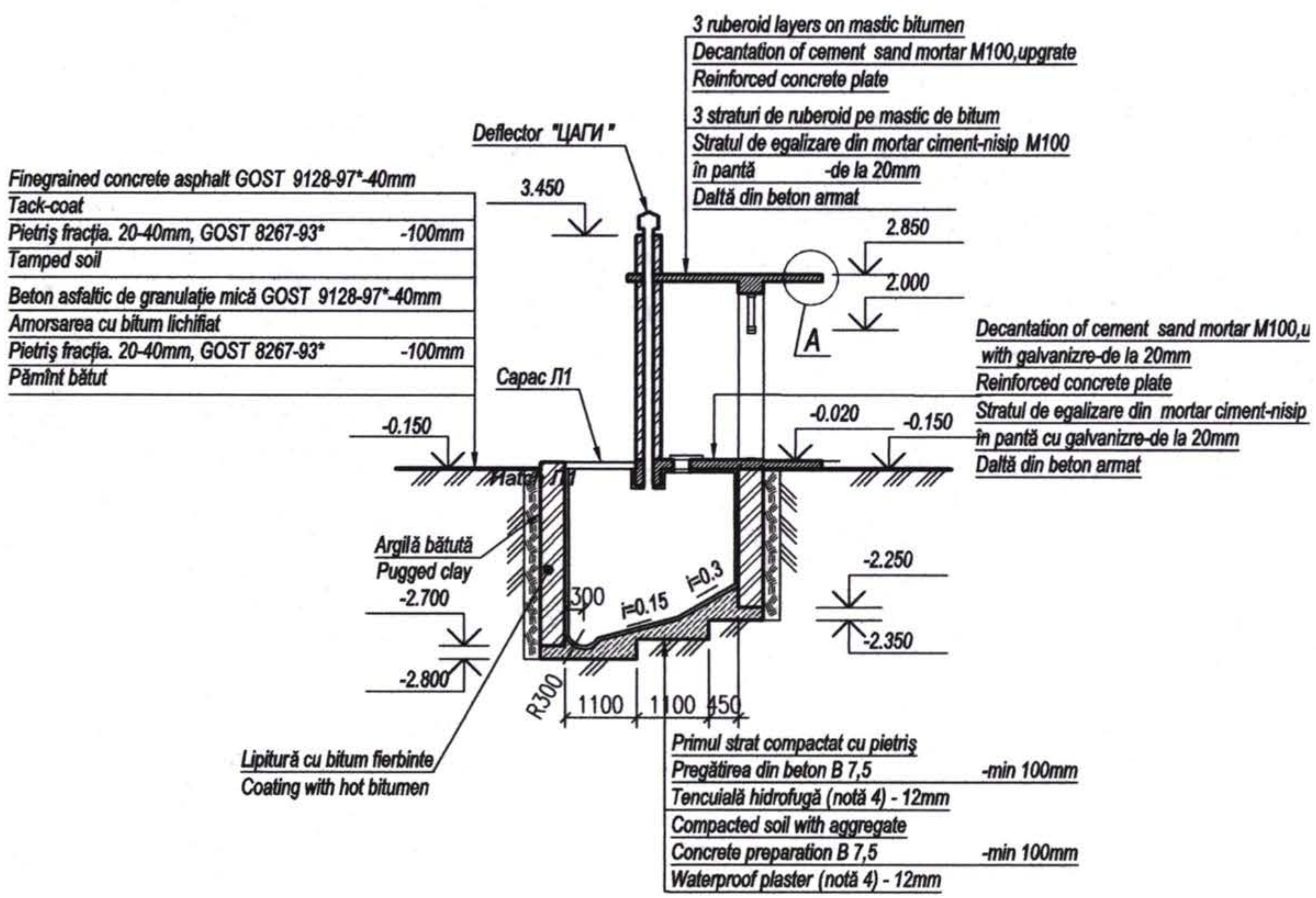
Facade A-B
Fațada A-B

Facade 1-2
Fațada 1-2

Facade B-A
Fațada B-A



Section 1-1
Secțiune 1-1

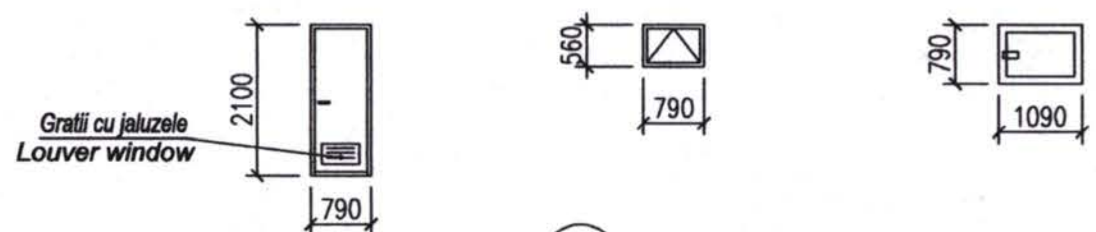


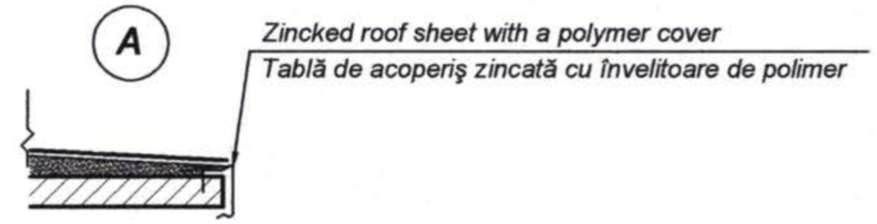
Gaps` filling schemes
Schemele de umplere a golurilor

Scheme 1
type Д 1
Schema 1
tip Д1

Scheme 2
type ОК1
Schema 2
tip ОК1

Scheme 3
type Л 1
Schema 3
tip Л 1





1. The walls of the WC shall be carried out from full face ceramic and lime-sand bricks sealing the joints which alternate in layers on height
2. Jointing the mortar sand-cement joints based on white cement.
3. Concrete structures smoothing with M150 compo based on white cement. The walls of the cesspool shall be carried out from red bricks on M50 compo. The bond shall be carried out in joints, with the depth of the joint of 1.5-2 cm from the inside.
4. Waterproof plaster of the cesspool shall be carried out from M100 compo, ironing the surface and treating with silicate-based cement.
5. Consumption of galvanized roof steel on the A detail and abutment to the ventilation shaft - 3.4m2
6. The doors and the casements shall be painted with exterior works paint twice on the existing layer, with white colour.

1. Pereții veceului-zidărie din cărămidă plină ceramică şi silicocalcaroasă cu rostuirea rosturilor ce alternează în rînduri pe înalțime .Rostuirea rosturilor din mortar ciment-nisip pe baza de ciment alb.
2. Structurile de beton- drişcuirea cu mortar ciment-nisip M150 pe baza de ciment alb.
3. Pereții haznalei - din cărămidă roşie pe mortar ciment-nisip M50. Zidăria se execută cu rosturi neumplute, cu adîncimea rostului 1,5-2cm din partea interioară.
4. Tencuiala hidrofugă a haznalei- din mortar ciment-nisip M100 cu sclivisirea suprafețelor şi tratarea cu clei silicatic.
5. Consumul oțelului galvanizat a învelitorii la nodul A şi racordarea la puțul de aerisire-3,4 м².
6. Uşile şi copertinele ferestrelor se vopsesc cu vopsea pentru lucrari exterioare de 2 ori pe stratul existent, culoarea albă

Inv. Nr.	
Semnatura si data	
Schimb Inv. Nr.	

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Consultantii/Consultants:

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Verificat/Checked: Vilcinschi D.
Desenat/Drawn: Cucu E.
Data/Date 08.09

Aprobat/Approved
Data/Date 08.09

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ție / Sector Comrat - R38

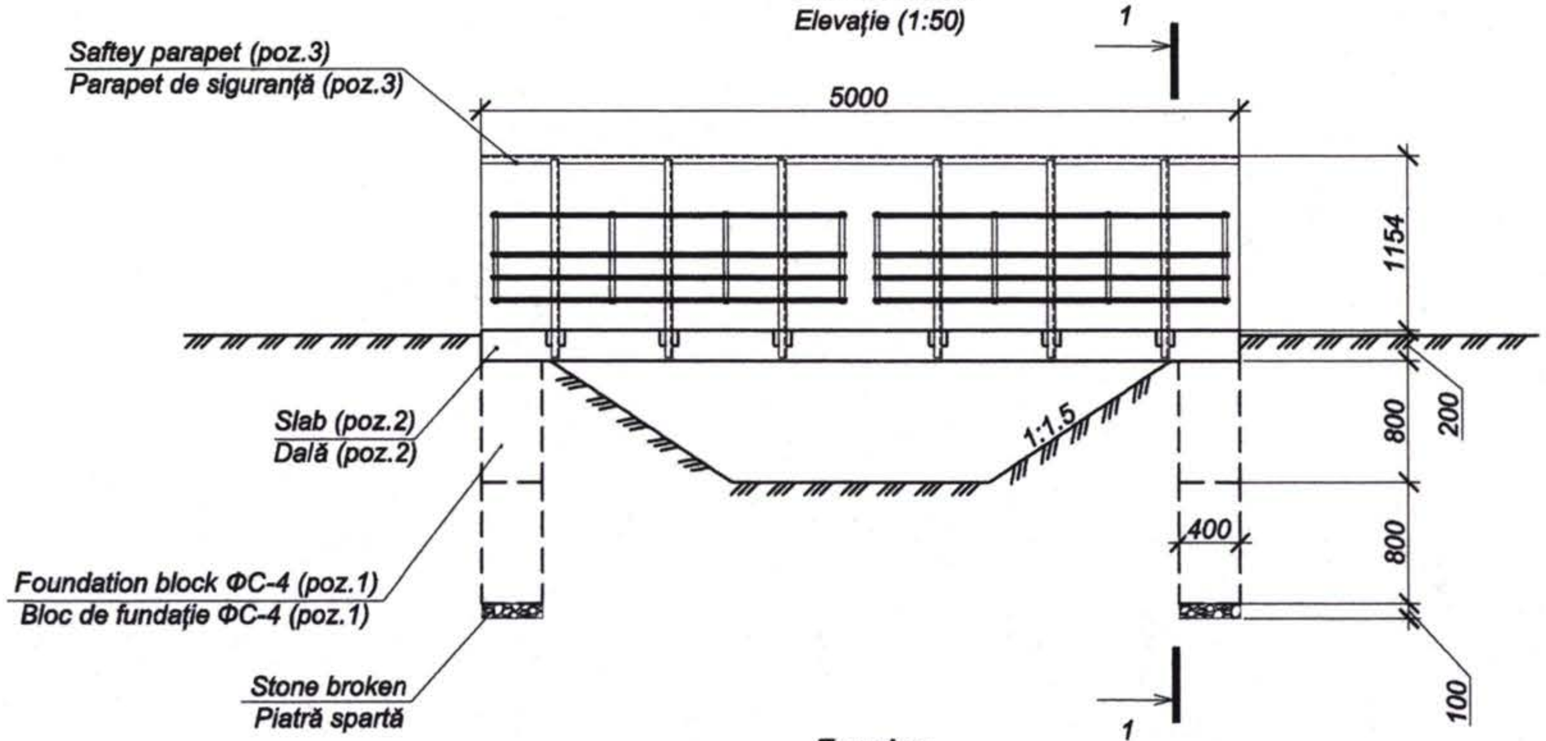
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Bus station. WC. Facade
Statie de autobus.Veceu.Fațade

Drawing 15-4

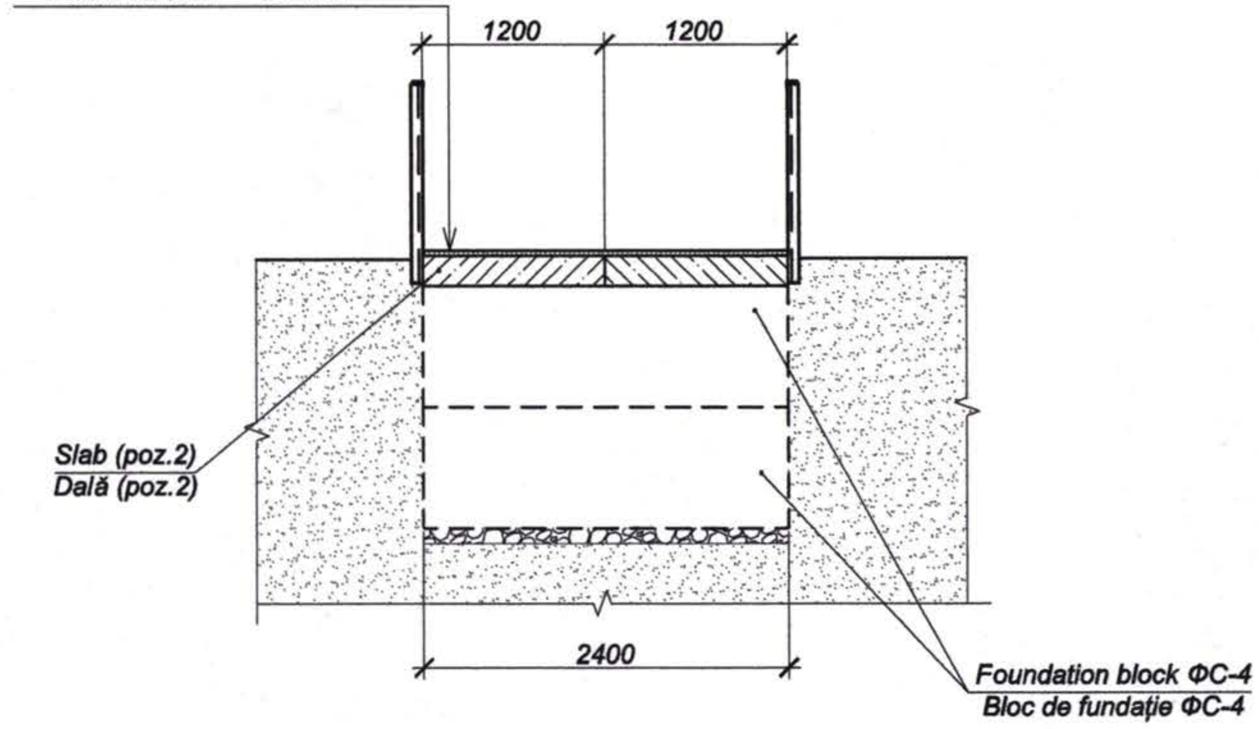
Format A3

Side elevation.
Elevație (1:50)

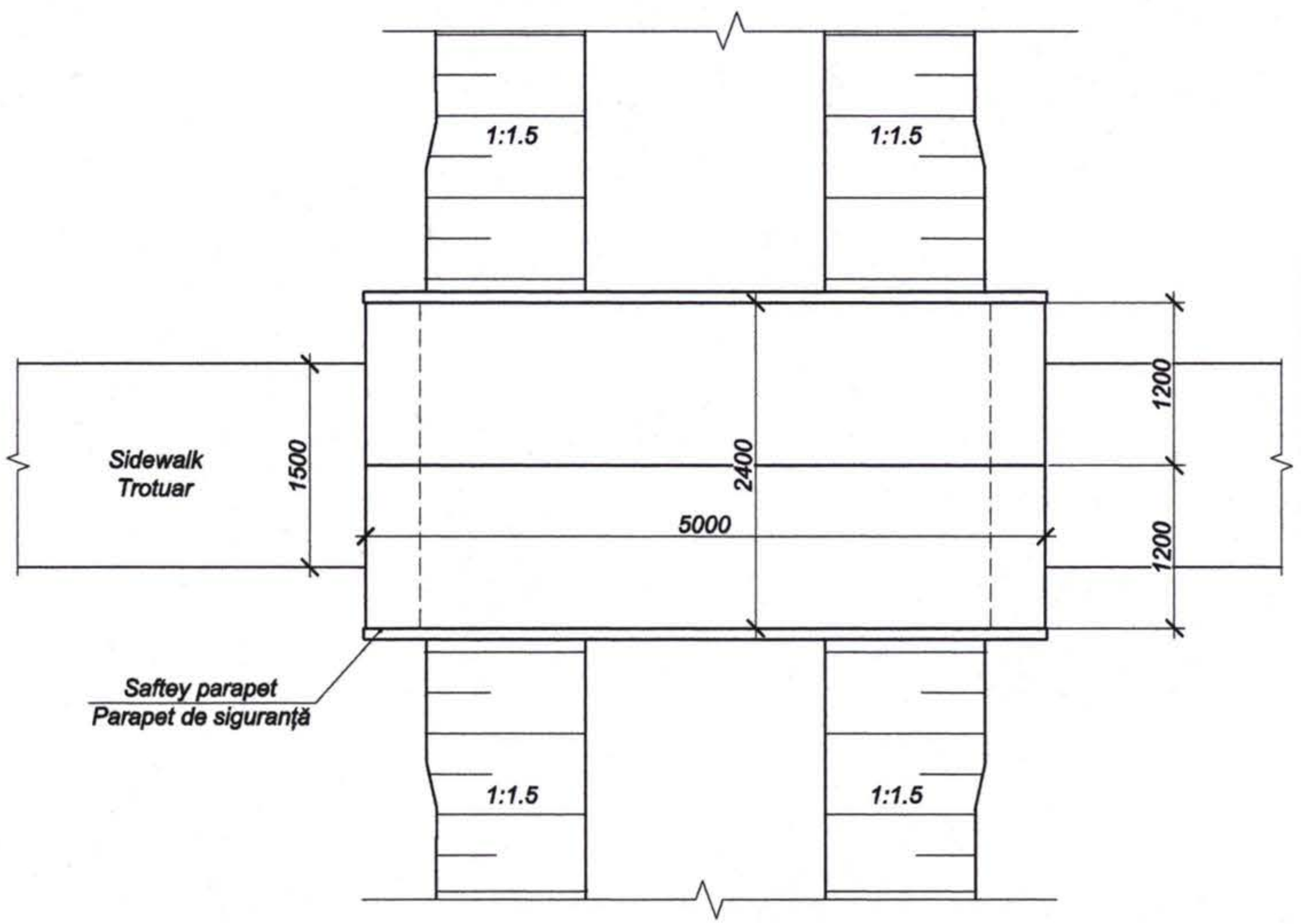


Asphalt concrete - 50mm
Beton asfaltic - 50 mm

1 - 1 (1:50)



Top view.
Plan (1:50)



Schedule of matrerials per pedestrian bridge
Lista de materiale pentru podul pentru pietoni

Pozition Poziția	Reference. Indicativ	Item. Denumirea	Quantity. Cant.	Weight. Masa, kg	Remarca
1		Foundation block ФС-4 Bloc de fundație ФС-4	4		0.78 m³
2		Slab D-1 Dala D-1	2		1.2 m³
3		Saftey parapet Parapet de siguranță	2	119.85	
	GOST 26633-91*	**Asphalt concrete h-50mm** Beton asfaltic h- 50 mm			0.6 m³

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Republic of Moldova Ministry of Transport

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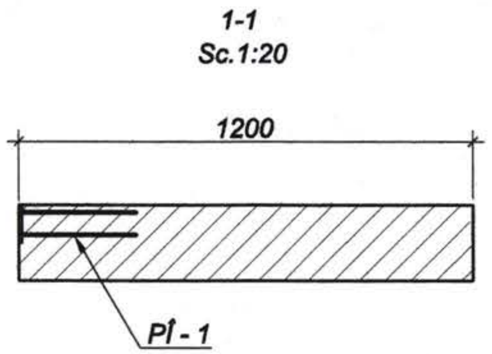
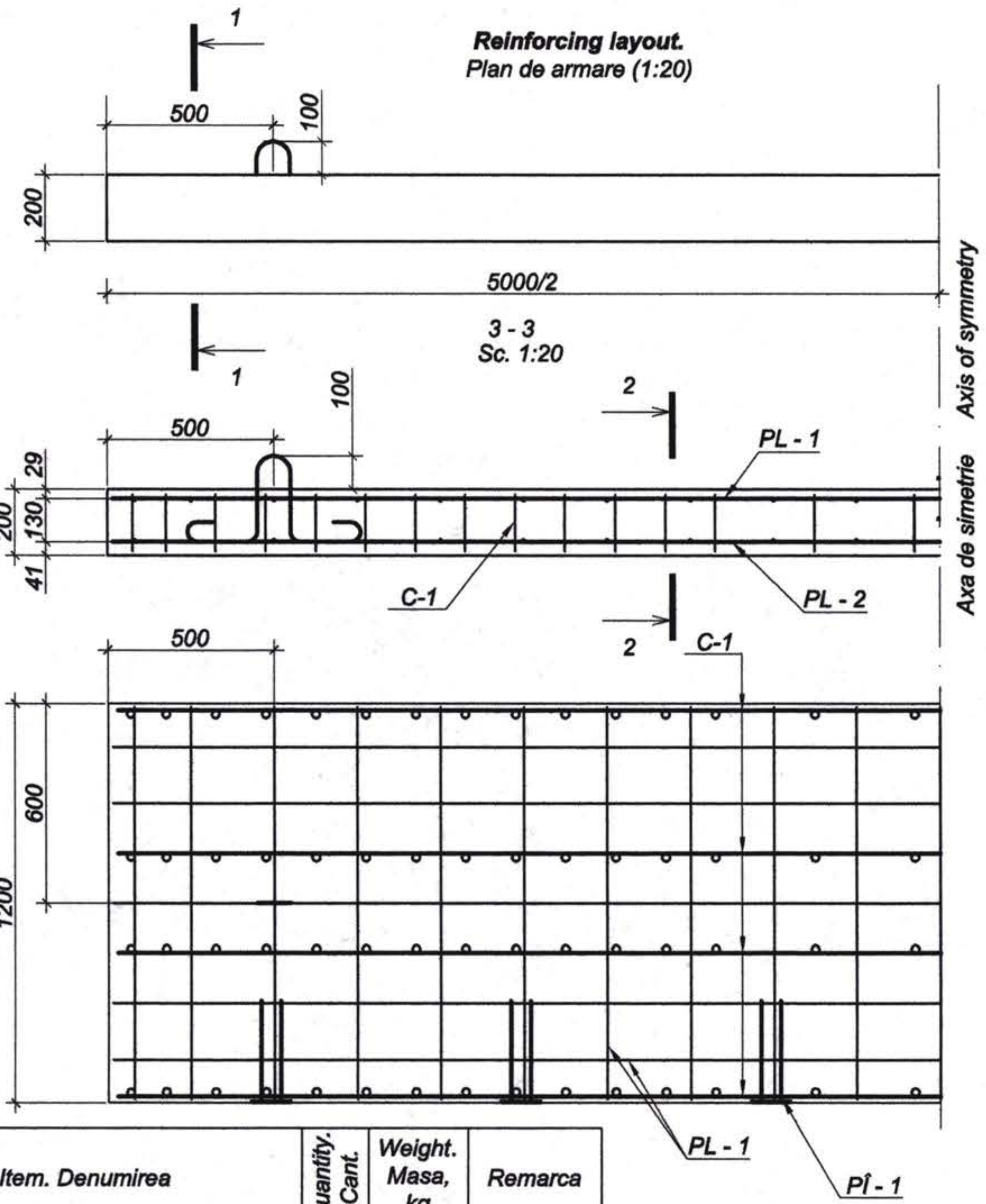
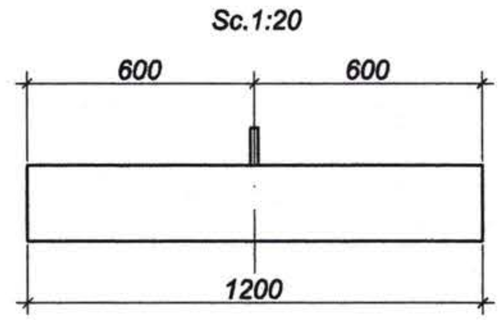
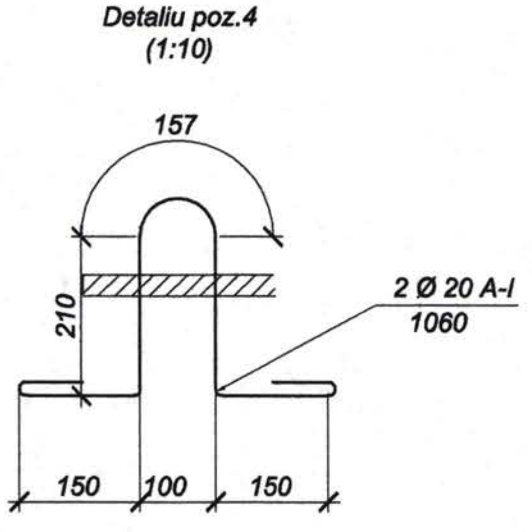
Pedestrian bridge. General arrangement
Podeț pentru pietoni. Vedere generală

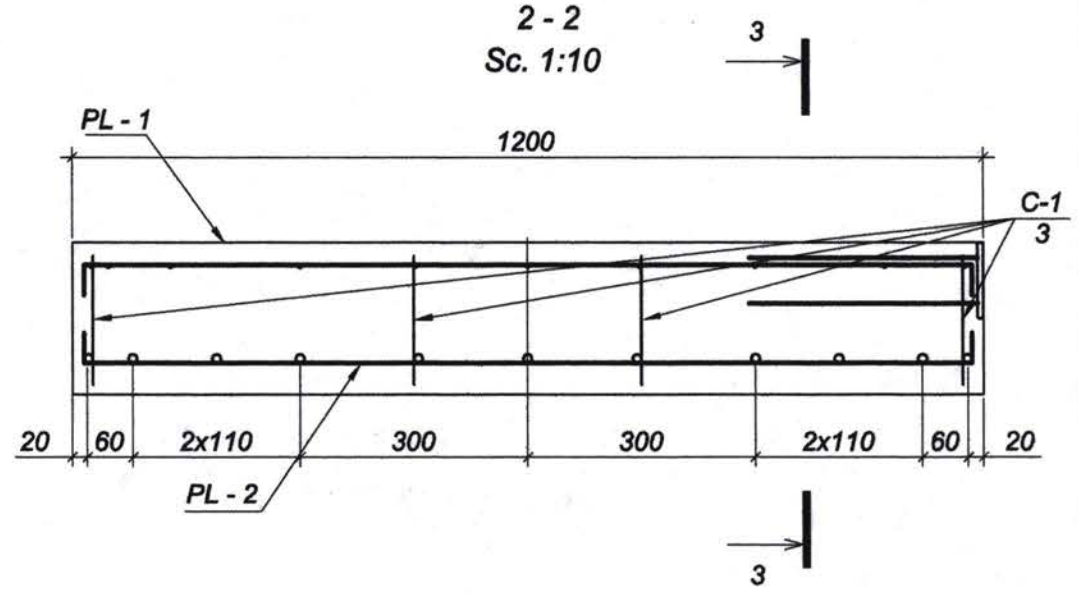
Drawing 16 -1











Schedule of matrerials per slab D-1.
Lista de materiale pentru dala D-1.

Pozition Poziția	Reference. Indicativ	Item. Denumirea	Quantity. Cant.	Weight. Masa, kg	Remarca
		Assembly elements Piese de asamblare			
1		Mesh Plasa PL-1	1	20.30	
2		Mesh Plasa PL-2	1	96.46	
3		Carcasa C-1	4	16.34	
		Embedded element Ureche de montaj			
4	GOST 5781-82**	Ø20 A-I L=1060	2	2.62	
5	GOST 5781-82**	PÎ-1	6	1.51	
		Materials Materiale			
	GOST 26633-91*	Concrete.Beton cl. B30, F200, W6			1.20 m³

Reinforcement amount for slab D-1
Masuratoare consum de metal pentru dala D-1

Element type. Marca elementului	Reinforcing pieces. Piese de armare							Embedded pieces. Piese inglobate							Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Steel type. Marca metalului			Totals. Linia totalului	
	A - I, Cm3cп			A - III, 25Г2C				A - I, Cm3cп			Steel type. Marca metalului				
	GOST 5781-82*			GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø8	Ø20	Total	Ø8	Ø20	Total		Ø10	-	Total	-100x8	-	Total		
D-1	29.4	5.24	34.84	17.64	135.08	152.72	187.56	9.12	-	9.12	9.0	-	9.0	18.12	205.48

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Data/Date 08.09

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Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

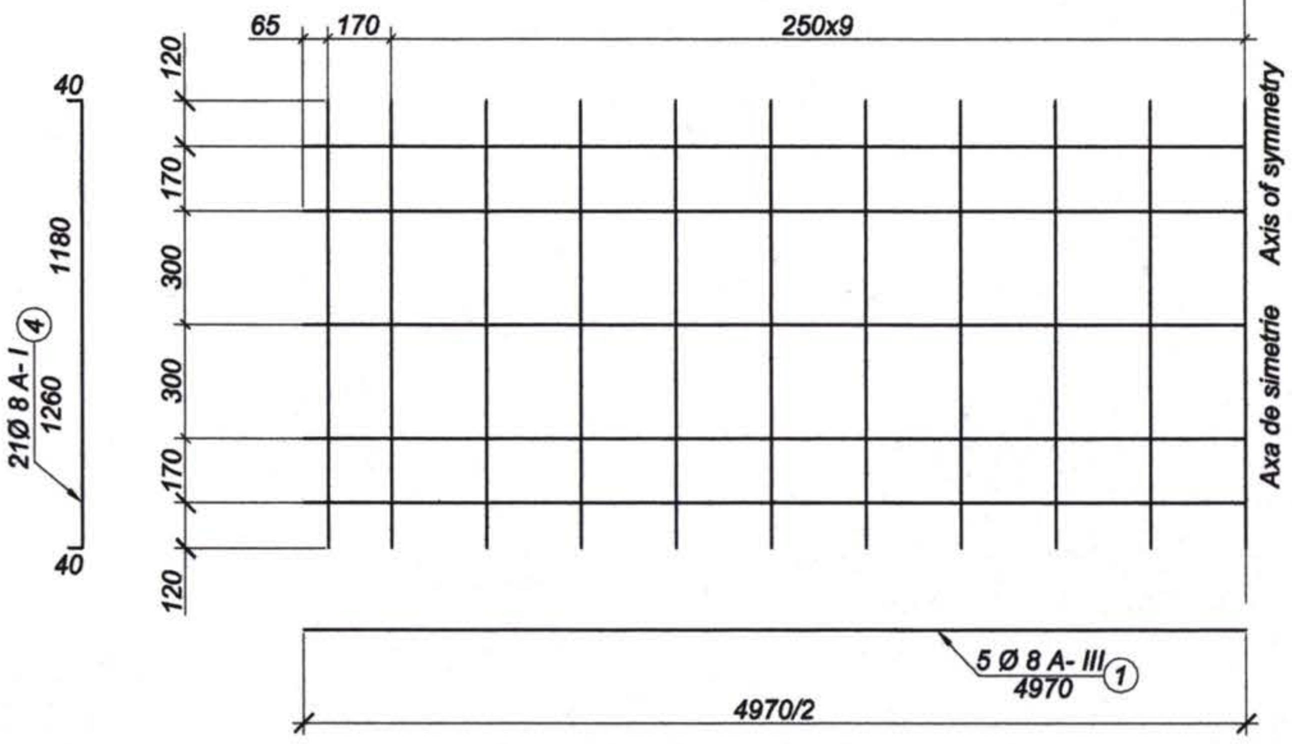
Pedestrian bridge. Slab D -1.Reinforcing layout
Podeţ pentru pietoni. Dala D - 1.Plan de armare

Drawing 16 -2

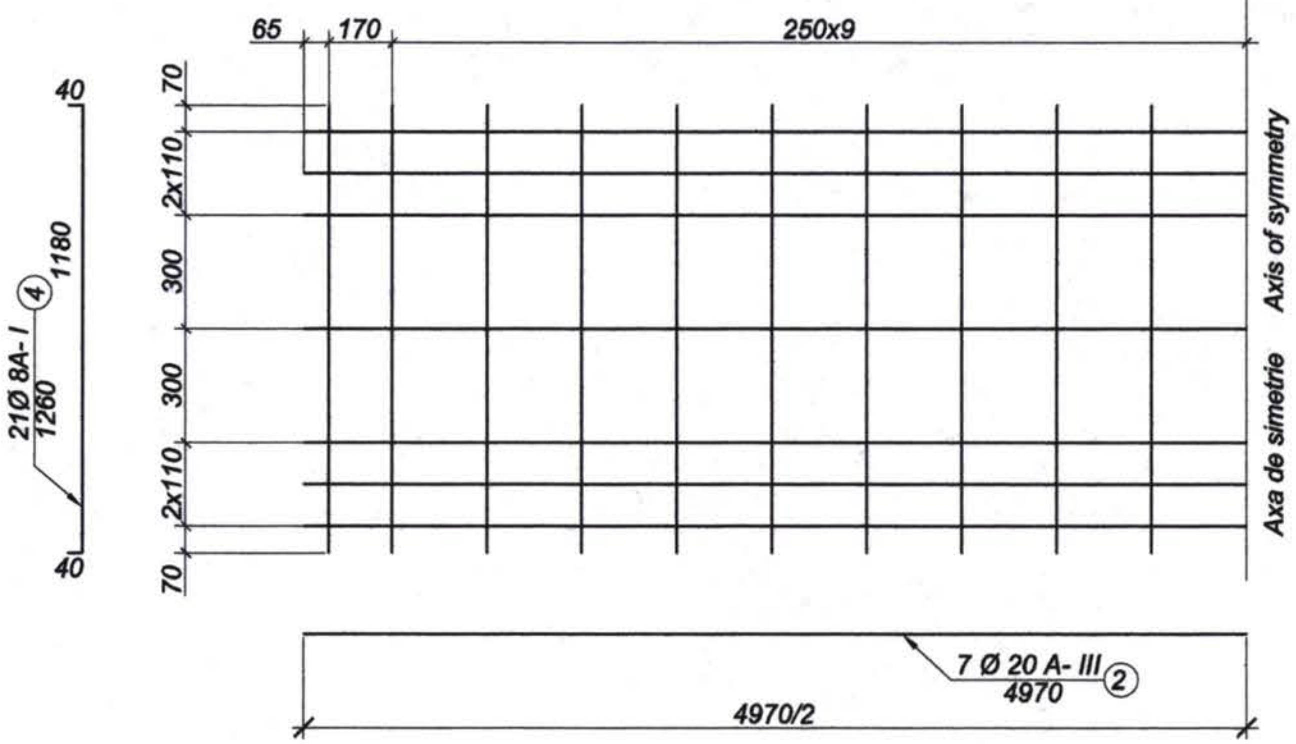
Reinforcement amount for slab D-1
Masuratoare consum materiale pentru dala D-1

Pozition Poziția	Reference. Indicativ	Item. Denumirea	Quantity. Cant.	Weight. Masa, kg	Remarca
		Mesh Plasa PL-1	1	20.30	
1	GOST 5781-82**	Ø 8 A-III L=4970	5	1.96	
4	GOST 5781-82**	Ø8 A-I L=1260	21	0.50	
		Mesh Plasa PL-2	1	96.46	
2	GOST 5781-82**	Ø20 A-III L=4970	7	12.28	
4	GOST 5781-82**	Ø8 A-I L=1260	21	0.50	
		Carcasa C-1	4	16.34	
1	GOST 5781-82**	Ø 8 A-III L=4970	1	1.96	
2	GOST 5781-82**	Ø20 A-III L=4970	1	12.28	
3	GOST 5781-82**	Ø8 A-I L=170	30	0.07	

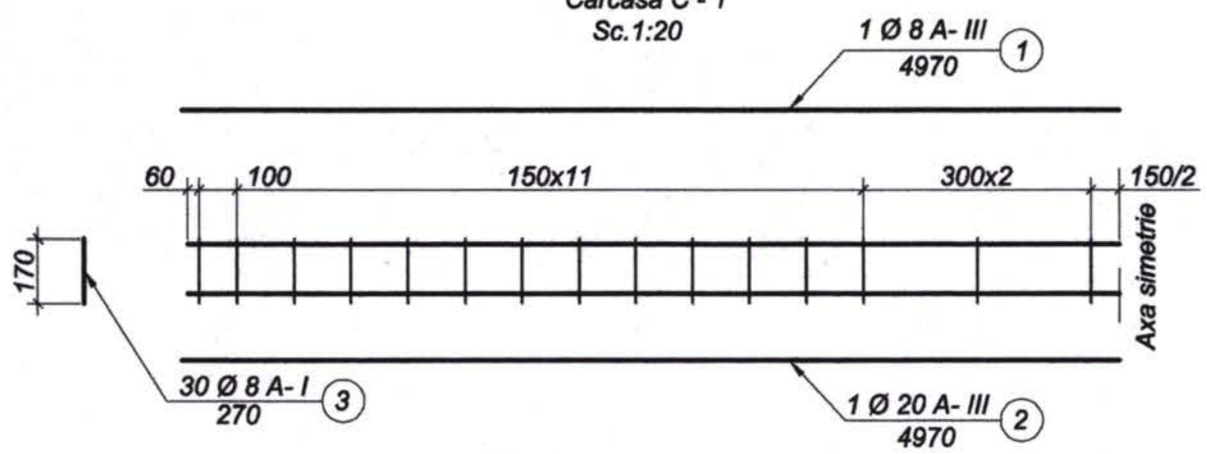
Plasa PL - 1
Sc.1:20



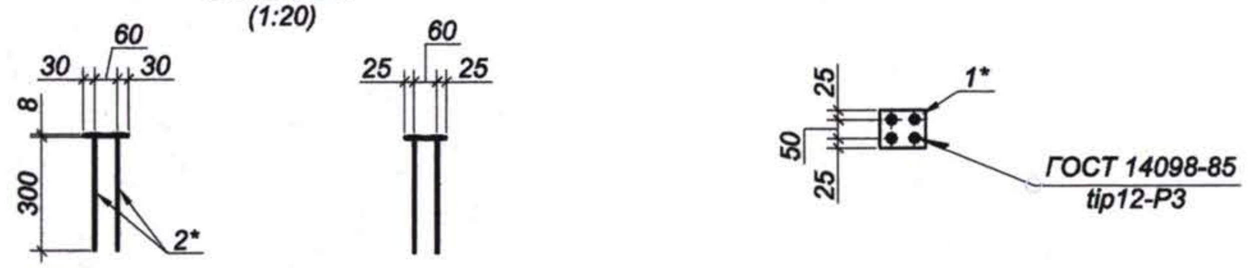
Plasa PL - 2
Sc.1:20



Cage C - 1
Carcasa C - 1
Sc.1:20



Detaliu poz.5
(1:20)



Măsurătoare elemente la PÎ-1

Poz.	Indicativ	Denumire	Canti-tate	Masa, kg	Remarcă
1*	ГОСТ 5781-82**	Ø10 A-II L=300	4	0.19	
2*	ГОСТ 103 - 76**	-- 100 x 8 L=120	1	0.75	

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Data/Date 08.09

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Republic of Moldova
Ministry of Transport

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Original Drawing Size

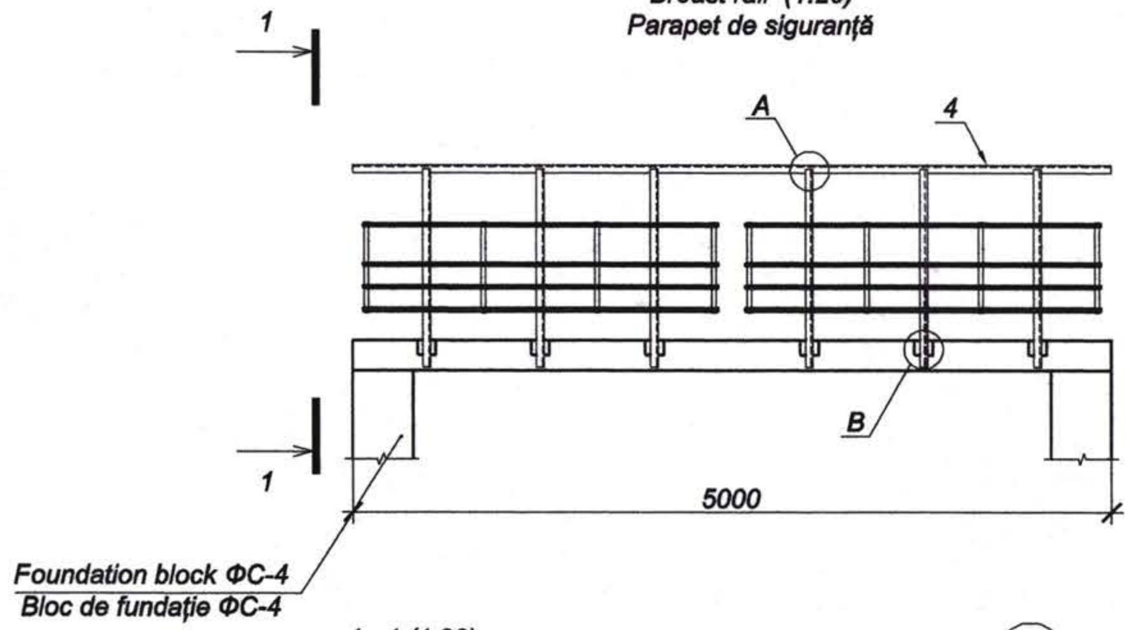
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

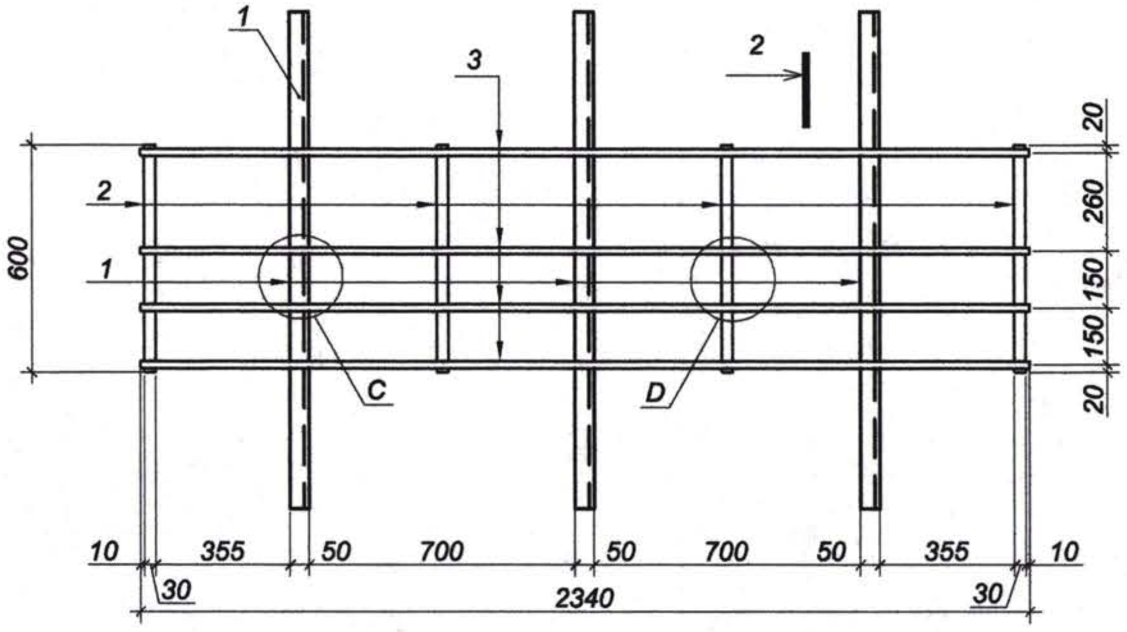
Pedestrian bridge. Slab D -1. Reinforcing layout
Podeţ pentru pietoni. Dala D - 1. Plan de armare

Drawing 16 -3

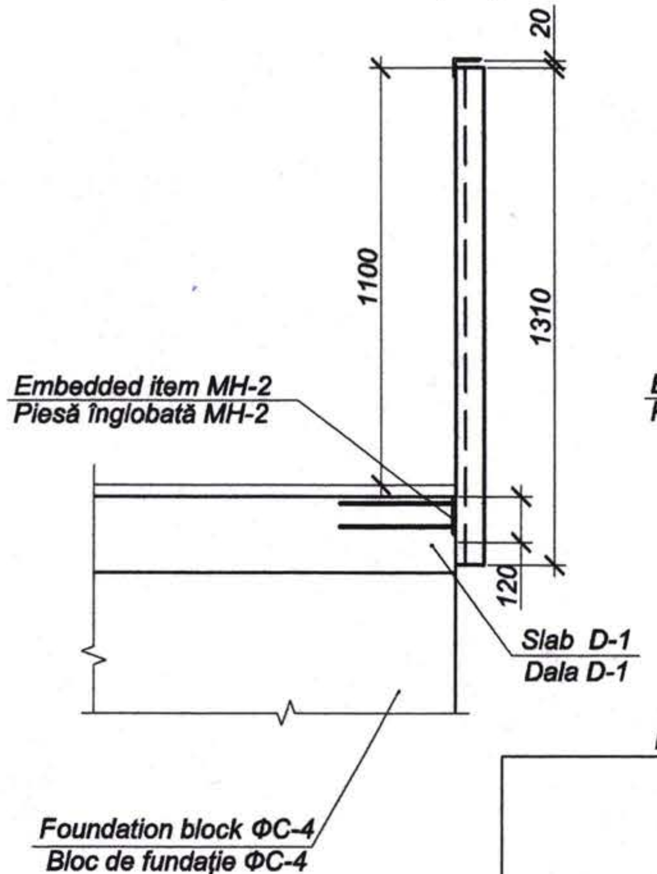
Breast rail (1:20)
Parapet de siguranță

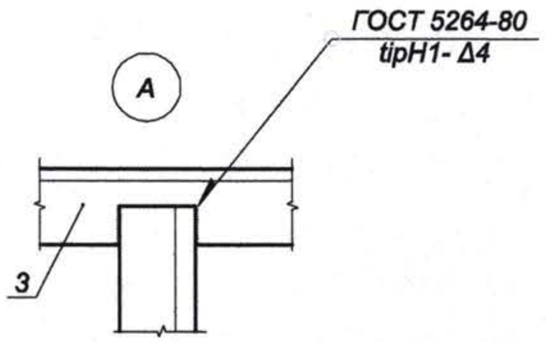


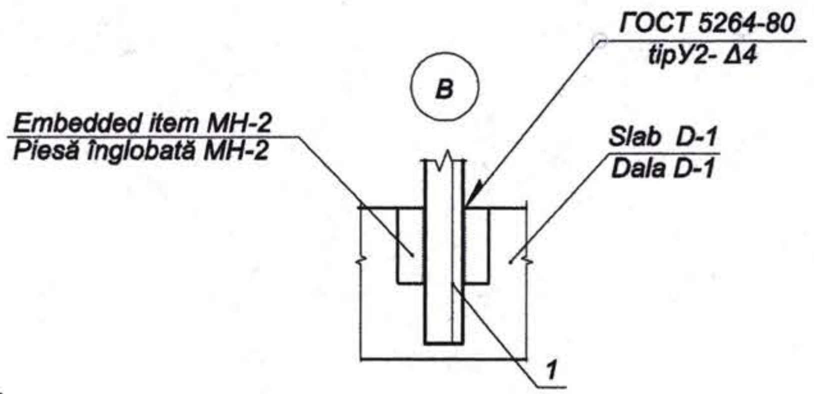
Railings (1:20)
Balustradă



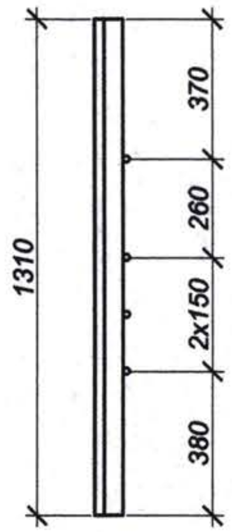
1 - 1 (1:20)

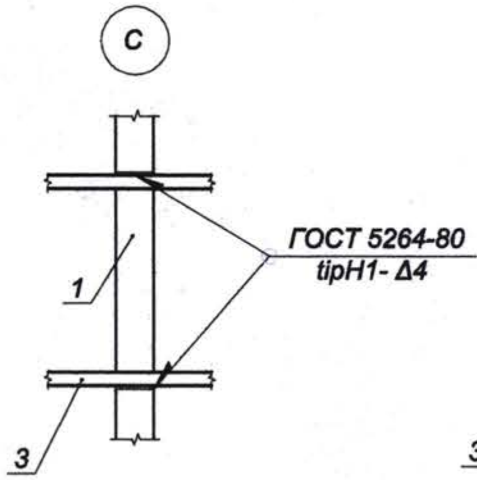


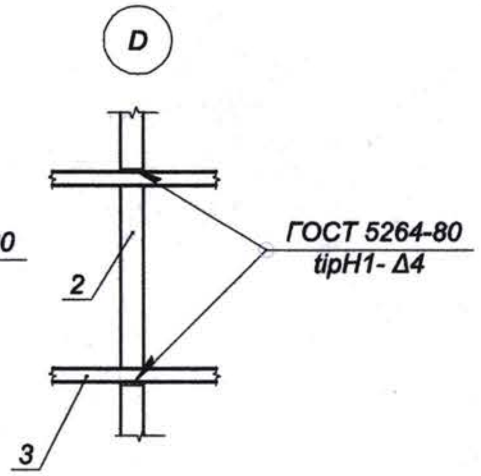




2 - 2 (1:20)







Reinforcement amount for breast rail
Masuratoare consum de metal pentru parapetul de siguranta

Element type. Marca elementului	Reinforcing pieces. Piese de armare — Reinforcing bar type. Armatura de clasa A - I, Cm3cп GOST 5781-82* Ø18	Total	Totals. Linia totalului	Steel type. Marca metalului — Steel type. Marca metalului GOST 103 - 2006 -30x8	Total	Steel type. Marca metalului — Steel type. Marca metalului GOST 8510-86* L 75x50	Total	Totals. Linia totalului	Overall weight. Greutate totala
	37.6	37.6	37.6	8.8	8.8	73.45	73.45	82.25	119.85

Specification for saftey parapet
Specificatia pentru parapet de siguranta

Poz.	Indicativ	Denumire	Canti tate	Masa u.m., kg	Remarcă
5		Railings Balustradă	2	45.7	
1	GOST 8510-86*	L 75x50x6 L=1310	3	7.50	
2	GOST 103-76*	▬ 30x8 L=600	4	1.1	
3	GOST 5781-82*	Ø18 A-I L=2340	4	4.7	
4	GOST 8510-86*	L 75x50x6 L=5000	1	28.45	

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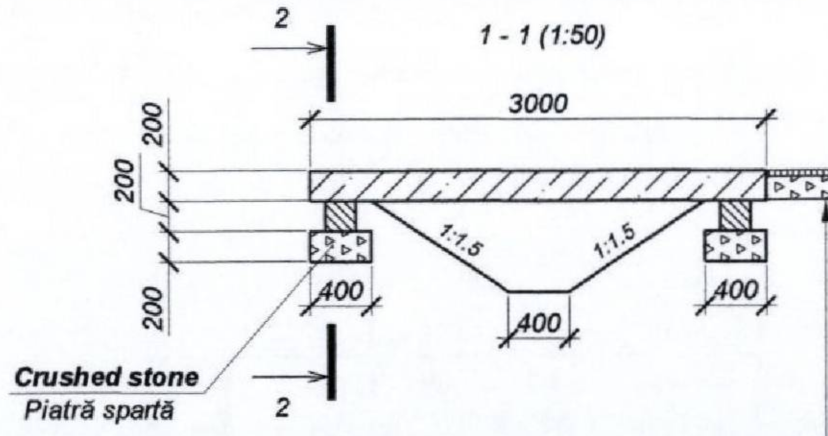
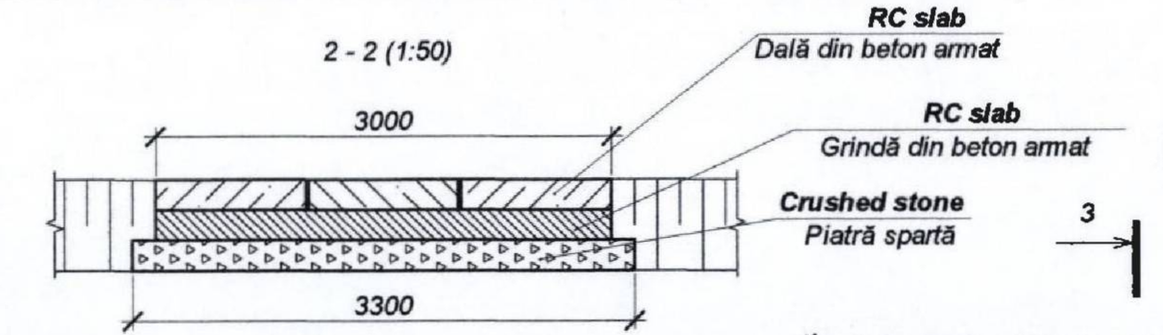
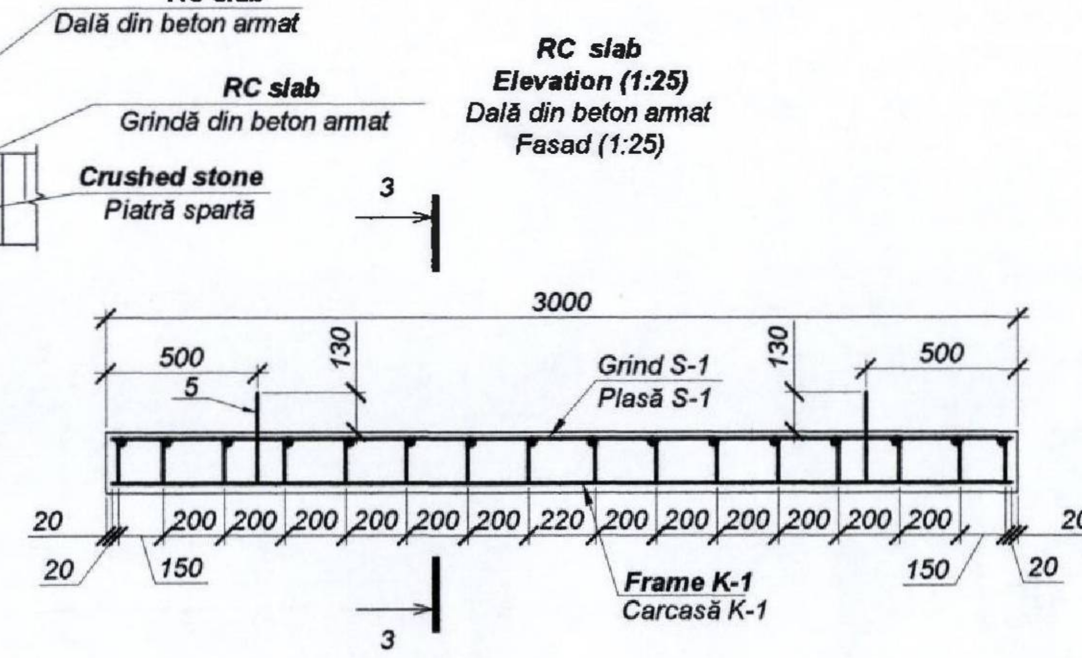
Pedestrian bridge. Breast rail
Podeț pentru pietoni. Parapet de siguranță

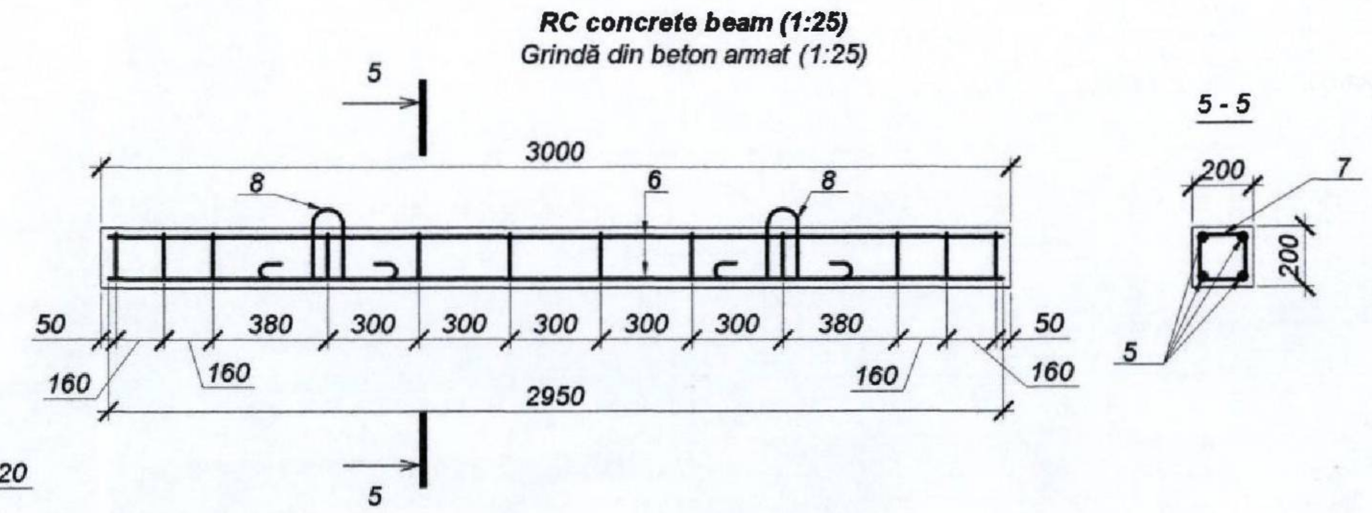
Drawing 16 -4

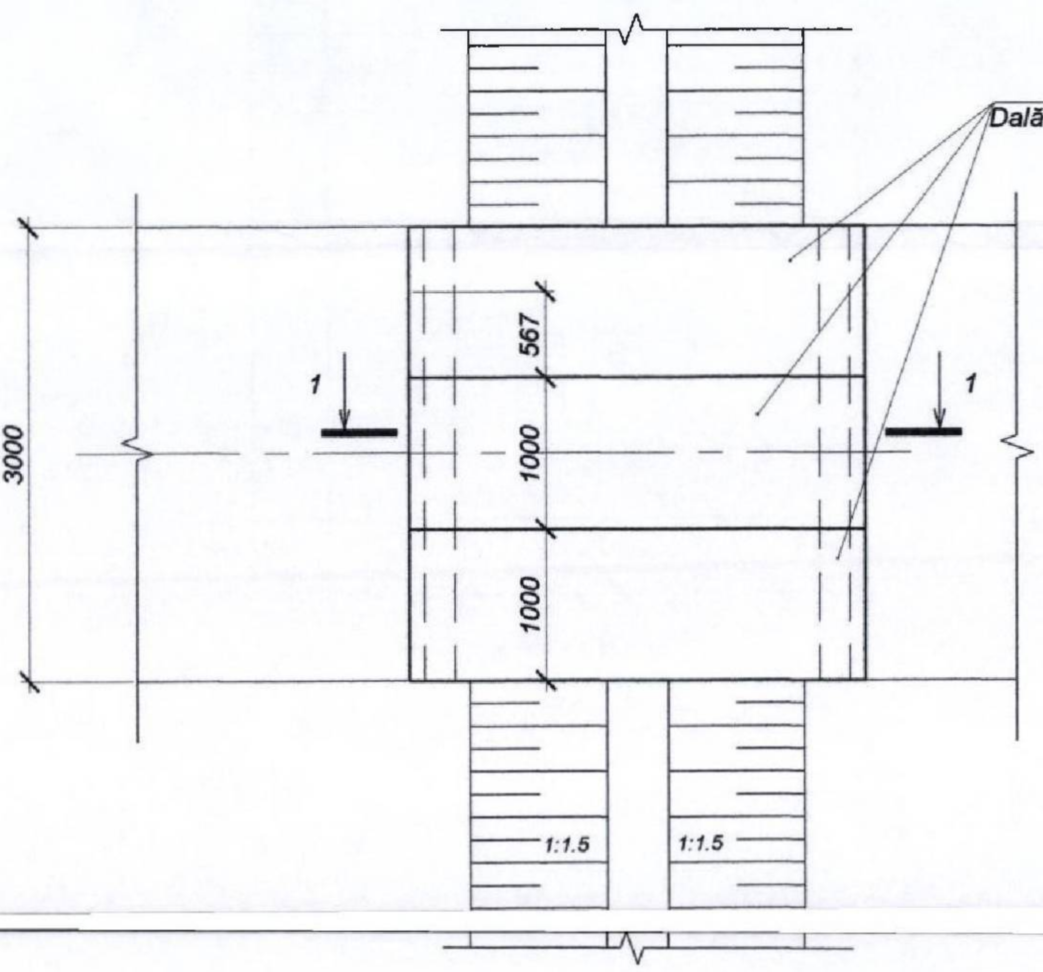


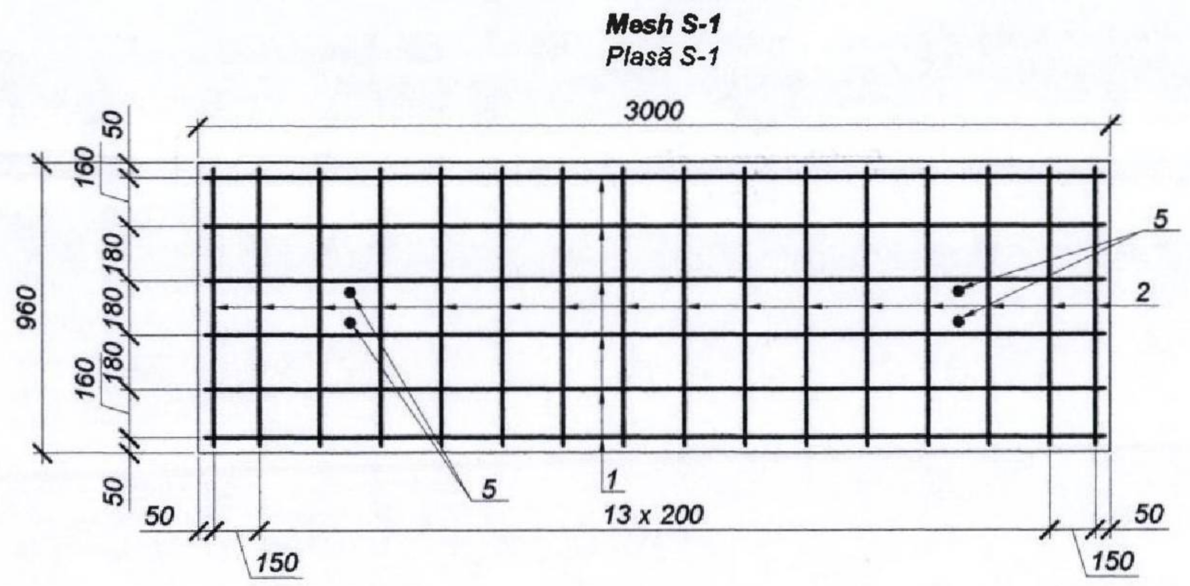


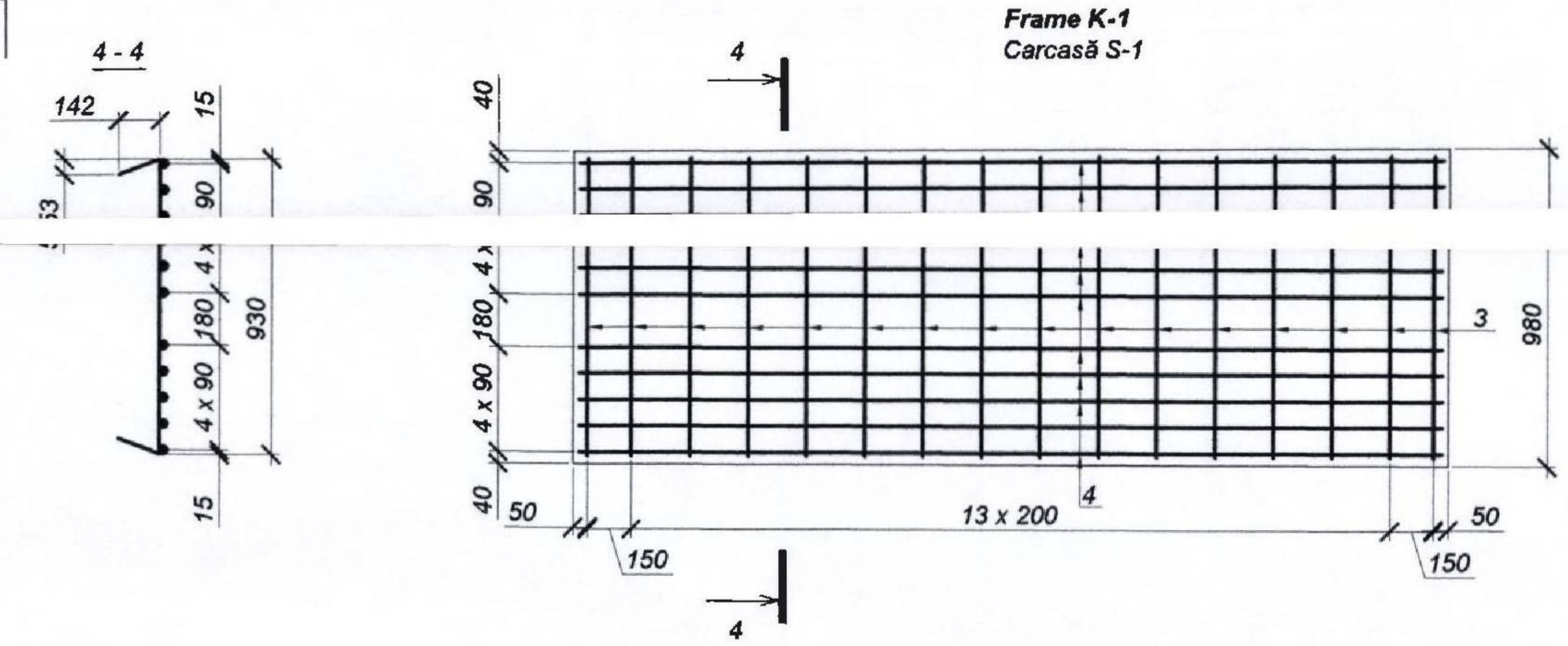
Crushed stone M300, GOST 8267-93*	**- 0.15**
Piatra sparta M300, GOST 8267-93*	- 0.15
Asphalt concrete ŞMGg III/2.0, SM STB 1033:2008	**- 0.04**
Beton asfaltic ŞMGg III-2.0, SM STB 1033:2008	- 0.04











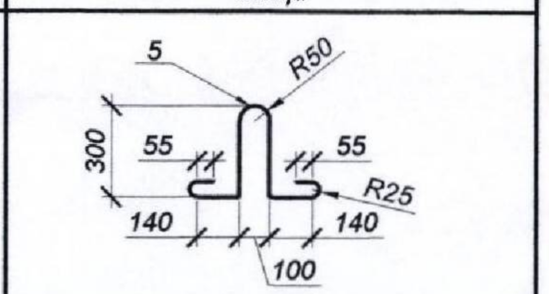
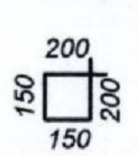
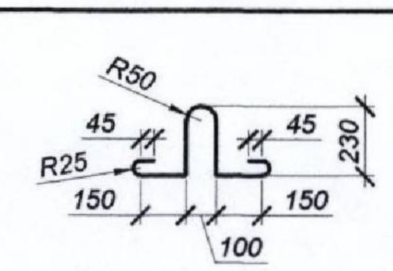
Specification of materials for RC slab
Specificarea materialelor pentru dală din beton armat

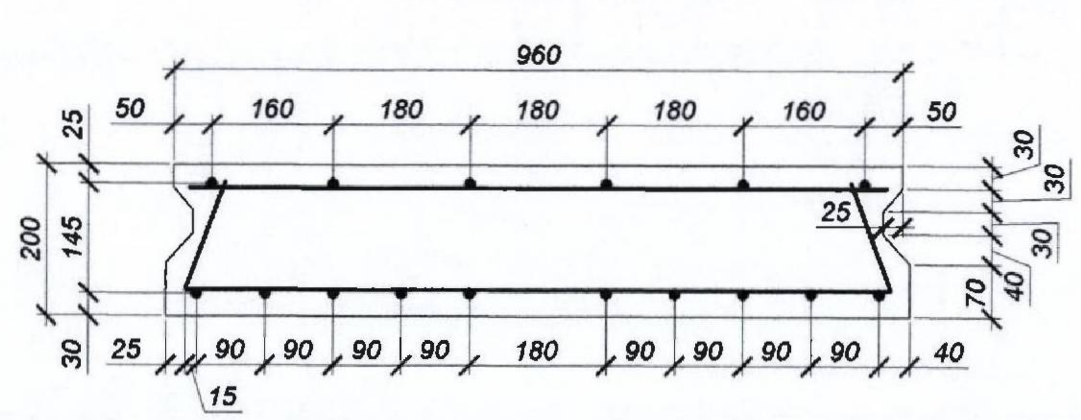
No Poz.	Referance Marcarea	Name Denumirea	Quantity Buc.	Weight, kg Masa unut., kg	Note Nota
		Prefabricated units			
		Grind S-1 Plasă S-1	1	20.10	
1	GOST 5781-82**	Ø10 A-I L - 2960	6	1.83	
2	GOST 5781-82**	Ø10 A-I L - 920	16	0.57	
		Carcasă K-1	1	58.96	
3	GOST 5781-82**	Ø10 A-I L - 1230	16	77.07	
4	GOST 5781-82**	Ø16 A-II L - 2960	10	4.68	
		Embedded detail Piese anglobate	2	7.16	
5	GOST 5781-82**	Ø22 A-I L - 1200	1	3.58	
		Material Materiale			
	GOST 26633-91*	**Concrete B25 F200 W6** Beton B25 F200 W6			0.6 m^3

Specification of materials for RC concrete beam
Specificarea materialelor pentru grindă din beton armat

No Poz.	Referance Marcarea	Name Denumirea	Quantity Buc.	Weight, kg Masa unut., kg	Note Nota
		Details Detalii			
6	GOST 5781-82**	Ø12 A-I L - 2950	4	2.62	
7	GOST 5781-82**	Ø6 A-I L - 700	12	0.16	
		Embedded detail Piese anglobate			
8	GOST 5781-82**	Ø6 A-I L - 1060	2	0.65	
		Material Materiale			
	GOST 26633-91*	**Concrete B25 F200 W6** Beton B25 F200 W6			0.12 m^3

List of details
Lista de detalii

No Poz.	Draft Schiţă
5	
7	
8	



List of steel use, kg
Lista utilizării oţelului, kg

Type of element Tip element	Reinforcing products Confecţii din armatură							Embedded details Piese anglobate				Total demand Greutate totală
	D-bars of Armatură clasa						Grand total Linia totalului	D-bars of Armatură clasa			Grand total Linia totalului	
	A - I, Cm3				A - II, Cm5			A-I, Cm3				
	GOST 5781-82*				GOST5781-82*			GOST5781-82*				
	Ø6	Ø10	Ø12	Total Total	Ø16	Total Total		Ø10	Ø22	Total		
RC slab Dală din beton armat	-	32.26	-	32.26	46.80	46.80	79.06	-	7.16	7.16	7.16	86.22
RC concrete beam Grindă din beton armat	1.92	-	10.48	12.40	-	-	12.40	1.30		1.30	1.30	13.70

1. All dimensions are given in mm.

1. Toate dimensiunile sînt indicate in mm.

Rev. Rev.	Amendamente Amendments		Data Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

UNIVERSINJ DESIGN, ENGINEERING, CONSULTING — Universinj Ltd. Independentei 6/1 Str. Chisinau MD 2043, Moldova

Proiectat/Designed:	Tcaci A.	Desenat/Drawn:	Tcaci A.
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Aprobat/Approved
Data/Date

EU Delegation to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

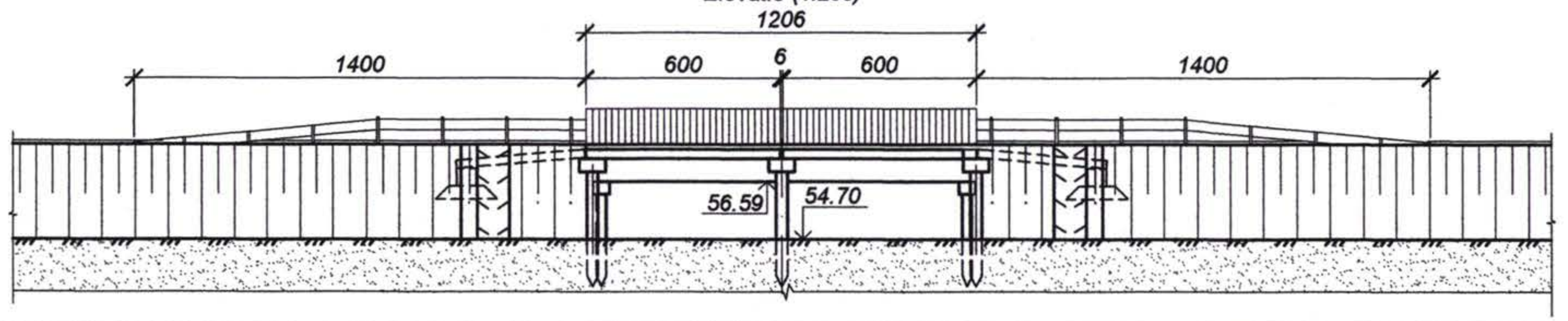
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Entry to the yard
Intrare in curti

Drawing 17-1

Inv. Nr | Semnatura si data | Scimb Inv. Nr

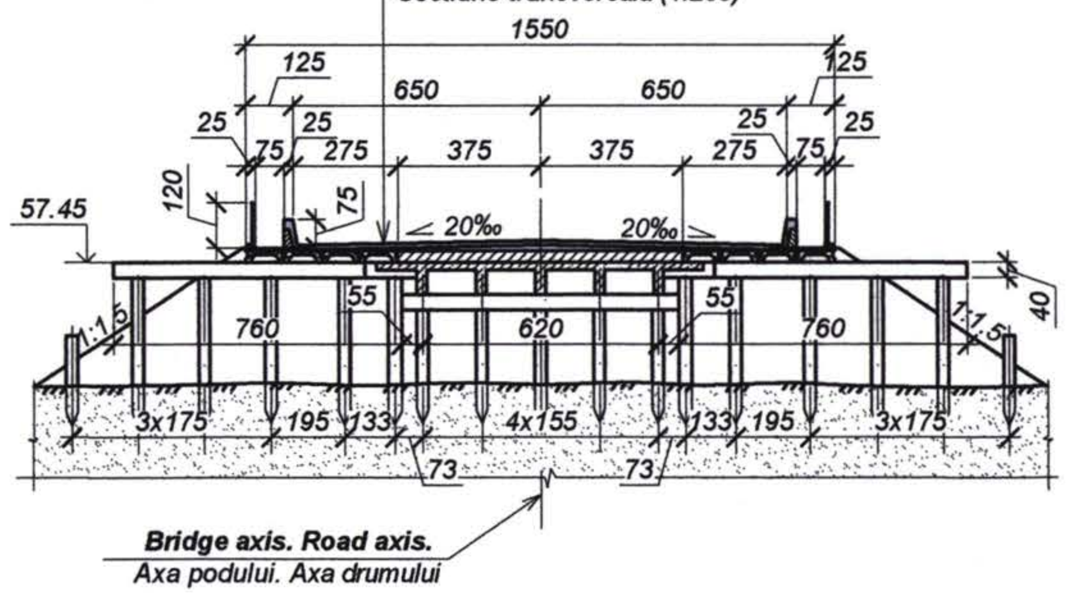
Side elevation.
Elevatie (1:200)



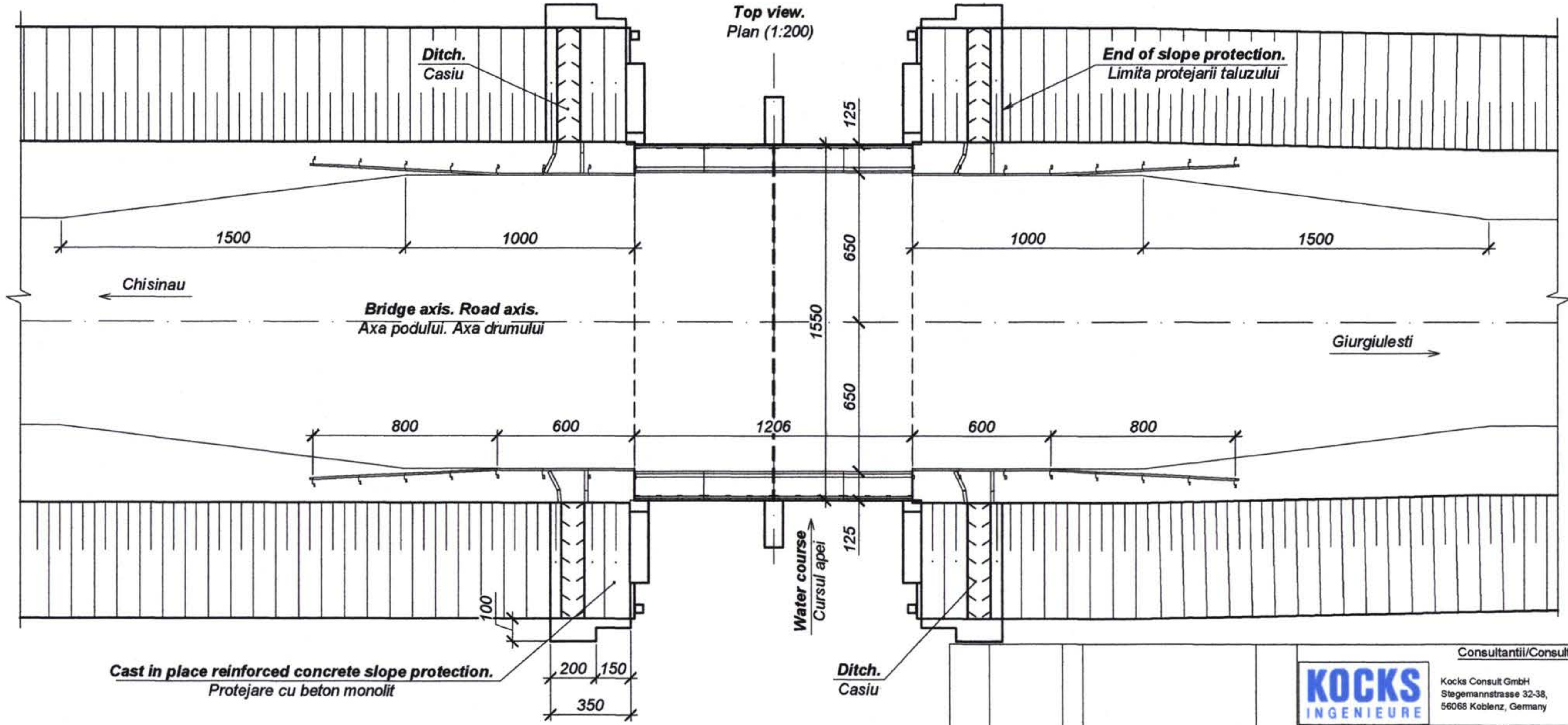
Design data / Date proiect	Gradient,‰, vertical radius, m / Declivitate,‰, curba verticala, m	R=2000
	Finished carriageway level, m / Cota in axa, m	58.20 · 58.08 · 57.99
Terrain data / Date teren	Ground level, m / Cota teren, m	55.11 · 54.93 · 57.97
	Distance, m / Distanta, m	6.03 · 6.03
Survey station	Pichet	975+96

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Strat de hidroizolare	- 5 mm
Leveling layer. Strat de egalizare	- 30÷180 mm

Cross section.
Sectiune transversala (1:200)



Top view.
Plan (1:200)



Hydrological parameters.
Caracteristici hidrologice

Item. Denumirea	**Unit of measure.** Unitatea de masura	**Quantity.** Cant.
Estimated flow quantity. Debitul de calcul, $Q_{1\%}$	m^3/s	77.5
High water. Nivelul apelor exceptionale $NAE_{2\%}$	m	23.39
Stream speed before bridge scur. Viteza apei inainte de afuiere	m / s	2.94
Stream speed after bridge scur. Viteza apei dupa afuiere	m / s	1.4

Quantity list.
Lista de cantități

No. Art.	**Item description.** Descrierea articolului	**Unit of measure.** Unitatea de măsură	**Quanitiy.** Cantitate
1	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	162
2	**Expansion joints.** Rosturi de dilatatie	m.	39
3	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod	Sq. m.	162
4	**Bridge rigid safety parapet.** Parapet de siguranta rigid pe pod	Cu. m.	3
5	**Bridge steel railing repair.** Reparatia parapetului metalic pietonal pe pod	m.	24
6	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	56
7	**Concrete repair.** Repararea betonului degradat	Sq. m.	280
8	**Slope and channel protection.** Protejarea taluzelor si albiei	Sq. m.	72
9	**Removal of existing structure.** Demolarea structurii existente	Cu. m.	29

Note. Nota:
1. All dimensions are in cm, level marks in m.
1. Toate dimensiunile sunt in cm, cotele in m.

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:
KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany
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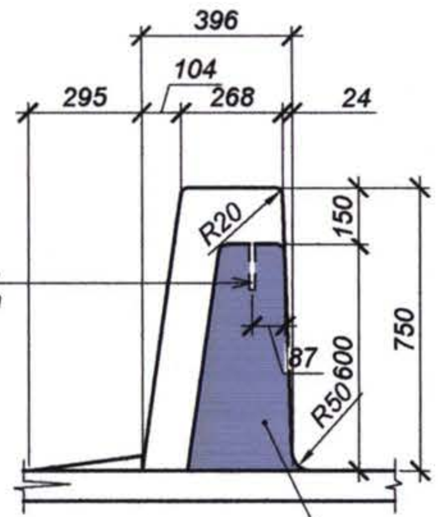
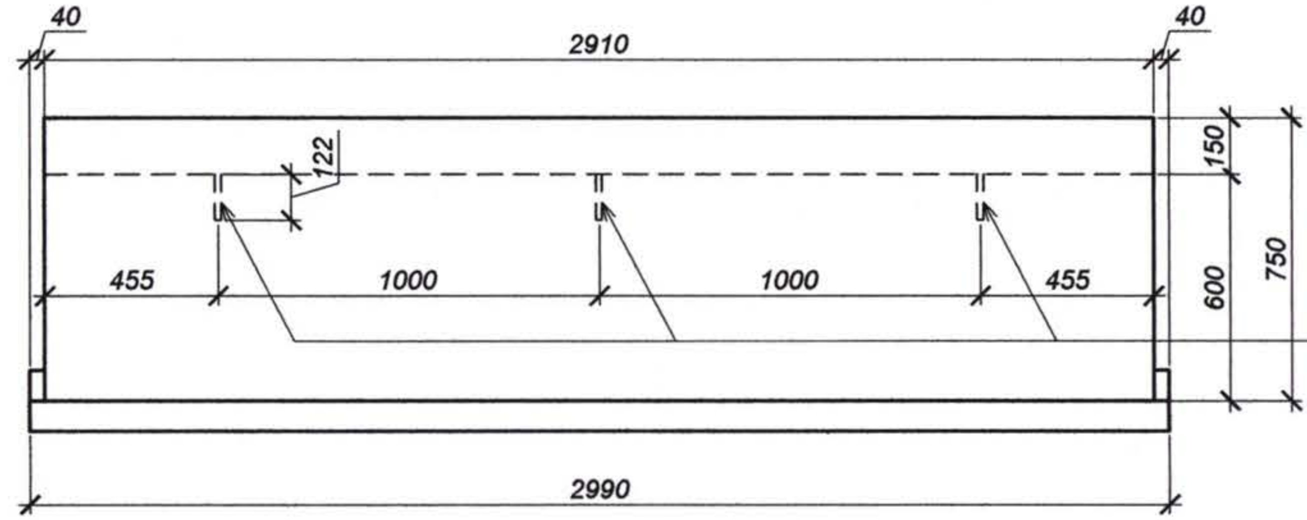
Desenat/Drawn: Russu I.
Data/Date
Aprobat/Approved
Data/Date
EU Delegation to Moldova
Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, Km 97+596
Bridge, Km 97+596
Dispozitie generala.
General arrangement .
Drawing 18-1

Formwork layout.
Plan de cofrare (1:20)

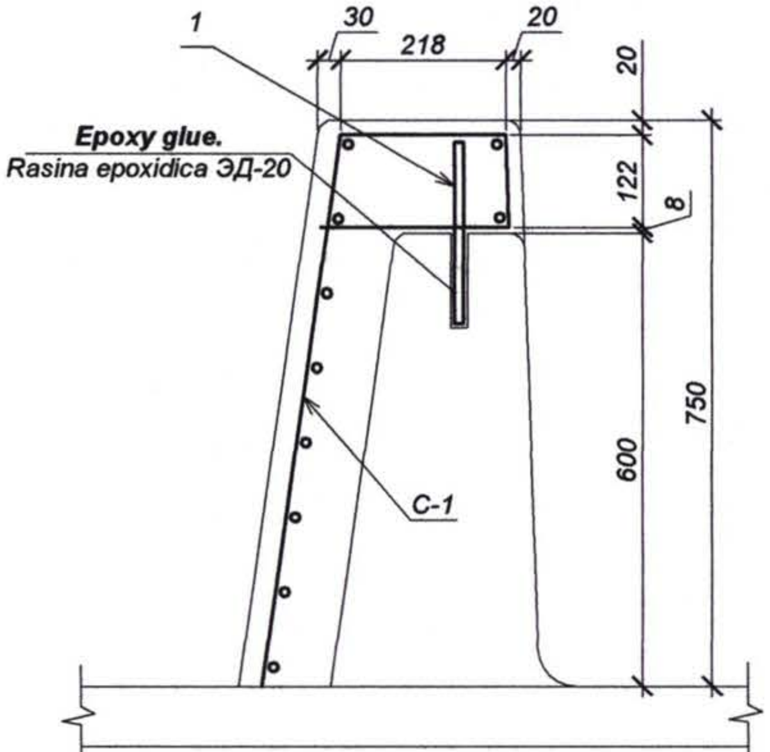




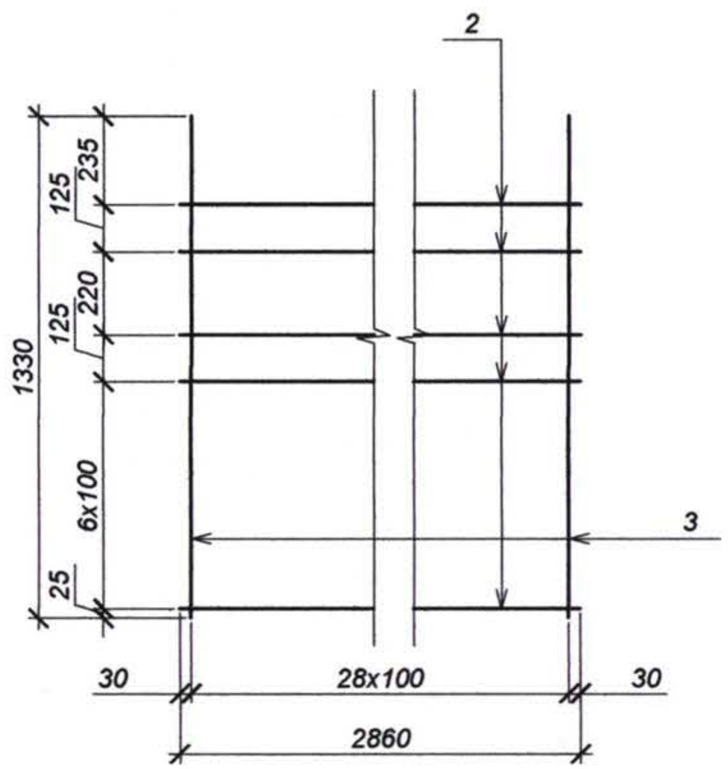
Shedule of materials, per rigid safety parapet.
Lista de materiale pentru parapet de siguranta rigid.

Pozition. Poziția	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarca
		Rigid safety parapet. Parapet de siguranta rigid	1	60.25	
1		Ø12 A-III, L=240, GOST 5781 - 82*	3	0.21	0.63
		Skeleton C-1. Carcasa C-1	1	59.62	
2		Ø12 A-III, L= 2860, GOST 5781 - 82*	10	2.54	25.40
3		Ø12 A-III, L=1330, GOST 5781 - 82*	29	1.18	34.22
		Materials. Materiale			
		Epoxy glue. Rasina epoxidica ЭД-20, GOST 10587-84*			0.065 l
		Concrete. Beton B35 F200 W6, GOST 26633-91*			0.35 m³

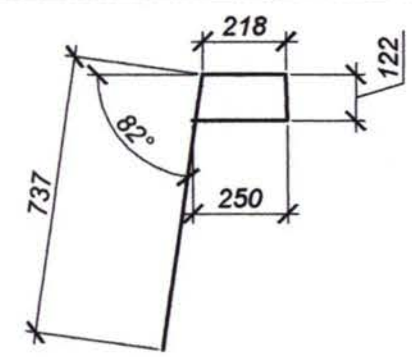
Reinforcing layout.
Plan de armare



Skeleton C-1.
Carcasa C-1 (1:20)



Bending details sheet
Masuratoare detalii

Pozition. Pozitia	**Sketch.** Schita
3	

Note. *Nota:*

1. Number of safety barrier - 8.
1. Numarul de parapeti de siguranta - 8 buc.

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany
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Desenat/Drawn: Russu I.
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Aprobat/Approved
Data/Date

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

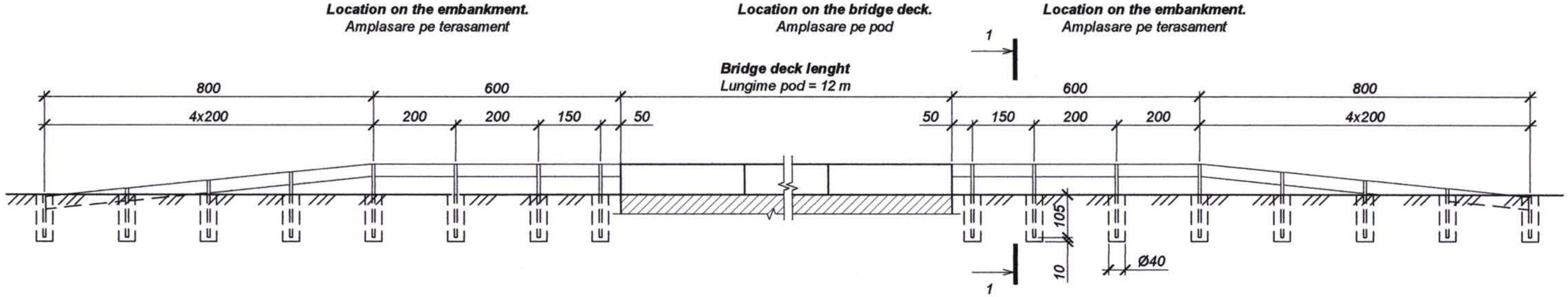
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, Km 97+596
Bridge, Km 97+596

Parapet de siguranta rigid
Rigid safety parapet

Drawing 18-2

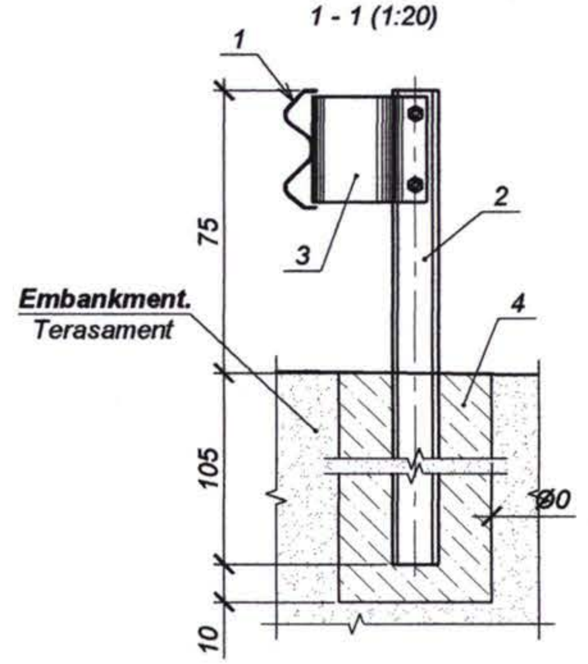
Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)



Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. Pozitia	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarca
1		**W-type guard-rail.** Lisa de otel	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** Stilpul parapetului СД-3*, GOST 8239 - 89	1	20.7	
3		**Shock absorber KA,bolts,washer,nut.** Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86	set		
4		**Concrete.** Beton B25, F200, W6, GOST 26633-91*			0.14 m³

1 - 1 (1:20)



Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

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Proiectat/Designed: | Desenat/Drawn:
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Data/Date

EU Delegation to Moldova | Republic of Moldova Ministry of Transport

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Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

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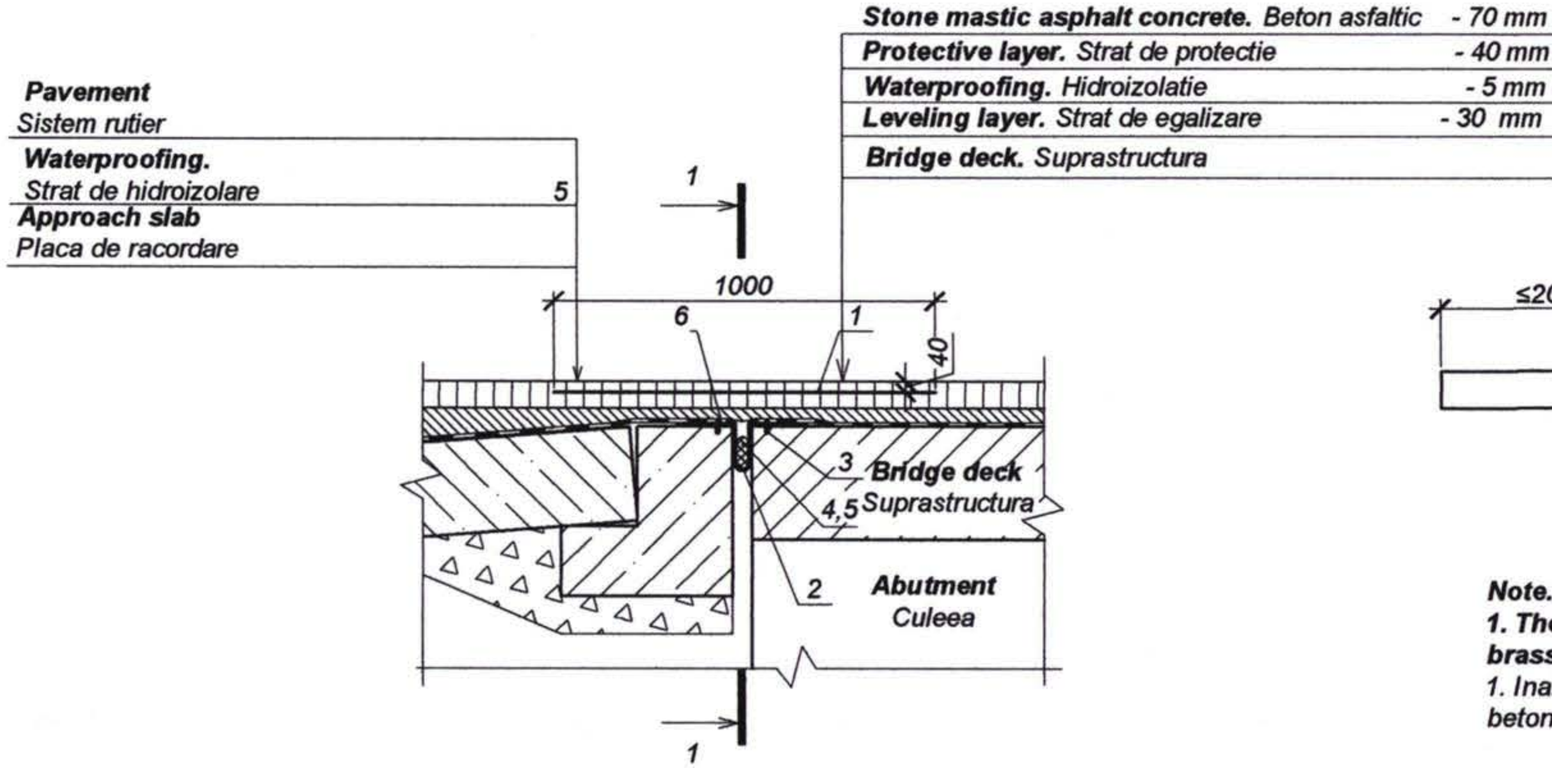
Pod, km 97+596.
Bridge, km 97+596.

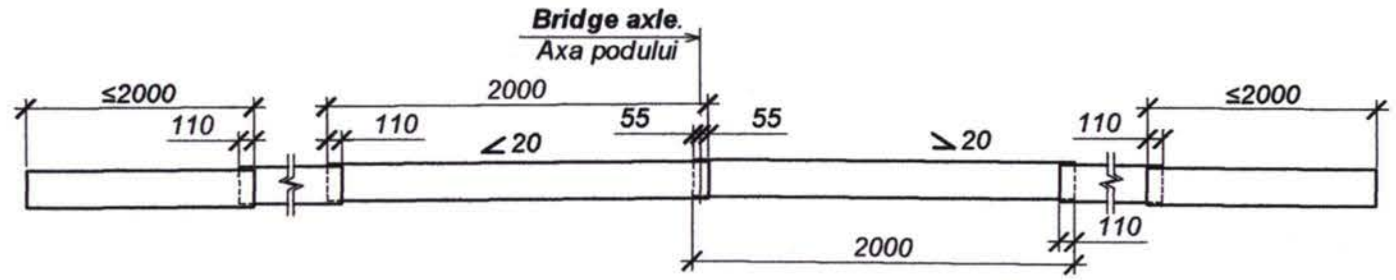
Parapet metalic de siguranta deformabil .
Deformable steel guard-rail.

Drawing 18-3

Expanssion joint at the abutment - *Rostul de dilatate la culee (1:20)*

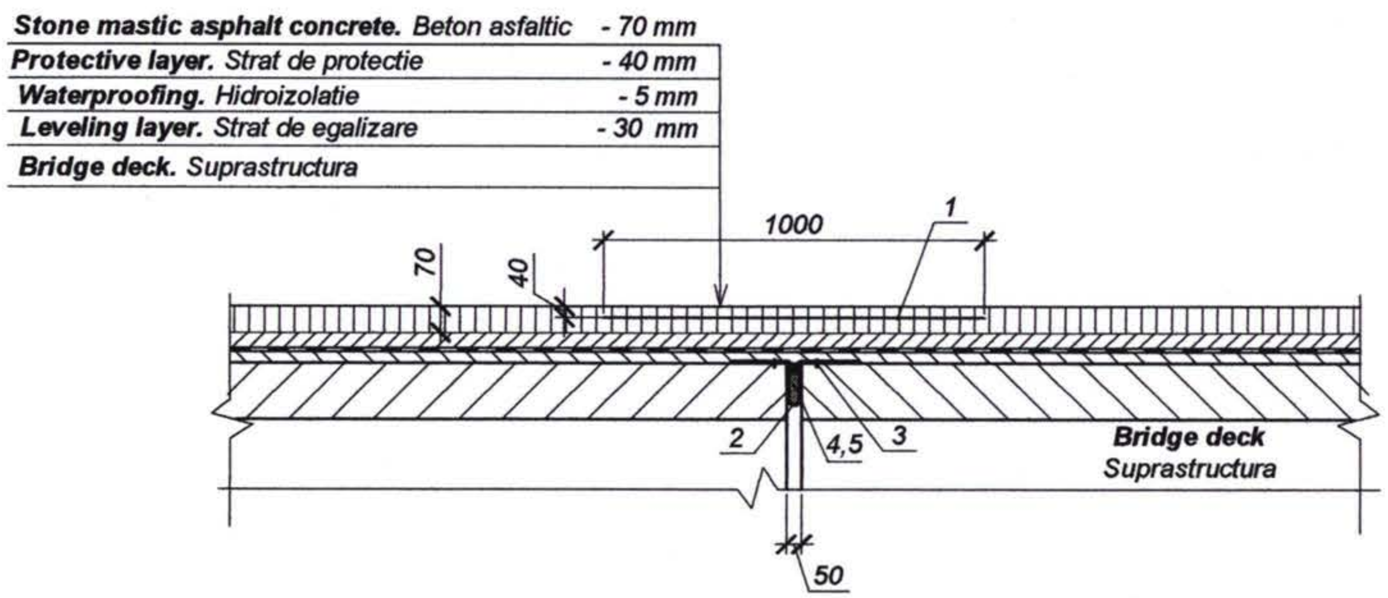


1-1
Method of lyre-shaped sheet installation - *Modul de instalare a buclelor*

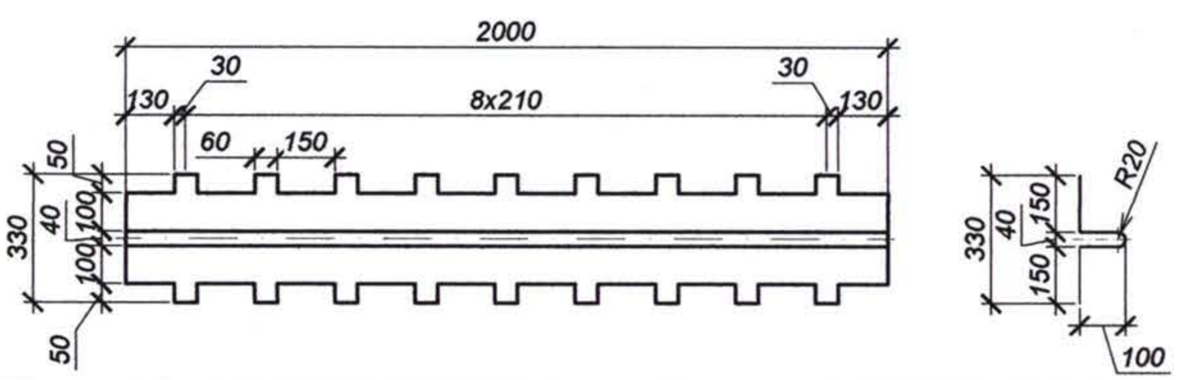


Note.*Notă:*
1. The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue .
1. Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Expanssion joint between the spans - *Rostul intre deschideri (1:20)*



Lyre-shaped brass sheet - *Bucla din tabla de alama (poz.3) (1:20)*



Schedule of materials for 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint at the abutment *Rost de dilatatie la culee*			
1	ТУ6-11-217-71	**Glass fibre mesh** *Plasa СПАП cu fibre de sticla, L=1,0 m*	-		1,0 m²
2		**Lyre-shaped brass sheet** *Bucla din tabla de alama, GOST 19904-90*	-		0,5 m²
3		**Steel expanssion bolts** *Dibluri de otel, L=5cm, GOST 19904-90*	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** *Mastic bituminos*	-	1,5	
5	ТУ480-1-119-71	**Hemp rope saturated with bitumen** *Fringhie din cinepa imbibata cu bitum*	-	0,7	
6		**Expoy Glue.** *Rasina epoxidica, SNiP 3.06.04-91*	-	0,6	
		Span joints *Rost intre deschideri*			
1	ТУ6-11-217-71	**Glass fibre mesh** *Plasa СПАП cu fibre de sticla, L=1,0 m*	-		1,0 m²
2		**Lyre-shaped brass sheet** *Bucla din tabla de alama, GOST 19904-90*	-		0,5 m²
3		**Steel expanssion bolts** *Dibluri de otel, L=5cm, GOST 19904-90*	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** *Mastic bituminos*	-	1,5	
5	ТУ480-1-119-71	**Hemp rope saturated with bitumen** *Fringhie din cinepa imbibata cu bitum*	-	0,7	
6		**Expoxy glue.** *Rasina epoxidica, SNiP 3.06.04-91*	-	0,6	

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat: Approved:	Data Date

Consultantii/Consultants:
KOCKS INGENIEURE
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Desenat/Drawn: Serdiuc V.
Data/Date:
Aprobat/Approved
Data/Date
EU Delegation to Moldova
Republic of Moldova
Ministry of Transport
Marimea originala a desenului
Original Drawing Size

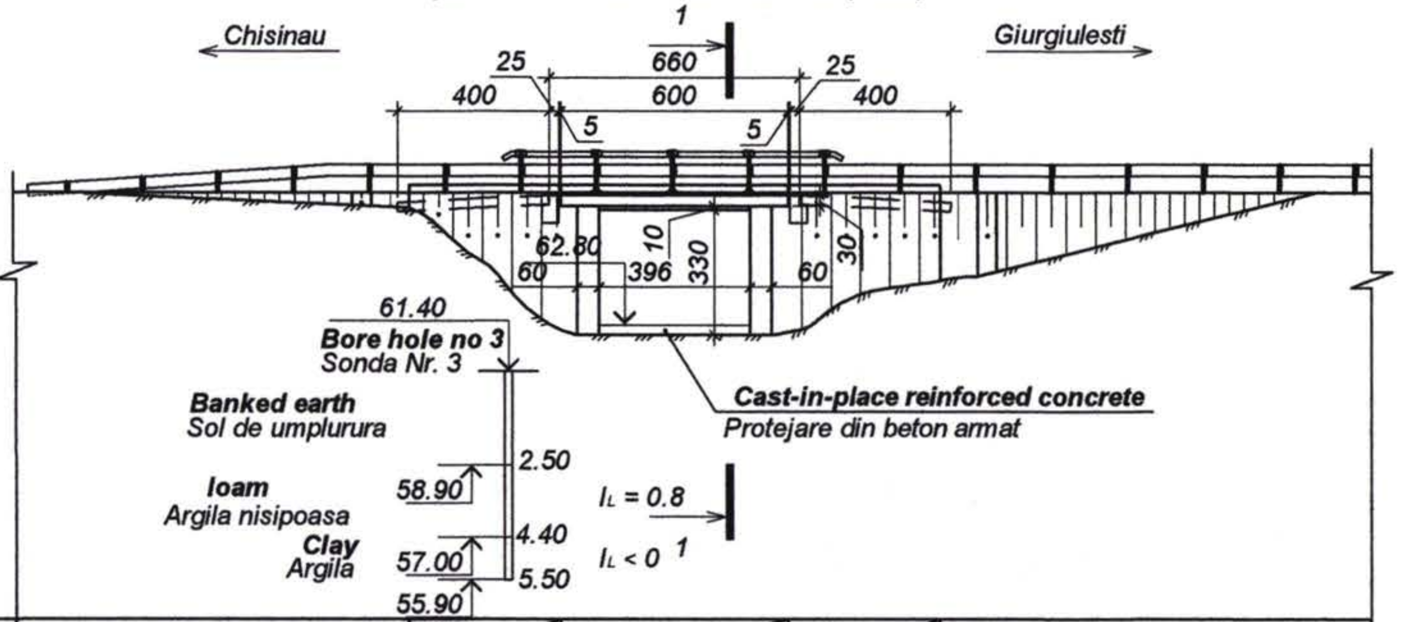
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 97+596
Bridge, km 97+596

Rost de dilatatie.
Expanssion joint.

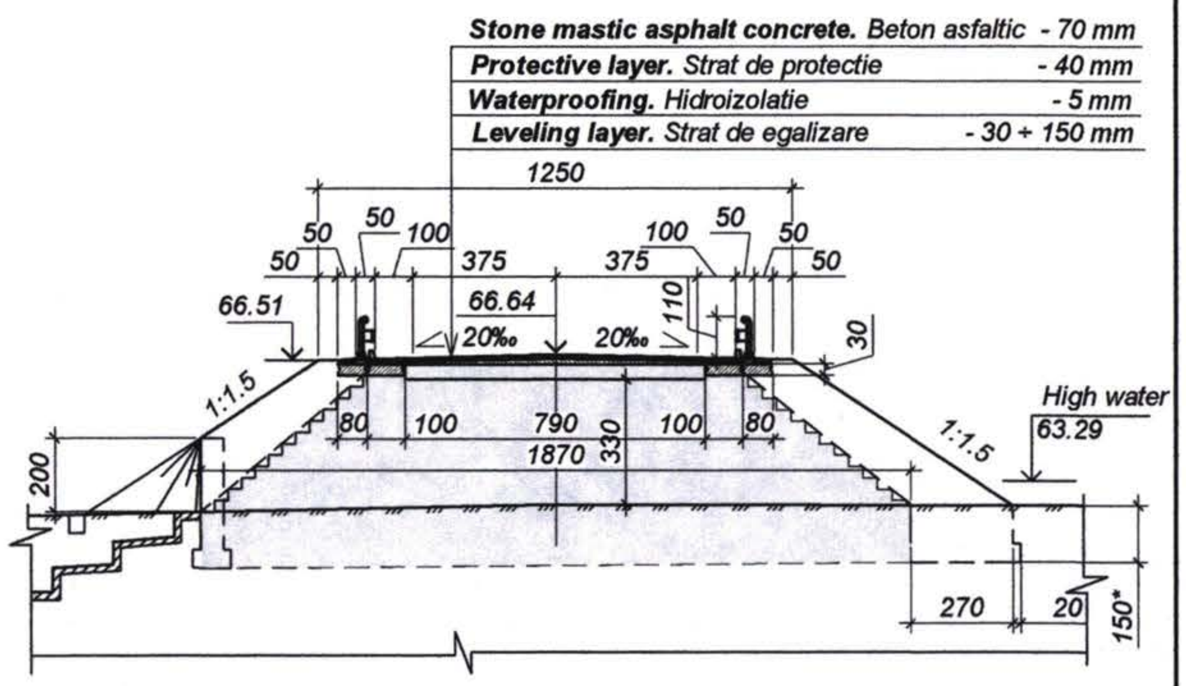
Drawing 18-4

Upstream side elevation - Elevatie (1:200)

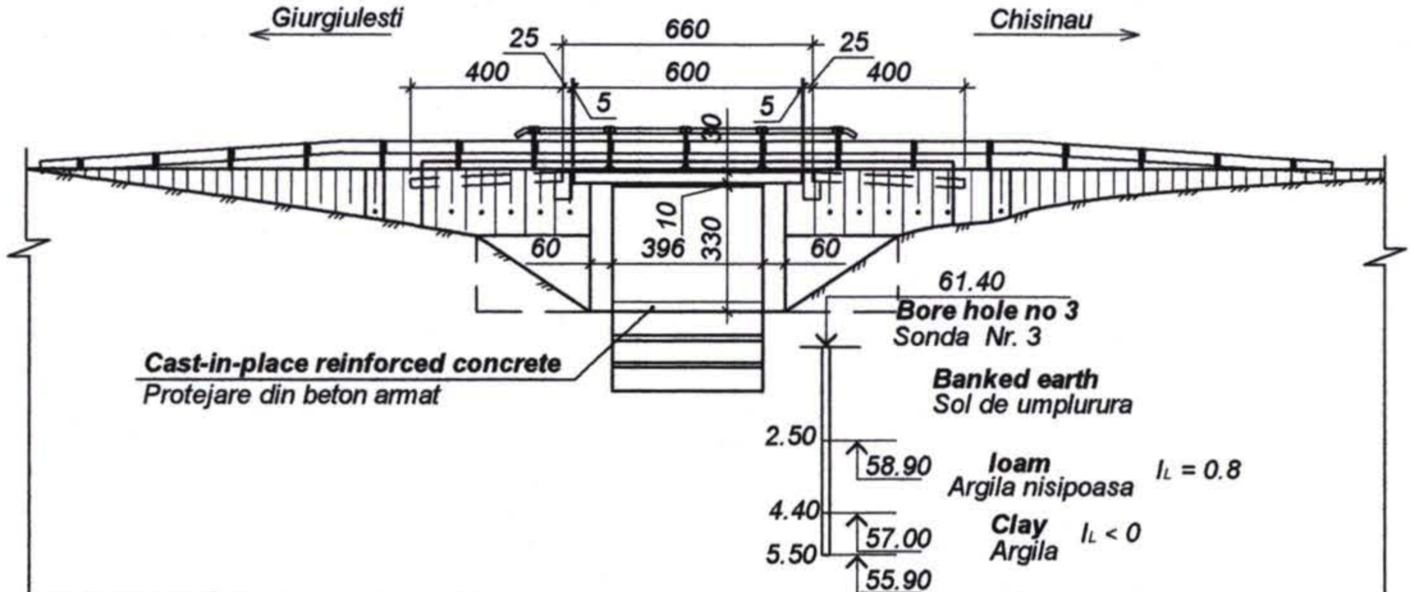


Gradient, ‰ Distances,m Declivitate,‰,distanta , m	2.5 / 4.00; 1.7 / 6.00; 2.5 / 4.00
Designed levels in axis, m Cota in axa, m	66.62; 66.63; 66.64; 66.65
Existing levels in axis, m Cota teren, m	66.55; 66.20; 62.80; 62.80; 63.90; 64.40; 66.70
Distances,m, distanta,m	8.50; 4.50; 5.10; 2.30; 3.10; 9.00
Pickets	981

1 - 1 (1:200)



Downstream side elevation-Elevatie (1:200)



Gradient, ‰ Distances,m Declivitate,‰,distanta , m	2.5 / 4.00; 1.7 / 6.00; 2.5 / 4.00
Designed levels in axis, m Cota in axa, m	66.65; 66.64; 66.63; 66.62
Existing levels in axis, m Cota teren, m	65.50; 64.45; 62.45; 62.45; 64.45; 65.50
Distances,m, distanta,m	3.00; 5.10; 3.00
Pickets	981

Hydrological characteristics.
Caracteristici hidrologice

Item. Denumirea	**Unit.** Unitate	**Quantity.** Cantitate
Estimated water flow. Debitul de calcul, $Q_{2\%}$	m³ / s	3.3
Stream speed. Viteza apei	m / s	2.6

Note. Nota:

1. The exact height of the elevation, respectively the value of the dimensions - *, will be finalized after the finding of the level of the existing foundation, by a precision leveling.

1. Inaltimea exacta a elevatiei, respectiv valoarea cotelor - *, va fi determinata dupa stabilirea cotelor de nivel ale fundatiei existente, printr-un nivelment de precizie.

2. Dimensions in cm.

2. Dimensiunile in cm.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date	

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

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Data/Date

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Data/Date

EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

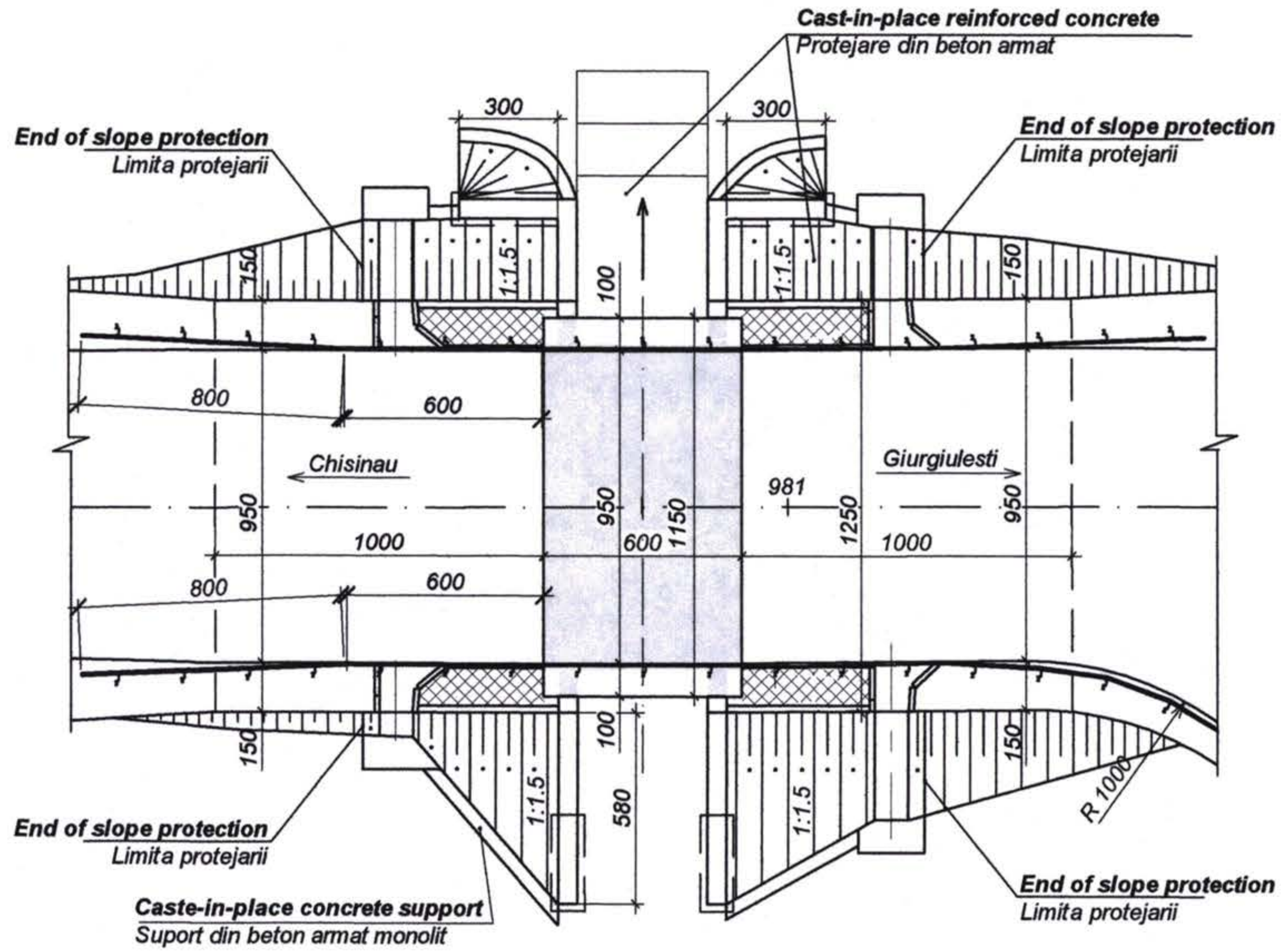
Pod, km 98+096.
Bridge, km 98+096.

Elevat ie. Dispozitie generala.
Side elevation. General arrangement.

Drawing 19-1

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Top view.
Plan (1:200)



Quantity list.
Lista de cantitati

No. *Art.*	***Item description.*** *Descrierea articolului*	***Unit of measure.*** *Unitite de masura*	***Quantity.*** *Cant.*
1	***Concrete reinforced bridge infrastructure on the earth foundation.*** *Infrastructuri din beton armat pe fundatii directe.*	Cu.m.	45
2	***Superstructure precast reinforced concrete elements.*** *Suprastructura din elemente prefabricate din beton armat.*	Cu.m.	6
3	***Bridge approach.*** *Racordarea podului cu rampele de acces.*	Cu.m.	27
4	***Bridge structure waterproofing.*** *Hidroizolatia suprastructurii podului.*	Sq.m.	69
5	***Expansion joints.*** *Rosturi de dilatatie.*	m.	23
6	***Bridge asphalt concrete pavement.*** *Imbracaminte din beton asfaltic pe pod.*	Sq.m.	69
7	***Bridge deformable quard-rail.*** *Parapet de siguranta metalic pe pod.*	m.	12
8	***Deformadle quard-rail on the ramps.*** *Parapet de siguranta deformabil pe rampe.*	m.	56
9	***Concrete repair.*** *Repararea betonului degradat.*	Sq.m.	12
10	***Slope and channel protection.*** *Protejarea taluzelor si albiei.*	Sq.m.	170
11	***Removal of existing structure.*** *Demolarea structurii existente.*	Cu.m./t	30/0.4
12	***Bridge approach slab waterproofing.*** *Hidroizolatia dalei de racordare.*	Sq.m.	80

Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

Rev. Rev. | Amendamente Amendments | Aprobat Approved | Data Date

Consultantii/Consultants:
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Independentei 6/1 Str.
Chisinau MD 2043, Moldova
Proiectat/Designed: Cusnir G.
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Desenat/Drawn: Sizova N.
Data/Date
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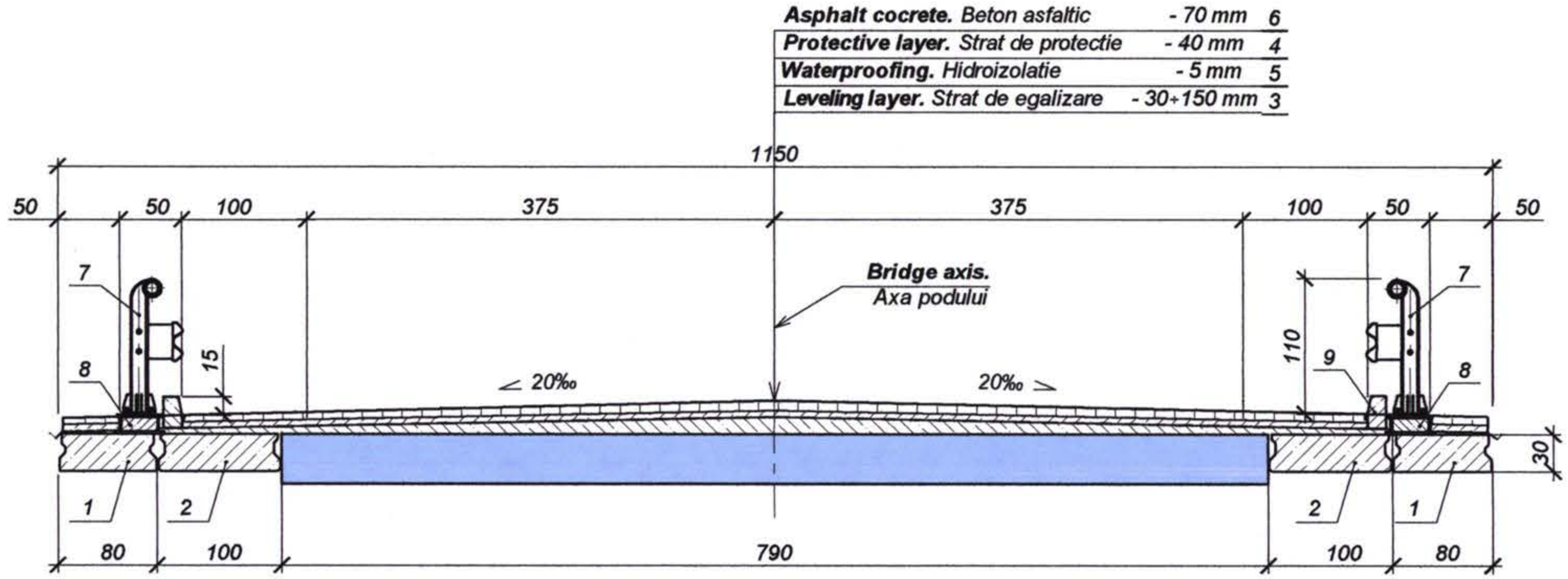
EU Delegation to Moldova
Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod , km 98+096.
Bridge , km 98+096.
Planul podului.
Bridge top view.
Drawing 19-2

Cross section.
Sectiune transversala (1:50)



Quantities for cross section.
Specificatia pentru sectiune transversala

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
1	**Drawing 19-6,19-7.**	**Precast reinforced concrete slab D-1.** Dala prefabricata din beton armat D-1	2	3375	1.35 m³
2	**Drawing 19-8,19-9.**	**Precast reinforced concrete slab D-2.** Dala prefabricata din beton armat D-2	2	4250	1.70 m³
3		**Leveling layer.** Dala de egalizare, beton B30, F200, W6			6.2 m³
4		**Concrete protective layer .** Strat de protectie, beton B27.5, F200, W6, h=4cm			3 m³
5	BCH 32 - 81	**Water proofing,membrane.** Hidroizolare, membrana.			69 m²
6	GOST 9128 - 97	**Asphalt concrete typeB, M-I.** Beton asfaltic tip Б, M-I, dens cu agregate marunte, h=7cm			4.8 m³
7	**Drawing 19-13.**	**Bridge guardrails.** Parapeti metalici de siguranta			12m
8	**Drawing 19-15.**	**Metallic header.** Soclu metalic	6	31.0	
9		**Kerb.** Bordura			12 m

Note. *Nota:*

1. All dimensions are in cm.

1. Toate dimensiunile sunt date in cm.

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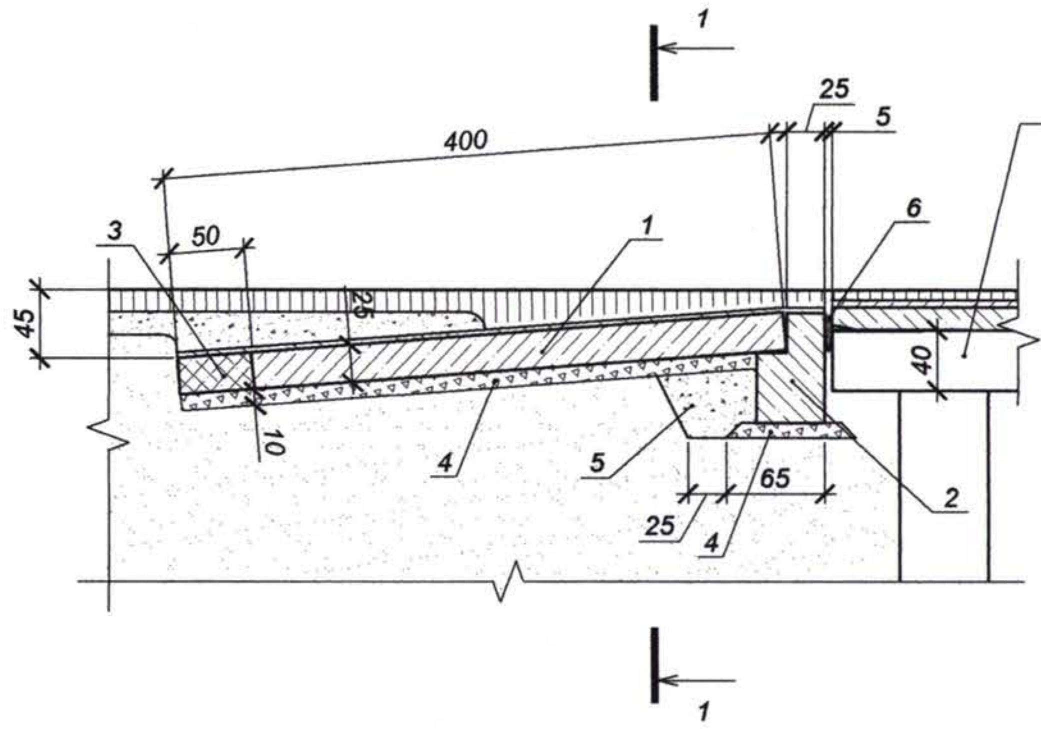
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod , km 98+096.
Bridge , km 98+096.

Sectiune transversala.
Cross section.

Drawing 19-3

Bridge approach.
Racordarea podului cu terasamentul (1:50)

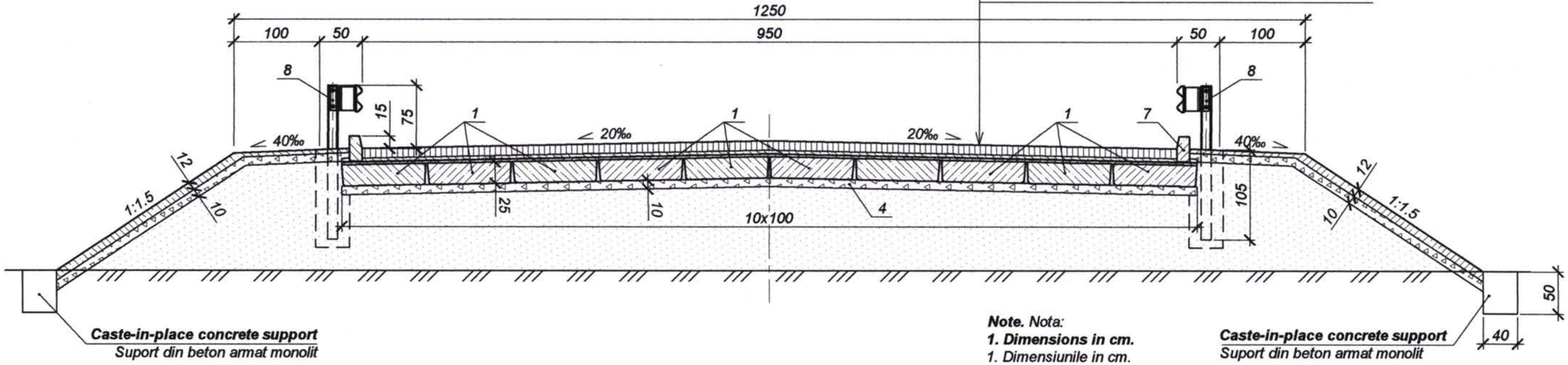


Bridge approach specification.
Lista de materiale pentru racordarea podului cu terasamentul

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota.
1	Drawing 19-5.	**Approach slab PR 1-4.** Placa de racordare PR 1-4	10	2100	0.84 m³
2		**Baskwoll.** Zid de gardă			2.9 m³
3		**Approach slab concreted conection.** Imbinarea , B25, F200, W6			1.25 m³
		Leveling concrete layer. Strat de egalizare, beton cl.B25, F200, W6, h=3cm			1.2 m³
		Concrete layer protective . Strat de protectie, beton cl.B25, F200, W6, h=4cm			1.6 m³
	BCH 32 - 81	**Waterproofing,membrane.** Hidroizolare, membrana, h=0.5cm			40 m²
4		**Crushed stone bed.** Pat din piatra sparta M400, h=40cm			6 m³
5		**Sand and gravel.** Nisip cu petris			4.6 m³
6	Drawing 19-14.	**Expanssion joints.** Rost de dilatatie			11.5 m
7		**Concrete kerbs.** Borduri de beton			12 m
8	Drawing 19-13.	**Deformable quard-rail.** Parapeti de siguranta metalici		700	28 m

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 mm
Approach slab. Placa de racordare	- 250 mm

1 - 1 (1:50)



Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

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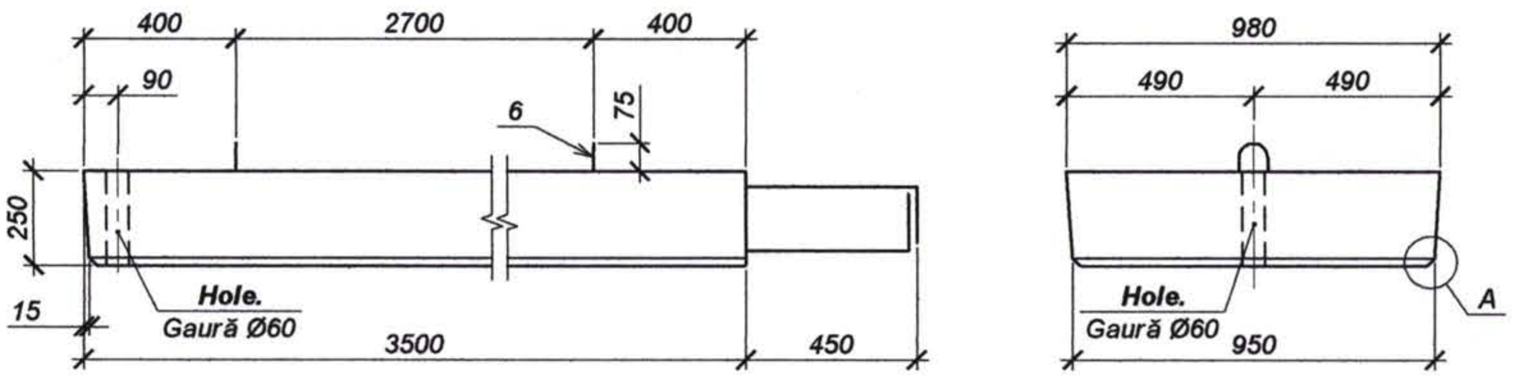
Pod, km 98+096.
Bridge, km 98+096.

Racordarea podului cu terasamentul.
Bridge approach.

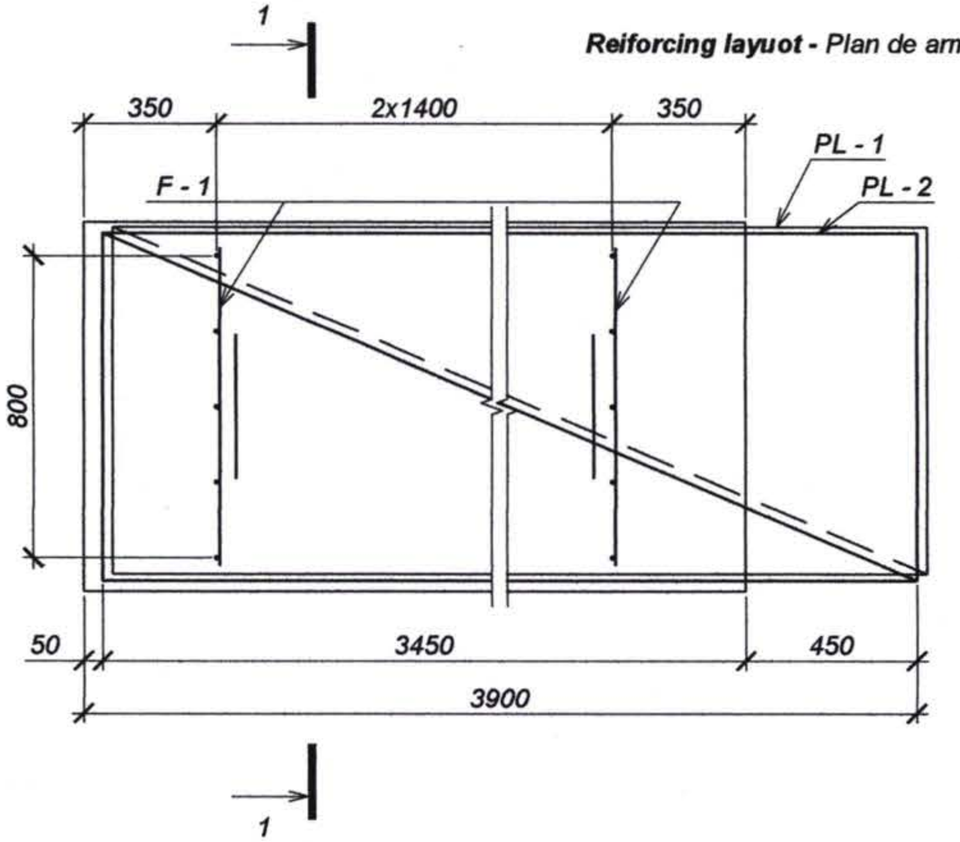
Drawing 19-4

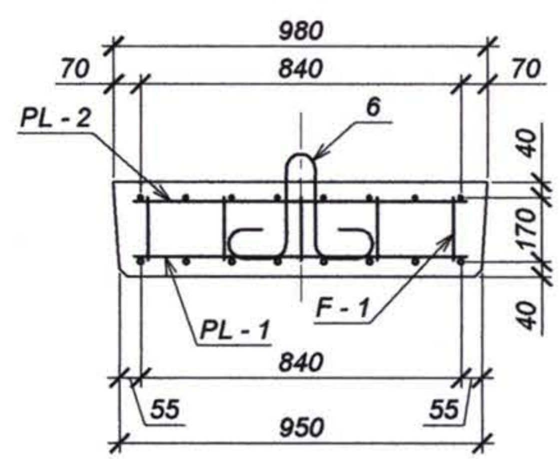
Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Formwork layout - *Plan de cofrare (1:20)*



Reiforcing layuot - *Plan de armare (1:20)*

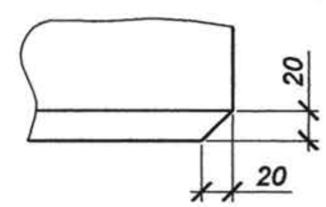




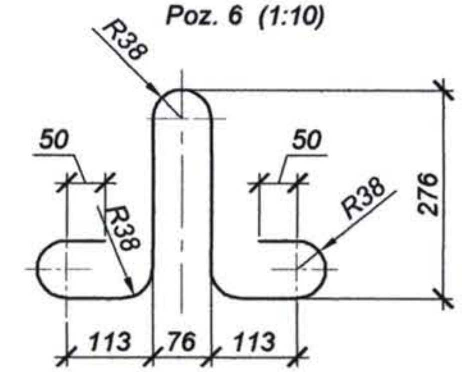
Approach slab PR1-4 specification.
Specificatie pentru placa de racordare PR1-4.

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
		Assembly elements. Piese de asamblare			
		Mesh. Plasa PL-1	1	42.8	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
2		Ø14 A-III L=4000, GOST 5781 - 82*	8	4.9	
		Mesh. Plasa PL-2	1	23.6	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
3		Ø10 A-III L=4005, GOST 5781 - 82*	8	2.5	
		Mesh support F-1. Fixator F-1	3	1.1	
4		Ø8 A-I L=840, GOST 5781 - 82*	2	0.3	
5		Ø8 A-I L=165, GOST 5781 - 82*	5	0.1	
		Embedded elements. Piese inglobate			
6		Ø 14A-I L=1130, GOST 5781 - 82*	2	1.4	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.84 m³

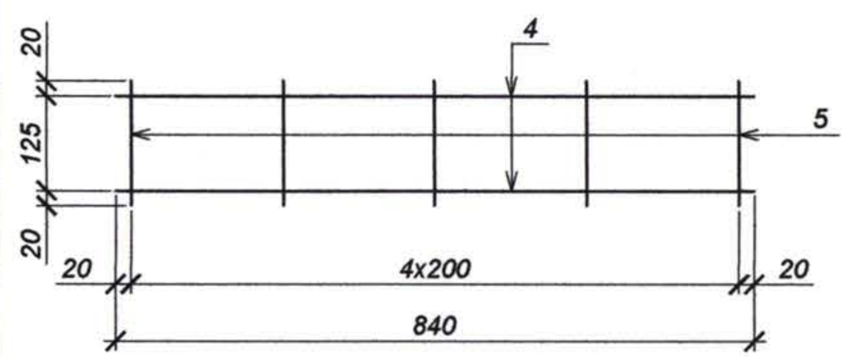
A (1:5)



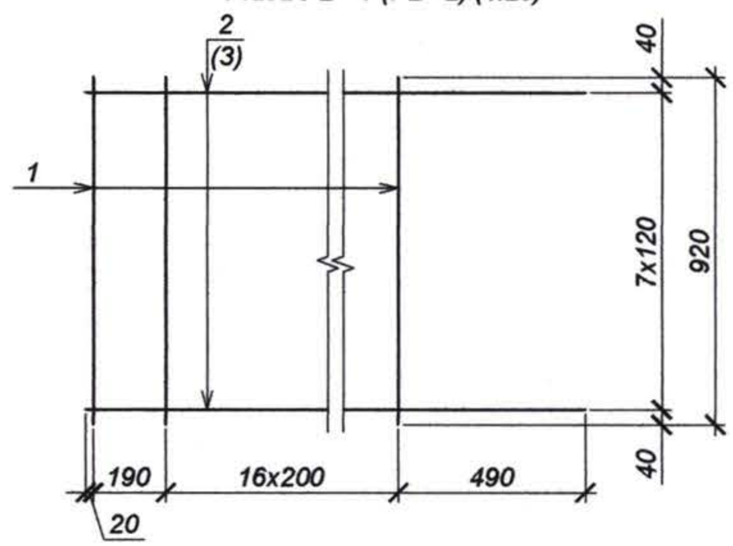
Poz. 6 (1:10)



Mesh support F-1.
Fixator F-1 (1:10)



Mesh PL-1 (PL-2).
Plasa PL - 1 (PL - 2) (1:20)



Reinforcement amount for element, kg
Masuratoare consum de metal pentru un element , kg

Element type. Marca elementului	Reinforcing pieses. Confectii din armature — Reinforcing bar type. Armatura de clasa — A - I, Cm3cn GOST 5781-82* Ø6	A - I, Cm3cn GOST 5781-82* Ø8	A - I, Cm3cn GOST 5781-82* Total	A - III, 25Г2C GOST 5781-82* Ø10	A - III, 25Г2C GOST 5781-82* Ø14	A - III, 25Г2C GOST 5781-82* Total	Totals. Linia totalului	Embedded pieces. Piese inglobate — Reinforcing bar type. Armatura clasa — A - I, Cm3cn GOST 5781-82* Ø14	A - I, Cm3cn GOST 5781-82* Total	Totals. Linia totalului	Overall weight. Greutate totala
PR 1-4	7.2	3.3	10.5	20	39.2	59.2	69.7	2.8	2.8	2.8	72.5

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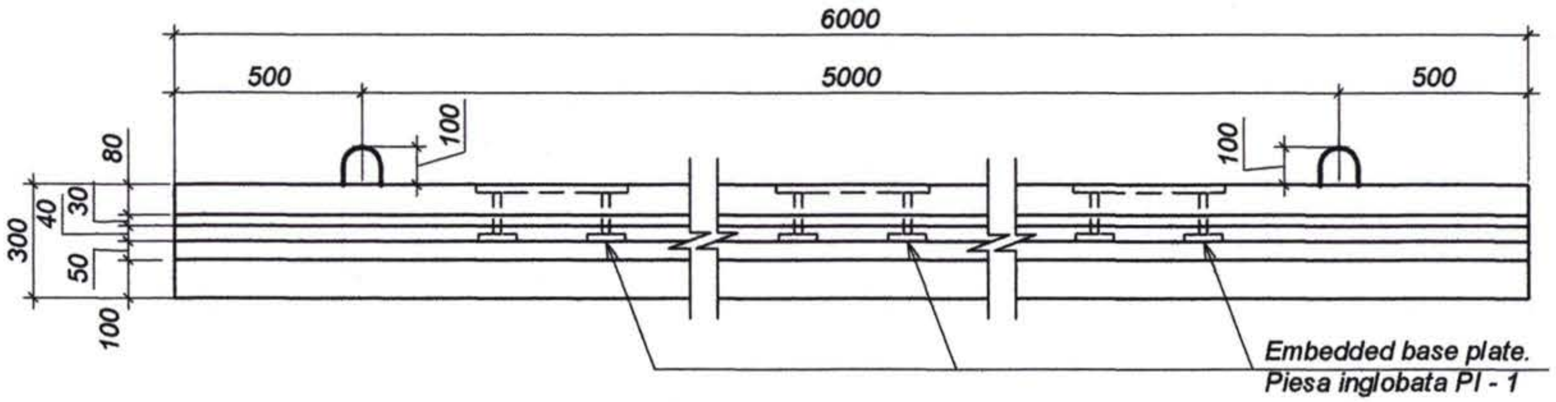
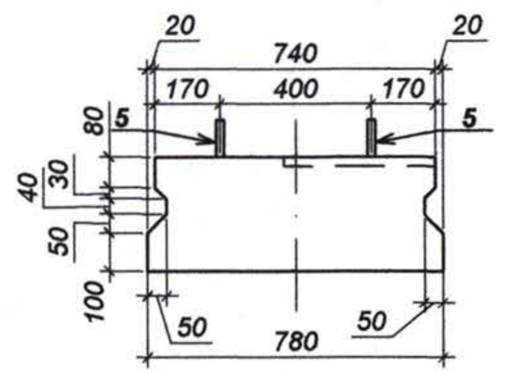
Pod, km 98+096. Placa de racordare prefabricata din beton armat PR1-4 .
Bridge, km 98+096. Precast reinforced concrete a pproach slab PR 1-4.

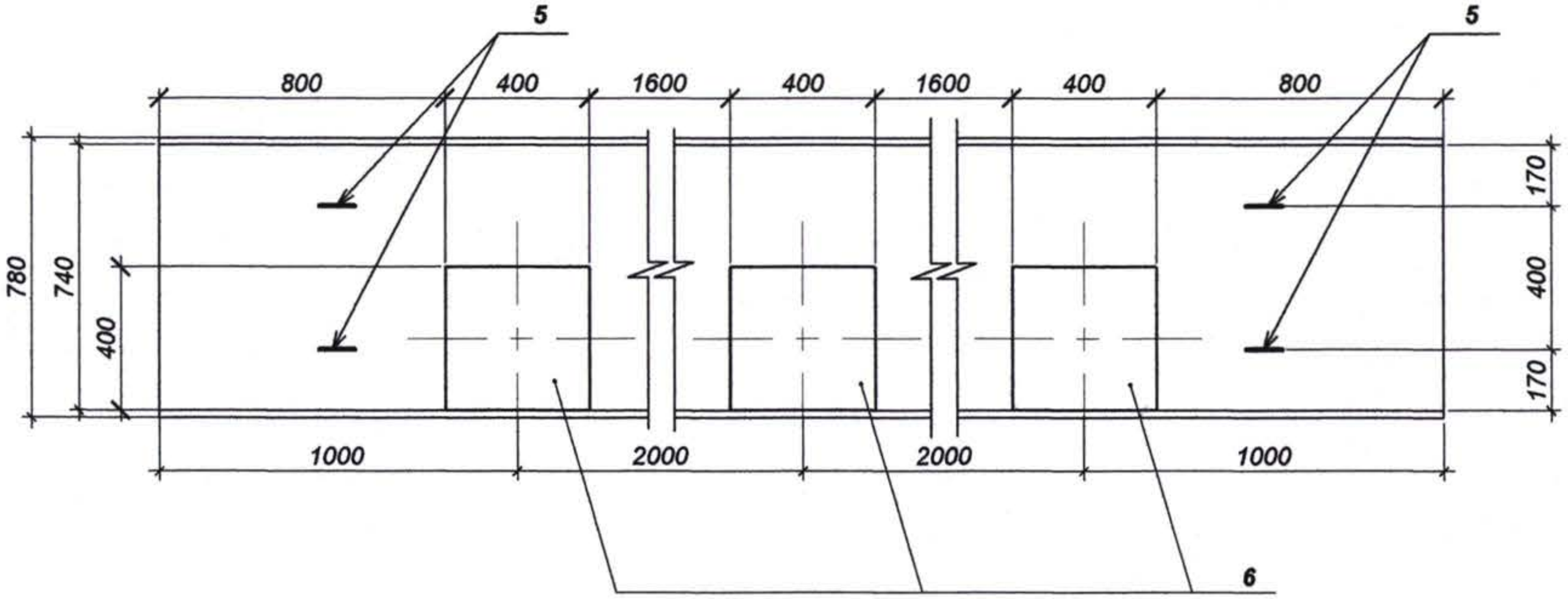
Drawing 19-5

Formwork layout
Plan de cofraj (1:20)

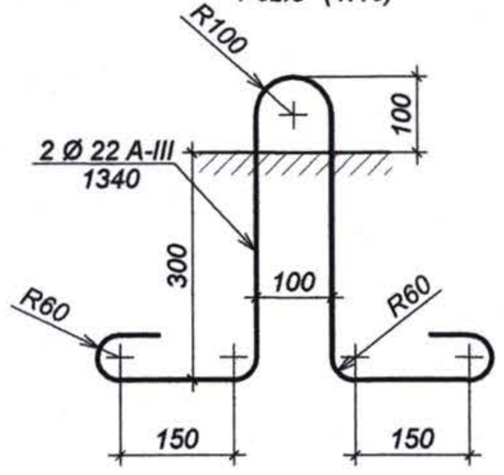


Sc. 1: 20





Poz.5 (1:10)



Reinforcement amount for element, kg.
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate							Total weight. Greutate totala
	Bar type. Armatura de clasa					Total line. Linia totalului	Bar type. Armatura de clasa			Steel type. Marca metalului			Total line. Linia totalului	
	A - I, Cm3 cп		A - III, 25Г2С				A - I, Cm3 cп			BCm3cп2				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø8	Total	Ø8	Ø20	Total		Ø22	Ø25	Total	-20x100	-20x400	Total		
D-1	34.58	34.58	16.52	103.25	119.77	154.35	15.96	7.2	23.16	19.2	75.3	94.5	117.66	272.01

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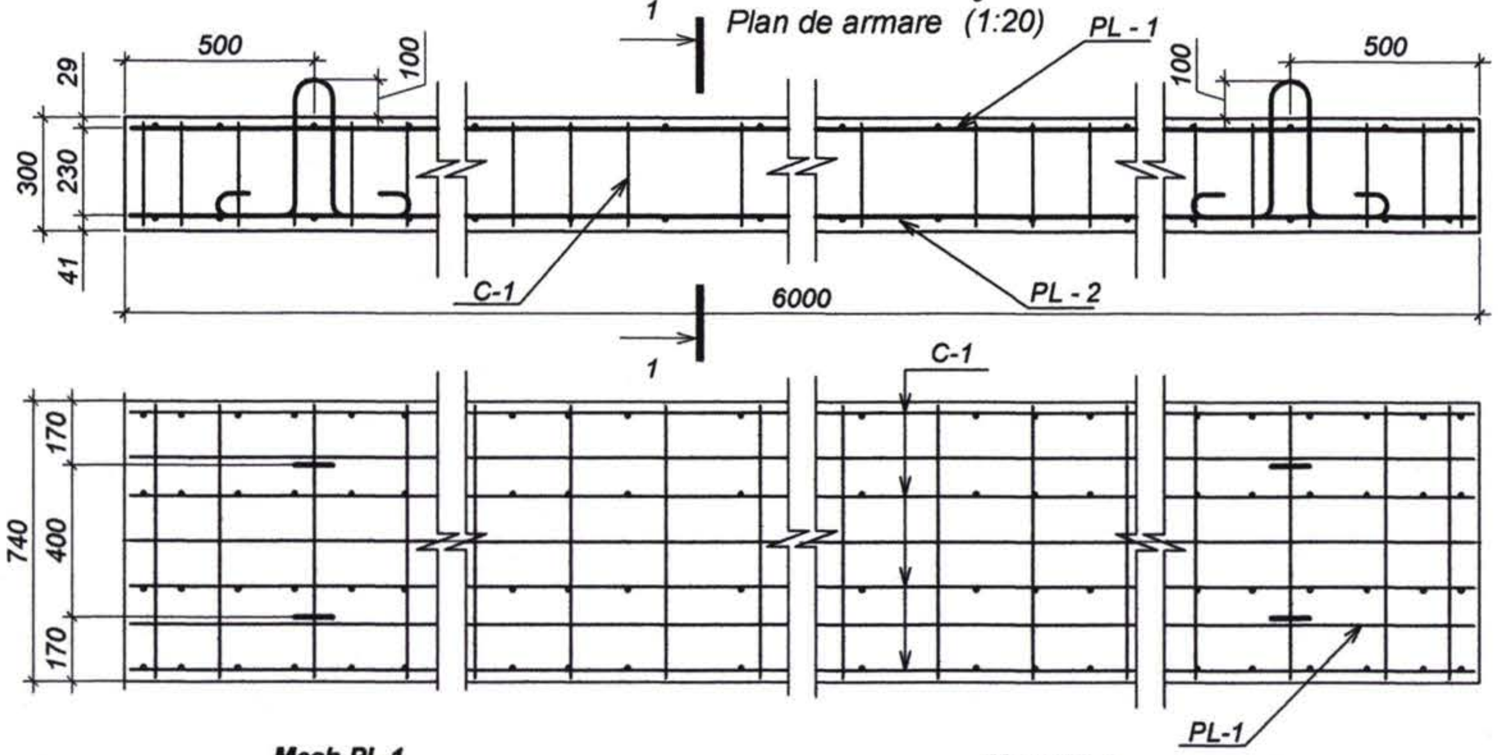
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 98+096.Dala suprastructura prefabricata din beton armat D-1
Bridge, km 98+096. Suprastructure precast reinforsed concrete slab D-1 .

Drawing 19-6

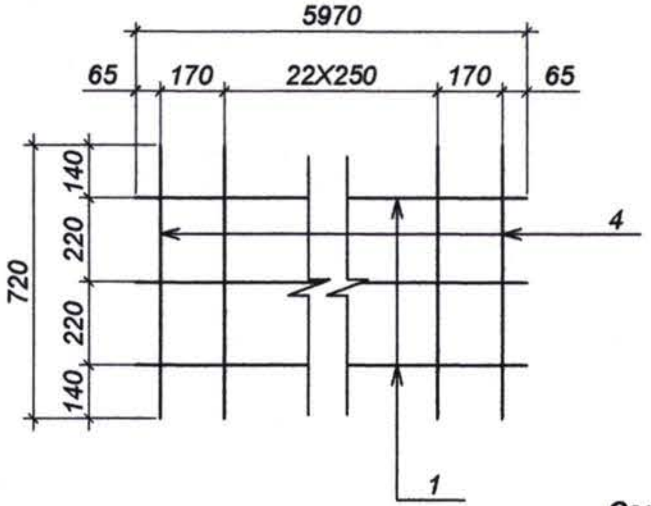
Reinforcement layout.
Plan de armare (1:20)



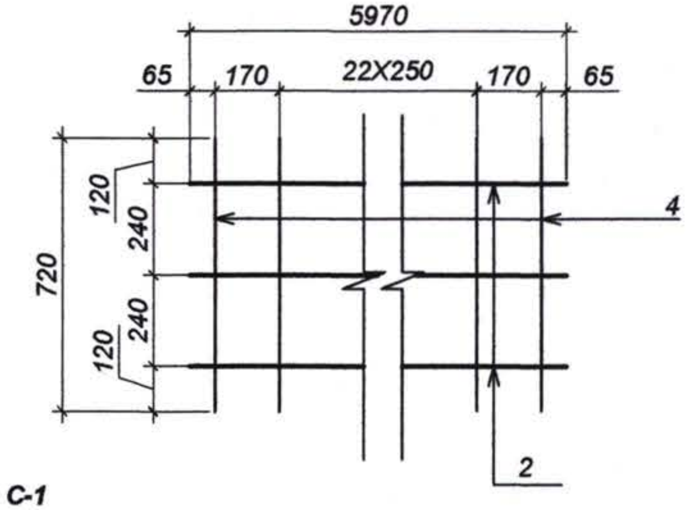
Slab D-1 specification.
Specificatia dalei D-1.

Pozition Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight Masa, kg	Note. Nota
		Mesh PL-1 Plasa PL-1	1	15.33	
1		Ø 8 A-III L=5970,GOST 5781-82*	3	2.36	
4		Ø8 A-I L=840,GOST 5781-82*	25	0.33	
		Mesh Pl-2 Plasa PL-2	1	52.50	
2		Ø20 A-III L=5970, GOST 5781-82*	3	14.75	
4		Ø8 A-I L=840 GOST 5781-82*	25	0.33	
		Cage C-1 Carcasa C-1	4	20.63	
1		Ø 8 A-III L=5970, GOST 5781-82*	1	2.36	
2		Ø20 A-III L=5970, GOST 5781-82*	1	14.75	
3		Ø8 A-I L=270, GOST 5781-82*	32	0.11	
		Embedded element Ureche de montaj			
5	**Drawing 19-6.**	**Bar** Bara Ø22 A-III L=1340,GOST 5781-82*	4	3.99	
6	**Drawing 19-16.**	**Embedded base plate Pl-1** Piesa inglobata Pl-1,GOST 5781-82*	3	40.1	
		Materials Materiale			
		Concrete. Beton B30, F200, W6,GOST 26633-91*			1.35 m³

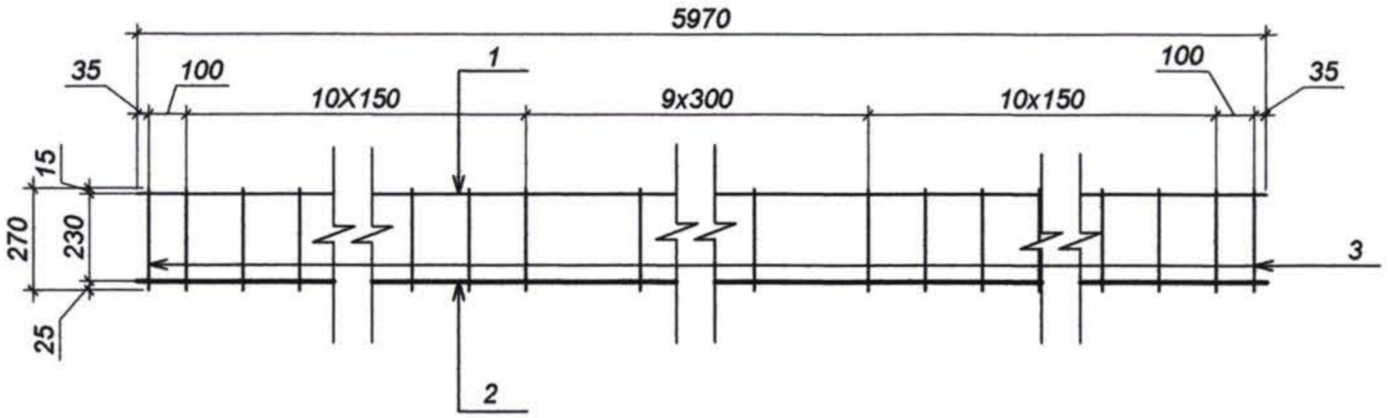
Mesh PL-1
Plasa PL-1 (1:20)



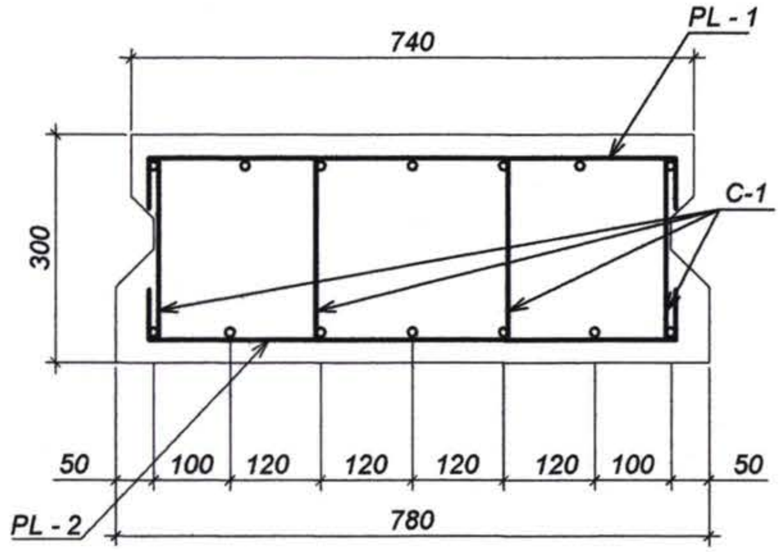
Mesh PL-2
Plasa PL-2 (1:20)



Cage C-1
Carcasa C-1 (1:20)



1 - 1 (1:10)



Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita
4	60 720 60

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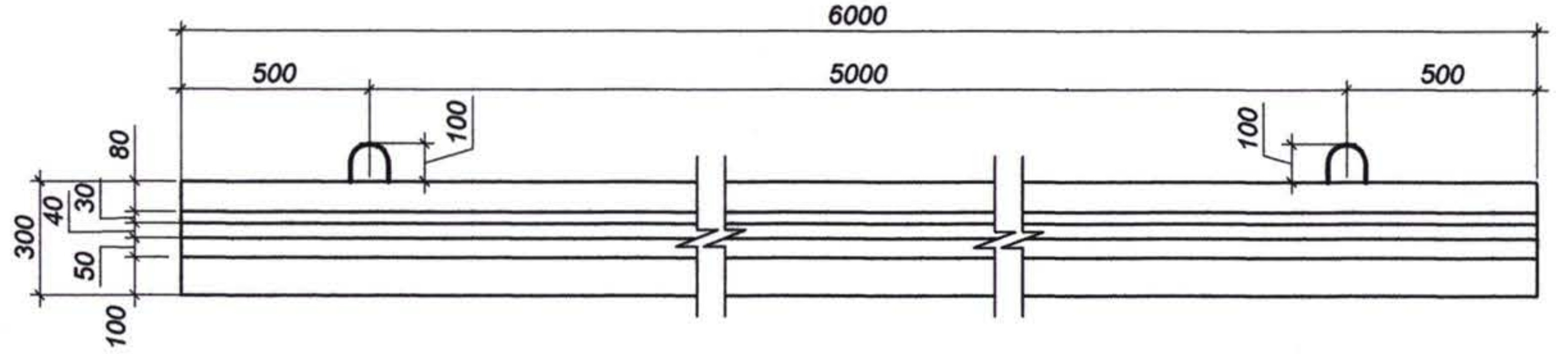
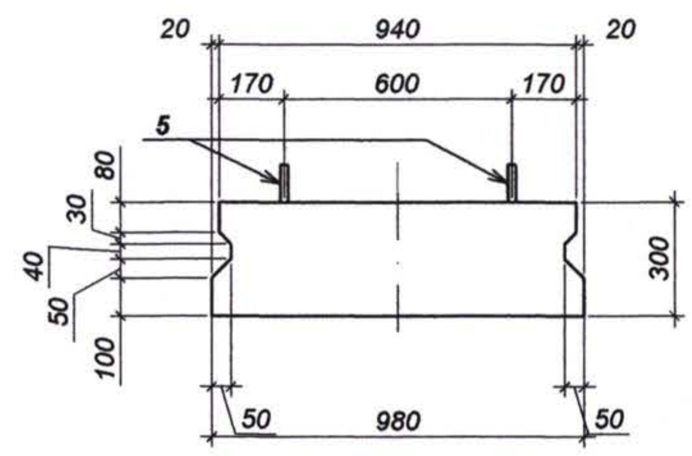
Pod, km 98+096. Dala prafabricata din beton armat D-1. Plasa PL-1,PL-2.Carcasa C-1 .
Bridge, km 98+096 . Slab D-1 .Mesh PL-1,PL-2 .Skeleton C-1.

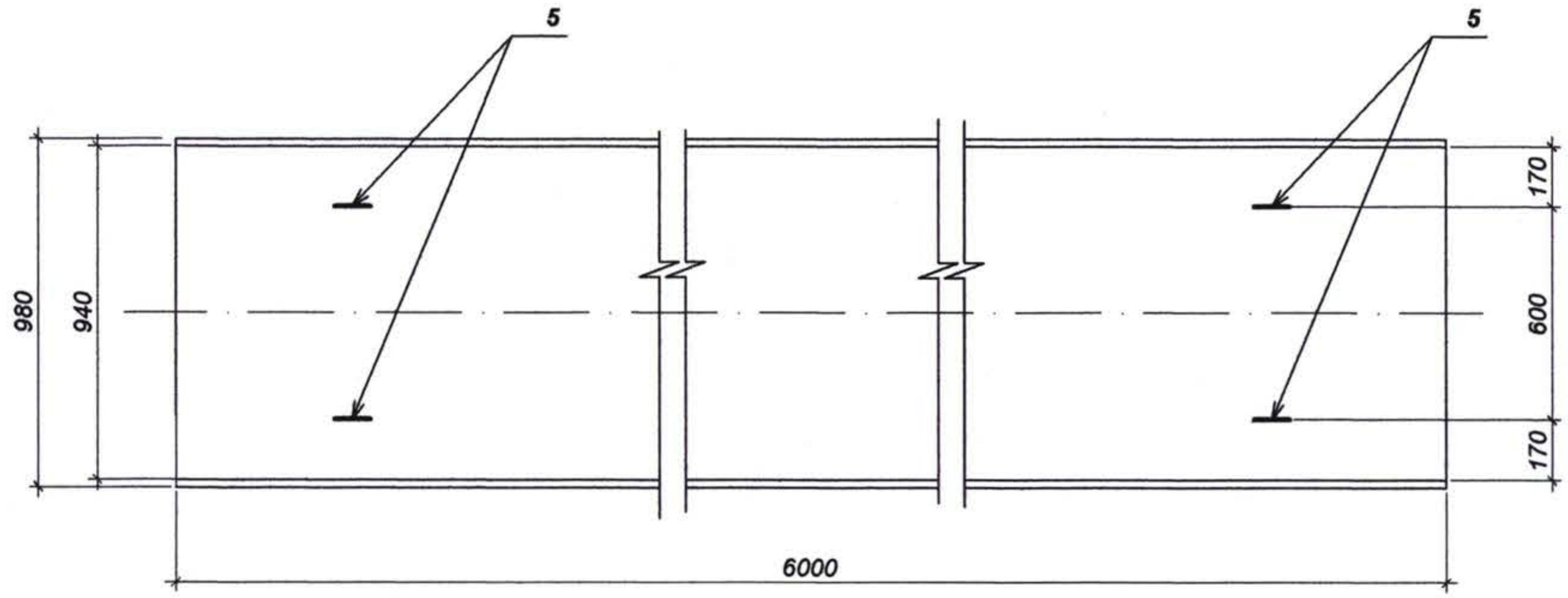
Drawing 19-7

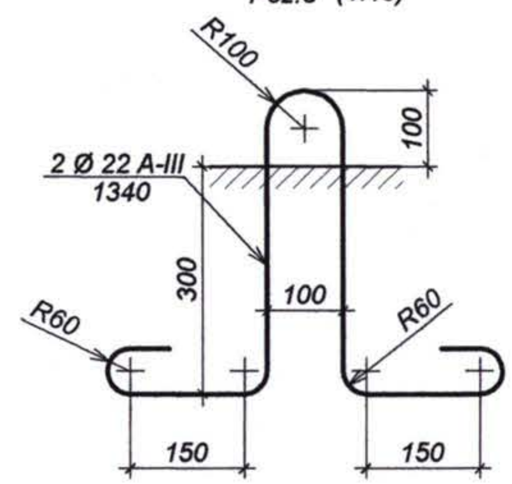
Formwork layout
Plan de cofraj

Sc. 1: 20









Reinforcement amount for element, kg.
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate							Total weight. Greutate totala
	Bar type. Armatura de clasa					Total line. Linia totalului	Bar type. Armatura de clasa			Steel type. Marca metalului			Total line. Linia totalului	
	A - I, Cm3 cп		A - III, 25Г2С				A - I, Cm3 cп			ВСm3cп2				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø8	Total	Ø8	Ø20	Total		Ø22	Ø25	Total	-20x100	-20x400	Total		
D-2	34.58	34.58	16.52	132.75	149.27	183.85	15.96	-	15.96	-	-	-	15.96	199.81

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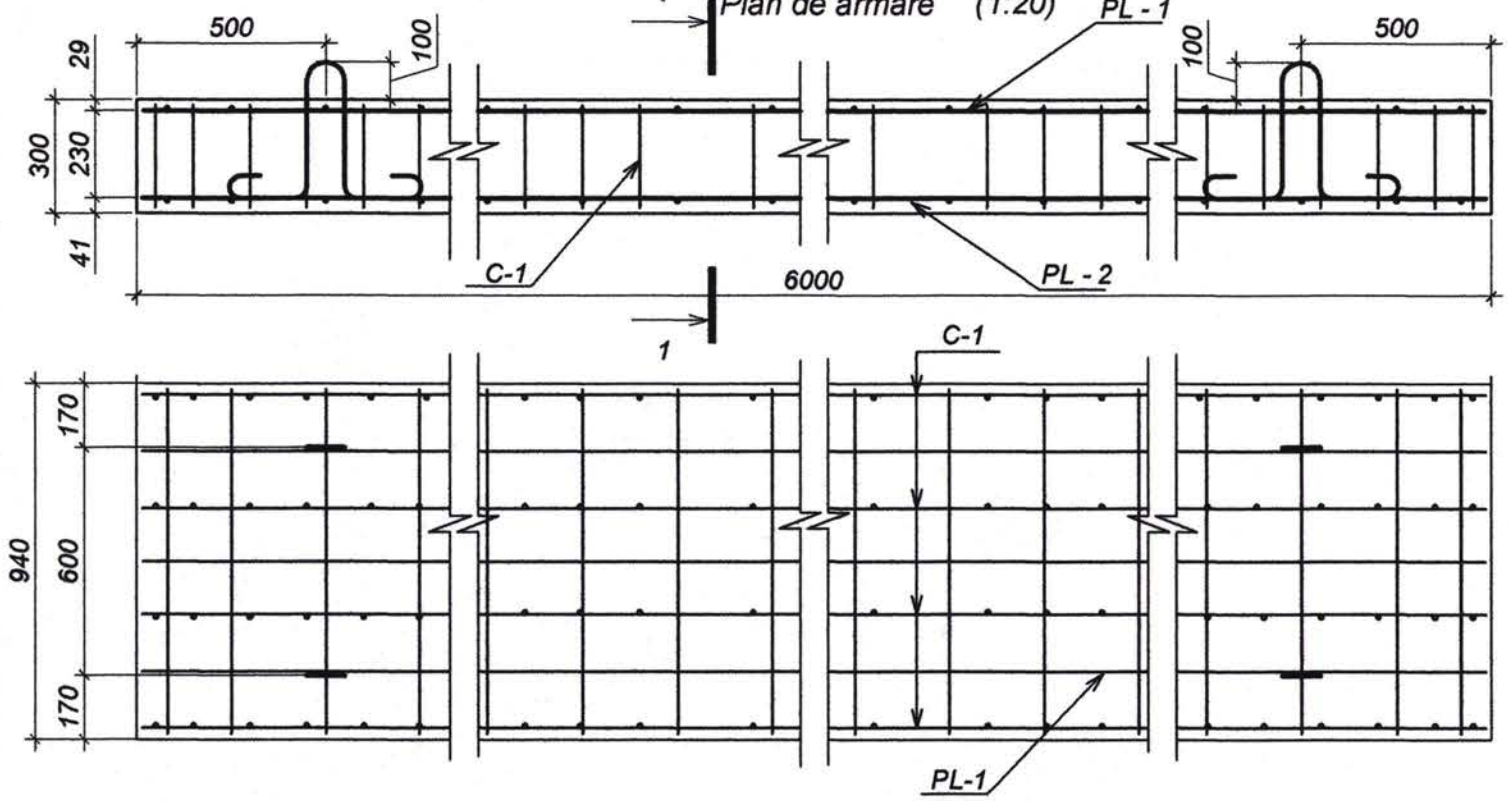
Pod, km 98+096. Dala prafabricata din beton armat D-2. Schema de cofraj.Schema de armare.

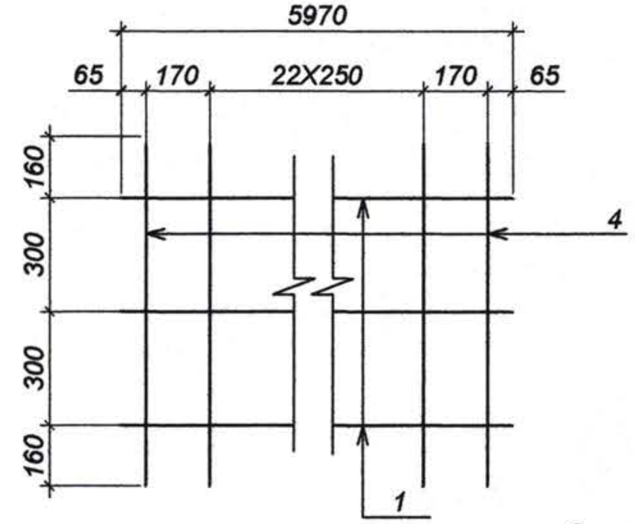
Bridge, km 98+096 . Slab D-2 .Formwork.Reinforcement scheme.

Drawing 19-8

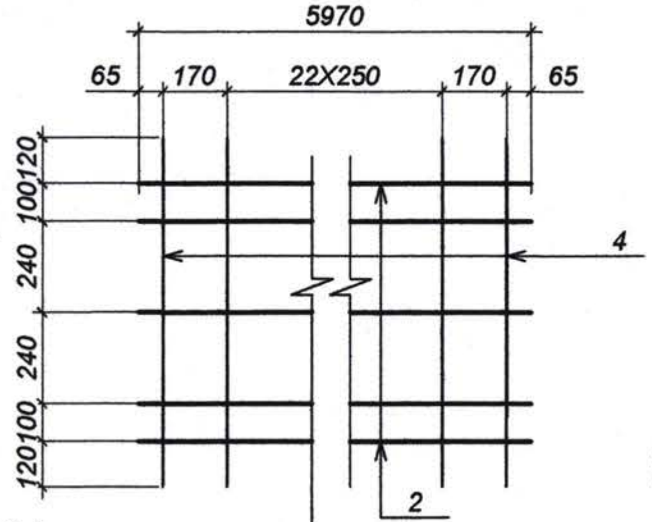
Reinforcement layout.
Plan de armare (1:20)



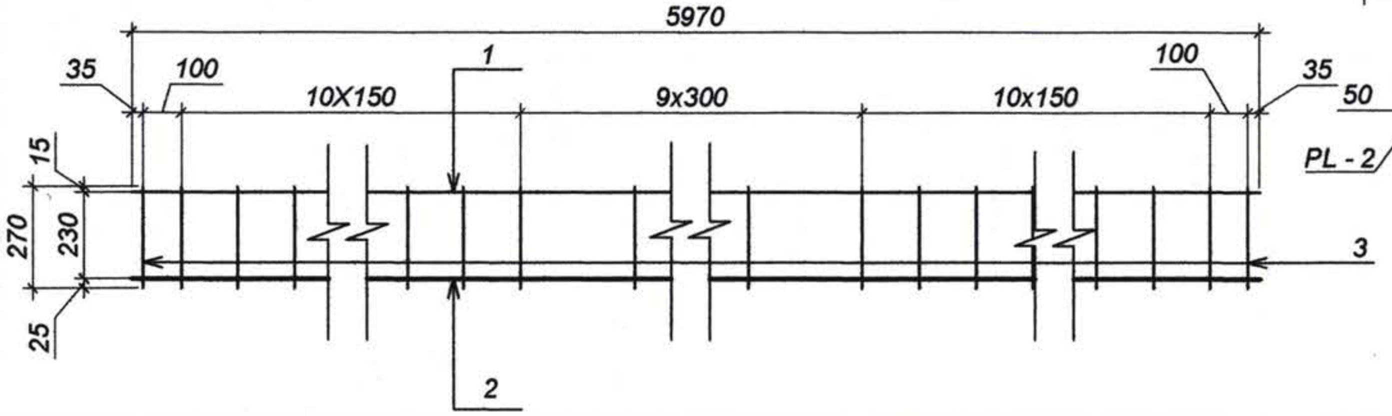
Mesh PL-1
Plasa PL-1 (1:20)



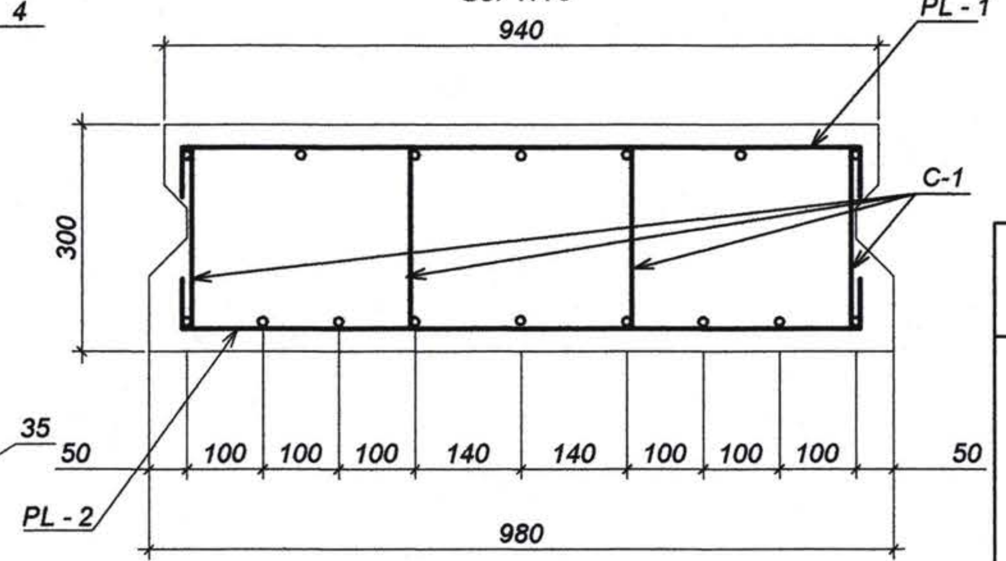
Mesh PL-2
Plasa PL-2 (1:20)



Cage C-1
Carcasa C-1 (1:20)



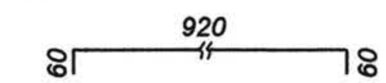
1 - 1
Sc. 1:10



Slab D-2 specification.
Specificatia dalei D-2.

Pozition Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight Masa, kg	Note. Nota
		Mesh PL-1 Plasa PL-1	1	17.33	
1		Ø8 A-III L=5970, GOST 5781-82*	3	2.36	
4		Ø8 A-I L=1040, GOST 5781-82*	25	0.41	
		Mesh Pl-2 Plasa PL-2	1	54.50	
2		Ø20 A-III L=5970, GOST 5781-82*	5	14.75	
4		Ø8 A-I L=1040, GOST 5781-82*	25	0.41	
		Cage C-1 Carcasa C-1	4	20.63	
1		Ø 8 A-III L=5970, GOST 5781-82*	1	2.36	
2		Ø20 A-III L=5970, GOST 5781-82*	1	14.75	
3		Ø8 A-I L=270, GOST 5781-82*	32	0.11	
		Embedded element Ureche de montaj			
5	**Drawing 19-8.**	**Bar** Bara Ø22 A-III L=1340, GOST 5781-82*	4	3.99	
		Materials Materiale			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			1.70 m³

Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita
4	

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EU Delegation to Moldova

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Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

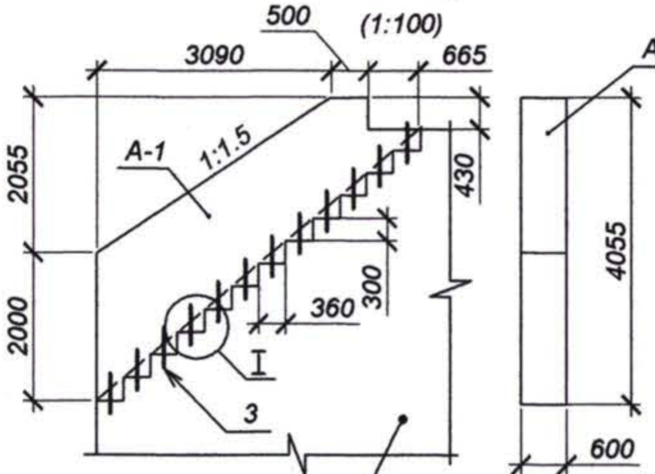
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 98+096. Dala prafabricata din beton armat D-2. Plasa PL-1,PL-2.Carcasa C-1 .

Bridge, km 98+096 . Slab D-2 .Mesh PL-1,PL-2 .Skeleton C-1.

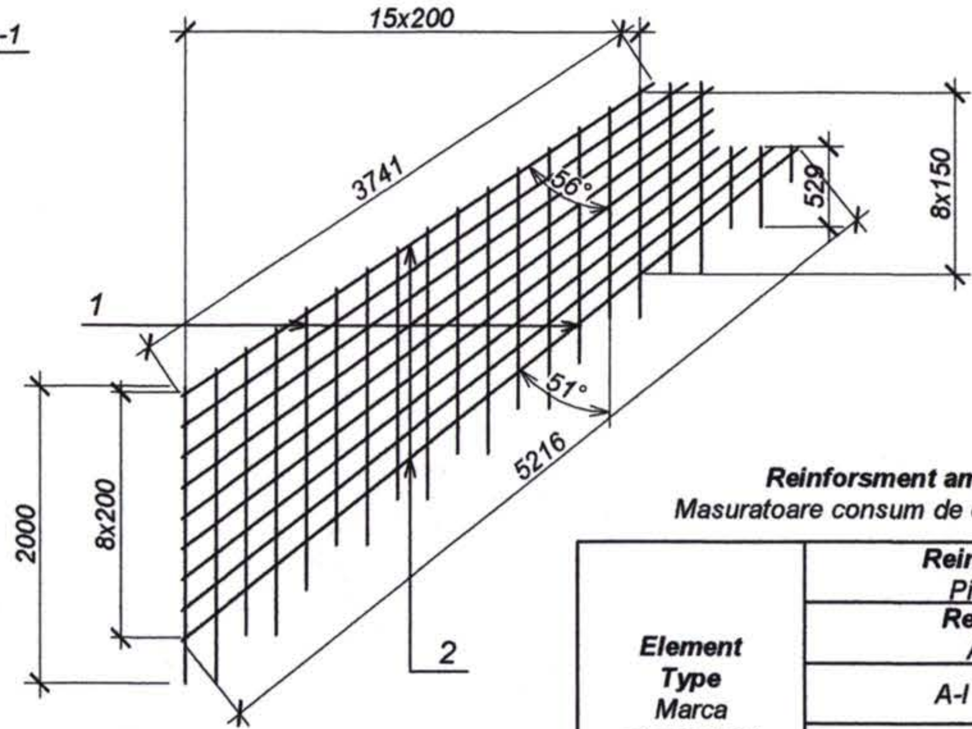
Drawing 19-9

Formwork
Plan de cofrajre

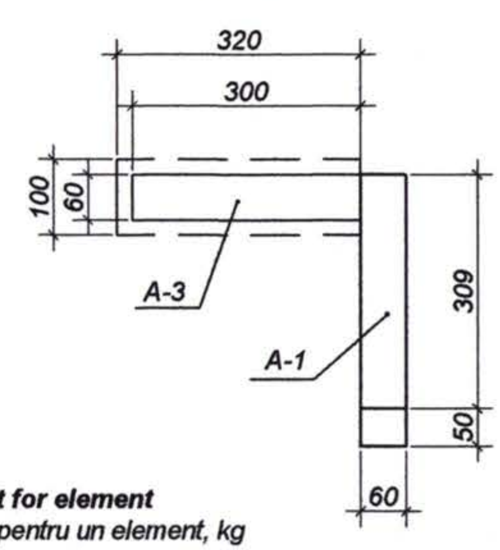


Existing abutment
Culea existenta

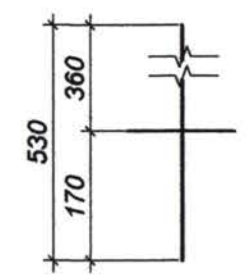
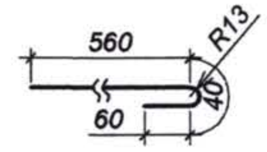
Mesh PL-1
Plasa PL-1 (1:50)



(1:100)



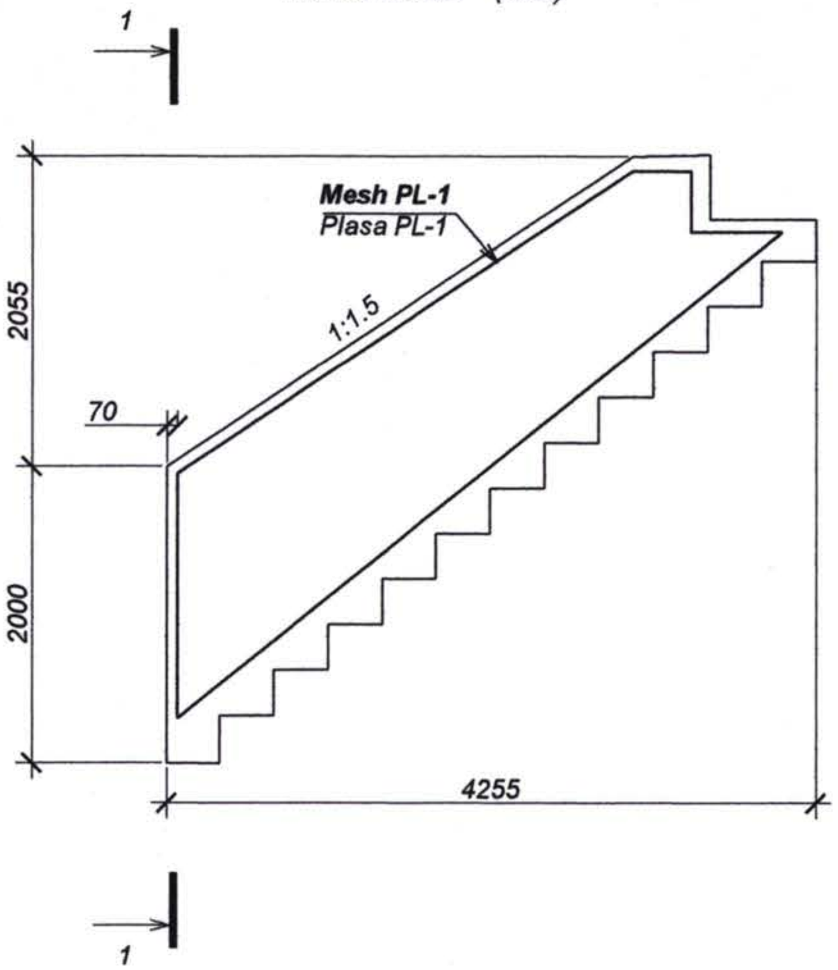
Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	**Sketch.** Schita
3	
4	

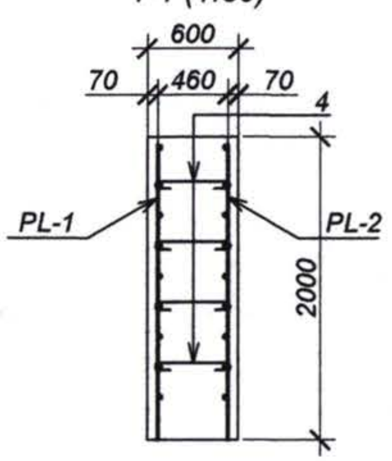
Reinforsment amount for element
Masuratoare consum de otee pentru un element, kg

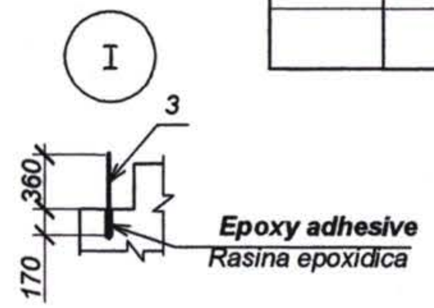
Element Type Marca elementului	**Reinforcing pieces** Piese de armare / **Reinforcing bar type** Armatura de clasa						**Total weight** Greutate totala
	A-I			A-III			
	GOST 5781-82**						
	Ø8	Ø14	Rez.	Ø10	Rez.	Total	
A-1	21.32	7.68	29.00	94.50	94.50	123.50	123.50

Reinforcement scheme
Plan de armare (1:50)



1-1 (1:50)





The specification on an element
Specificatie de un element

Pozition Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Mesh Pl-1/PL-2 Plasa PL-1/PL-2	1/1	47.25/ 47.25	
1		Ø10 A III L=1900, GOST 5781-82*	19	1.17	
2		Ø10 A III L=4500, GOST 5781-82*	9	2.78	
		Embedded element Ureche de montaj			
3		Ø14 A I L=530, GOST 5781-82*	12	0.64	
4		Ø8 A I L=660, GOST 5781-82*	82	0.26	
		Materials Materiale			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			4.3 m³

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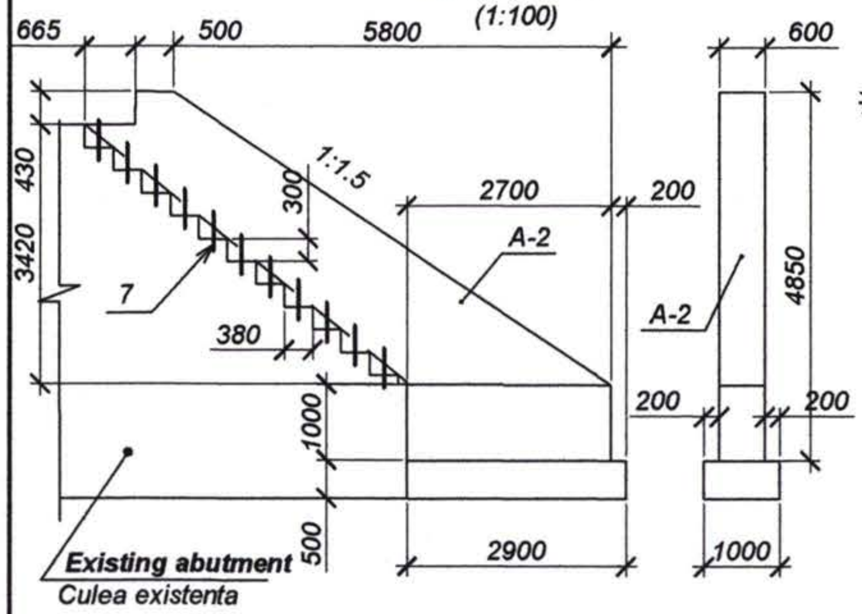
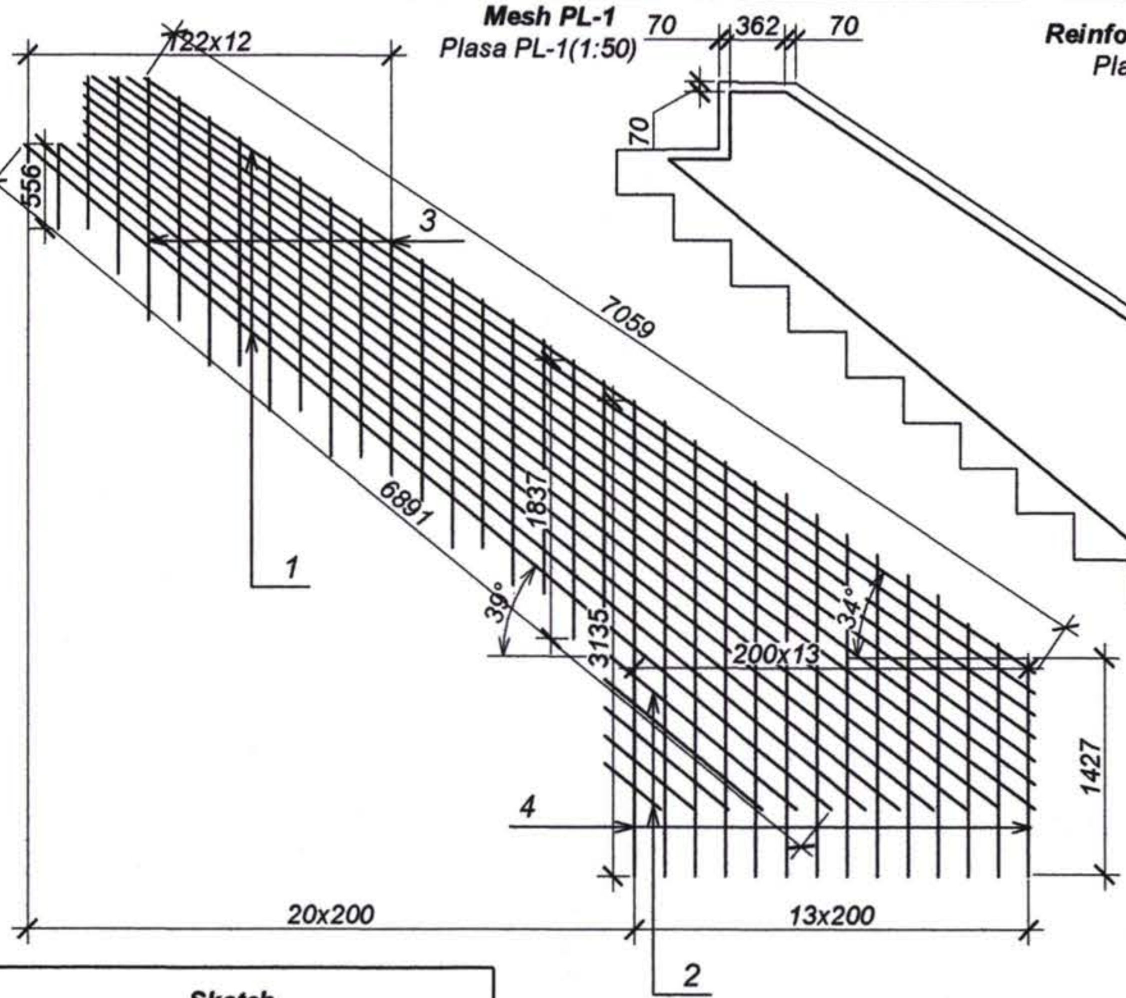
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 98+096.
Bridge, km 98+096.
Culee A-1.
Abutment A-1.
Drawing 19-10

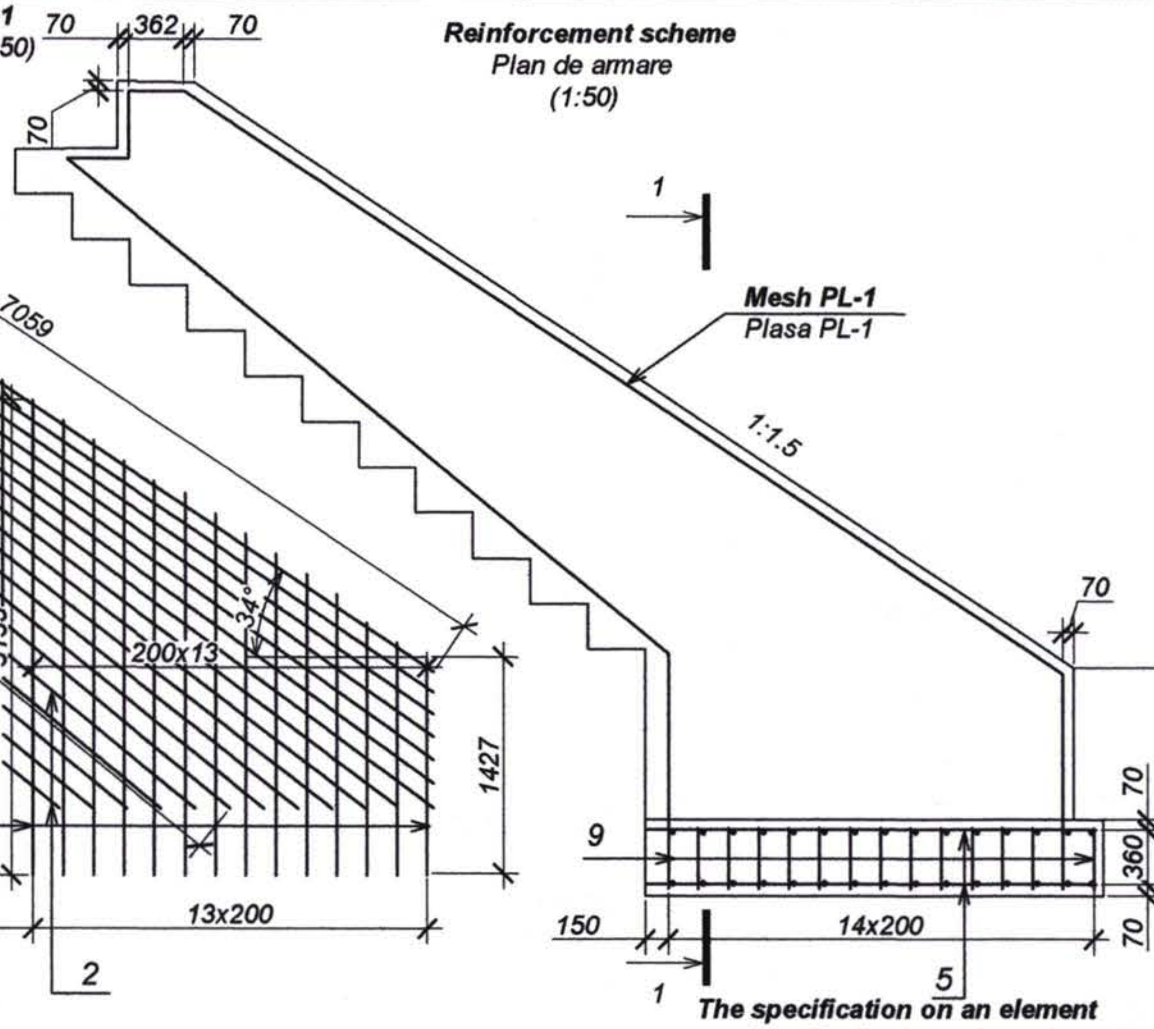
Formwork
Plan de cofrajre
(1:100)



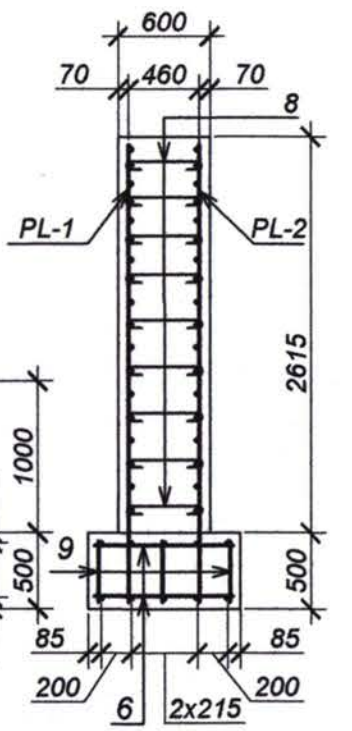
Mesh PL-1
Plasa PL-1(1:50)



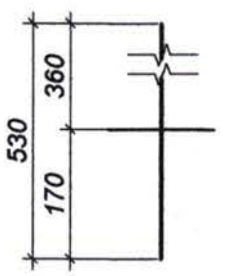
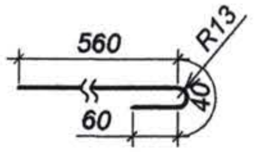
Reinforcement scheme
Plan de armare
(1:50)



1-1 (1:50)



Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita	Pozition. Pozitia	Sketch. Schita
7		8	

The specification on an element
Specificatie de un element

Pozition Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Mesh PL-1/PL-2 Plasa PL-1/PL-2	1/1	96.81/ 96.81	
1		Ø10 A III L=6890, GOST 5781-82*	13	4.25	
2		Ø10 A III Lmin=480 Lmax=1632, L=1055, GOST 5781-82*	5	0.65	
3		Ø10 A III L=1570, GOST 5781-82*	19	0.97	
4		Ø10 A III Lmin=1427 Lmax=3135, L=2300, GOST 5781-82*	14	1.42	
		Embedded element Ureche de montaj			
5		Ø10 A III L=2970, GOST 5781-82*	10	1.83	
6		Ø10 A III L=910, GOST 5781-82*	30	0.56	
7		Ø14 A III L=530, GOST 5781-82*	11	0.64	
8		Ø8 A I L=660, GOST 5781-82*	203	0.26	
9		Ø10 A III L=410, GOST 5781-82*	47	0.25	
		Materials Materiale			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			10.2 m³

Reinforsment amount for element
Masuratoare consum de otee pentru un element, kg

Element Type Marca elementului	Reinforcing pieces Piese de armare						Total weight Greutate totala
	Reinforcing bar type Armatura de clasa						
	A-I			A-III			
	GOST 5781-82**						
	Ø8	Ø14	Rez.	Ø10	Rez.	Total	
A-2	52.78	7.04	59.82	240.75	240.75	300.29	300.29

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Ministry of Transport

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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

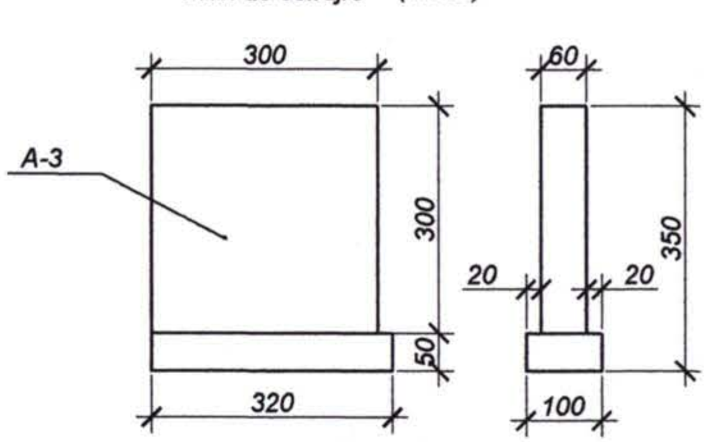
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 98+096.
Bridge, km 98+096.

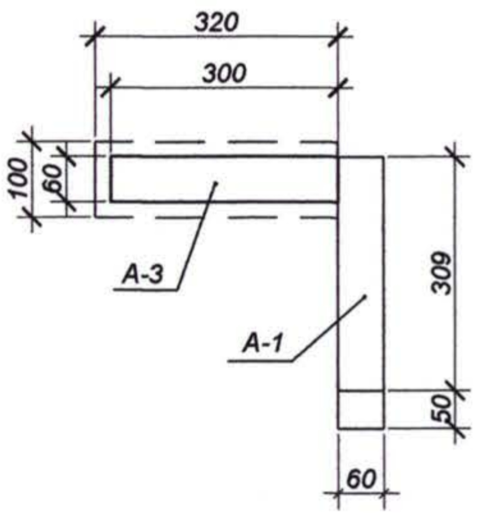
Culee A-2.
Abutment A-2.

Drawing 19-11

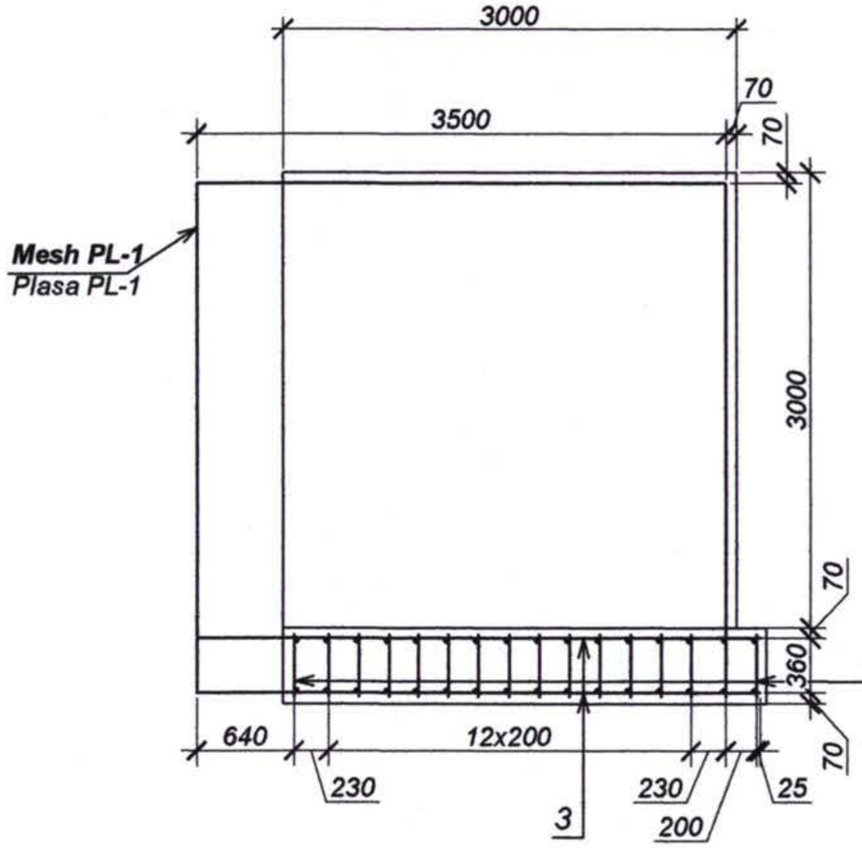
Formwork layout
Plan de cofrajre (1:100)

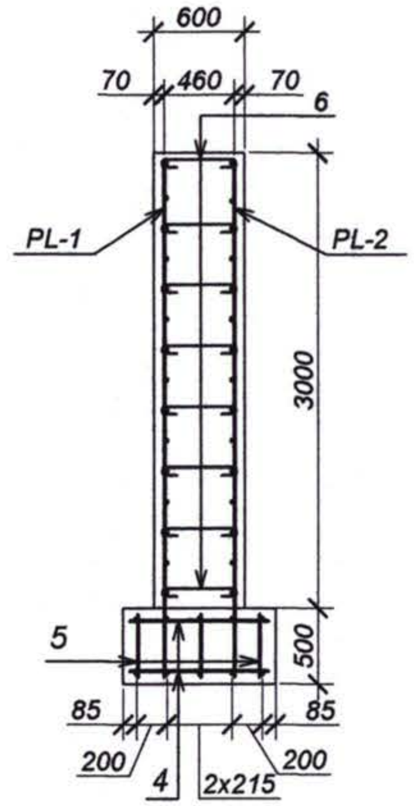


(1:100)

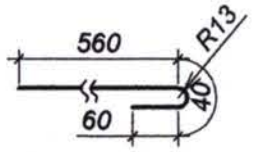


Reinforcement layout
Plan de armare (1:50)

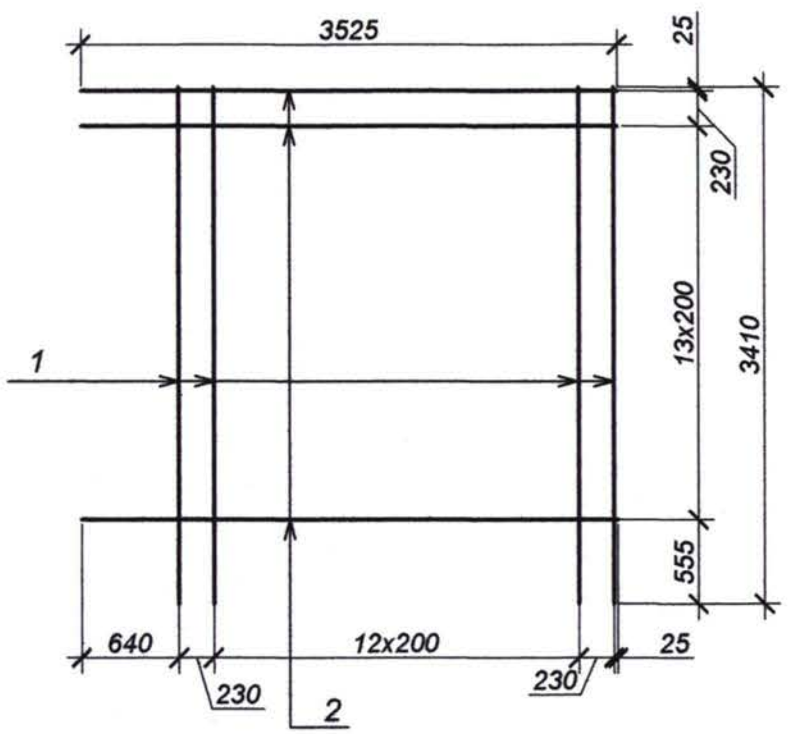




Bending details sheet.
Tabela pieselor incovoiate

Pozition. *Pozitia*	**Sketch.** *Schita*
6	

Mesh PL-1/PL-2
Plasa PL-1/PL-2 (1:50)



The specification on an element
Specificatie de un element

Pozition *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Mesh PL-1/PL-2 *Plasa PL-1/PL-2*	1/1	64.05/ 64.05	
1		Ø10 A III L=3410, GOST 5781-82*	15	2.10	
2		Ø10 A III L=3525, GOST 5781-82*	15	2.17	
		Embedded element *Ureche de montaj*			
3		Ø10 A III L=3725, GOST 5781-82*	10	2.30	
4		Ø10 A III L=910, GOST 5781-82*	32	0.56	
5		Ø10 A III L=410, GOST 5781-82*	50	0.25	
6		Ø8 A I L=660, GOST 5781-82*	113	0.26	
		Materials *Materiale*			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			7.1 m³

Reinforsment amount for element
Masuratoare consum de otee pentru un element, kg

Element Type *Marca elementului*	**Reinforcing pieces** *Piese de armare* — **Reinforcing bar type** *Armatura de clasa* — A-I — GOST 5781-82**					**Total weight** *Greutate totală*
	A-I		A-III			
	Ø8	Rez.	Ø10	Rez.	Total	
A-3	29.38	29.38	173.27	173.07	202.65	202.65

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Pod, km 98+096.
Bridge, km 98+096.
Culee A-3.
Abutment A-3.

Drawing 19-12

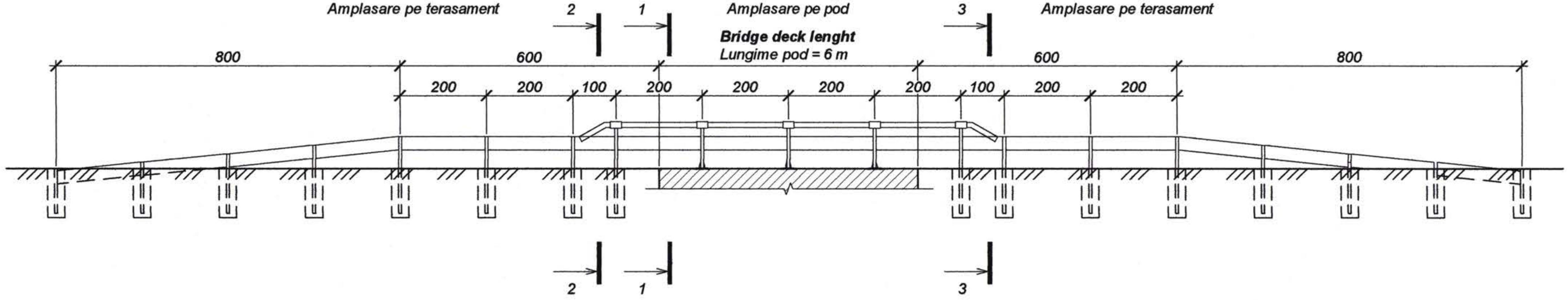
Format A3

Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)

Location on the embankment.
Amplasare pe terasament

Location on the bridge deck.
Amplasare pe pod

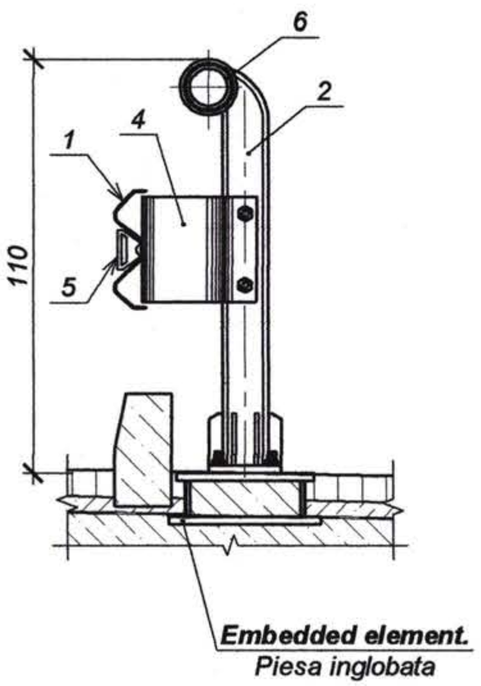
Location on the embankment.
Amplasare pe terasament



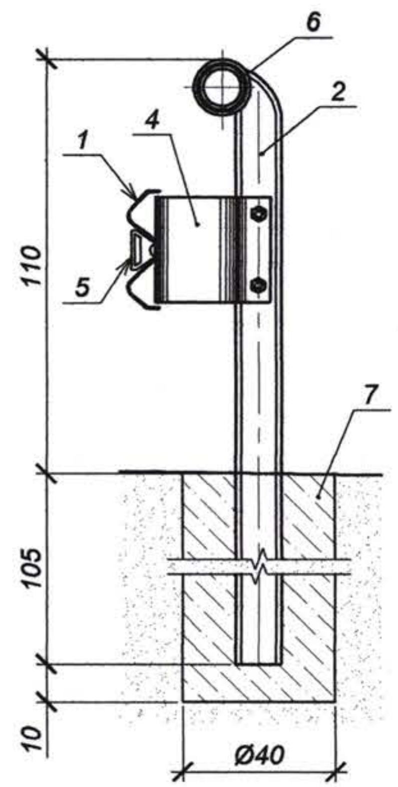
Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Elements. *Piese*			
1		**W-type guard-rail.** *Lisa de otel*	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** *Stilpul parapetului CM / CMЦ**	1 / 1		
3		**Guard-rail post.** *Stilpul parapetului CД-3*, GOST 8239 - 89*	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** *Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86*	set		
5		**Reflector.** *Reflector УС-1, GOST 26804 - 86*	1	0.1	**for 4m lenght** *la 4m lungime*
6		**Steel pipe.** *Teava de metal Ø 121, δ=8, GOST 8732-78**	1	44.6	
7		**Cast in place concrete.** *Beton B25, F200, W6, GOST 26633-91**			0.14 m^3

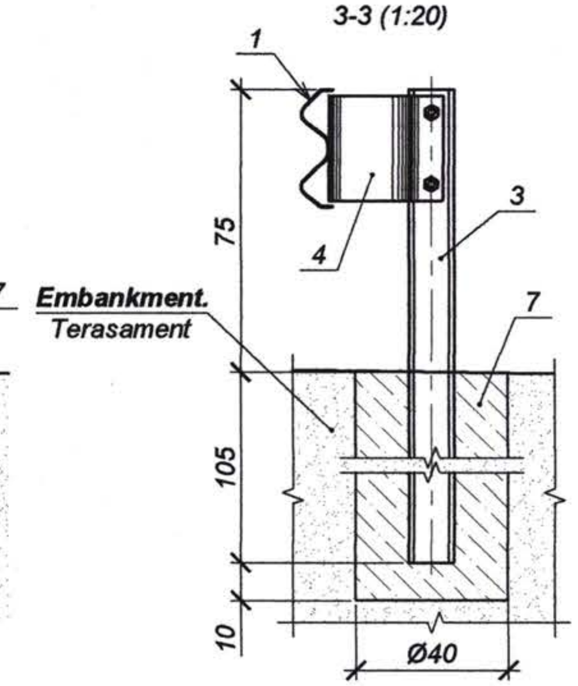
1 - 1 (1:20)



2 - 2 (1:20)



3 - 3 (1:20)



Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

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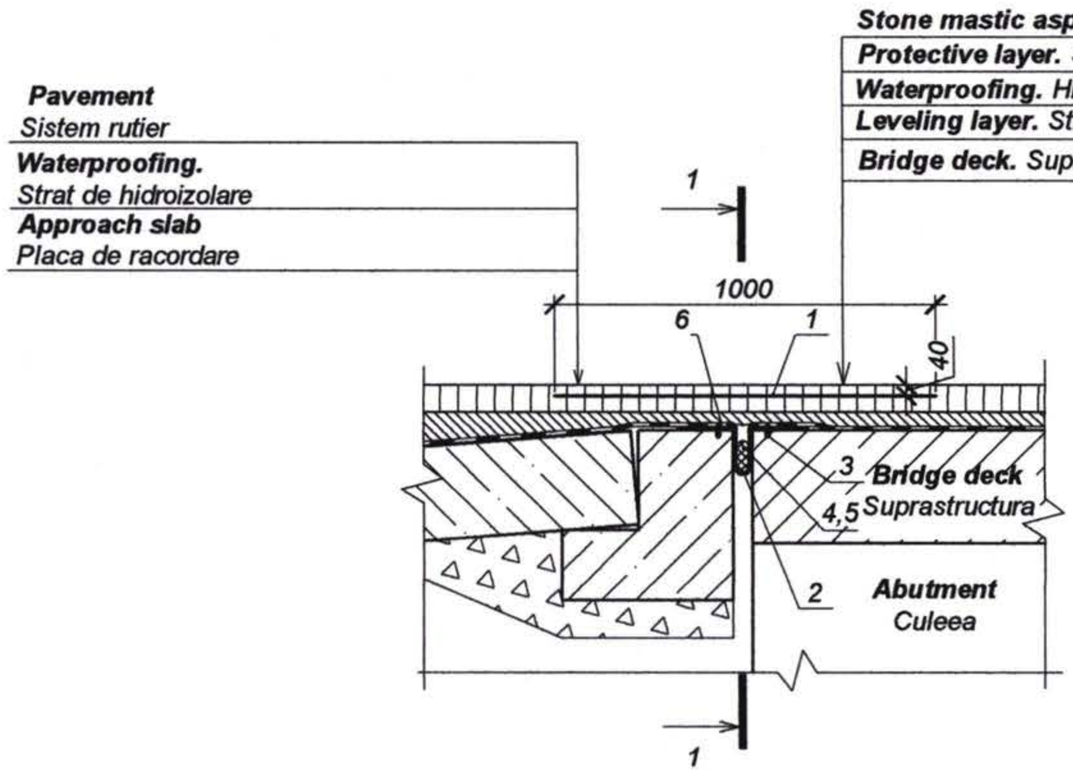
Pod, km 98+096.
Bridge, km 98+096.

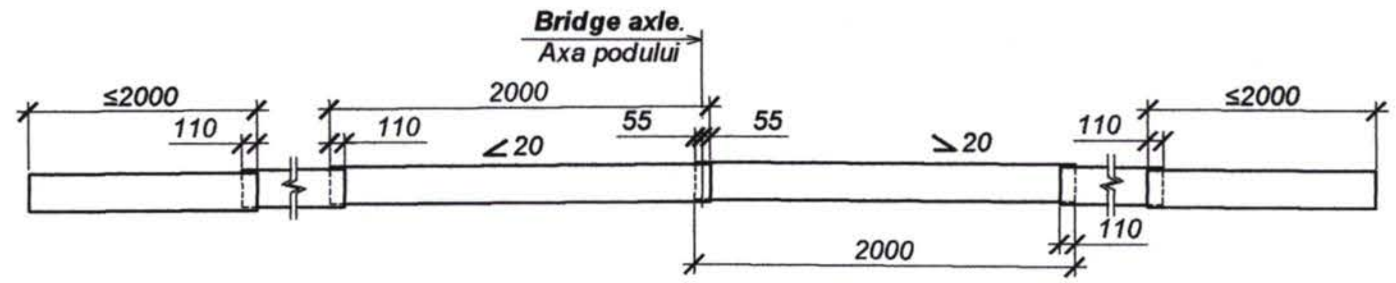
Parapet metalic de siguranta deformabil.
Deformable steel guard-rail.

Drawing 19-13

Expanssion joint at the abutment - Rostul de dilatate la culee (1:20)



1-1
Method of lyre-shaped sheet installation - Modul de instalare a buclelor

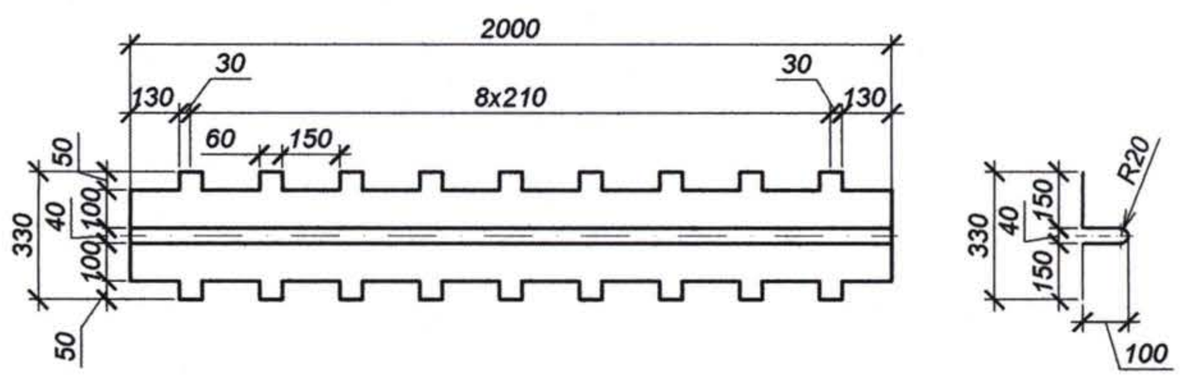


Note. *Nota:*

The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue .

Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Lyre-shaped brass sheet - Bucla din tabla de alama (poz.3) (1:20)



Schedule of materials for 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Expanssion joint at the abutment Rost de dilatatie la culee			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ 480-1-119-71	**Popous rubber cold** Coldon din cauciuc poros	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev.	Amendamente	Aprobat	Data
Rev.	Amendments	Approved	Date

Consultantii/Consultants:

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Proiectat/Designed: Cusnir G.

Desenat/Drawn: Sizova N.

Aprobat/Approved
Data/Date

EU Delegation to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

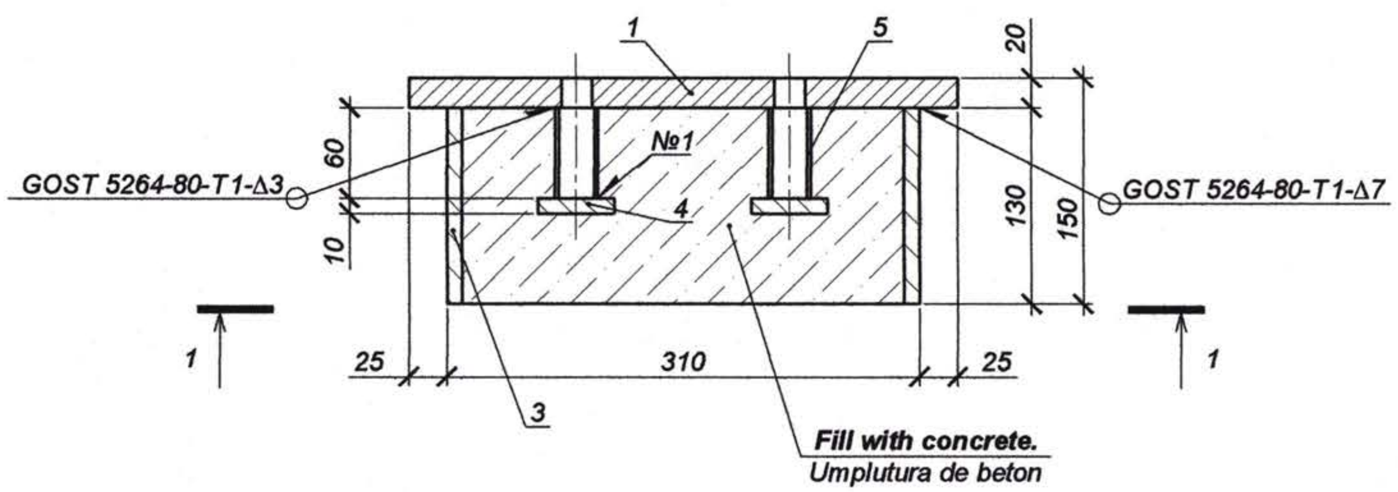
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 98+096
Bridge, km 98+096

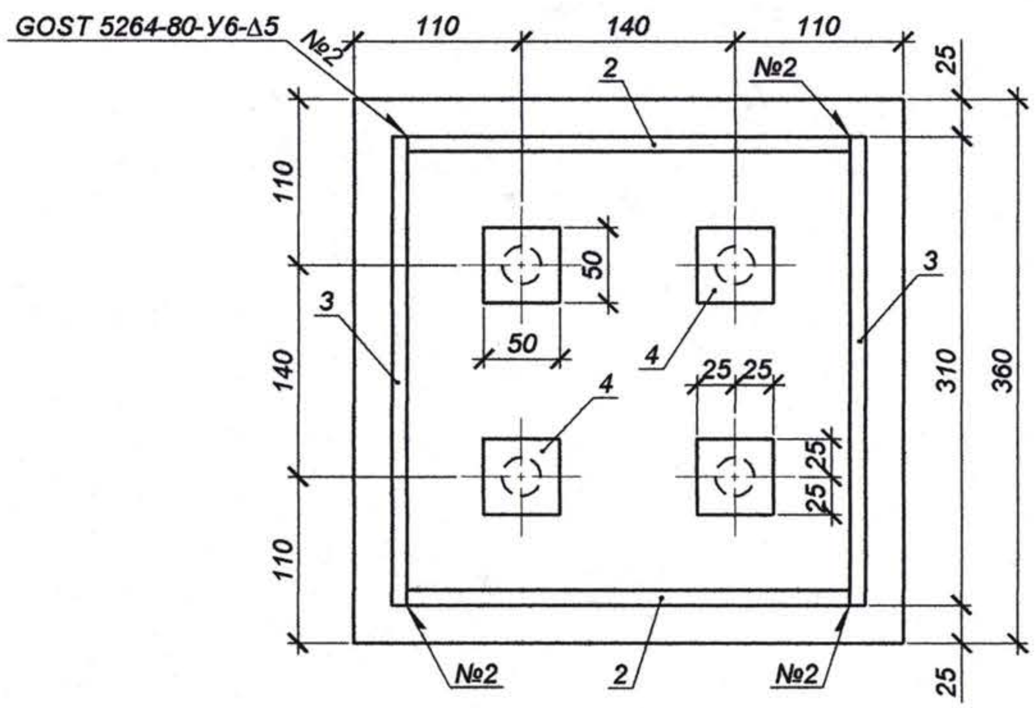
Rost de dilatatie.
Expanssion joint.

Drawing 19-14

Metallic header
Soclu metalic (1:5)

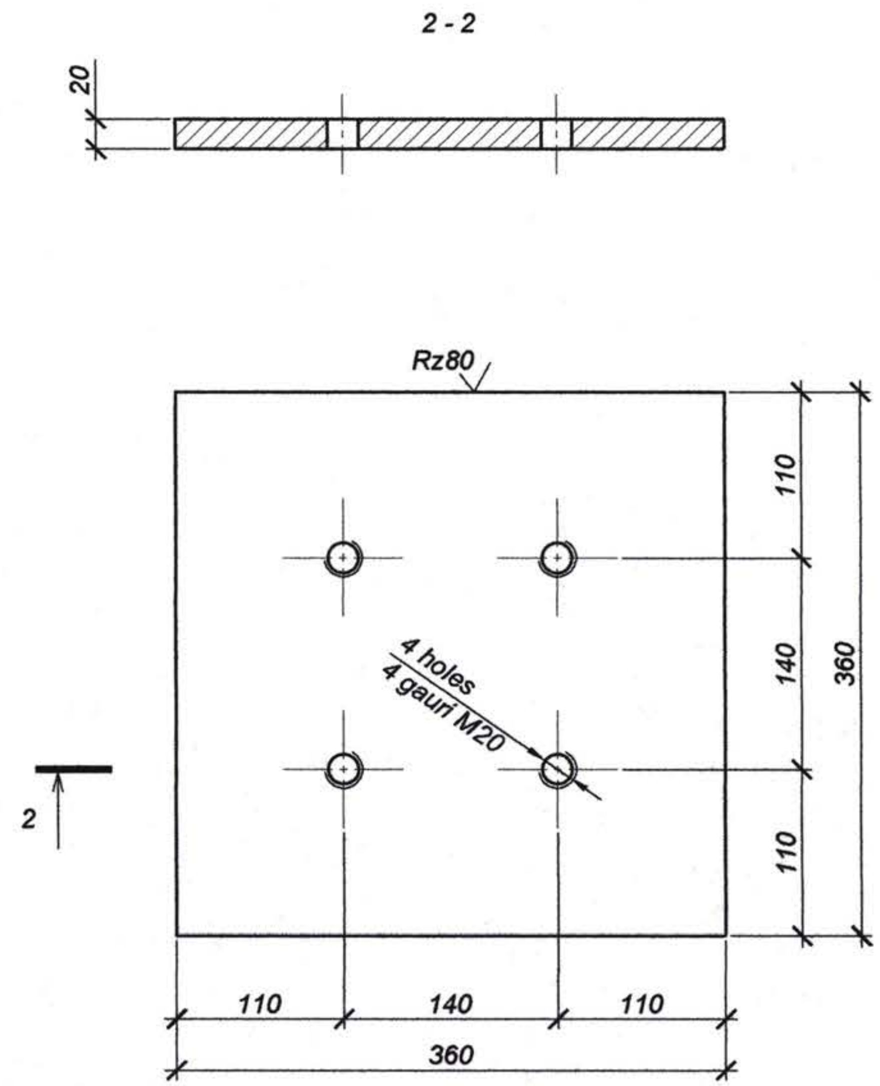


1 - 1



Component.
Piesa P - 1

2 - 2



Schedule of matrerials per metallic header.
Lista de materiale pentru soclu metalic

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
1		**Detail.** *Piesa P - 1*	1	20.4	
2		--10x130 L=290, GOST 103 - 2006	2	3.0	
3		--10x130 L=310, GOST 103 - 2006	2	3.0	
4		--10x50 L=50, GOST 103 - 2006	4	0.2	
5		28x2.5 L=60, GOST 8732 - 78*	4	0.1	
		Materials. *Materiale*			
		Concrete. *Beton B25, F200, W6, GOST 26633-91**			0.01 m³

Shimb. nr. inv.
Semnat la data
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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

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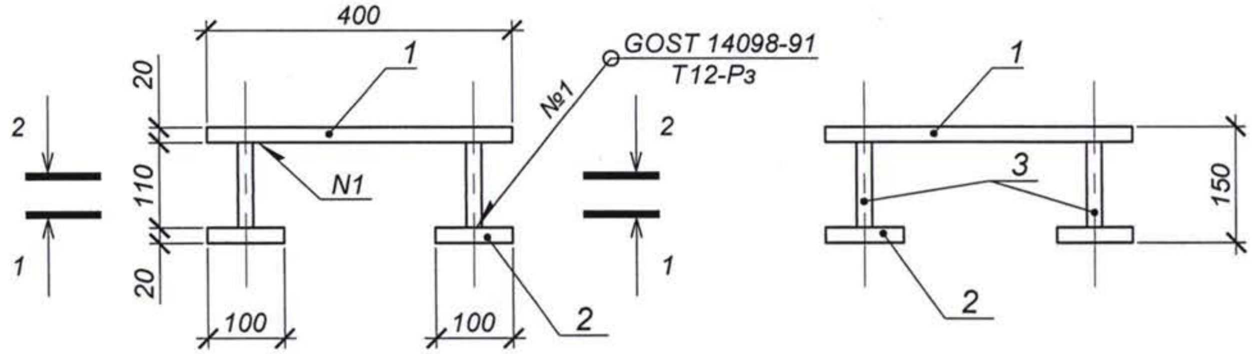
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 98+096.
Bridge, km 98+096.

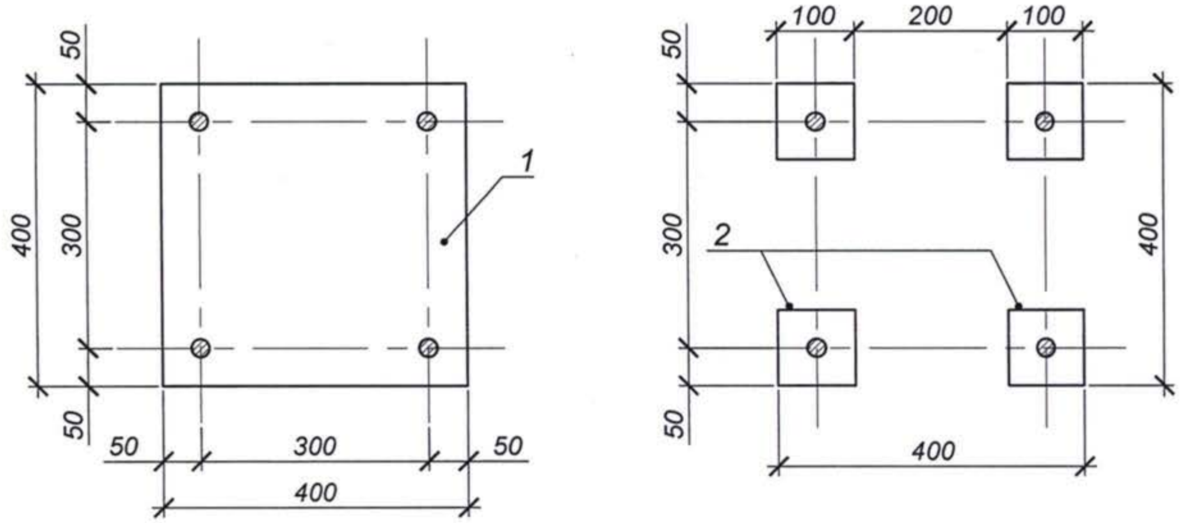
Soclu metalic.
Metallic header.

Drawing 19-15



1 - 1 (1:10)

2 - 2 (1:10)



Specification for embedded base plate.
Specificatia pentru piesa inglobata PI - 1

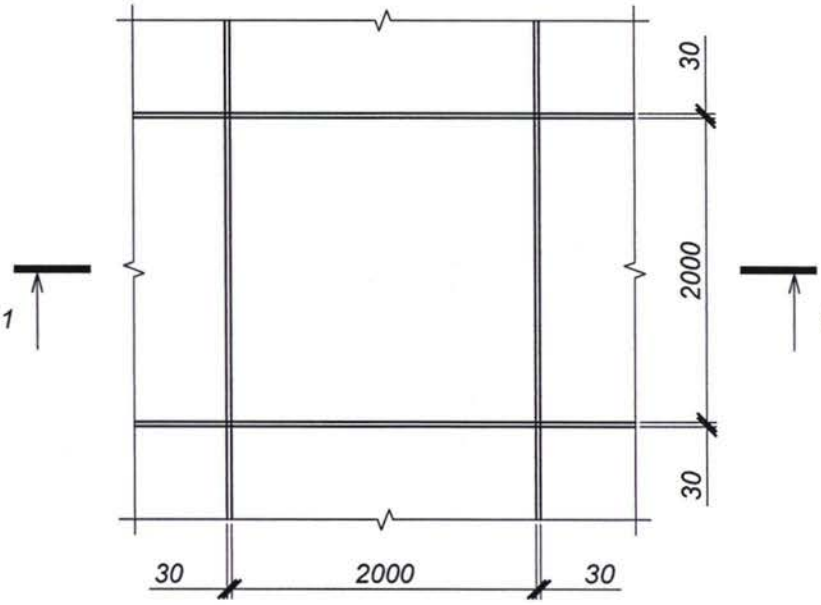
Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***Quantity.*** *Cant.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
		Elements *Piese*			
1		*--20x400 L=400, GOST 103 - 2006*	*1*	*25.1*	
2		*--20x100 L=100, GOST 103 - 2006*	*4*	*1.6*	
3		*Ø25 AIII L = 150, GOST 5781 - 82**	*4*	*0.6*	

Shimb. nr. inv.

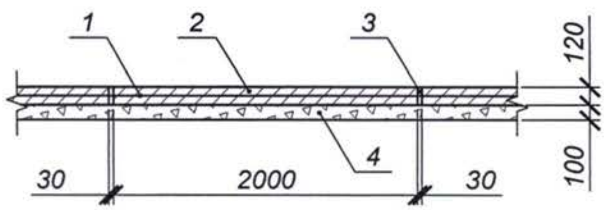
Semnat la data

Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 98+096. Bridge, km 98+096.	Piesa inglobata PI - 1 Embedded base plate.	Drawing 19-16



1 - 1 (1:50)



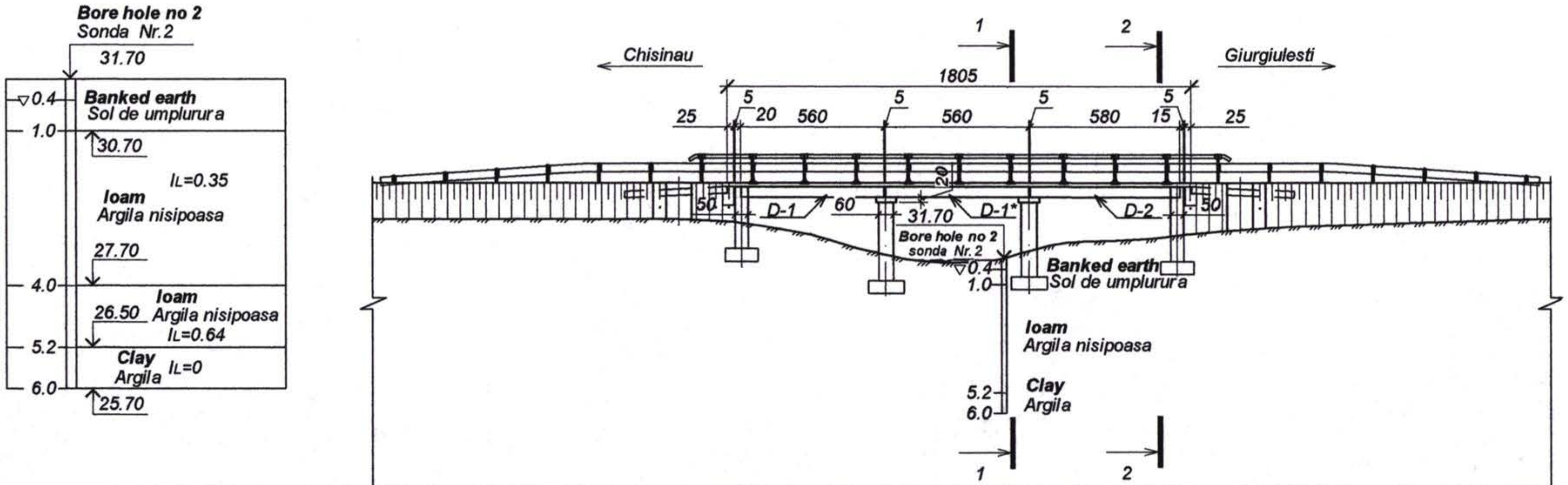
Schedule of matrerials per 1.0m² of stregthening.
Lista de materiale pentru 1.0 m² de consolidare

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
1		**Mesh.** Plasa Ø6 A-I, GOST 5781-82*, 200x200		2.2	
2		**Concrete.** Beton B20, F200, W6, GOST 26633-91*			0.12 m^3
3	BCH 32-81	**Bituminous mastic.** Mastic de bitum			0.01 m^3
4		**Crushed stone h=10 cm.** Piatra sparta h=10 cm, GOST 8267-93*			0.10 m^3

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 98+096. Bridge, km 98+096.	Protejarea taluzelor si a albiei cu beton. Slope and chanel concrete protection detail.	Drawing 19-17

Upstream side elevation - Elevatie (1:200)

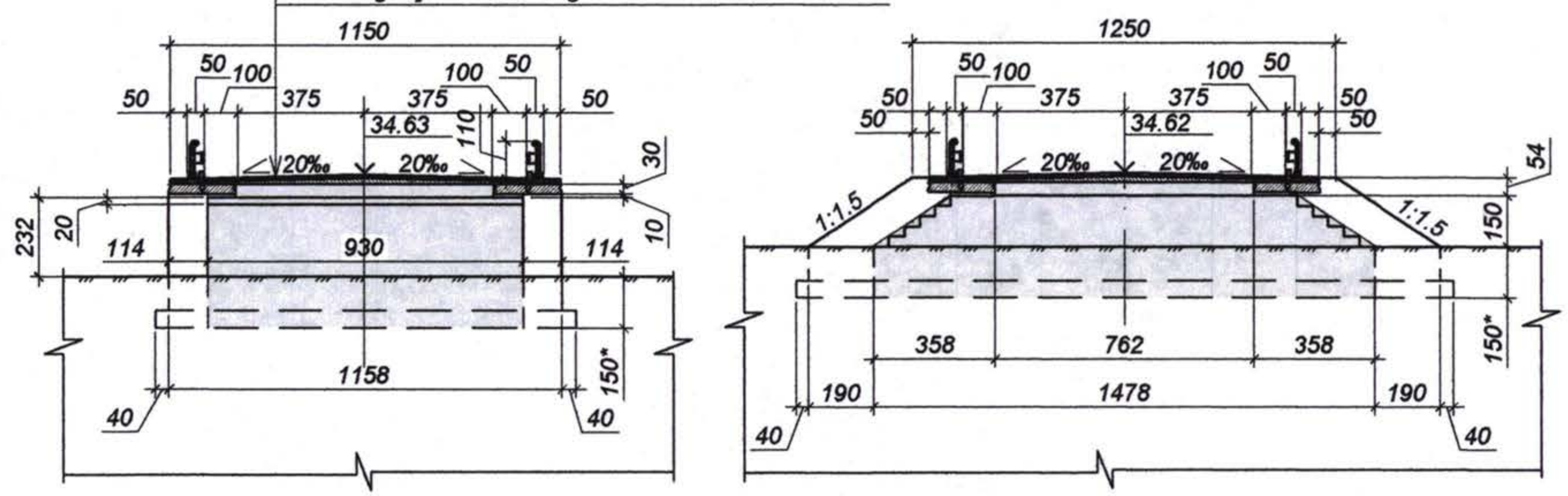


Gradient, ‰ Distances,m Declivitate,‰,distanta , m	4.00 / 2.5	17.10 / 0.06	4.00 / 0
Designed levels in axis, m Cota in axa, m	34.64; 34.63	34.63	34.62; 34.62
Existing levels in axis, m Cota teren, m	32.84	31.70; 31.65; 31.70	32.50
Distances,m, distanta,m	5.61	5.60	5.74
Pickets	141+160		

1 - 1 (1:100)

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 ÷ 150 mm

2 - 2 (1:100)



Hydrological characteristics.
Caracteristici hidrologice

Item. Denumirea	**Unit.** Unitate	**Quantity.** Cantitate
Estimated water flow. Debit de calcul, $Q_{1\%}$	m^3/s	42.8
Channel scour coefficient. Coeficient de afuiere		1.48

Note. Nota:

1. The exact height of the elevation, respectively the value of the dimensions - *, will be finalized after the finding of the level of the existing foundation, by a precision leveling.

1. Inaltimea exacta a elevatiei, respectiv valoarea cotelor - *, va fi determinata dupa stabilirea cotelor de nivel ale fundatiei existente, printr-un nivelment de precizie.

2. Dimensions in cm.

2. Dimensiunile in cm.

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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Proiectat/Designed: Cusnir G.
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Desenat/Drawn: Psarlova V.
Data/Date

Aprobat/Approved
Data/Date

EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

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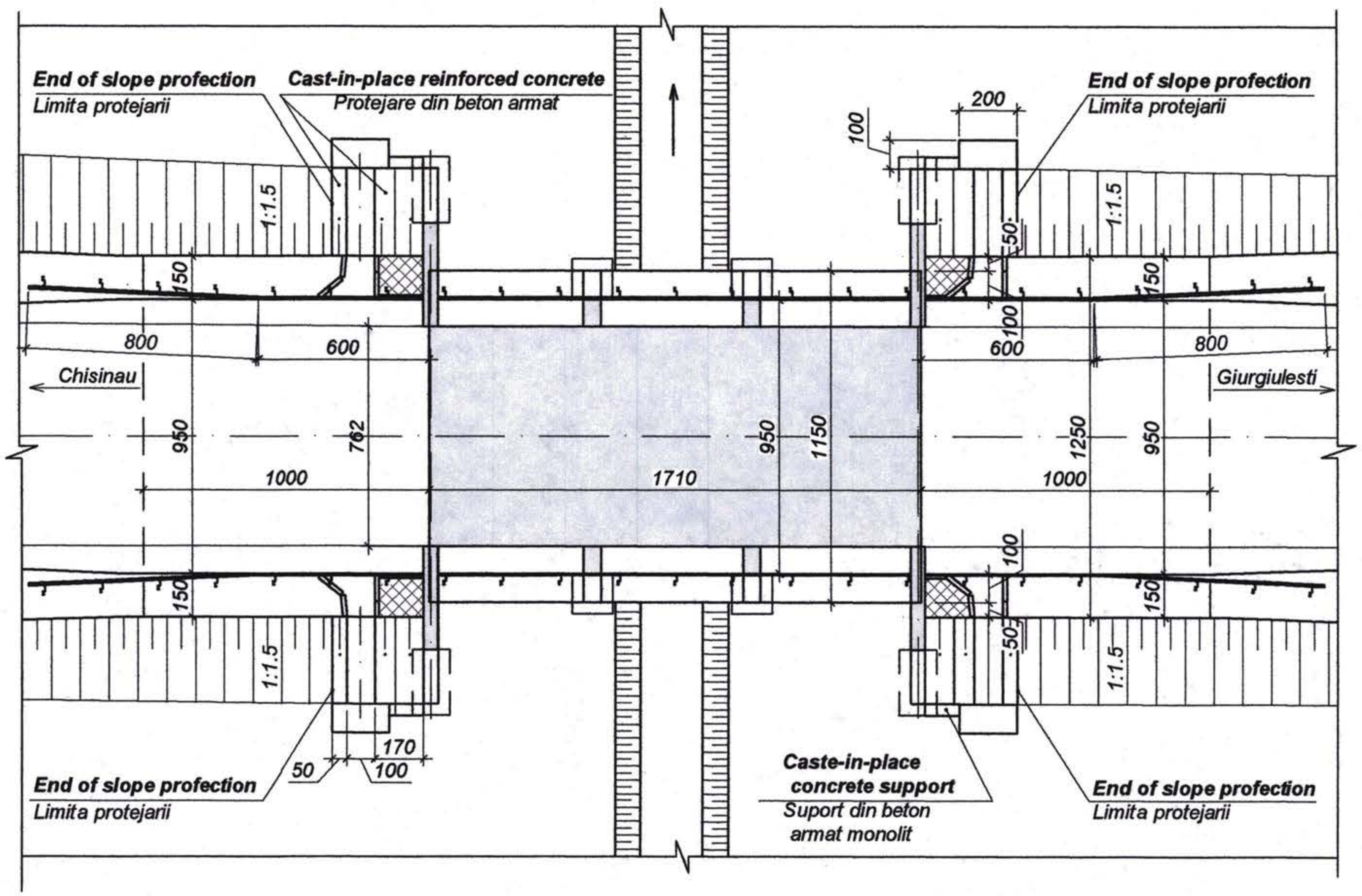
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 114+160. Elevatie. Dispozitie generala.
Bridge, km 114+160. Side elevation. General arrangement.

Drawing 20-1

Top view - Plan (1:200)



Quantity list.
Lista de cantitati

No. Art.	Item description. Descrierea articolului	Unit of measure. Unitite de masura	Quantity. Cant.
1	**Concrete reinforced bridge infrastructure on the earth foundation.** Infrastructuri din beton armat pe fundatii directe.	Cu.m.	41.7
2	**Superstructure precast reinforced concrete elements.** Suprastructura din elemente prefabricate din beton armat.	Cu.m.	20.3
3	**Bridge approach.** Racordarea podului cu rampele de acces.	Cu.m.	26
4	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului.	Sq.m.	197
5	**Expansion joints.** Rosturi de dilatatie.	m.	46
6	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod.	Sq.m.	197
7	**Bridge deformable quard-rail.** Parapet de siguranta metalic pe pod.	m.	36
8	**Deformadle quard-rail on the ramps.** Parapet de siguranta deformabil pe rampe.	m.	56
9	**Concrete repair.** Repararea betonului degradat.	Sq.m.	128
10	**Slope and channel protection.** Protejarea taluzelor si albiei.	Sq.m.	52
11	**Removal of existing structure.** Demolarea structurii existente.	Cu.m./t	81/0.8
12	**Bridge approach slab waterproofing.** Hidroizolatia dalei de racordare.	Sq.m.	80

Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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UNIVERSINJ DESIGN, ENGINEERING, CONSULTING — Universinj Ltd., Independentei 6/1 Str., Chisinau MD 2043, Moldova
Proiectat/Designed: Cusnir G.
Desenat/Drawn: Psariova V.
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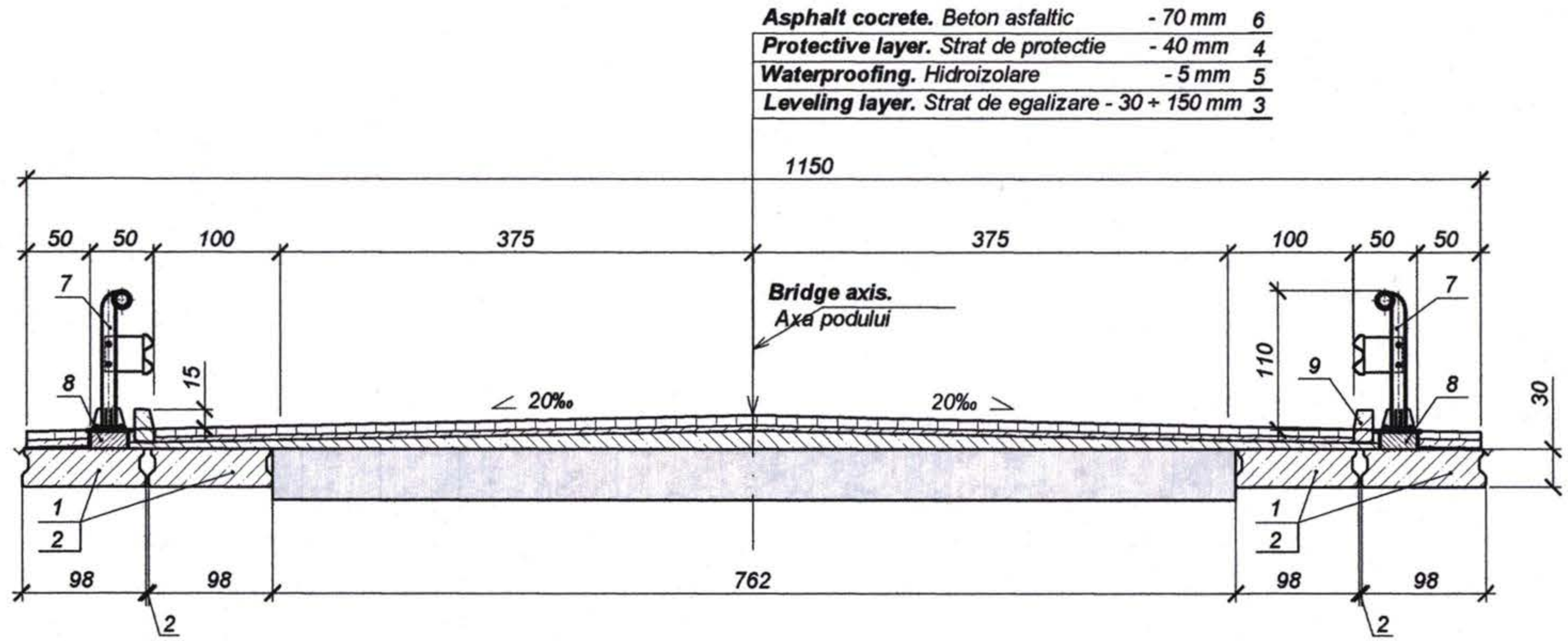
Data/Date
Aprobat/Approved Data/Date
EU Delegation to Moldova
Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 114+160. Planul podului.
Bridge, km 114+160. Bridge top view.
Drawing 20-2

Cross section.
Sectiune transversala (1:50)



Specification for cross section.
Specificatia pentru sectiune transversala

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity Cant.	Weight. Masa, kg	Note. Nota
1	**Drawing 20-6,20-7.**	**Precast reinforced concrete slab D-1.** Dala prefabricata din beton armat D-1	8	3610	1.59 m³
2	**Drawing 20-8,20-9.**	**Precast reinforced concrete slab D-2.** Dala prefabricata din beton armat D-2	4	3725	1.64 m³
3		**Leveling layer.** Dala de egalizare, beton B30, F200, W6			18 m³
4		**Concrete protective layer .** Strat de protectie, beton B27.5, F200, W6, h=4cm			8 m³
5	BCH 32 - 81	**Water proofing,membrane.** Hidroizolare, membrana			197 m²
6		**Asphalt concrete typeB, M-I.** Beton asfaltic tip Б, M-I, dens cu agregate marunte, h=7cm			13.7m³
7	**Drawing 20-12.**	**Bridge guardrails.** Parapeti metalici de siguranta			34m
8	**Drawing 20-14.**	**Metallic header.** Soclu metalic	18	31.0	
9		**Kerb.** Bordura			34 m

Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

Nr. inv. orig.	Semnat la data	Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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Kocks Consult GmbH
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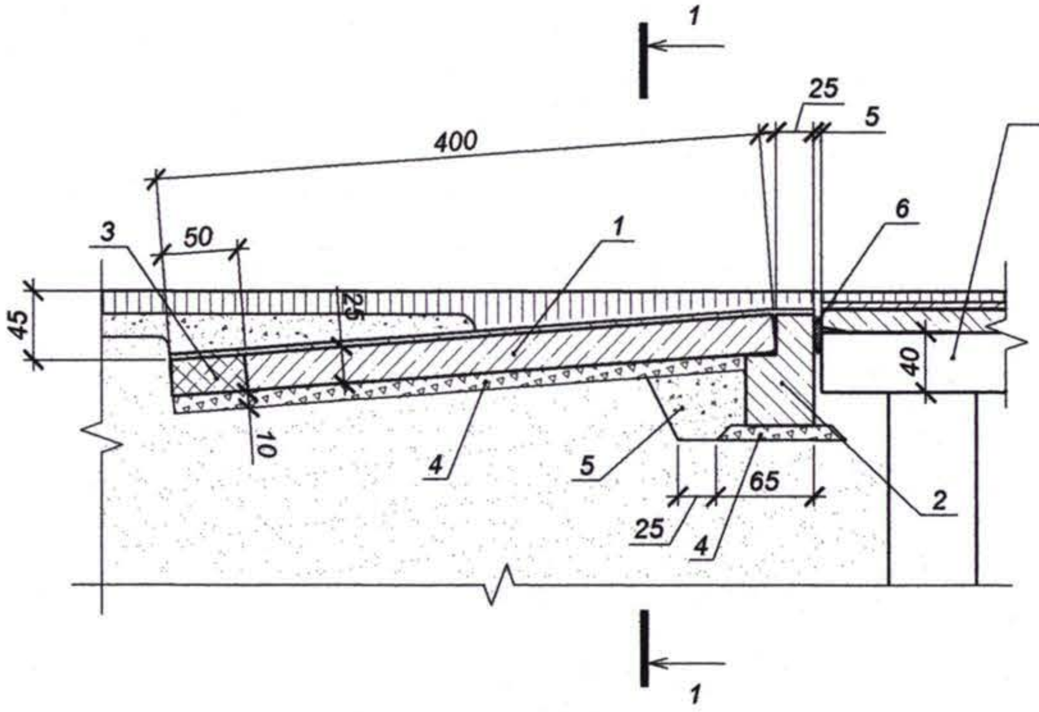
Pod, km 114+160.
Bridge, km 114+160.
Sectiune transversal a.
Gross section.

Drawing 20-3

Bridge approach.
Racordarea podului cu terasamentul (1:50)

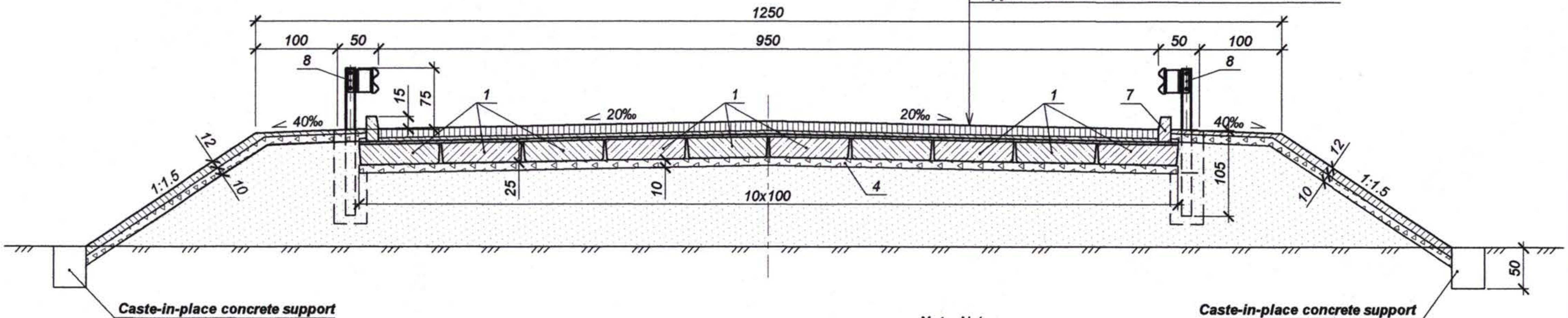


Bridge approach specification.
Lista de materiale pentru racordarea podului cu terasamentul

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota.
1	Drawing 20-5.	**Approach slab PR 1-4.** Placa de racordare PR 1-4	10	2100	0.84 m³
2		**Baskwoll.** Zid de gardă			2.9 m³
3		**Approach slab concreted conection.** Imbinarea , B25, F200, W6			1.25 m³
		Leveling concrete layer. Strat de egalizare, beton cl.B25, F200, W6, h=3cm			1.2 m³
		Concrete layer protective . Strat de protectie, beton cl.B25, F200, W6, h=4cm			1.6 m³
	BCH 32 - 81	**Waterproofing,membrane.** Hidroizolare, membrana, h=0.5cm			40 m²
4		**Crushed stone bed.** Pat din piatra sparta M400, h=40cm			6 m³
5		**Sand and gravel.** Nisip cu petris			4.6 m³
6	Drawing 20-13.	**Expanssion joints.** Rost de dilatatie			11.5 m
7		**Concrete kerbs.** Borduri de beton			12 m
8	Drawing 20-12.	**Deformable quard-rail.** Parapeti de siguranta metalici		700	28 m

1 - 1 (1:50)

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 mm
Approach slab. Placa de racordare	- 250 mm



Caste-in-place concrete support
Suport din beton armat monolit

Caste-in-place concrete support
Suport din beton armat monolit

Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

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Marimea originala a desenului Original Drawing Size
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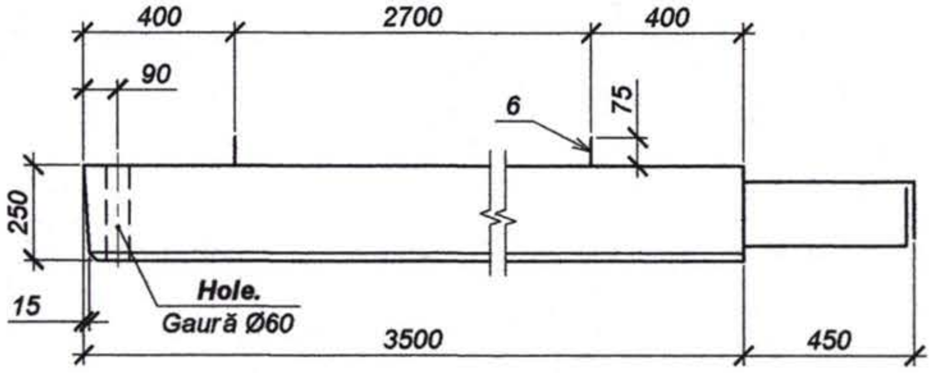
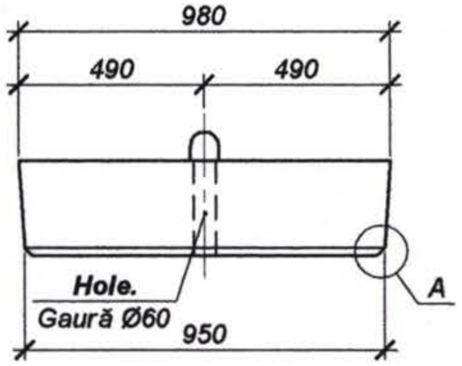
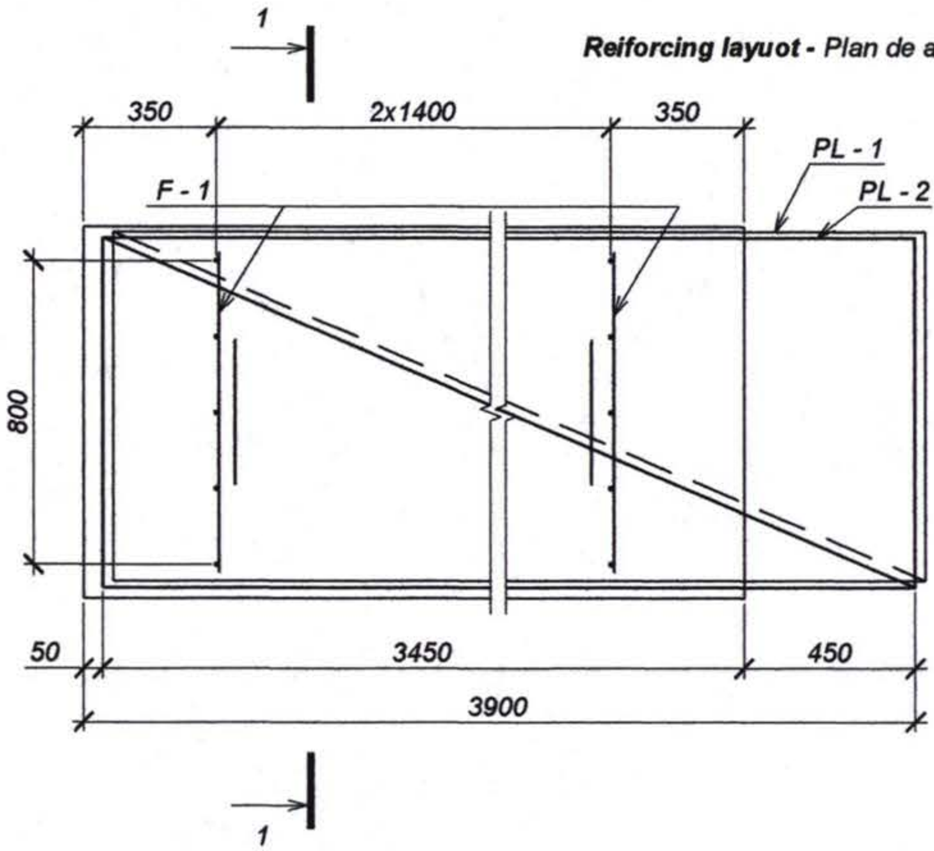
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 114+160. Racordarea podului cu terasamentul.
Bridge, km 114+160. Bridge approach slab.
Drawing 20-4

Formwork layout - *Plan de cofrare (1:20)*

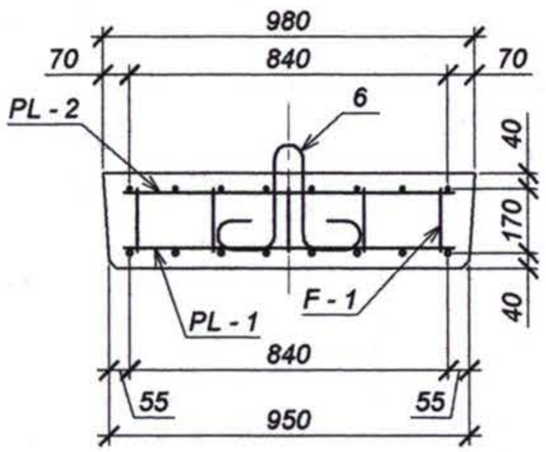




Reifocing layuot - *Plan de armare (1:20)*



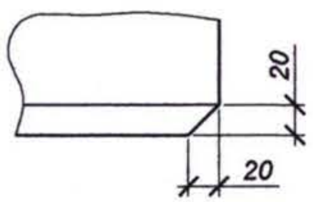
1 - 1



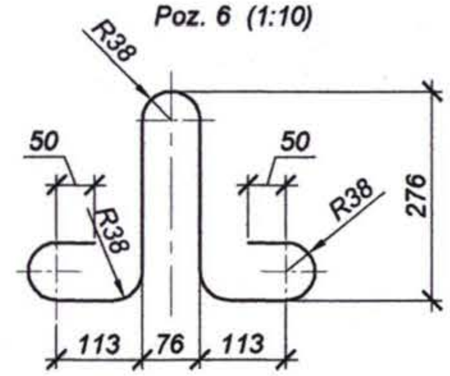
Approach slab PR1-4 specification.
Specificatie pentru placa de racordare PR1-4.

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
		Assembly elements. Piese de asamblare			
		Mesh. Plasa PL-1	1	42.8	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
2		Ø14 A-III L=4000, GOST 5781 - 82*	8	4.9	
		Mesh. Plasa PL-2	1	23.6	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
3		Ø10 A-III L=4005, GOST 5781 - 82*	8	2.5	
		Mesh support F-1. Fixator F-1	3	1.1	
4		Ø8 A-I L=840, GOST 5781 - 82*	2	0.3	
5		Ø8 A-I L=165, GOST 5781 - 82*	5	0.1	
		Embedded elements. Piese inglobate			
6		Ø 14A-I L=1130, GOST 5781 - 82*	2	1.4	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.84 m³

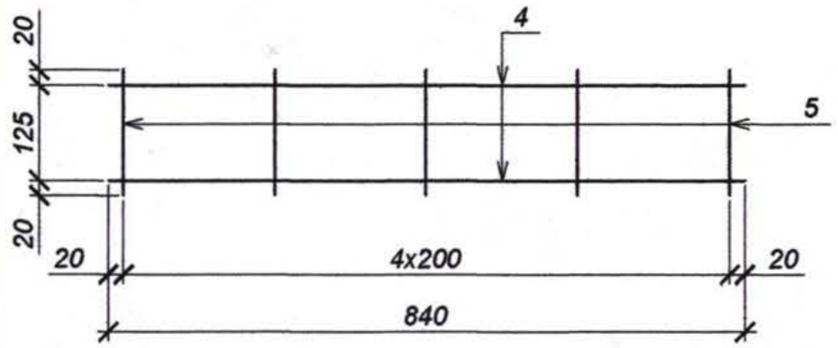
A (1:5)



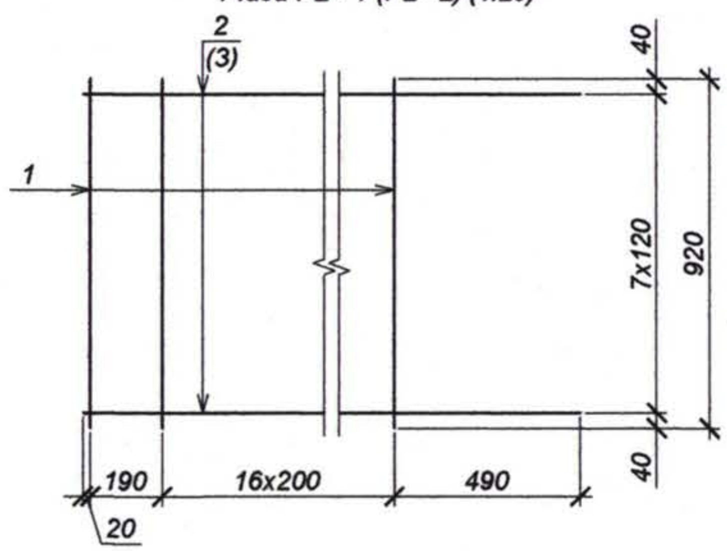
Poz. 6 (1:10)



Mesh support F-1.
Fixator F-1 (1:10)



Mesh PL-1 (PL-2).
Plasa PL - 1 (PL - 2) (1:20)



Reinforcement amount for element, kg
Masuratoare consum de metal pentru un element, kg

Element type. Marca elementului	Reinforcing pieses. Confectii din armature							Embedded pieces. Piese inglobate			Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	Reinforcing bar type. Armatura clasa		Totals. Linia totalului	
	A - I, Cm3cn			A - III, 25Г2С				A - I, Cm3cn			
	GOST 5781-82*			GOST 5781-82*				GOST 5781-82*			
	Ø6	Ø8	Total	Ø10	Ø14	Total		Ø14	Total		
PR 1-4	7.2	3.3	10.5	20	39.2	59.2	69.7	2.8	2.8	2.8	72.5

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

Rev. Amendamente Aprobat Data
Rev. Amendments Approved Date

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Desenat/Drawn: Psariova V.
Data/Date

Aprobat/Approved
Data/Date

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

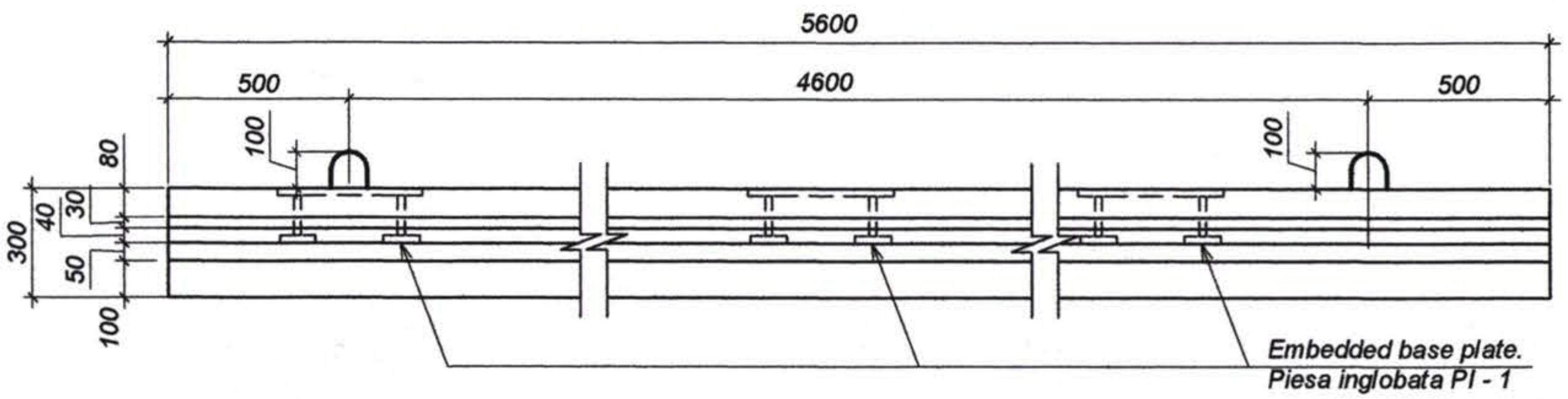
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

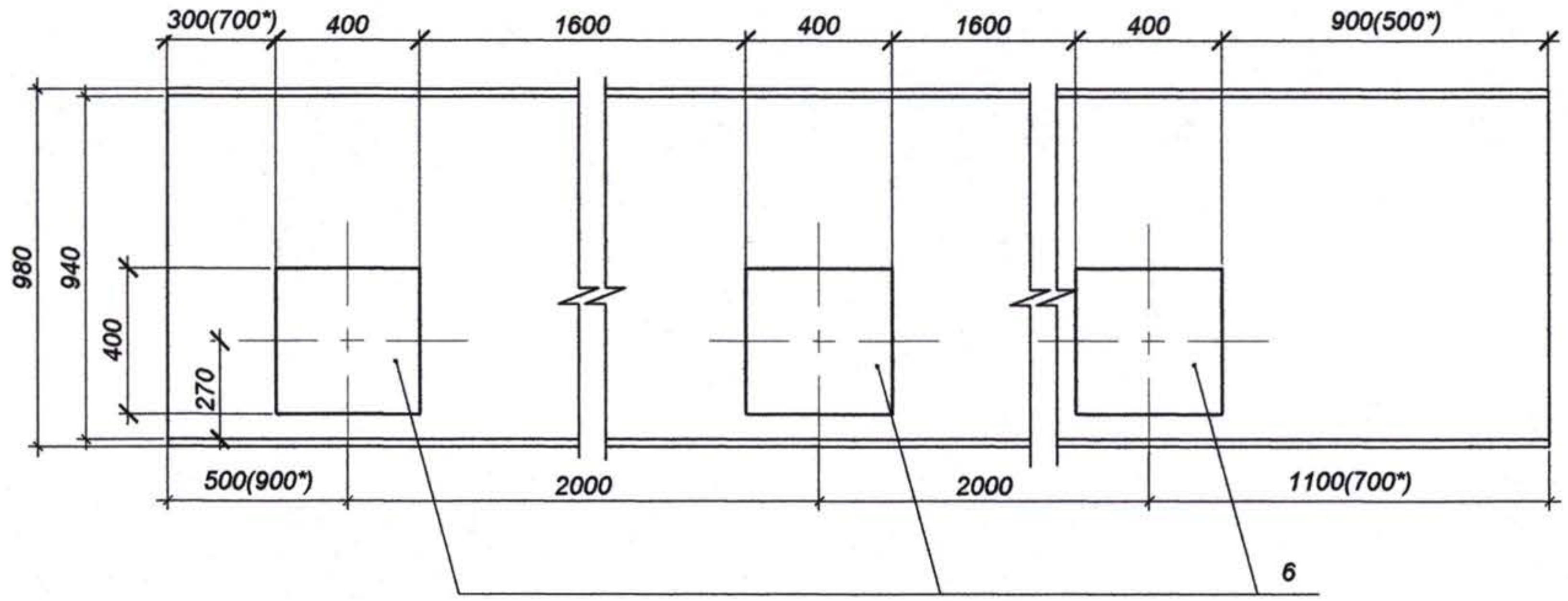
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

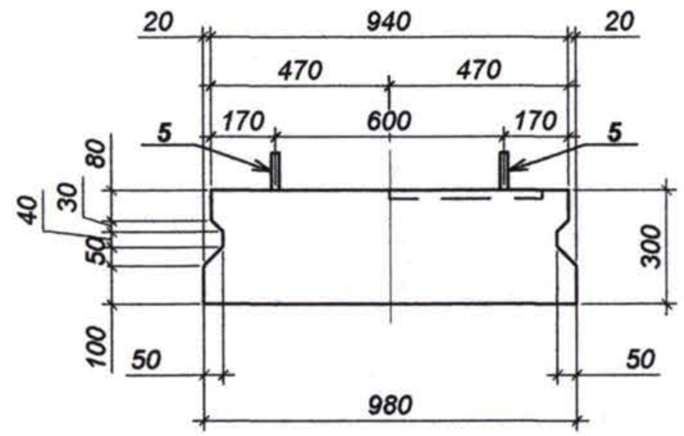
Pod, km 114+160. Placa de racordare prefabricata din beton armat PR1-4.
Bridge, km 114+160. Precat reinforced concrete a pproach slab PR 1-4.

Drawing 20-5

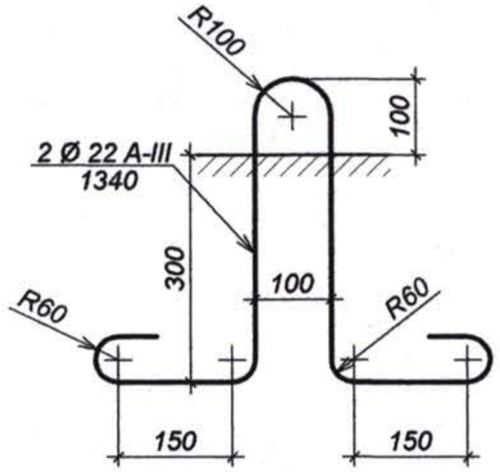
Formwork layout
Plan de cofraj (1:20)







Poz.5 (1:10)



Reinforcement amount for element, kg.
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	**Reinforcing pieces.** Piese de armare						**Embedded pieces.** Piese inglobate							**Total weight.** Greutate totala
	Bar type. Armatura de clasa					**Total line.** Linia totalului	**Bar type.** Armatura de clasa			**Steel type.** Marca metalului			**Total line.** Linia totalului	
	A - I, Cm3 cп		A - III, 25Г2С				A - I, Cm3 cп			BCm3cп2				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø8	Total	Ø8	Ø20	Total		Ø22	Ø25	Total	-20x100	-20x400	Total		
D-1	32.94	32.94	15.40	123.84	139.24	172.18	15.96	7.20	23.16	19.2	75.3	94.5	117.66	289.84

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Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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Desenat/Drawn: Psariova V.

Aprobat/Approved Data/Date

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Marimea originala a desenului
Original Drawing Size

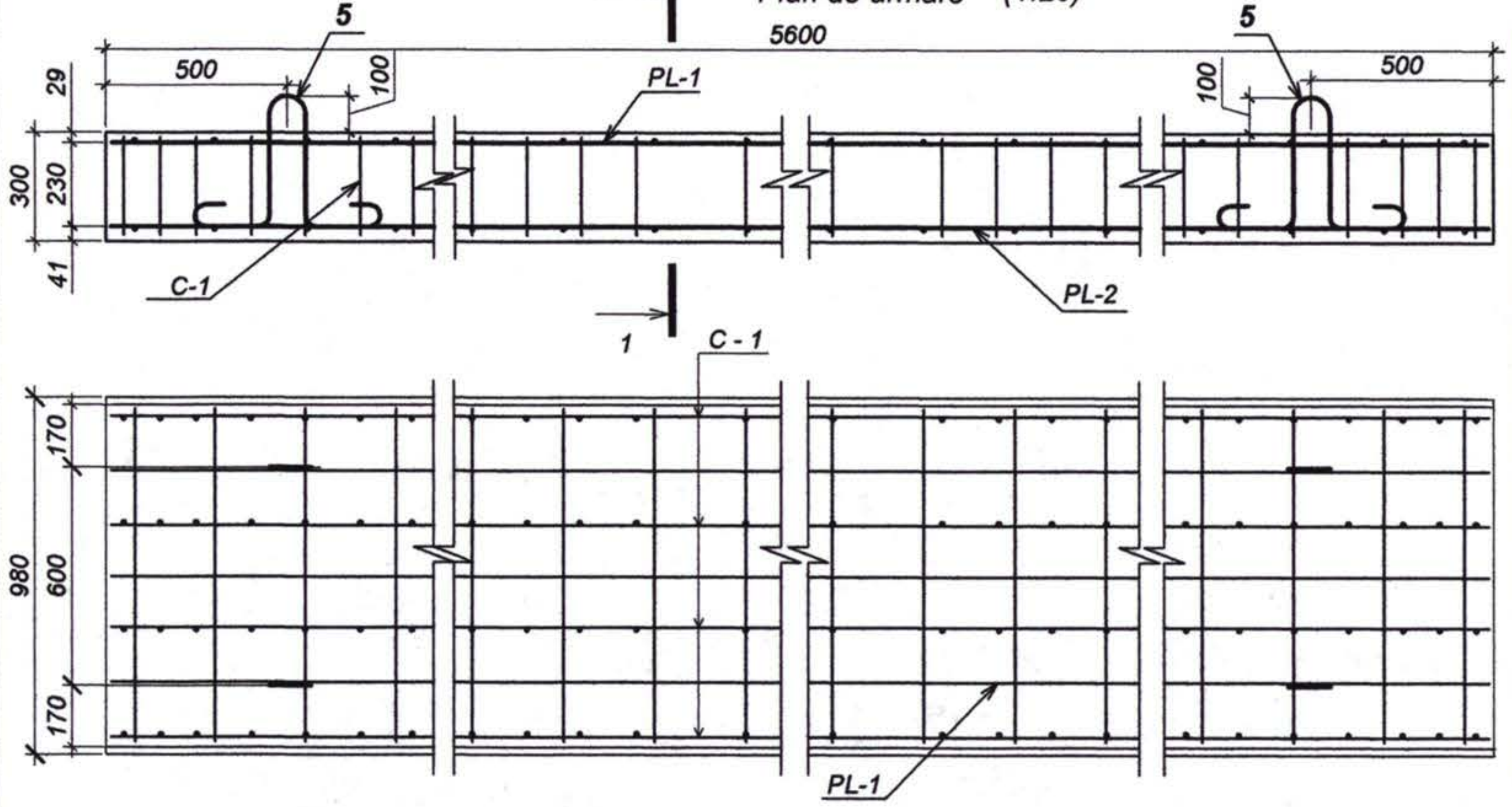
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 114+160. Dala suprastructura prefabricata din beton armat D-1.
Bridge, km 114+160 . Suprastructure precast reinforsed concrete slab D-1.

Drawing 20-6

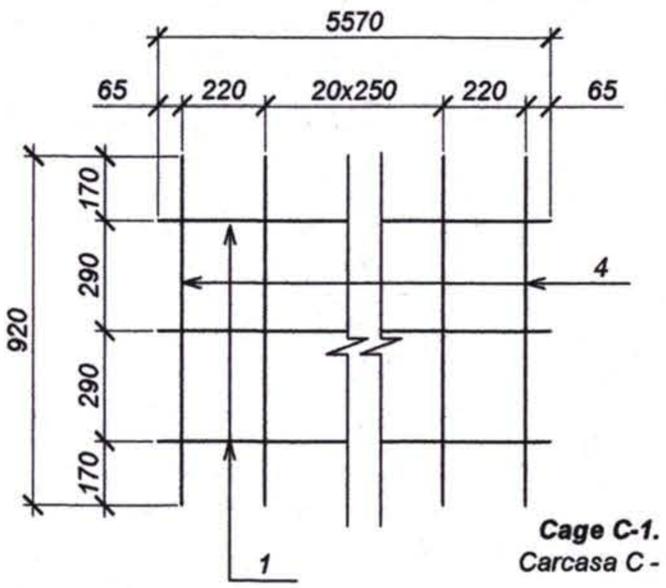
Reinforcement layout.
Plan de armare (1:20)



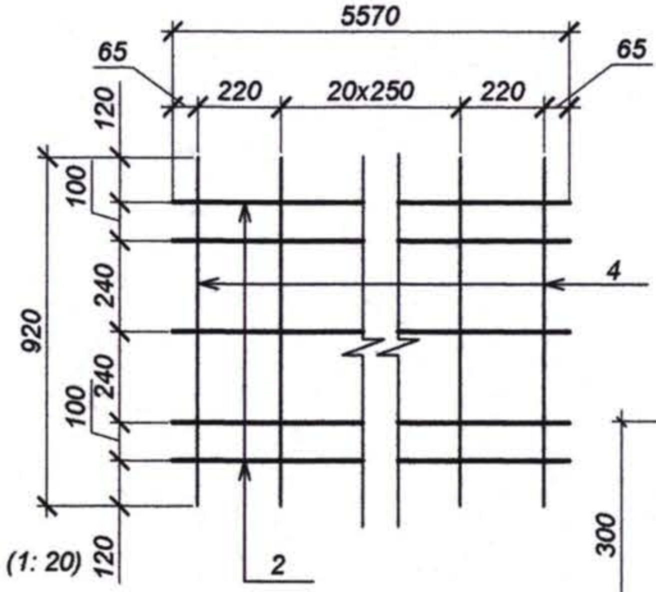
Slab D-1 specification.
Specificatia dalei D-1.

Pozition Pozitia	Reference. Indicativ	Name. Denumirea	Quantity Cant.	Weight. Masa, kg	Note. Nota
		Mesh PL-1. Plasa PL-1	1	16.05	
1		Ø 8 A-III L=5570, GOST 5791-82*	3	2.20	
4		Ø8 A-I L=1040, GOST 5781-82*	23	0.41	
		Mesh PL-2. Plasa PL-2	1	78.23	
2		Ø20 A-III L=5570, GOST 5781-82*	5	13.76	
4		Ø8 A-I L=1040, GOST 5781-82*	23	0.41	
		Cage C-1 Carcasa C-1	4	19.48	
1		Ø 8 A-III L=5570, GOST 5781-82*	1	2.20	
2		Ø20 A-III L=5570, GOST 5781-82*	1	13.76	
3		Ø8 A-I L=270, GOST 5781-82*	32	0.11	
		Embedded element. Ureche de montaj			
5	**Drawing 20-6.**	**Bar.** Bara Ø22 A-III L=1340, GOST 5781-82*	4	3.99	
6	**Drawing 20-15.**	**Embedded base plate Pl-1.** Piesa inglobata Pl-1, GOST 5781-82*	3	48.22	
		Materials. Materiale			
		Concrete. Beton B30,F200,W6, GOST 26633-91*			1.59m³

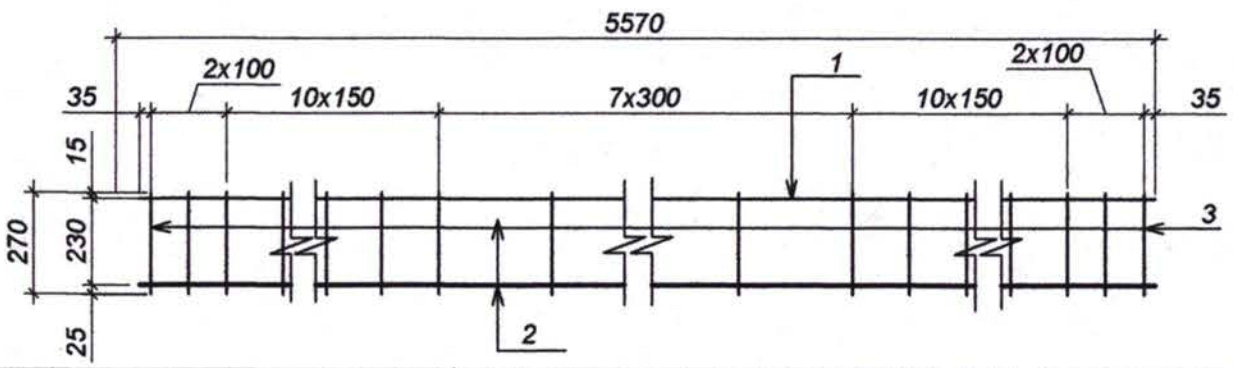
Mesh PL-1.
Plasa PL - 1 (1: 20)



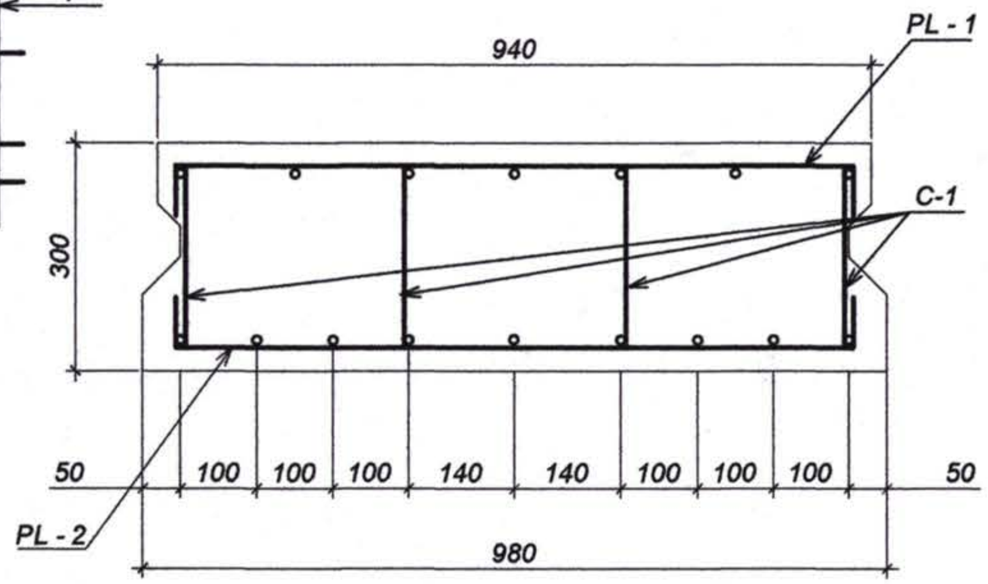
Mesh PL-2.
Plasa PL - 2 (1: 20)



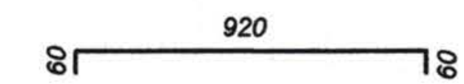
Cage C-1.
Carcasa C - 1 (1: 20)



1 - 1
Sc. 1:10



Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita
4	

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Desenat/Drawn: Psarlova V.
Aprobat/Approved
Data/Date
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Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size

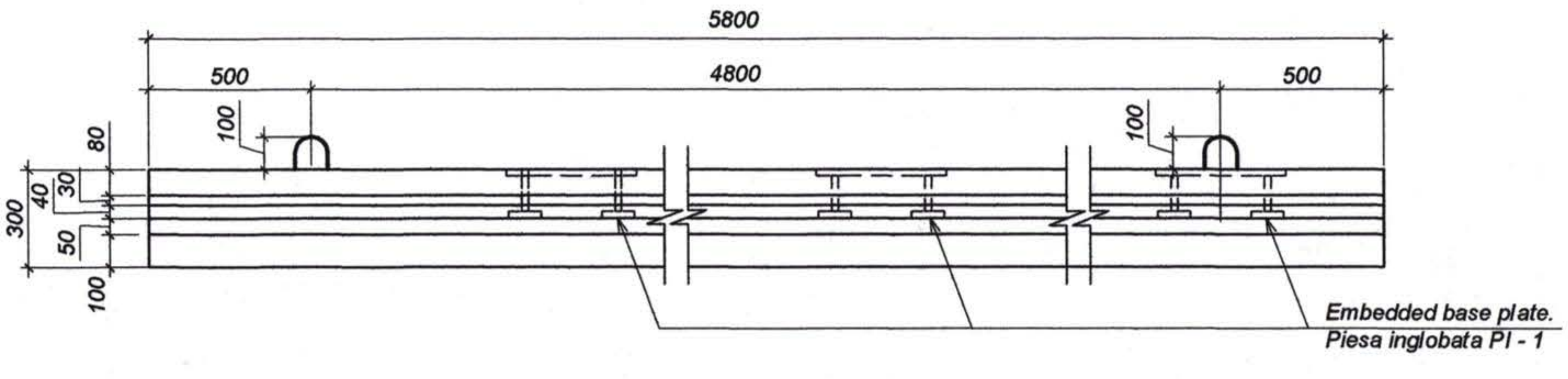
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

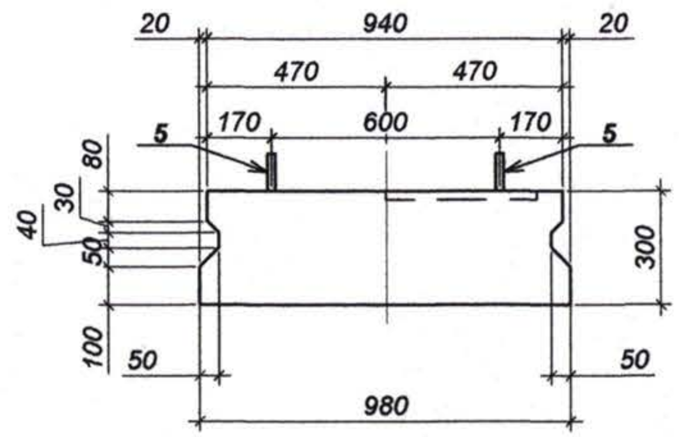
Pod, km 114+160. Dala prefabricata din beton armat D-1. Plasa PL-1,PL-2.Carcasa C-1 .
Bridge, km114+160 . Slab D-1.Mesh PL-1,PL-2 .Skeleton C-1.
Drawing 20-7

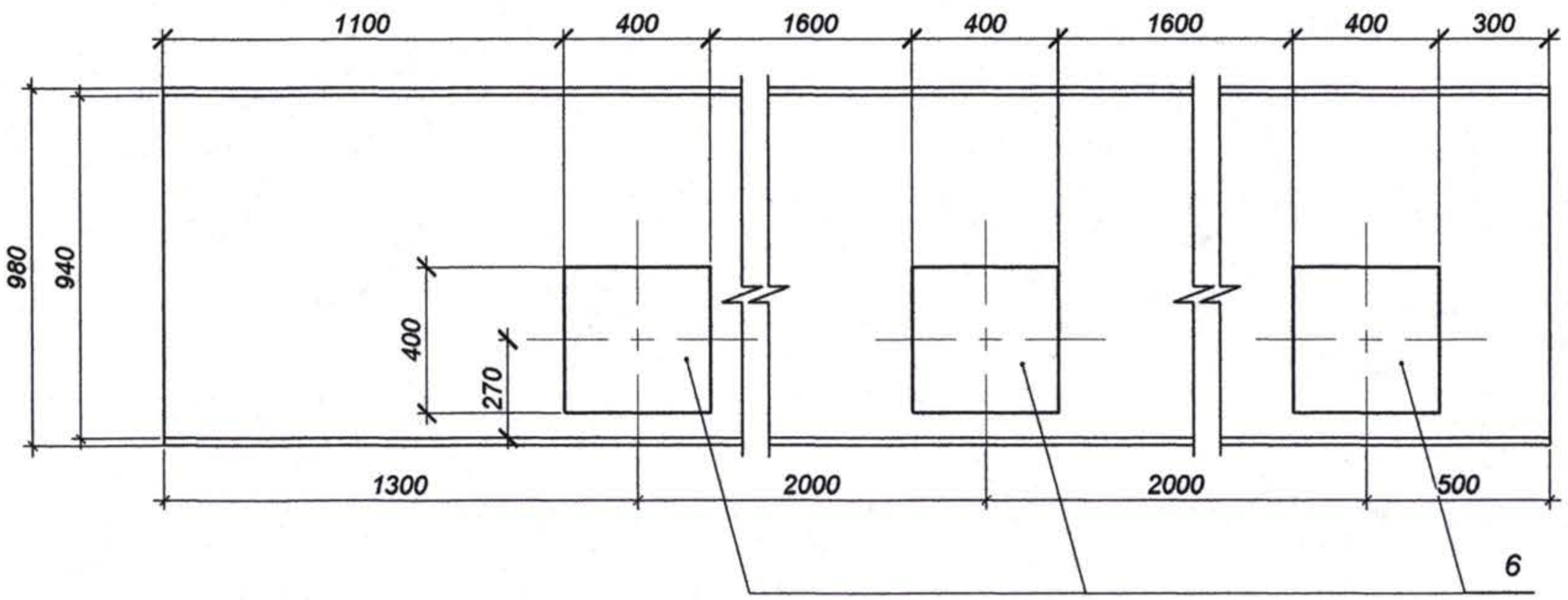
Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

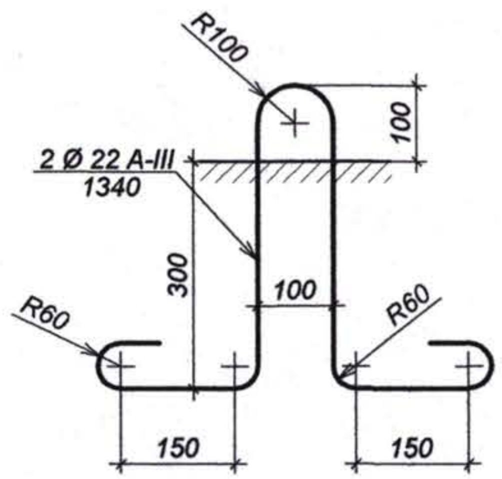
Formwork layout
Plan de cofraj (1:20)







Poz.5 (1:10)



Reinforcement amount for element, kg.
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate							Total weight. Greutate totala
	Bar type. Armatura de clasa					Total line. Linia totalului	Bar type. Armatura de clasa			Steel type. Marca metalului			Total line. Linia totalului	
	A - I, Cm3 cп		A - III, 25Г2C				A - I, Cm3 cп			BCm3cп2				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø8	Total	Ø8	Ø20	Total		Ø22	Ø25	Total	-20x100	-20x400	Total		
D-2	35.46	35.46	15.96	128.25	144.21	179.69	15.96	7.20	23.16	19.2	75.3	94.5	117.66	297.33

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. Rev.	Amendamente Amendments	Aprobat: Approved:	Data Date

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Marimea originala a desenului
Original Drawing Size

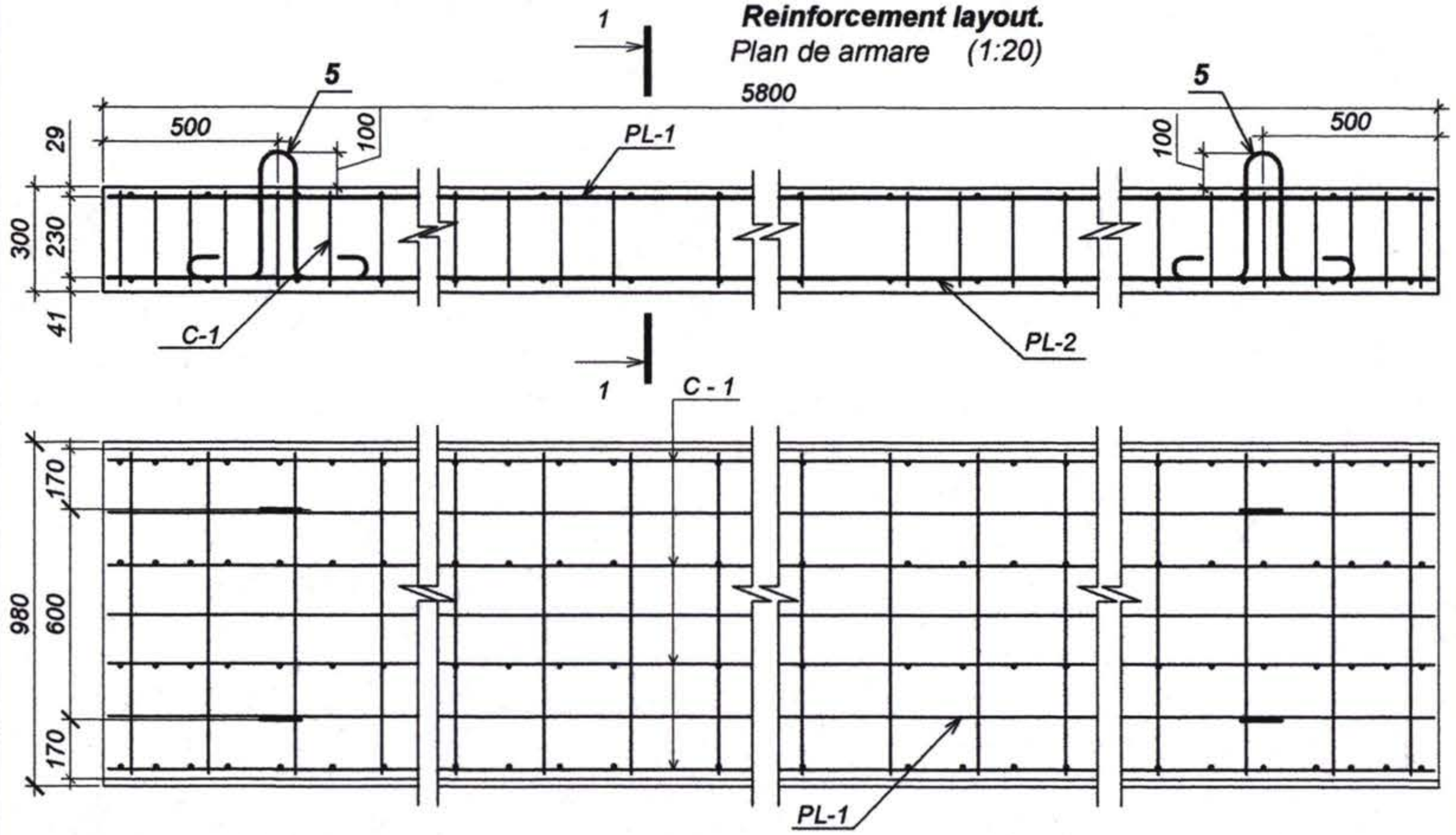
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

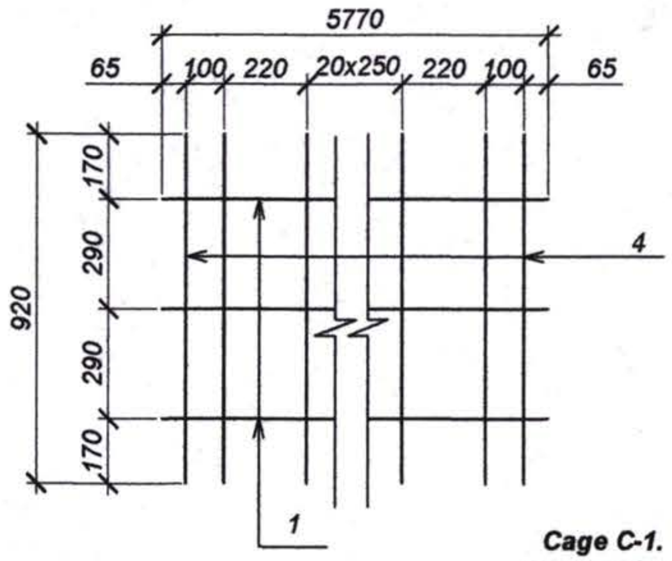
Pod, km 114+160. Dala suprastructura prefabricata din beton armat D-2.
Bridge, km 114+160 . Suprastructure precast reinforsed concrete slab D-2 .

Drawing 20-8

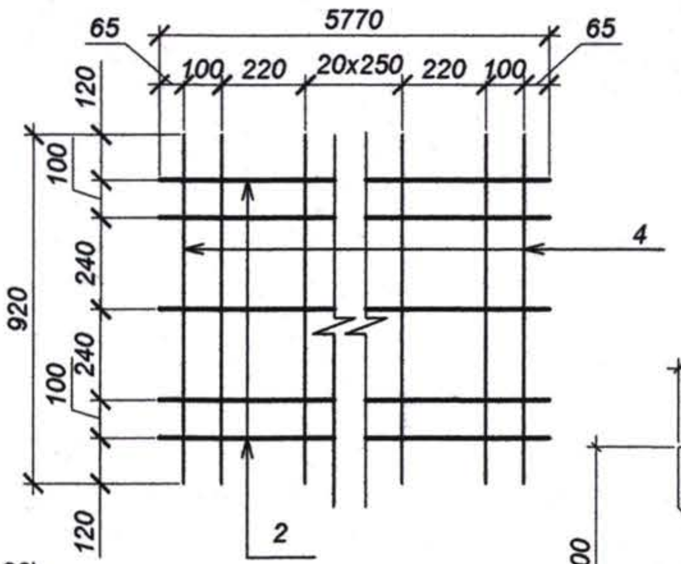
Reinforcement layout.
Plan de armare (1:20)



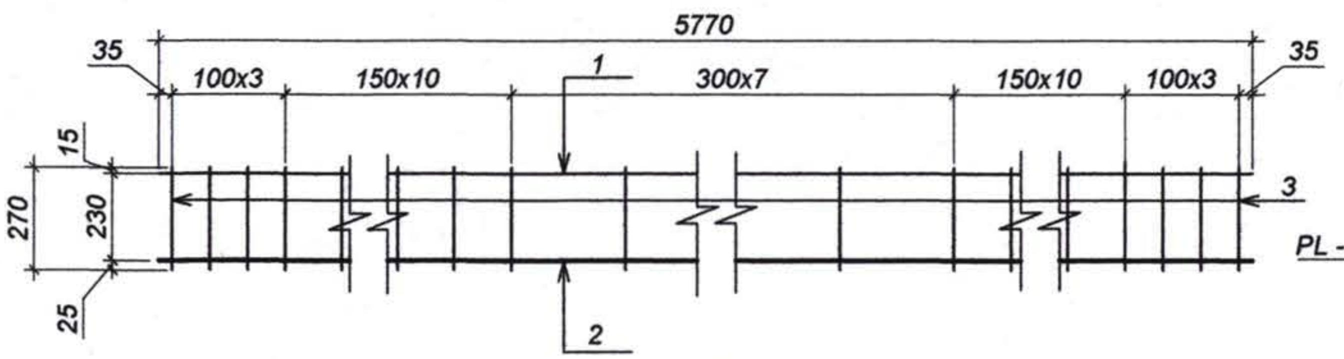
Mesh PL - 1.
Plasa PL - 1 (1: 20)



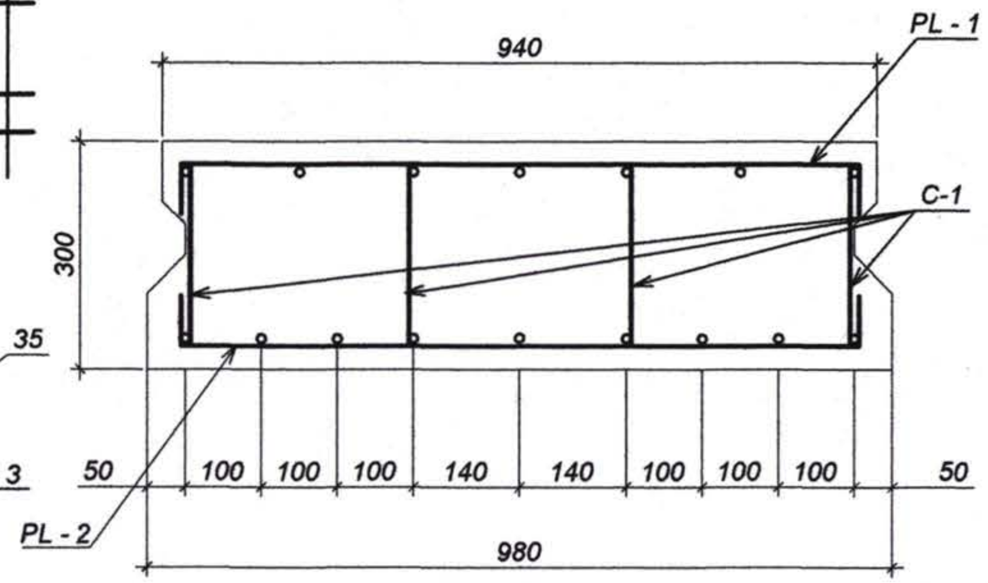
Mesh PL - 2.
Plasa PL - 2 (1: 20)



Cage C-1.
Carcasa C - 1 (1: 20)



1 - 1
Sc. 1:10



Schedule of materials per cage C -1 and meshes PL - 1, PL - 2
Lista de materiale pe carcasa C - 1 si plase PL - 1, PL - 2

Pozition Pozitia	Reference. Indicativ	Item. Denumirea	Quantity Cant.	Weight. Masa, kg	Note. Remarca
		Mesh PL-1. Plasa PL-1	1	17.09	
1		Ø 8 A-III L=5770, GOST 5781-82*	3	2.28	
4		Ø8 A-I L=1040, GOST 5781-82*	25	0.41	
		Mesh PL-2. Plasa PL-2	1	81.5	
2		Ø20 A-III L=5770, GOST 5781-82*	5	14.25	
4		Ø8 A-I L=1040, GOST 5791-82*	25	0.41	
		Skeleton C-1. Carcasa C-1	4	20.24	
1		Ø 8 A-III L=5770, GOST 5781-82*	1	2.28	
2		Ø20 A-III L=5770, GOST 5781-82*	1	14.25	
3		Ø8 A-I L=270, GOST 5781-82*	34	0.11	
		Embedded element. Ureche de montaj			
5	**Drawing 20-8.**	**Bar.** Bara Ø22 A-III L=1340, GOST 5781-82*	4	3.99	
6	**Drawing 20-15.**	**Embedded base plate Pl-1.** Piesa inglobata Pl-1, GOST 5781-82*	3	48.22	
		Materials. Materiale			
		Concrete. Beton B30,F200,W6, GOST 26633-91*			1.64m³

Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita
4	60 920 60

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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EU Delegation to Moldova
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Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

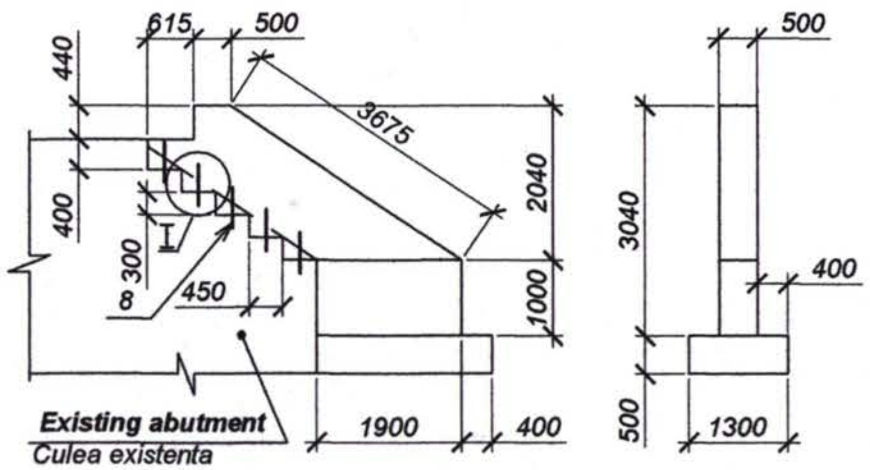
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 114+160. Dala prefabricata din beton armat D-2. Plasa PL-1,PL-2.Carcasa C-1 .

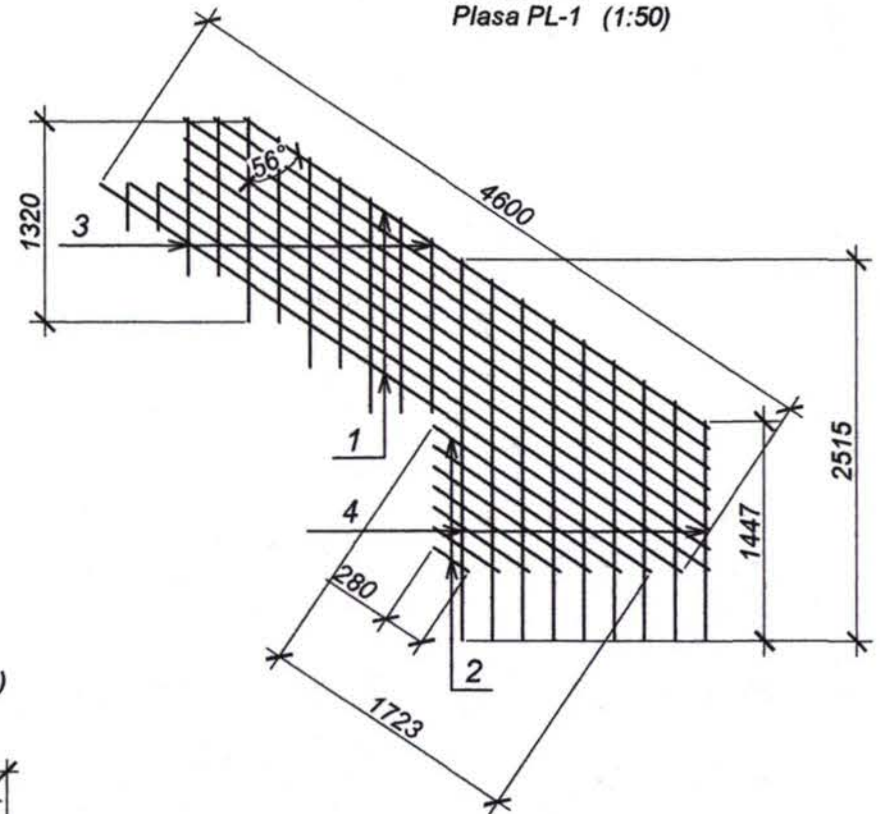
Bridge, km 114+160 . Slab D-2.Mesh PL-1,PL-2 .Skeleton C-1.

Drawing 20-9

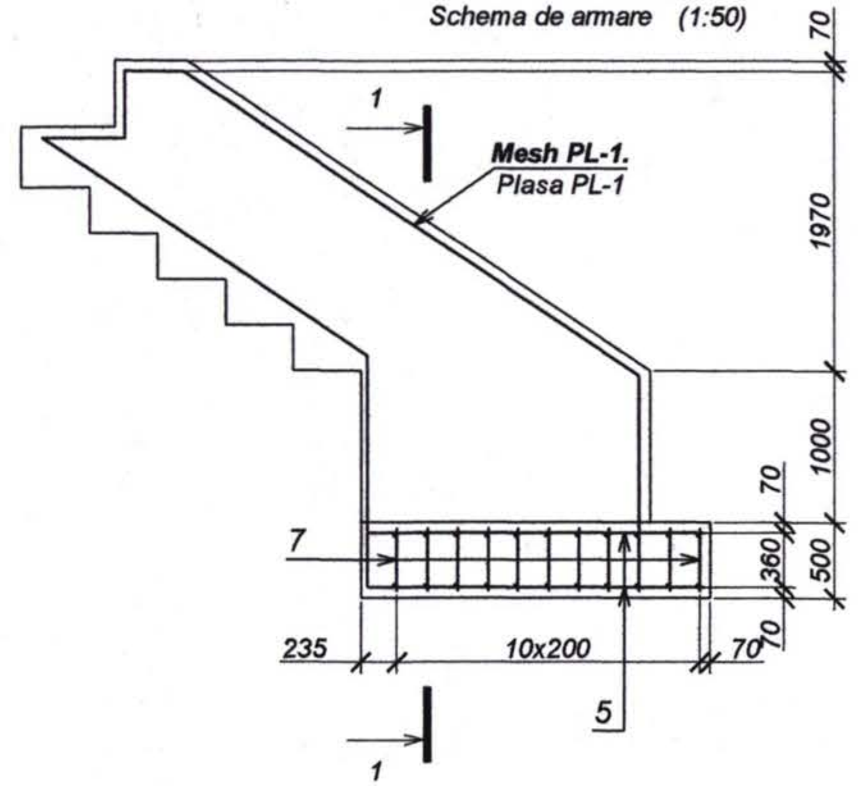
Formwork.
Schema de cofraj (1:100)



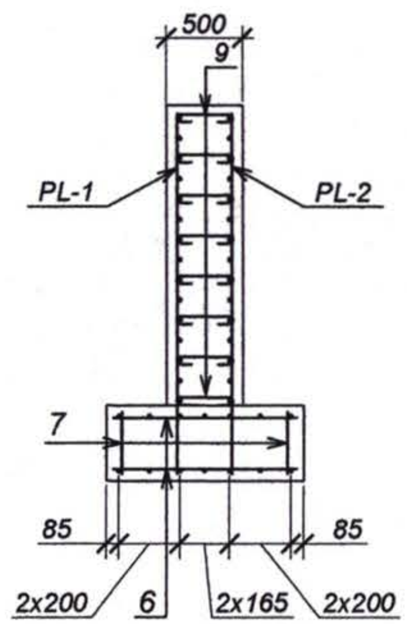
Mesh PL-1.
Plasa PL-1 (1:50)



Reinforcement scheme.
Schema de armare (1:50)

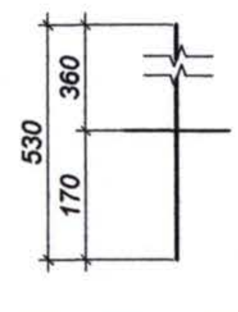
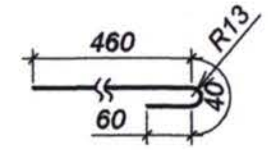


1-1
(1:50)



I

Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	**Sketch.** Schita
8	
9	

Reinforsment amount for element
Masuratoare consum de otee pentru un element, kg

Element Type Marca elementului	**Reinforcing pieces** Piese de armare						**Total weight** Greutate totala
	Reinforcing bar type Armatura de clasa						
	A-I			A-III			
	GOST 5781-82*						
	Ø8	Ø14	Rez.	Ø10	Rez.	Total	
	21.56	3.20	24.76	139.32	139.32	164.08	164.08

The specefication on an element.
Specificatie de un element

Pozition. Pozitia	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarca
		Mesh PL-1/PL-2. Plasa PL-1/PL-2	1/1	49.07/ 49.07	
1		Ø10 A III L=4600, GOST 5781-82*	9	2.84	
2		Ø10 A III Lmin=280 Lmax=1723, L=1000, GOST 5781-82*	7	0.62	
3		Ø10 A III L=1320, GOST 5781-82*	10	0.81	
4		Ø10 A III Lmin=1447 Lmax=2515,L=2000 GOST 5781-82*	9	1.23	
		Embedded element. Ureche de montaj			
5		Ø10 A III L=2220, GOST 5781-82*	14	1.37	
6		Ø10 A III L=1210, GOST 5781-82*	22	0.75	
7		Ø10 A III L=410, GOST 5781-82*	22	0.25	
8		Ø14 A III L=530, GOST 5781-82*	5	0.64	
9		Ø8 A I L=560, GOST 5781-82*	98	0.22	
		Materials. Materiale			
		Concrete. Beton B30,F200,W6, GOST 26633-91*			5.2 m³

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Semnat la data
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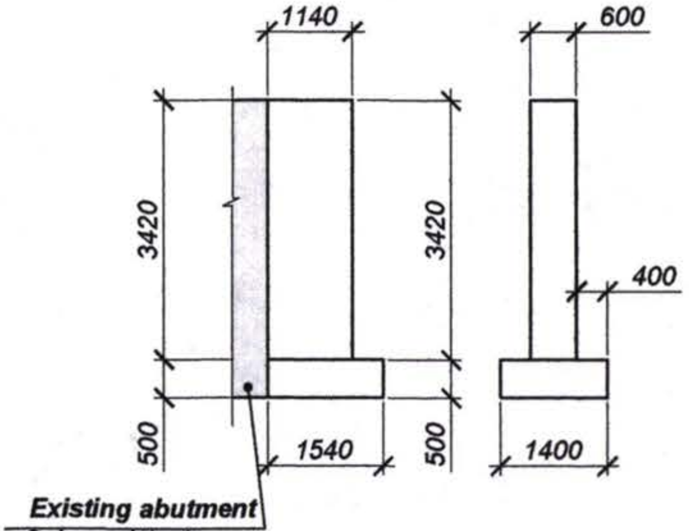
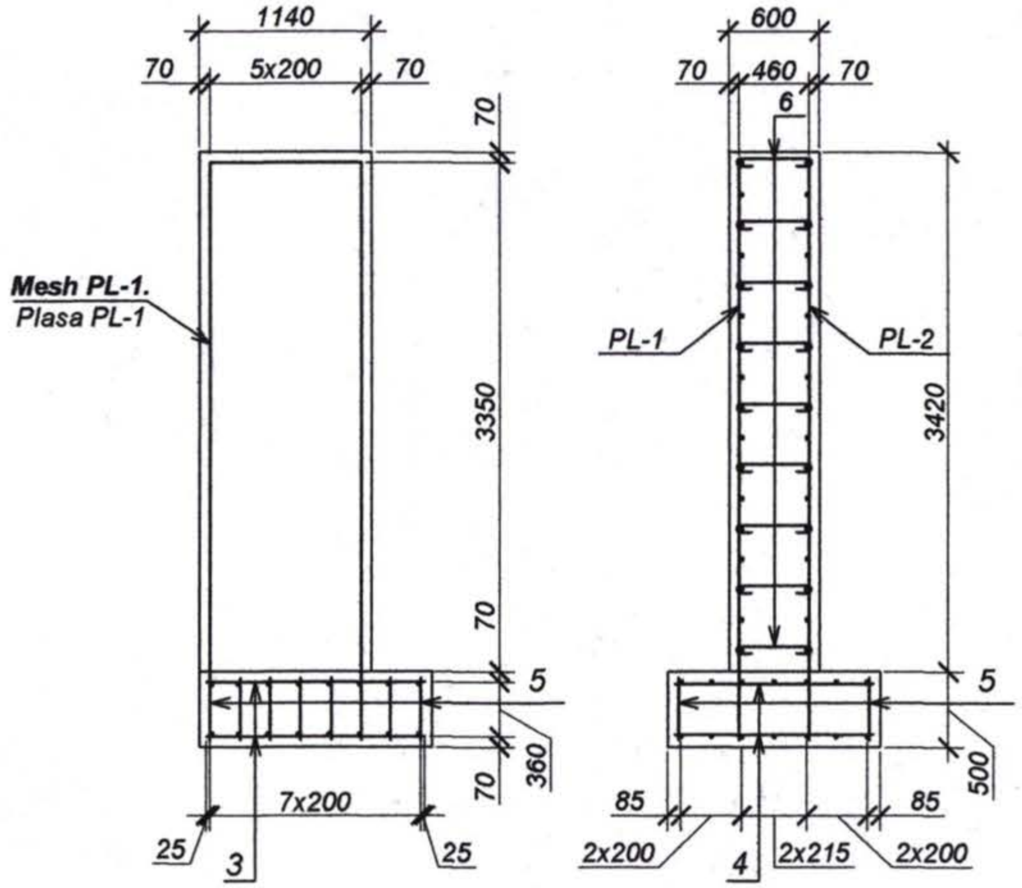
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 114+160.
Bridge, km 114+160.
Culeii.
Abutment.
Drawing 20-10

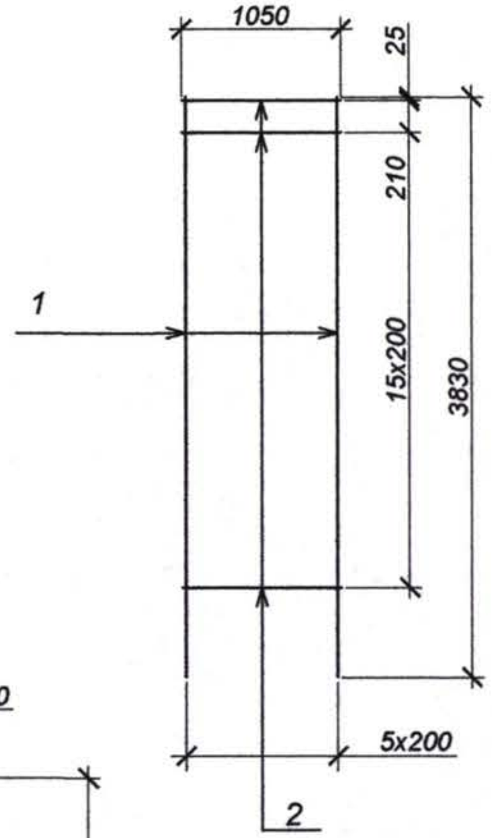
Formwork.
Schema de cofraj (1:100)



Reinforcement scheme.
Schema de armare (1:50)



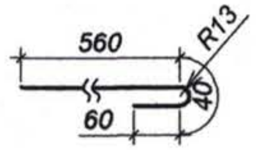
Mesh PL-1.
Plasa PL-1 (1:50)



The specefication on an element.
Specificatie de un element

Pozition Pozitia	Reference. Indicativ	Item. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Remarca
		Mesh PL-1/PL-2. Plasa PL-1/PL-2	1/1	25.21/ 25.21	
1		Ø10 A III L=3830, GOST 5781-82*	6	2.36	
2		Ø10 A III L=1050, GOST 5781-82*	17	0.65	
		Embedded element. Ureche de montaj			
3		Ø10 A III L=1450, GOST 5781-82*	14	0.89	
4		Ø10 A III L=1310, GOST 5781-82*	16	0.81	
5		Ø10 A III L=410, GOST 5781-82*	20	0.25	
6		Ø8 A I L=660, GOST 5781-82*	51	0.26	
		Materials. Materiale			
		Concrete. Beton B30,F200,W6, GOST 26633-91*			3.5m³

Bending details sheet.
Tabela pieselor incovoiate

Pozition. Pozitia	Sketch. Schita
6	

Reinforsment amount for element
Masuratoare consum de otee pentru un element, kg

Element Type Marca elementului	Reinforcing pieces / Piese de armare — Reinforcing bar type / Armatura de clasa					Total weight Greutate totala
	A-I		A-III			
	GOST 5781-82*					
	Ø8	Rez.	Ø10	Rez.	Total	
	13.26	13.26	80.84	80.84	94.10	94.10

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Consultantii/Consultants:

KOCKS INGENIEURE
Kocks Consult GmbH
Stegemannstrasse 32-38,
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Chisinau MD 2043, Moldova

Proiectat/Designed: Cusnir G.
Verificat/Checked:
Desenat/Drawn: Psariova V.
Data/Date

Aprobat/Approved
Data/Date

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu ţie / Sector Comrat - R38

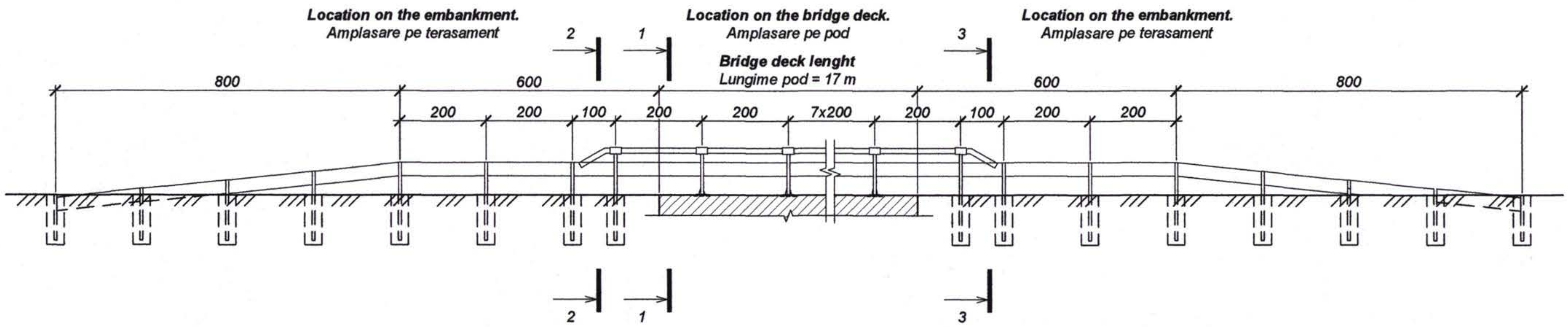
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 114+160.
Bridge, km 114+160.

Intermediate pier .
Buttress.

Drawing 20-11

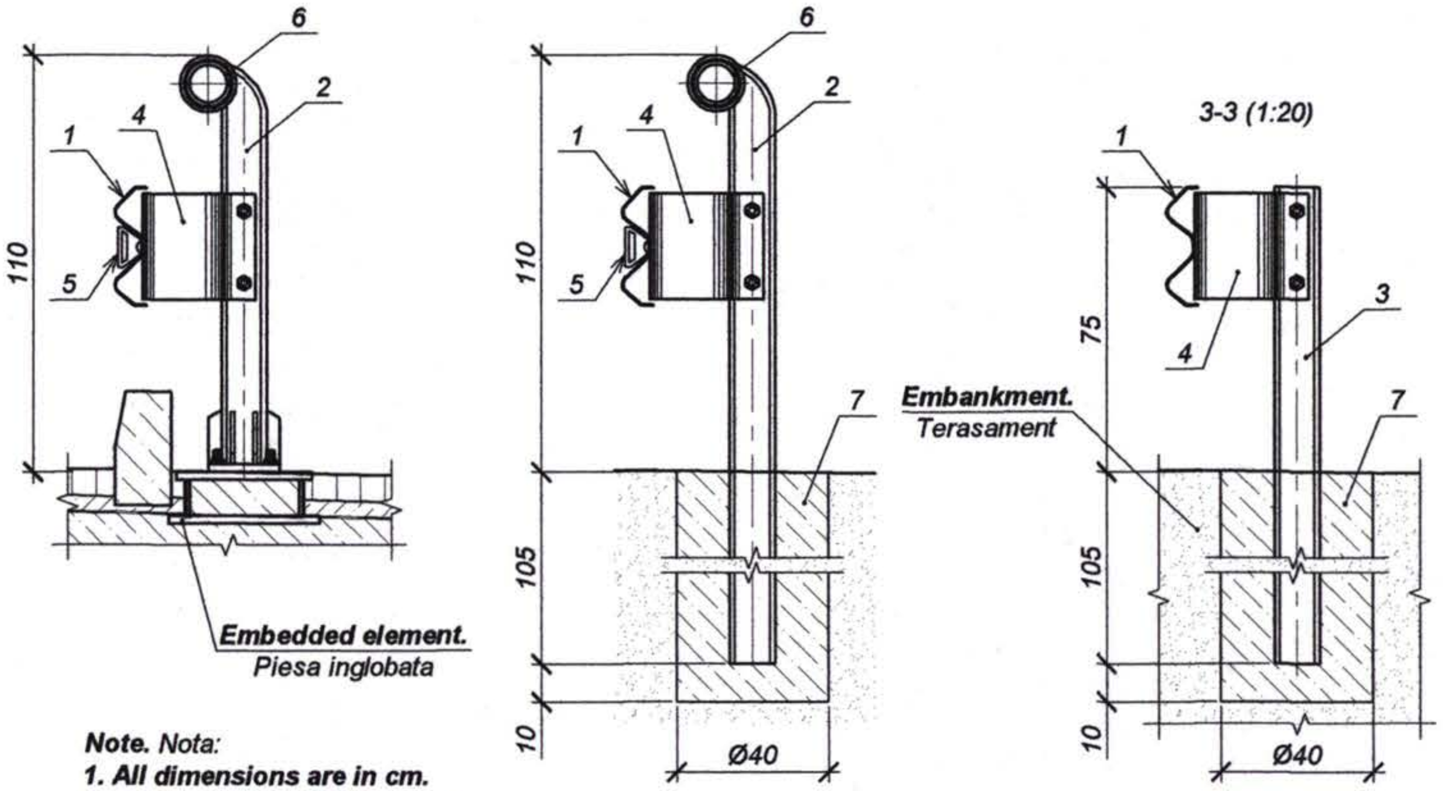
Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)



Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Elements. Piese			
1		**W-type guard-rail.** Lisa de otel	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** Stilpul parapetului СМ / СМЦ*	1 / 1		
3		**Guard-rail post.** Stilpul parapetului СД-3*, GOST 8239 - 89	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86	set		
5		**Reflector.** Reflector УС-1, GOST 26804 - 86	1	0.1	for 4m lenght la 4m lungime
6		**Steel pipe.** Teava de metal Ø 121, δ=8, GOST 8732-78*	1	44.6	
7		**Cast in place concrete.** Beton B25, F200, W6, GOST 26633-91*			0.14 m³

1 - 1 (1:20) 2 - 2 (1:20) 3-3 (1:20)



Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

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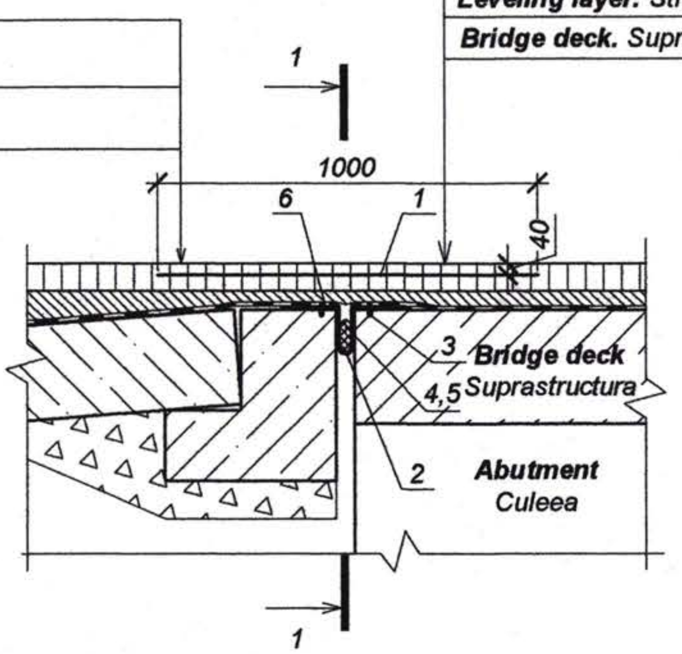
Pod, km 114+160.
Bridge, km 114+160.

Parapet metalic de siguranta deformabil.
Deformable steel guard-rail.

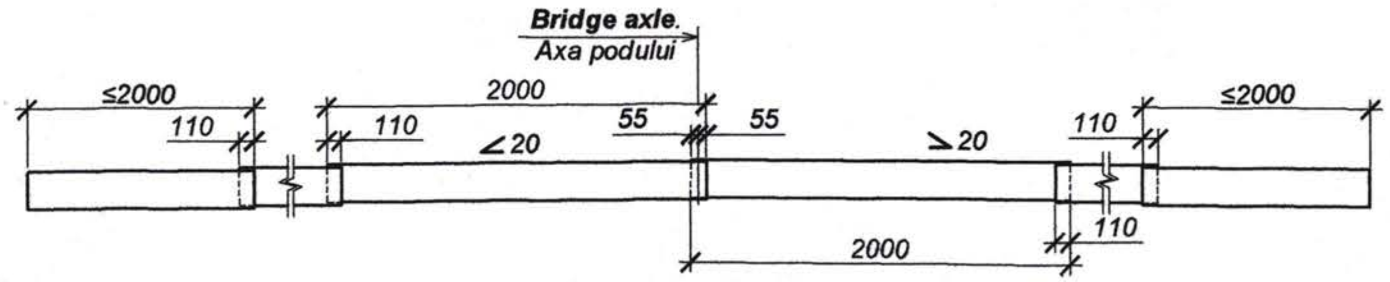
Drawing 20-12

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Expanssion joint at the abutment - Rostul de dilatate la culee (1:20)



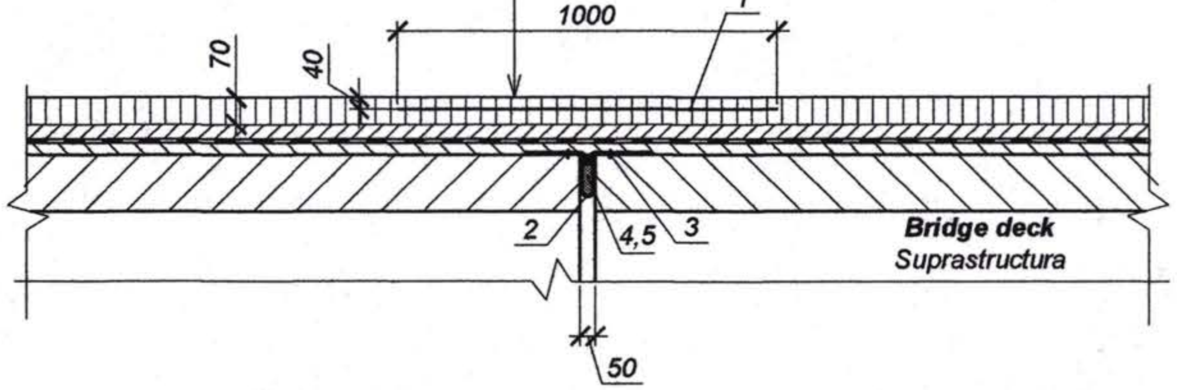
1-1
Method of lyre-shaped sheet installation - Modul de instalare a buclelor



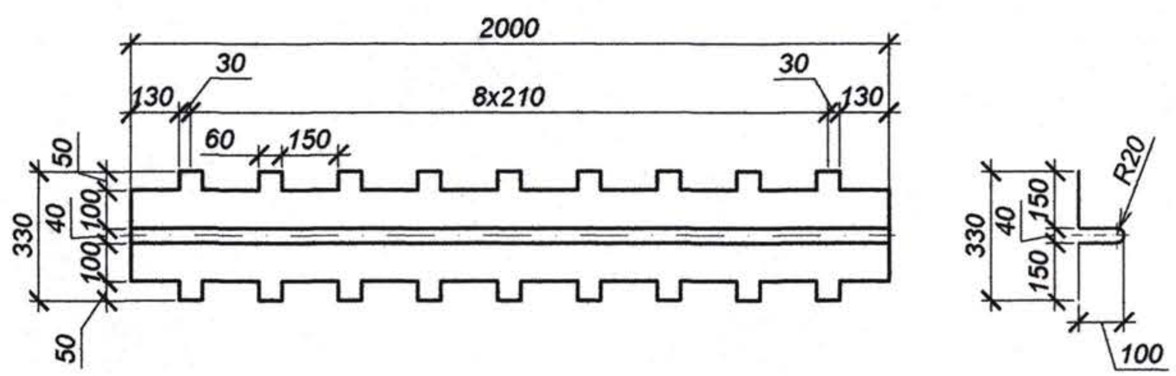
Note. *Nota:*

The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue.
Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Expanssion joint between the spans - Rostul intre deschideri (1:20)



Lyre-shaped brass sheet - Bucla din tabla de alama (poz.3) (1:20)



Schedule of materials for 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint at the abutment Rost de dilatatie la culee			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Porous rubber cold** Cordon din cauciuc poros	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	
		Span joints Rost intre deschideri			
1	ТУ 6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Popous rubber cold** Coldon din cauciuc poros	-	0,7	
6		**Expoxy glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. Amendamente / Rev. Amendments | Aprobat / Approved | Data / Date

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Republic of Moldova Ministry of Transport

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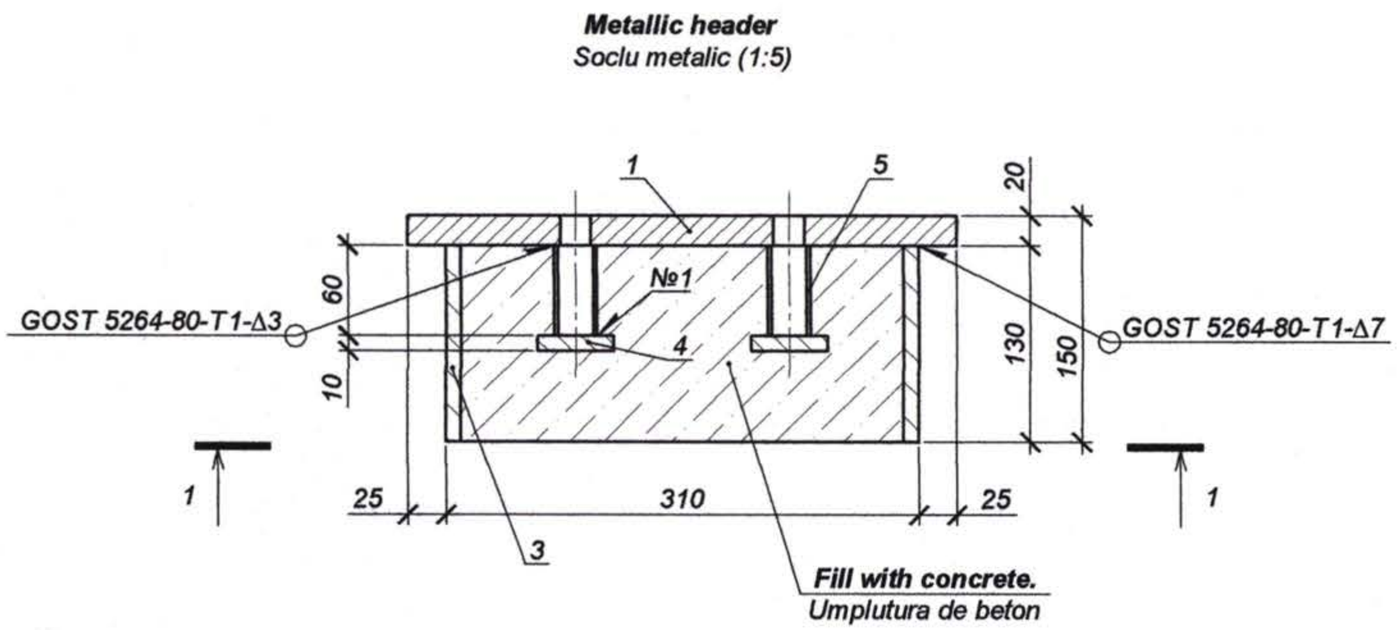
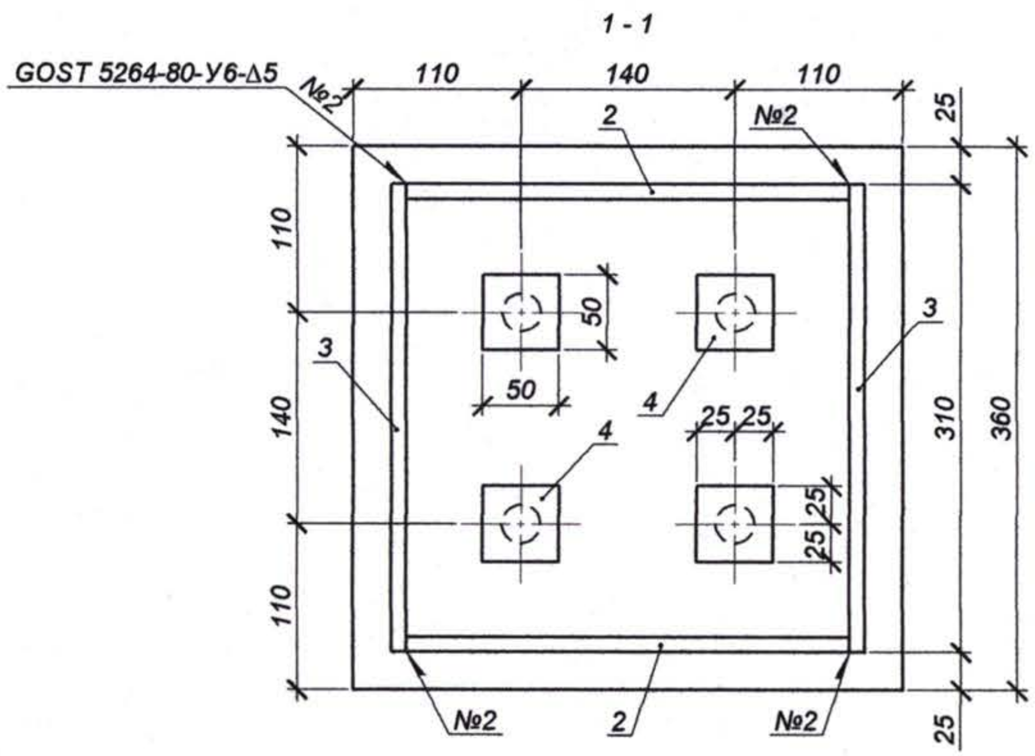
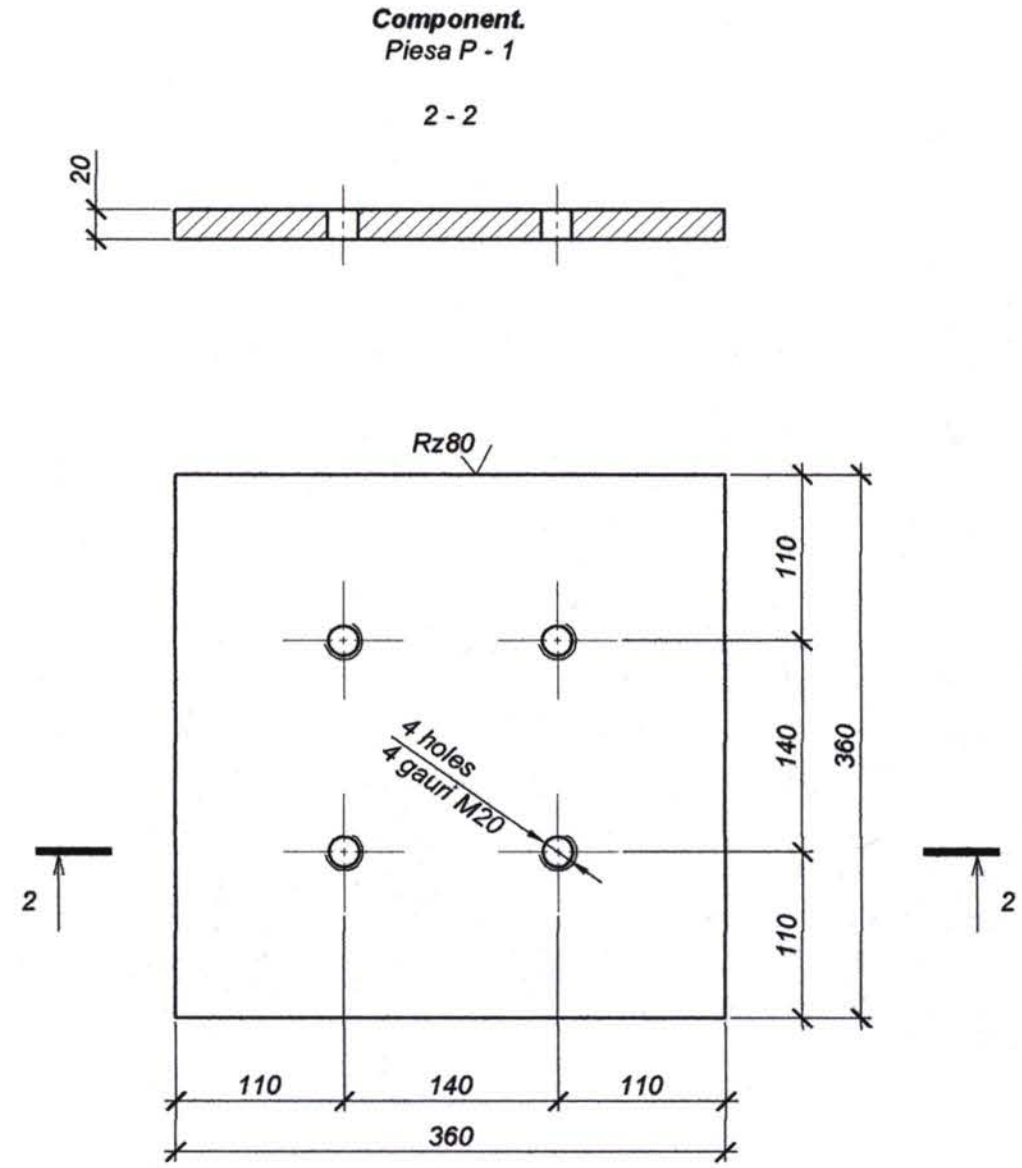
Pod, km 114+160
Bridge, km 114+160

Rost de dilatatie.
Expanssion joint.

Drawing 20-13







Schedule of matrerials per metallic header.
Lista de materiale pentru soclu metalic

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Detail. Piesa P - 1			
1		Piesa P - 1	1	20.4	
2		--10x130 L=290, GOST 103 - 2006	2	3.0	
3		--10x130 L=310, GOST 103 - 2006	2	3.0	
4		--10x50 L=50, GOST 103 - 2006	4	0.2	
5		28x2.5 L=60, GOST 8732 - 78*	4	0.1	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.01 m^3

Nr. inv. orig.
Semnat la data
Shimb. nr. inv.

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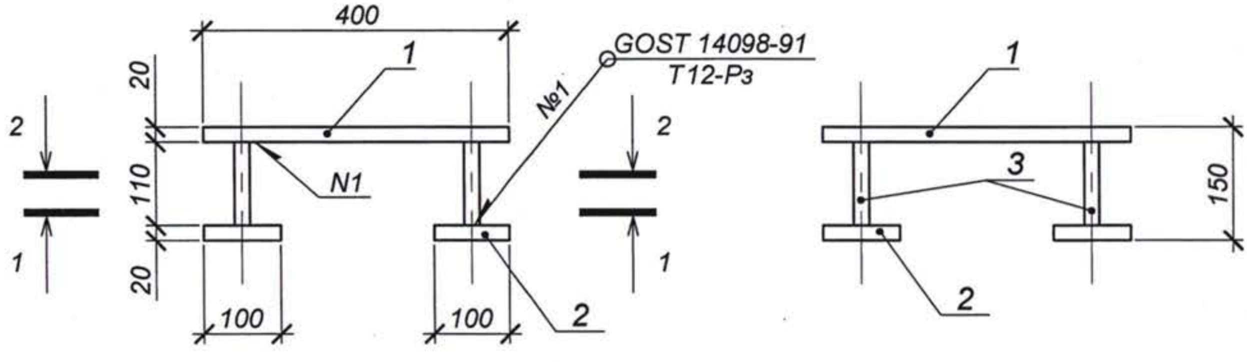
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod, km 114+160.
Bridge, km 114+160.

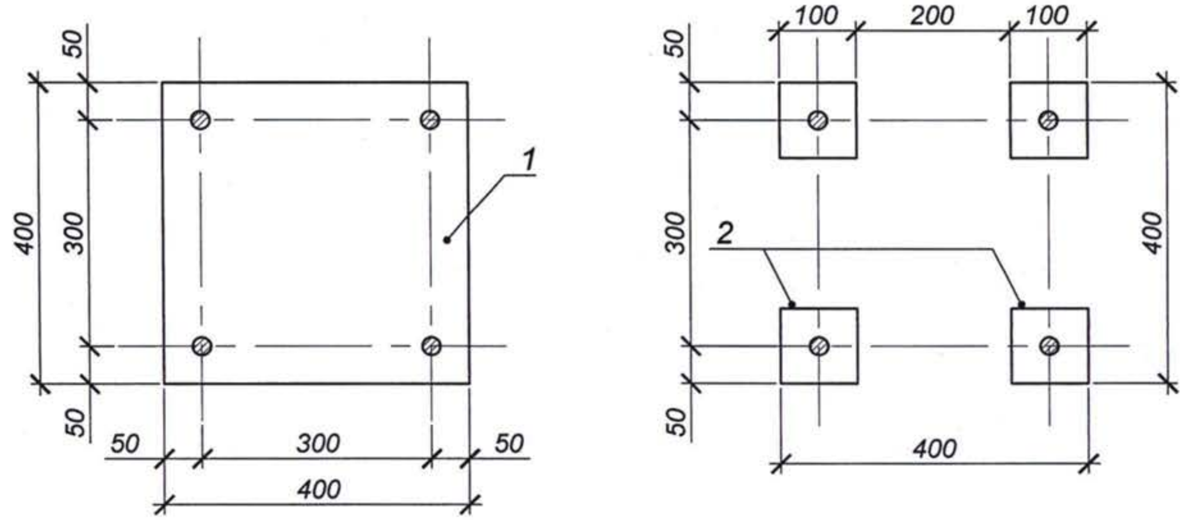
Soclu metalic.
Metallic header.

Drawing 20-14



1 - 1 (1:10)

2 - 2 (1:10)



Specification for embedded base plate.
Specificatia pentru piesa inglobata PI - 1

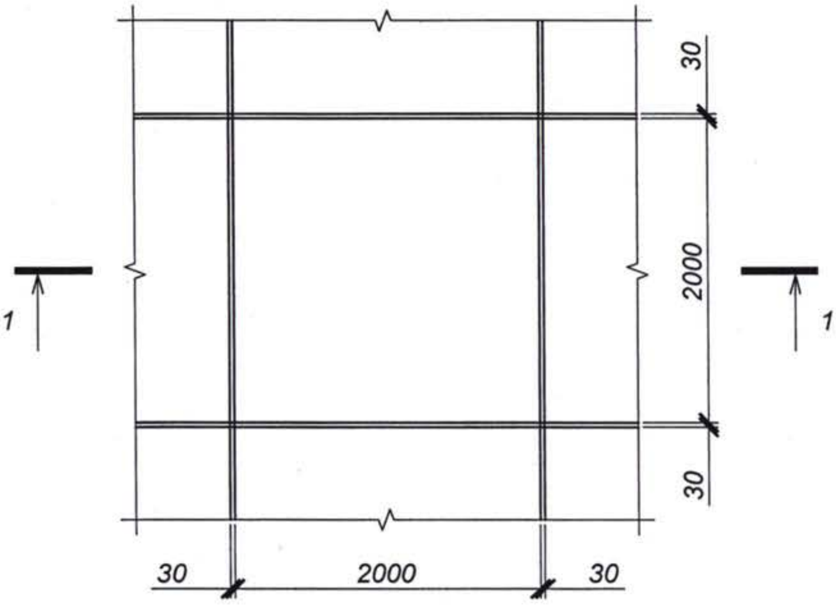
Pozition. Pozitia	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarca
		Elements Piese			
1		--20x400 L=400, GOST 103 - 2006	1	25.1	
2		--20x100 L=100, GOST 103 - 2006	4	1.6	
3		Ø25 AIII L = 150, GOST 5781 - 82*	4	0.6	

Shimb. nr. inv.

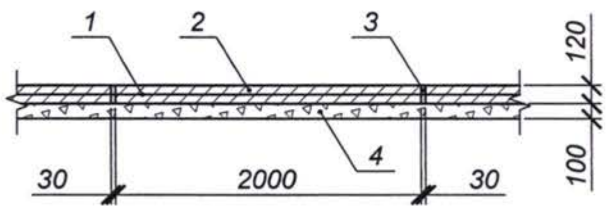
Semnat la data

Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 114+160. Bridge, km 114+160.	Piesa inglobata PI - 1 Embedded base plate.	Drawing 20-15



1 - 1 (1:50)



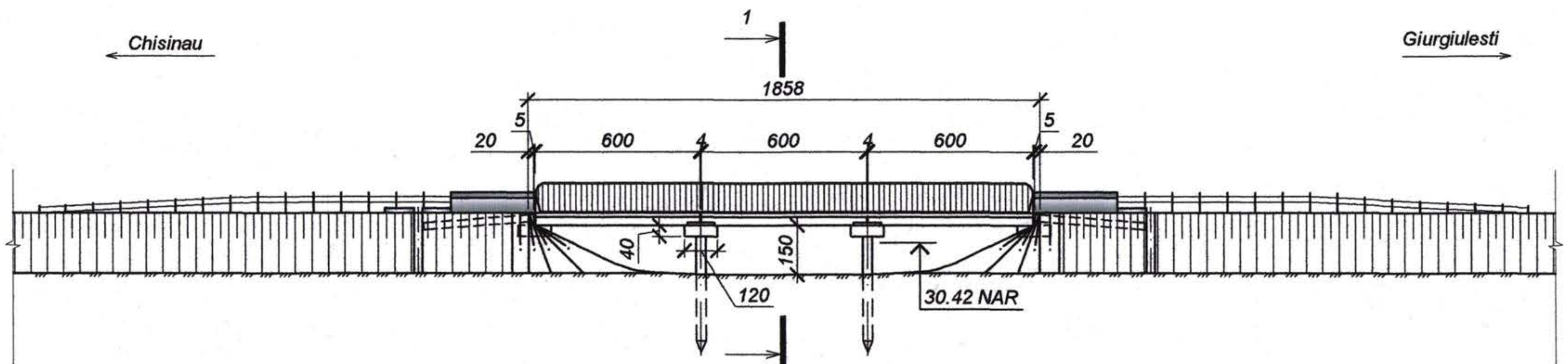
Schedule of matrerials per 1.0m² of stregthening.
Lista de materiale pentru 1.0 m² de consolidare

Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***No.*** *Nr.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
1		***Mesh.*** *Plasa Ø6 A-I, GOST 5781-82*, 200x200*		2.2	
2		***Concrete.*** *Beton B20, F200, W6, GOST 26633-91**			0.12 m³
3	BCH 32-81	***Bituminous mastic.*** *Mastic de bitum*			0.01 m³
4		***Crushed stone h=10 cm.*** *Piatra sparta h=10 cm, GOST 8267-93**			0.10 m³

Shimb. nr. inv. | *Semnat la data* | *Nr. inv. orig.*

Kocks Consult - Universinj SRL	Pod, km 114+160. Bridge, km 114+160.	Protejarea taluzelor si a albiei cu beton. Slope and chanel concrete protection detail.	Drawing 20-16

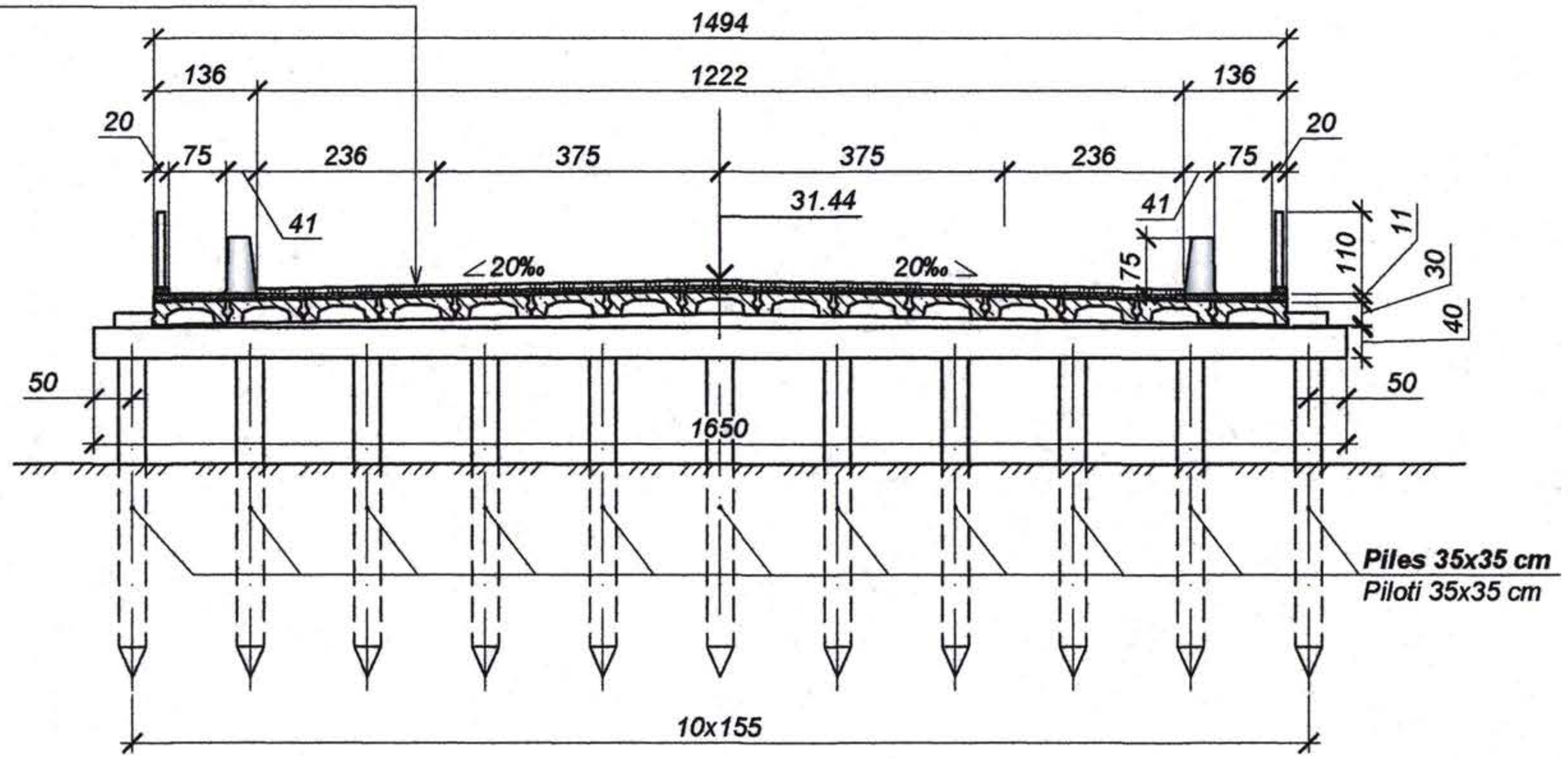
Side elevation - *Elevatie (1:200)*



Design data / Date proiect	**Gradient,‰, vertical radius, m** / *Declivitate,‰, curba verticala, m*	9					72.84	R=6000
	Finished carriageway level, m / *Cota in axa, m*	31.57	31.49	31.44	31.44	31.38	31.32	
Terrain data / Date teren	**Ground level, m** / *Cota teren, m*	30.11	29.42	29.60	29.68	29.98	29.94	
	Distance, m / *Distanta, m*	18.64	8.15	5.82	7.49	6.94	16.12	
Survey station. *Pichet*		1183+56						

1 - 1 *(1:100)*

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 mm



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UNIVERSINJ — DESIGN, ENGINEERING, CONSULTING — Universinj Ltd. Independentei 6/1 Str. Chisinau MD 2043, Moldova

Proiectat/Designed: Cuşnir G.

Verificat/Checked:

Desenat/Drawn: Serdiuc Victor

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Marimea originala a desenului / Original Drawing Size

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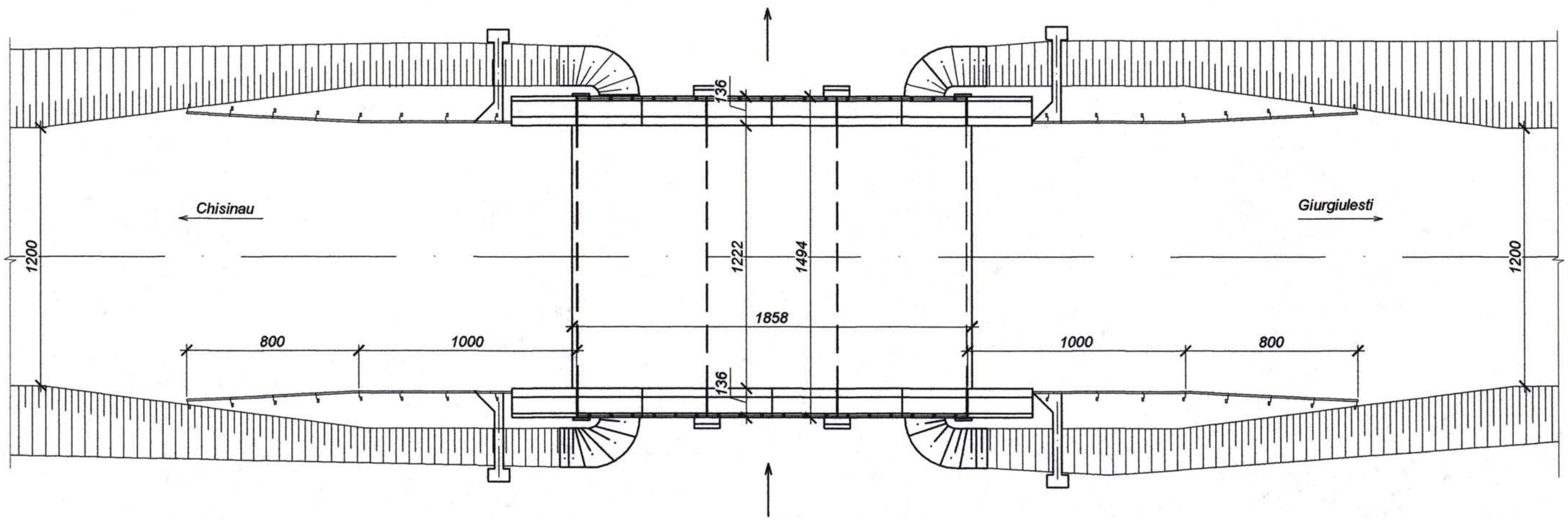
Pod, km 118+356.
Bridge, km 118+356.

Elevatie, sectiune transversala.
Side elevation, cross section.

Drawing 21-1

Top view - Plan (1:200)



Quantity list.
Lista de cantitati

No. Art.	**Item description.** Descrierea articolului	**Unit of measure.** Unitatea de masura	**Quanitiy.** Cantitate
1	**Removal of existing structure.** Demolarea structurii existente	Cu. m.	65
2	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	233
3	**Expansion joints.** Rosturi de dilatatie	m.	60
4	**Bridge asphalt concrete pavement.** Îmbracaminte din beton asfaltic pe pod	Sq. m.	233
5	**Bridge rigid saftey parapet.** Parapet de siguranta rigid pe pod	Cu. m.	4.6
6	**Bridge steel railing repair.** Reparatia parapetului metalic pietonal pe pod	m.	36
7	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	56
8	**Concrete repair.** Repararea betonului degradat	m.	120

Hydrological characteristics.
Caracteristici hidrologice

Name. Denumirea	**Unit.** Unitate	**Quantity.** Cant.
Design water flow. Debit de calcul, Q 1%	m³/s	23.6
Water velocity. Viteza apei	m/s	3.27

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

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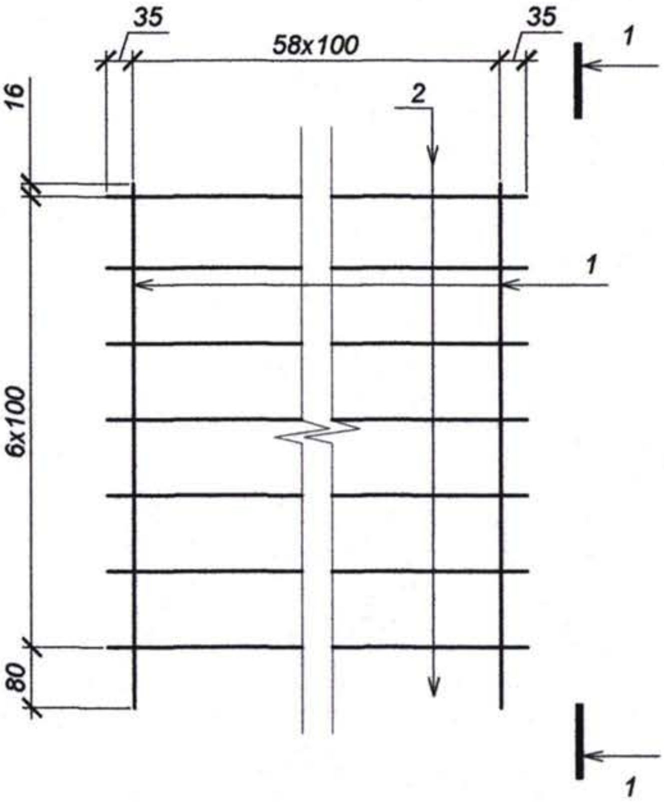
Pod, km 118+356.
Bridge, km 118+356.

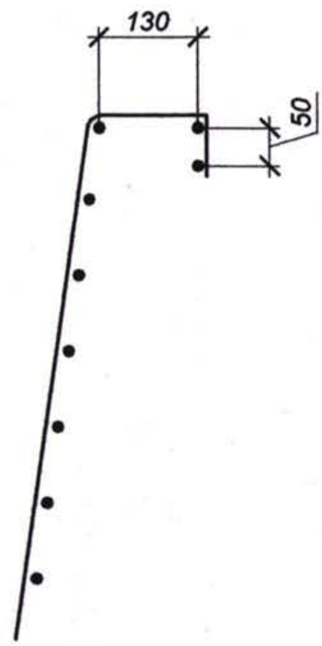
Plan.
Top view.

Drawing 21-2

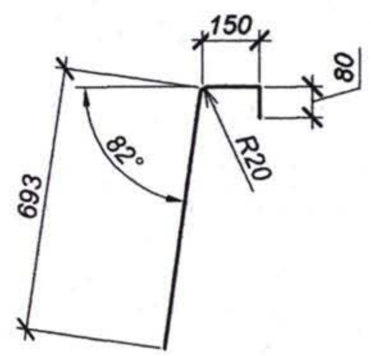
Mesh C - 2.
Plasa C - 2 (1:10)



1 - 1



Bending details sheet
Piese

Pozition. *Pozitia*	**Sketch.** *Schita*
1	

Note: ***1. The grid to be manufactured by welding.***
Nota: 1. Plasele de confectionat prin sudare.

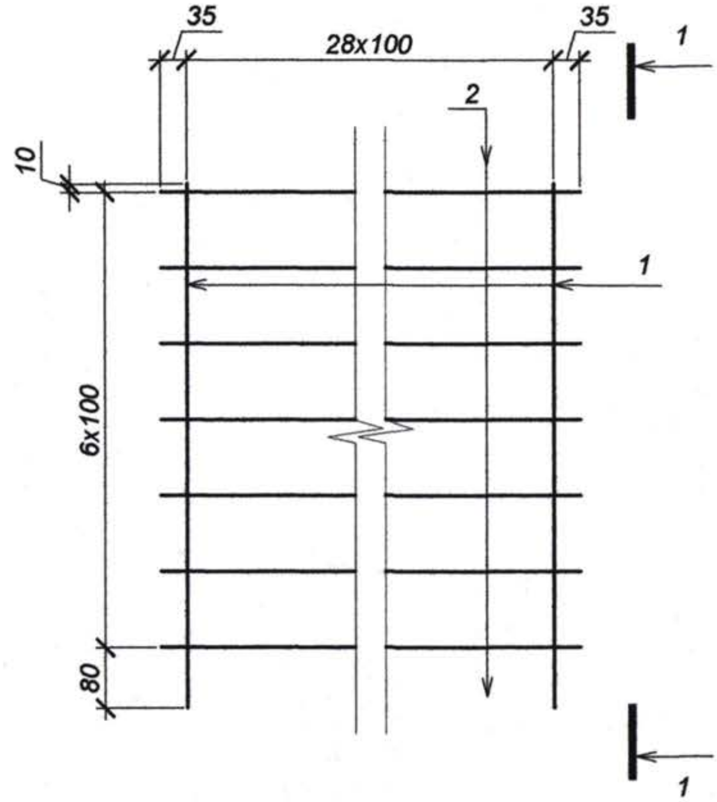
Schedule of materials for Mesh C - 2.
Lista de materiale pentru Plasa C - 2.

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
1		*Ø12 A-III, L= 925, GOST 5781 - 82**	*59*	*0.91*	
2		*Ø12 A-III, L=5870, GOST 5781 - 82**	*10*	*5.2*	

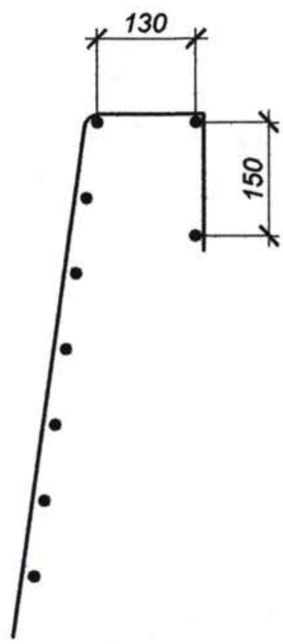
Kocks Consult - Universinj SRL	Pod, km 118+356 Bridge, km 118+356	***Mesh C - 2.*** *Plasa C - 2*	Drawing 21-5

Shimb. nr. inv. | *Semnat la data* | *Nr. inv. orig.*

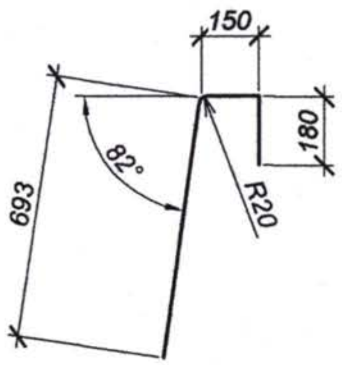
Mesh C - 1.
Plasa C - 1 (1:10)



1 - 1



Bending details sheet
Piese

Pozition. Pozitia	**Sketch.** Schita
1	

Note: **1. The grid to be manufactured by welding.**
Nota: 1. Plasele de confectionat prin sudare.

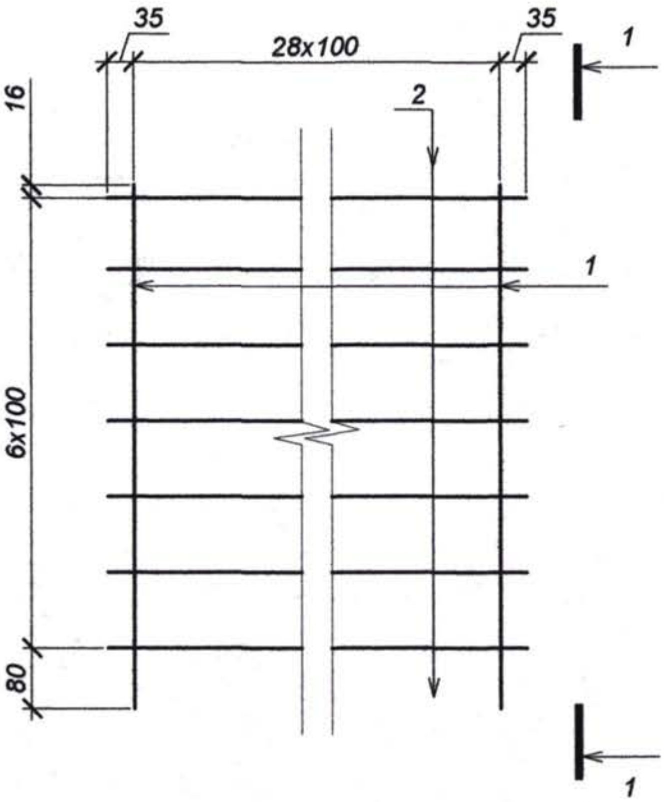
Schedule of materials for Mesh C - 1.
Lista de materiale pentru Plasa C - 1.

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
1		Ø12 A-III, L= 1025, GOST 5781 - 82*	29	0.91	
2		Ø12 A-III, L=2870, GOST 5781 - 82*	10	2.55	

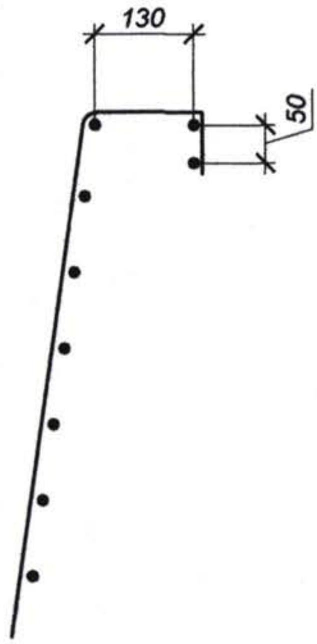
Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 118+356 Bridge, km 118+356	**Mesh C - 1.** Plasa C - 1	Drawing 21-4

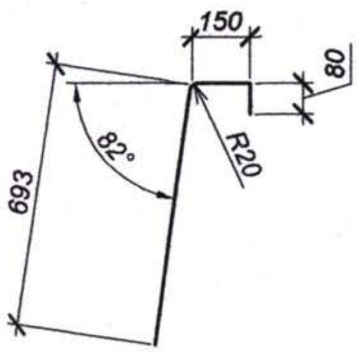
Mesh C - 3.
Plasa C - 3 (1:10)



1 - 1



Bending details sheet
Piese

Pozition. *Pozitia*	**Sketch.** *Schita*
1	

Note: **1. The grid to be manufactured by welding.**
Nota: *1. Plasele de confectionat prin sudare.*

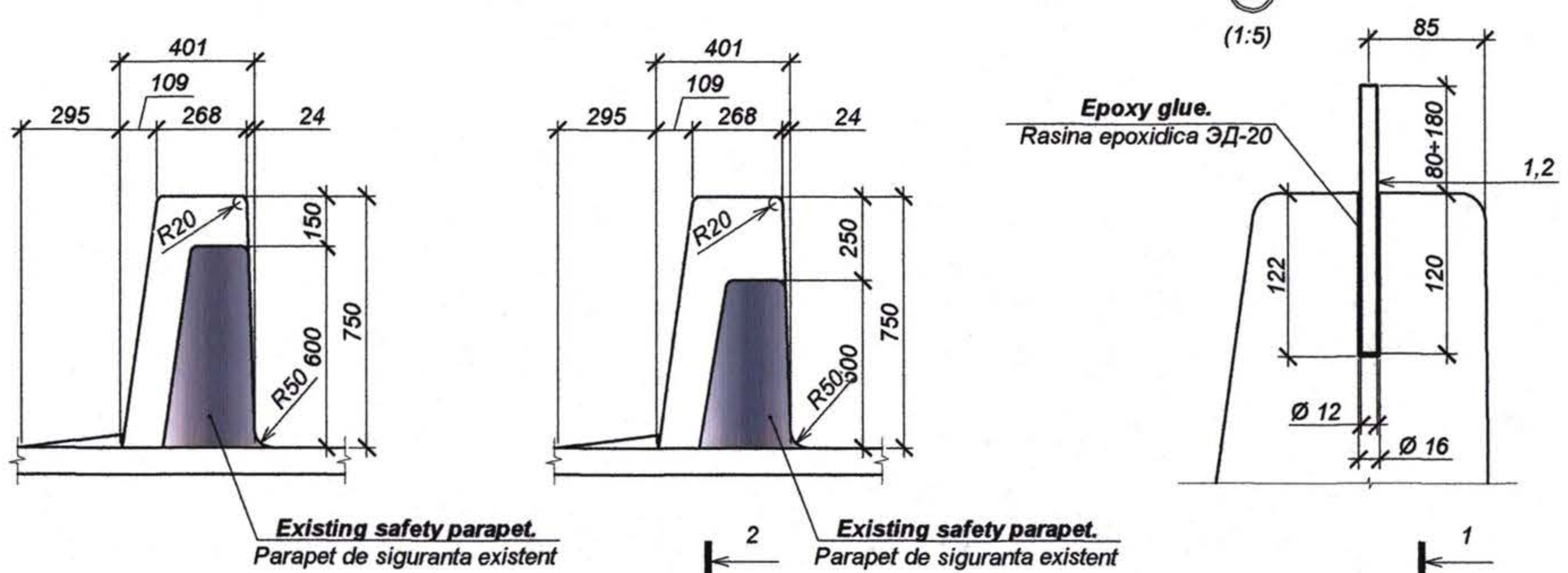
Schedule of materials for Mesh C - 3.
Lista de materiale pentru Plasa C - 3.

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** Masa, kg	**Note.** *Nota*
1		Ø12 A-III, L= 925, GOST 5781 - 82*	29	0.82	
2		Ø12 A-III, L=2870, GOST 5781 - 82*	10	2.55	

Kocks Consult - Universinj SRL	Pod, km 118+356 Bridge, km 118+356	**Mesh C - 3.** *Plasa C - 3*	Drawing 21-6

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

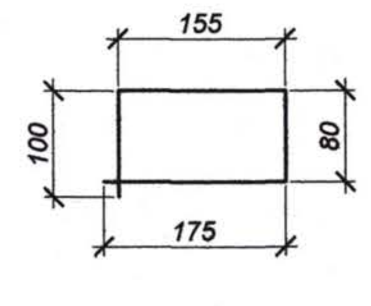
Formwork layout - *Plan de cofrare (1:20)*



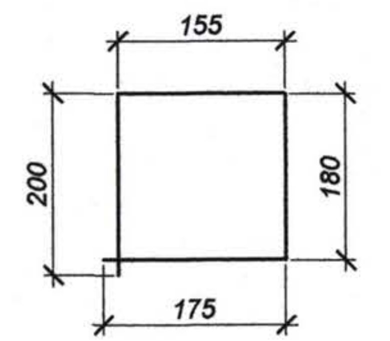
Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare					Embedded pieces. Piese inglobate				Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa				Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Totals. Linia totalului	
	A - I, Cm3cn		A - III, 25Г2C			A - I, Cm3cn				
	GOST 5781-82*		GOST 5781-82*			GOST 5781-82*				
	Ø10	Total	Ø12	Total		Ø12	-	Total		
D - 9	156.1	156.1	839.2	839.2	995.3	9.3	-	9.3	9.3	1004.6

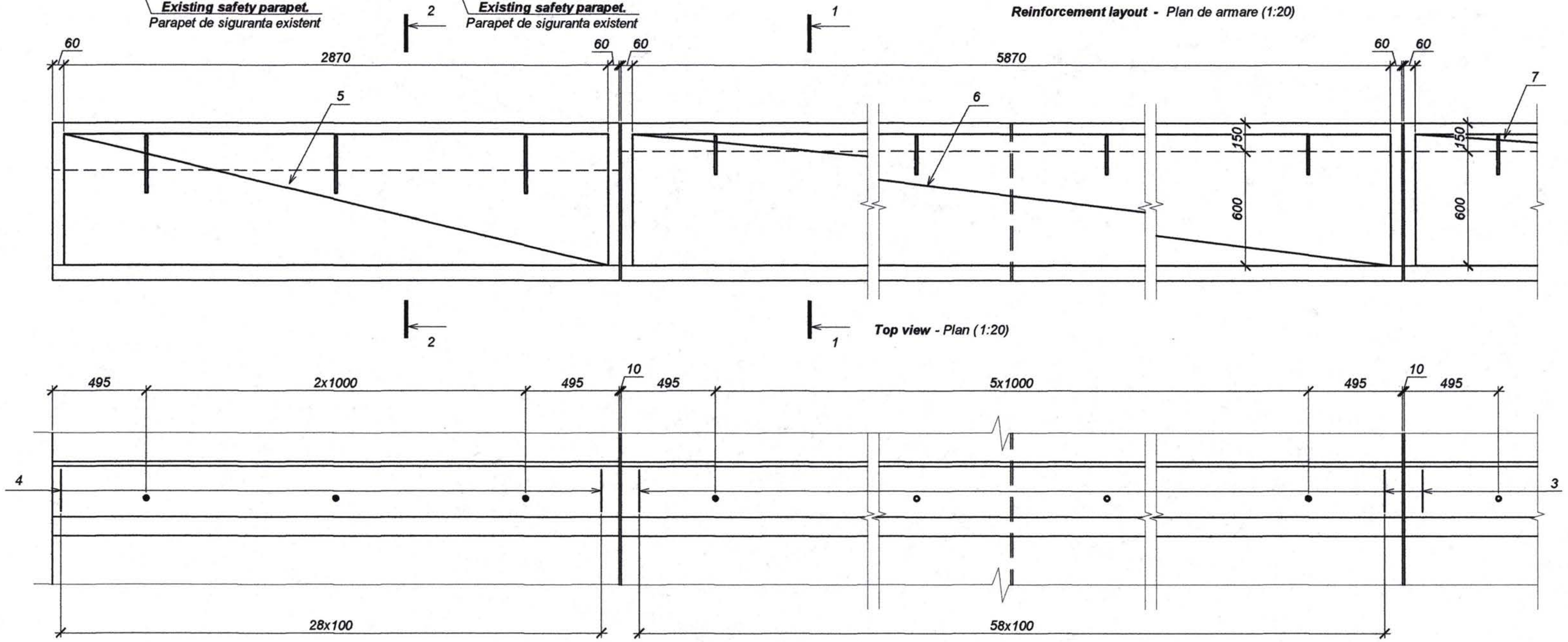
Bending details sheet
Piese

Pozition. Pozitia	Sketch. Schita
3	

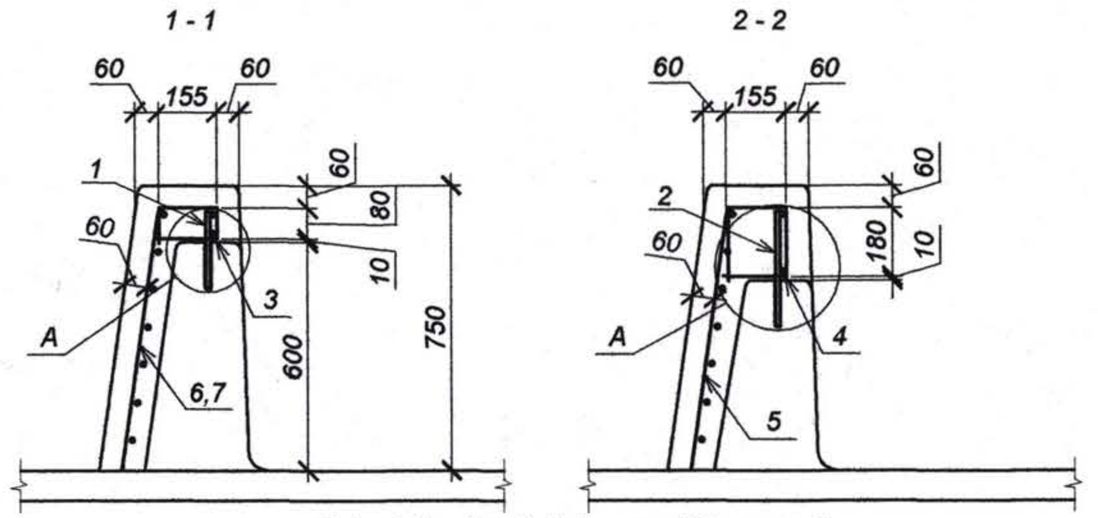
Bending details sheet (Followup)
Piese (Continuare)

Pozition. Pozitia	Sketch. Schita
4	

Reinforcement layout - *Plan de armare (1:20)*



Reinforcement layout - *Plan de armare (1:20)*



Schedule of materials per safety parapet.
Lista de materiale pentru parapet de siguranta.

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		Ø12 A-I, L=200, GOST 5781 - 82*	39	0.18	
2		Ø12 A-I, L=300, GOST 5781 - 82*	9	0.26	
3		**Stirrup** Etrier Ø10 A-I L=510, GOST 5781-82*	383	0.31	
4		**Stirrup** Etrier Ø10 A-I L=710, GOST 5781-82*	87	0.43	
5		**Mesh C - 1.** Plasa C - 1	3	51.9	
6		**Mesh C - 2.** Plasa C - 2	6	105.7	
7		**Mesh C - 3.** Plasa C - 3	1	49.3	
		Epoxy glue. Rasina epoxidica ЭД-20,GOST 10587-84*			0.07 l
		Concrete. Beton B35, F200, W6, GOST 26633-91*			5.67 m³

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Aprobat/Approved
Data/Date
Rev. Amendamente Aprobat Data
Rev. Amendments Approved Date

EU Delegation to Moldova
Republic of Moldova Ministry of Transport
Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

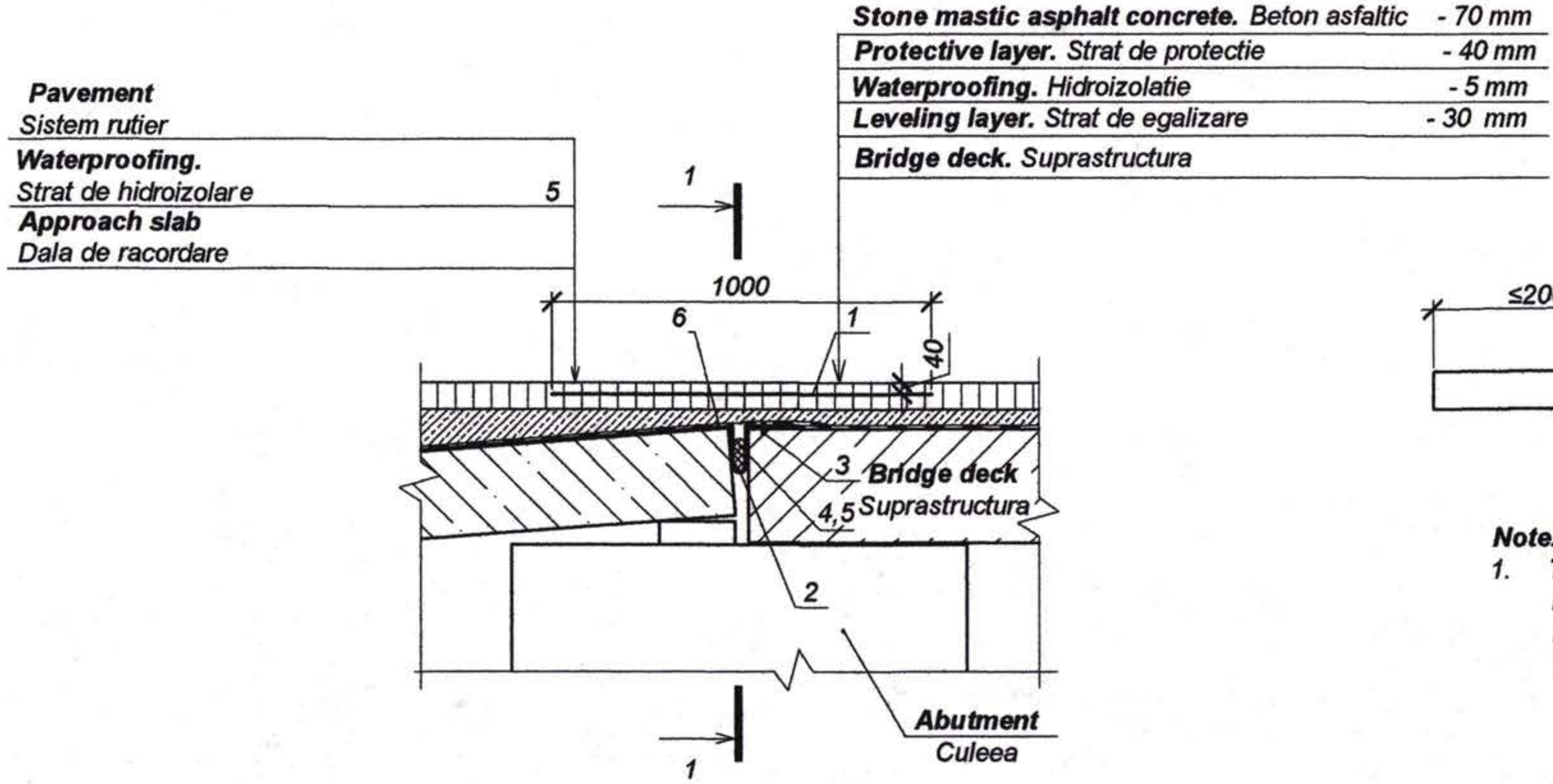
Pod, km 118+356
Bridge, km 118+356

Parapet de sigurata.
Bridge safety parapet

Drawing 21-3

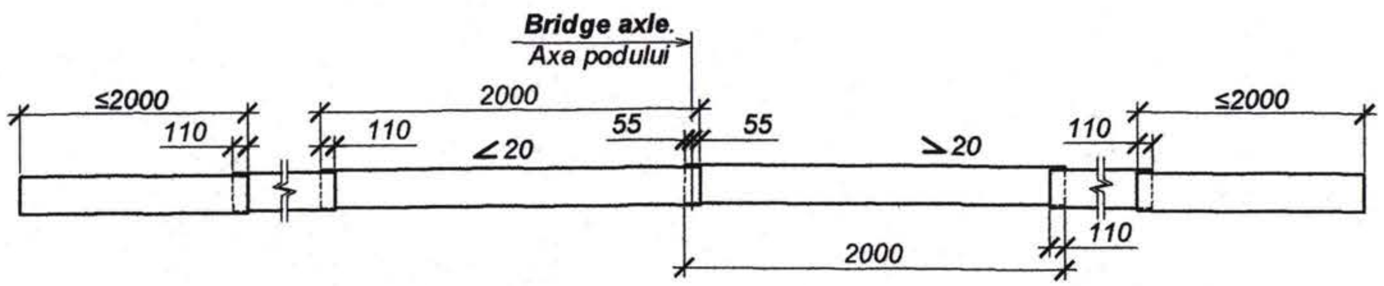
Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Expanssion joint at the abutment - *Rostul de dilatate la culee (1:20)*



1-1

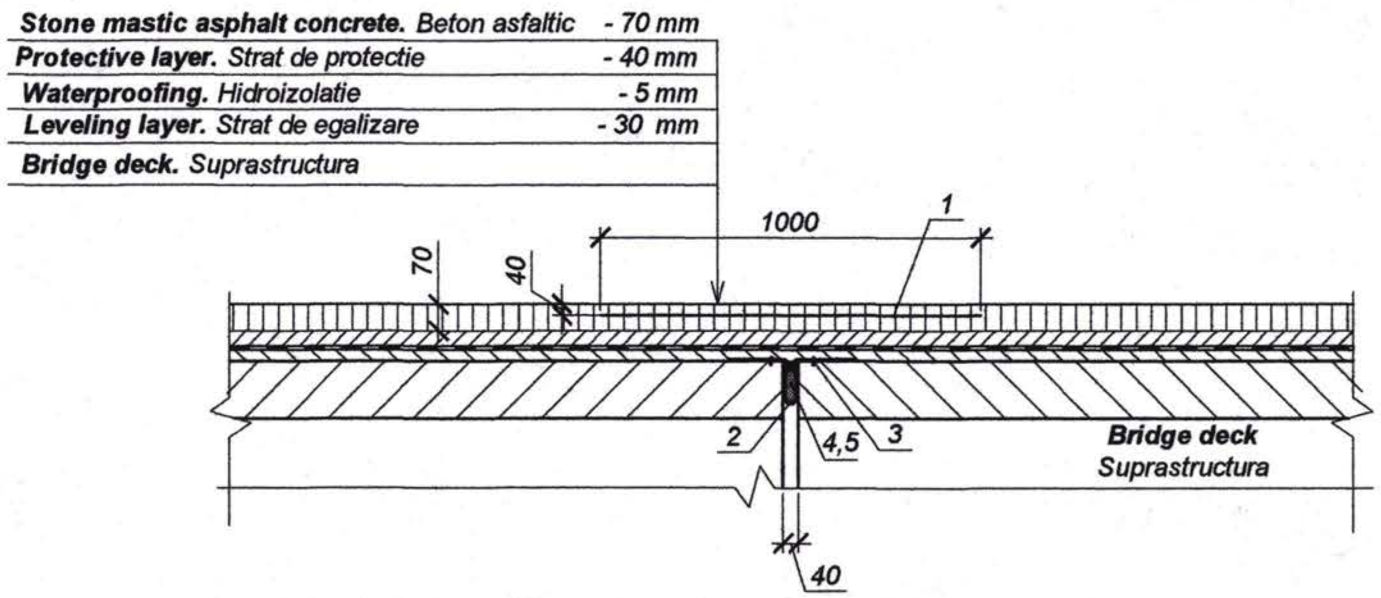
Method of lyre-shaped sheet installation - *Modul de instalare a buclelor*



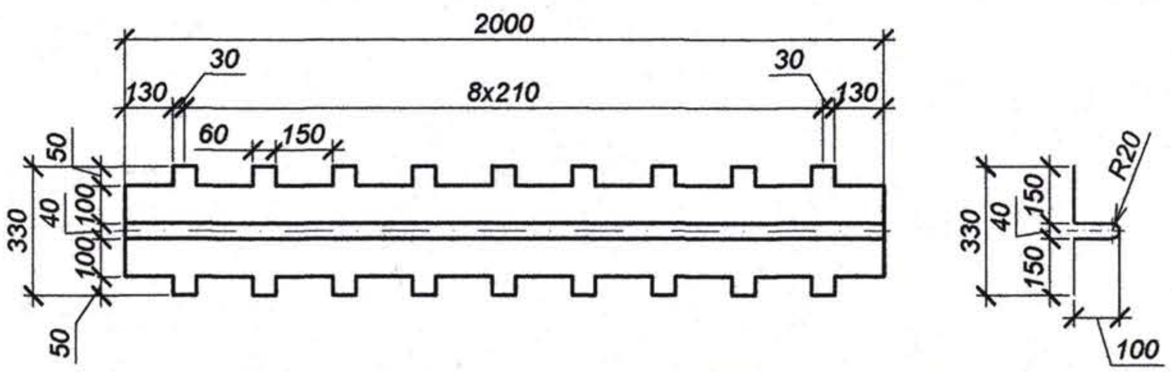
Note. *Nota:*

1. **The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue.**
   Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Expanssion joint between the spans - *Rostul intre deschideri (1:20)*



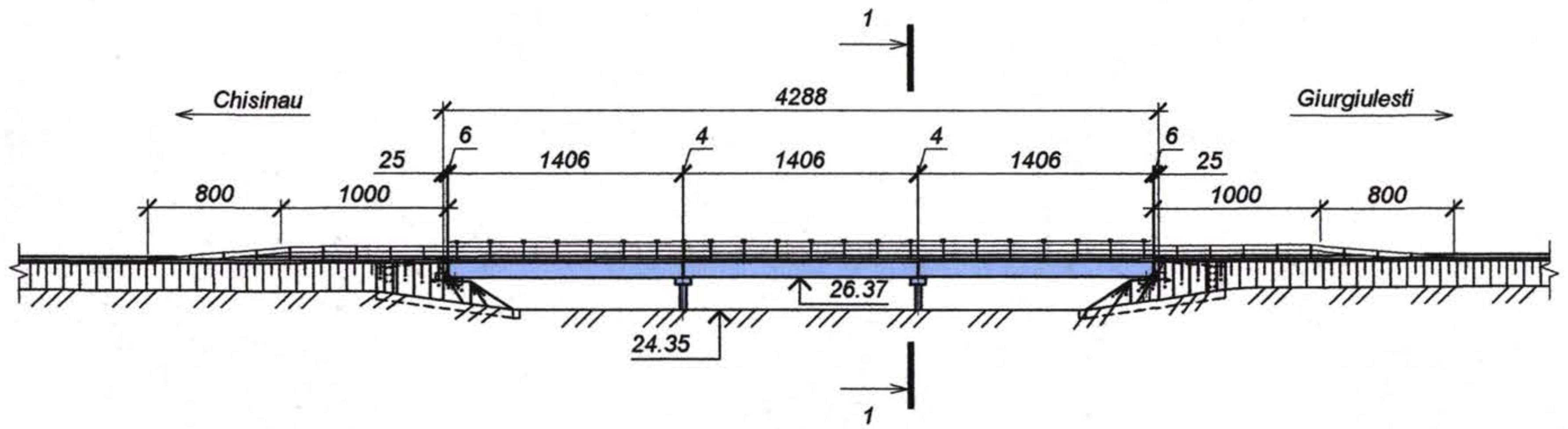
Lyre-shaped brass sheet - *Bucla din tabla de alama (poz.3) (1:20)*



Schedule of materials per 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint at the abutment Rost de dilatatie la culee			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Porous rubber cord** Cordon din cauciuc poros	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	
		Span joints Rost între deschideri			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Porous rubber cord** Cordon din cauciuc poros	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	

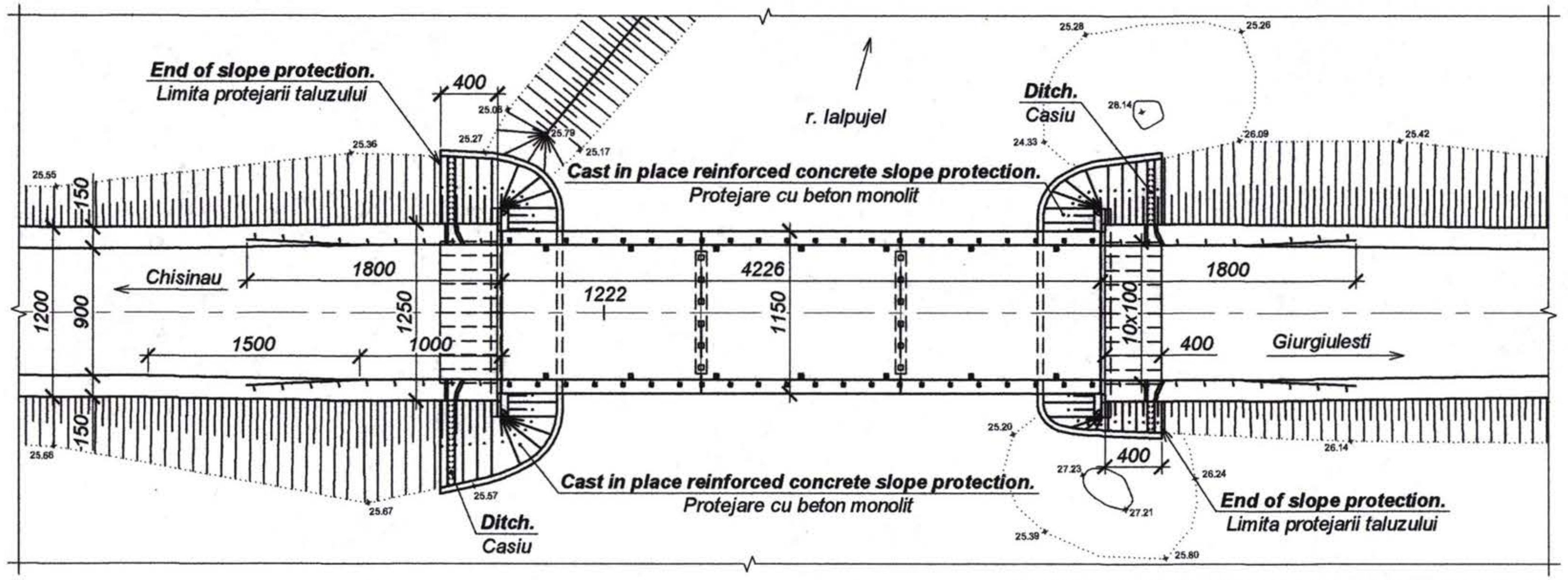
Side elevation.
Elevatie (1:400)



Design data / Date proiect						
Gradient,‰, vertical radius, m Declivitate,‰, curba verticala, m	2 / 11.17	2 / 13.67	2 / 14.10	2 / 13.67	2 / 9.26	R=10000
Finished carriageway level, m Cota in axa, m	27.60	27.63	27.66	27.69	27.73	27.77

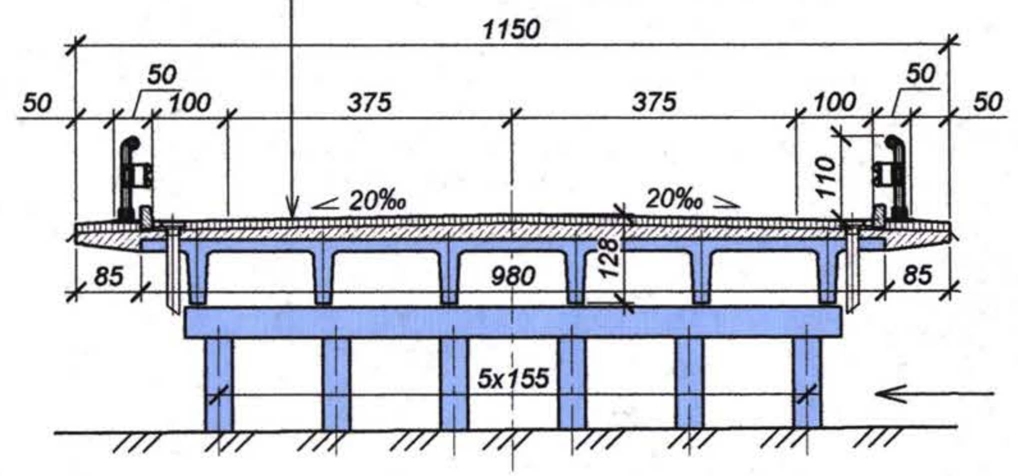
Terrain data / Date teren				
Ground level, m Cota teren, m	25.67	25.57	26.24	26.14
Distance, m Distanta, m	7.47	50.89	10.92	
Survey station. Pichet	1222			

Top view.
Plan (1:400)



Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Strat de hidroizolare	- 5 mm
Concrete slab. Placa de suprabetonare	- 120÷220 mm

1 - 1 (1:100)



Hydrological characteristics.
Caracteristici hidrologice

Item. Denumirea	**Unit.** Unitatea de masura	**Quantity.** Cantitate
Estimated flow quantity. Debitul de calcul, $Q_{1\%}$	m³/s	77.5
High water. Nivelul apelor exceptionale $NAE_{1\%}$	m	25.39
Stream speed before bridge scur. Viteza apei înainte de afuiere	m / s	2.94
Stream speed after bridge scur. Viteza apei dupa afuiere	m / s	1.4
Bridge scur rate. Coeficient de afuiere		1.99

Quantity list.
Lista de cantitati

No. Art.	**Item description.** Descrierea articolului	**Unit.** Unitatea de masura	**Quantity.** Cantitate
1	**Bridge approach.** Racordarea podului cu rampele de acces	Cu. m.	38
2	**Bridge approach slab waterproofing.** Hidroizolatia dalei de racordare	Sq. m.	80
3	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	490
4	**Concrete slab.** Placa de suprabetonare	Cu. m.	95
5	**Expansion joints.** Rosturi de dilatatie	m.	23
6	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod	Sq. m.	490
7	**Bridge deformable guard-rail.** Parapet de siguranta metalic pe pod	m.	85
8	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	72
9	**Concrete repair.** Repararea betonului degradat	Sq. m.	206
10	**Slope and channel protection.** Protejarea taluzelor si albiei	Sq. m.	200
11	**Removal of existing structure.** Demolarea structurii existente	Cu. m. / t	134 / 1.7

Note. Nota:
1. **Cleaning the river bed under the bridge should be performed up to 24.35 m level.**
1. Curatarea albiei de sub pod se va executa pina la cota 24.35 m.
2. **All dimensions are in cm.**
2. Toate dimensiunile sunt date in cm.

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:
KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany
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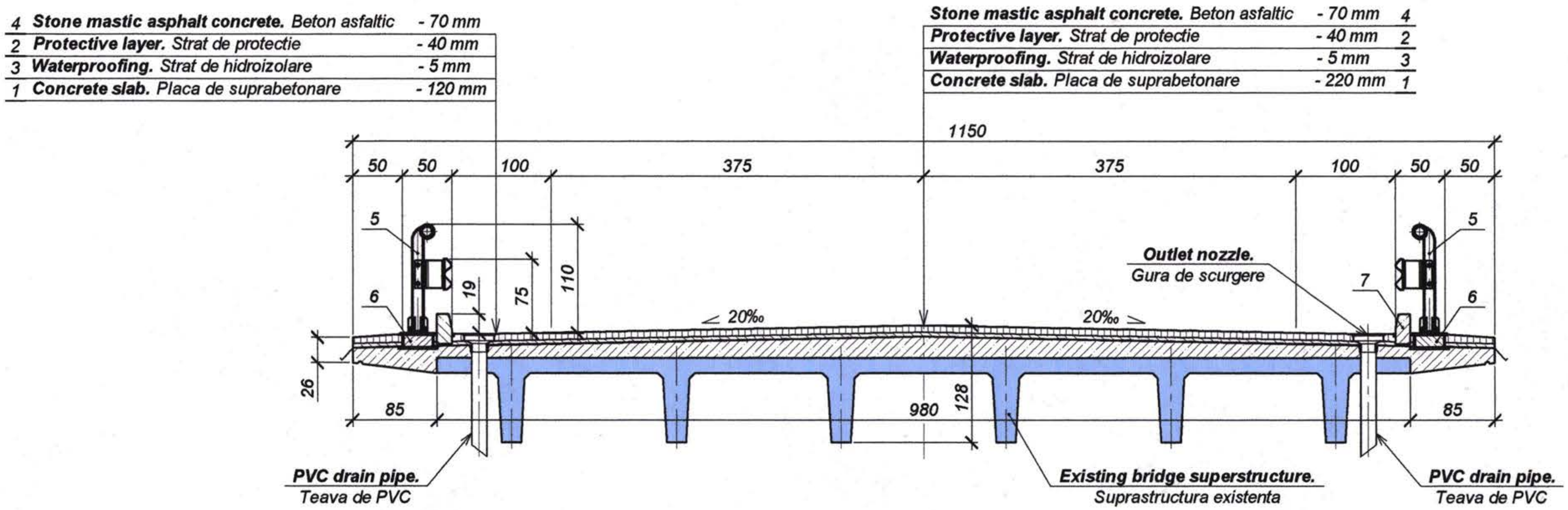
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 122+212. Bridge, km 122+212.
Dispozitie generala. General arrangement.
Drawing 22-1

(1:50)



Schedule of matrerials per cross section.
Lista de materiale pentru sectiune transversala

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
1		**Concrete slab.** Placa de suprabetonare			95 m^3
2		**Protective layer of reinforced concrete.** Strat de protectie, beton B27.5, F200, W6, h=4cm			19.4 m^3
3		**Water proofing,membrane.** Hidroizolare, membrana, h=0.5cm			486 m^2
4		**Stone mastic asphalt concrete.** Beton asfaltic, h=7cm			34 m^3
5		**Bridge guardrails.** Parapeti metalici de siguranta			85 m
6		**Metallic header.** Soclu metalic	44	31.0	
7		**Kerb.** Bordura			85 m

Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

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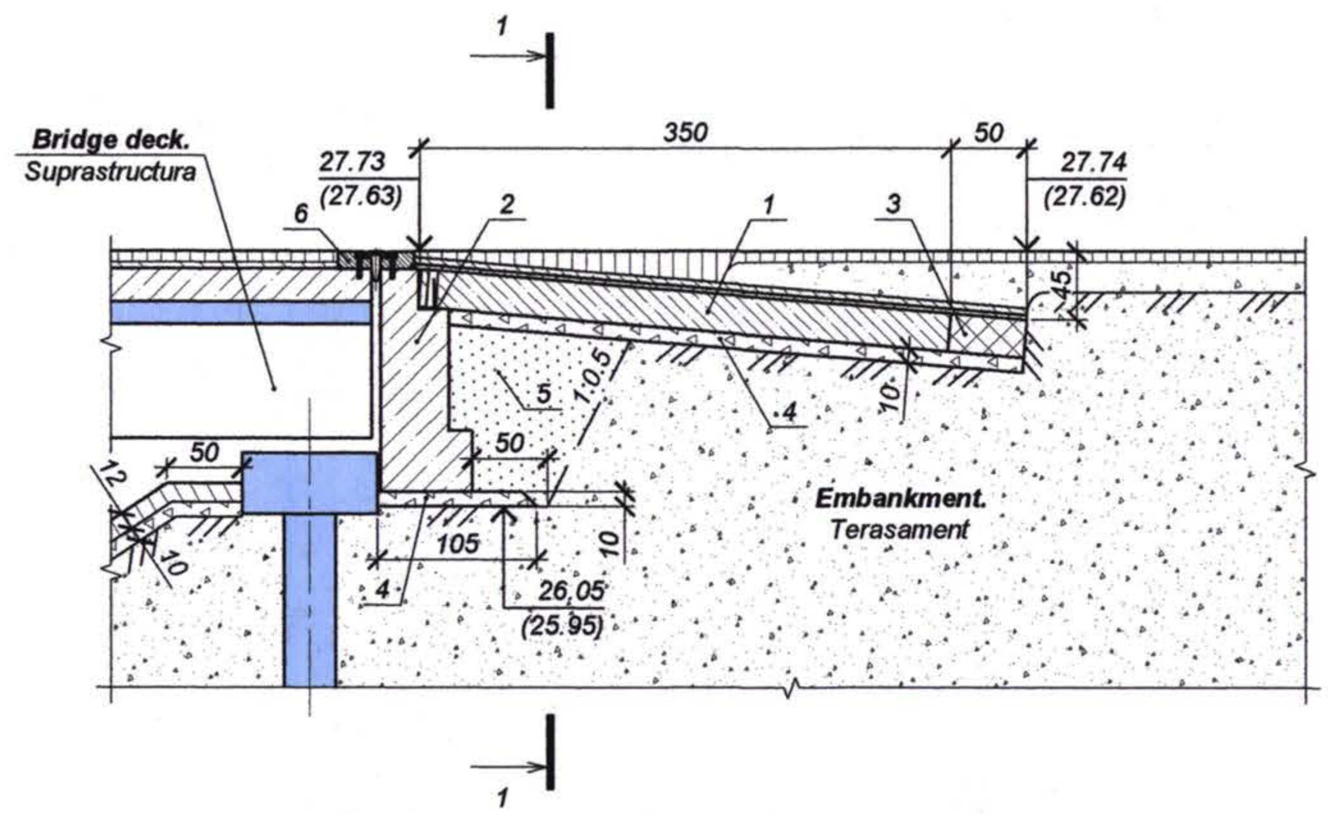
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 122+212.
Bridge, km 122+212.

Sectiune transversala.
Cross section.

Drawing 22-2

Bridge approach. Abutmet No.2.
Racordarea podului cu terasamentul. Culeea nr.2 (1:50)



Schedule of matrerials per bridge approach.
Lista de materiale pentru racordarea podului cu terasamentul

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		**Approach slab.** Dala de racordare D-1	10/10	2100	0.84 m³/0.84 m³
2		**Backwall.** Zid de garda	2/2		4.3 m³/4.3 m³
3		**Approach slab concreted conection.** Imbinarea placilor de racordare			1.6 m³/1.6 m³
		Leveling layer. Strat de egalizare, beton cl.B25, F200, W6, h= 3cm			1.2 m³/1.2 m³
		Concrete protective layer. Strat de protectie, beton cl.B25, F200, W6, h=4cm			1.6 m³/1.6 m³
		Waterproofing,membrane. Hidroizolare, membrana, h=0.5cm			40 m²/40 m²
4		**Crushed stone bed.** Pat din piatra sparta M400, h=40cm			6 m³/6 m³
5		**Sand and gravel.** Nisip cu petris			17 m³
6		**Expanssion joints.** Rost de dilatatie Algaflex T-80			11.5 m/11.5 m
7		**Kerb.** Bordura			12 m/12 m
8		**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe		900	36 m/36 m

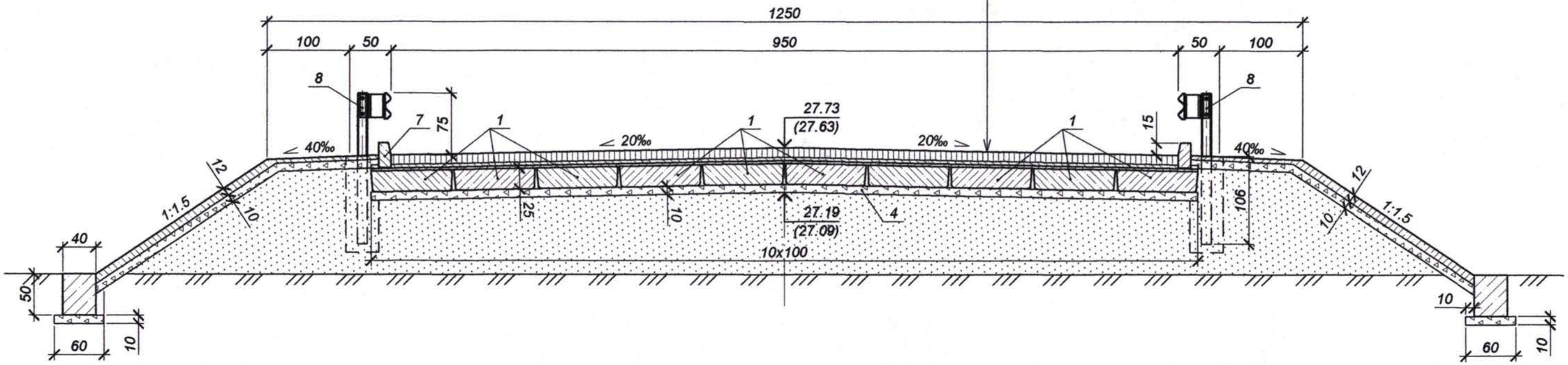
Note. *Nota:*

1. Bridge approach on the abutmet No.1 is similarly.
1. Racordarea culeei nr.1 e similara.
2. Levels in brackets are given for appoach on abutmet No.1.
2. Cotele din paranteze sint date pentru culeea nr.1.
3. All dimensions are in cm.
3. Toate dimensiunile sunt date in cm.

1 - 1 (1:50)

Pavement. *Sistem rutier*

Protective layer. Strat de protectie	- 40 mm
Waterproofing. Strat de hidroizolare	- 5 mm
Leveling layer. Strat de egalizare	- 30 mm
Approach slab. Placa de racordare	- 250 mm



Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

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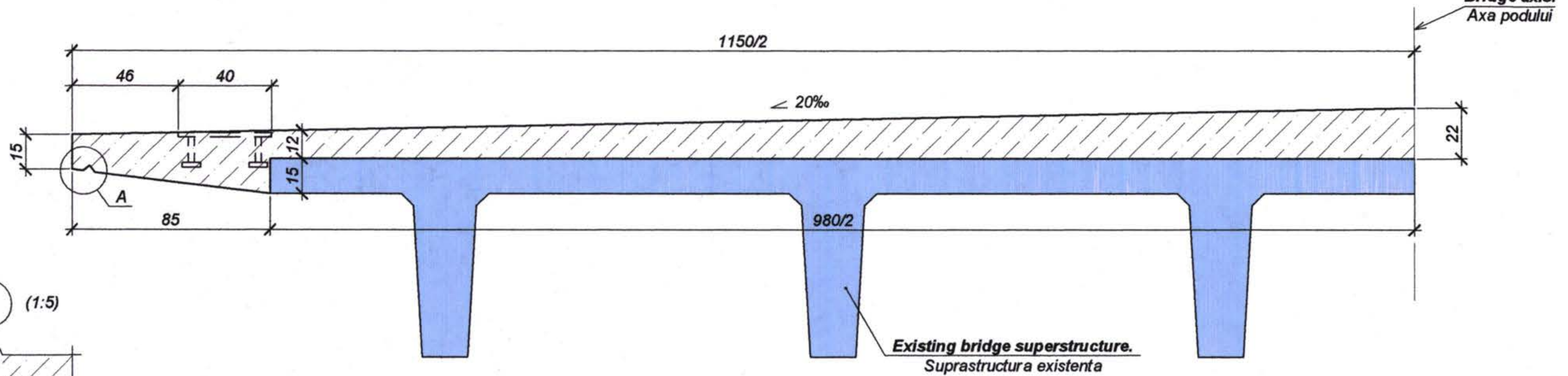
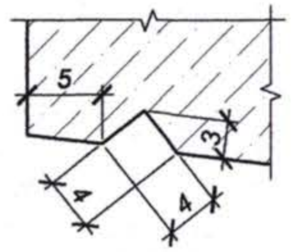
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 122+21 2..
Bridge, km 122+21 2.
Racordarea podului cu terasamentul.
Bridge approach.
Drawing 22-3

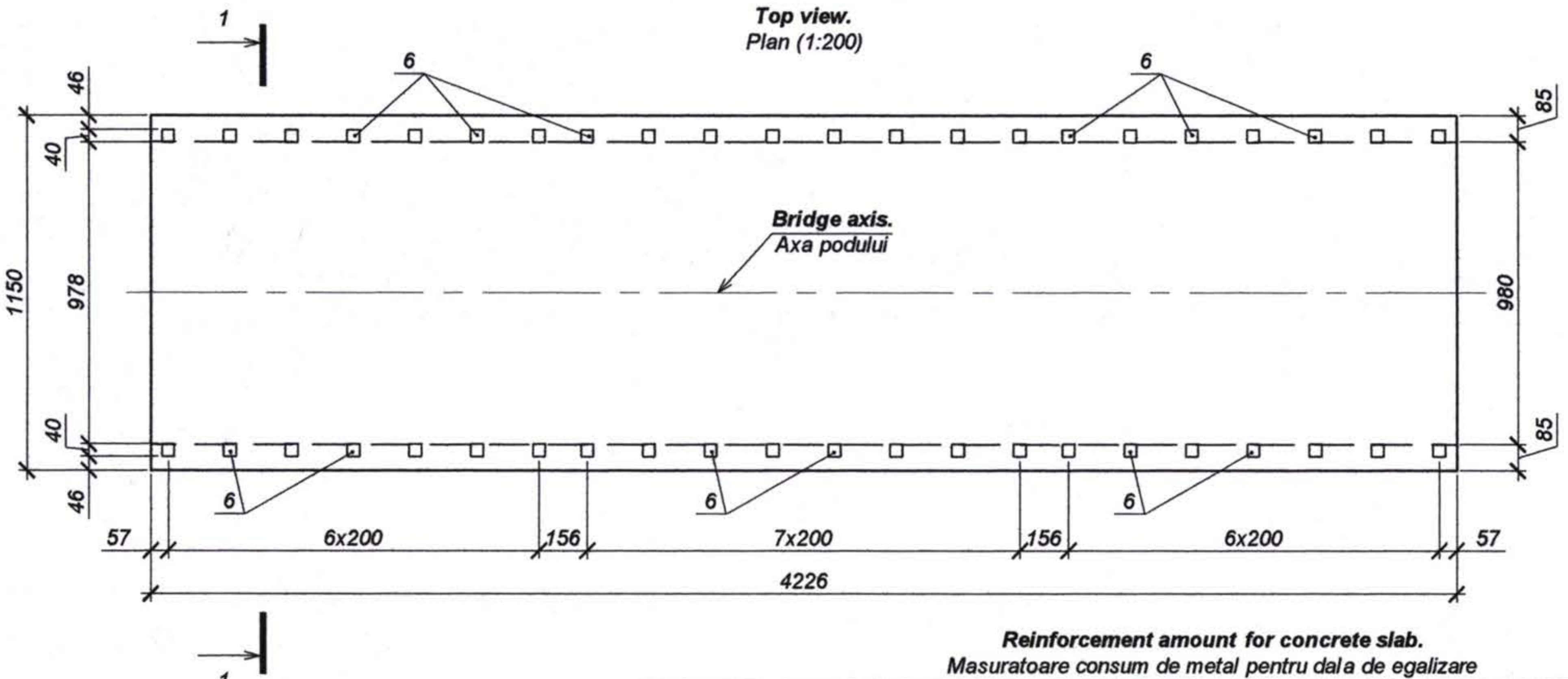
1 - 1 (1:20)



A (1:5)



Top view.
Plan (1:200)



Note. Nota:

1. All dimensions are in cm.

1. Toate dimensiunile sunt date in cm.

Reinforcement amount for concrete slab.

Masuratoare consum de metal pentru dala de egalizare

Element type. Marca elementului	Reinforcing pieces. Piese de armare				Embedded pieces. Piese inglobate							Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa			Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Steel type. Marca metalului			Totals. Linia totalului	
	A - III, 25Г2С				A - III, 25Г2С			ВСт3сп2				
	GOST 5781-82*				GOST 5781-82*			GOST 103 - 2006				
	Ø10	Ø12	Total		Ø25	-	Total	-20x100	-20x400	Total		
	3676.4	4428	8104.4	8104.4	105.6	-	105.6	554.4	1104.4	1658.8	1658.8	9763.2

Nr. inv. orig.	Semnat la data	Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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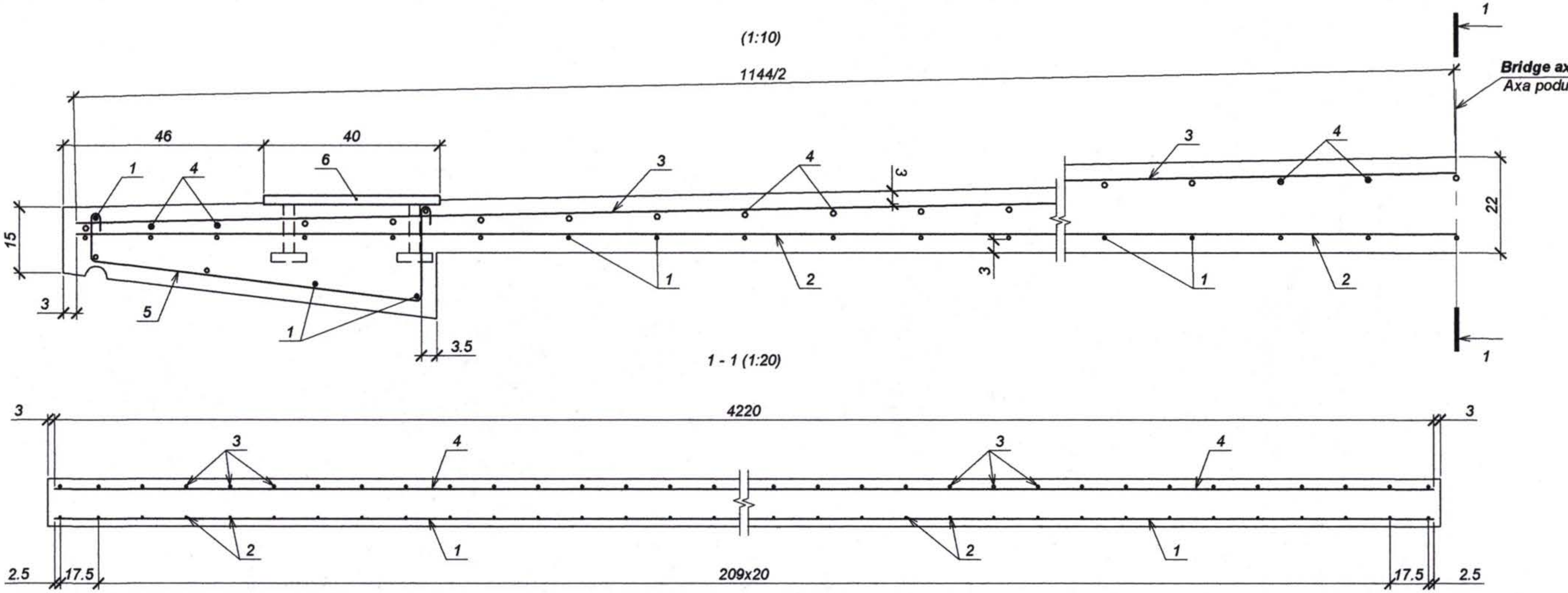
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 122+212.
Bridge, km 122+212.

Placa de suprabetonare.
Concrete slab.

Drawing 22-4



Schedule of matrerials per concrete slab.
Lista de materiale pentru dala de egalizare

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Assembly elements. Elemente de asamblare			
1		Ø10 AIII L=10775, GOST 5781 - 82*	284	6.6	
2		Ø10 AIII L=11440, GOST 5781 - 82*	212	7.1	
3		Ø12 AIII L=11440, GOST 5781 - 82*	212	10.2	
4		Ø12 AIII L=10820, GOST 5781 - 82*	236	9.6	
5		Ø10 AIII L=1100, GOST 5781 - 82*	424	0.7	
		Embedded pieces. Piese inglobate			
6		**Embedded base plate.** Piesa inglobata PI - 1	44	40.1	
		Materials. Materiale			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			85 m³

Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev. | Amendamente Amendments | Aprobat Approved | Data Date

Consultantii/Consultants:

KOCKS INGENIEURE
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Desenat/Drawn: Cotelea A.
Data/Date:

Aprobat/Approved
Data/Date

EU Delegation to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

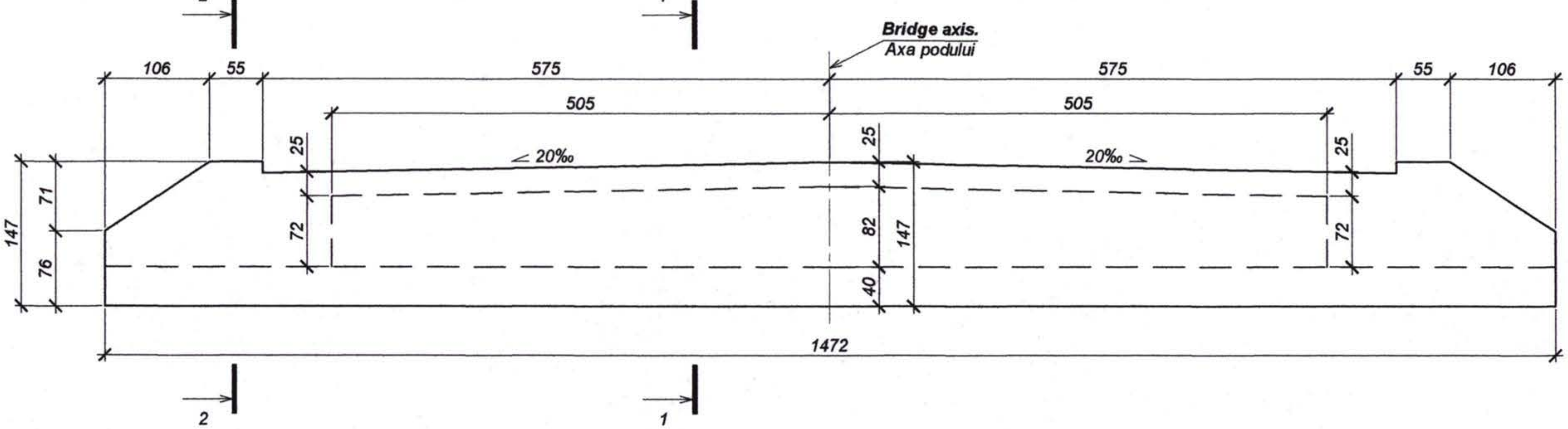
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 122+212.
Bridge, km 122+212.

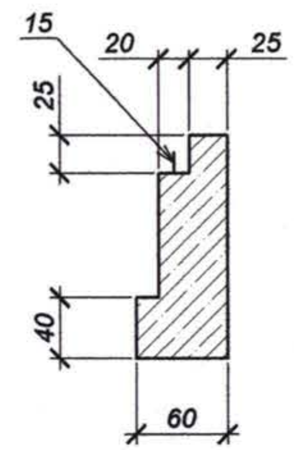
Placa de suprabetonare. Plan de armare.
Concrete slab. Reinforcing layout.

Drawing 22-5

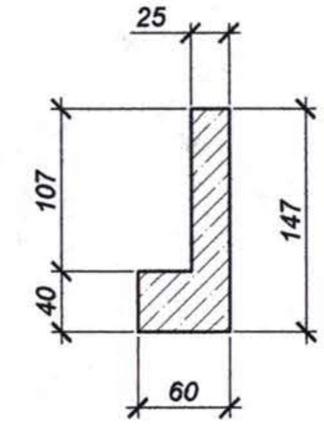
Formwork layout.
Plan de cofrare (1:50)

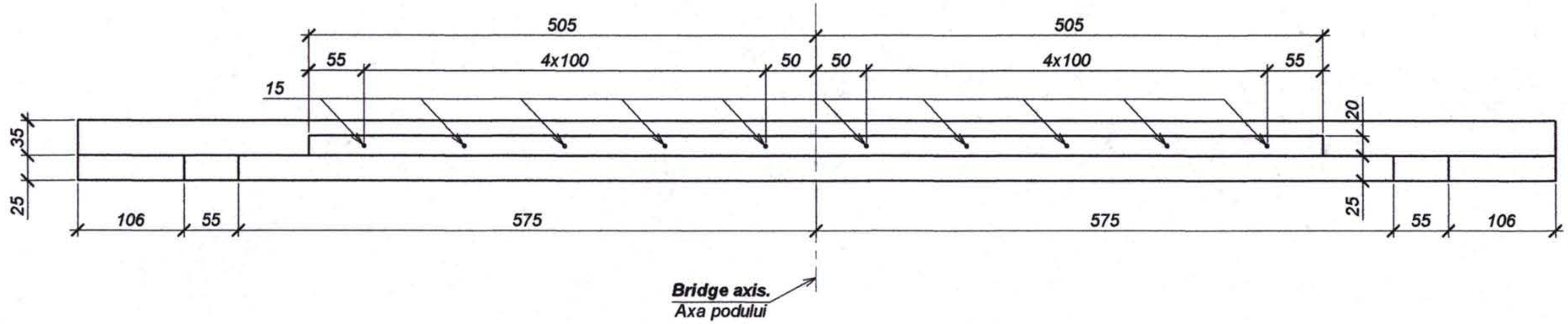


1 - 1 (1:50)



2 - 2 (1:50)

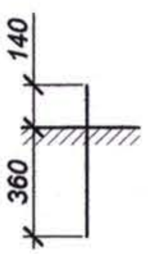




Reinforcement amount for backwall.
Masuratoare consum de metal pentru zidul de garda Z-1

Element type. Marca elementului	Reinforcing pieces. Piese de armare					Embedded pieces. Piese inglobate				Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa				Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Totals. Linia totalului	
	A - I, Cm3cn		A - III, 25Г2C			A - I, Cm3cn				
	GOST 5781-82*		GOST 5781-82*			GOST 5781-82*				
	Ø8	Total	Ø10	Total		Ø22	-	Total		
Z-1	35.8	35.8	429.0	429.0	464.8	15.0	-	15.0	15.0	479.8

Poz. 15 (1:25)



Note. *Nota:*
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1. Toate dimensiunile sunt date in cm.

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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EU Delegation to Moldova
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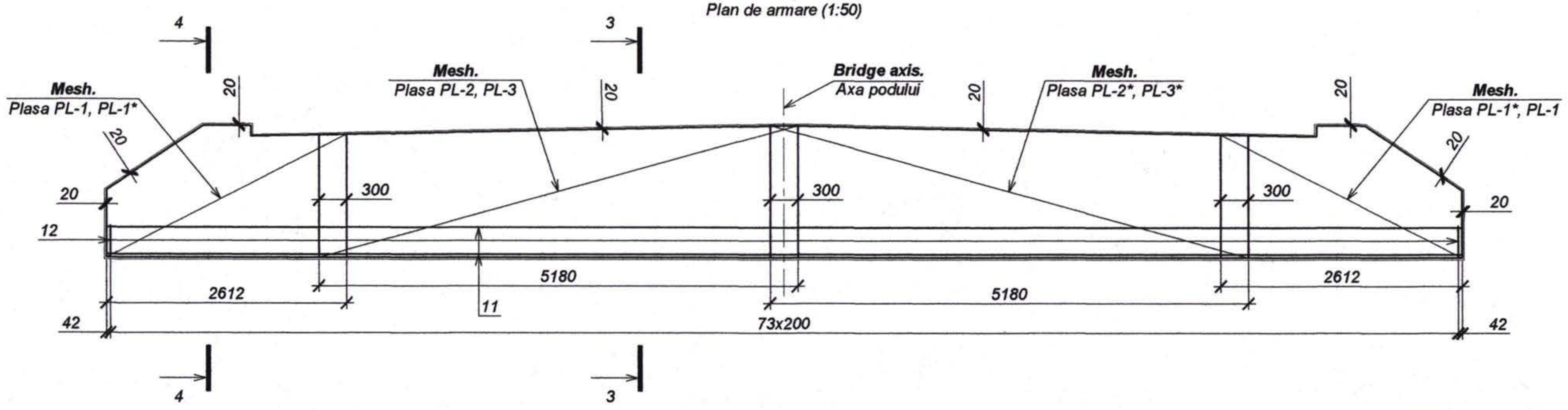
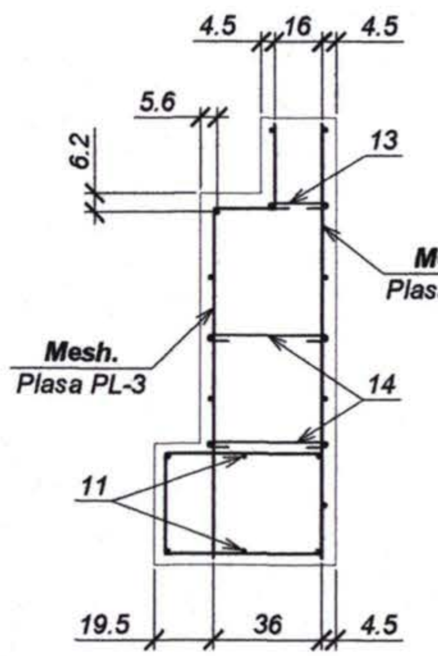
Marimea originala a desenului / Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 122+212.
Bridge, km 122+212.
Zid de garda Z-1. Plan de cofrare.
Backwall. Formwork layout.
Drawing 22-6

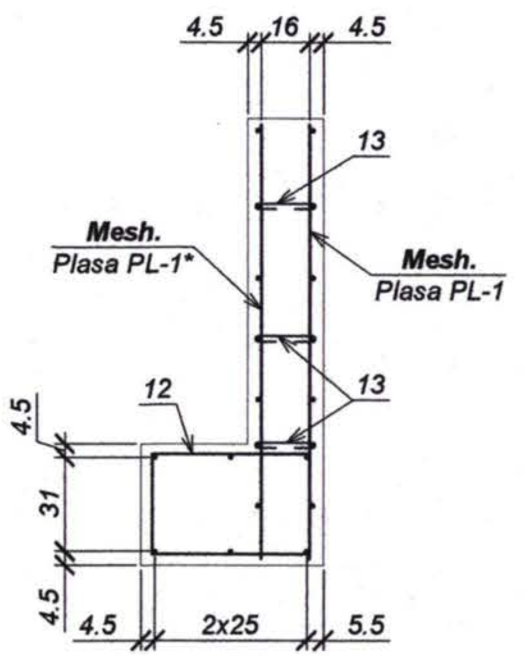
Reinforcing layout.
Plan de armare (1:50)



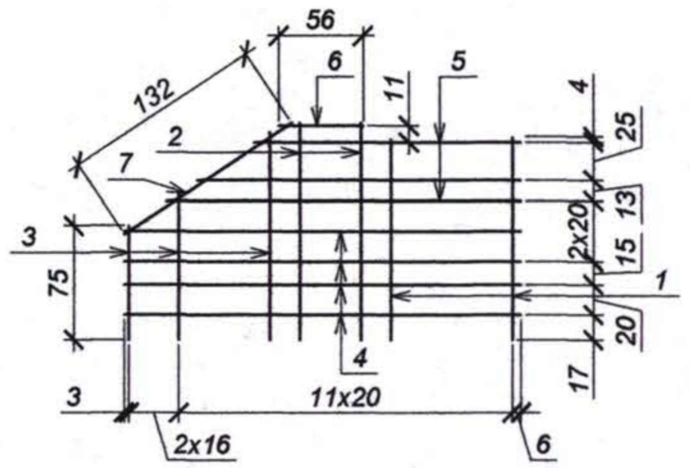
3 - 3 (1:25)



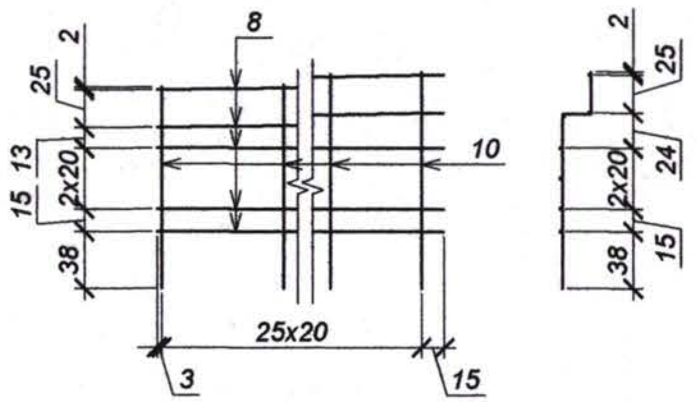
4 - 4 (1:25)



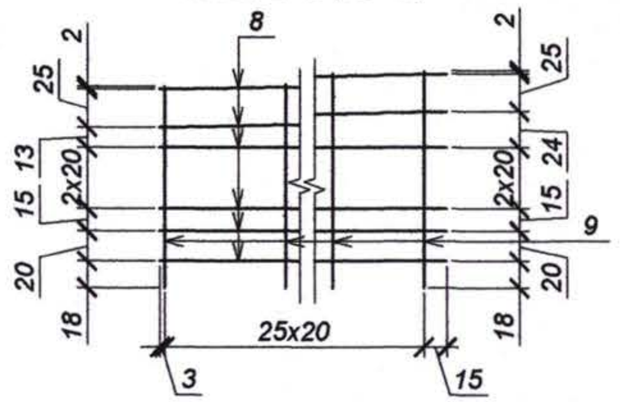
Mesh.
Plasa PL - 1 (PL - 1)*



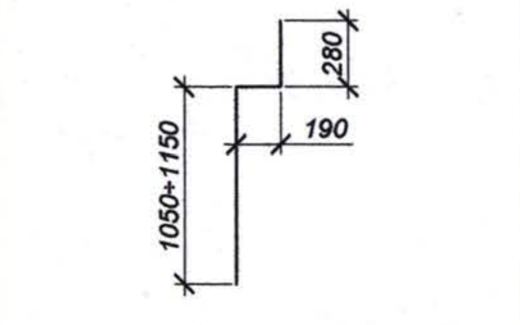
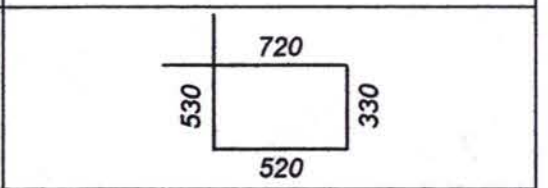
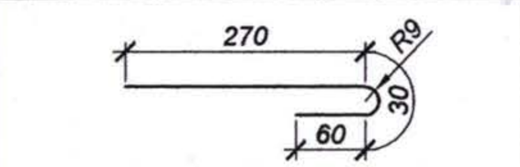
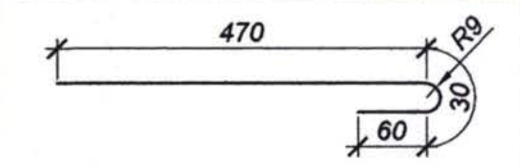
Mesh.
Plasa PL - 3 (PL - 3)*



Mesh.
Plasa PL - 2 (PL - 2)*



Bending details sheet.
Piese

Pozition. *Pozitia*	**Sketch.** *Schita*
10	
12	
13	
14	

Schedule of matrerials per backwall.
Lista de materiale pentru zidul de garda Z-1

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Mesh. Plasa PL-1 (PL-1*)	2 (2)	22.3	
1		Ø10 A-III L=1318÷1334, Lmed=1326 GOST 5781 - 82*	5	0.8	
2		Ø10 A-III L=1430, GOST 5781 - 82*	3	0.9	
3		Ø10 A-III L=750÷1370, Lmed=1060 GOST 5781 - 82*	6	0.7	
4		Ø10 A-III L=2610, GOST 5781 - 82*	4	1.6	
5		Ø10 A-III L=1760÷2340, Lmed=2050 GOST 5781 - 82*	3	1.3	
6		Ø10 A-III L=560, GOST 5781 - 82*	1	0.3	
7		Ø10 A-III L=1320, GOST 5781 - 82*	1	0.8	
		Mesh. Plasa PL-2 (PL-2*)	1 (1)	45.8	
8		Ø10 A-III L=5180, GOST 5781 - 82*	7	3.2	
9		Ø10 A-III L=1330÷1430, Lmed=1380 GOST 5781 - 82*	26	0.9	
		Mesh. Plasa PL-3 (PL-3*)	1 (1)	48.4	
8		Ø10 A-III L=5180, GOST 5781 - 82*	7	3.2	
10		Ø10 A-III L=1520÷1620, Lmed=1570 GOST 5781 - 82*	26	1.0	
11		Ø10 A-III L=7490, GOST 5781 - 82*	12	4.6	
12		Ø10 A-III L=2100, GOST 5781 - 82*	74	1.3	
13		Ø8 A-I L=360, GOST 5781 - 82*	150	0.1	
14		Ø8 A-I L=560, GOST 5781 - 82*	104	0.2	
		Embedded pieces. Piese inglobate			
15		Ø22 A-III L=500, GOST 5781 - 82*	10	1.5	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			8.7 m³

Note. *Nota:*

1. Mesh PL - 1*, PL - 2*, PL - 3* are a mirrored images of the mesh PL - 1, PL - 2, PL - 3.
1. Plasa PL - 1, PL - 2*, PL - 3* sunt imaginile oglindite a plasei PL - 1, PL - 2, PL - 3.*
2. All dimensions are in cm.
2. Toate dimensiunile sunt date in cm.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

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Proiectat/Designed: Cusnir G. — Desenat/Drawn: Cotelea A.
Verificat/Checked: — Data/Date:

Aprobat/Approved
Data/Date

EU Delegation to Moldova — Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

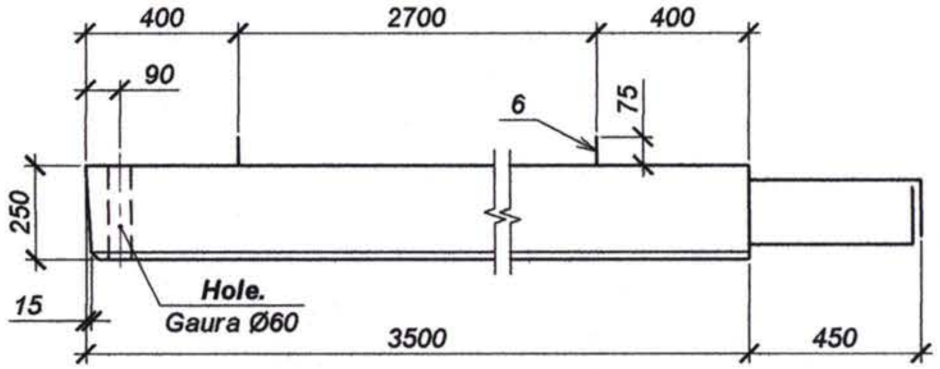
Pod, km 122+212.
Bridge, km 122+212.

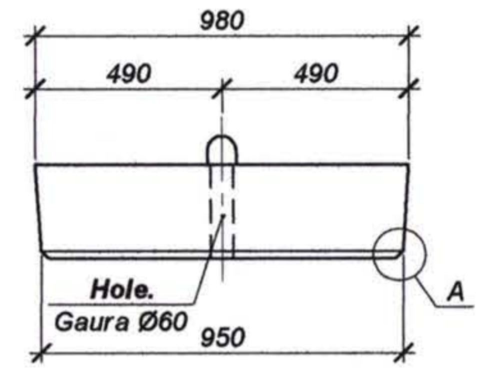
Zid de garda Z-1. Plan de armare.
Backwall. Reinforcing layout.

Drawing 22-7

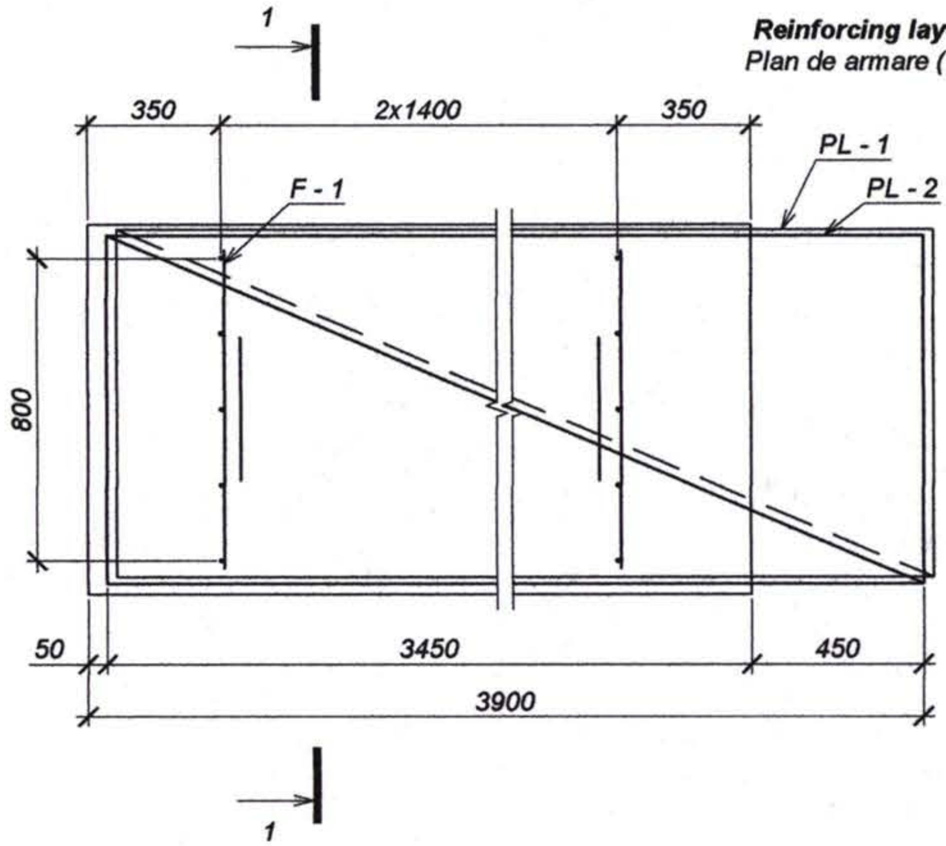
Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Formwork layout.
Plan de cofrare (1:20)

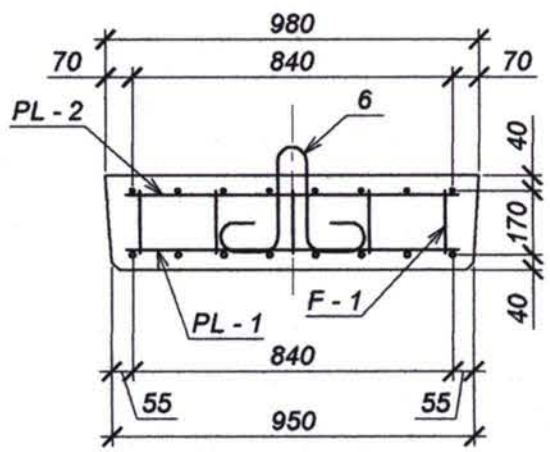




Reinforcing layout.
Plan de armare (1:20)



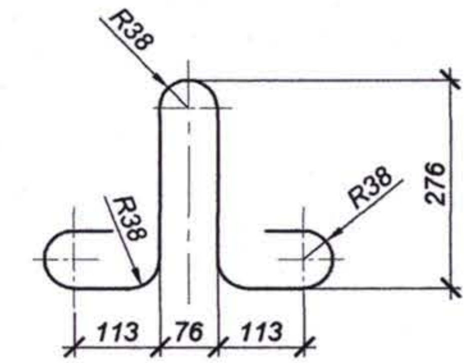
1 - 1



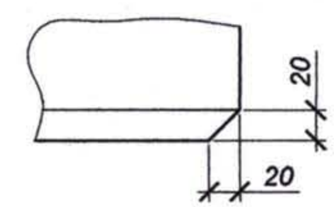
Schedule of matrerials per approach slab.
Lista de materiale pentru dala de racordare D-1.

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Assembly elements. Piese de asamblare			
		Mesh. Plasa PL-1	1	42.8	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
2		Ø14 A-III L=4000, GOST 5781 - 82*	8	4.9	
		Mesh. Plasa PL-2	1	23.6	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
3		Ø10 A-III L=4005, GOST 5781 - 82*	8	2.5	
		Bar support. Fixator F-1	3	1.1	
4		Ø8 A-I L=840, GOST 5781 - 82*	2	0.3	
5		Ø8 A-I L=165, GOST 5781 - 82*	5	0.1	
		Embedded pieces. Piese inglobate			
6		Ø 14A-I L=1130, GOST 5781 - 82*	2	1.4	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.84 m³

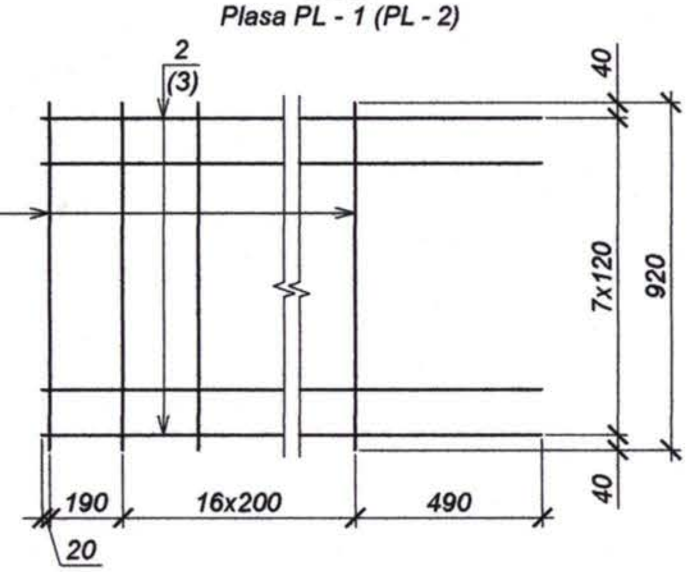
Poz. 6 (1:10)



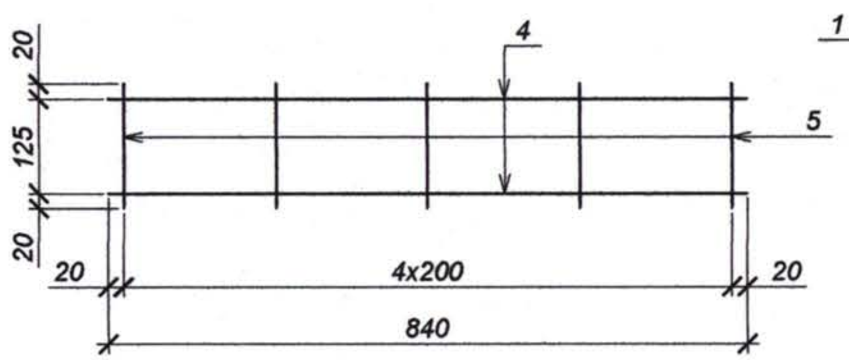
A (1:5)



Mesh.
Plasa PL - 1 (PL - 2)



Bar support.
Fixator F-1 (1:10)



Reinforcement amount for approach slab.
Masuratoare consum de metal pentru dala de racordare D-1, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare							Embedded pieces. Piese inglobate				Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Totals. Linia totalului	
	A - I, Cm3cn			A - III, 25Г2C				A - I, Cm3cn				
	GOST 5781-82*			GOST 5781-82*				GOST 5781-82*				
	Ø6	Ø8	Total	Ø10	Ø14	Total		Ø14	-	Total		
D-1	7.2	3.3	10.5	20	39.2	59.2	69.7	2.8	-	2.8	2.8	72.5

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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EU Delegation to Moldova
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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

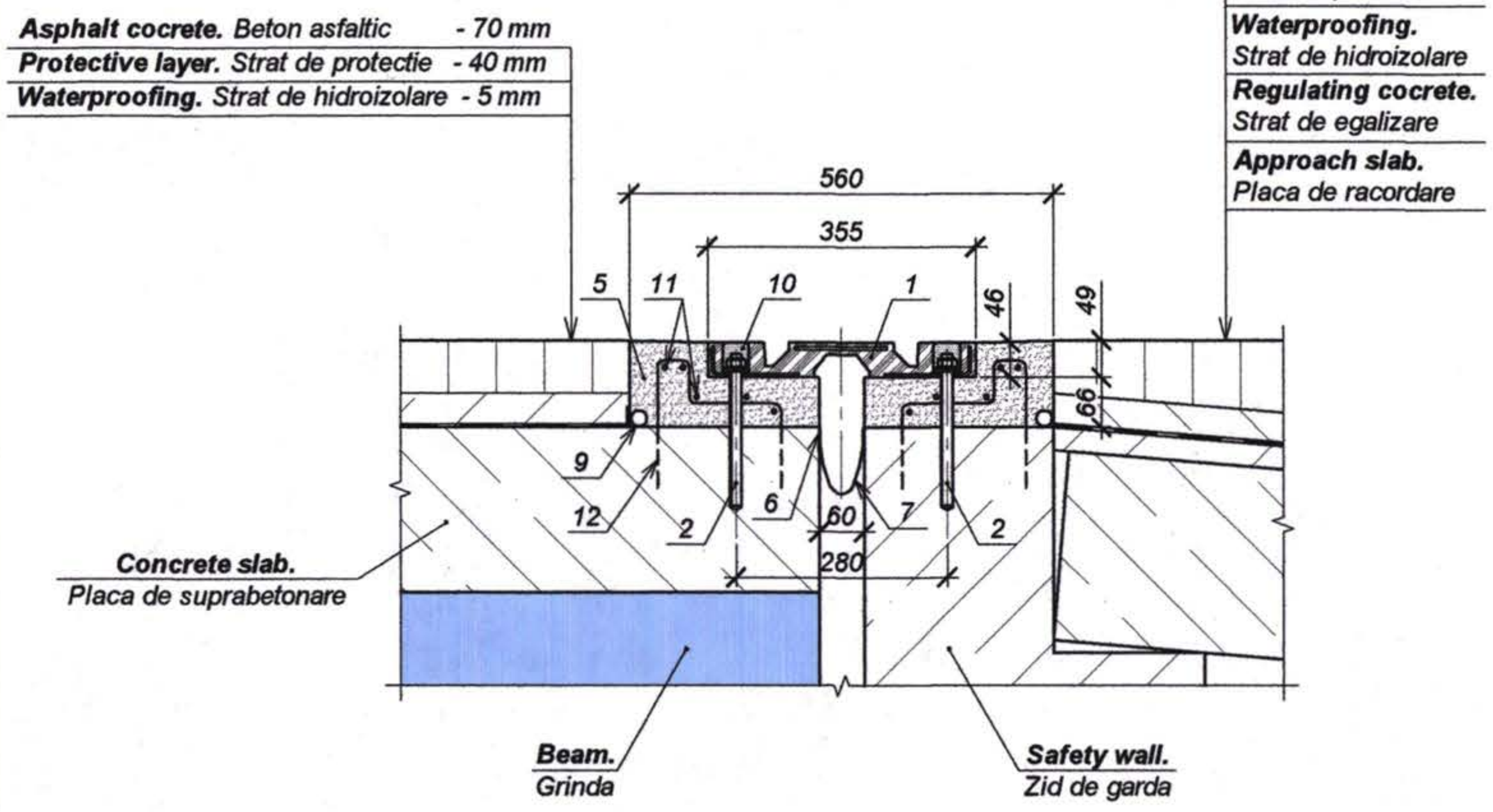
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 122+212.
Bridge, km 122+212.

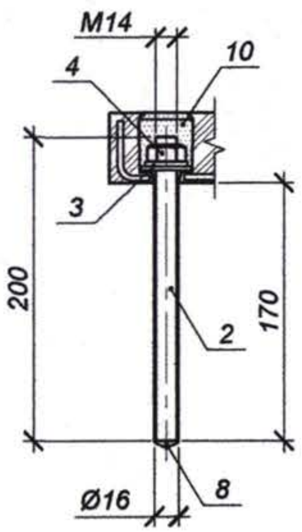
Dala de racordare D-1.
Approach slab.

Drawing 22-8

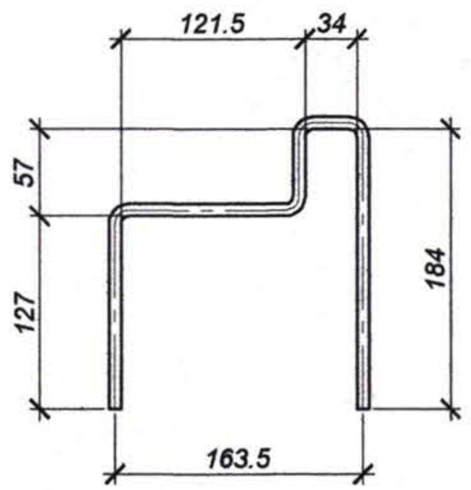
ALGAFLEX T80 tip expansion joints detail.
Detaliu dispozitiv de acoperire a rostului de dilatatie tip ALGAFLEX T80 (1:10)



Anchor bolt.
Ancoraj (1:5)



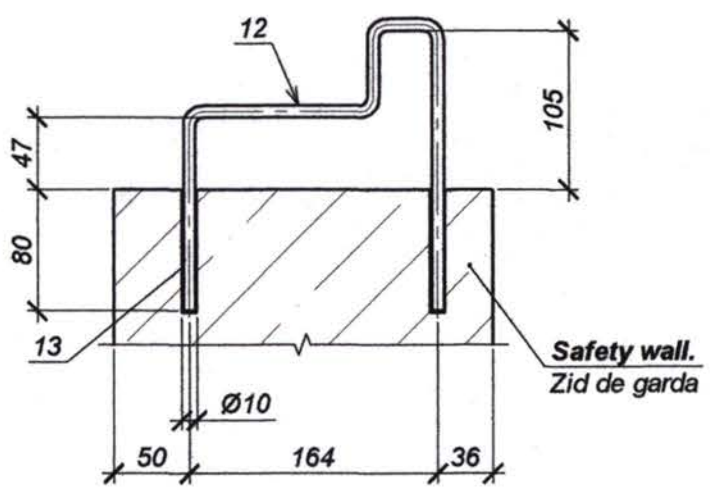
Poz. 12 (1:5)



Schedule of matrerials per proprietary expanssion joint with elastomer elements, 1.0m long
Lista de materiale pentru rostul de dilatatie cu element de acoperire elastomeric pentru 1.0m lungime

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint. Rost de dilatatie ALGAFLEX T80	Set		L=1.0 m
		Joint elements of the set. Piesele rostului din setul ALGAFLEX T80			
1		**Reinforced rubber pad.** Placa de acoperire din cauciuc armat			
2		**Anchor bolt.** Bulon de ancorare. (C40 + DACROMET 320)			
3		**Bolt washer.** Saiba de bulon (R40 / R60 + DACROMET 320)			
4		**Bolt nut.** Piulita bulonului (Cl. 6S + DACROMET 320)			
5		**Polymer concrete.** Beton polimeric (Tigigrout 102FR)			
6		**Epoxy Glue.** Rasina epoxidica (Tigigrout T01)			
7		**Ruber membrane.** Membrana din cauciuc (Tigitec - E)			
8		**Epoxy Glue.** Rasina epoxidica (Tigiepox Grout)			
9		**Polythene drainage pipe.** Teava de drenaj din polimeri (PVC Ø20)			
10		**Sealing material.** Material de sigilare (Tigitar A)			
		Joint elements of local materials. Piesele rostului din materiale locale			
11		Ø6 A-III L=1000, GOST 5781 - 82*	10	0.2	
12		**Hoop iron.** Etrier Ø8 A-III L=525, GOST 5781 - 82*	10	0.2	
13		**Epoxy Glue for anchorage reinforcement.** Rasina epoxidica pentru ancorarea etrierilor			0.05 m³

Anchrage of reinforcement.
Ancorarea etrierilor (1:5)



Note: Nota:

1. **The design shows the expanssion joint using elements manufactured by Italian Co "ALGA SPA", previously used for repairs to bridges in Moldova. Contractor may propose an alternative proprietary joint for the Employer's and Designer's concent.**
1. *Proiectul prevede acoperirea rostului de dilatatie cu elemente din setul ALGAFLEX produs de firma italiana "ALGA SPA" si utilizate la reparatia podurilor din Republica Moldova. Antreprenorul, cu acordul Beneficiarului si Proiectantului, poate propune o alta constructie similara de acoperire a rostului.*

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Semnat la data
Nr. inv. orig.

Rev. Rev. | Amendamente Amendments | Aprobat Approved | Data Date

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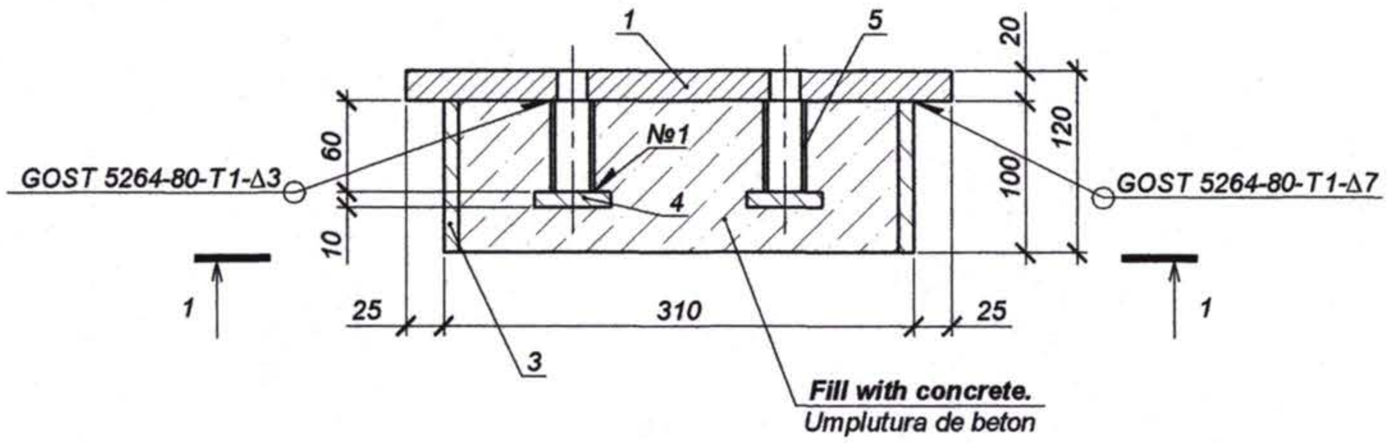
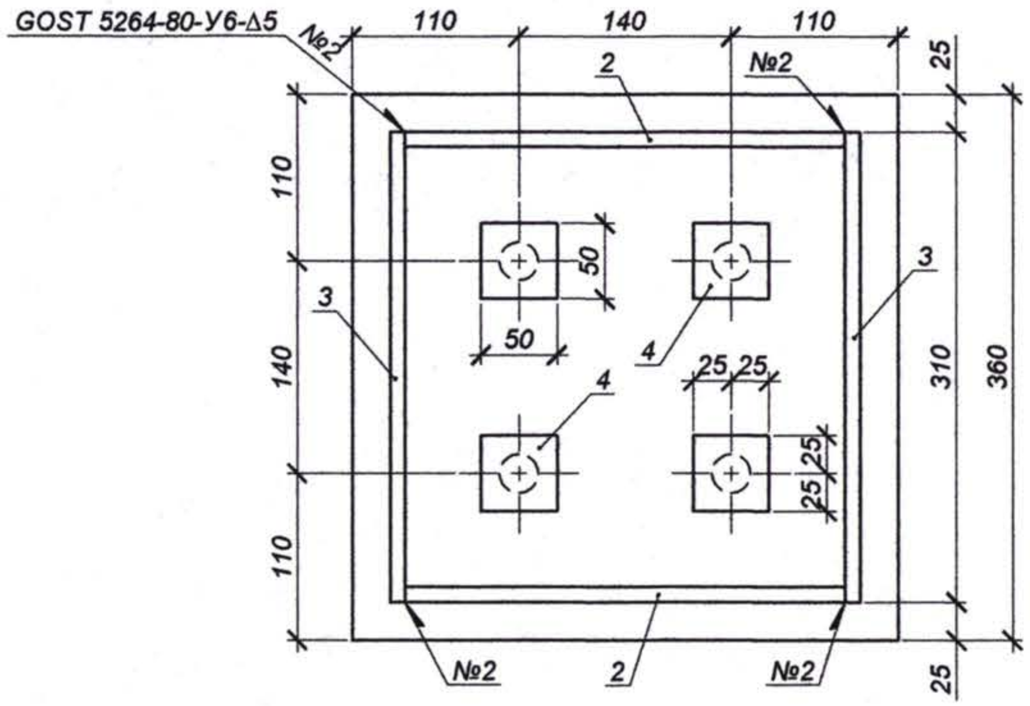
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 122+212. Bridge, km 122+212.
Dispozitiv de acoperire a rostului de dilatatie. Expanssion joint.
Drawing 22-9

(1:5)

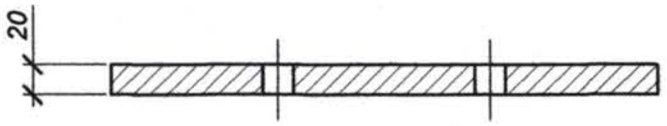


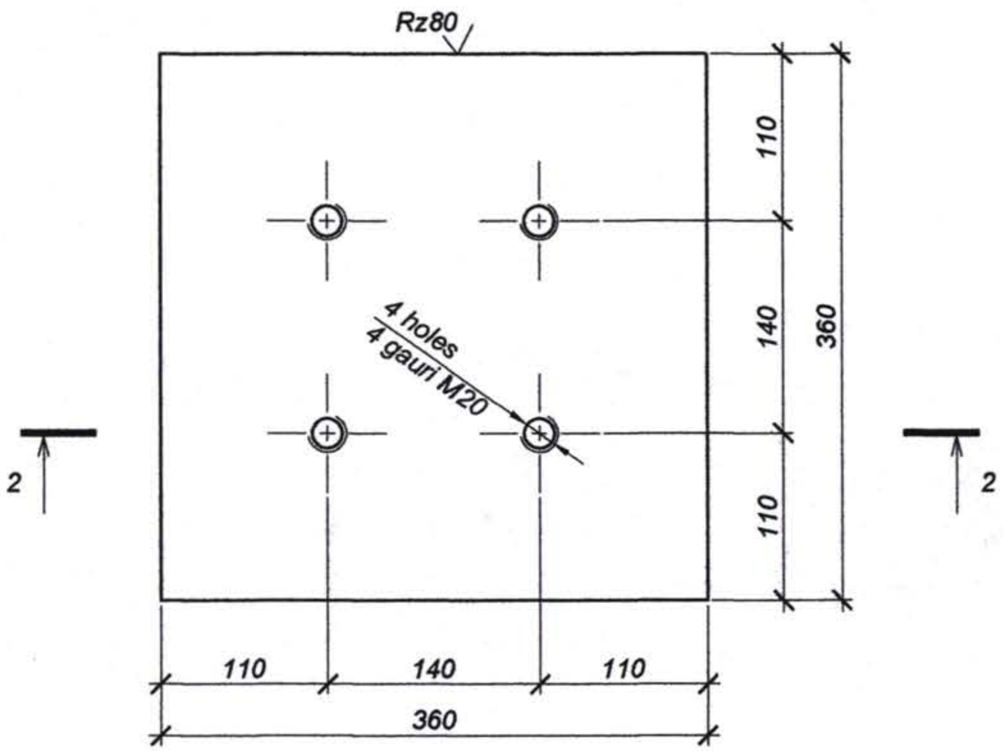
1 - 1



Detail.
Piesa P - 1

2 - 2





Schedule of matrerials per metallic header.
Lista de materiale pentru soclu metalic

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
1		**Detail.** Piesa P - 1	1	20.4	
2		-10x100 L=290, GOST 103 - 2006	2	2.3	
3		-10x100 L=310, GOST 103 - 2006	2	2.4	
4		-10x50 L=50, GOST 103 - 2006	4	0.2	
5		28x2.5 L=60, GOST 8732 - 78*	4	0.1	
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.009 m^3

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Amendamente Aprobat Data
Rev. Amendments Approved Date

Consultantii/Consultants:

KOCKS INGENIEURE
Kocks Consult GmbH
Stegemannstrasse 32-38,
56068 Koblenz, Germany

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Desenat/Drawn: Cotelea A.
Data/Date:

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Data/Date

EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

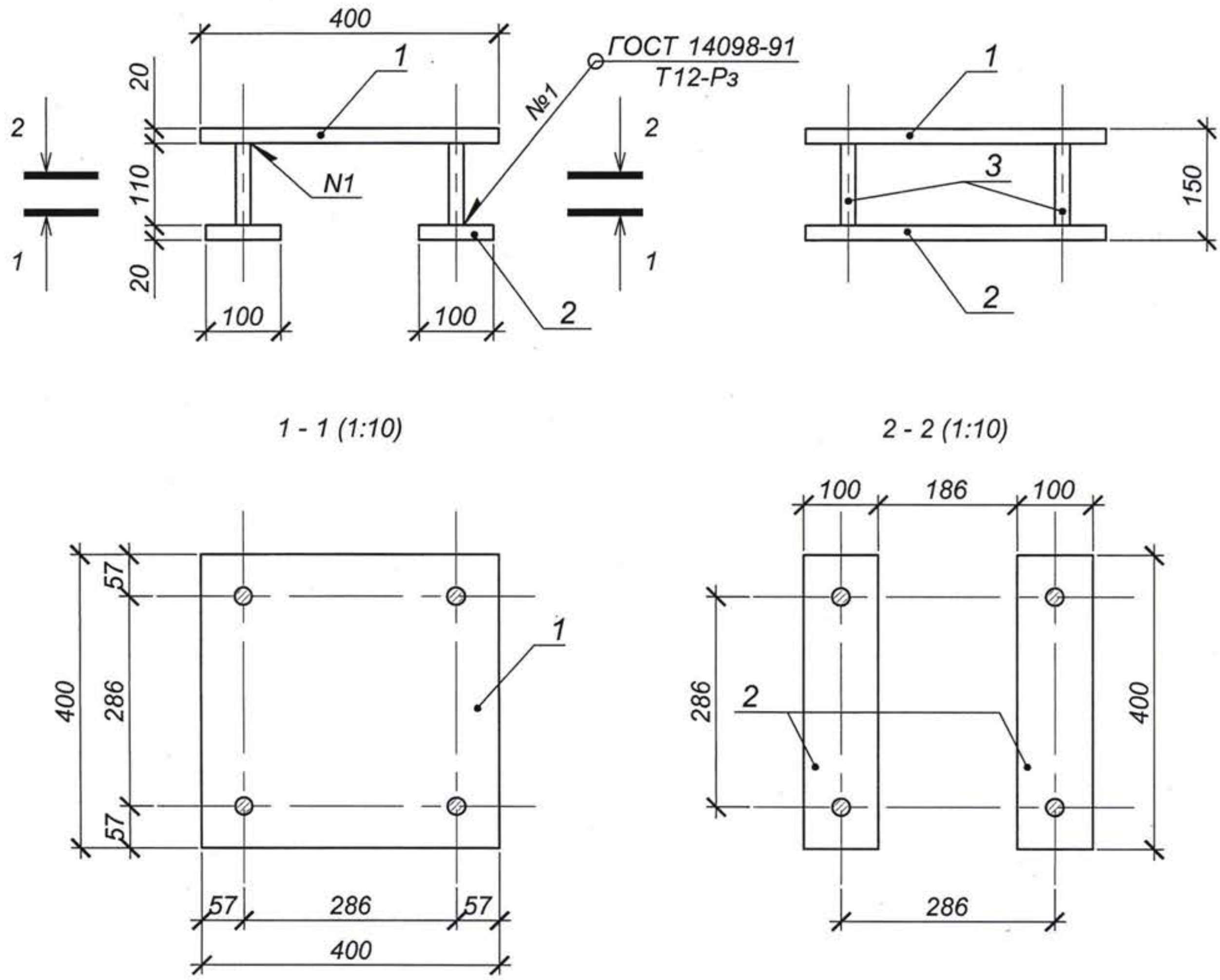
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 122+212.
Bridge, km 122+212.

Metallic header.
Soclu metalic.

Drawing 22-10



Schedule of matrerials per embedded base plate.
Lista de materiale pentru piesa inglobata PI - 1

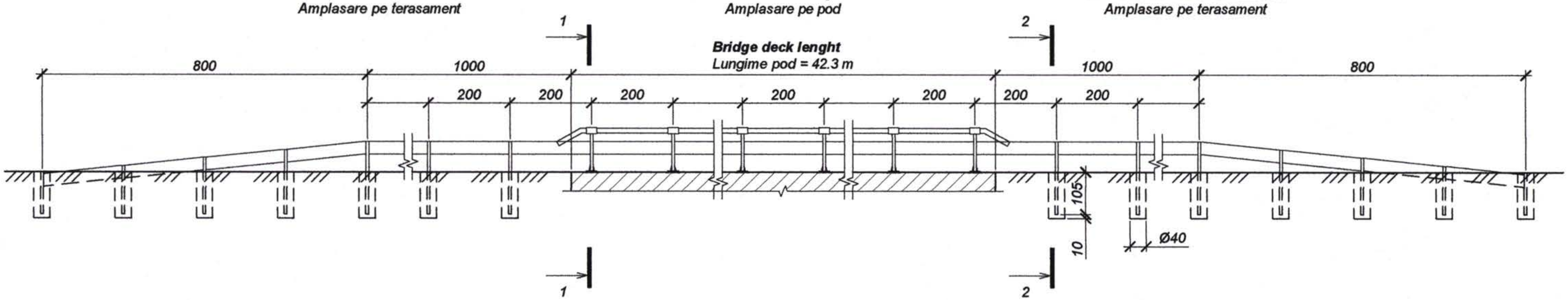
Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Elements Piese			
1		--20x400 L=400, GOST 103 - 2006	1	25.1	
2		--20x100 L=400, GOST 103 - 2006	2	6.3	
3		Ø25 AIII L = 150, GOST 5781 - 82*	4	0.6	

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

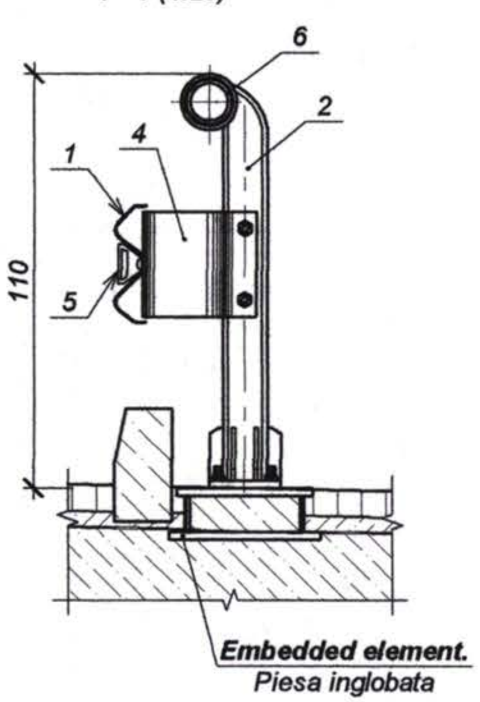
Kocks Consult - Universinj SRL	Pod, km 122+212. Bridge, km 122+212.	Embedded base plate. Piesa inglobata PI - 1	Drawing 22-11

Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)

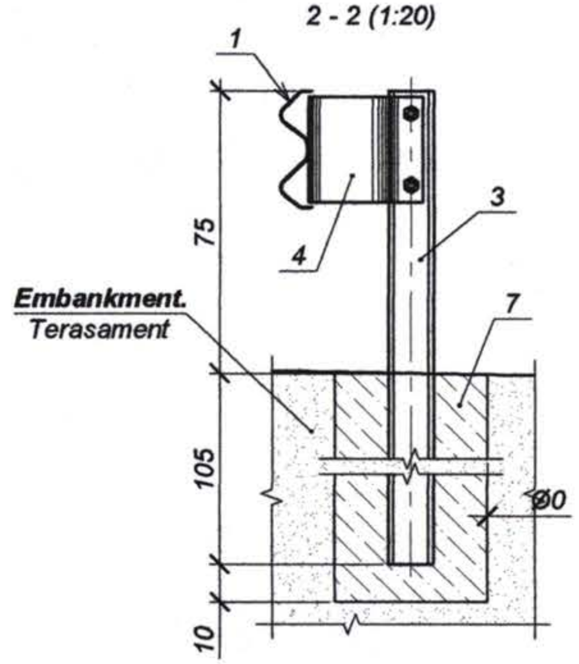
Location on the embankment. *Amplasare pe terasament* — **Location on the bridge deck.** *Amplasare pe pod* — **Location on the embankment.** *Amplasare pe terasament*



1 - 1 (1:20)



2 - 2 (1:20)



Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Elements. Piese			
1		**W-type guard-rail.** Lisa de otel	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** Stilpul parapetului СМ / СМЦ*	1 / 1		
3		**Guard-rail post.** Stilpul parapetului СД-3*, GOST 8239 - 89	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86	set		
5		**Reflector.** Reflector УС-1, GOST 26804 - 86	1	0.1	**for 4m lenght** la 4m lungime
6		**Steel pipe.** Teava de metal Ø 121, δ=8, GOST 8732-78*	1	44.6	
7		**Cast in place concrete.** Beton B25, F200, W6, GOST 26633-91*			0.14 m^3

Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

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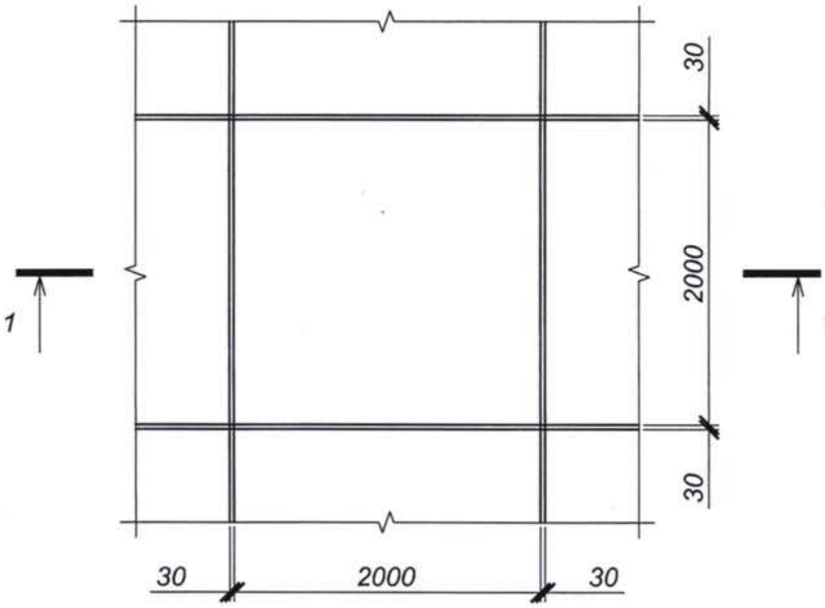
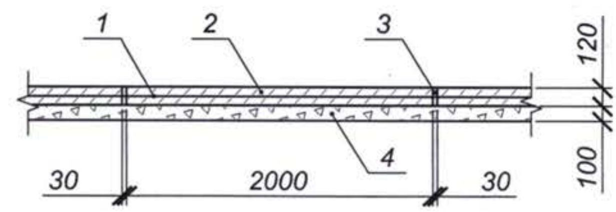
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 122+212. Bridge, km 122+212.
Parapet metalic de siguranta deformabil. Deformable steel guard-rail.
Drawing 22-12



1 - 1 (1:50)

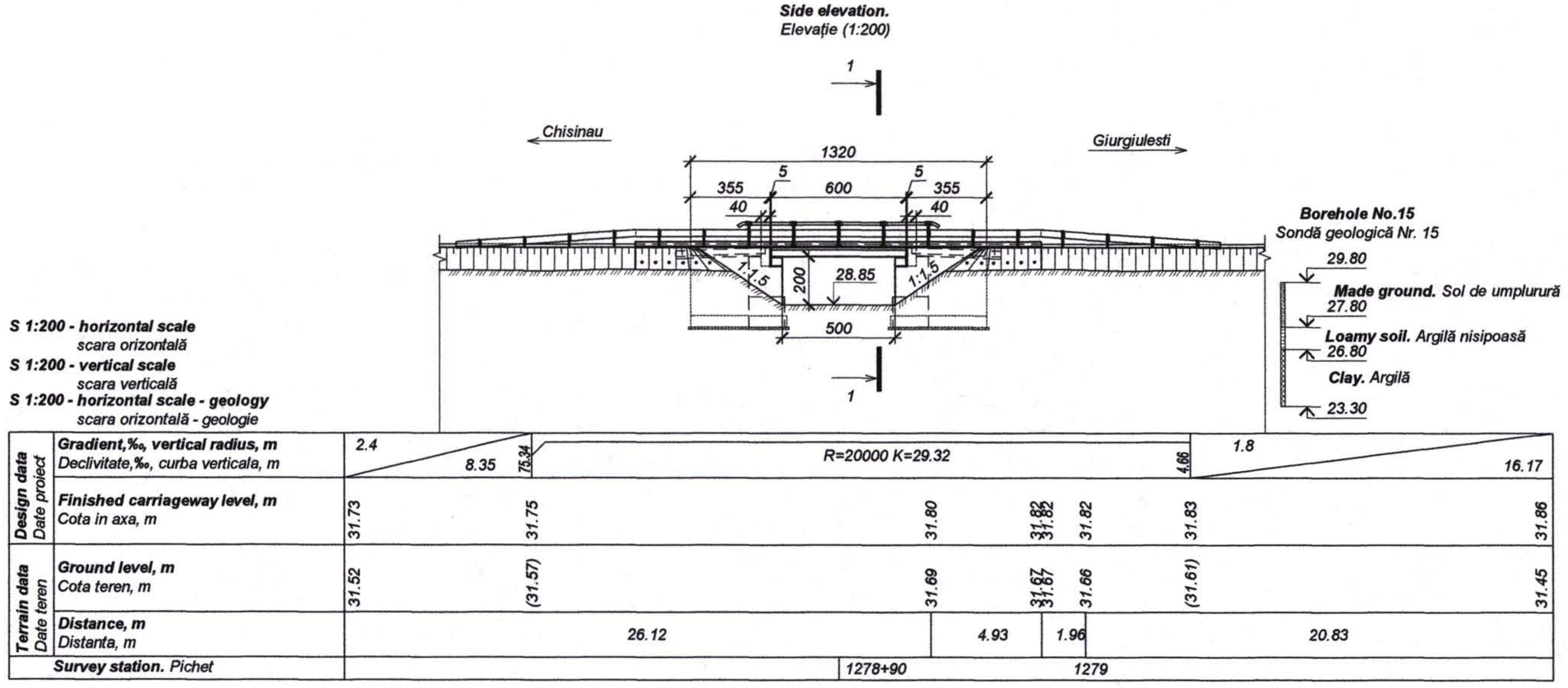


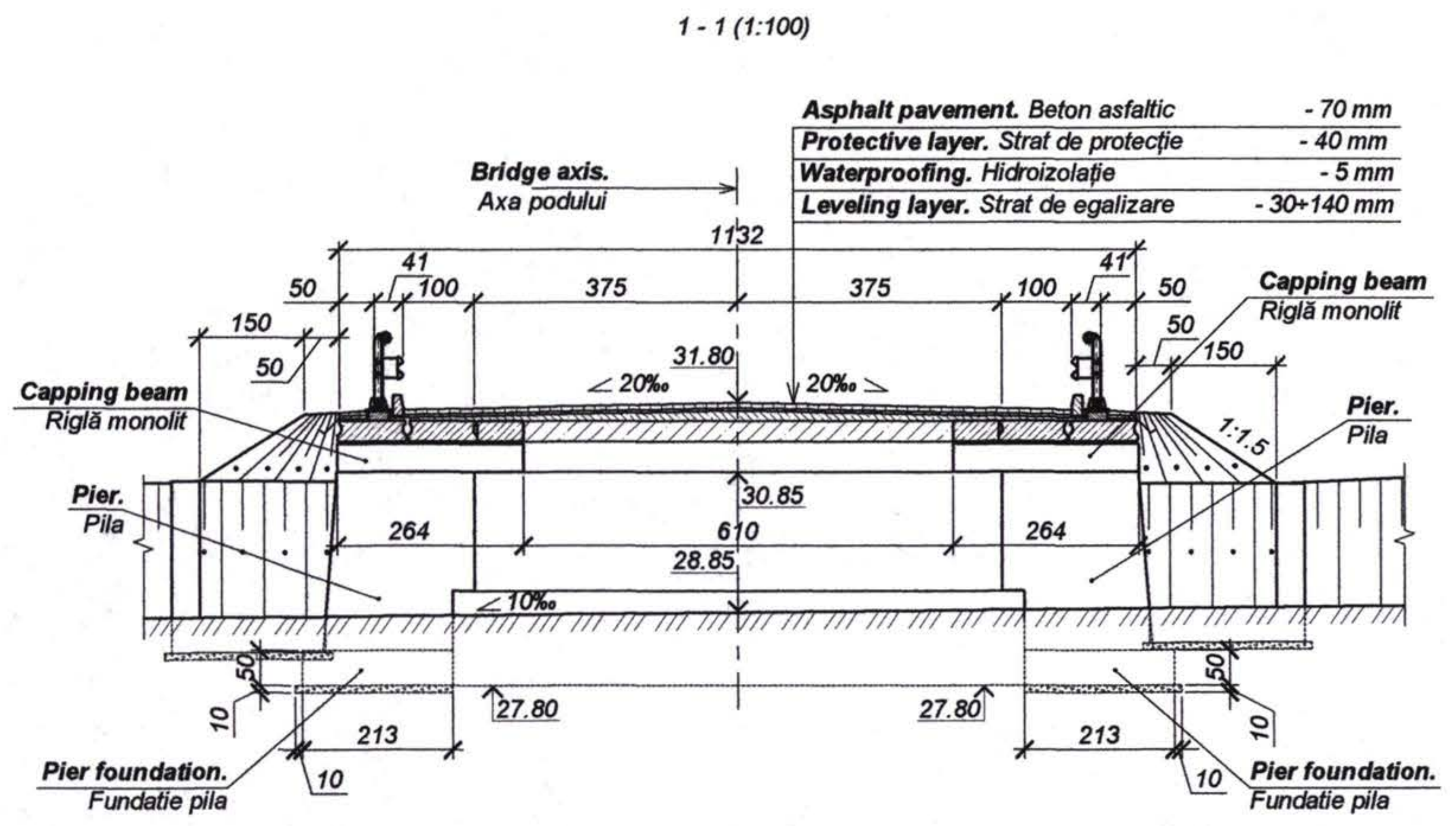
Schedule of matrerials per 1.0m² of stregthening.
Lista de materiale pentru 1.0 m² de consolidare

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
1		**Mesh.** *Plasa Ø6 A-I, GOST 5781-82*, 200x200*		2.2	
2		**Concrete.** *Beton B20, F200, W6, GOST 26633-91**			0.12 m³
3	BCH 32-81	**Bituminous mastic.** *Mastic de bitum*			0.01 m³
4		**Crushed stone h=10 cm.** *Piatra sparta h=10 cm, GOST 8267-93**			0.10 m³

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

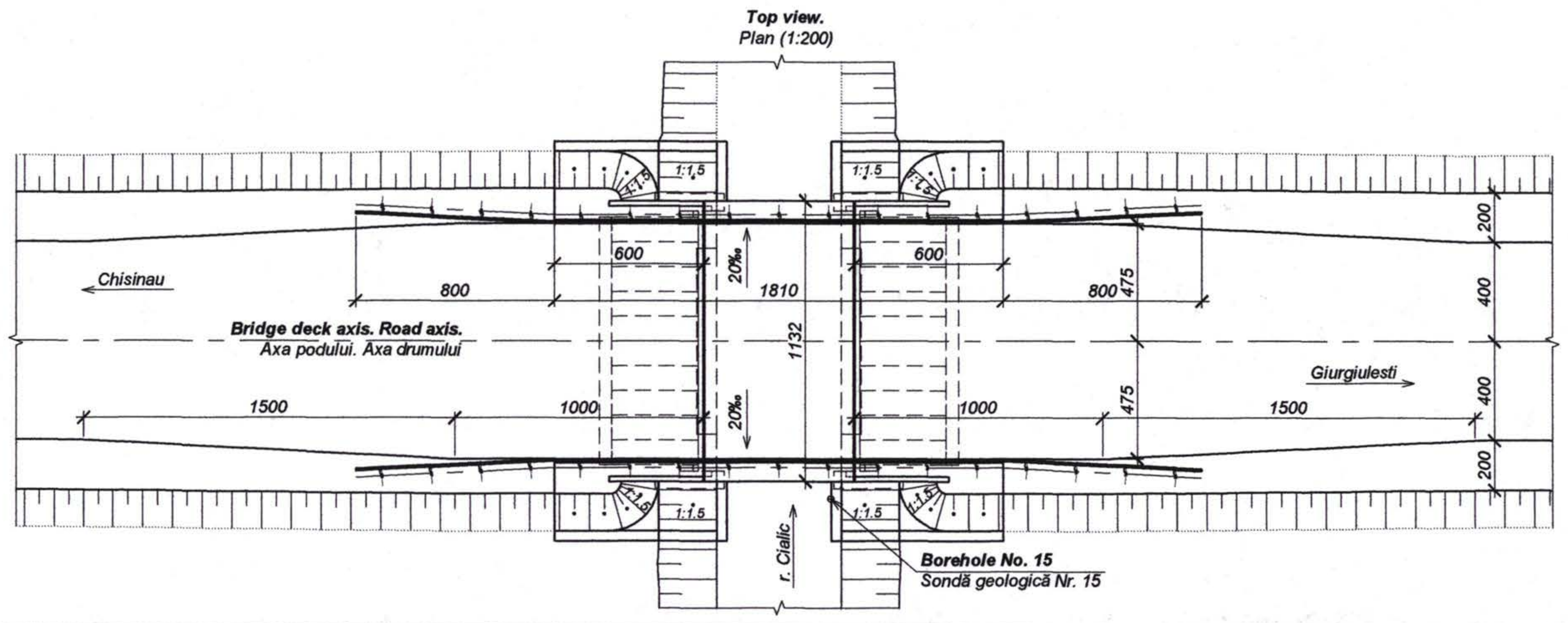
Kocks Consult - Universinj SRL	Pod, km 122+212. Bridge, km 122+212.	Protejarea taluzelor si a albiei cu beton. Slope and channel concrete protection detail.	Drawing 22-13





Quantity list.
Lista de cantitati

No. Art.	Item description. Descrierea articolului	Unit. Unitatea de masura	Quantitiy. Cantitate
1	**Removal of existing structure** Demolarea structurii existente	Cu.m/t	55/0.4
2	**Concrete repair** Repararea betonului degradat	Sq.m	5
3	**Concrete reinforced bridge infrastructure on the earth foundation** Infrastructuri din beton armat pe fundatii directe	Cu. m.	54
4	Superstructure precast reinforced concrete elements Suprastructura din elemente prefabricate din benon armat	Cu. m.	9.2
5	**Concrete slab.** Placa de suprabetonare	Cu. m.	11
6	**Bridge approach** Racordarea podului cu rampele de acces	Cu. m.	20.9
7	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	68
8	**Expansion joints.** Rosturi de dilatatie	m.	23
9	**Bridge safety parapet.** Parapet de siguranta pe pod	m.	12
10	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	56
11	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod	Sq. m.	68
12	**Slope and channel protection.** Protejarea taluzelor si albiei	Sq. m.	80
13	**Bridge approach slab waterproofing** Hidroizolatia dalei de racordare	Sq. m.	80



Hydrological characteristics.
Caracteristici hidrologice

Item. Denumirea	Unit. Unitate	Quantity. Cant.
Design water flow. Debitul de calcul, $Q_{1\%}$	m³/s	22.1
Water level. Nivelul apelor excepționale $NAE_{1\%}$	m	30.18
Flow velocity. Viteza maximă a apei V_{MAX}	m/s	2.26

Note. Notă:
1. **Dimensions in cm.** Dimensiunile în cm.
2. **Altitude mark in m.** Cota în m.
3. **Pickling earth, under the bridge, until the altitude mark 28.85.** Decaparea pămîntului, sub pod, pînă la cota 28.85

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Rev. Rev. | Amendamente Amendments | Aprobat Approved | Data Date

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Data/Date

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Republic of Moldova Ministry of Transport
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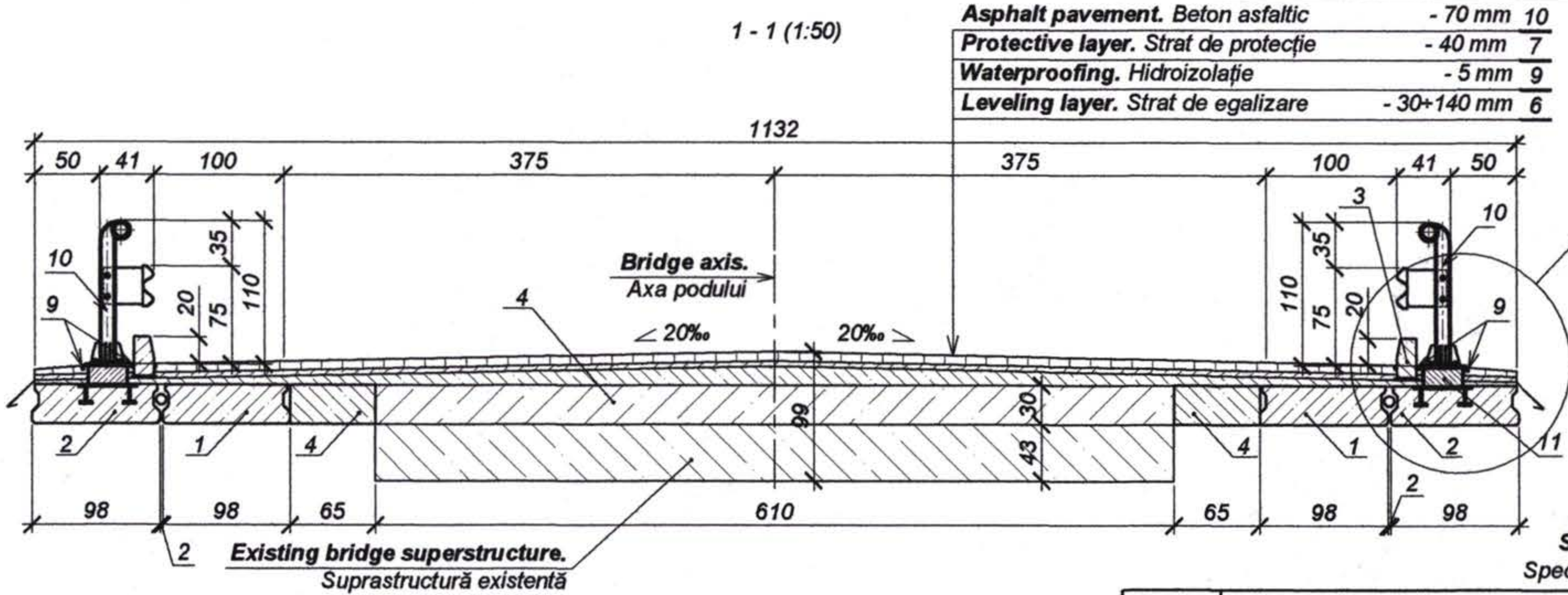
Pod km 127+890
Bridge km 127+890
Dispozitie generala .
General arrangement .

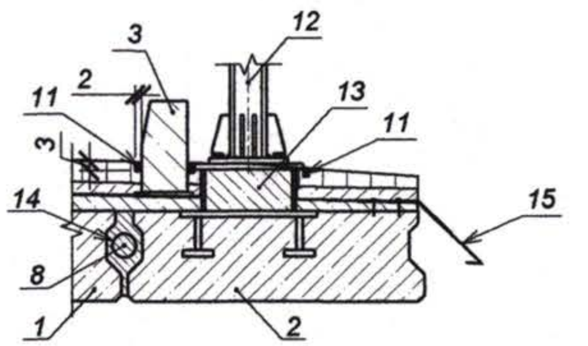
Drawing 23-1

1 - 1 (1:50)

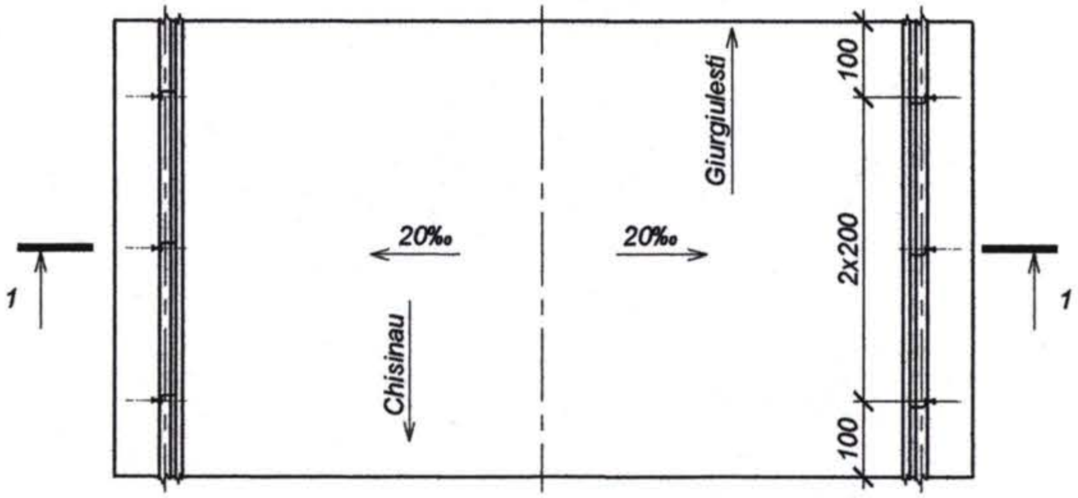


A

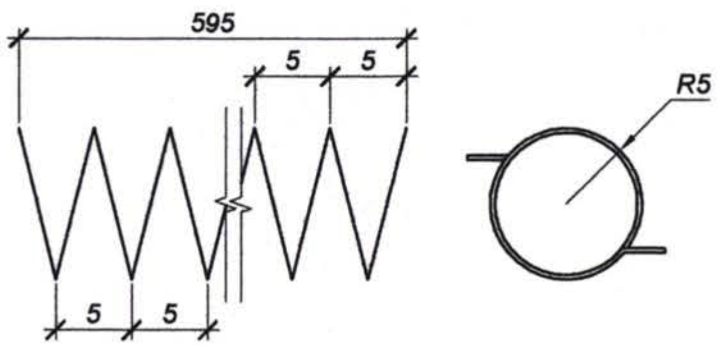
(1:25)



Top view.
Plan (1:100)



poz. 14 (1:5)



Specification for cross section.
Specificația pentru secțiune transversală

Pozitio n. *Poziția*	Reference. *Indicativ*	Item. *Denumirea*	Quantity. *Cant.*	Weight. *Masa, kg*	Note. *Remarcă*
		Pre cast concrete elements *Elemente din beton prefabricate*			
1	Drawing 23-11	**Slab.** Dala D6	2		1.7 m^3
2	Drawing 23-12	**Slab.** Dala D6"	2		1.7 m^3
3		**Curb.** Bordura	12		
		Cast in place concrete elements *Elemente din beton monolit*			
4		**Hearting concrete.** Beton de umplutura B25 F200 W6, GOST 26633-91*			11 m^3
5		**Cast in place, sector betweeen beams.** Sector monolit între dale.	2		1.2 m^3
6		**Leveling layer.** Strat de egalizare			5.7 m^3
7	Pr. tip Seria 3.503.1 - 101 Editia 0	**Protective layer of reinforced concrete.** Strat de protecție, beton B27.5, F200, W6, h=4cm			2.7 m^3
8		**Concrete.** Beton B 30 F200 W6, GOST 26633-91*	2		0.1 m^3
		The rest elements *Diverse*			
9		**Water proofing,membrane.** Hidroizolare, membrană, h=0.5cm			68 m^2
10		**Stone mastic asphalt concrete.** Beton asfaltic, h=7cm			4.7 m^3
11		**Bitumen mastic** Mastic bituminos			19.6 l
12	Drawing 23-13	**Bridge guardrails.** Parapeti metalici de siguranta			12 m
13	Drawing 23-14	**Metallic header.** Soclu metalic	6	34.8	
14		**Spiral.** Spirala Ø3 Bp L=36.6m GOST 7348-81	2	2.03	
15		Bucla de scurgere BS-1	2	8.30	

Note. *Nota:*
Dimensions in cm. *Dimensiunile în cm.*

Shimb. nr. inv. | Semnat la data | Nr. inv. orig.

Rev. Rev. | Amendamente Amendments | Aprobat Approved | Data Date

Consultantii/Consultants:

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Proiectat/Designed: Cusnir G. | Desenat/Drawn: Bodiu C.
Verificat/Checked: | Data/Date

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EU Delegation to Moldova

Republic of Moldova Ministry of Transport

Marimea originala a desenului / Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

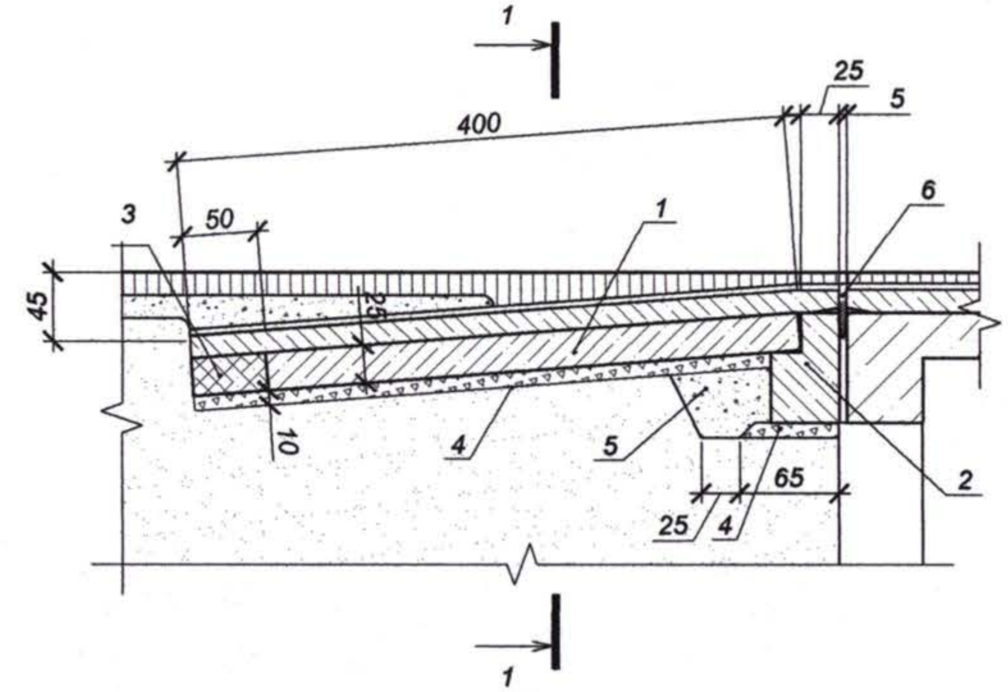
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod km 127+890
Bridge km 127+890

Sectiune transversala.
Cross section.

Drawing 23-2

Bridge approach slab.
Racordarea podului cu terasamentul (1:50)

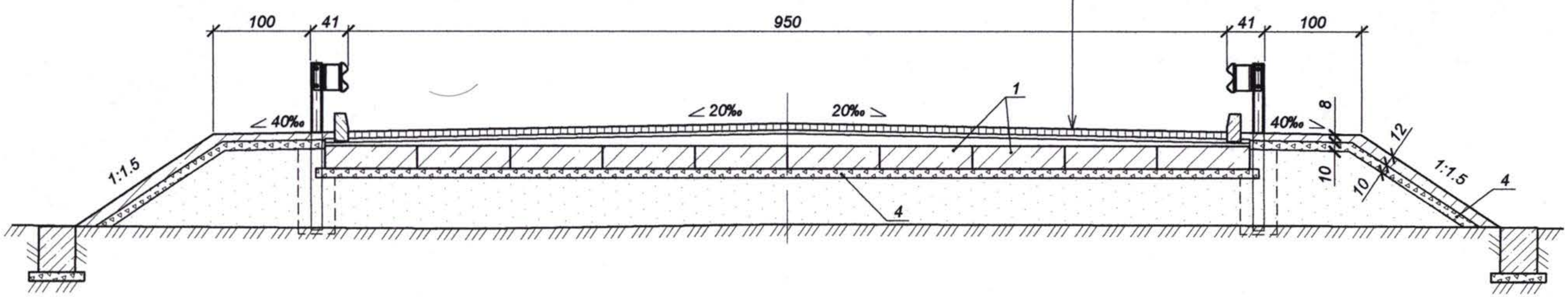


Quantities for approach slab.
Specificația pentru racordarea podului cu terasamentul

Pozition. Poziția	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarcă
1		**Approach slab.** Placa de racordare PR 1-4	10	2100	0.84 m³
2		**Safety wall.** Zid de gardă	1		3.14 m³
3		**In-situ concrete between PC approach slabs.** Nodul monolit a plăcilor de racordare			1.6 m³
	Pr. tip Seria 3.503.1 - 101 Ediția 0	**Regulating concrete layer.** Strat de egalizare, beton cl.B25, F200, W6, h=4cm			1.2 m³
	Pr. tip Seria 3.503.1 - 101 Ediția 0	**Protective layer of reinforced concrete.** Strat de protecție, beton cl.B25, F200, W6, h=4cm			1.6 m³
	BCH 32 - 81	**Water proofing,membrane.** Hidroizolare, membrană, h=0.5cm			40 m²
4		**Crushed stone bed.** Pat din piatră spartă M400, h=40cm			8 m³
5		**Sand and gravel.** Nisip cu petriș			4.60 m³
6		**Expanssion joints.** Rost de dilatație			11.32 m

1 - 1 (1:50)

Asphalt pavement. Beton asfaltic	- 70÷200 mm
Protective layer. Strat de protecție	- 40 mm
Waterproofing. Hidroizolație	- 5 mm
Leveling layer. Strat de egalizare	- 30÷150 mm



Note. *Notă:*
1. Dimensions in cm.
1. Dimensiunile în cm.

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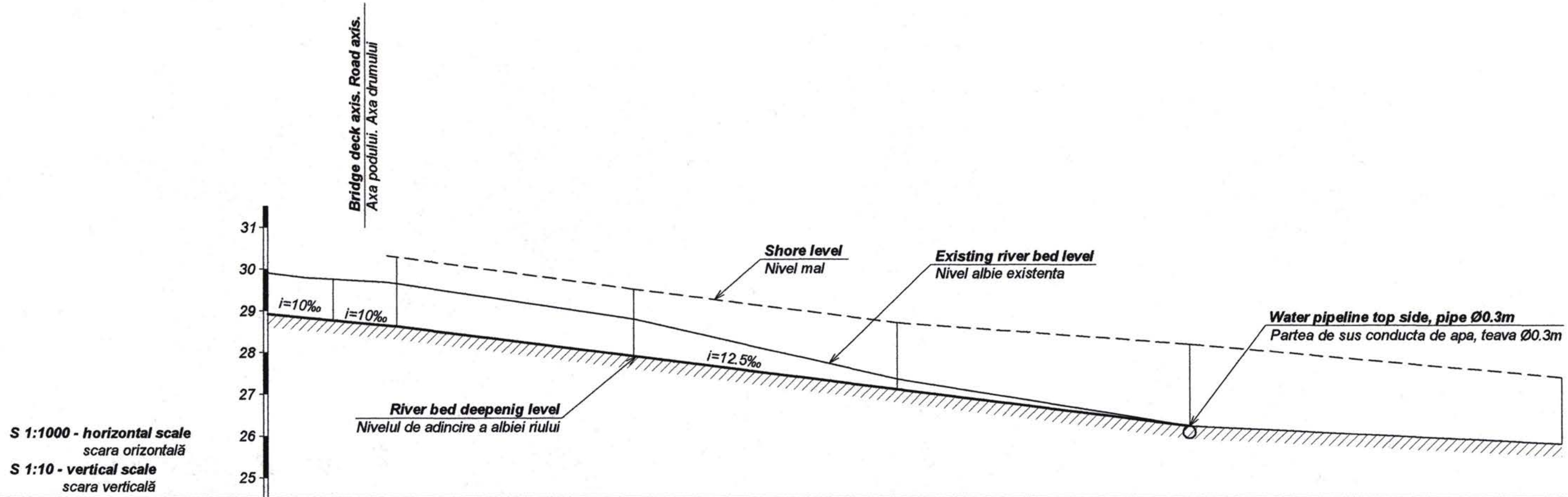
Pod km 127+890
Bridge km 127+890

Racordarea podului cu terasamentul
Bridge approach.

Drawing 23-3 A3

Longitudinal profile of river Cialic bed deepenig.
Profil lungitudinal a adincire a albiei riului Cialic



Distance, m. *Distanta, m*	6.60	7.65	7.65	56.60		63.00	70.00	89.00	
Existing riverbed level/Shore level, m *Cota albie existenta/Cota mal, m*	29.80			28.81/29.52	28.81/29.52	27.38/28.73	26.70/28.21		26.70/28.21
Altitude mark of river bed deepenig, m. *Cota de adincire a albiei riului, m*	29.80	28.78	28.85	28.62	27.92	27.12	26.25		
Survey station. *Pichet*									

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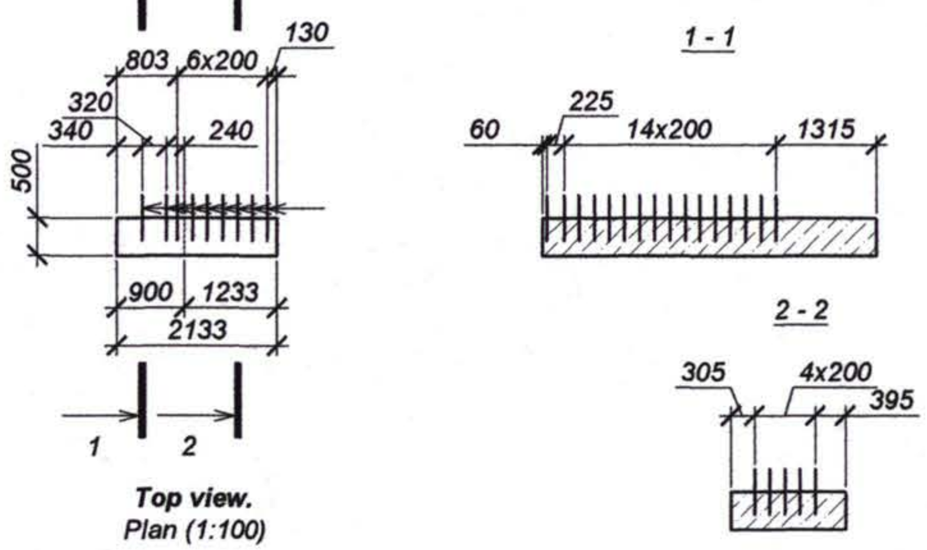
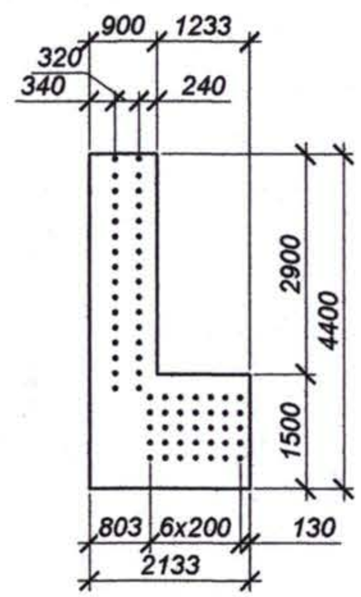
Pod km 127+890 — Profil lungitudinal a adincire a albiei riului Cialic.
Bridge km 127+890 — Longitudinal profile of river Cialic bed deepenig.

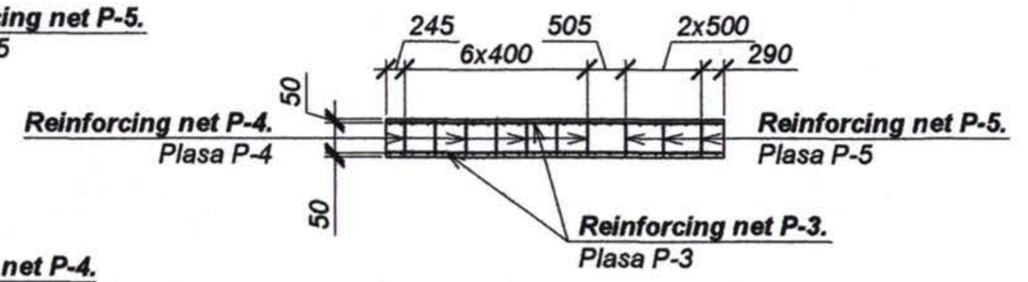
Drawing 23-4 1 A3

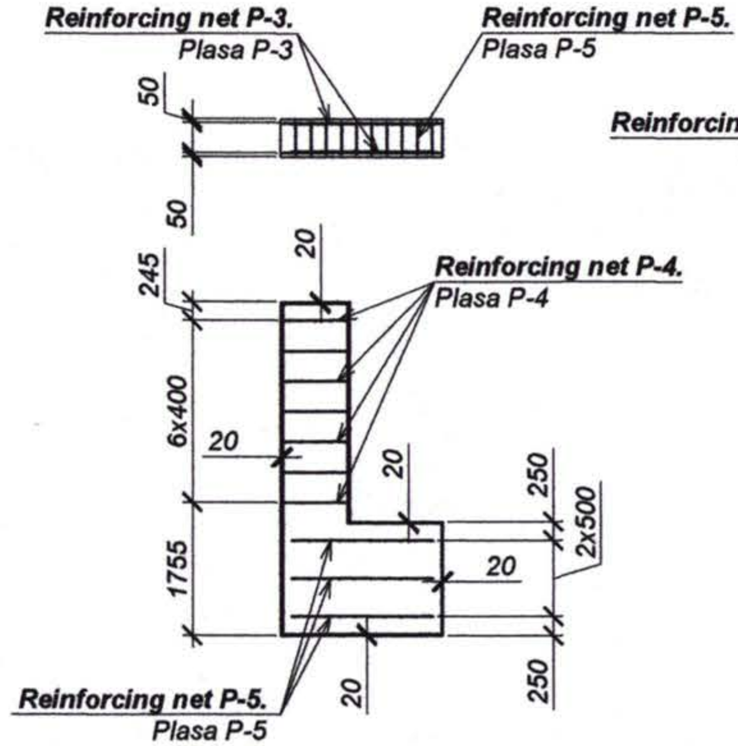
Pier foundation. Formwork.
Fundatie pila. Schema de cofraj (1:100)



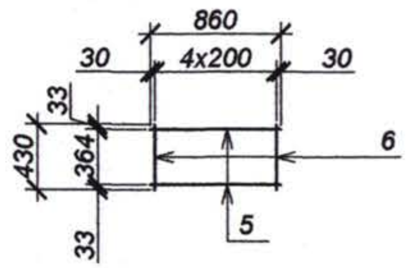


Pier foundation. Reinforcement scheme.
Fundatie pila. Schema de armare (1:100)

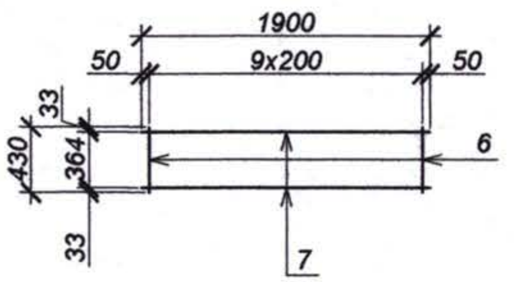




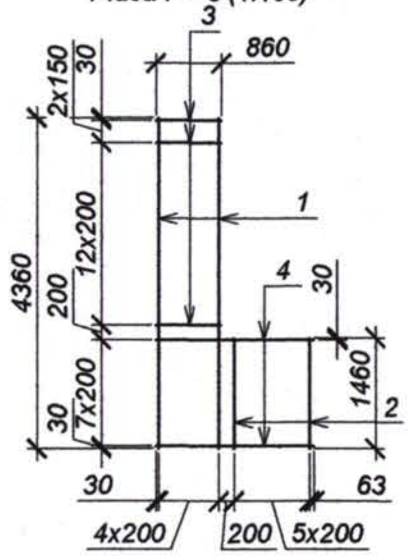
Reinforcing net P - 4.
Plasa P - 4 (1:50)



Reinforcing net P - 5.
Plasa P - 5 (1:50)



Reinforcing net P - 3.
Plasa P - 3 (1:100)



Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element Type / Marca elementului	Reinforcing pieces. Piese de armare					Embedded pieces. Piese inglobate			Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa				Totals. Linia totalului	Reinforcing bar type. Armatura de clasa		Totals. Linia totalului	
	A-I Cm3cп GOST 5781-82*		A-III 25Г2С GOST 5781-82*			A-III 25Г2С GOST 5781-82*			
	Ø6	Total	Ø10	Total		Ø10	Total		
	11.7	11.7	74.2	74.2	85.9	24.1	24.1	24.1	110.0

Pozition. Poziția	Reference. Indicativ	Item. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Remarcă
		Reinforcing net P - 3. Plasa P - 3	2	37.12	
1		Ø10 A-III L=4360 GOST 5781-82	5	2.69	
2		Ø10 A-III L=1460 GOST 5781-82	6	0.90	
3		Ø10 A-III L=860 GOST 5781-82	15	0.53	
4		Ø10 A-III L=2093 GOST 5781-82	8	1.29	
		Reinforcing net P - 4. Plasa P - 4	7	0.88	
5		Ø6 A-I L=860 GOST 5781-82	2	0.19	
6		Ø6 A-I L=430 GOST 5781-82	5	0.10	
		Reinforcing net P - 5. Plasa P - 5	3	1.84	
7		Ø6 A-I L=1900 GOST 5781-82	2	0.42	
6		Ø6 A-I L=430 GOST 5781-82	10	0.10	
		Embeded pieces. Piese inglobate			
8		Ø10 A-III L=600 GOST 5781-82	65	0.37	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			2.9 m^3

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Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

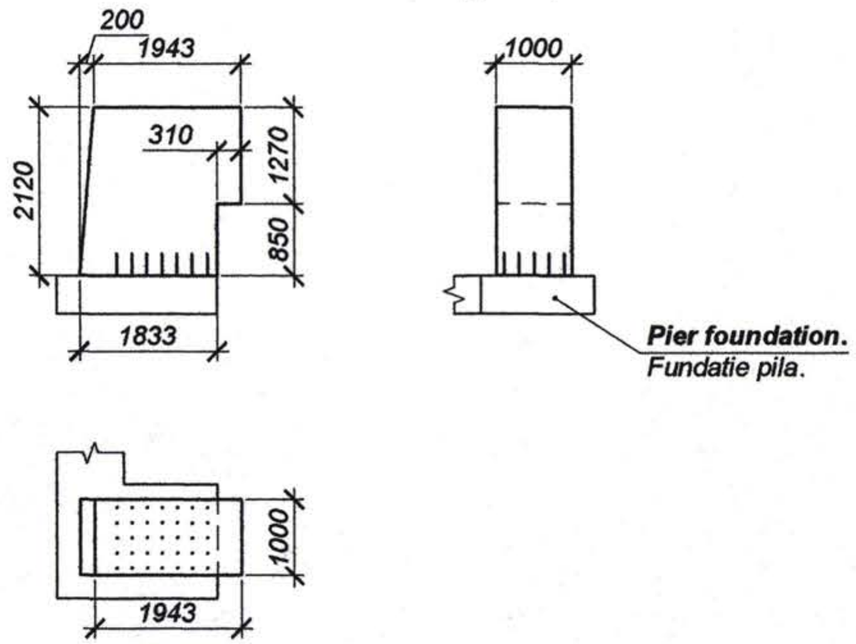
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod km 127+890
Bridge km 127+890

Fundatie pila.
Pier foundation.

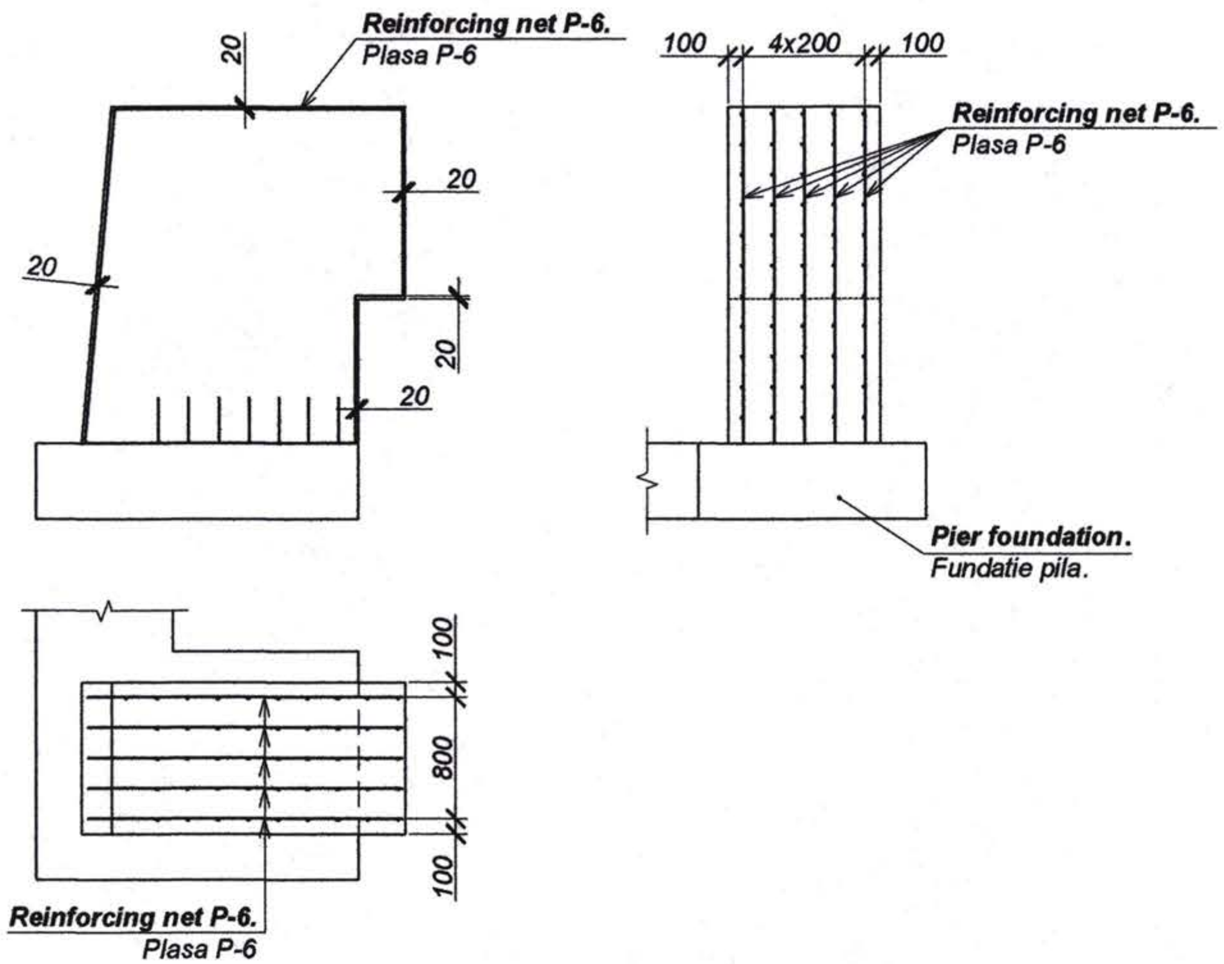
Drawing 23-5

Pier. Formwork.
Pila. Schema de cofraj (1:100)

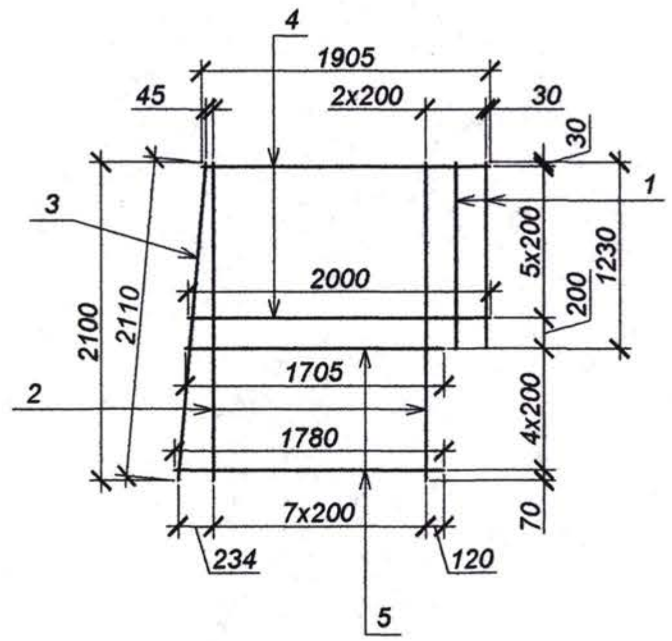


Pozition. Poziția	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarcă
		Reinforcing net P - 6. Plasa P - 6	5	25.88	
1		Ø10 A-III L=1230 GOST 5781-82	2	0.76	
2		Ø10 A-III L=2100 GOST 5781-82	8	1.30	
3		Ø10 A-III L=2110 GOST 5781-82	1	1.30	
4		Ø10 A-III L=1905÷2000 L_{MED}=1953 GOST 5781-82	6	1.21	
5		Ø10 A-III L=1705÷1780 L_{MED}=1743 GOST 5781-82	5	1.08	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			4.1 m³

Pier. Reinforcement scheme.
Pila. Schema de armare (1:50)



Reinforcing net P - 6.
Plasa P - 6 (1:50)



Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element Type Marca elementului	Reinforcing pieces. Piese de armare Reinforcing bar type. Armatura de clasa A-III 25Г2С GOST 5781-82* Ø10	Total	Totals. Linia totalului	Overall weight. Greutate totala
	129.4	129.4	129.4	129.4

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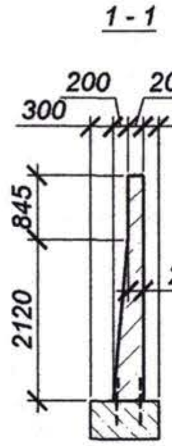
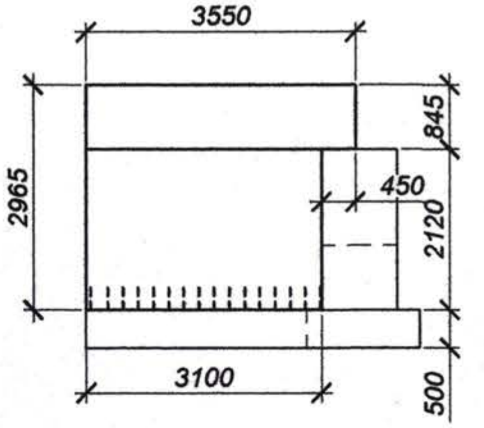
Pod km 127+890
Bridge km 127+890

Pila.
Pier.

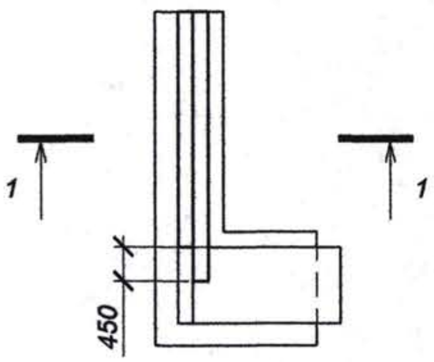
Drawing 23-6

End wall. Formwork.
Zid intors. Schema de cofraj (1:100)





Top view.
Plan (1:100)



Reinforcement cage CR-1
Carcasa CR - 1 (1:50)

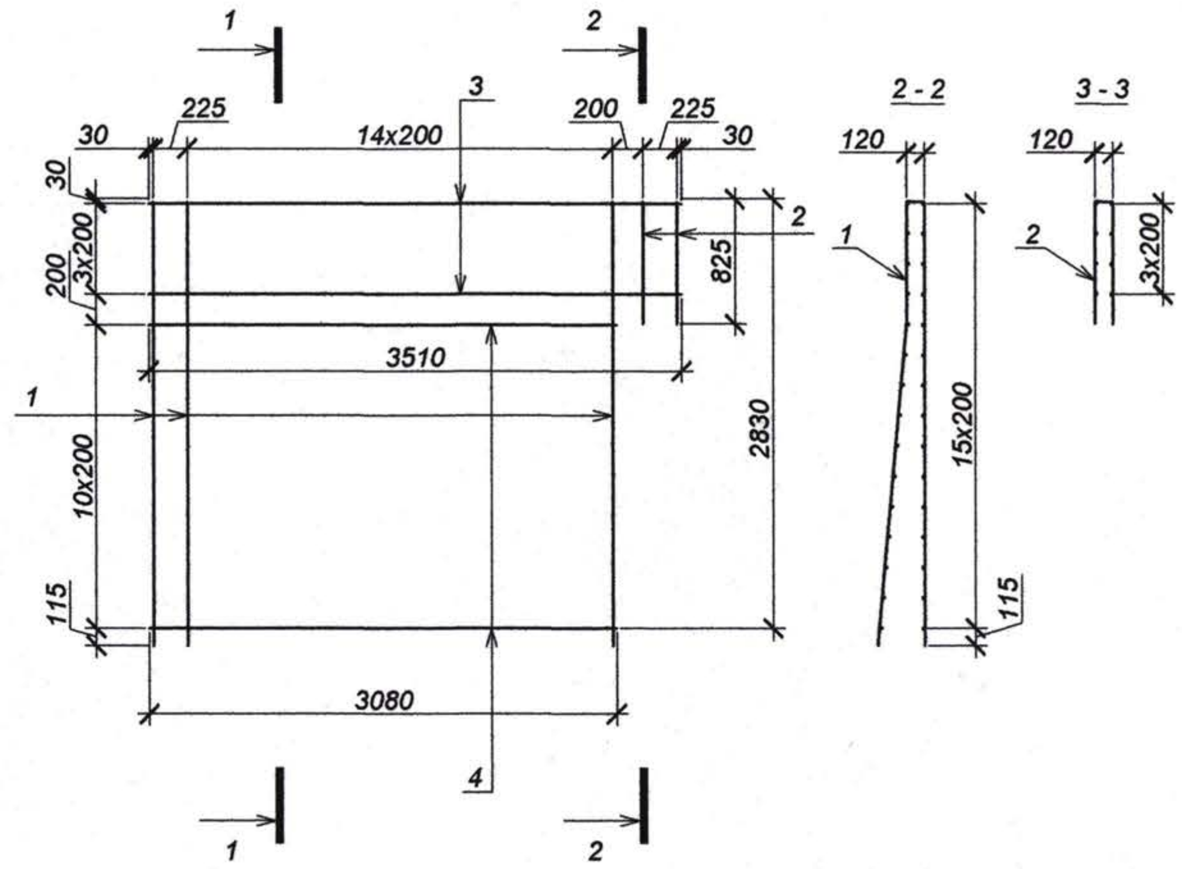
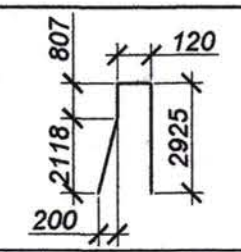
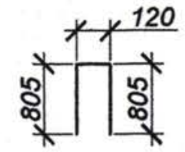
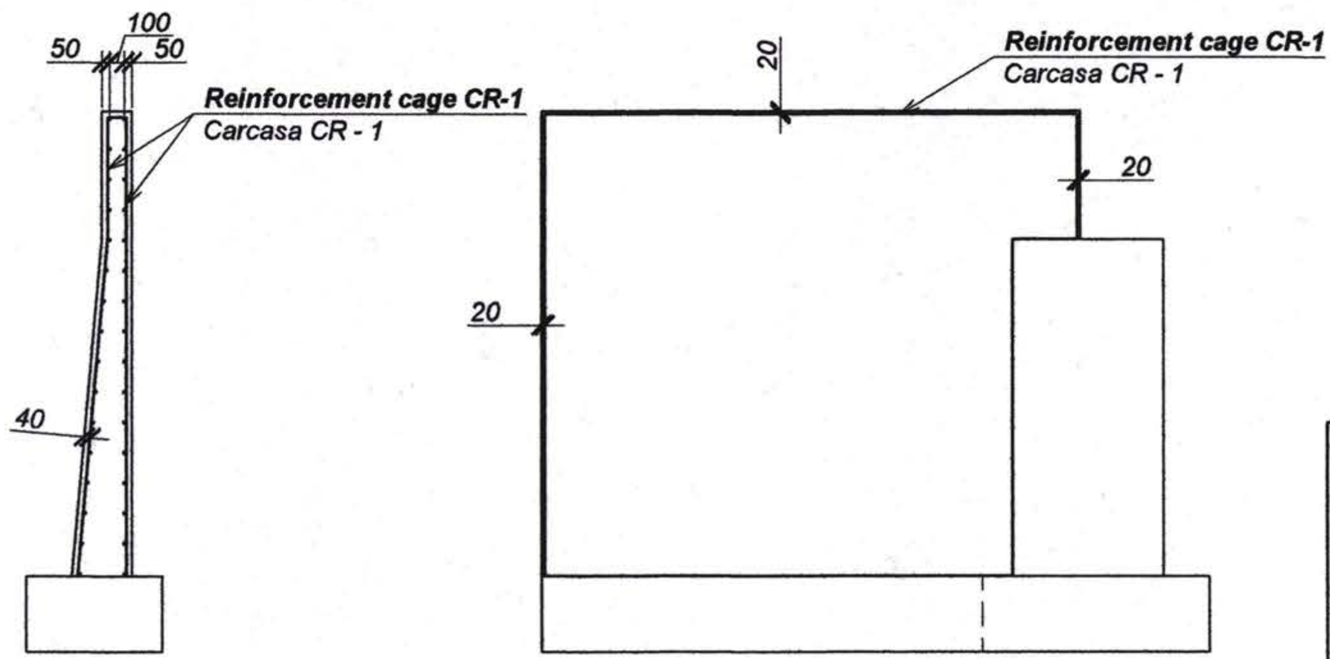


Table of elements.
Tabela pieselor

Pozition. Poz.	**Shape.** Eschiz
1	
2	

End wall. Reinforcement scheme.
Zid intors. Schema de armare (1:50)



Pozition. Poziția	**Reference.** Indicativ	**Item.** Denumirea	**Quantity.** Cant.	**Weight.** Masa, kg	**Note.** Remarcă
		Reinforcement cage CR-1 Carcasa CR - 1	1	120.34	
1		Ø10 A-III L=5979 GOST 5781-82	16	3.69	
2		Ø10 A-III L=1730 GOST 5781-82	2	1.07	
3		Ø10 A-III L=3510 GOST 5781-82	8	2.17	
4		Ø10 A-III L=3080 GOST 5781-82	22	1.90	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			$2.6\ m^3$

Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element Type Marca elementului	**Reinforcing pieces.** Piese de armare			**Overall weight.** Greutate totala
	Reinforcing bar type. Armatura de clasa		**Totals.** Linia totalului	
	A-III 25Г2С			
	GOST 5781-82*			
	Ø10	Total		
	120.3	120.3	120.3	120.3

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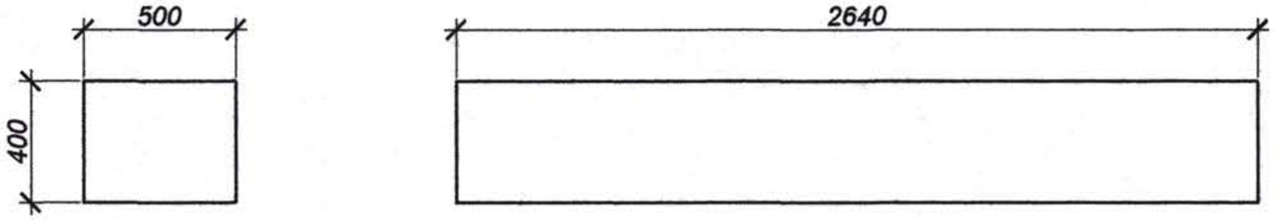
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod km 127+890
Bridge km 127+890

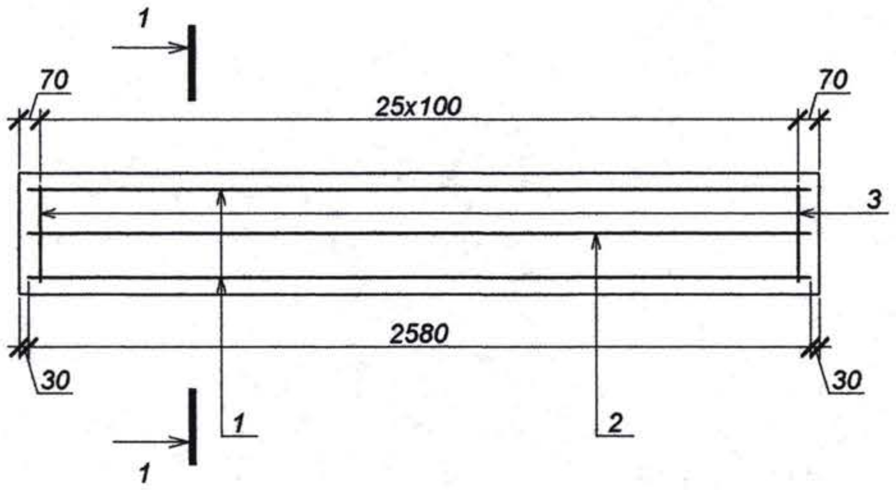
Zid intors.
End wall.

Drawing 23-7

Cast in place, capping beam. Formwork.
Riglă monolit. Schema de cofraj (1:25)



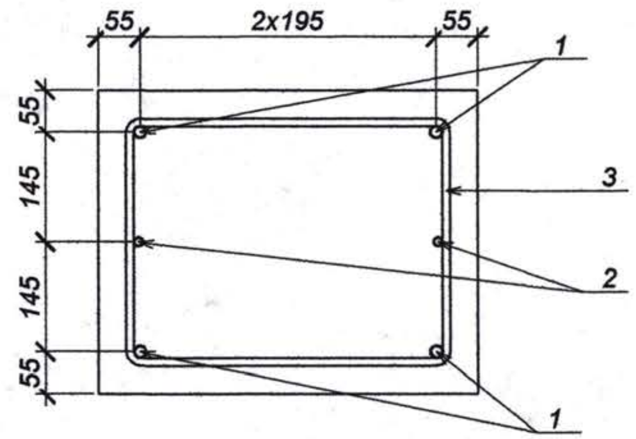
Cast in place, capping beam. Reinforcement scheme.
Riglă monolit. Schema de armare (1:25)



Quantities for safety wall.
Specificația pentru zid de gardăSpecificație

Pozitio n. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		Ø16 A-III L=2580 GOST 5781-82	4	4.08	
2		Ø16 A-III L=2580 GOST 5781-82	2	2.29	
3		Ø10 A-I L=1544 GOST 5781-82	26	0.95	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			0.53 m^3

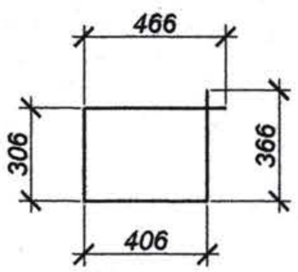
1-1 (1:10)



Consumption of steel, kg.
Măsurătoare consum de metal, kg

Element type. Tip element	Reinforcing pieces. Piese de armare						Overall weight. Greutate totala
	Bar type. Armătură clasa					Totals. Linia totalului	
	A-I Cm3cп		A-III 25Г2С				
	GOST 5781-82*		GOST 5781-82*				
	Ø10	Total	Ø12	Ø16	Total		
	24.7	24.7	4.6	16.32	20.9	45.6	45.6

Poz. 3 (1:25)



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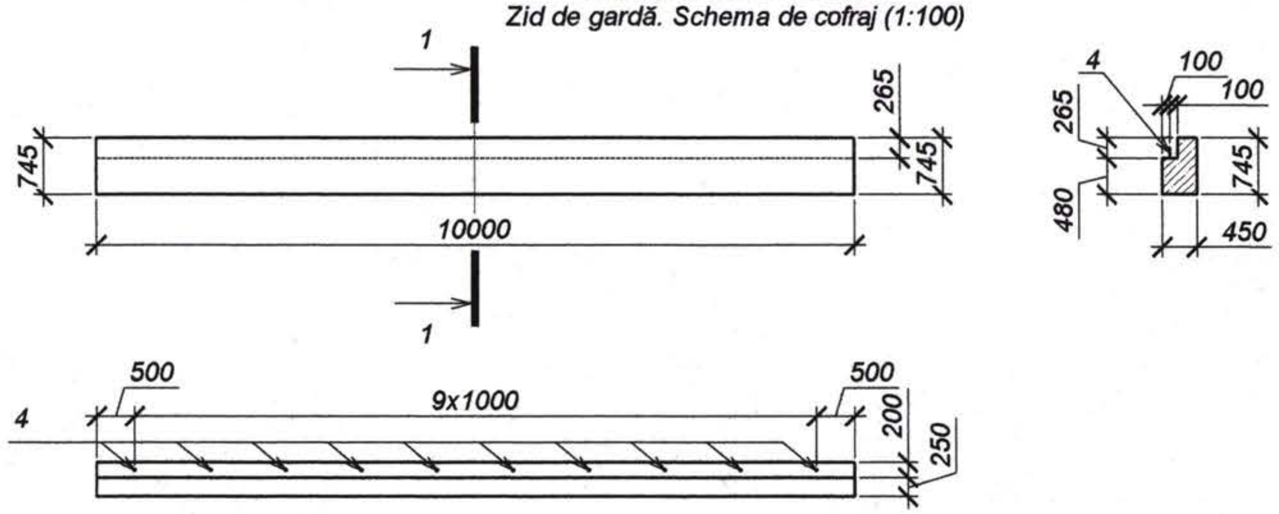
Pod km 127+890
Bridge km 127+890

Riglă monolit.
Cast in place, capping beam.

Drawing 23-8 A3

Safety wall. Formwork.
Zid de gardă. Schema de cofraj (1:100)



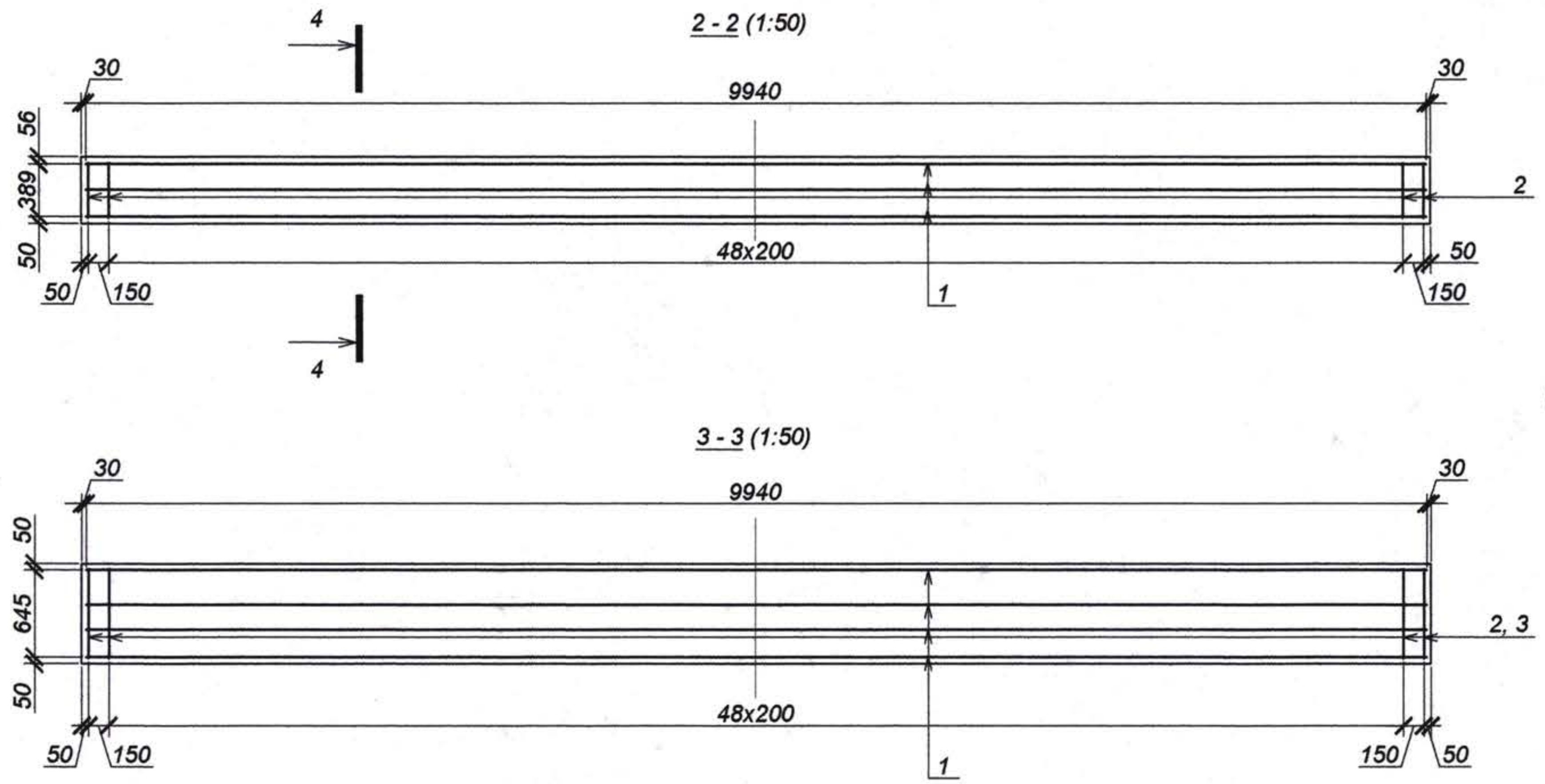
Schedule of materials for safety wall
Lista de materiale pentru zid de garda

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		Ø10 A-III L=9940 GOST 5781-82	11	6.13	
2		Ø10 A-III L=1598 GOST 5781-82	51	0.99	
3		Ø10 A-III L=1730 GOST 5781-82	51	1.07	
		Embedded pieces Piese înglobate			
4		Ø22 A I L=560 GOST 5781-82	10	1.67	
		Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			2.87 m³

Safety wall. Reinforcement scheme.
Zid de gardă. Schema de armare (1:100)

2 - 2 (1:50)

3 - 3 (1:50)



4 - 4 (1:20)

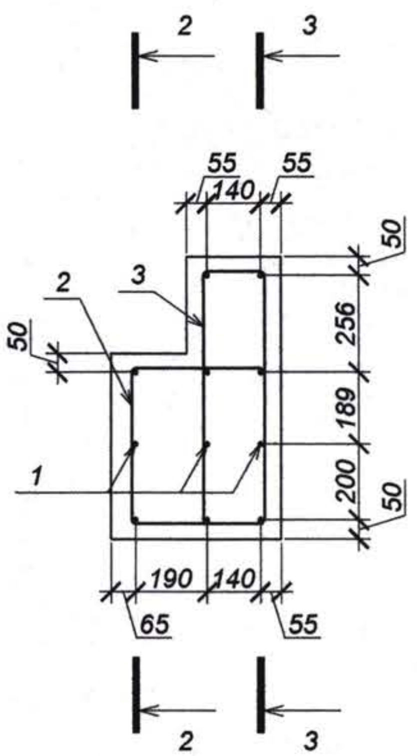


Table of elements.
Tabela pieselor

Pozition. Pozitia	Sketch. Schita
2	400; 399; 459; 340
3	210; 655; 715; 150

Consumption of steel, kg.
Măsurătoare consum de metal, kg

Element type. Tip element	Reinforcing pieces. Piese de armare			Embedded pieces. Piese inglobate			Overall weight. Greutate totala
	Bar type. Armătură clasa A-III 25Г2С GOST 5781-82*		Totals. Linia totalului	Bar type. Armătură clasa A-I Ст3сп GOST 5781-82*		Totals. Linia totalului	
	Ø10	Total		Ø22	Total		
	172.5	172.5	172.5	16.7	16.7	16.7	189.2

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Pod km 127+890
Bridge km 127+890

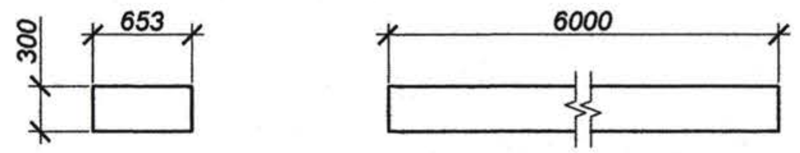
Zid de gard a.
Safety wall.

Drawing 23-9 A3

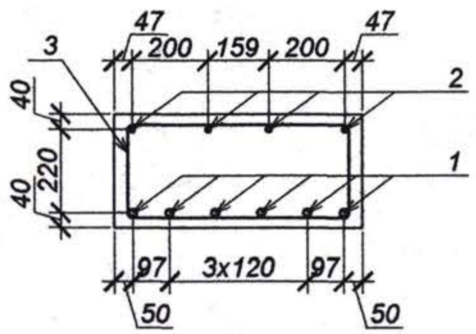
Quantities for sector betweeen beams.
Specificația pentru sector monolit între dale

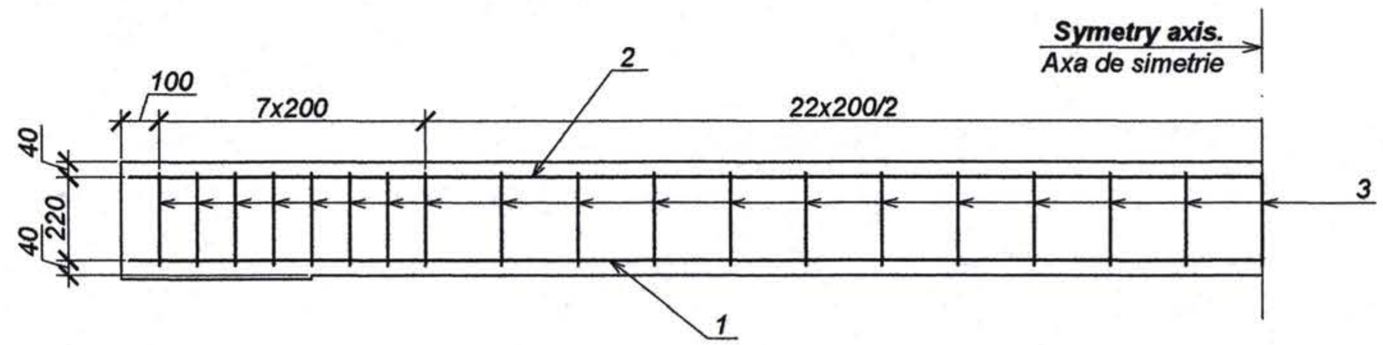
Poz.	Indicativ	Denumire	Cant.	Masa, kg	Remarcă
1		Ø20 A-III L=5960 GOST 5781-82	6	14.7	
2		Ø14 A-III L=5960 GOST 5781-82	4	7.2	
3		Ø8 A-I L=1772 GOST 5781-82	37	0.7	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6 GOST 26633-91*			1.2 m³

Cast in place, sector betweeen beams. Formwork.
Sector monolit între dale. Schema de cofraj (1:50)

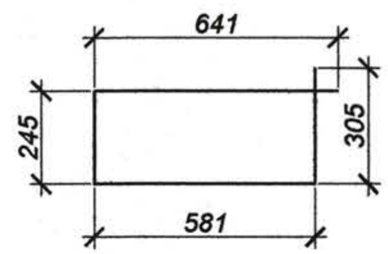


Cast in place, sector betweeen beams. Reinforcement scheme.
Sector monolit între dale. Schema de armare (1:20)





poz. 3 (1:20)



Consumption of steel, kg.
Măsurătoare consum de metal, kg

Element type. Tip element	**Reinforcement.** Confecții din armatură						**Total weight.** Greutate totală
	Bar type. Armătură clasa					**Total line.** Linia totalului	
	A-I Cm3cn GOST 5781-82*		A-III 25Г2C GOST 5781-82*				
	Ø8	Total	Ø14	Ø20	Total		
	25.9	25.9	28.8	88.2	117.0	142.9	142.9

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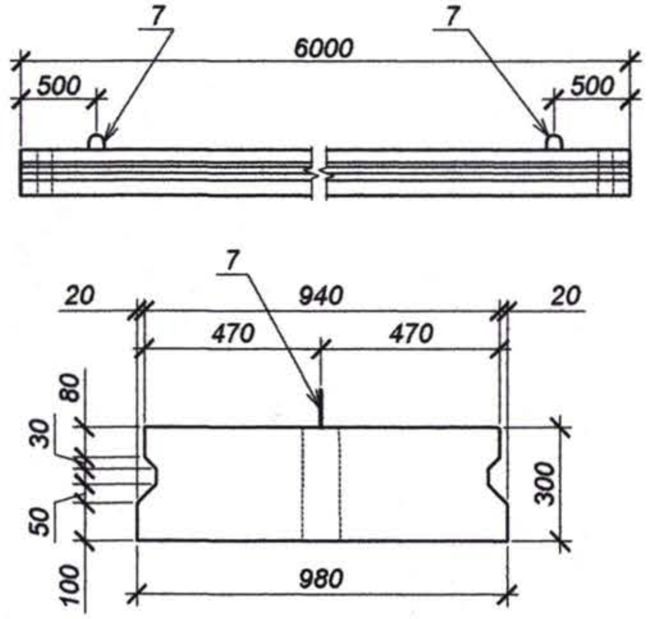
Pod km 127+890
Bridge km 127+890

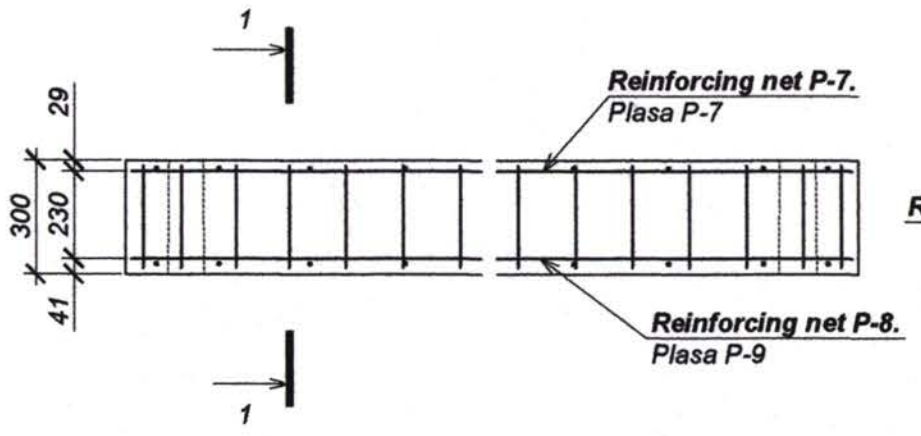
Sector monolit între dale.
Cast in place, sector betweeen beams.

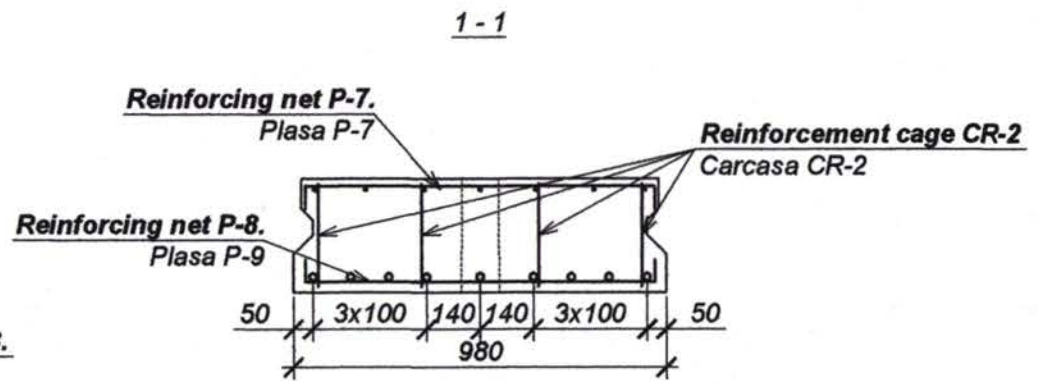
Drawing 23-10 A3

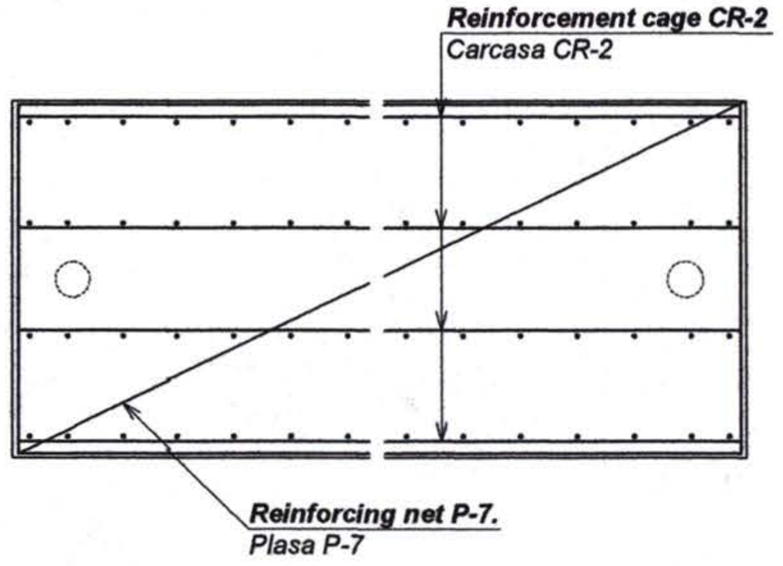
Slab D6. Formwork.
Dala D6. Schema de cofraj (1:50)



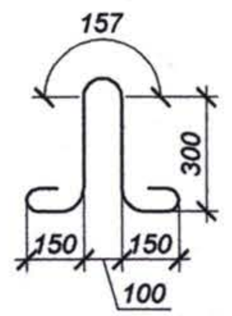
Slab D6. Reinforcement scheme.
Dala D6. Schema de armare (1:20)



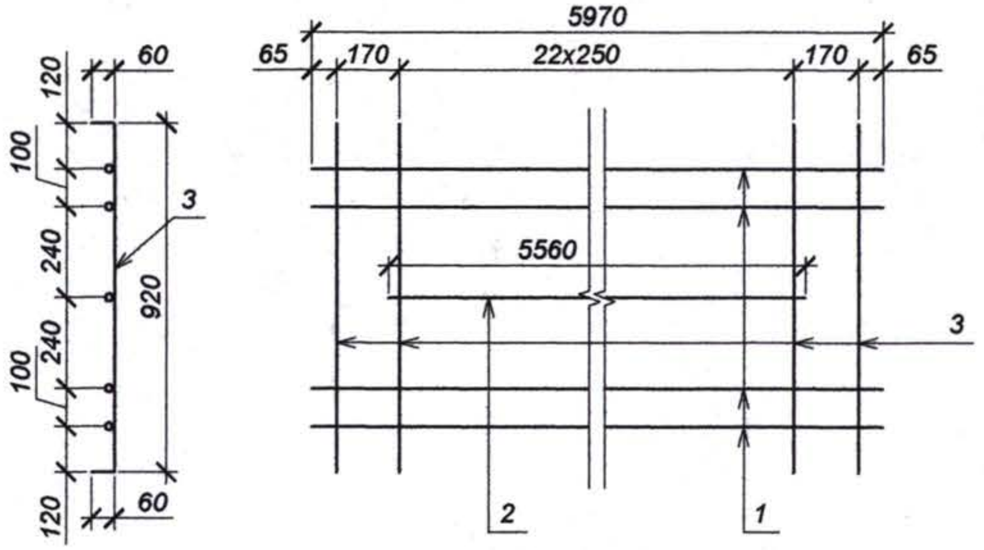




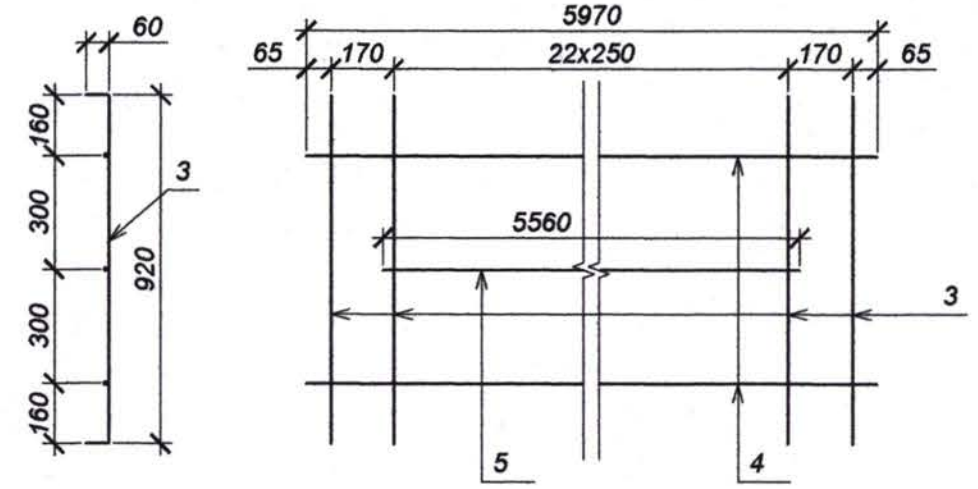
Poz. 7 (1:20)



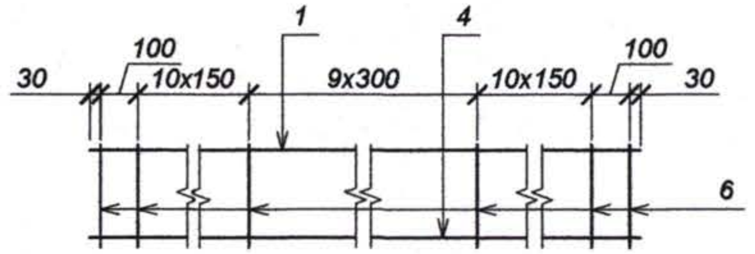
Reinforcing net P-7.
Plasa P-7 (1:20)



Reinforcing net P-8.
Plasa P-9 (1:20)



Reinforcement cage CR-2
Carcasa CR-2 (1:20)



Schedule of materials per slab D6
Lista de materiale pentru dala D6

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
		Reinforcing net P-7. Plasa P-7	1	14.81	
1		Ø8 A-III L=5970 GOST 5781-82*	4	2.36	
2		Ø8 A-III L=5560 GOST 5781-82*	1	2.20	
3		Ø8 A-I L=1040 GOST 5781-82*	25	0.41	
		Reinforcing net P-8. Plasa P-9	1	53.48	
4		Ø20 A-III L=5970 GOST 5781-82*	2	14.75	
5		Ø20 A-III L=5560 GOST 5781-82*	1	13.73	
3		Ø8 A-I L=1040 GOST 5781-82*	25	0.41	
		Reinforcement cage CR-2 Carcasa CR-2	4	20.63	
1		Ø8 A-III L=5970 GOST 5781-82*	1	2.36	
4		Ø20 A-III L=5970 GOST 5781-82*	1	14.75	
6		Ø8 A-I L=270 GOST 5781-82*	32	0.11	
		Embedded pieces. Piese inglobate			
		Ø20 A-I L=1340 GOST 5781-82*	2	3.31	
7		**Materials.** Materiale			
		Concrete. Beton B30 F200 W6 GOST 26633-91*			1.7m³

Reinforcement amount for element, kg
Masuratoare consum de otel pentru element , kg

Element Type Marca elementului	Reinforcing pieces. Piese de armare							Embedded pieces. Piese inglobate			Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	Reinforcing bar type. Armatura de clasa		Totals. Linia totalului	
	A-I Cm3cn			A-III Cm3cn				A-I Cm3cn			
	GOST 5781-82 GOST 380-94			GOST 6727-80				GOST 5781-82**			
	Ø8	Ø20	Total	Ø8	Ø20	Total		Ø20	Total		
Slab D6. Dala D6	34.2	6.6	40.8	16.3	131.7	148.0	188.8	6.6	6.6	6.6	195.4

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Consultantii/Consultants:

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Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execu tie / Sector Comrat - R38

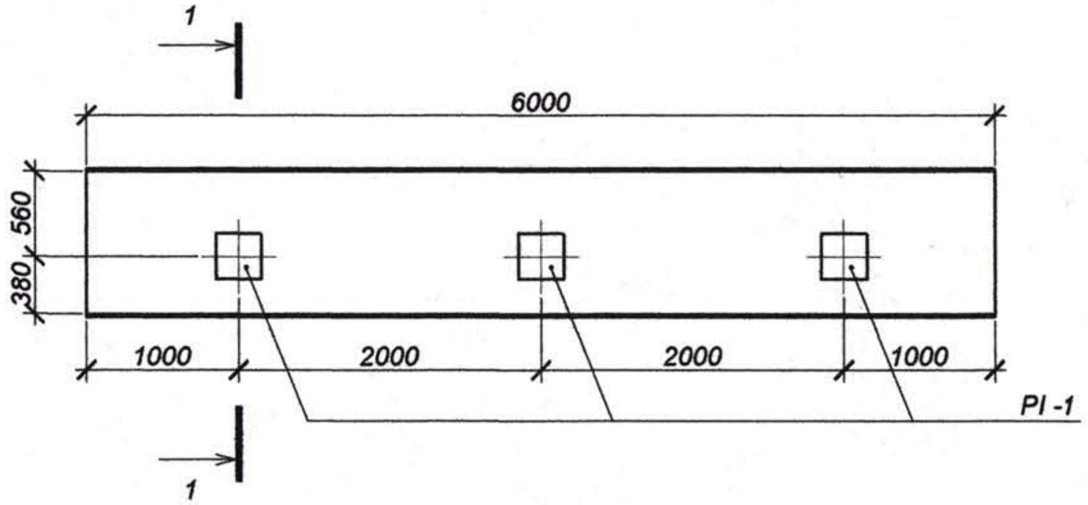
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod km 127+890
Bridge km 127+890

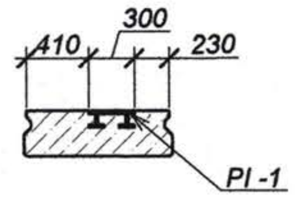
Dala D6".
Slab D6".

Drawing 23-11 A3

Slab. Formwork.
Dala D6". Schema de cofraj (1:50)

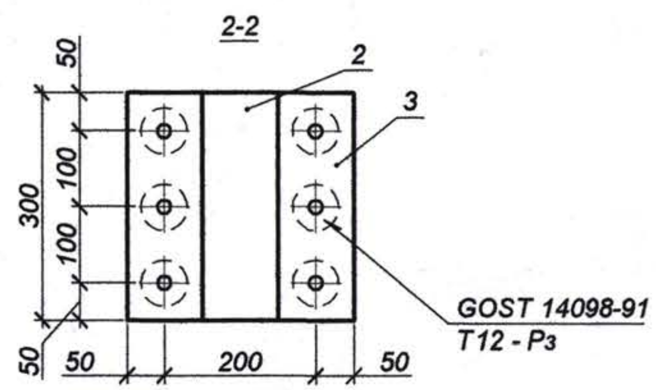


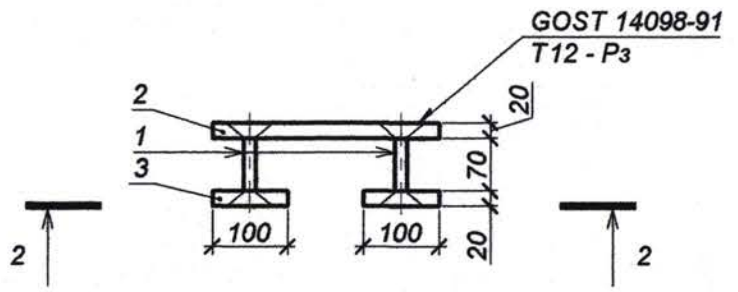
1-1



Embeded item.
Piesa inglobata PI - 1 (1:10)

2-2





Schedule of materials per slab D6"
Lista de materiale pentru dala D6"

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Slab D6". Dala D6"			1.7m³
		Embeded item PI - 1. Piesa inglobata PI - 1	3	25.17	
		Ø20 A-II L=110 GOST 5781-82*	6	0.27	
		--20x300 L=300 GOST 103-76*	1	14.13	
		--20x100 L = 300 GOST 103-76*	2	4.71	

Note. *Nota:*
For formwork dimensions and slab reinforcement look in "Drawing 20-11", Slab D6.
Dimensiunile de cofraj şi armarea dalei vezi "Drawing 20-11 A3",Dala D6.

Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element Type Marca elementului	**Reinforcing pieces.** Piese de armare							**Embedded pieces.** Piese inglobate											**Overall weight.** Greutate totala
	Reinforcing bar type. Armatura de clasa						**Totals.** Linia totalului	**Reinforcing bar type.** Armatura de clasa						**Rolled metal type** Tip produs laminat				**Totals.** Linia totalului	
	A-I Cm3cп			A-III Cm3cп				A-I Cm3cп		A - II		A-III Cm3cп		16Д					
	GOST 5781-82 GOST 380-94			GOST 6727-80				GOST 5781-82**		GOST 5781-82**		GOST 103-76		GOST 103-76					
	Ø8	Ø20	Total	Ø8	Ø20	Total		Ø20	Total	Ø20	Total	Ø12	Total	-20x300	-20x100	-20x200	Total		
Slab D6". Dala D6"	34.2	6.6	40.8	16.3	131.7	148.00	188.8	6.6	6.6	3.24	3.2	1.1	1.1	28.3	18.8	6.3	53.4	64.3	253.1

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Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/126919/C/SER/MD Engineering Design Section Comrat - R38

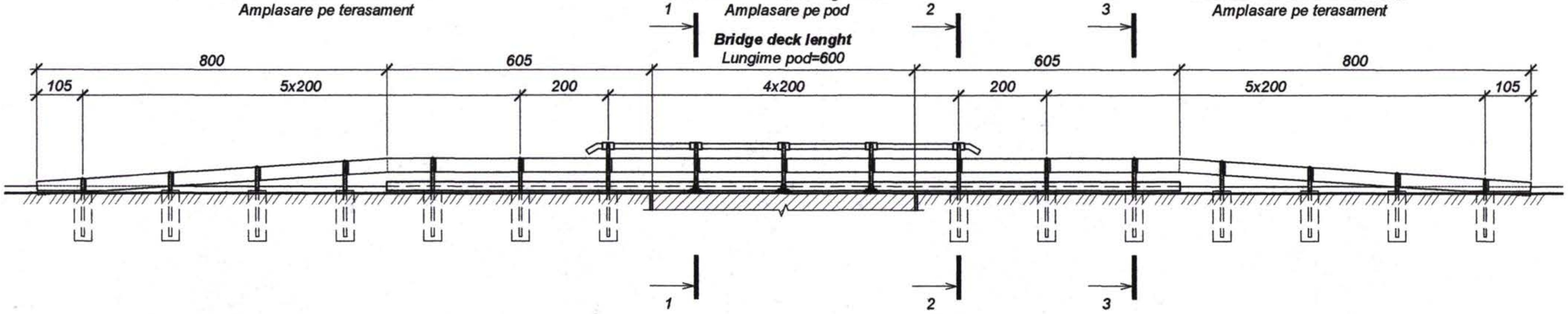
Pod km 127+890
Bridge km 127+890

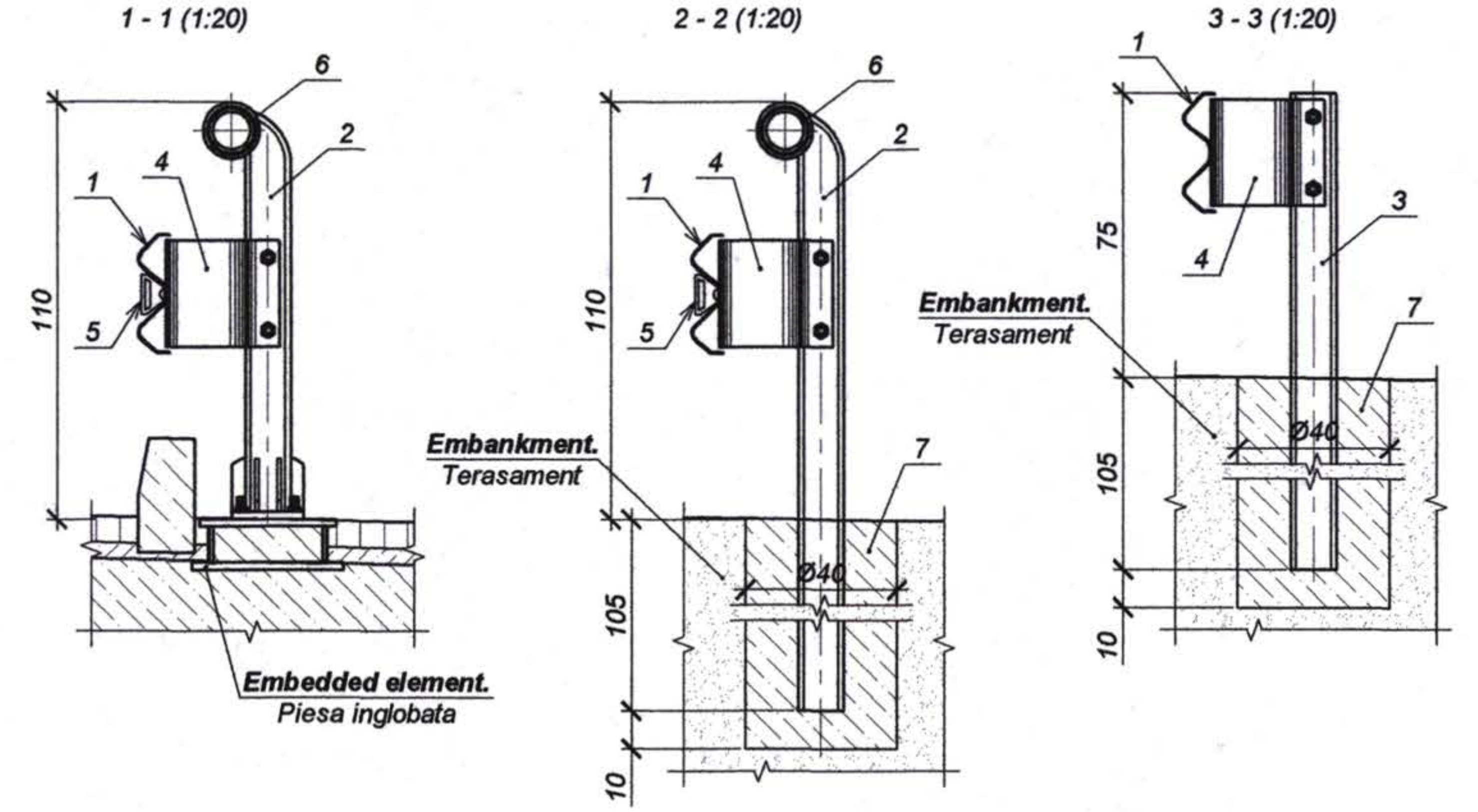
Dala D6".
Slab D6".

Drawing 23-12 A3

Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)

Location on the embankment. *Amplasare pe terasament* — **Location on the bridge deck.** *Amplasare pe pod* — **Location on the embankment.** *Amplasare pe terasament*





Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Elements. Piese			
1		**W-type guard-rail.** Lisa de otel	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** Stilpul parapetului СМ / СМЦ*	1 / 1		
3		**Guard-rail post.** Stilpul parapetului СД-3*, GOST 8239 - 89	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86	set		
5		**Reflector.** Reflector УС-1, GOST 26804 - 86	1	0.1	for 4m lenght la 4m lungime
6		**Steel pipe.** Teava de metal Ø 121, δ=8, GOST 8732-78*	1	44.6	
7		**Cast in place concrete.** Beton B25, F200, W6, GOST 26633-91*			0.14 m³

Note. *Nota:*
1. All dimensions are in cm.
1. Toate dimensiunile sunt date in cm.

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Original Drawing Size
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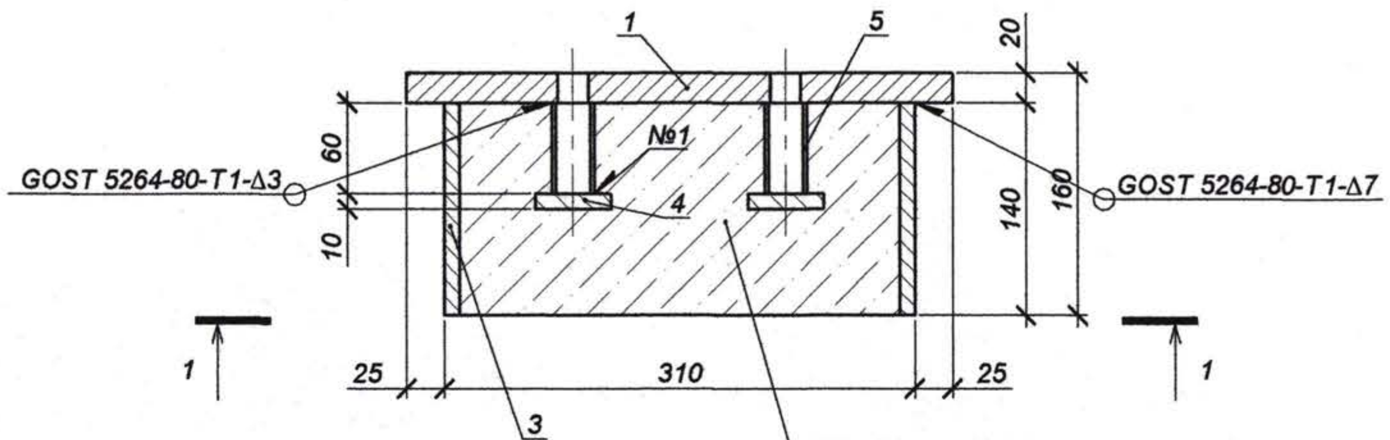
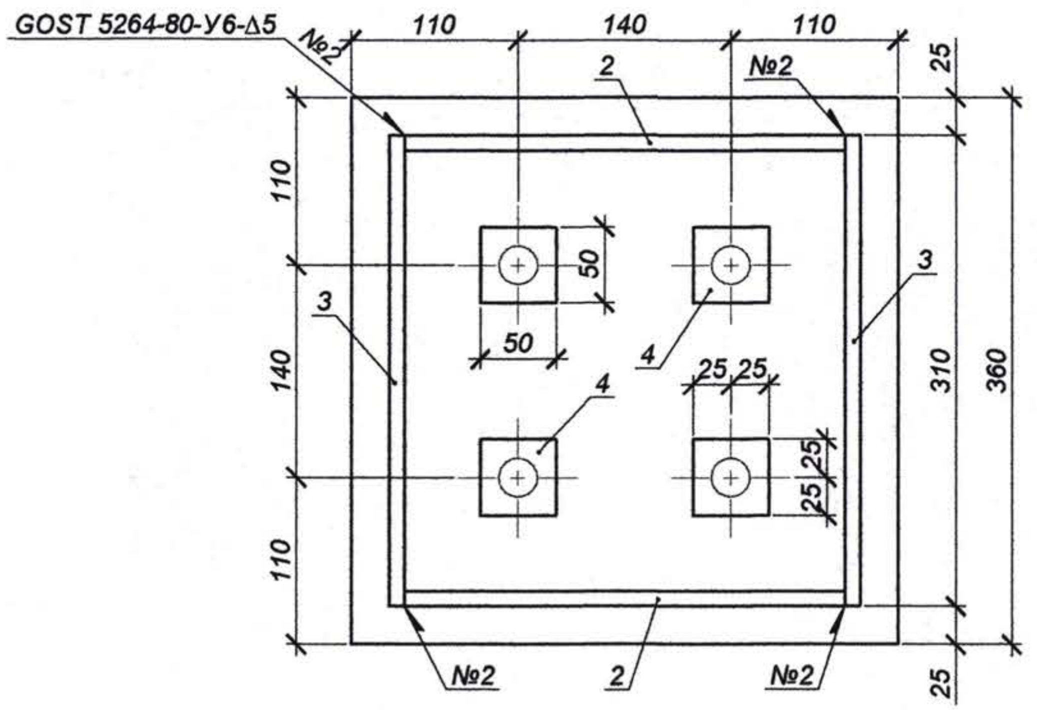
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod km 127+890
Bridge km 127+890
Parapet metalic de siguranta deformabil
Deformable steel guard-rail.
Drawing 23-13

(1:5)

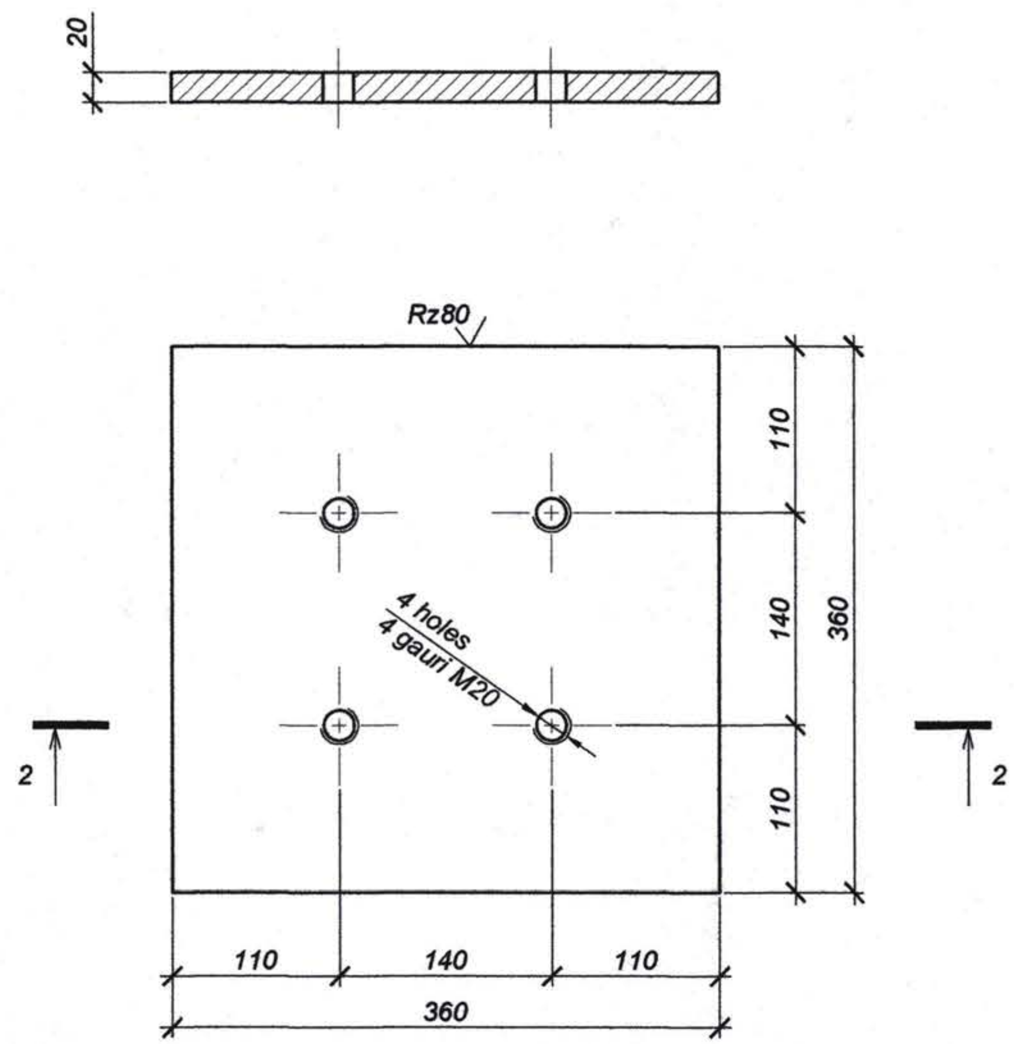


1 - 1



Detail.
Piesa P - 1

2 - 2



Schedule of matrerials per metallic header.
Lista de materiale pentru soclu metalic

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		Detail. Piesa P - 1	1	20.4	
2		--10x140 L=290, GOST 103 - 2006	2	3.2	
3		--10x140 L=310, GOST 103 - 2006	2	3.4	
4		--10x50 L=50, GOST 103 - 2006	4	0.2	
5		28x2.5 L=60, GOST 8732 - 78*	4	0.1	
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.012 m^3

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EU Delegation to Moldova

Republic of Moldova
Ministry of Transport

Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3
Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execu tie / Sector Comrat - R38

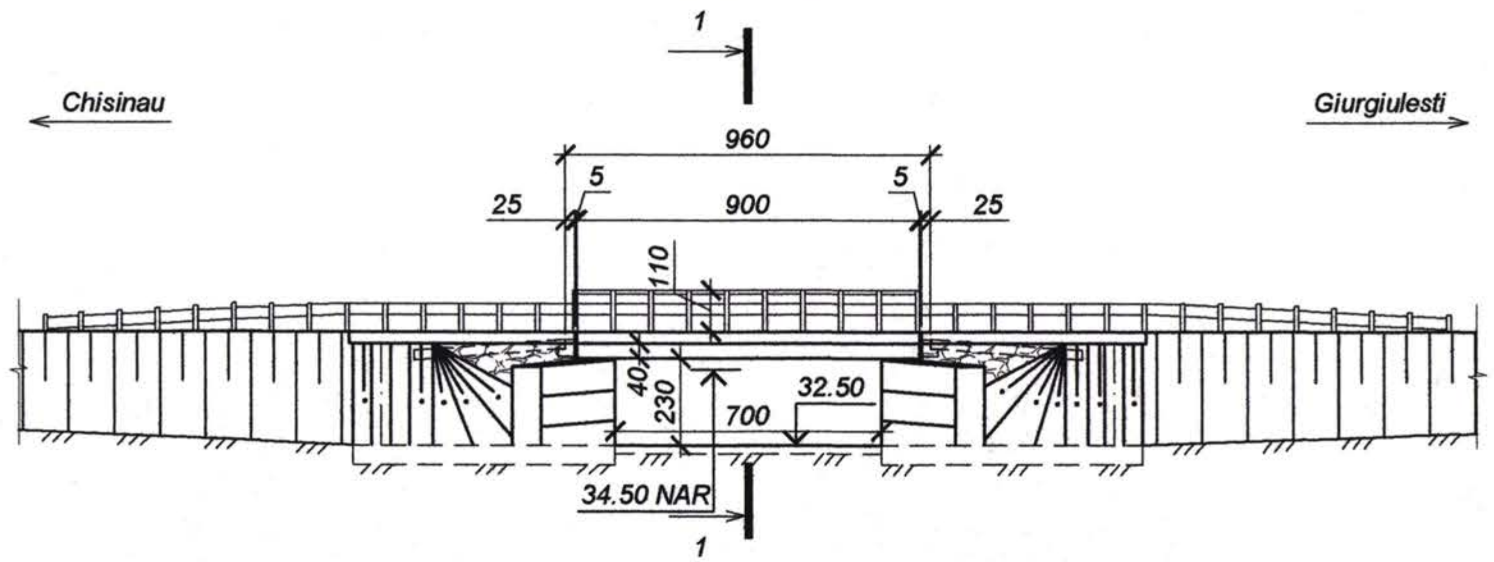
Rehabilitation and Extension of the Road M3
Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod km 127+890
Bridge km 127+890

Soclu metalic.
Metallic header.

Drawing 23-14

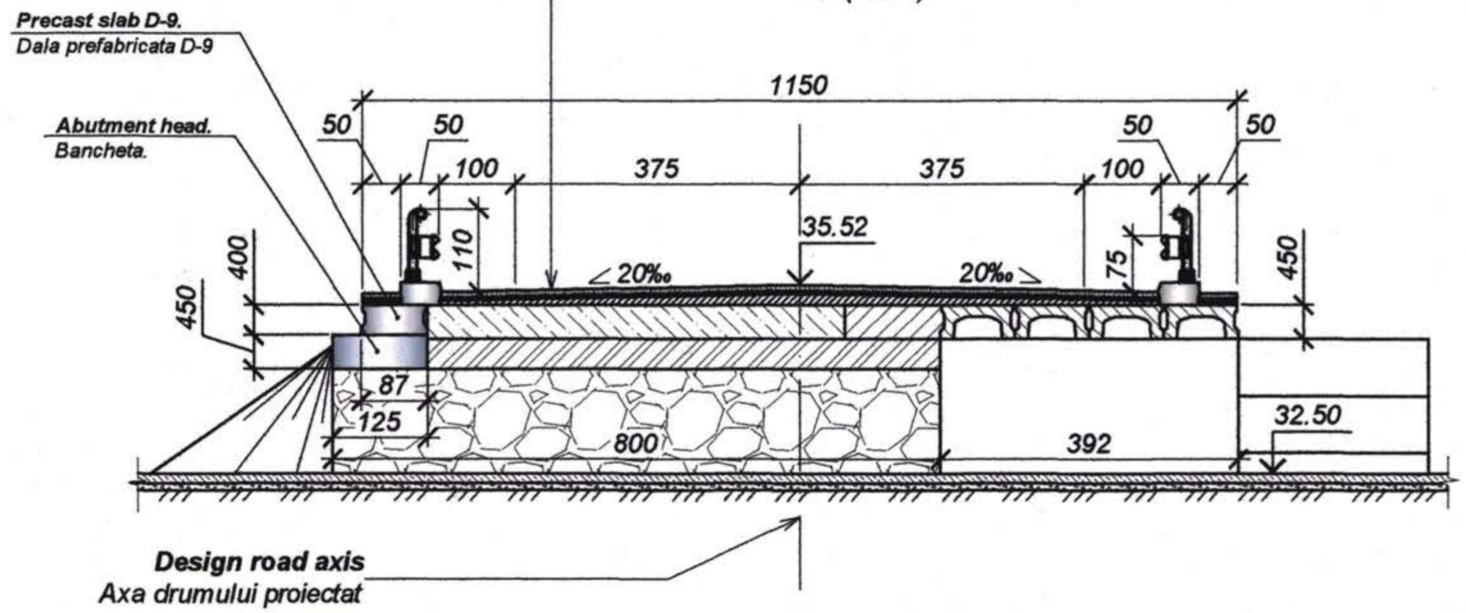
Elevation Side - Elevatie (1:200)



Design data / Date proiect	**Gradient,‰, vertical radius, m** Declivitate,‰, curba verticala, m				
	Finished carriageway level, m Cota in axa, m	35.45	35.52	35.50	
Terrain data / Date teren	**Ground level, m** Cota teren, m	32.85	32.50	32.99	
	Distance, m Distanta, m		15.71		
Survey station. Pichet			1307+27		

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 ÷ 145 mm

1-1 (1:100)



Hydrological characteristics.
Caracteristici hidrologice

Item. Denumirea	**Unit.** Unitate	**Quantity.** Cantitatea
Estimated water flow. Debit de calcul, Q 1%	m³/s	27,6
Water velocity. Viteza apei	m/s	4,43

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Republic of Moldova Ministry of Transport

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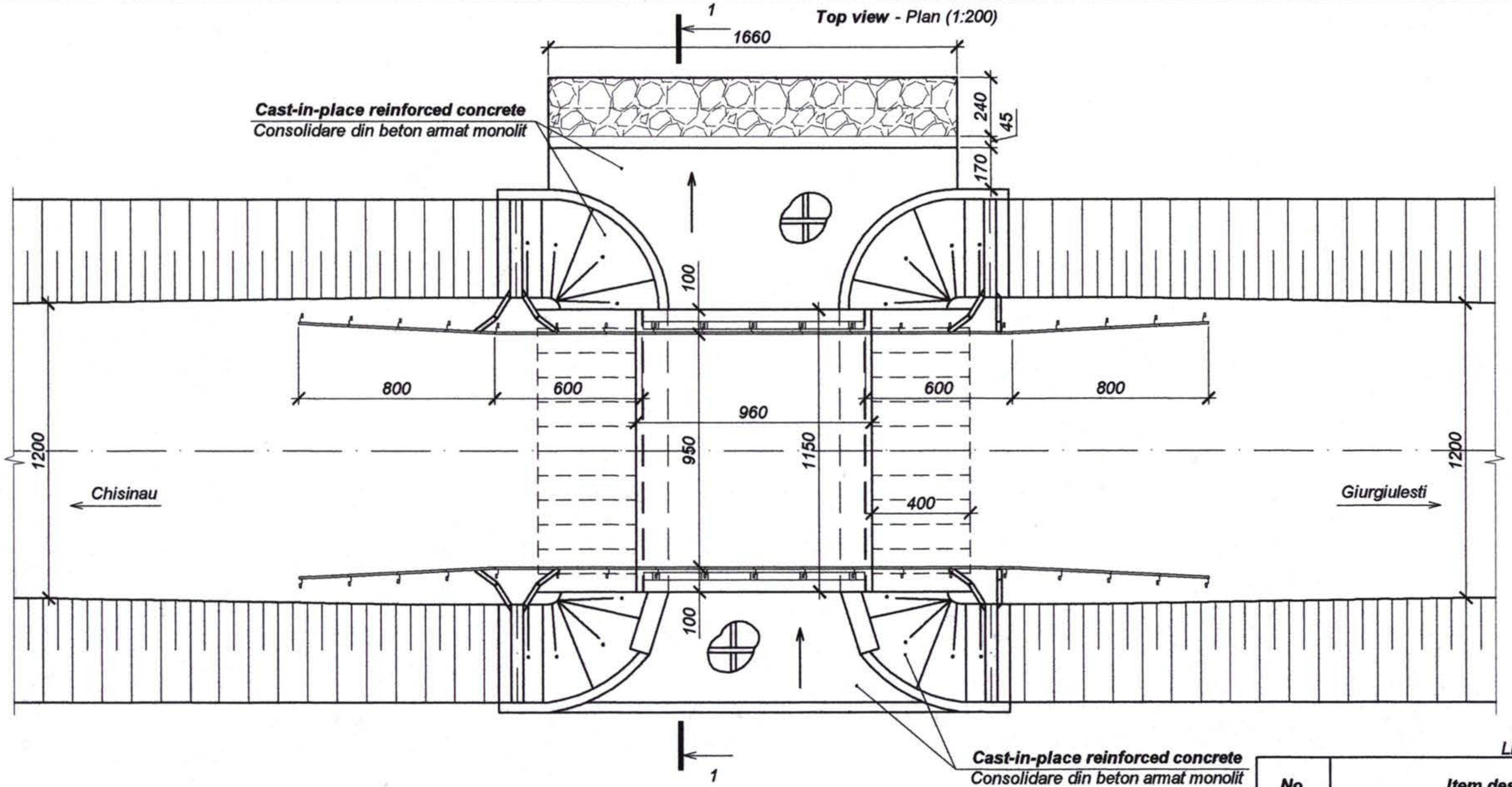
Pod, km 130+727.
Bridge, km 130+727.

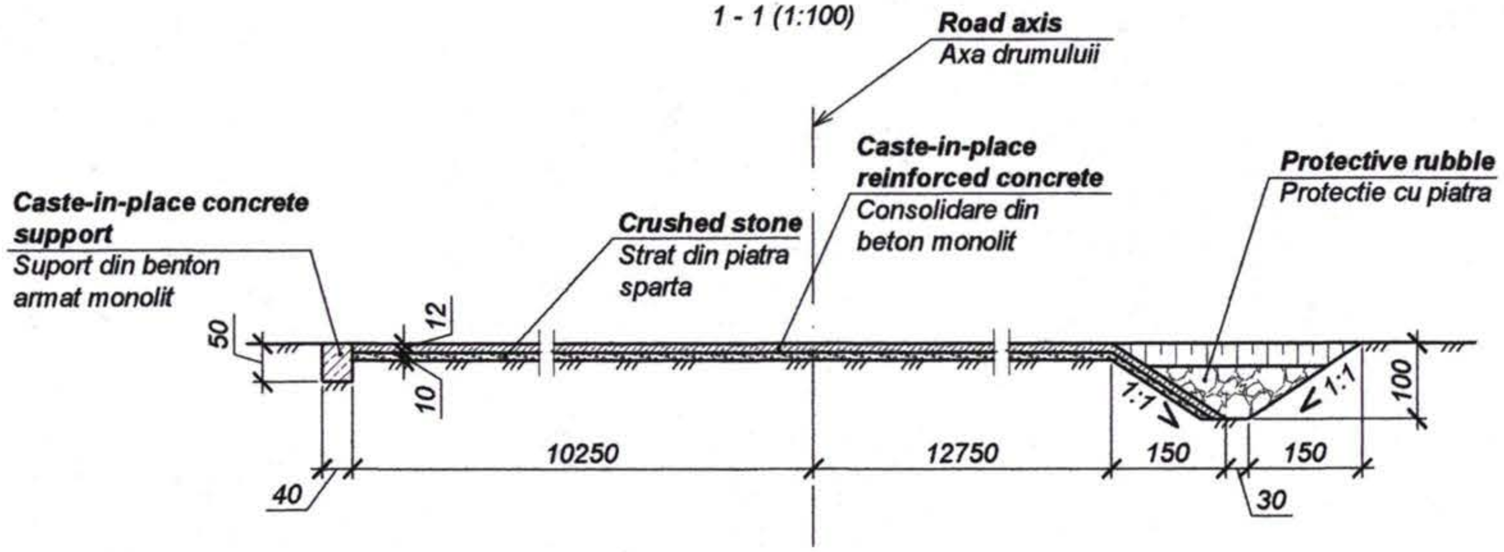
Elevatie, sectiune transversala.
Side elevation, cross section.

Drawing 24-1

Top view - Plan (1:200)



1 - 1 (1:100)



Quantity list.
Lista de cantitati

No. Art.	Item description. Descrierea articolului	Unit of measure. Unitatea de masura	Quanitiy. Cantitate
1	**Superstructure reinforced concrete elements** Suprastructura din elemente din beton armat	Cu. m	4
2	**Bridge approach.** Racordarea podului cu rampele de acces	Cu. m.	25.6
3	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	104
4	**Expansion joints.** Rosturi de dilatatie	m.	23
5	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod	Sq. m.	104
6	**Bridge deformable guard-rail.** Parapet de siguranță metalic pe pod	m.	18
7	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	56
8	**Concrete repair.** Repararea betonului degradat	Sq. m.	180
9	**Slope and channel protection.** Protejarea taluzelor si albiei	Sq. m.	270
10	**Bridge approach waterproofing.** Hidroizolatia la rampele de acces	Sq. m.	80
11	**Removal of existing structure.** Demolarea structurii existente	Cu. m. / t	38 / 0.5

Shimb. nr. inv.
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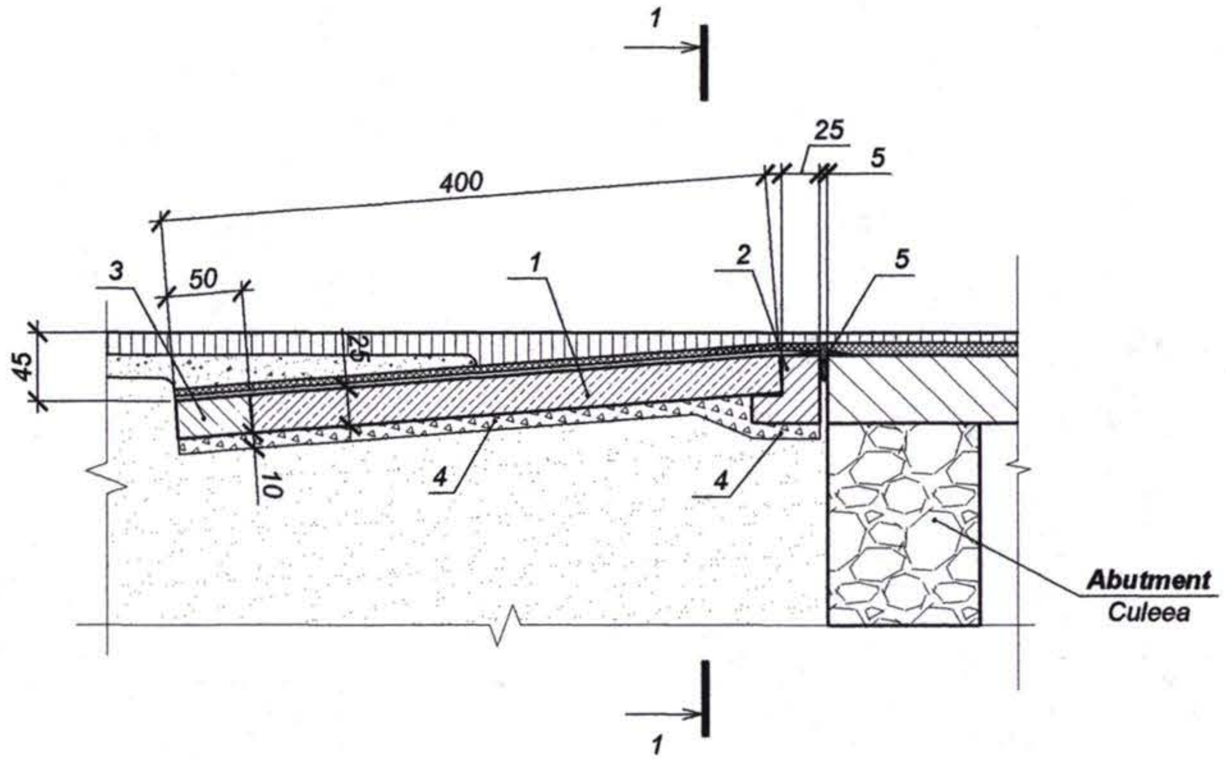
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 130+727.
Bridge, km 130+727.
Plan.
Top view.
Drawing 24-2

Bridge approach slab.
Racordarea podului cu terasamentul (1:50)

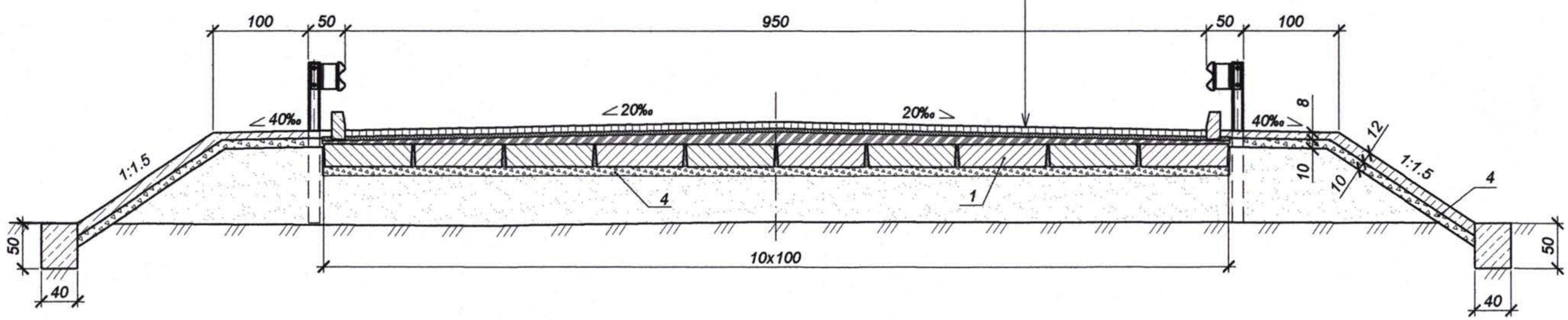


Schedule of materials per bridge approach.
Lista de materiale pentru racordarea podului cu terasamentul

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant	Weight. Masa, kg	Note. Nota
1		**Approach slab PR 1-4** Dala de racordare PR 1-4	10	1100	0.85 m³
2		**Safety wall.** Zid de garda	1		1.7 m³
3		**Cast-in-place concrete between PC approach slabs.** Nodul monolit a placilor de racordare	1		1.25 m³
		Leveling concrete layer. Strat de egalizare, beton cl.B25, F200, W6, h=4cm			1.2 m³
		Protective layer of reinforced concrete. Strat de protectie, beton cl.B25, F200, W6, h=4cm			1.6 m³
	BCH 32 - 81	**Water proofing,membrane.** Hidroizolare, membrana, h=0.5cm			40 m²
4		**Crushed stone bed.** Pat din piatra sparta M400, h=40cm			8.00 m³
5		**Expanssion joints.** Rost de dilatatie	1		11.5 m
		Concrete kerbs Borduri de beton	0		16 ml
		Deformable guard-rail Parapeti de siguranta metalici	0		56 m

Stone mastic asphalt concrete. Beton asfaltic - 70 mm
Protective layer. Strat de protectie - 40 mm
Waterproofing. Hidroizolatie - 5 mm
Leveling layer. Strat de egalizare - 30 ÷ 130 mm
Approach slab. Dala de racordare

1 - 1 (1:50)



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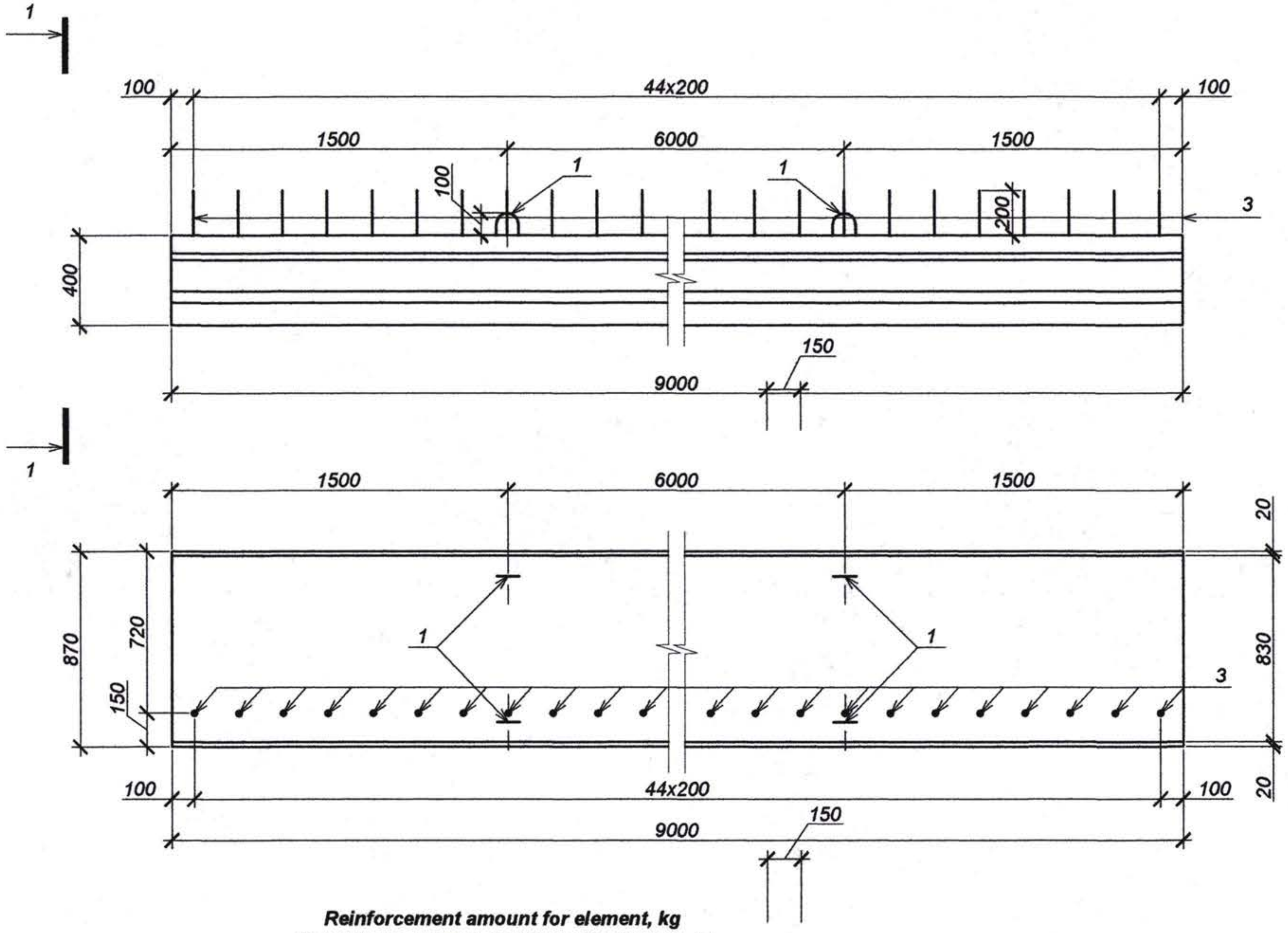
Pod, km 130+727.
Bridge, km 130+727.

Racordarea podului cu terasamentul .
Bridge approach.

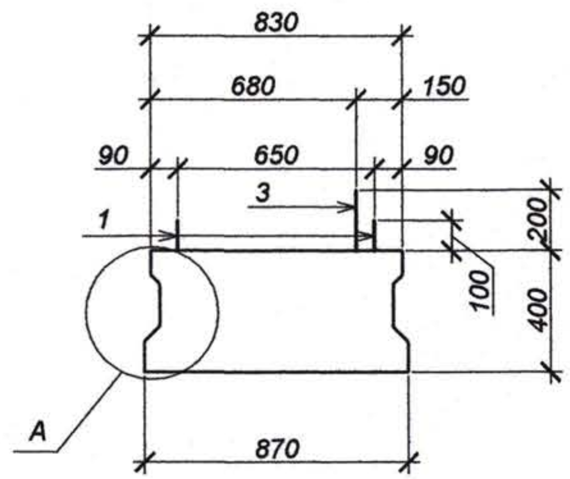
Drawing 24-3

Superstructure. Precast reinforced slab D - 9.
Suprastructura. Dala prefabricata din beton armat D - 9

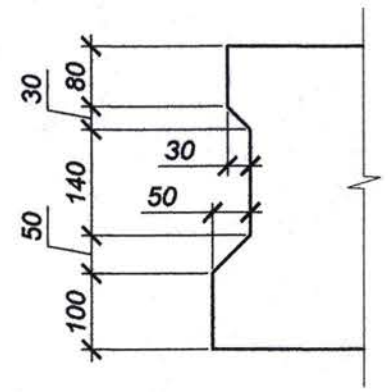
Formwork layout - *Plan de cofrare (1:25)*



1 - 1



A (1:10)



Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	**Reinforcing pieces.** Piese de armare						**Embedded pieces.** Piese inglobate				**Overall weight.** Greutate totala
	Reinforcing bar type. Armatura de clasa					**Totals.** Linia totalului	**Reinforcing bar type.** Armatura de clasa			**Totals.** Linia totalului	
	A - I, Cm3cп		A - III, 25Г2С				A - I, Cm3cп				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*				
	Ø10	Total	Ø10	Ø28	Total		Ø12	Ø20	Total		
D - 9	96.3	96.3	44.0	344.8	388.8	485.1	22.5	20.8	43.3	43.3	528.4

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Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execuţie / Sector Comrat - R38

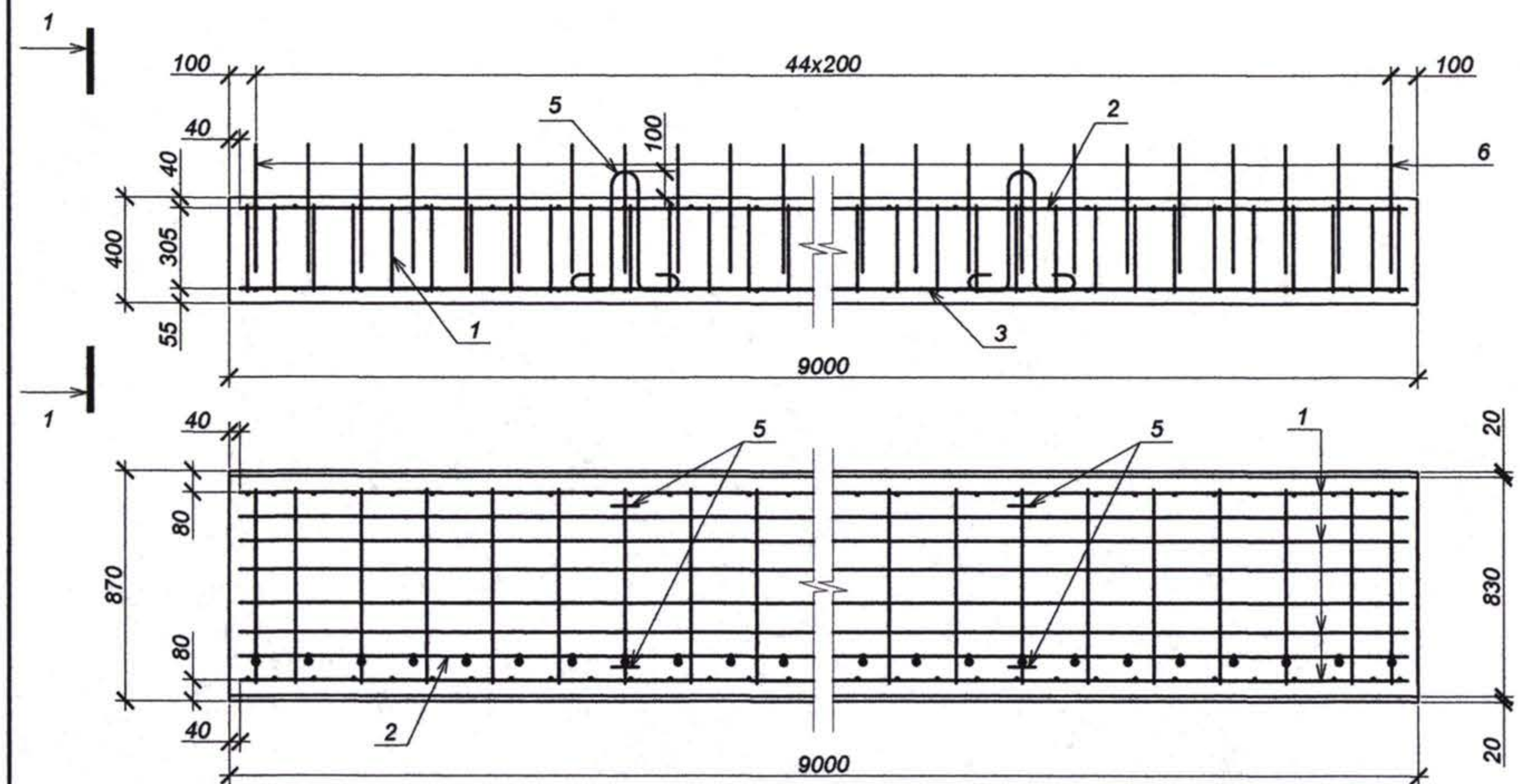
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod, km 130+727.
Bridge, km 130+727.

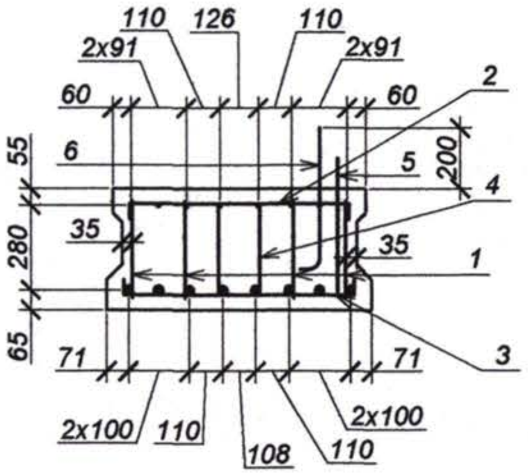
Dala prefabricata din beton armat D - 9.
Precast reinforced slab D - 9.

Drawing 24-4

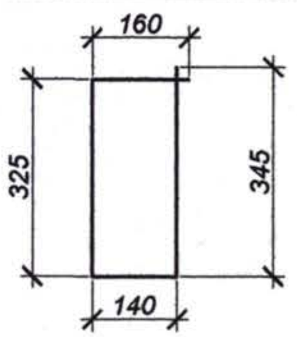
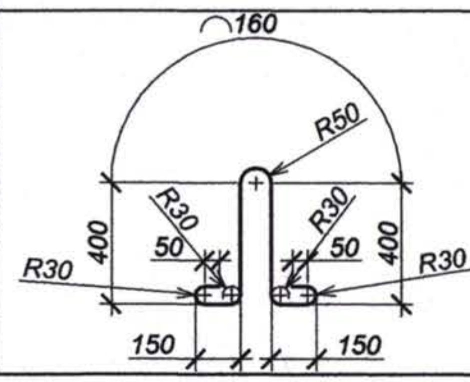
Reinforcing layout - *Plan de armare (1:25)*



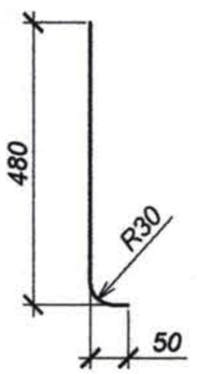
1 - 1



Bending details sheet.
Piese

Pozition. *Pozitia*	**Sketch.** *Schită*
4	
5	

Bending details sheet (Followup).
Piese (Continuare)

Pozition. *Pozitia*	**Sketch.** *Schita*
6	

Schedule of materials per slab D - 9
Lista de materiale pentru dala D - 9

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
1		**Cage C - 1** *Carcasa C - 1*	4	57.4	
2		**Mesh PL - 1** *Plasa PL - 1*	1	41	
3		**Mesh PL - 2** *Plasa PL - 2*	1	193.3	
4		**Stirrup** *Etrier Ø10 A-I L=970, GOST 5781-82**	37	0.6	
5		**Bar** *Bara Ø20 A-I L=2100, GOST 5781-82**	4	5.2	
6		**Bar** *Bara Ø12 A-I L=530, GOST 5781-82**	45	0.5	
		Concrete *Beton B30, F200, W6, GOST 26633-91**			3.0 m^3

Shimb. nr. inv.
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Ministry of Transport

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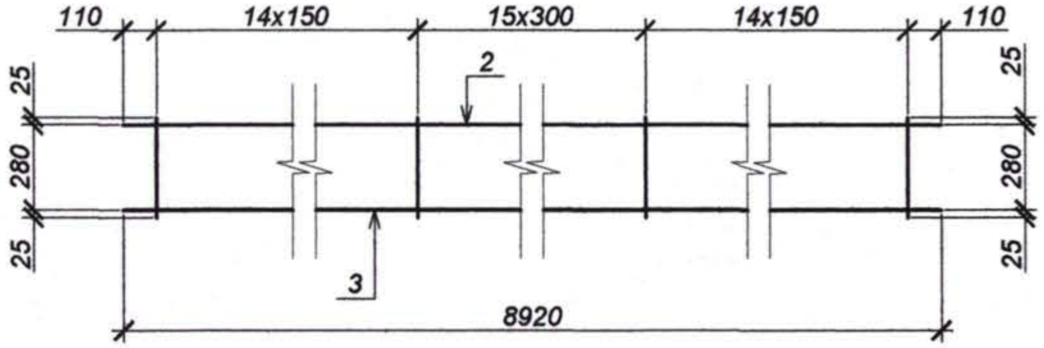
Pod, km 130+727.
Bridge, km 130+727.

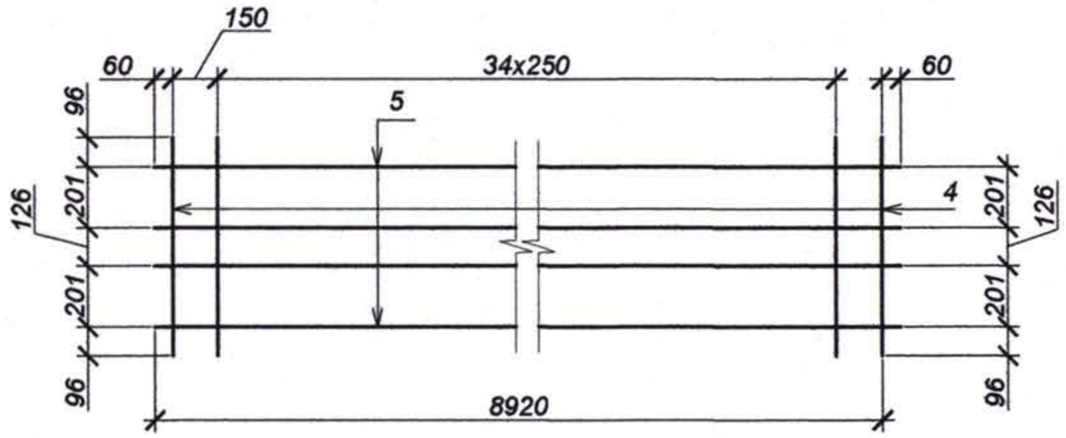
Dala prefabricata din beton armat D - 9.
Precast reinforced slab D - 9.

Drawing 24-5

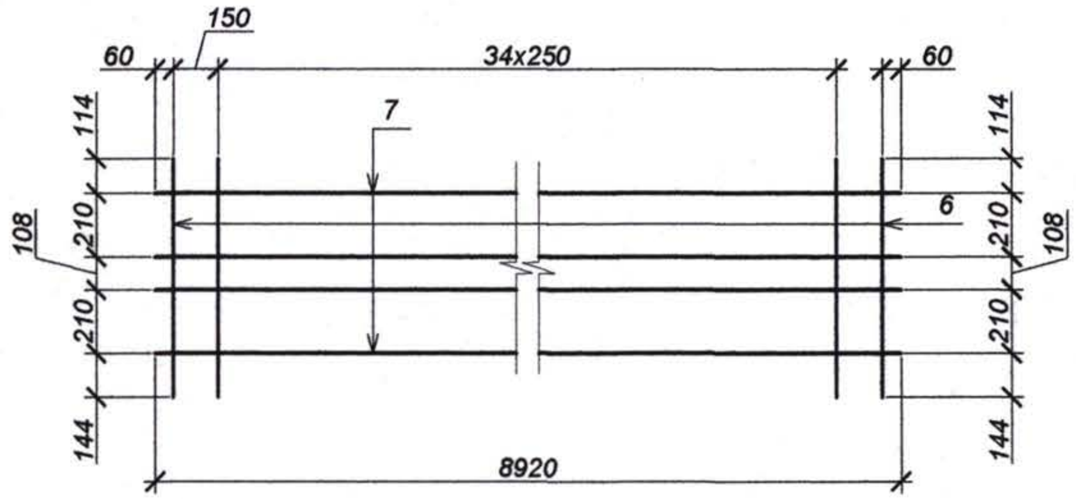
Cage C - 1 - Carcasa C - 1



Mesh PL - 1 - Plasa PL - 1



Mesh PL - 2 - Plasa PL - 2



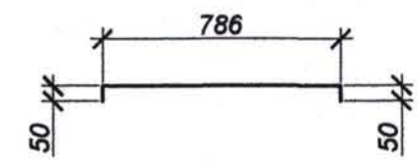
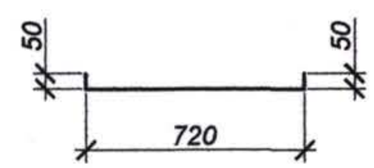
Schedule of materials per cage K -1 and meshes S - 1, S - 2

Lista de materiale pe carcasa K - 1 si plase S - 1, S - 2

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Cage C - 1 - Carcasa C - 1	4		
1		Ø10 A-I L=330, GOST 5781-82*	44	0.2	
2		Ø10 A-III L=8920, GOST 5781-82*	1	5.5	
3		Ø28 A-III L=8920, GOST 5781-82*	1	43.1	
		Mesh PL - 1 - Plasa PL - 1	1		
4		Ø10 A-I L=820, GOST 5781-82*	37	0.5	
5		Ø10 A-III L=8920, GOST 5781-82*	4	5.5	
		Mesh PL - 2 - Plasa PL - 2	1		
6		Ø10 A-I L=886, GOST 5781-82*	37	0.55	
7		Ø28 A-III L=8920, GOST 5781-82*	4	43.1	

Bending details sheet.

Piese

Pozition. Pozitia	**Sketch.** Schita
4	
6	

Note: **1. The grid to be manufactured by welding.**

Nota: *1. Plasele de confectionat prin sudare.*

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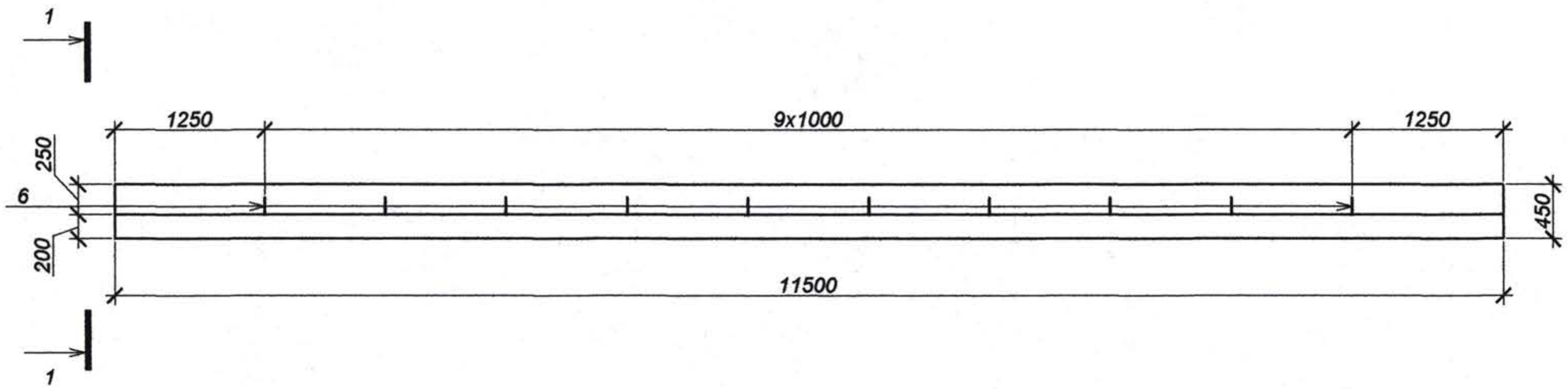
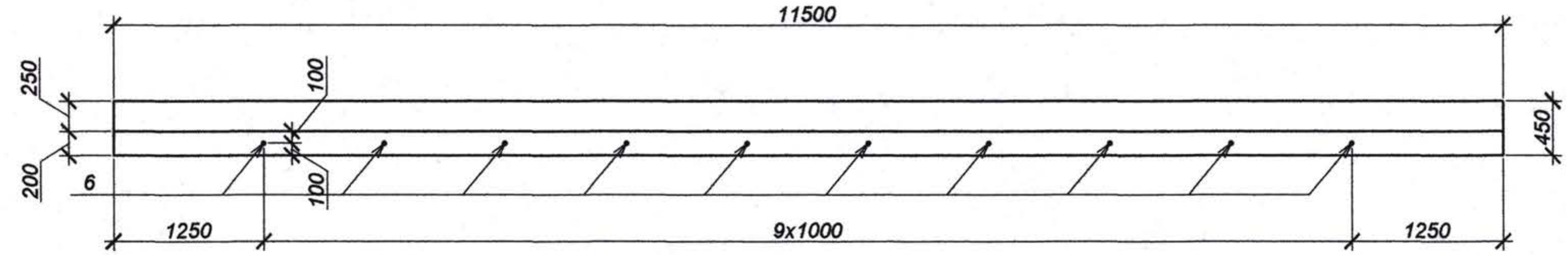
Pod, km 130+727.
Bridge, km 130+727.

Dala prefabricata din beton armat D - 9.
Precast reinforced slab D - 9.

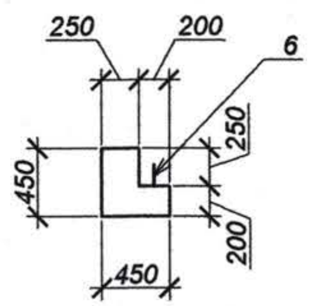
Drawing 24-6

Formwork layout - Plan de cofrare (1:50)





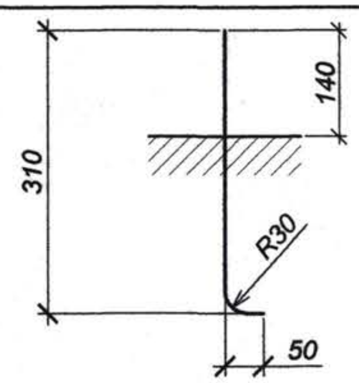
1 - 1



Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element Type *Marca elementului*	Reinforcing pieces *Piese de armare*						Embedded pieces. *Piese inglobate*				Overall weight *Greutate totala*
	Reinforcing bar type *Armatura de clasa*					Totals *Linia totalului*	Reinforcing bar type *Armatura de clasa*			Totals *Linia totalului*	
	A - I, Cm3cп			A - III, 25Г2С			A - I, Cm3cп				
	GOST 5781-82*			GOST 5781-82*			GOST 5781-82*				
	Ø6	Ø10	Total	Ø10	Total		Ø20	-	Total		
	4.7	16.1	20.8	103.7	103.7	124.5	17.1	-	17.1	17.1	141.6

Bending details sheet.
Piese

Pozition. *Pozitia*	Sketch. *Schita*
6	

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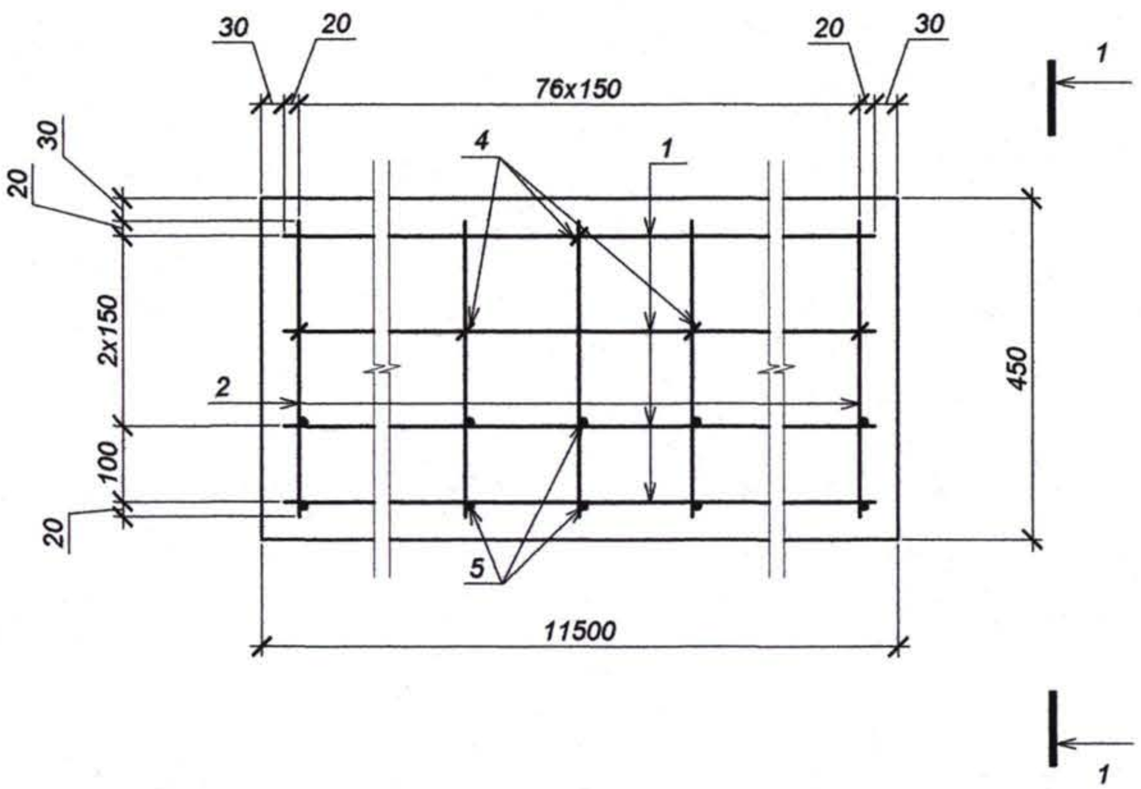
Pod, km 130+727.
Bridge, km 130+727.

Zidul de garda monolit.
Cast-in-place safety wall.

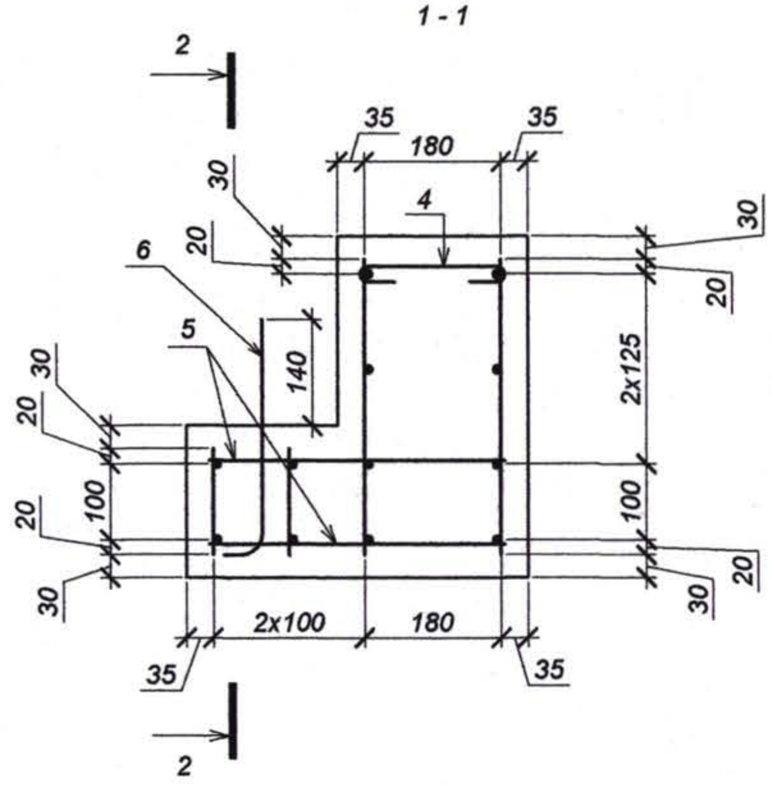
Drawing 24-7

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

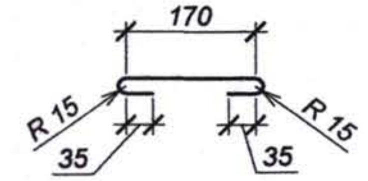
Reinforcing layout - *Plan de armare (1:10)*



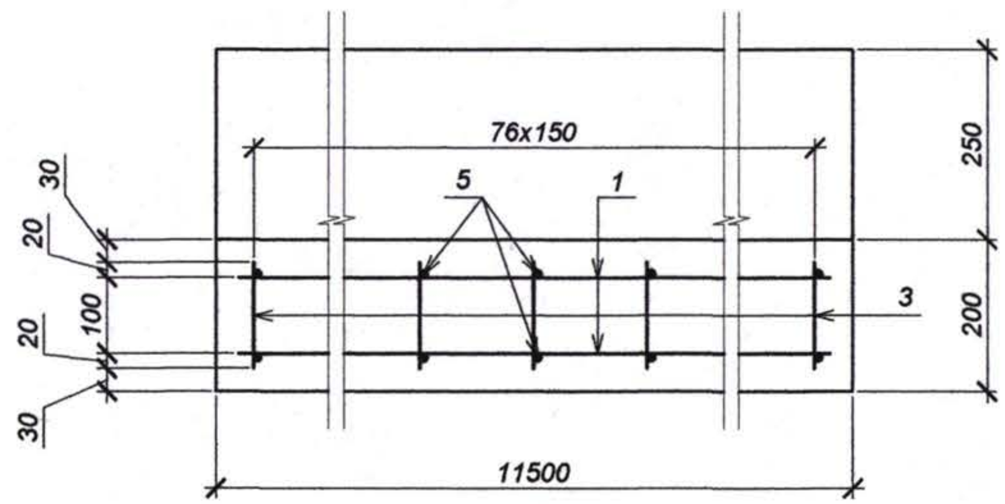
1 - 1



Bending details sheet.
Piese

Pozition. Pozitia	*Sketch.* Schita
4	

2 - 2



Schedule of matrerials per safety wall.
Lista de materiale pentru zid de garda

Pozition. Pozitia	*Reference.* Indicativ	*Name.* Denumirea	*No.* Nr.	*Weight.* Masa, kg	*Note.* Nota
1		Ø10 A-III L=11440, GOST 5781-82*	12	6.1	
2		Ø10 A-I L=390, GOST 5781-82*	154	0.09	
3		Ø 10 A-I L=140, GOST 5781-82*	154	0.03	
4		Ø6 A-I L=320, GOST 5781-82*	77	0.07	
5		Ø10 A-III L=390, GOST 5781-82*	154	0.25	
6		Ø20 A-I L=360, GOST 5781-82*	10	0.9	
		Concrete Beton B25, F200, W6, GOST 26633-91*			1.8 m^3

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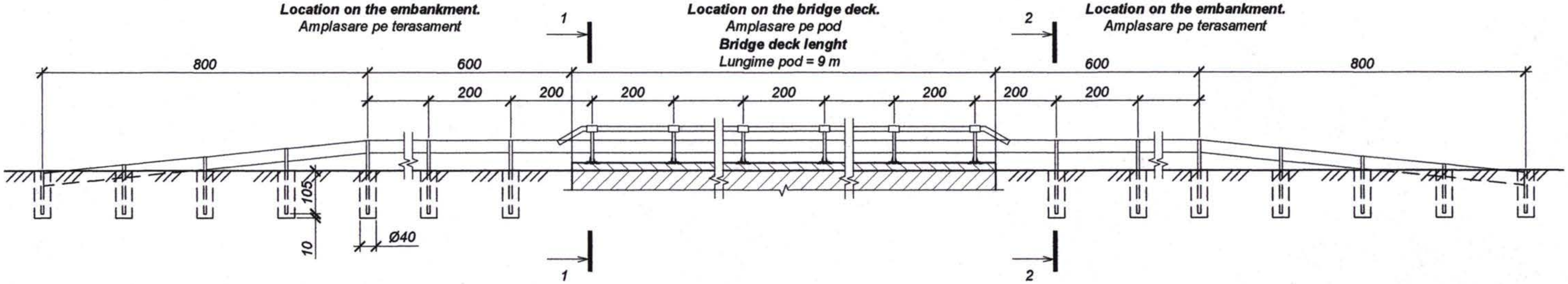
Pod, km 130+727.
Bridge, km 130+727.

Zidul de garda monolit.
Cast-in-place safety wall.

Drawing 24-8

Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)

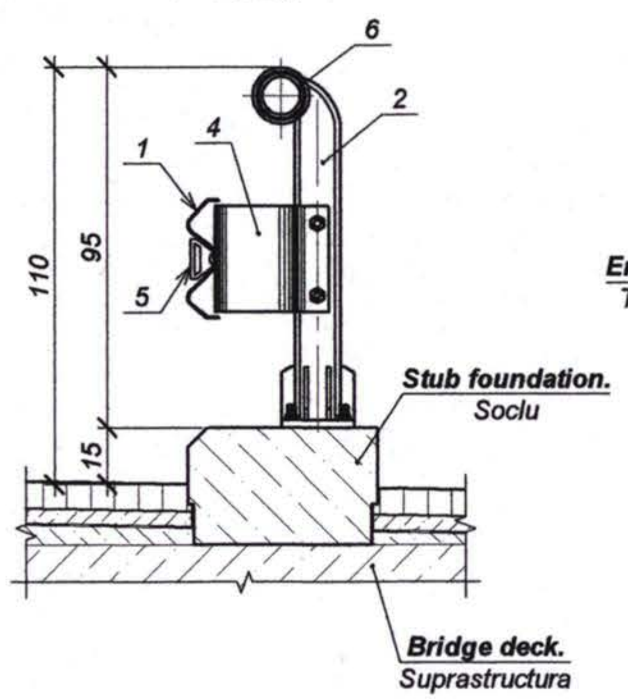
Location of with stub foundation on the bridge deck.
Amplasare pe pod cu soclu



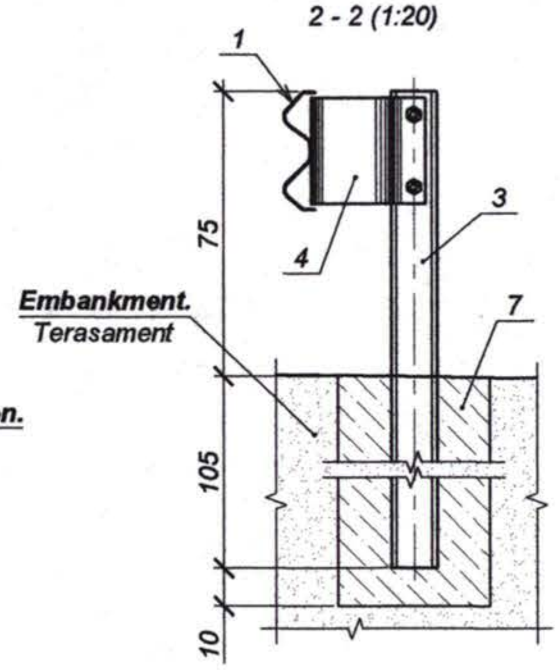
Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Pozition. *Poziția*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**No.** *Nr.*	**Weight.** *Masa, kg*	**Note.** *Nota*
1		**W-type guardrail.** *Profil lisa*	1	185.2	
2	ТУ 5216-001-44884945-02	**Guardrail post.** *Stilpul parapetului СМ / СМЦ**	1 / 1		
3		**Guard-rail post.** *Stilpul parapetului СД-3*, GOST 8239 - 89*	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** *Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86*	set		
5		**Reflector.** *Reflector УС-1, GOST 26804 - 86*	1	0.1	**for 4m lenght** *la 4m lungime*
6		**Pipe.** *Teava de metal Ø121,δ=8,GOST 8732-78**	1	44.6	
7		**Concrete.** *Beton B25, F200, W6, GOST 26633-91**			0.14 m³

1 - 1 (1:20)



2 - 2 (1:20)



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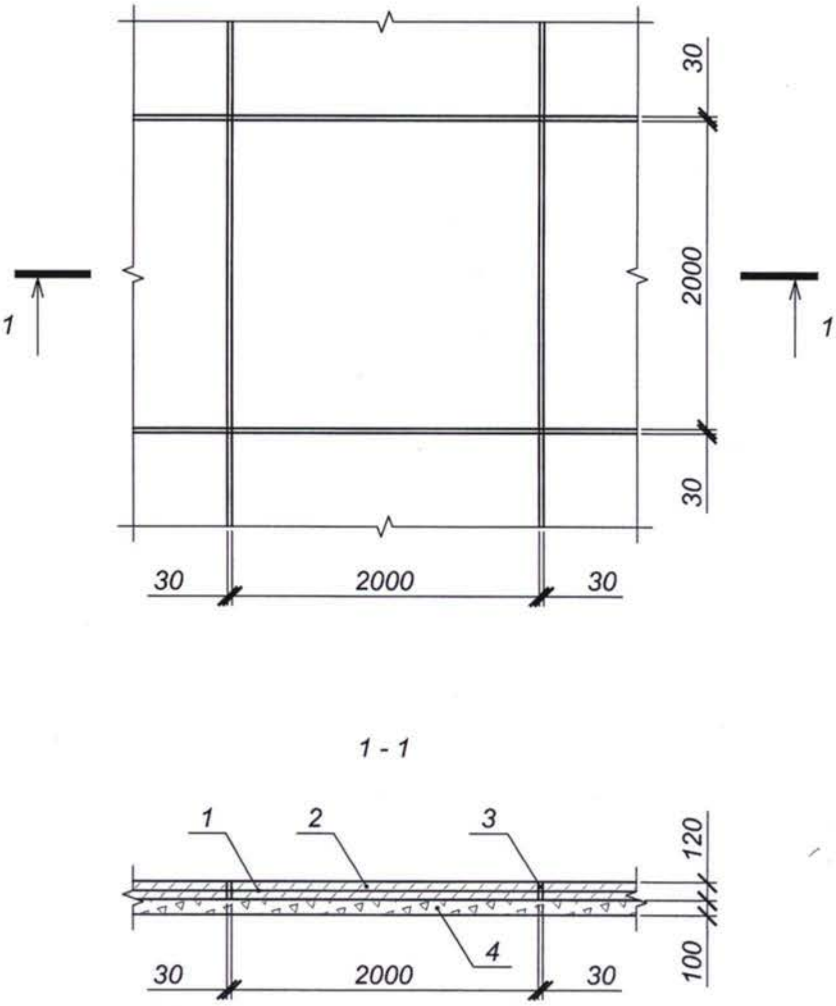
Pod, km 130+727.
Bridge, km 130+727.

Parapet metalic de siguranta deformabil.
Deformable steel guard-rail.

Drawing 24-9

Protection of the semicone slopes and channel with reinforced concrete.
Consolidarea conurilor, albiei si a taluzurilor cu beton armat (1:50)



Schedule of materials per 1,0 m² of stregthening.
Lista de materiale pentru 1,0 m² de consolidare

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	No. Nr.	Weight. Masa, kg	Note. Nota
1		**Mesh.** Plasa Ø6 A-I, GOST 5781-82*, 200x200		2.2	
2		**Concrete.** Beton B20, F200, W6, GOST 26633-91*			0.12 m³
3	BCH 32-81	**Bituminous mastic.** Mastic bituminos			0.01 m³
4		**Crushed stone h=10 cm.** Piatra sparta h=10 cm, GOST 8267-93*			0.10 m³

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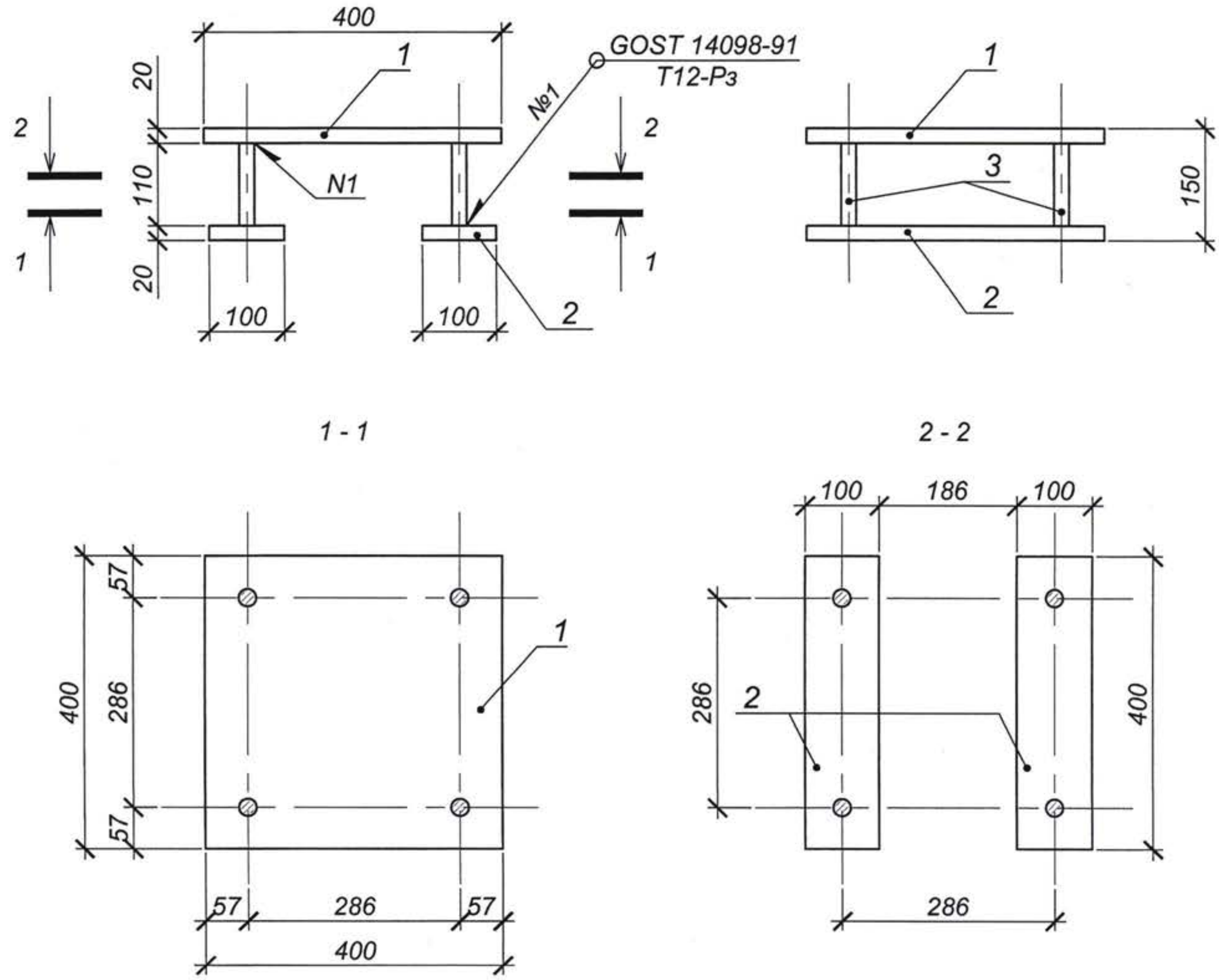
Kocks Consult - Universinj SRL	Pod, km 130+727 Bridge, km 130+727	Protejarea taluzelor si a albiei cu beton. Slope and channel concrete protection detail.	Drawing 24-10

Embedded base plate.
Piesa inglobata PI - 1



Schedule of materials per embedded base plate.
Lista de materiale pentru piesa inglobata PI - 1

Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***No.*** *Nr.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
1		--20x400 L=400, GOST 103 - 2006	1	25.1	
2		--20x100 L=400, GOST 103 - 2006	2	6.3	
3		Ø25 AIII L = 150, GOST 5781 - 82*	4	0.6	

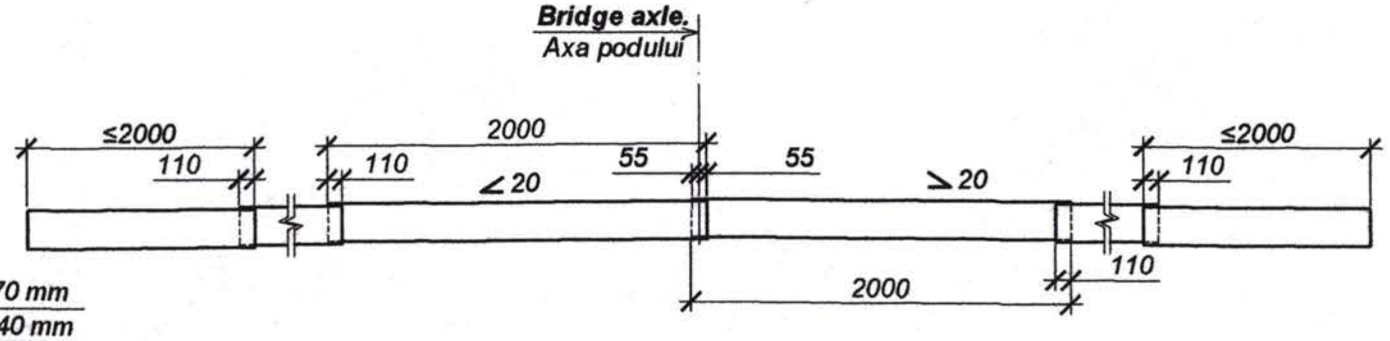
Shimb. nr. inv.

Semnat la data

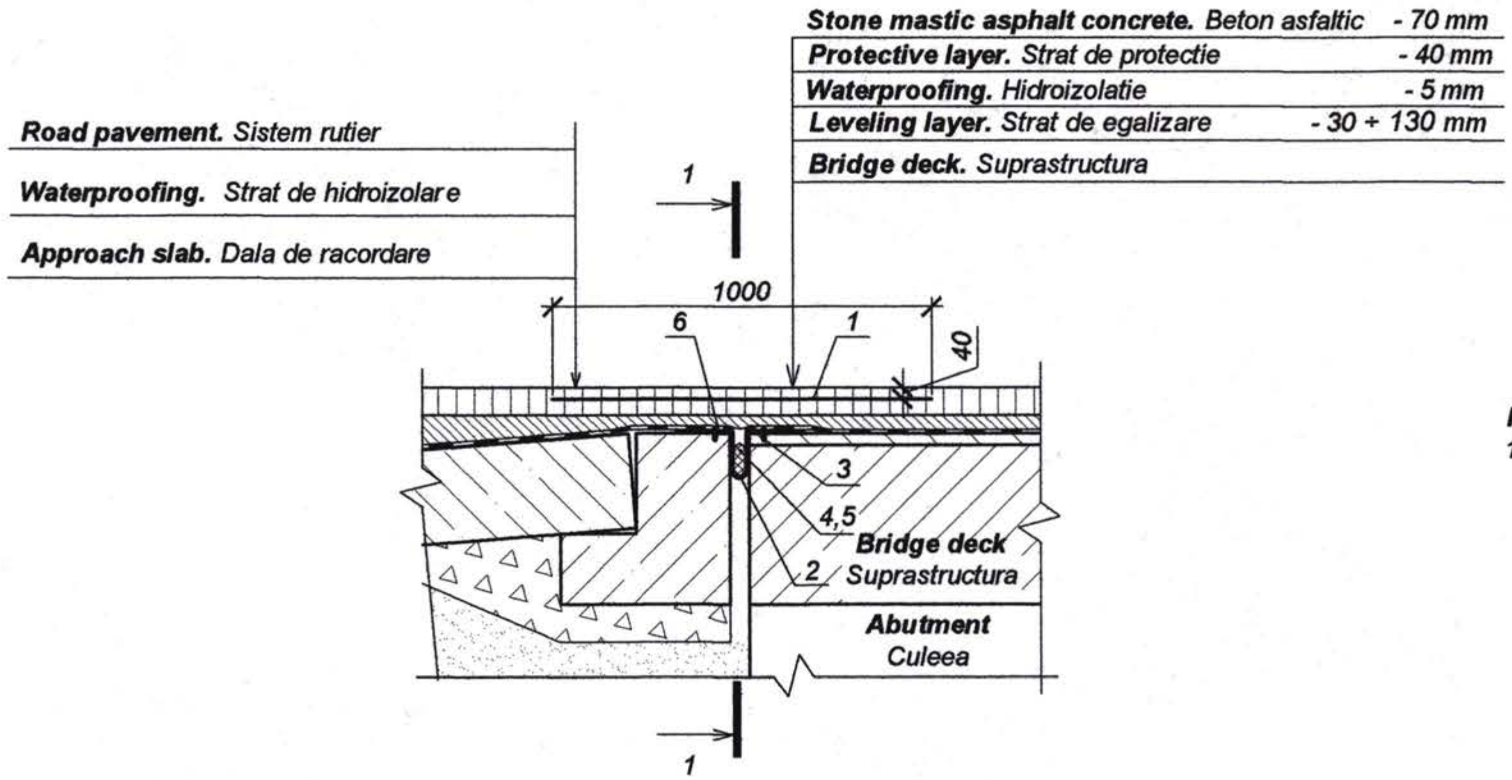
Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 130+727 Bridge, km 130+727	Piesa inglobata PI - 1. Embedded base plate.	Drawing 24-11

1-1
Method of lyre-shaped sheet installation - Modul de instalare a buclelor



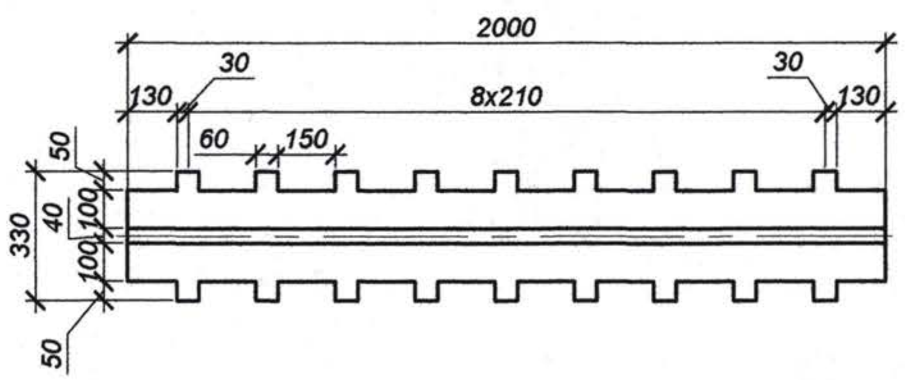
Expanssion joint at the abutment - Rostul de dilatate la culee (1:20)

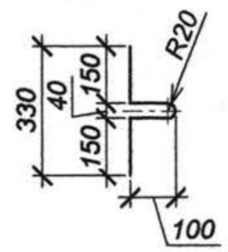


Note. *Notă:*

1. **The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue.**
   Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Lyre-shaped brass sheet - Bucla din tabla de alama (poz.3) (1:20)





Schedule of materials for 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint at the abutment Rost de dilatatie la culee			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasă СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Porous rubber cord** Cordon din cauciuc poros	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	

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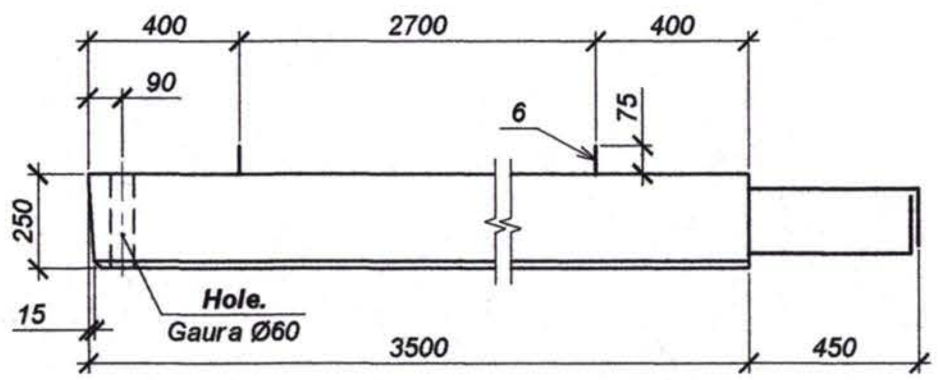
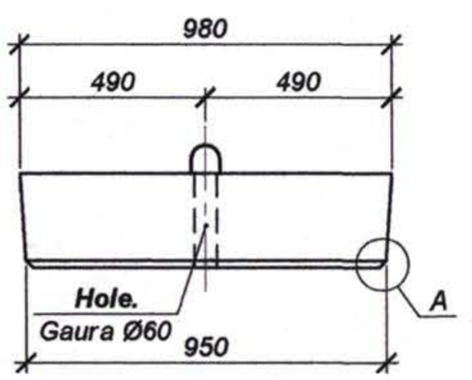
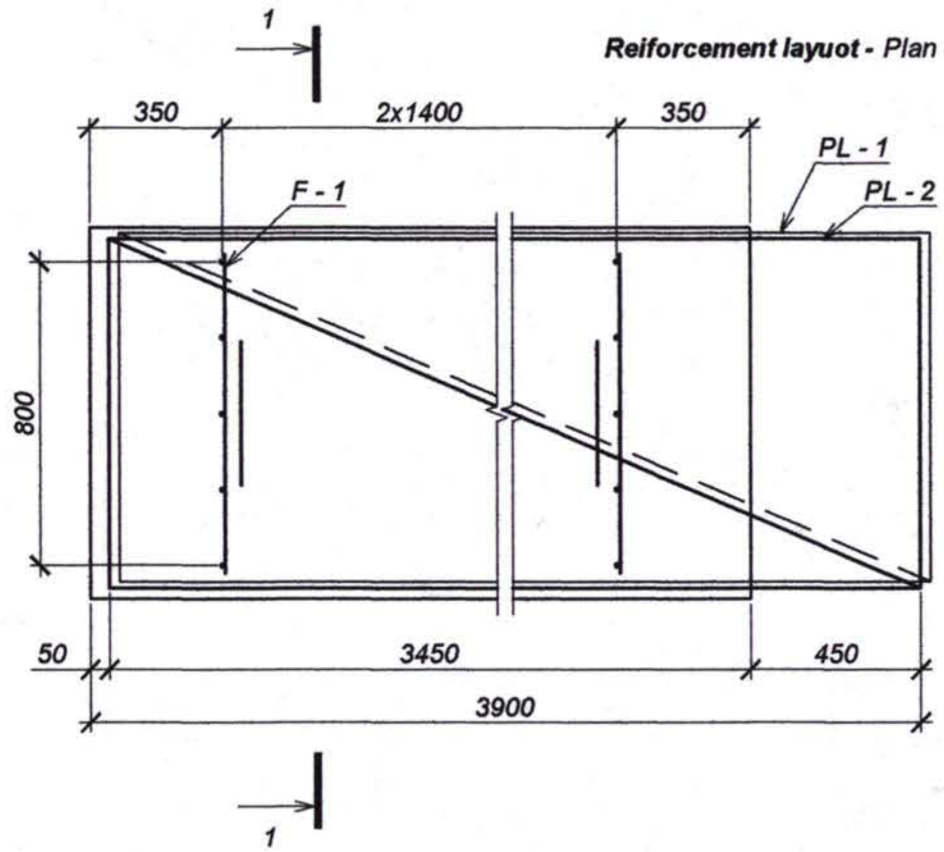
Pod, km 130+727.
Bridge, km 130+727.
Rost de dilatatie.
Expanssion joint.
Drawing 24-12

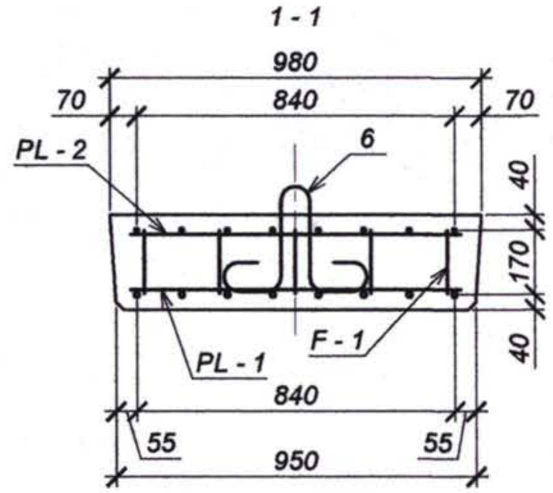
Formwork layout - *Plan de cofraj (1:20)*





Reiforcement layuot - *Plan de armare (1:20)*

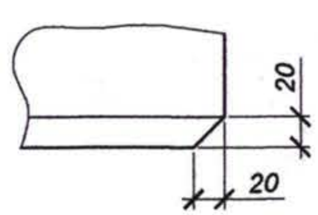




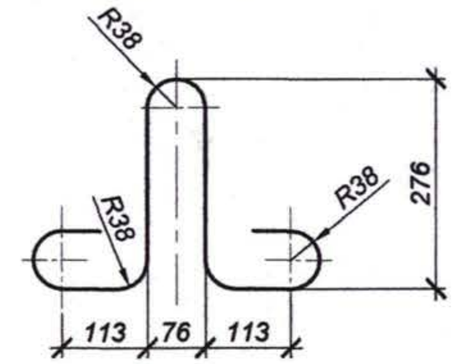
Schedule of materials per approach slab P-1.
Lista de materiale pentru dala de racordare P-1.

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
		Assembly elements. Piese de asamblare			
		Mesh. Plasa PL-2	1	42.8	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
2		Ø14 A-III L=4000, GOST 5781 - 82*	8	4.9	
		Mesh. Plasa PL-4	1	23.6	
1		Ø6 A-I L=920, GOST 5781 - 82*	18	0.2	
3		Ø10 A-III L=4000, GOST 5781 - 82*	8	2.5	
		Bar chair. Fixator F-1	3	1.1	
4		Ø8 A-I L=840, GOST 5781 - 82*	2	0.3	
5		Ø8 A-I L=165, GOST 5781 - 82*	5	0.1	
		Embedded elements. Piese inglobate			
6		Ø 14A-I L=1130, GOST 5781 - 82*	2	1.4	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.84 m³

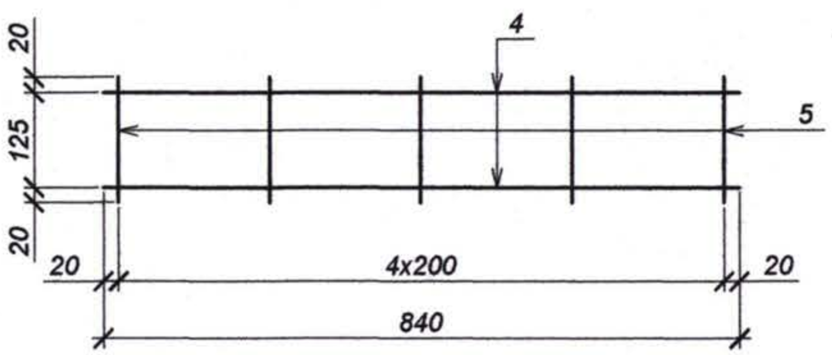
A (1:5)



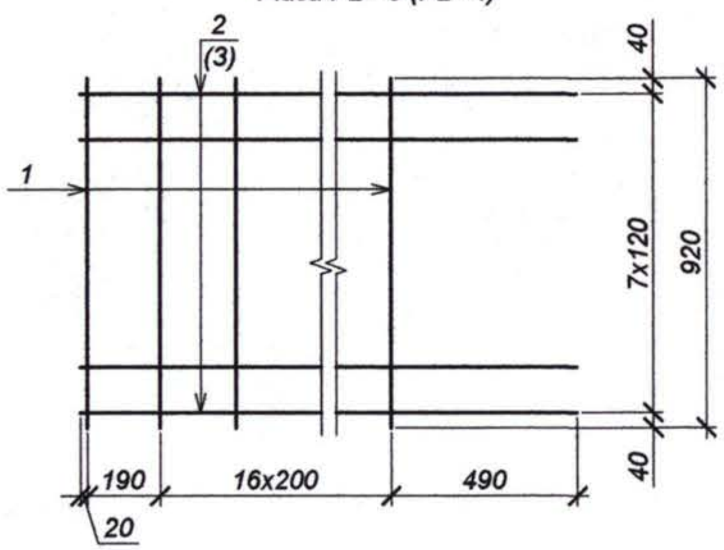
Poz. 6 (1:10)



Bar chair.
Fixator F-1 (1:10)



Mesh.
Plasa PL - 3 (PL - 4)



Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare							Embedded pieces. Piese inglobate			Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	Reinforcing bar type. Armatura clasa		Totals. Linia totalului	
	A - I, Cm3сп GOST 5781-82*			A - III, 25Г2С GOST 5781-82*				A - I, Cm3сп GOST 5781-82*			
	Ø6	Ø8	Total	Ø10	Ø14	Total		Ø14	Total		
PR 1-4	7.2	3.3	10.5	20	39.2	59.2	69.7	2.8	2.8	2.8	72.5

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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

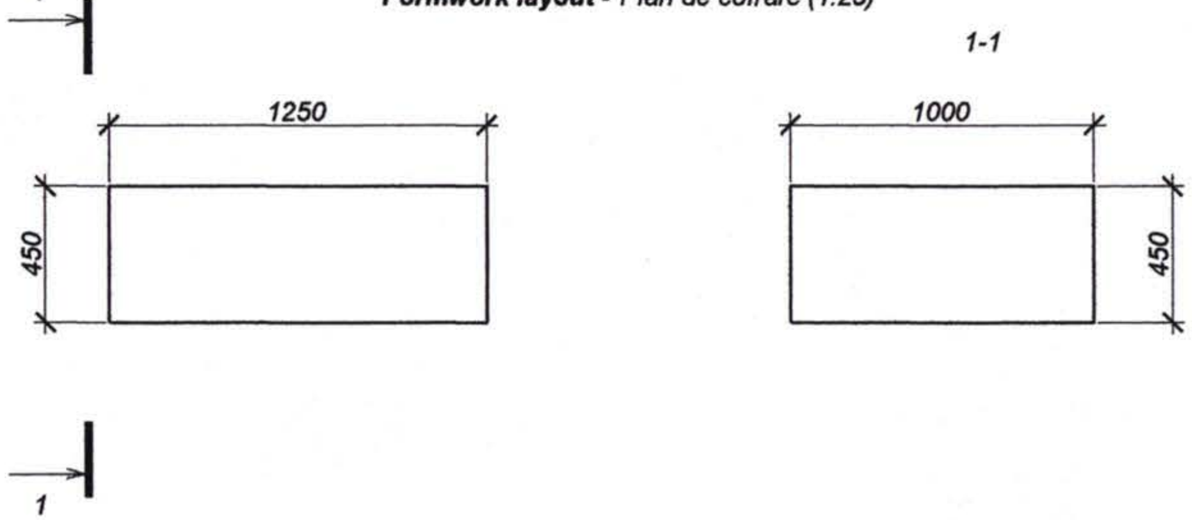
Pod, km 130+727.
Bridge, km 130+727.

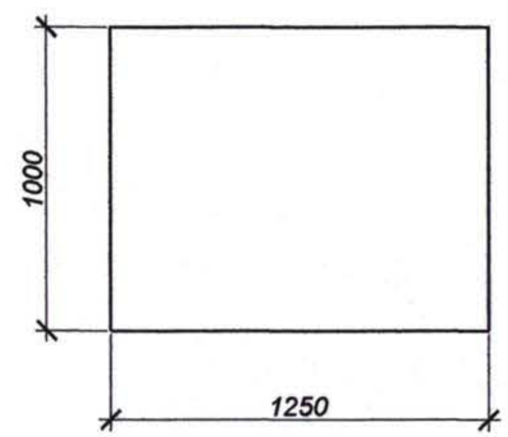
Dala de racordare P-1.
Approach slab P-1.

Drawing 24-13

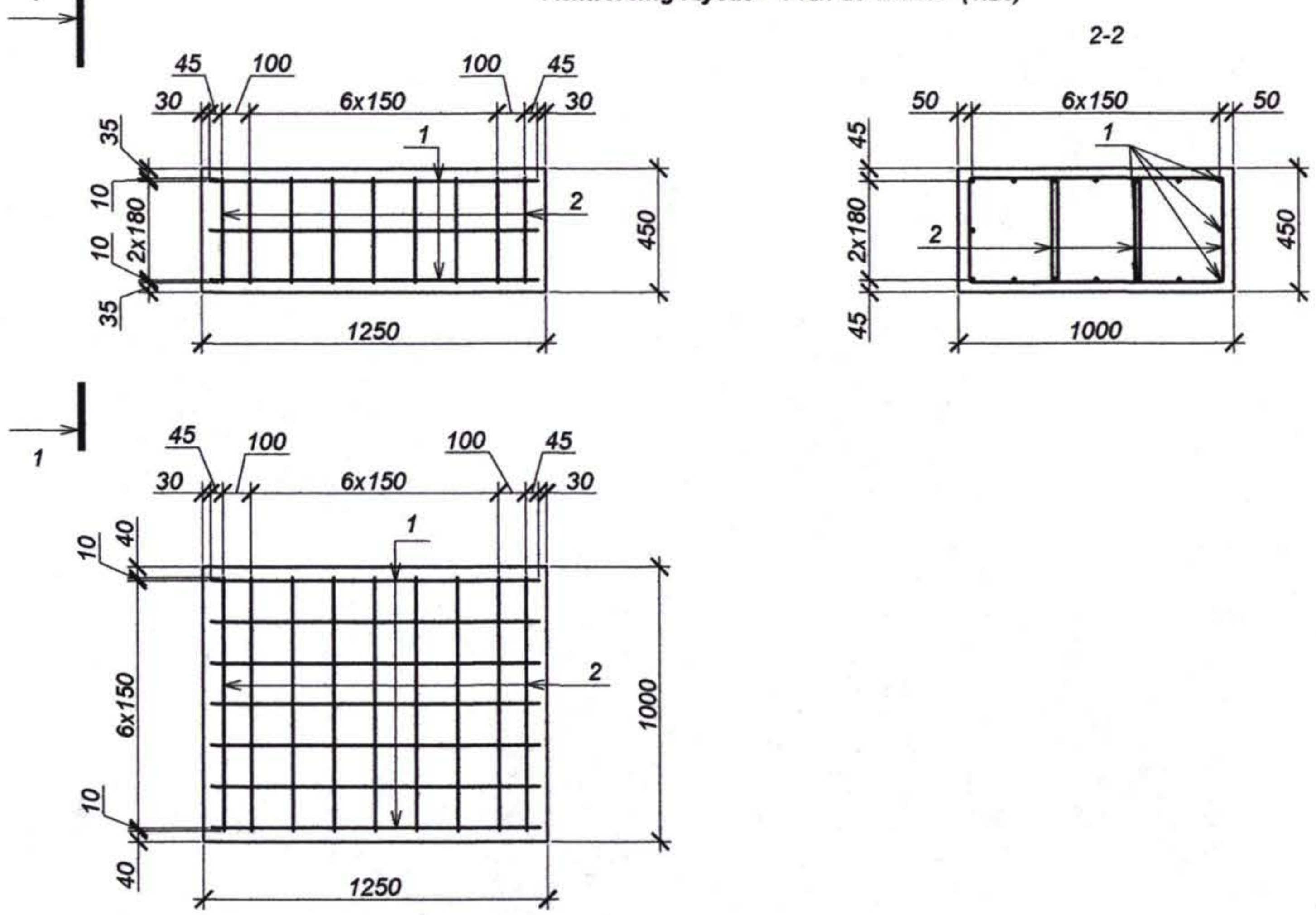
***Abutment head** - Bancheta.*

***Formwork layout** - Plan de cofrare (1:25)*

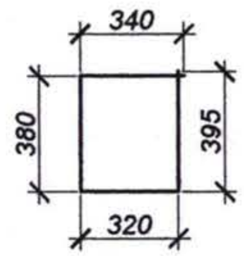




***Reinforcing layout** - Plan de armare (1:25)*



Bending details sheet.
Piese

Pozition. *Pozitia*	***Sketch.*** *Schită*
2	

Reinforcement amount for element, kg
Masuratoare consum de otel pentru element, kg

Element type. *Marca elementului*	***Reinforcing pieces.*** *Piese de armare*					***Overall weight.*** *Greutate totala*
	Reinforcing bar type. *Armatura de clasa*				***Totals.*** *Linia totalului*	
	*A - I, Cm3cп GOST 5781-82**		*A - III, 25Г2С GOST 5781-82**			
	Ø10	*Total*	*Ø10*	*Total*		
	13.3	*13.3*	*24.0*	*24.0*	*37.3*	*50.6*

Schedule of materials per abutment head
Lista de materiale pentru bancheta

Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***No.*** *Nr.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
1		*Ø10 A-III L=1190, GOST 5781-82**	16	0.73	
2		***Stirrup*** *Etrier Ø10 A-I L=1435, GOST 5781-82**	27	0.89	
		Concrete *Beton B30, F200, W6, GOST 26633-91**			*0.56 m³*

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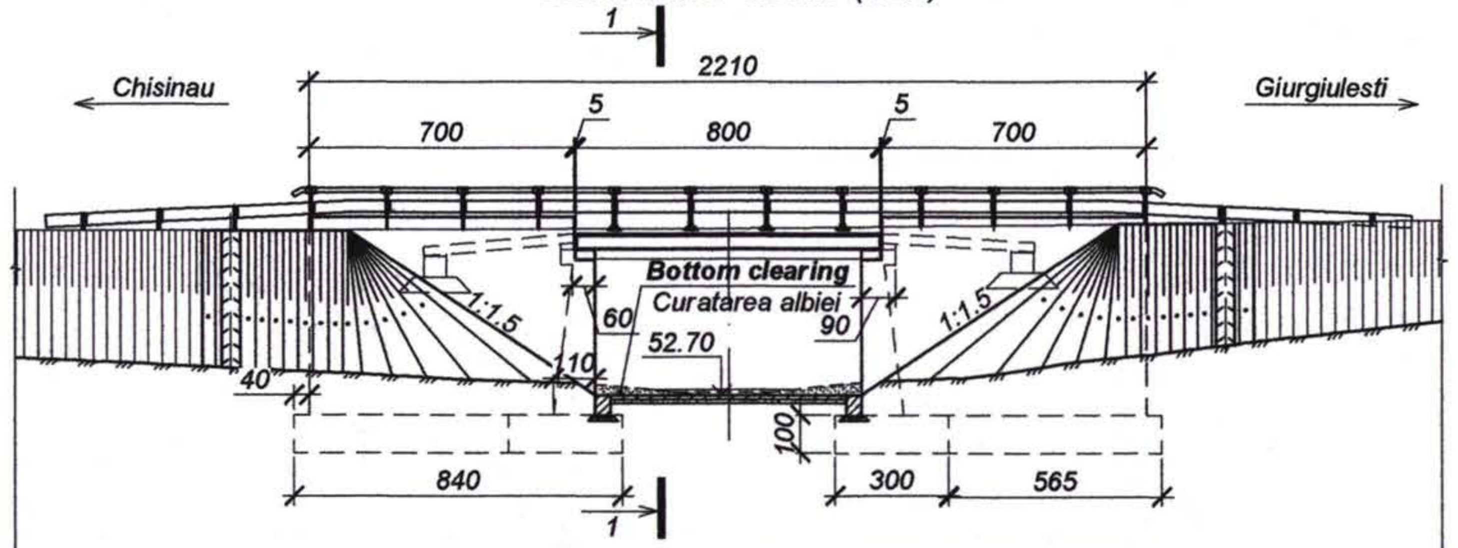
Pod, km 130+727.
Bridge, km 130+727.

Bancheta.
Abutment head.

Drawing 24-14

Side Elevation - *Elevatie (1:200)*



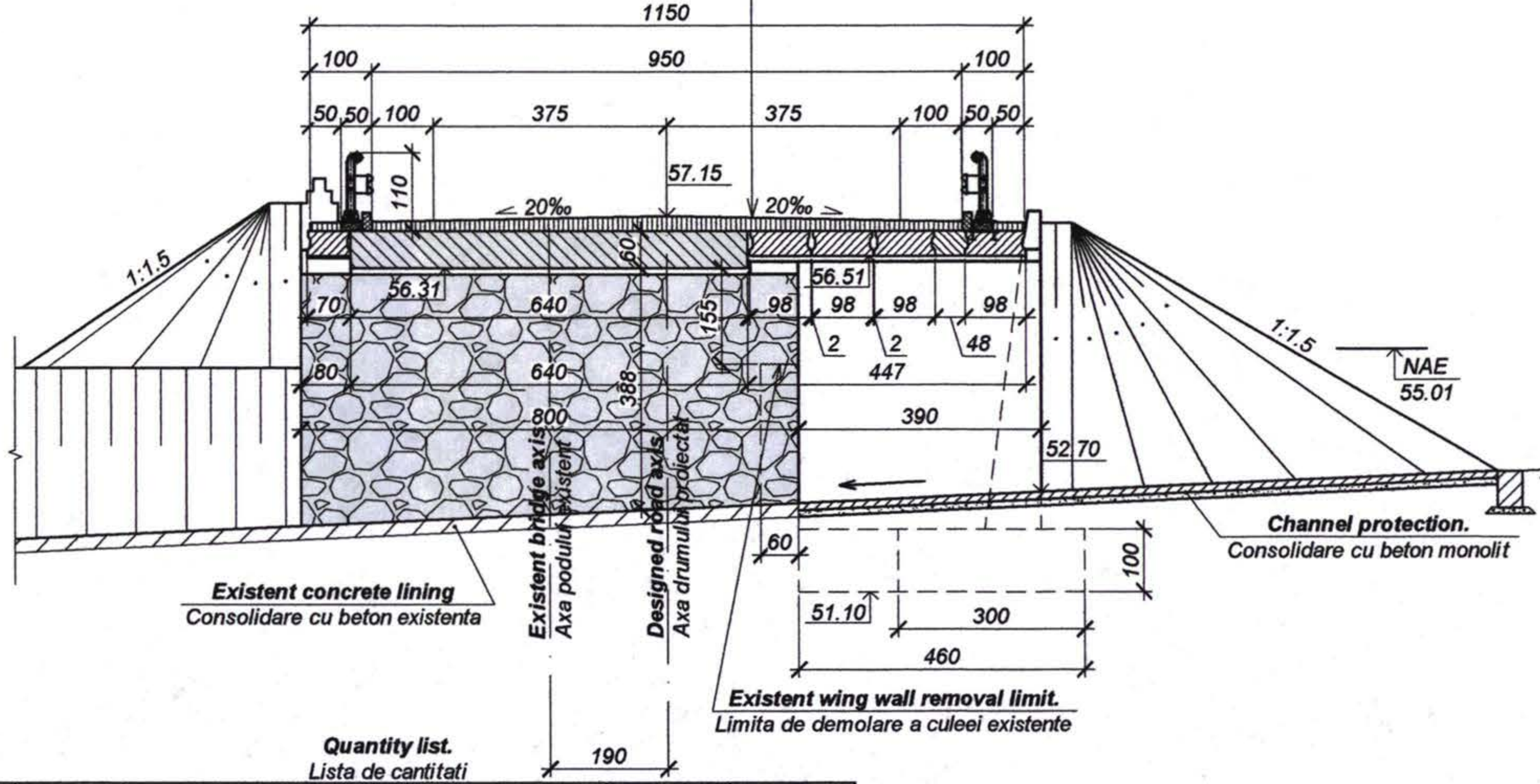
Borehole No.14 section
Sectiune sonda geologica Nr. 14

52.90
Made ground. *Sol de umplutura*
51.80
Loamy soil. *Argila nisipoasa*
47.40

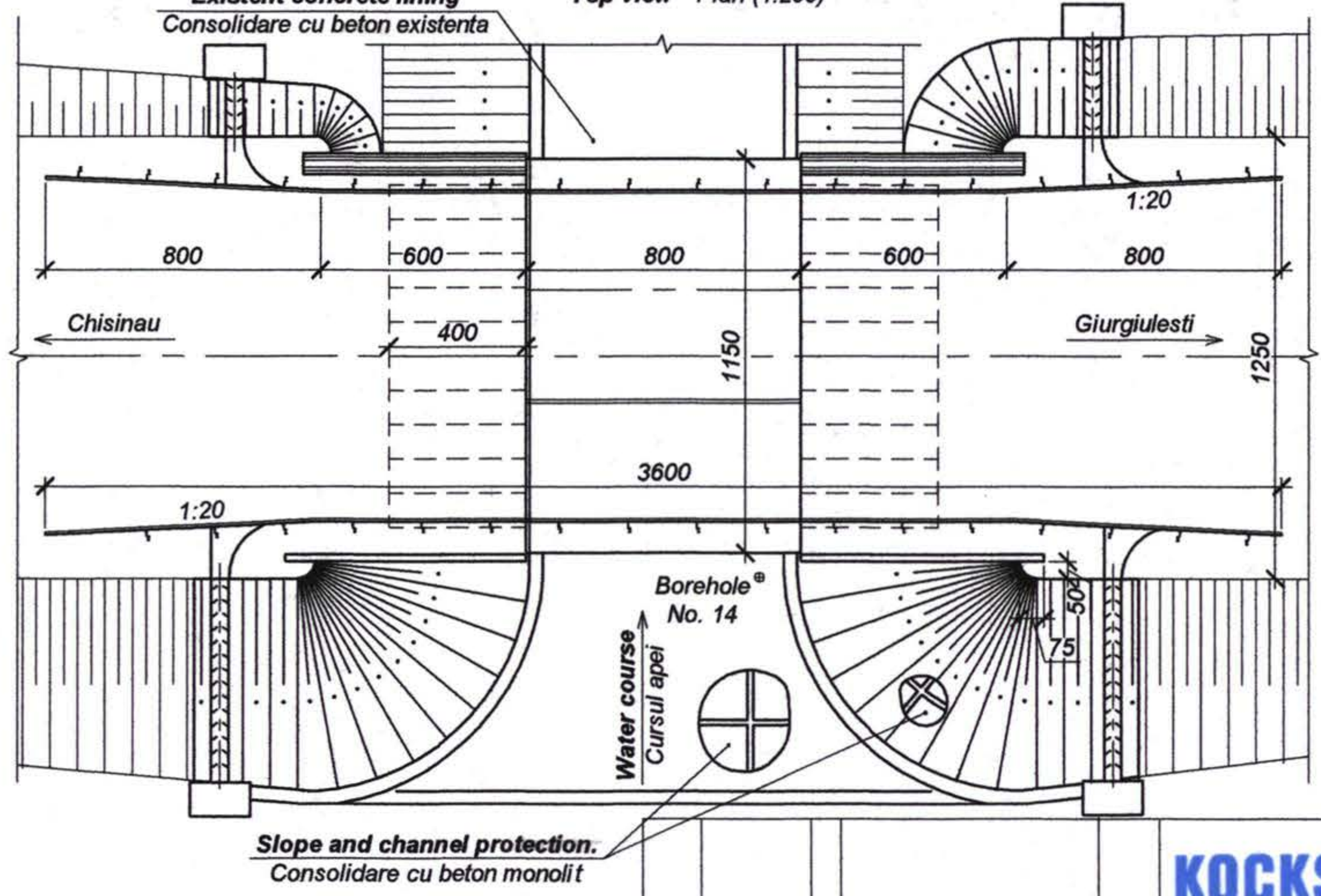
Design data / Date proiect	Gradient,‰, vertical radius, m / Declivitate,‰, curba verticala, m	R=2210						
	Finished carriageway level, m / Cota in axa, m	57.08	57.08		57.15		57.26	57.34
Terrain data / Date teren	Ground level, m / Cota teren, m	53.68	53.52	52.70	52.70		53.99	54.64
	Distance, m / Distanta, m	3.45	11.84	8.00	8.50	5.79		
Survey station	Pichet	1349+87				135		

1 - 1 (1:100)

Stone mastic asphalt concrete. *Beton asfaltic*	- 70 mm
Protective layer. Strat de protectie	- 40 mm
Waterproofing. Hidroizolatie	- 5 mm
Leveling layer. Strat de egalizare	- 30 mm



Top view - *Plan (1:200)*



Soil physical characteristics.
Caracteristicile fizice ale paminturilor

Type of characteristic. Tipul caracteristicii.	**Loamy soil.** Argila nisipoasa
Soil moisture. Umiditatea naturala a pamintului.	0.24
Index of plasticity. Indicele de plasticitate I_P	0.13
Flow index. Indicile de lichiditate I_L	0.05
Consistency of the soil. Densitatea pimantului, g/cm³	1.84
Consistency of dry soil. Densitatea pimantului uscat, g/cm³	1.50
Porosity factor. Coeficientul de porozitate	0.794

Quantity list.
Lista de cantitati

No. Art.	Item description. Descrierea articolului	Unit. Unitatea de masura	Quantitiy. Cantitate
1	**Abutment widening.** Supralargirea culeei.	Cu. m	130
2	**Superstructure precast reinforced concrete elements.** Suprastructura din elemente prefabricate din beton armat	Cu. m	15.7
3	**Bridge approach.** Racordarea podului cu rampele de acces	Cu. m.	30
4	**Bridge structure waterproofing.** Hidroizolatia suprastructurii podului	Sq. m.	92
5	**Bridge approach waterproofing.** Hidroizolatia la acces a podului	Sq. m.	80
6	**Expansion joints.** Rosturi de dilatatie	m.	23
7	**Bridge asphalt concrete pavement.** Imbracaminte din beton asfaltic pe pod	Sq. m.	92
8	**Bridge deformable guard-rail.** Parapet de siguranta metalic pe pod	m.	16
9	**Deformable guard-rail on the ramps.** Parapet de siguranta deformabil pe rampe	m.	56
10	**Slope and channel protection.** Protejarea taluzelor si albiei	Sq. m.	450
11	**Existent dashpot repair.** Reparatia disipatorului de apa existent.	Cu. m.	10
12	**Removal of existing structure.** Demolarea structurii existente	Cu. m. / t	47 / 0.9

Hydrological characteristics.
Caracteristici hidrologice

Name. Denumirea	**Unit.** Unitate	**Quantity.** Cant.
Estimated flow quantity. Debitul de calcul, $Q_{2\%}$	m³/s	37.8
High-water level. Nivelul apelor exceptionale $NAE_{2\%}$	m	55.01
Flow velocity. Viteza apei	m / s	4.91

Note. *Nota:*
1. **Bridge deck level will be adjusted after existent deck pavement disassembly.**
1. Cota caii podului se va preciza dupa desfacearea caii existente.
2. **All dimensions are in cm, level marks in m.**
2. Toate dimensiunile sunt in cm, cotele in m.

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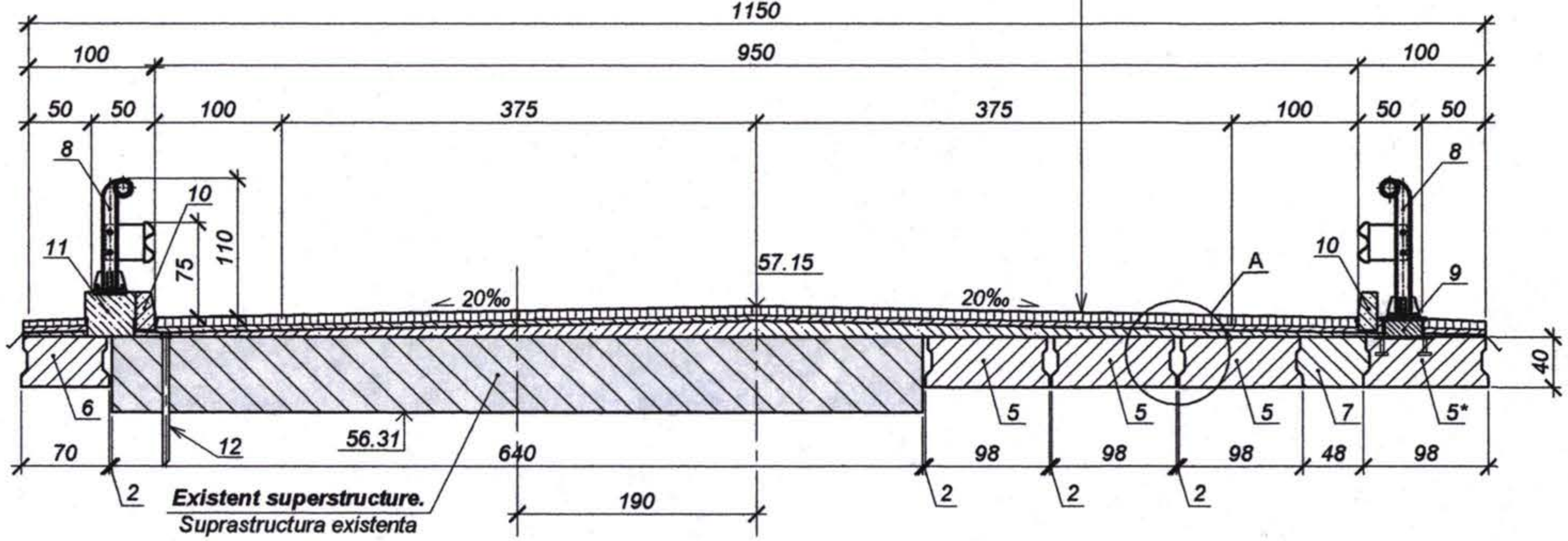
Pod, km 134+987.
Bridge, km 134+987.
Dispozitie generala.
General arrangement.

Drawing 25-1

Superstructure cross section.
Sectiune transversala a suprastructurii (1:50)

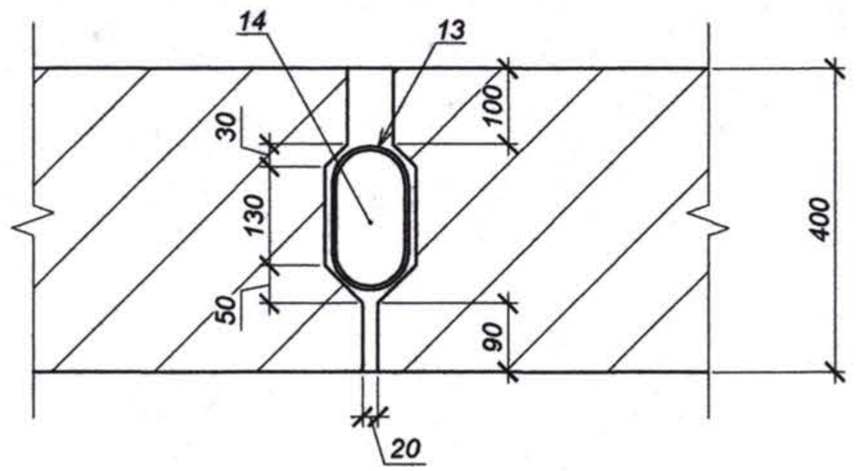
Stone mastic asphalt concrete. Beton asfaltic	- 70 mm	4
Protective layer. Strat de protectie	- 40 mm	2
Waterproofing. Hidroizolatie	- 5 mm	3
Leveling layer. Strat de egalizare	- 30-120 mm	1



Schedule of materials per cross section.
Lista de materiale pentru sectiunea transversala

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
1		**Leveling concrete layer.** Strat de egalizare din beton B27.5 F200 W6			8.3 m³
2		**Protective layer of reinforced concrete.** Strat de protectie, beton B27.5 F200 W6 h=4cm			3.7 m³
3		**Water proofing,membrane.** Hidroizolare, membrana, h=0.5cm			92 m²
4		**Stone mastic asphalt concrete.** Beton asfaltic, h=7cm			6.5 m³
5		**Precast reinforced concrete slab D-8.** Dala prefabricata din beton armat D-8.	4		3.0 m³
6		**Precast reinforced concrete slab.** Dala prefabricata din beton armat D-8s.	1		2.1 m³
7		**Cast-in-place concrete sector of deck.** Sectorul monolit al suprastructurii S - 1.	1		1.7 m³
8		**Bridge deformable guard-rail.** Parapet de siguranta metalic pe pod			16 m
9		**Metallic header.** Soclu metalic	4	31.0	
10		**Concrete curb.** Bordura din beton armat			16 m
11		**Concrete stub foundation.** Soclu din beton armat monolit.	1		1.2 m³
12		**PVC drain pipe Ø40mm.** Teava de drenaj din PVC Ø40mm	2		
13		**Helix.** Spirala SP-1	32	0.35	
14		**Concrete.** Beton B30 F200 W6.			0.1 m³

Concreted conection between slabs
Imbinare din beton a dalelor (1:10)



Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

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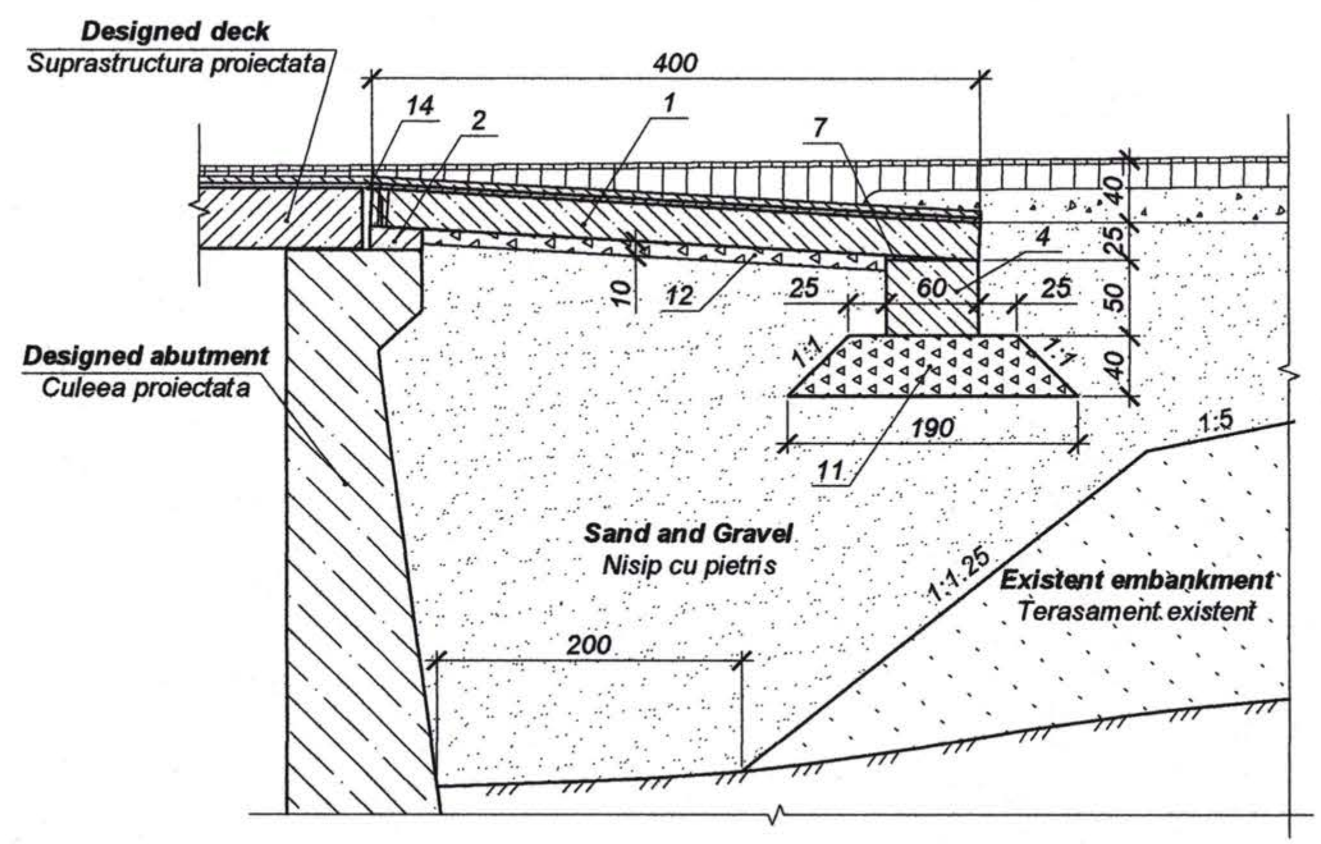
Pod, km 134+987.
Bridge, km 134+987.

Sectiune transversala a suprastructurii.
Superstructure c ross section.

Drawing 25-2

1 - 1 (1:50)

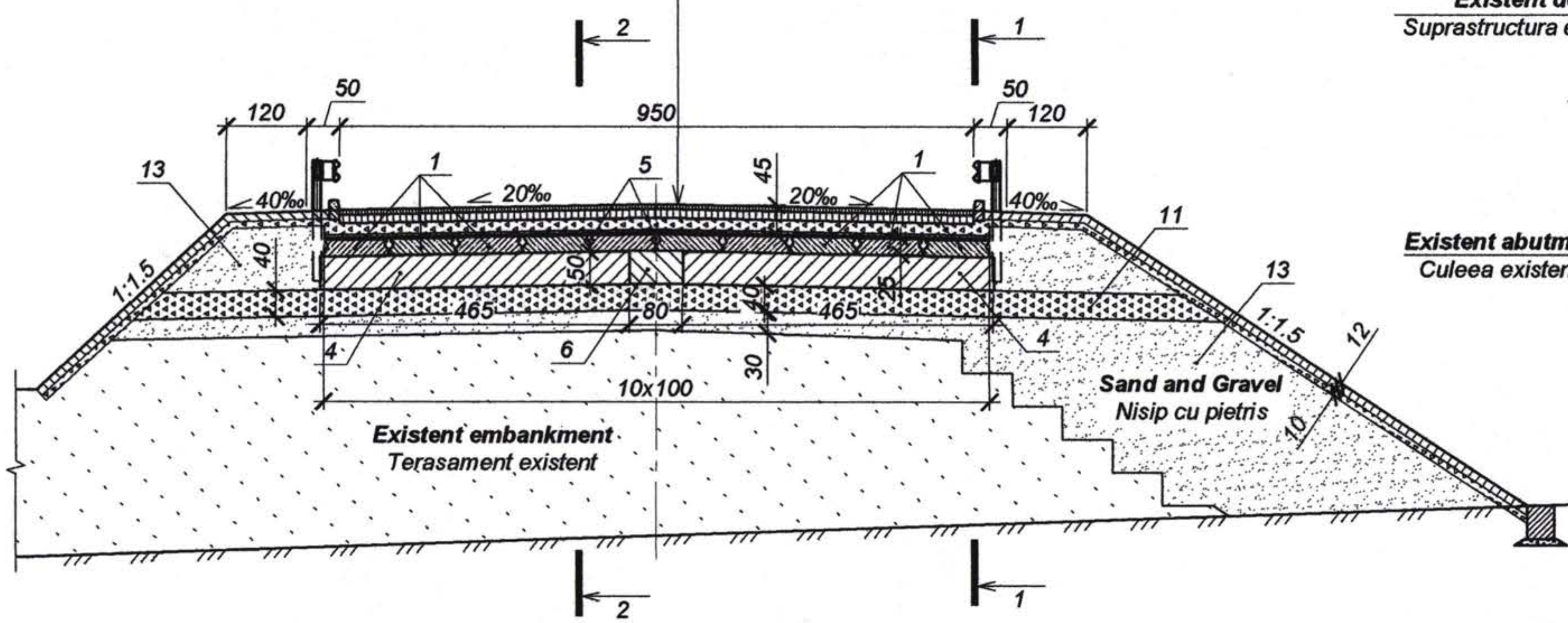


Schedule of materials per approach of one abutment
Lista de materiale pentru racordarea unei culei cu terasamentul

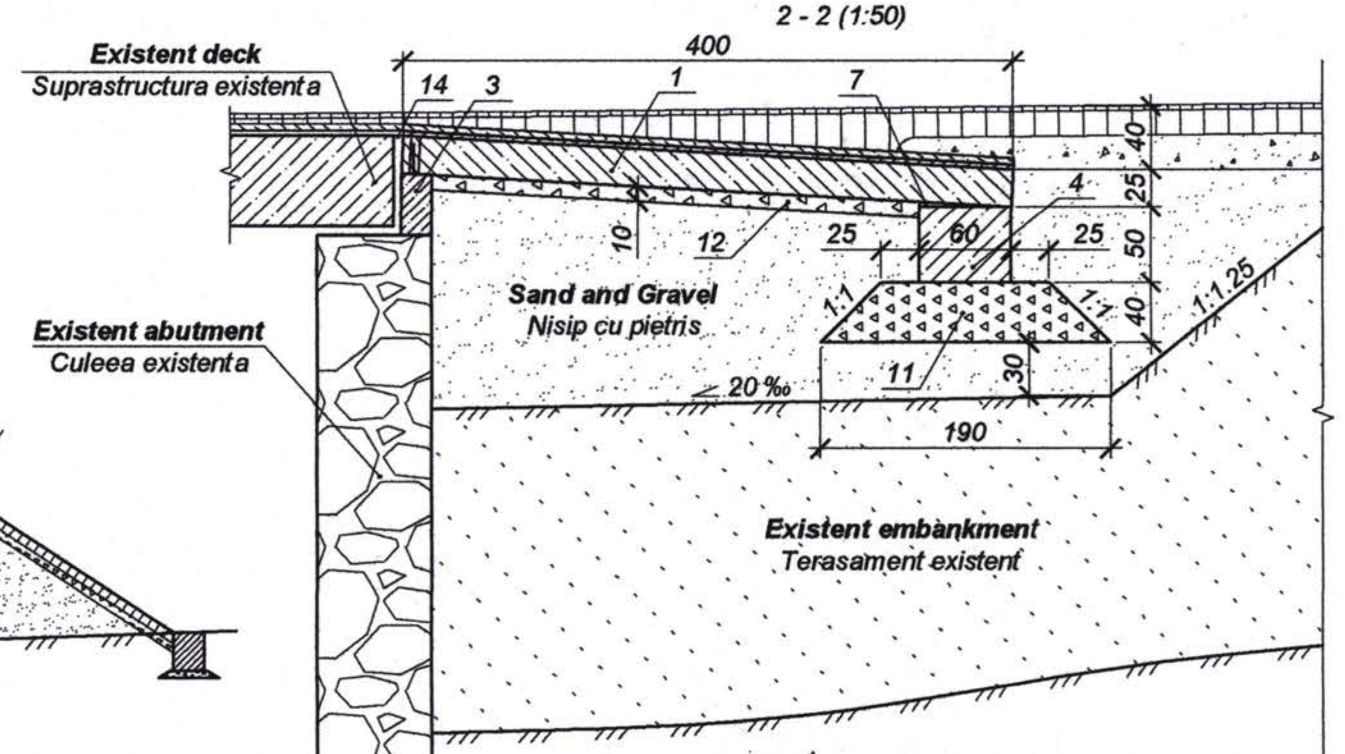
Pozition Pozitia	Reference. Indicativ	Name. Denumirea	Quantity Cant.	Weight. Masa, kg	Note. Nota
1		**Approach slab** Dala de racordare PR 1-4	10	2350	0.94 m³
2		**Back wall on designed abutment** Zid de garda pe culeea proiectata	1		0.4 m³
3		**Back wall on existent abutment** Zid de garda pe culeea existenta	1		1.6 m³
4		**Precast bearing beam** Longrina prefabricata	2	3500	1.4 m³
5		**Cast-in-place concrete between PC approach slab s** Imbinarea placilor de racordare			0.6 m³
6		**Cast-in-place concrete between PC bearing beams** Imbinarea elementelor longrinei			0.5 m³
7		**Cement and sand mortar M200 bed to approach slab .** Pat de mortar de ciment cu nisip M200 la rezemarea placilor de racordare.			0.1 m³
8		**Leveling concrete layer** Strat de egalizare, beton B25 F200 W6, h=4cm			1.2 m³
9	BCH 32 - 81	**Water proofing, membrane** Hidroizolare, membrana, h=0.5cm			40 m²
10		**Protective layer of reinforced concrete** Strat de protectie, beton B25 F200 W6, h=4cm			1.6 m³
		Precast reinforced concrete curbs. Borduri beton armat			26 m
11		**Crushed stone bed** Pat din piatra sparta M400, h=40cm			9.4 m³
12		**Crushed stone layer** Strat din piatra sparta M400, h=10cm			3 m³
13		**Sand and gravel** Nisip cu petris			17 m³
14		**Expanssion joints** Rost de dilatatie			11.5 m

Bridge approach
Racordarea podului cu terasamentul (1:100)

Stone mastic asphalt concrete. Beton asfaltic	- 70 mm	
Protective layer. Strat de protectie	- 40 mm	10
Waterproofing. Hidroizolatie	- 5 mm	9
Leveling layer. Strat de egalizare	- 30 mm	8



2 - 2 (1:50)



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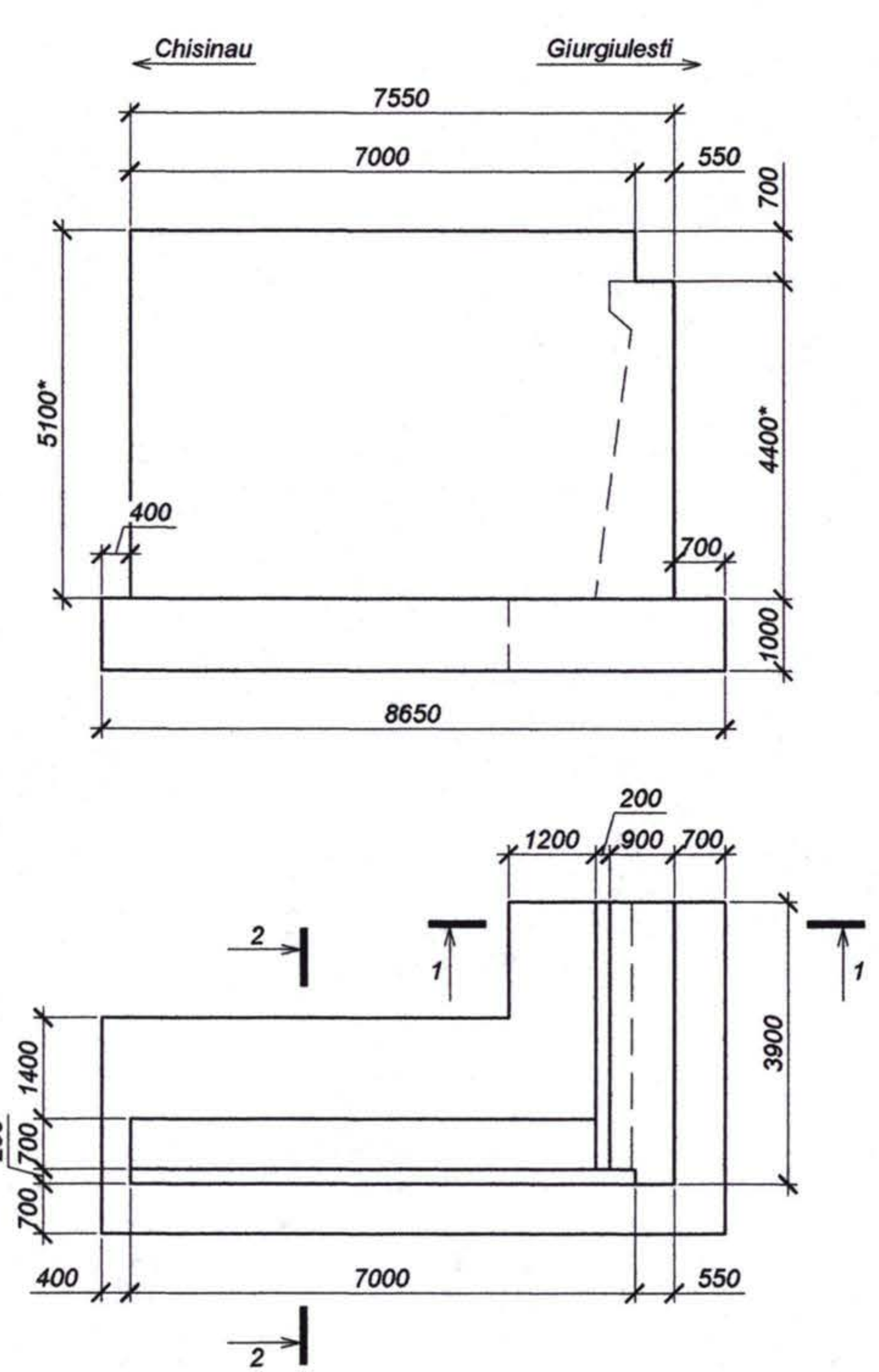
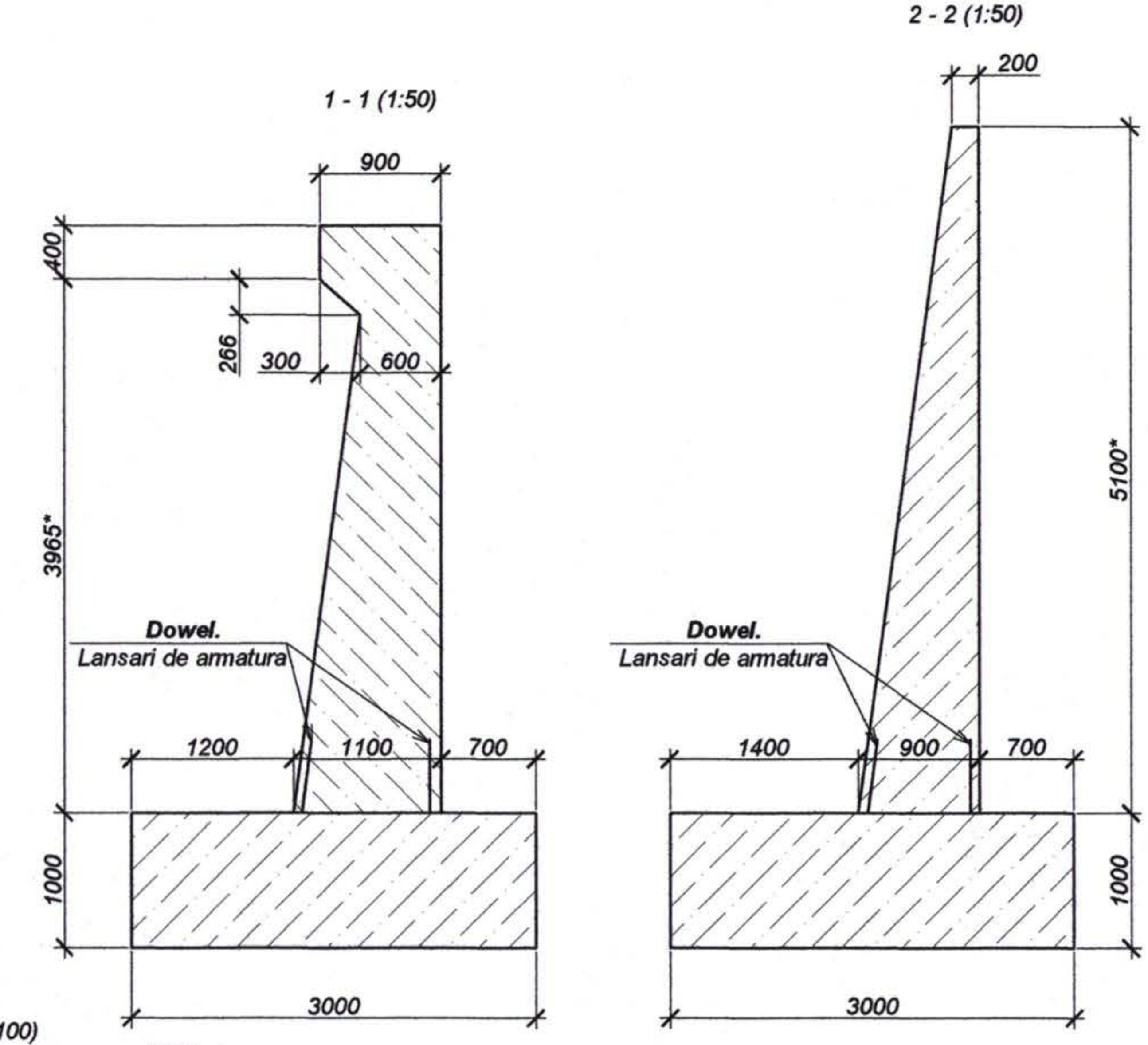
Pod, km 134+987.
Bridge, km 134+987.

Racordarea podului cu terasamentul.
Bridge approach.

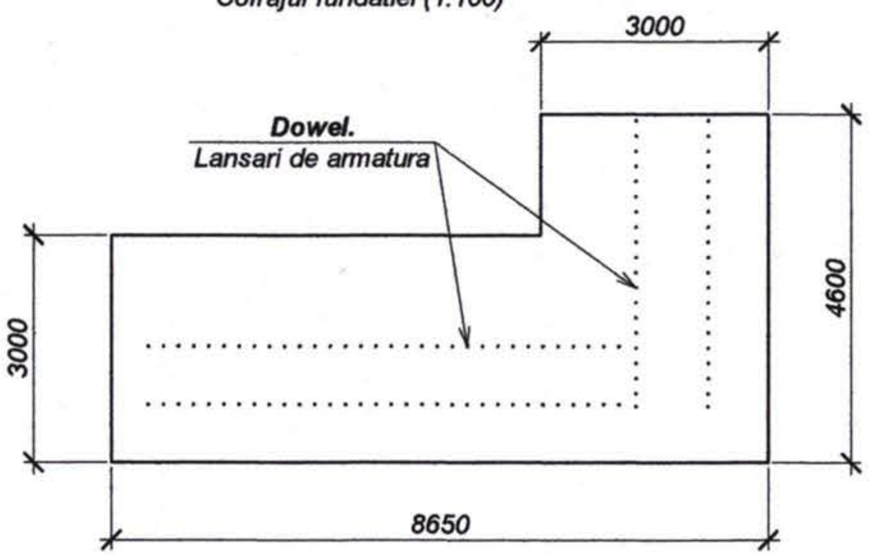
Drawing 25-3

Design abutment formwork. Abutment No.1
Cofrajul culeei proiectate. Culeea Nr.1 (1:100)





Base formwork.
Cofrajul fundatiei (1:100)



Reinforcement amount for one abutment, kg.
Masuratoare consum de otel pentru o culee, kg

Element type. Tip element	Reinforcing pieces. Piese de armare							Total weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Total line. Linia totalului	
	A-I Cm3cп		A-III 25Г2C					
	GOST 5781-82*		GOST 5781-82*					
	Ø6	Total	Ø8	Ø12	Ø18	Total		
	45.0	45.0	170.86	1139.2	81.0	1391.1	1436.1	1436.1

Note. *Remarca:*

1. ***Abutment No.2 is a mirrored image of the abutment No.1.***
1. *Culeea Nr.2 este imaginea oglindita a culeei Nr.1.*
2. ***The dimensions with * will be adjusted after refining of bridge deck level.***
2. *Dimensiunile cu * vor fi precizate dupa aprecierea nivelului caii podului.*

Shimb. nr. inv.	Semnat la data	Nr. inv. orig.

Rev. / Rev.	Amendamente / Amendments	Aprobat / Approved	Data / Date

Consultantii/Consultants:

KOCKS INGENIEURE — Kocks Consult GmbH, Stegemannstrasse 32-38, 56068 Koblenz, Germany

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Desenat/Drawn: Ponomari S.
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EU Delegation to Moldova
Republic of Moldova Ministry of Transport

Marimea originala a desenului
Original Drawing Size

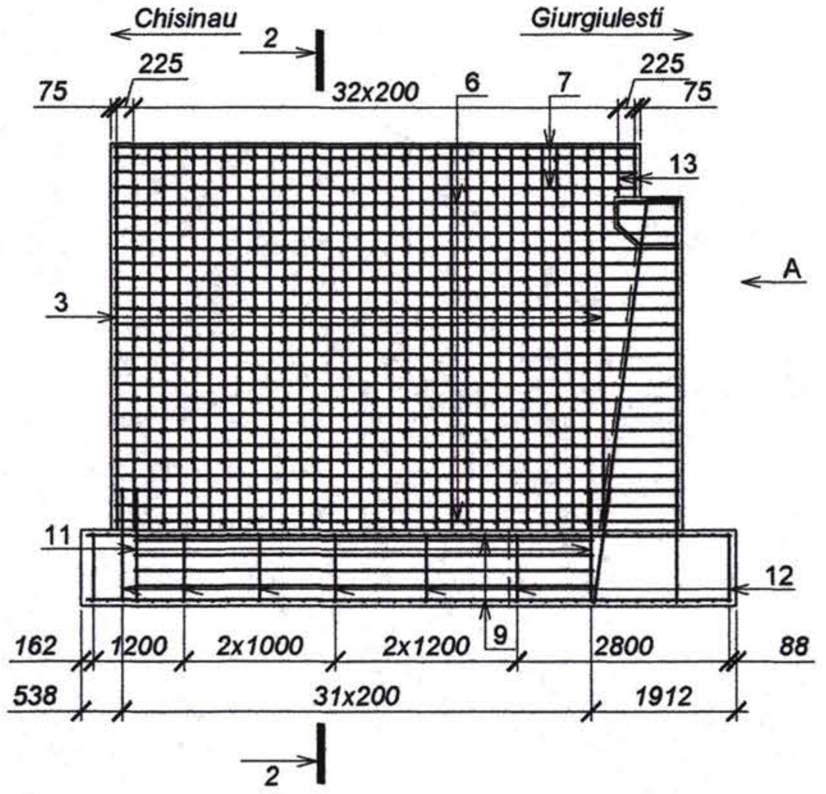
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuţie / Sector Comrat - R38

Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

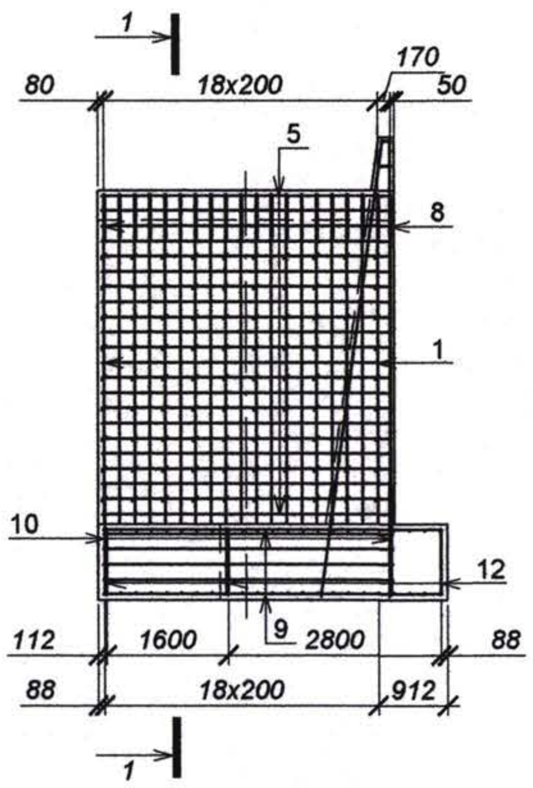
Pod, km 134+987. Cofrajul culeei proiectate. Culeea Nr.1
Bridge, km 134+987. Design abutment formwork. Abutment No.1

Drawing 25-4

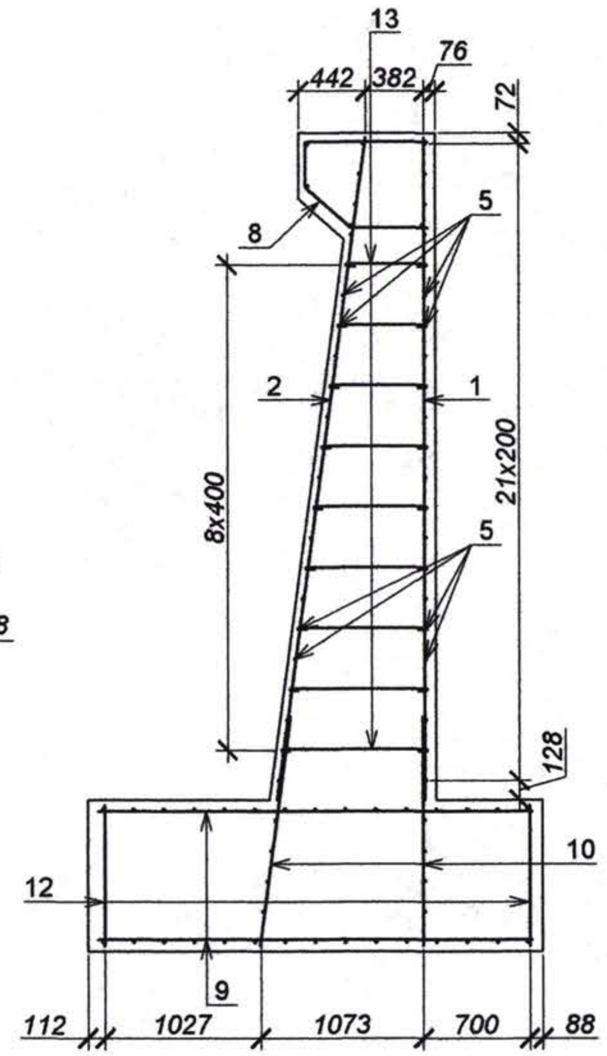
Abutment No.1 reinforcing layout.
Plan de armare a culeei Nr.1 (1:100)



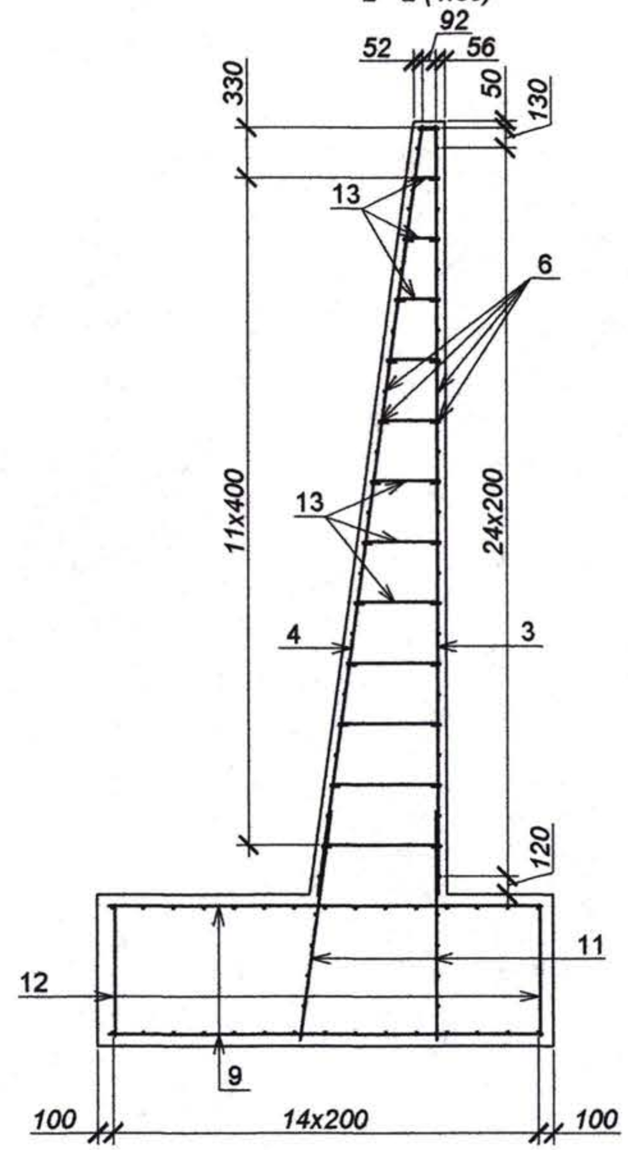
A (1:100)



1 - 1 (1:50)



2 - 2 (1:50)



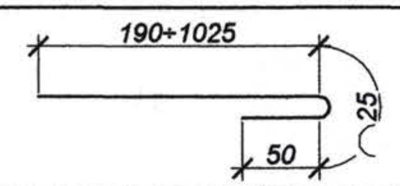
Schedule of materials per one abutment
Lista de materiale pentru o culee

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity** Cantitate	**Weight.** Masa, kg	**Note.** Nota
		Assembly elements. Piese de asamblare			
1		Ø12 A-III L=4370, GOST 5781-82*	20	3.88	
2		Ø12 A-III L=4410, GOST 5781-82*	20	3.92	
3		Ø12 A-III L=5070, GOST 5781-82*	34	4.50	
4		Ø12 A-III L=5125, GOST 5781-82*	32	4.55	
5		Ø8 A-III L=3800, GOST 5781-82*	22	1.50	
6		Ø8 A-III L=7450, GOST 5781-82*	26	2.95	
7		Ø8 A-III L=6900, GOST 5781-82*	8	2.73	
8		**Reinforcing cage.** Carcasa KC - 1	1	94.60	
9		**Mesh.** Plasa SC - 1	2	264.60	
10		**Mesh.** Plasa SC - 2	2	32.84	
11		**Mesh.** Plasa SC - 3	2	52.80	
12		Ø8 A-III L=930, GOST 5781-82*	20	0.37	
13		Ø6 A-I L_{med}=681, L_{max}=265, L_{max}=1100; GOST 5781-82*	300	0.15	

Schedule of materials per one abutment (continuation)
Lista de materiale pentru o culee (continuare)

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity** Cantitate	**Weight.** Masa, kg	**Note.** Nota
14		Ø12 A-III L=670, GOST 5781-82*	4	0.60	
		Materials. Materiale			
		Concrete. Beton B30 F200 W6, GOST 26633-91*			65 m³

Bending details sheet.
Piese

Pozition. Poz.	**Sketch.** Schita
13	

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Republic of Moldova Ministry of Transport

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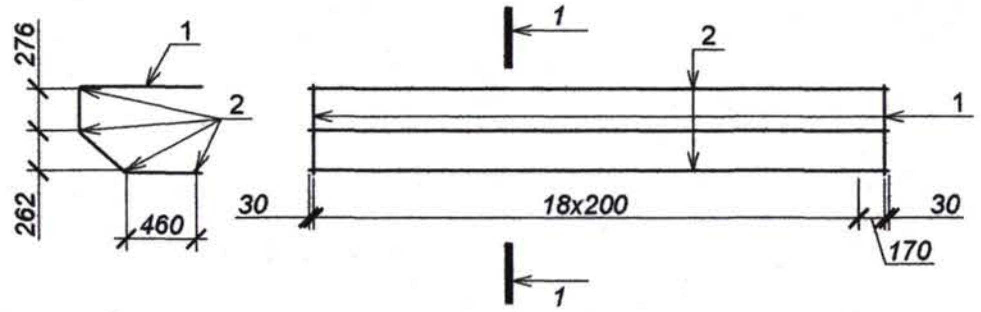
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

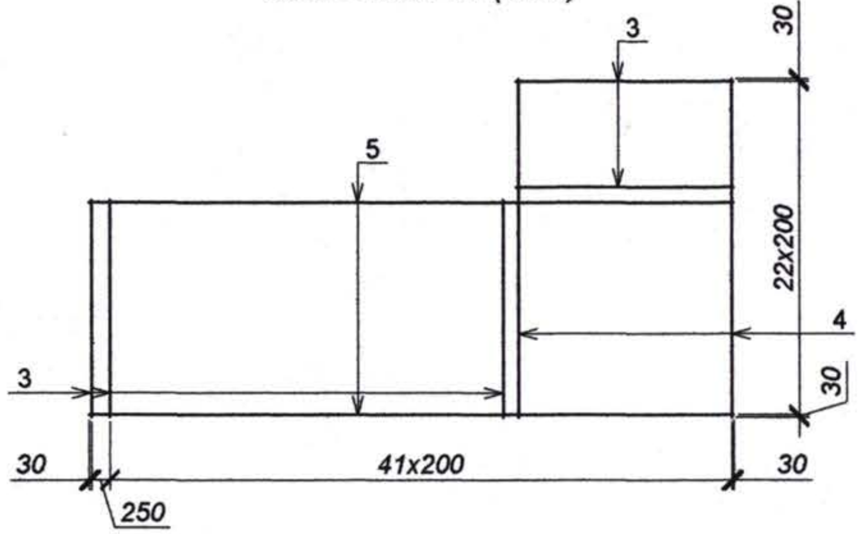
Pod, km 134+987.
Bridge, km 134+987.

Plan de armare a culeei.
Abutment reinforcing layout.

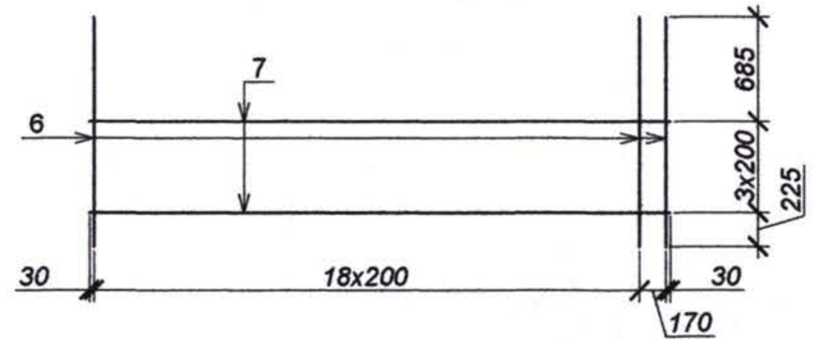
Drawing 25-5



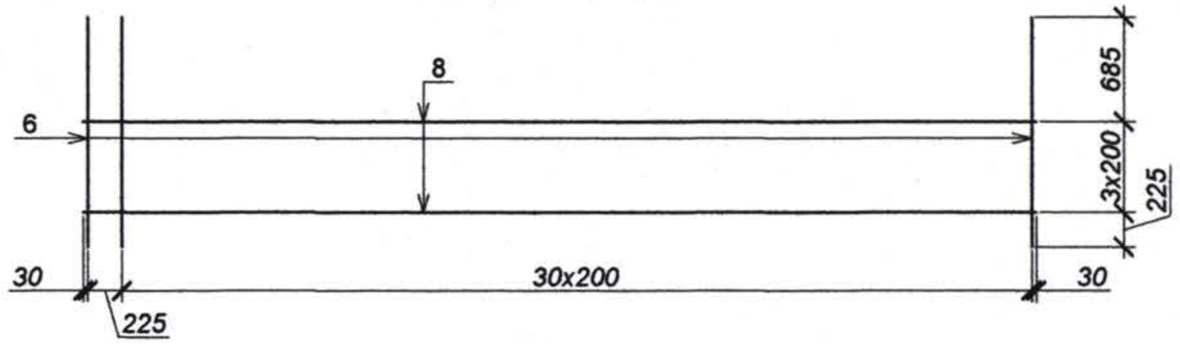
Mesh - *Plasa PL-7 (1:100)*



Mesh - *Plasa PL-8 (1:50)*



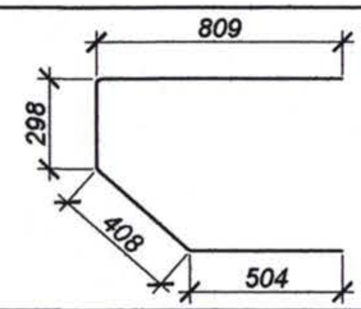
Mesh - *Plasa PL-9 (1:50)*



Schedule of materials per reinforcing cage C-4 and meshes PL-7, PL-8, PL-9.
Lista de materiale pentru carcasa C-4 si plase PL-1, PL-2, PL-3

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**Quantity.** *Cantitate*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Reinforcing cage. *Carcasa C-4*			
1		Ø18 A-III L=2020	20	4.05	
2		Ø12 A-III L=3830	4	3.40	
		Mesh. *Plasa PL-7*			
3		Ø12 A-III L=2860	36	2.55	
4		Ø12 A-III L=4460	15	3.96	
5		Ø12 A-III L=8510	15	7.56	
		Mesh. *Plasa PL-8*			
6		Ø12 A-III L=1510	20	1.34	
7		Ø8 A-III L=3830	4	1.51	
		Mesh. *Plasa PL-9*			
6		Ø12 A-III L=1510	32	1.34	
8		Ø8 A-III L=6285	4	2.48	

Bending details sheet.
Piese

Pozition. *Poz.*	**Sketch.** *Schita*
1	

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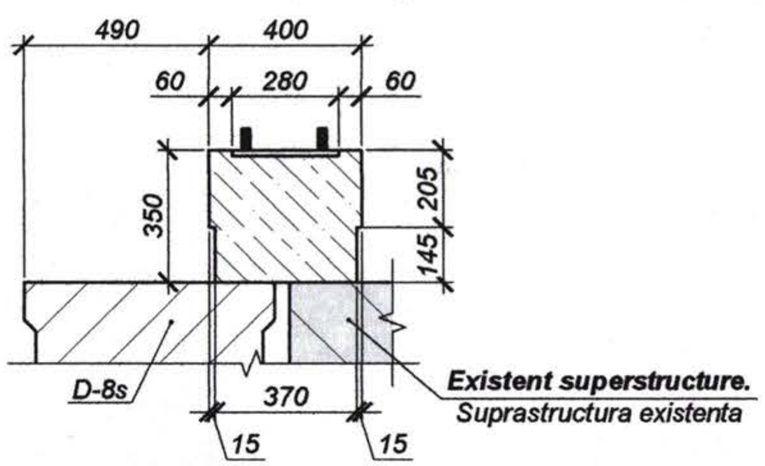
Pod, km 134+987.
Bridge, km 134+987.

Culee. Plase si carcase.
Abutment. Meshes and cages.

Drawing 25-6

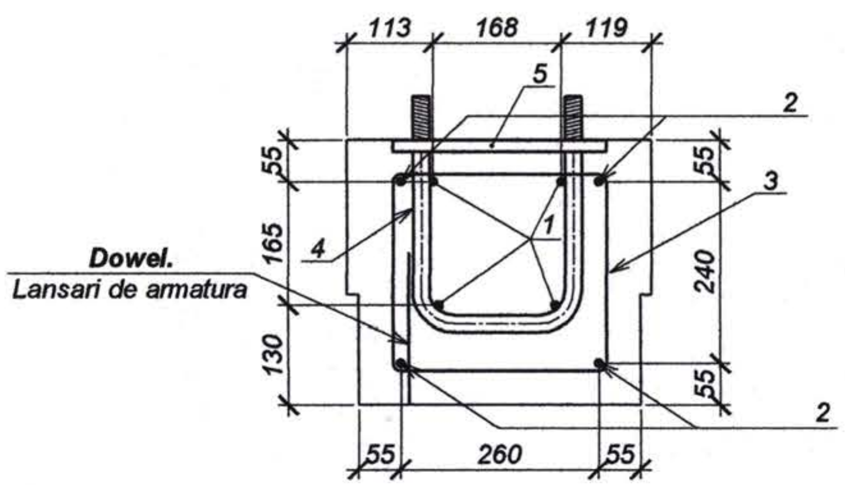
Formwork.
Schema de cofraj (1:50)



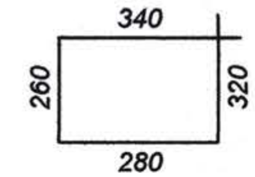
Schedule of materials per concrete stub foundation.
Lista de materiale pentru soclu monolit

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cantitate	Weight. Masa, kg	Note. Nota
1		Ø10 A-III L=1150, GOST 5781-82*	4	0.71	
2		Ø10 A-III L=7900, GOST 5781-82*	4	4.87	
3		Ø10 A-I L=1200, GOST 5781-82*	40	0.74	
		Embedded pieces. Piese inglobate			
4		Ø20 A-I L=770, GOST 5781-82*	8	1.9	15.2000
5		–20x240 L=280, GOST 103-2006	4	10.6	42.4000
		Materials. Materiale			
		Concrete. Beton B25 F200 W6, GOST 26633-91*			1.2 m³

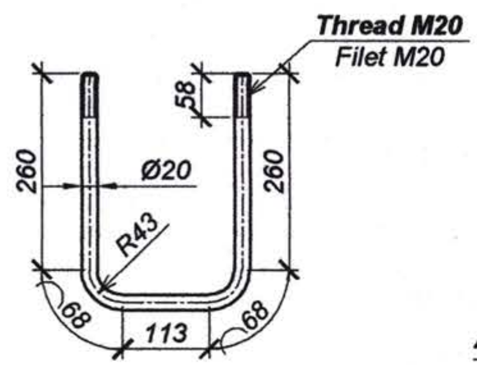
Reinforcing scheme.
Schema de armare (1:10)



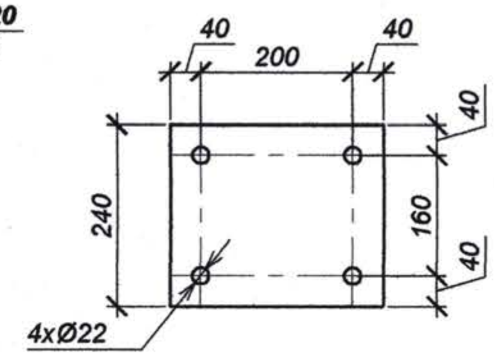
Bending details sheet.
Piese

Pozition. Poz.	Sketch. Schita
3	

Poz. 4 (1:10)



Poz. 5 (1:10)



Reinforcement amount for concrete stub foundation.
Masuratoare consum de otel pentru soclu monolit, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare					Embedded pieces. Piese inglobate					Total weight. Greutate totala
	Reinforcing bar type. Armatura de clasa				Totals. Linia totalului	Reinforcing bar type. Armatura de clasa				Totals. Linia totalului	
	A - I, Ст3сп		A - III, 25Г2С			A - I, Ст3сп		ВСт3кп2			
	GOST 5781-82*		GOST 5781-82*			GOST 5781-82*		GOST 103-2006			
	Ø10	Total	Ø10	Total		Ø20	Total	–20x240 L=280	Total		
	29.6	29.6	22.3	22.3	51.9	15.2	15.2	42.4	42.4	57.6	109.5

Note. *Nota:*

1. Reinforcements type 1, 1.15 m length are local (0.5 m each side of the guard-rail post.
1. Armaturile de marca 1, cu lungimea de 1.15 m, sunt locale (0.5 m de o parte si de alta a stilpului parapet.
2. Reinforcements type 2,3 are located all along the bridge.
2. Armaturile de marca 2,3 sunt pe toata lungimea podului.
3. Reinforcements type 3 are ,ounted with 20 cm step.
3. Armaturile de marca 3 sunt montate cu pasul 20 cm.

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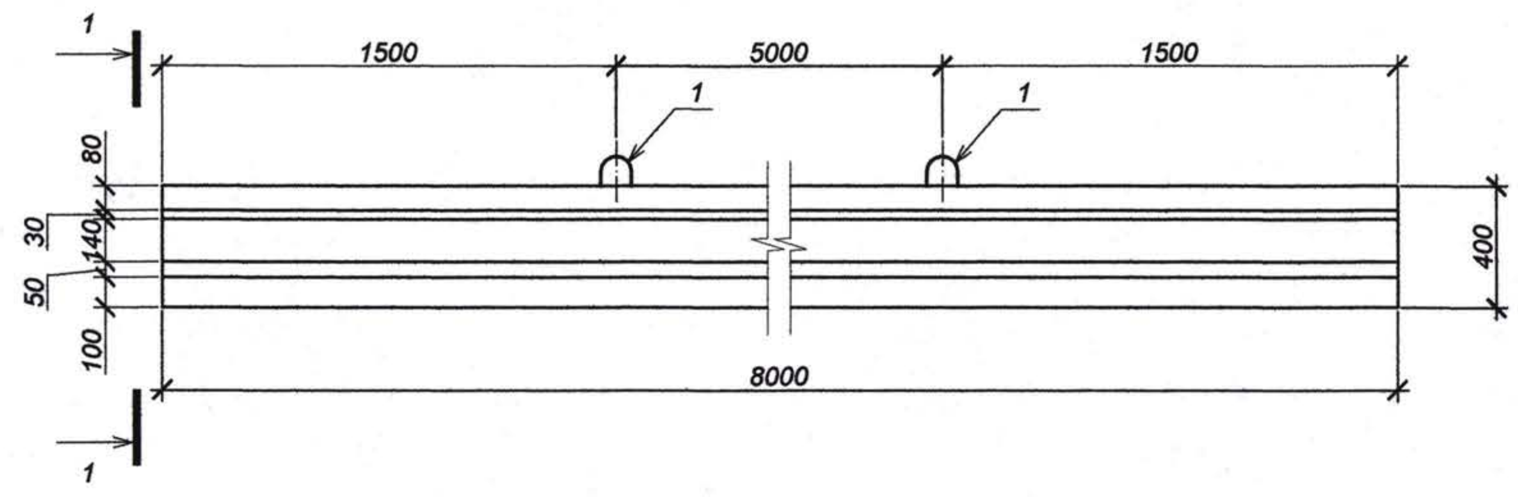
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

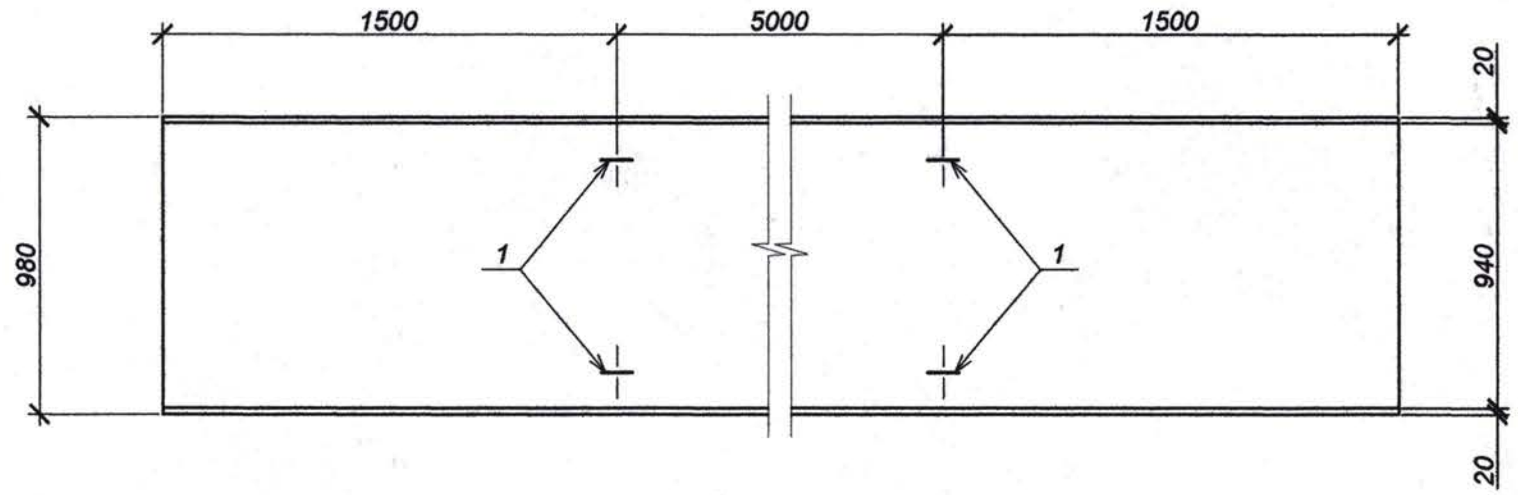
Pod, km 134+987.
Bridge, km 134+987.

Soclu din beton armat monolit.
Concrete stub foundation.

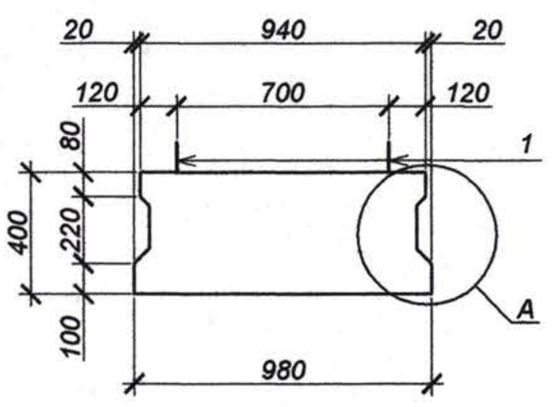
Drawing 25-7

Formwork layout - *Plan de cofrare (1:25)*

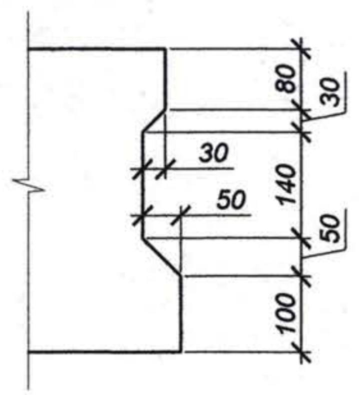




1 - 1 (1:25)



A *(1:10)*



Reinforcement amount for slab D - 8, kg
Masuratoare consum de otel pentru dala D - 8, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate			Total weight. Greutate totala
	Reinforcing bar type. Armatura de clasa					Totals. Linia totalului	Bar type. Armatura clasa		Totals. Linia totalului	
	A - I, Cm3cп GOST 5781-82*		A - III, 25Г2С GOST 5781-82*				A - I, Cm3cп GOST 5781-82*			
	Ø8	Total	Ø10	Ø25	Total		Ø20	Total		
D - 8	63.8	63.8	44.1	275.1	319.2	383.0	20.8	20.8	20.8	403.8

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Ministry of Transport

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Proiect de executie / Sector Comrat - R38

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Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod, km 134+987.
Bridge, km 134+987.

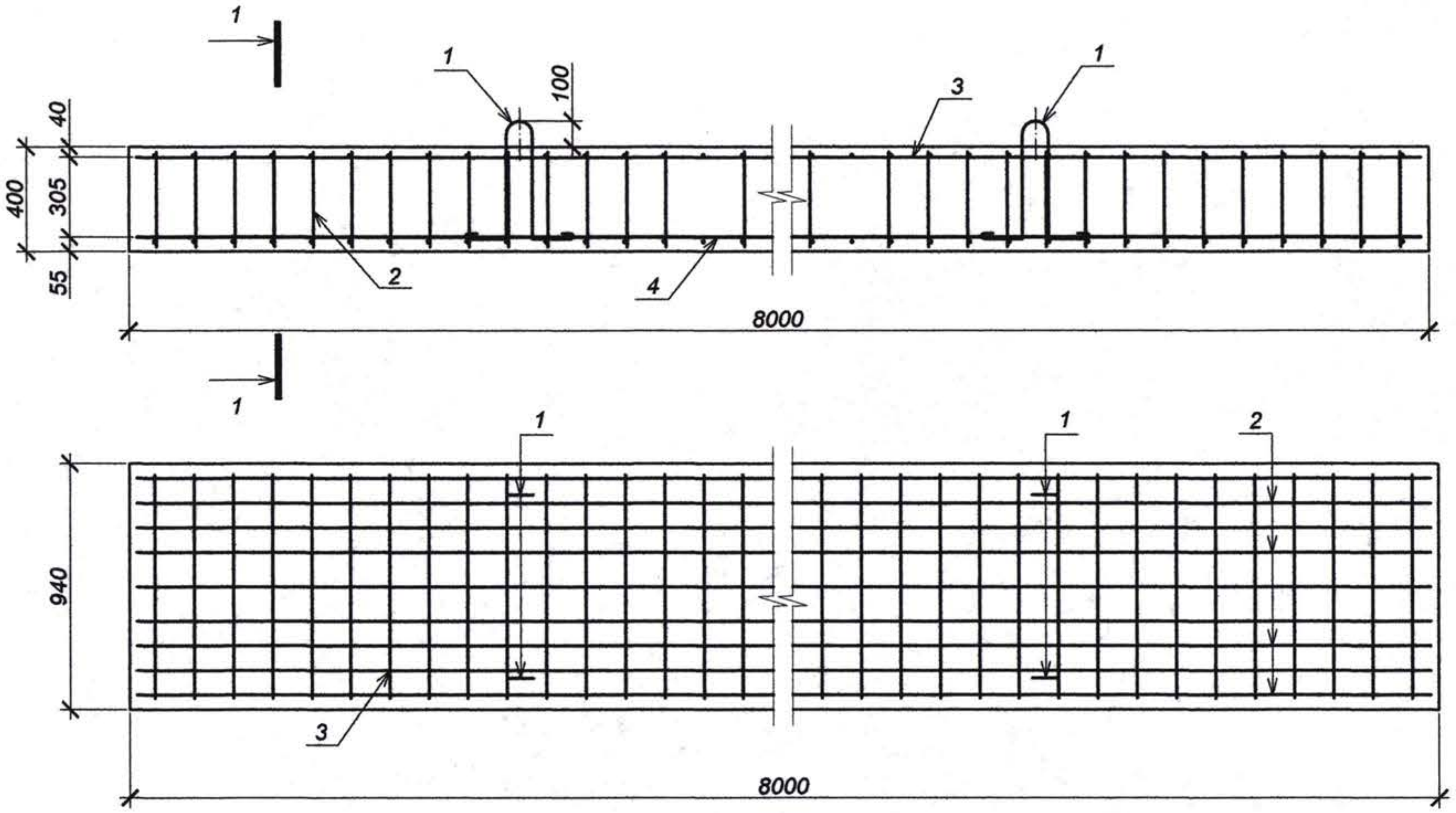
Dala prefabricata din beton armat D - 8.
Precast reinforced slab D - 8.

Drawing 25-8

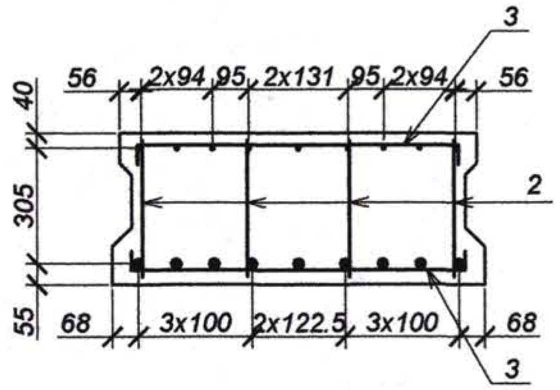
Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

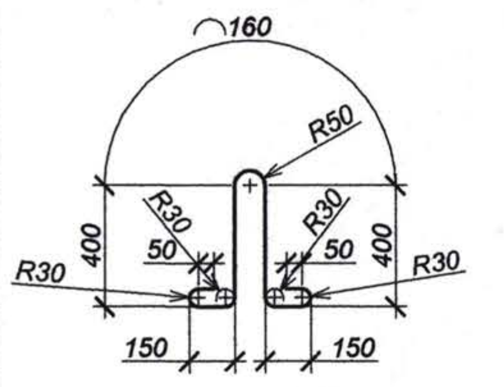
Reinforcing layout - Plan de armare (1:25)



1 - 1 (1:20)



Bending details sheet.
Piese

Pozition. Pozitia	**Sketch.** Schită
1	

Schedule of materials per slab D - 8z.
Lista de materiale pentru dala D - 8z

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity.** Cantitate	**Weight.** Masa, kg	**Note.** Nota
		Assembly elements. Piese de asamblare			
1		Ø20 A-I L=2100, GOST 5781-82*	4	5.2	
2		**Reinforcing cage.** Carcasa C - 1	4	41.47	
3		**Mesh.** Plasa PL - 1	1	44.1	
4		**Mesh.** Plasa PL - 2	1	173	
		Materials. Materiale			
		Concrete. Beton B30, F200, W6, GOST 26633-91*			3.0 m^3

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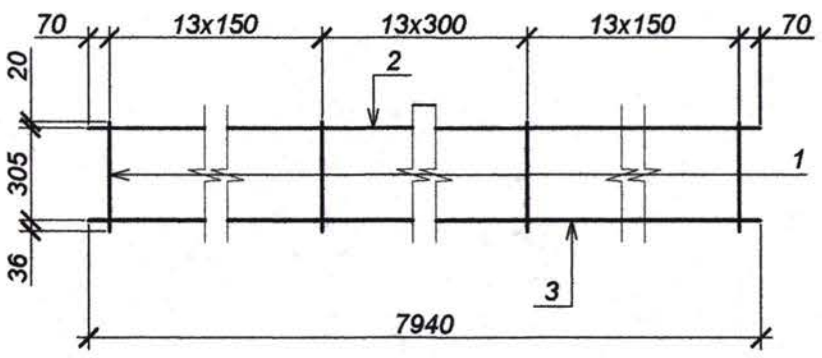
Pod, km 134+987.
Bridge, km 134+987.

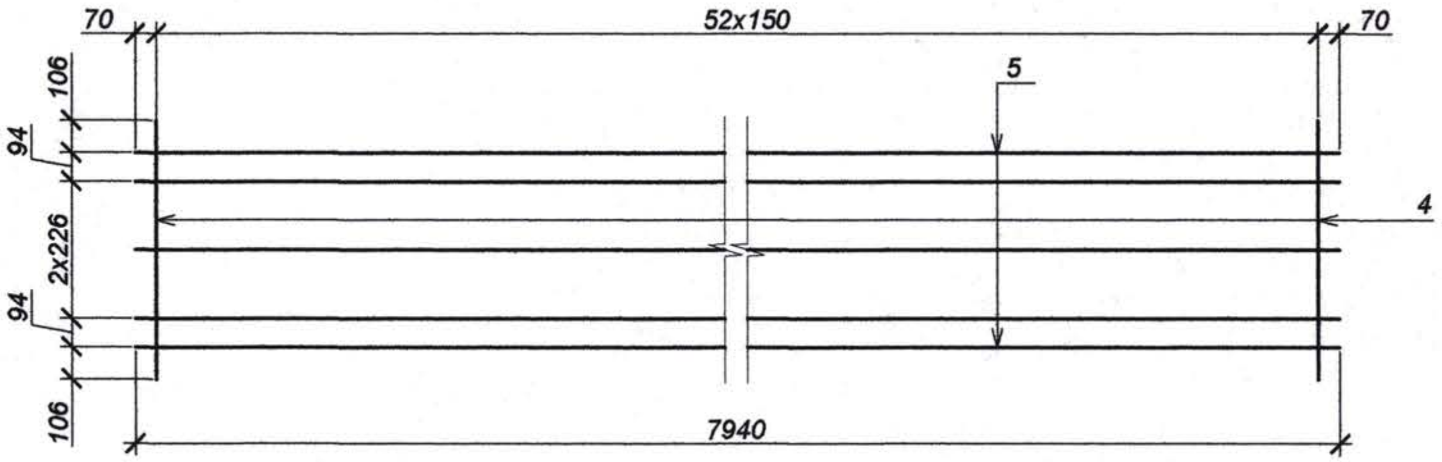
Dala prefabricata din beton armat D - 8.
Precast reinforced slab D - 8.

Drawing 25-9

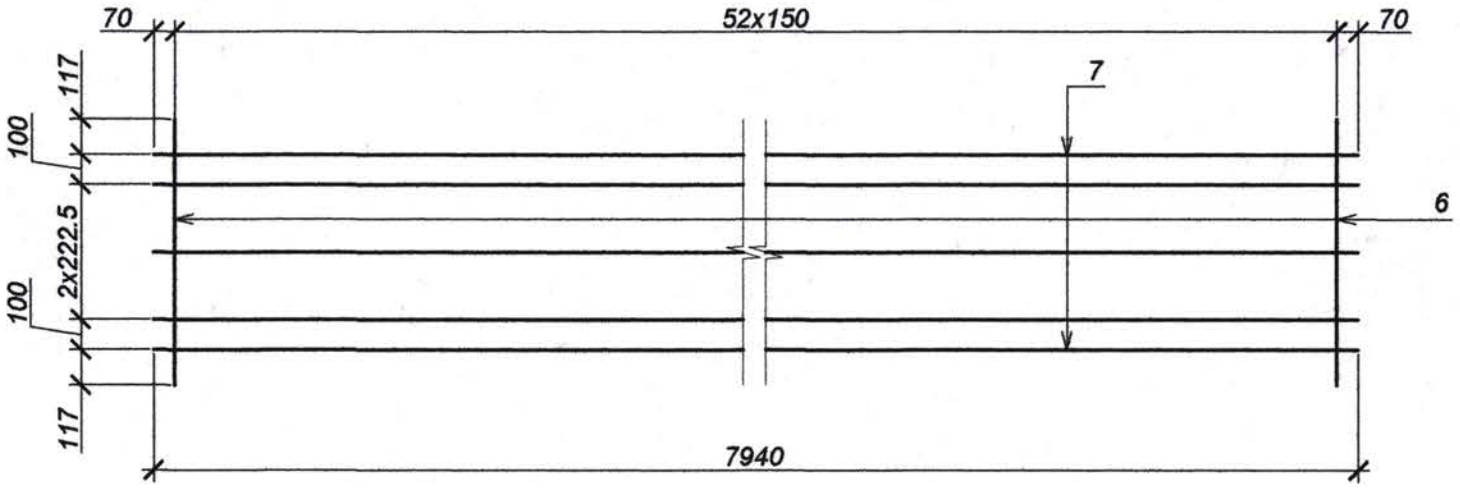
Reinforcing cage - *Carcasa C-1 (1:25)*



Mesh - *Plasa PL-1 (1:25)*



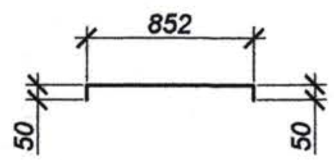
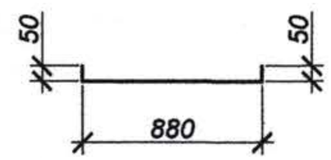
Mesh - *Plasa PL-2 (1:25)*



Schedule of materials per reinforcing cage C-1 and meshes PL-1, PL-2.
Lista de materiale pentru carcasa C-1 si plase PL-1, PL-2

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cantitate	Weight. Masa, kg	Note. Nota
		Reinforcing cage. Carcasa C-1			
1	GOST 5781-82*	Ø8 A-I L=361	40	0.15	
2	GOST 5781-82*	Ø10 A-III L=7940	1	4.9	
3	GOST 5781-82*	Ø25 A-III L=7940	1	30.57	
		Mesh. Plasa PL-1			
4	GOST 5781-82*	Ø8 A-I L=952	53	0.37	
5	GOST 5781-82*	Ø10 A-III L=7940	5	4.9	
		Mesh. Plasa PL-2			
6	GOST 5781-82*	Ø8 A-I L=979	53	0.38	
7	GOST 5781-82*	Ø25 A-III L=7940	5	30.57	

Bending details sheet.
Piese

Pozition. Pozitia	Sketch. Schita
4	
6	

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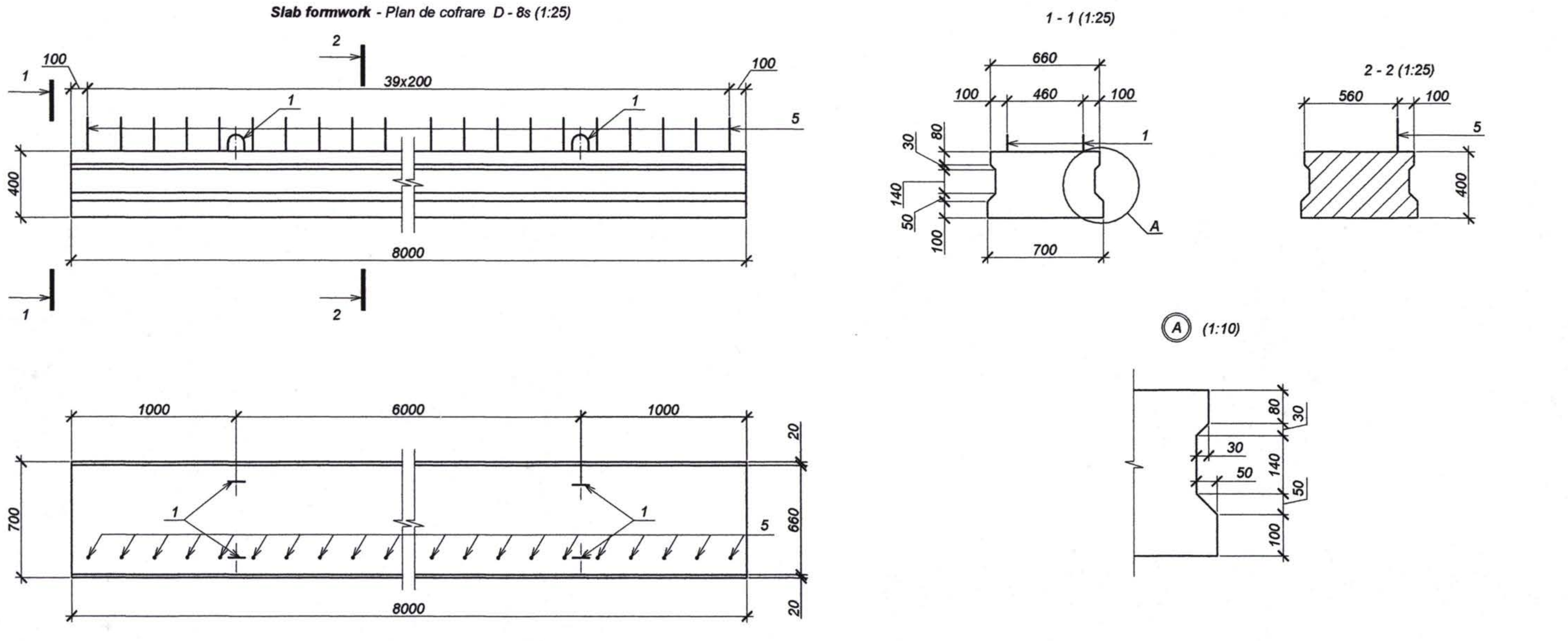
Marimea originala a desenului
Original Drawing Size

Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuţie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 134+987.
Bridge, km 134+987.

Carcasa C-1, plasele PL-1, PL-2 a dalei D-8.
Cage C-1, meshes PL-1, PL-2 of slab D-8.

Drawing 25-10



Reinforcement amount for slab D - 8s, kg
Masuratoare consum de otel pentru dala D - 8s, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate				Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa					Totals. Linia totalului	Reinforcing bar type. Armatura de clasa			Totals. Linia totalului	
	A - I, Cm3cп		A - III, 25Г2C				A - I, Cm3cп				
	GOST 5781-82*		GOST 5781-82*				GOST 5781-82*				
	Ø8	Total	Ø10	Ø25	Total		Ø12	Ø20	Total		
D - 8s	34.7	34.7	29.4	183.0	212.4	247.1	20.0	20.8	40.8	40.8	287.9

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

Consultantii/Consultants:

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Desenat/Drawn: Ponomari S.
Data/Date

Aprobat/Approved
Data/Date

EU Delegation to Moldova
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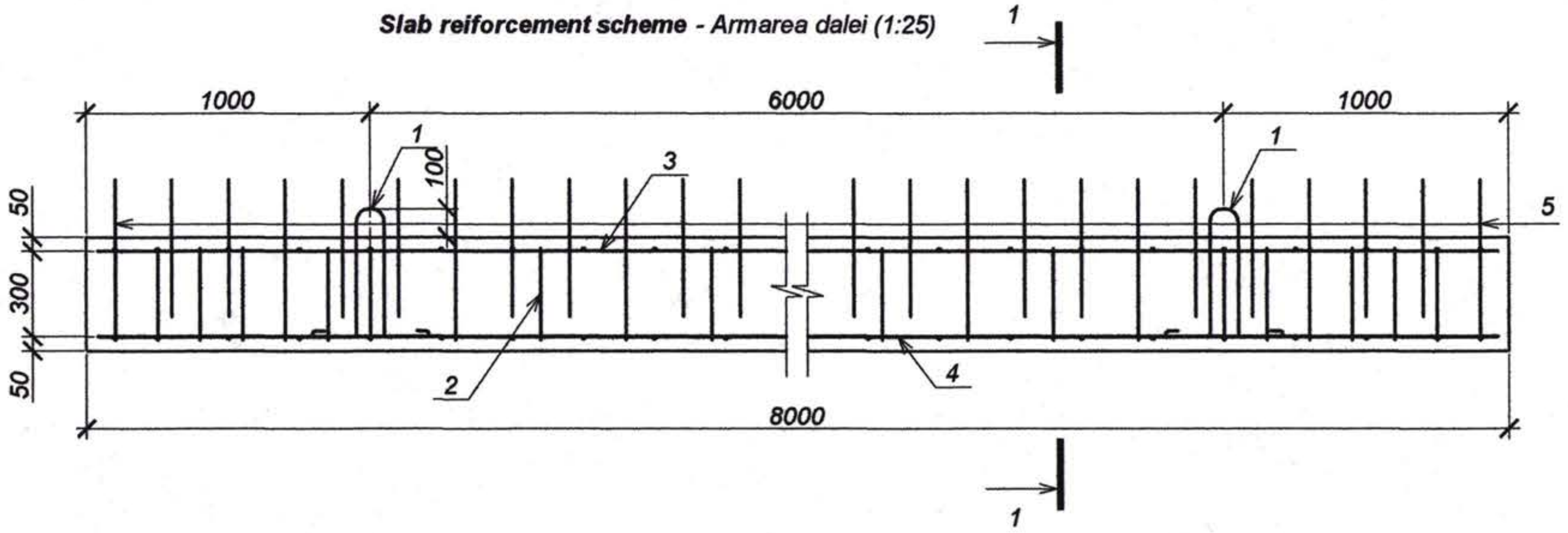
Pod, km 134+987.
Bridge, km 134+987.

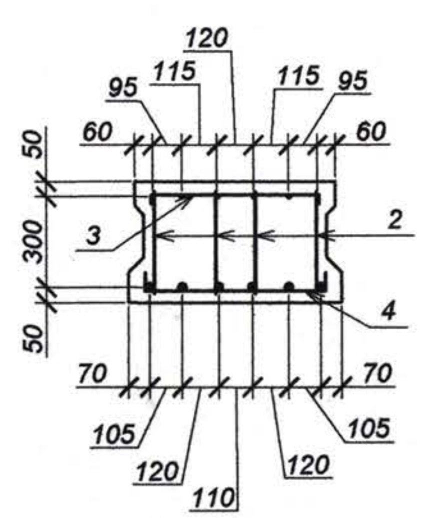
Dala suprastructurii D - 8s.
Superstructure slab D - 8s.

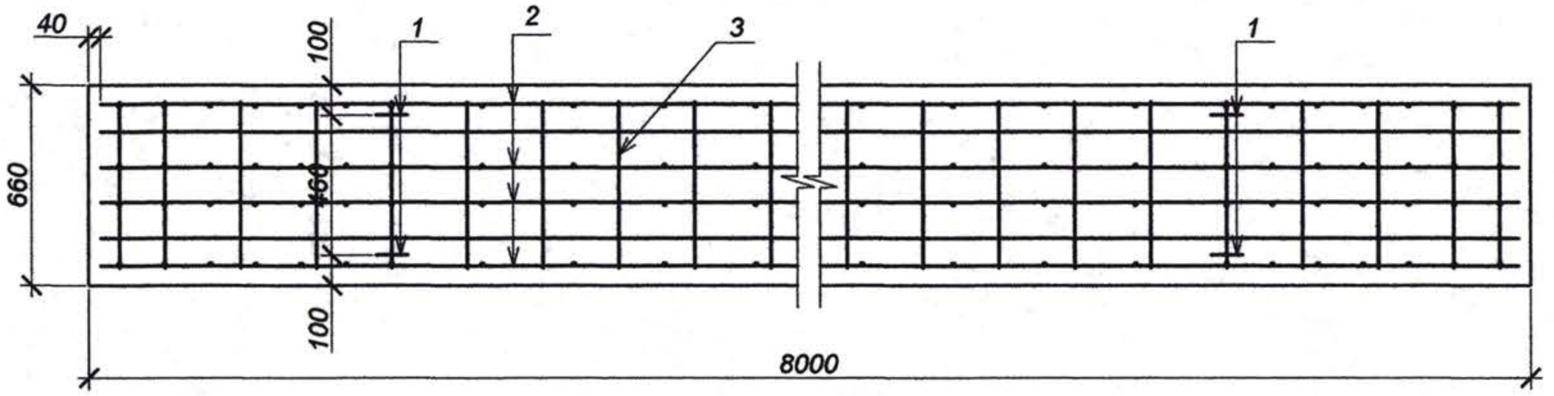
Drawing 25-11

Slab reiforcement scheme - *Armarea dalei (1:25)*

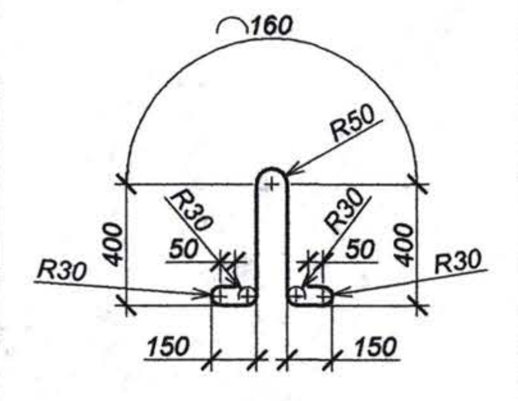
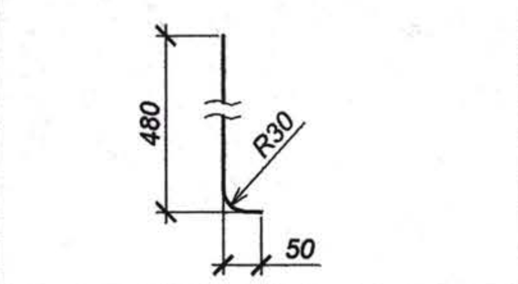


1 - 1 (1:25)





Bending details sheet.
Piese

Pozition. *Pozitia*	**Sketch.** *Schita*
1	
5	

Schedule of materials per slab.
Lista de materiale pentru dala D - 8s

Pozition. *Pozitia*	**Reference.** *Indicativ*	**Name.** *Denumirea*	**Quantity.** *Cantitate*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Assembly elements. *Piese de asamblare*			
1	GOST 5781-82*	Ø20 A-I L=2100	4	5.2	
2	GOST 5781-82*	**Reinforcing cage.** *Carcasa C - 2*	4	42	
3	GOST 5781-82*	**Mesh.** *Plasa PL - 3*	1	23	
4	GOST 5781-82*	**Mesh.** *Plasa PL - 4*	1	74.2	
5	GOST 5781-82*	Ø 12 A-I L=530	40	0.5	
		Materials. *Materiale*			
	GOST 26633-91*	Beton B30 F200 W6			2.1 m³

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Rev. Amendamente Aprobat Data
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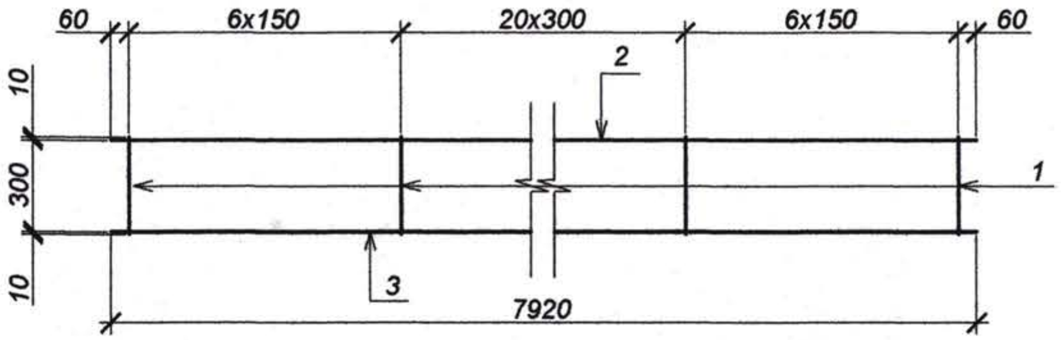
Pod, km 134+987.
Bridge, km 134+987.

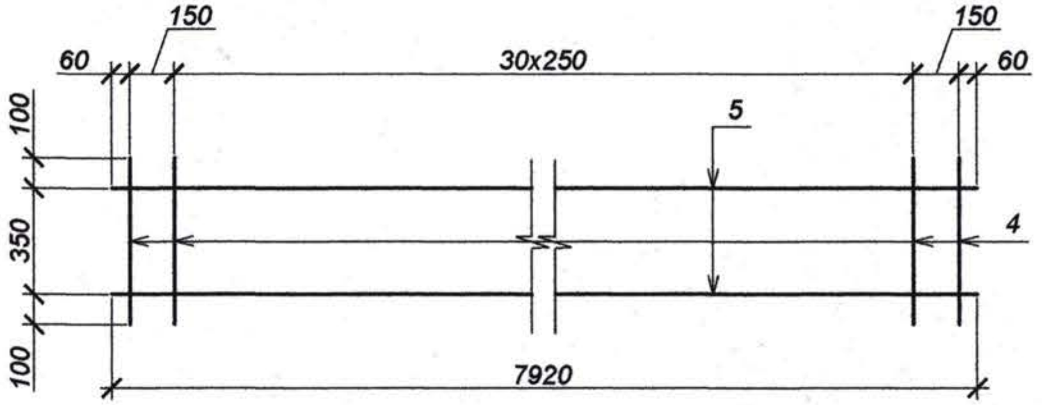
Dala suprastructurii D - 8s.
Superstructure slab D - 8s.

Drawing 25-12

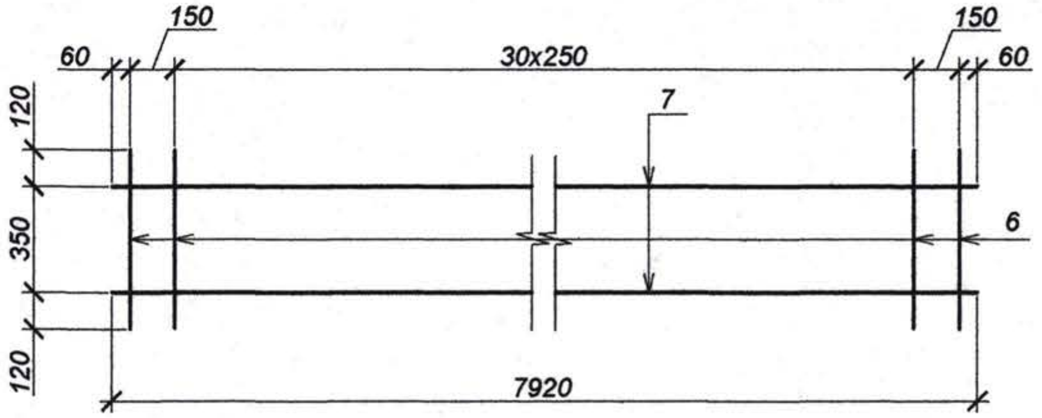
Reinforcing cage - *Carcasa C-2 (1:25)*



Mesh - *Plasa PL-3 (1:25)*



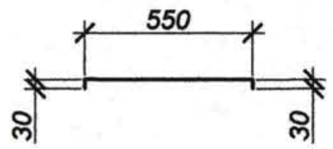
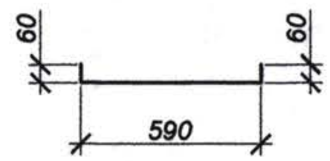
Mesh - *Plasa PL-4 (1:25)*



Specification for reinforcing cage C-2 and meshes PL-3, PL-4.
Specificatie pe carcasa C-2 si plase PL-3, PL-4

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity.** Cantitate	**Weight.** Masa, kg	**Note.** Remarca
		Reinforcing cage. Carcasa C - 2	4		
1	GOST 5781-82*	Ø8 A-I L=320	33	0.13	
2	GOST 5781-82*	Ø10 A-III L=7920	1	4.9	
3	GOST 5781-82*	Ø25 A-III L=7920	1	30.5	
		Mesh. Plasa PL - 3	1		
4	GOST 5781-82*	Ø8 A-I L=610	33	0.25	
5	GOST 5781-82*	Ø10 A-III L=7920	2	4.9	
		Mesh. Plasa PL - 4	1		
6	GOST 5781-82*	Ø8 A-I L=710	33	0.28	
7	GOST 5781-82*	Ø25 A-III L=7920	2	30.5	

Bending details sheet.
Piese

Pozition. Pozitia	**Sketch.** Schita
4	
6	

Note: 1. The grid to be manufactured by welding.
Nota: 1. Plasele de confectionat prin sudare.

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Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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Republic of Moldova Ministry of Transport

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Original Drawing Size

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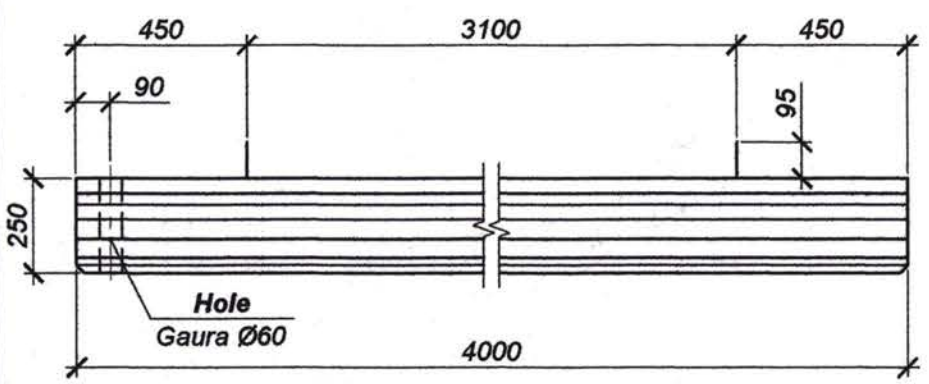
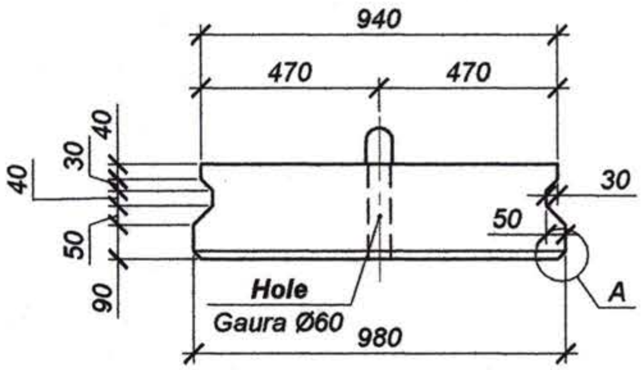
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 134+987. Carcasa C-2, plasele PL-3, PL-4 a dalei D-8s.
Bridge, km 134+987. Cage C-2, meshes PL-3, PL-4 of slab D-8s .

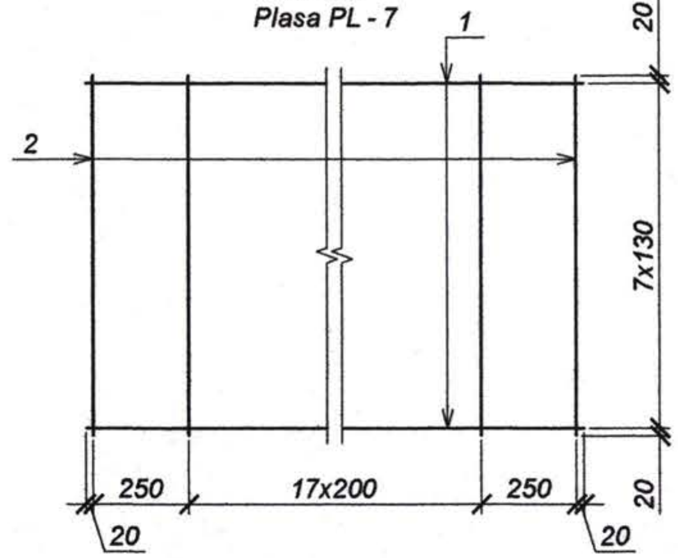
Drawing 25-13

Slab formwork - *Plan de cofare (1:25)*

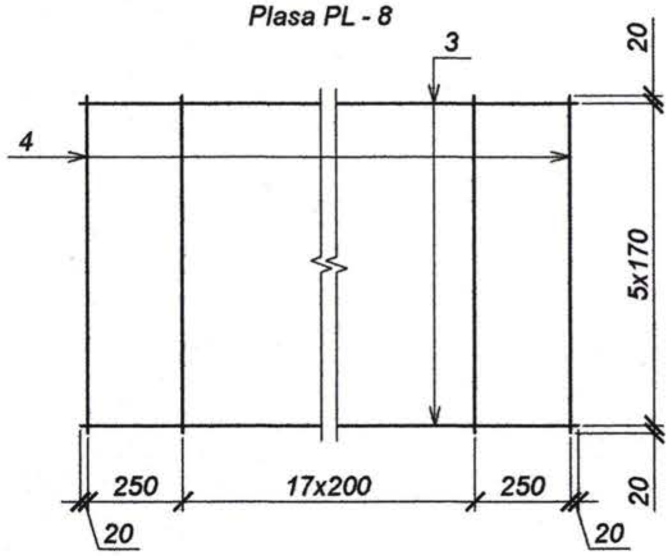




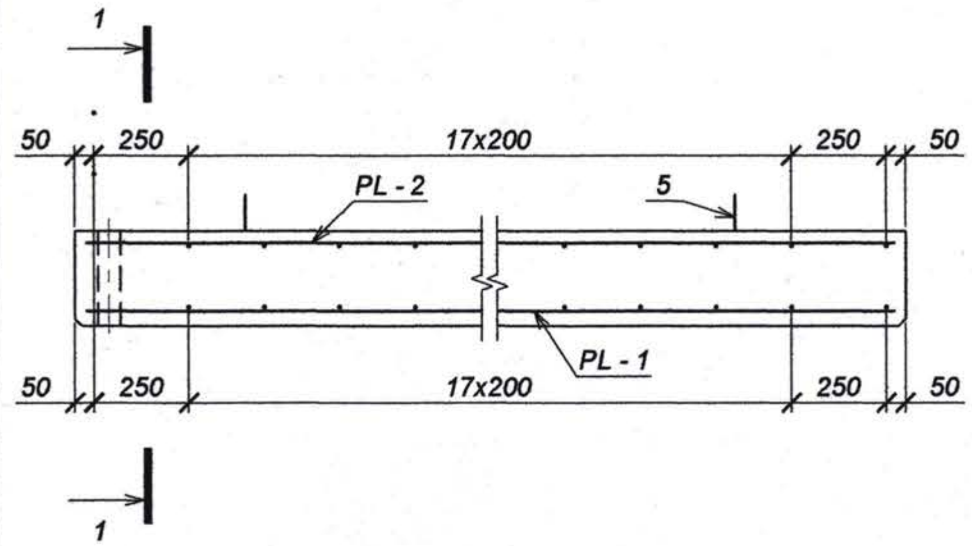
Mesh.
Plasa PL - 7



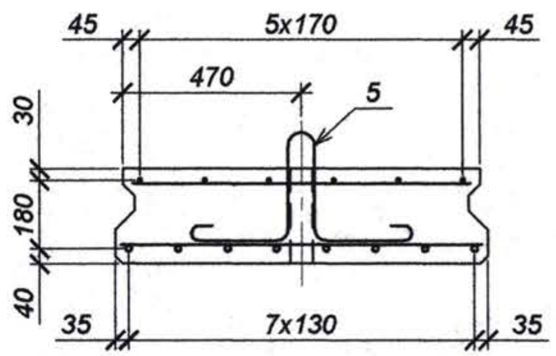
Mesh.
Plasa PL - 8



Slab reinforcement scheme - *Plan de armare (1:25)*



1 - 1



Schedule of materials per approach slab DR 1-4.
Lista de materiale pentru dala de racordare DR 1-4

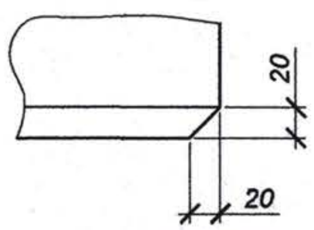
Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
		Assembly elements Piese de asamblare			
		Mesh. Plasa PL-7	1	54.04	
1		Ø 16 A-III L=3940, GOST 5781-82*	8	6.23	
2		Ø 6 A-I L=950, GOST 5781-82*	20	0.21	
		Mesh. Plasa PL-8	1	18.58	
3		Ø 10A-I L=3940, GOST 5781-82*	6	2.43	
4		Ø 6A-I L=890, GOST 5781-82*	20	0.20	
		Embedded element. Ureche de montaj			
5		Ø 14A-I L=1250, GOST 5781-82*	2	1.51	
		Materials. Materiale			
		Concrete. Beton B25 F200 W6, GOST 26633-91*			0.94 m³

Note: 1. The mesh to be manufactured by welding.
Nota: 1. Plasele de confectionat prin sudare.

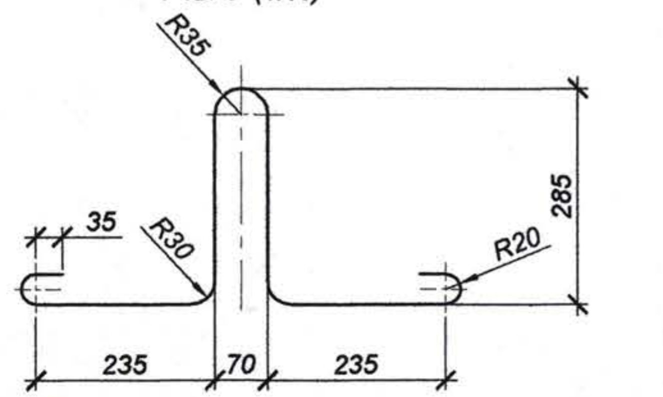
Reinforcement amount for approach slab.
Masuratoare consum de otel pentru placa de racordare DR 1-4, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare							Total weight. Greutate totala
	Reinforcing bar type. Armatura de clasa						Totals. Linia totalului	
	A - I, Cm3cп				A-III,25Г2С			
	GOST 5781-82*							
	Ø6	Ø10	Ø14	Total	Ø16	Total		
PR 1-4	8.20	14.58	3.02	25.80	49.84	49.84	75.64	75.64

A (1:5)



Poz. 5 (1:10)



Rev. Rev.	Amendamente Amendments	Aprobat Approved	Data Date

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Marimea originala a desenului
Original Drawing Size
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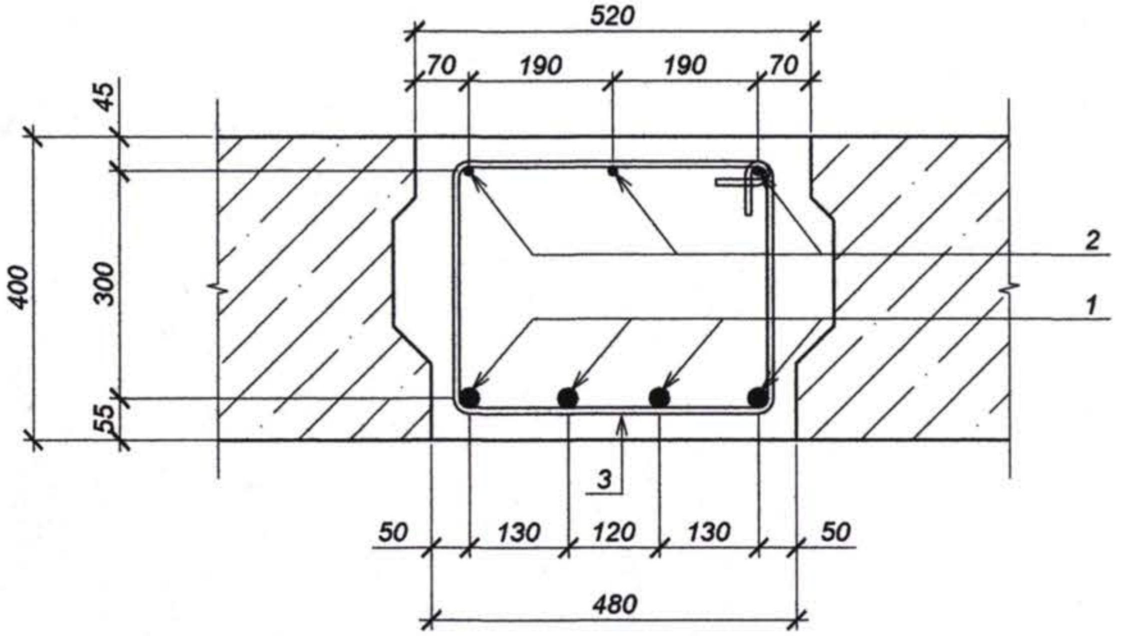
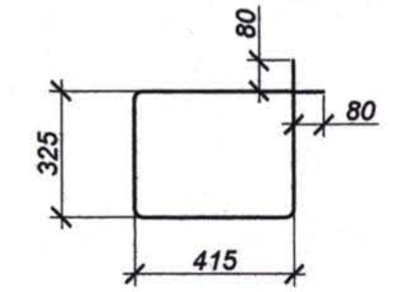
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 134+987.
Bridge, km 134+987.
Dala de racordare DR 1-4.
Approach slab DR 1-4.
Drawing 25-14

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

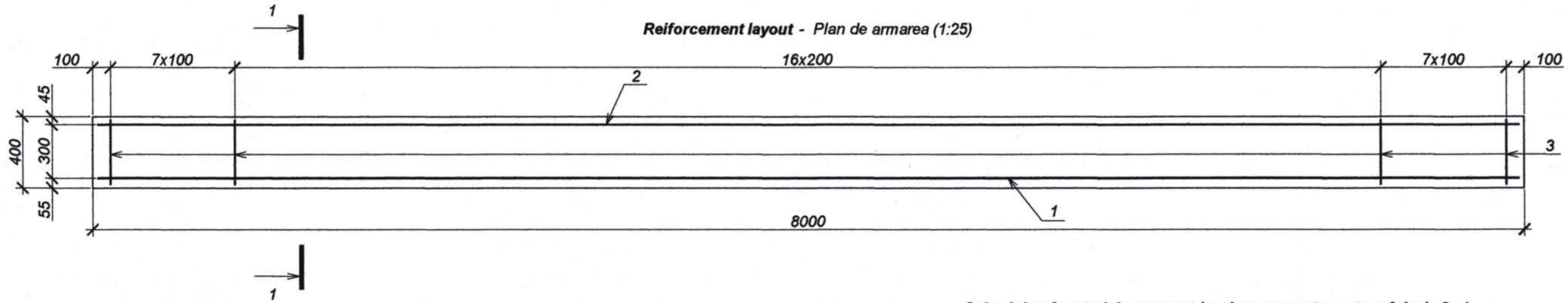
1 - 1 (1:10)



Bending details sheet.
Piese

Pozition. Pozitia	**Sketch.** Schita
3	

Reiforcement layout - *Plan de armarea (1:25)*



Reinforcement amount for cast-in-place sector S - 1, kg
Masuratoare consum de otel pentru sectorul monolit S - 1, kg

Element type. Marca elementului	**Reinforcing pieces.** Piese de armare						**Total weight.** Greutate totala
	Reinforcing bar type. Armatura de clasa					**Totals.** Linia totalului i	
	A - I, Ст3сп		A - III, 25Г2С				
	GOST 5781-82*		GOST 5781-82*				
	Ø8	Total	Ø10	Ø25	Total		
S - 1	30.6	30.6	14.7	122.6	137.3	167.9	167.90

Schedule of materials per cast-in-place concrete sector of deck S -1
Lista de materiale pentru sectorul monolit al suprastructurii S - 1

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity.** Cantitate	**Weight.** Masa, kg	**Note.** Nota
		Assembly elements Piese de asamblare			
1	GOST 5781-82*	Ø25 A-III L=7960	4	30.65	
2	GOST 5781-82*	Ø10 A-III L=7960	3	4.9	
3	GOST 5781-82*	Ø8 A-I L=1640	47	0.65	
		Materials Materiale			
	GOST 26633-91*	**Concrete.** Beton B30 F200 W6			1.7 m³

Nr. inv. orig. | Semnat la data | Shimb. nr. inv.

Rev. | Amendamente Amendments | Aprobat Approved | Data Date

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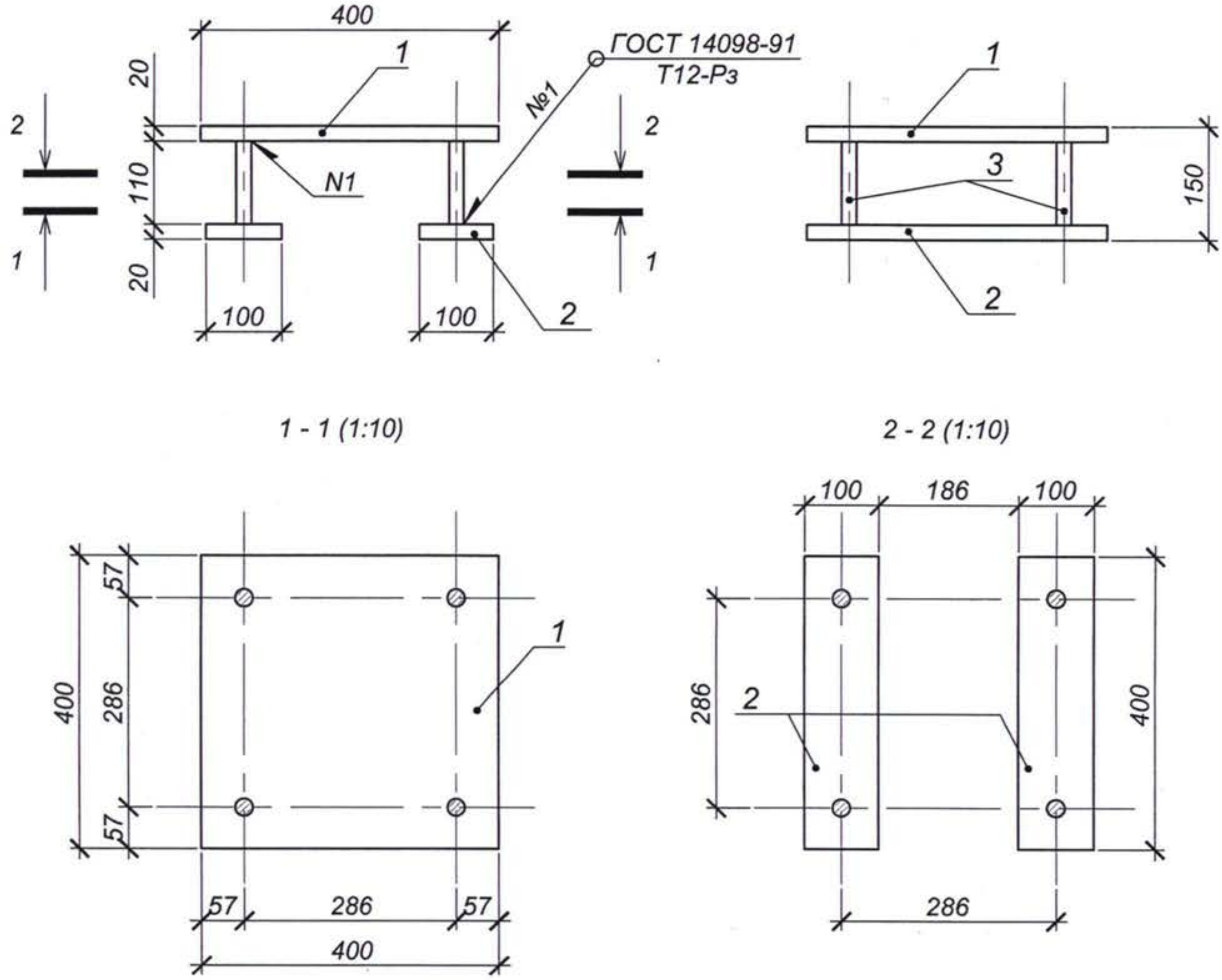
Pod, km 134+987.
Bridge, km 134+987.

Sectorul monolit al suprastructurii , S - 1.
Cast-in-place concrete sector of deck , S -1.

Drawing 25-15

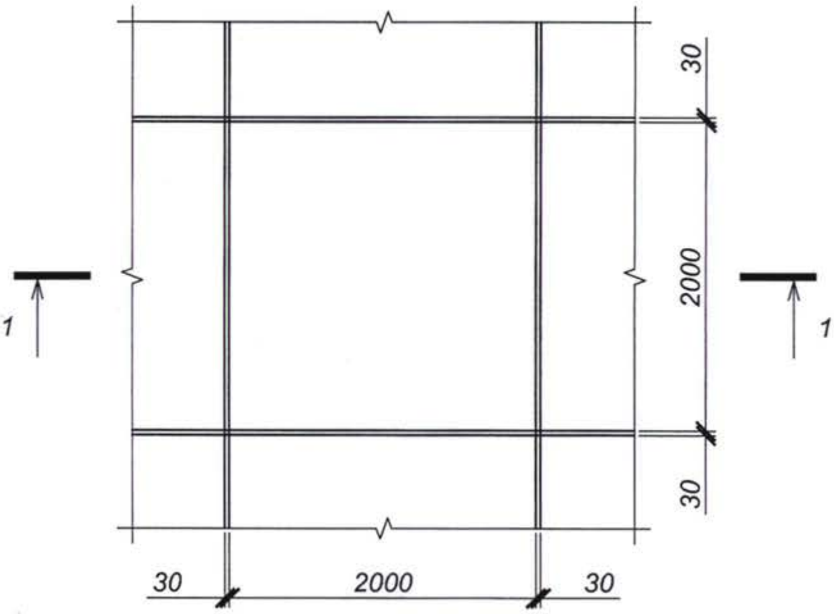


Schedule of materials per embedded base plate.
Lista de materiale pentru piesa inglobata PI - 1

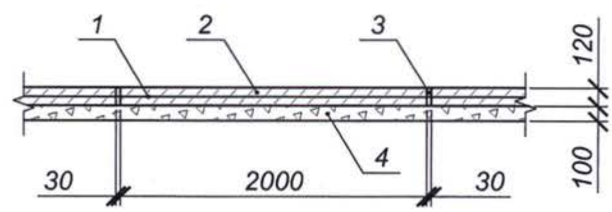
Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***Quantity.*** *Cant.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
		Elements *Piese*			
1		--20x400 L=400, GOST 103 - 2006	1	25.1	
2		--20x100 L=400, GOST 103 - 2006	2	6.3	
3		Ø25 AIII L = 150, GOST 5781 - 82*	4	0.6	

Shimb. nr. inv.
Semnat la data
Nr. inv. orig.

Kocks Consult - Universinj SRL	Pod, km 134+987. Bridge, km 134+987.	*Piesa inglobata PI - 1* *Embedded base plate.*	Drawing 25-16



1 - 1 (1:50)



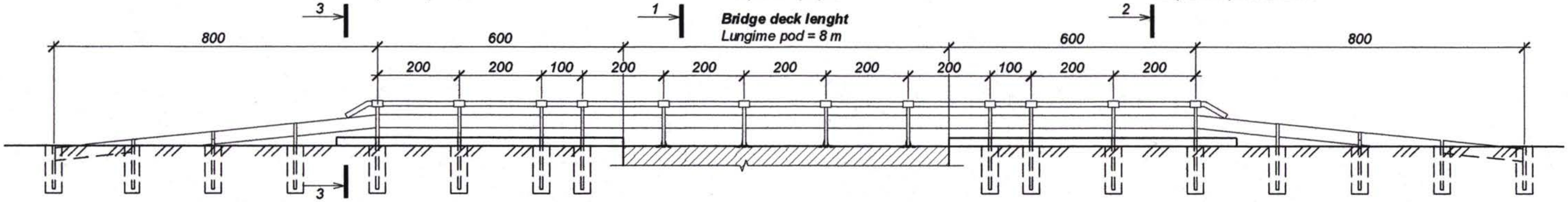
Schedule of materials per 1.0m² of protection.
Lista de materiale pentru 1.0 m² de consolidare

Pozition. *Pozitia*	***Reference.*** *Indicativ*	***Name.*** *Denumirea*	***Quantity.*** *Cant.*	***Weight.*** *Masa, kg*	***Note.*** *Nota*
1		***Mesh.*** *Plasa Ø6 A-I, GOST 5781-82*, 200x200*		*2.2*	
2		***Concrete.*** *Beton B20, F200, W6, GOST 26633-91**			*0.12 m³*
3	*BCH 32-81*	***Bituminous mastic.*** *Mastic de bitum*			*0.01 m³*
4		***Crushed stone h=10 cm.*** *Piatra sparta h=10 cm, GOST 8267-93**			*0.10 m³*

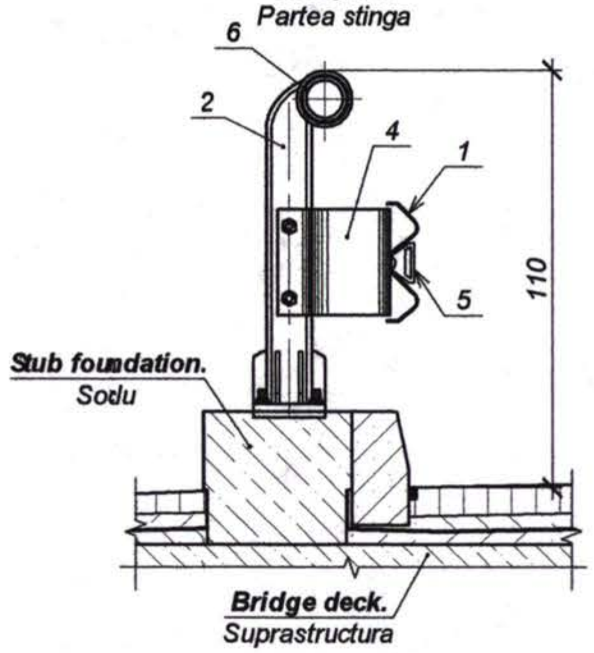
Shimb. nr. inv. | *Semnat la data* | *Nr. inv. orig.*

Kocks Consult - Universinj SRL	Pod, km 134+987. Bridge, km 134+987.	Protejarea taluzelor si a albiei cu beton. Slope and channel concrete protection detail.	Drawing 25-17

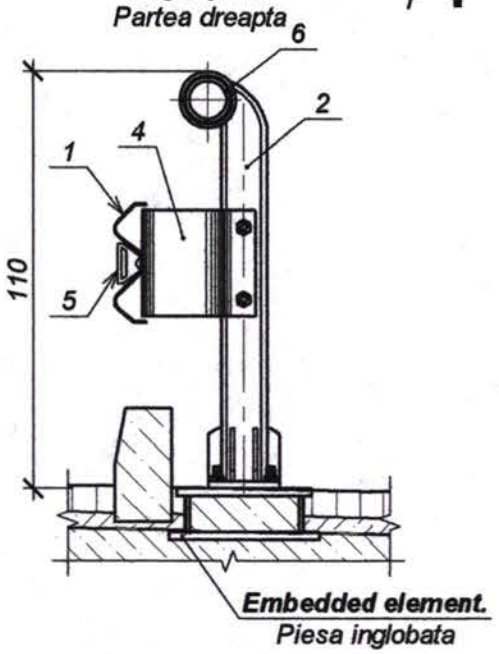
Deformable steel guard-rail.
Parapet metalic de siguranta deformabil (1:100)



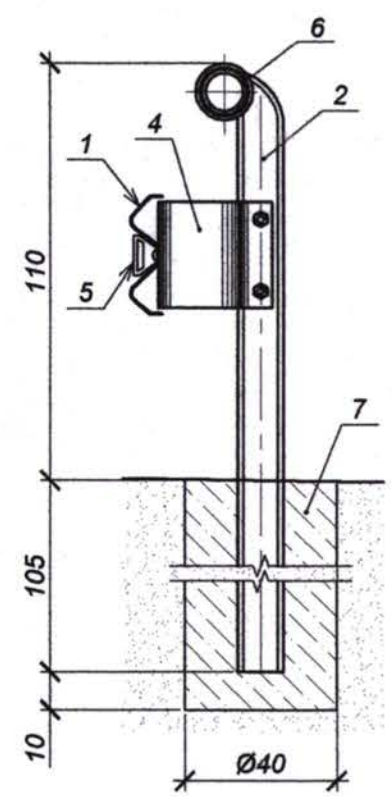
1 - 1 (1:20)
Left part.
Partea stinga



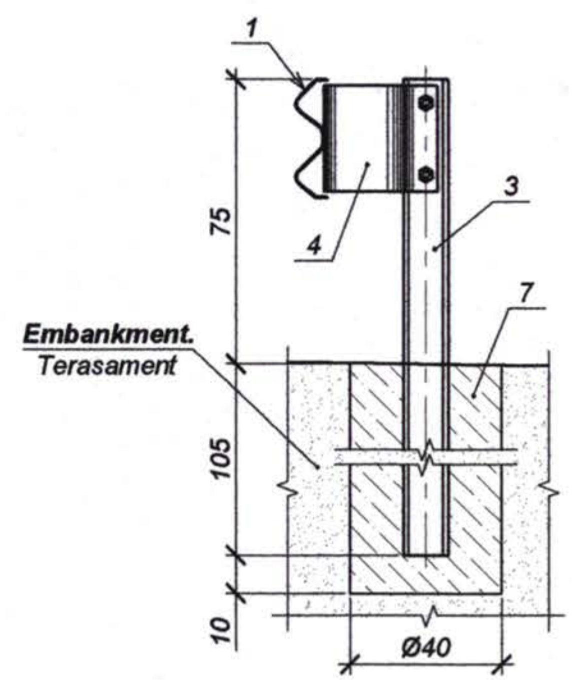
1 - 1 (1:20)
Right part.
Partea dreapta



2 - 2 (1:20)



3-3 (1:20)



Schedule of matrerials per 2.0m deformable steel guard-rail length.
Lista de materiale pentru parapet metalic de siguranta, lungimea 2 m

Position. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
1		**W-type guard-rail.** Profil lisa	1	185.2	
2	ТУ 5216-001-44884945-02	**Guard-rail post.** Stilpul parapetului СМ / СМЦ*	1 / 1		
3		**Guard-rail post.** Stilpul parapetului СД-3*, GOST 8239 - 89	1	20.7	
4		**Shock absorber KA,bolts,washer,nut.** Amortizor KA,buloane,piulite,saibe,GOST 26804 - 86	set		
5		**Reflector.** Reflector УС-1, GOST 26804 - 86	1	0.1	for 4m lenght la 4m lungime
6		**Pipe.** Teava de metal Ø121, δ=8, GOST8732-78*	1	44.6	
7		**Concrete.** Beton B25, F200, W6, GOST 26633-91*			0.14 m³

Note. *Nota:*
1. Dimensions in cm.
1. Dimensiunile in cm.

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Consultantii/Consultants:
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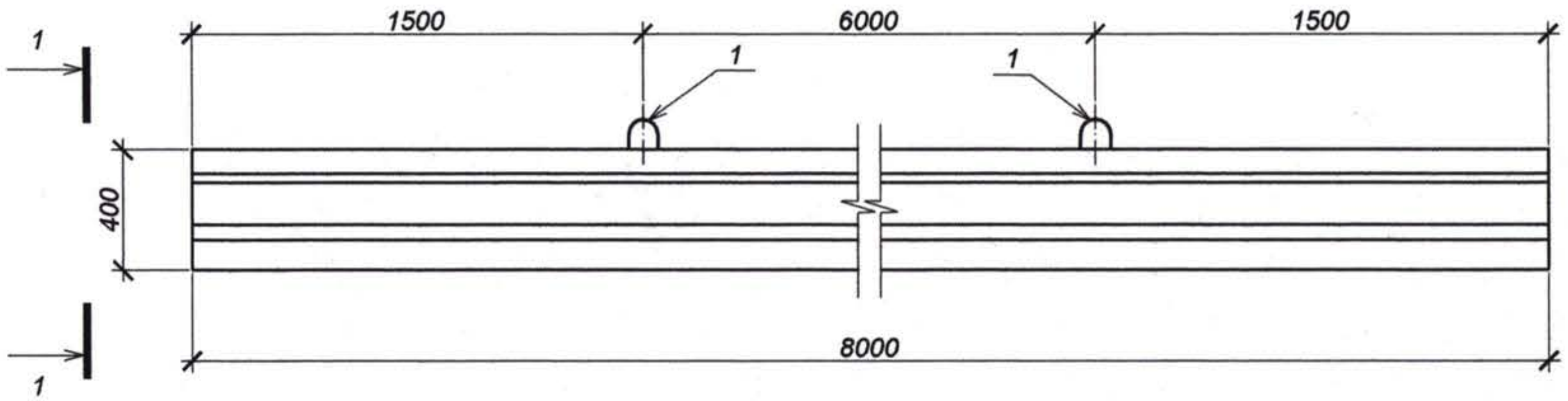
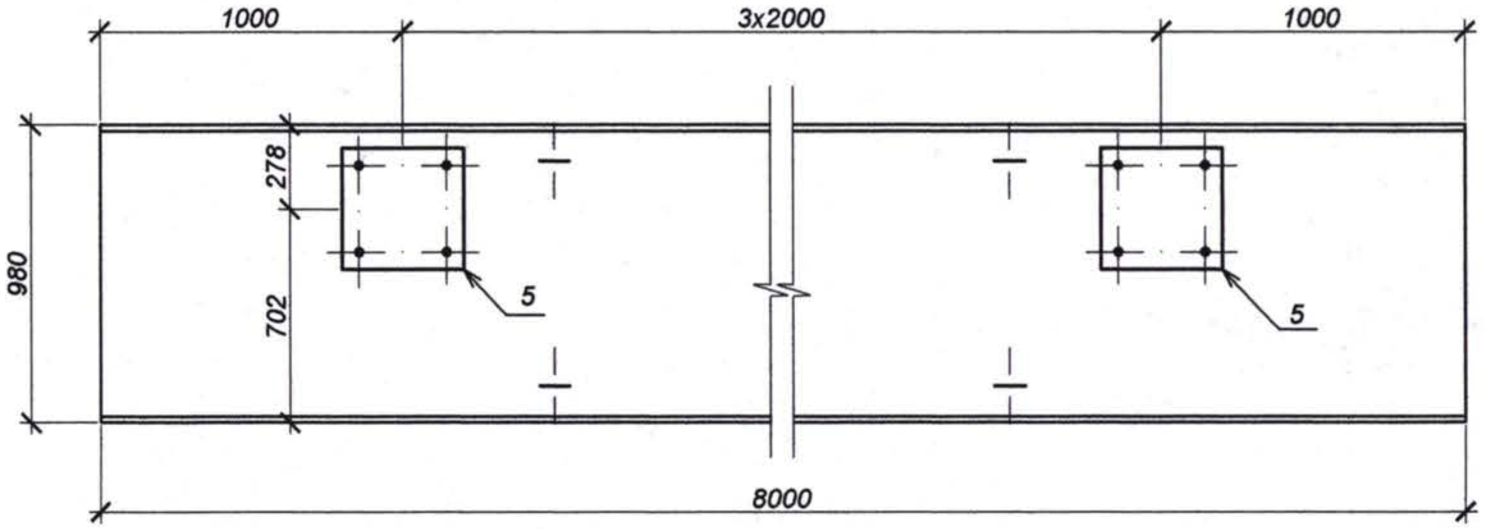
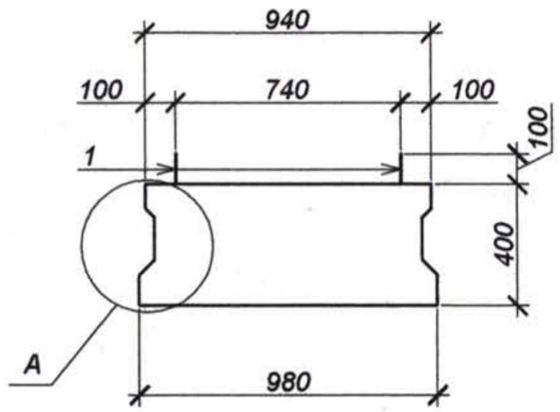
Marimea originala a desenului
Original Drawing Size
Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de executie / Sector Comrat - R38
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38
Pod, km 134+987.
Bridge, km 134+987.
Parapet metalic de siguranta deformabil.
Deformable steel guard-rail.
Drawing 25-18

Slab formwork - Plan de cofrare D - 8z (1:25)

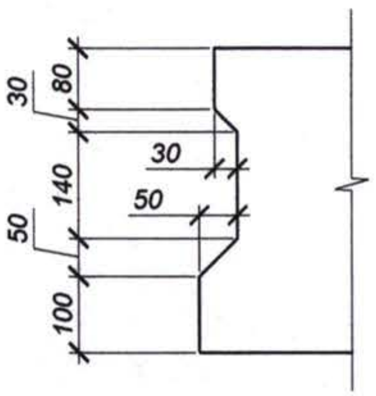




1 - 1 (1:25)



A (1:10)



Reinforcement amount for slab D - 8z, kg
Masuratoare consum de otel pentru dala D - 8z, kg

Element type. Marca elementului	Reinforcing pieces. Piese de armare						Embedded pieces. Piese inglobate								Overall weight. Greutate totala
	Reinforcing bar type. Armatura de clasa					Totals. Linia totalului	Reinforcing bar type. Armatura de clasa				Rolled metal type Tip produs laminat			Totals. Linia totalului	
	A - I, Cm3cп GOST 5781-82*		A - III, 25Г2С GOST 5781-82*				A - I, Cm3cп GOST 5781-82*		A - III, 25Г2С GOST 5781-82*		16Д GOST 103-2006				
	Ø8	Total	Ø10	Ø25	Total		Ø20	Total	Ø25	Total	-20x400	-20x100	Total		
D - 8z	64.8	64.8	44.1	275.1	319.2	384.0	20.8	20.8	9.6	9.6	100.4	50.4	150.8	181.2	565.2

Shimb. nr. inv.
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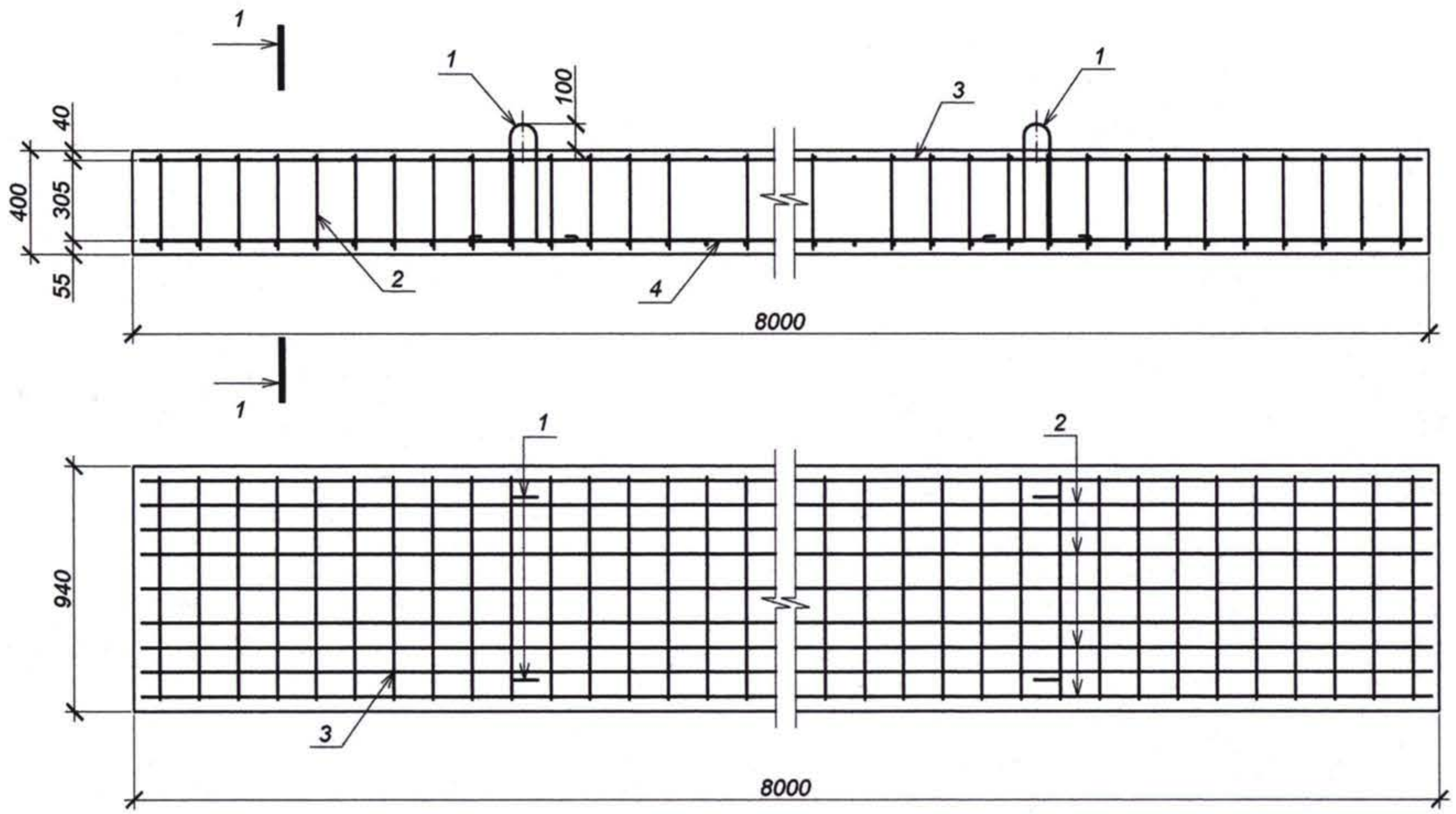
Pod, km 134+987.
Bridge, km 134+987.

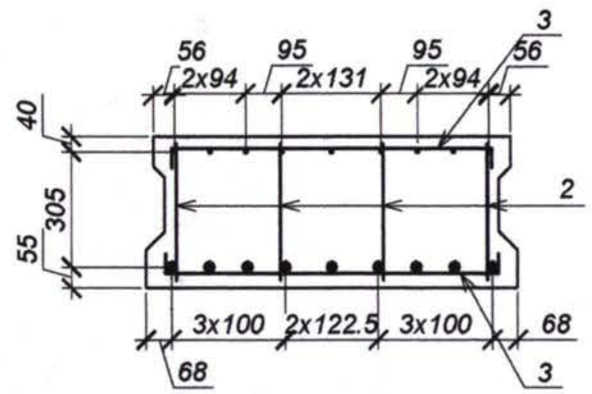
Dala suprastructurii D - 8z.
Superstructure slab D - 8z.

Drawing 25-19

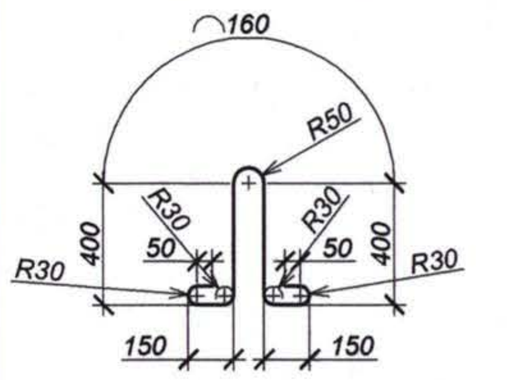
Reinforcing layout - *Plan de armare (1:25)*



1 - 1 (1:20)



Bending details sheet.
Piese

Pozition. *Pozitia*	**Sketch.** *Schită*
1	

Schedule of materials per slab D - 8z.
Lista de materiale pentru dala D - 8z

Pozition. Pozitia	**Reference.** *Indicativ*	**Name.** *Denumirea*	**Quantity.** *Cantitate*	**Weight.** *Masa, kg*	**Note.** *Nota*
		Assembly elements. *Piese de asamblare*			
1		*Ø20 A-I L=2100, GOST 5781-82**	4	5.2	
2		**Reinforcing cage.** *Carcasa C - 3*	4	39.7	
3		**Mesh.** *Plasa PL - 5*	1	35.3	
4		**Mesh.** *Plasa PL - 6*	1	173.5	
5		**Embedded base plate.** *Piesa inglobata Pl - 1*	4	40.1	
		Materials. *Materiale*			
		Concrete. *Beton B30, F200, W6, GOST 26633-91**			$3.0\ m^3$

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Ministry of Transport

Marimea originala a desenului
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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/
Proiect de execuţie / Sector Comrat - R38

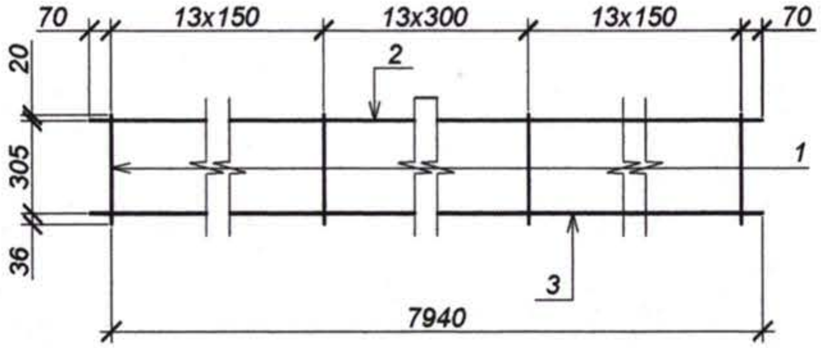
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/
Europe Aid/125919/C/SER/MD
Engineering Design Section Comrat - R38

Pod, km 134+987.
Bridge, km 134+987.

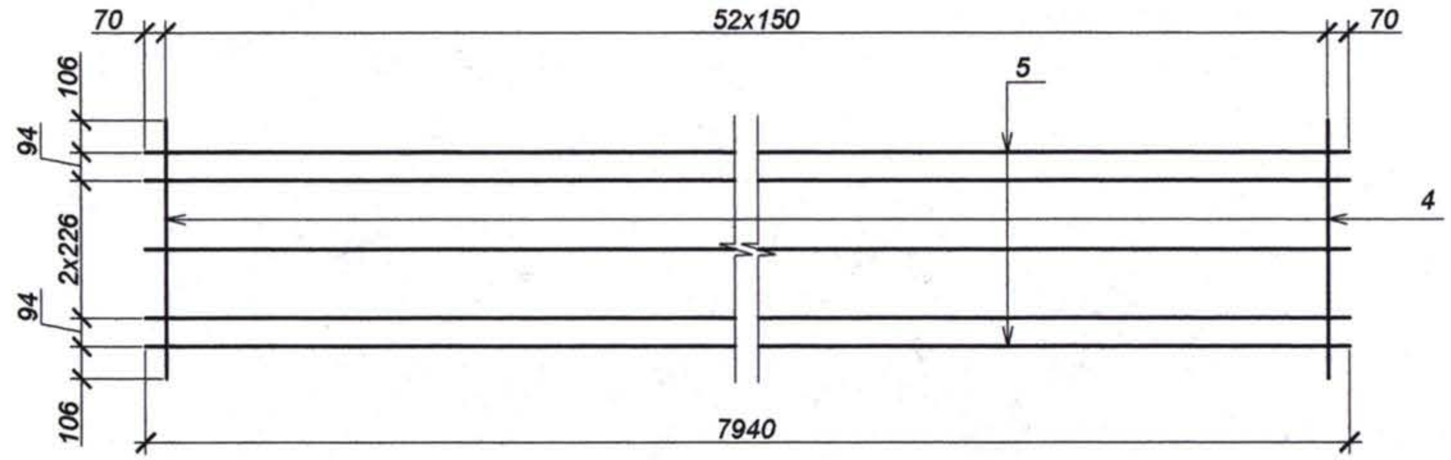
Dala suprastructurii D - 8z.
Superstructure slab D - 8z.

Drawing 25-20

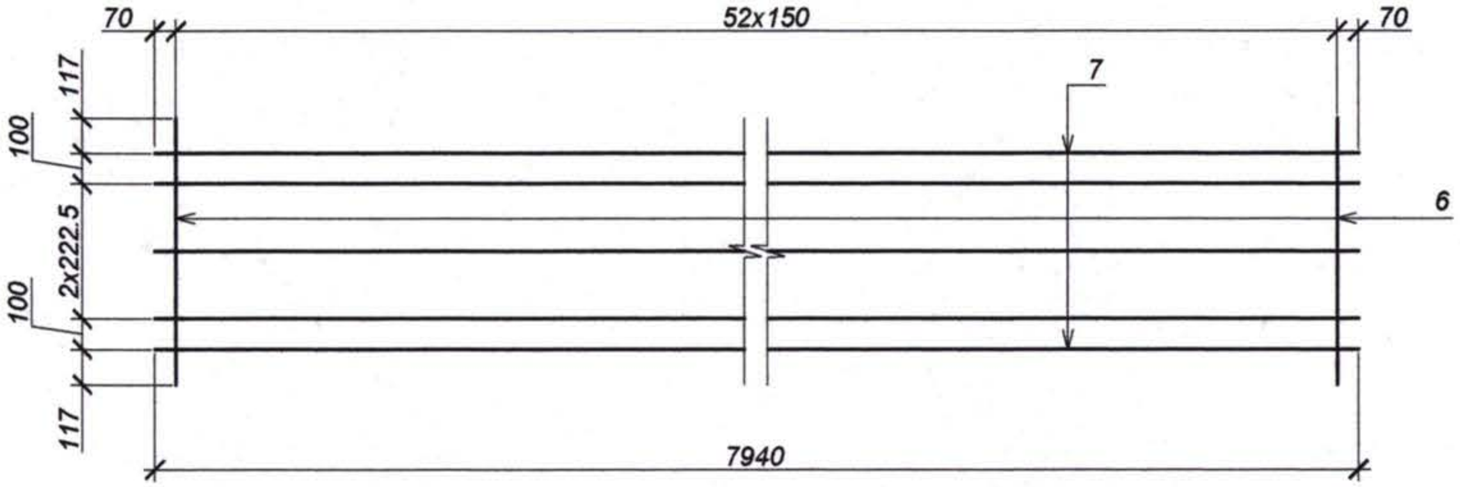
Reinforcing cage - *Carcasa C-1 (1:25)*



Mesh - *Plasa PL-1 (1:25)*



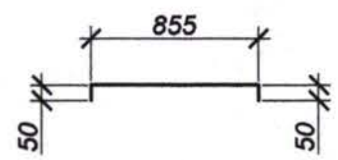
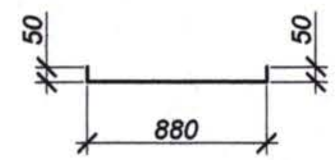
Mesh - *Plasa PL-2 (1:25)*



Schedule of materials per reinforcing cage C-1 and meshes PL-1, PL-2.
Lista de materiale pentru carcasa C-1 si plase PL-1, PL-2

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**Quantity.** Cantitate	**Weight.** Masa, kg	**Note.** Nota
		Reinforcing cage. Carcasa C-3			
1	GOST 5781-82*	Ø8 A-I L=361	40	0.15	
2	GOST 5781-82*	Ø10 A-III L=7940	1	4.9	
3	GOST 5781-82*	Ø25 A-III L=7940	1	30.57	
		Mesh. Plasa PL-5			
4	GOST 5781-82*	Ø8 A-I L=955	53	0.38	
5	GOST 5781-82*	Ø10 A-III L=7940	5	4.9	
		Mesh. Plasa PL-6			
6	GOST 5781-82*	Ø8 A-I L=980	53	0.39	
7	GOST 5781-82*	Ø25 A-III L=7940	5	30.57	

Bending details sheet.
Piese

Pozition. Pozitia	**Sketch.** Schita
4	
6	

Note: **1. The grid to be manufactured by welding.**
Nota: *1. Plasele de confectionat prin sudare.*

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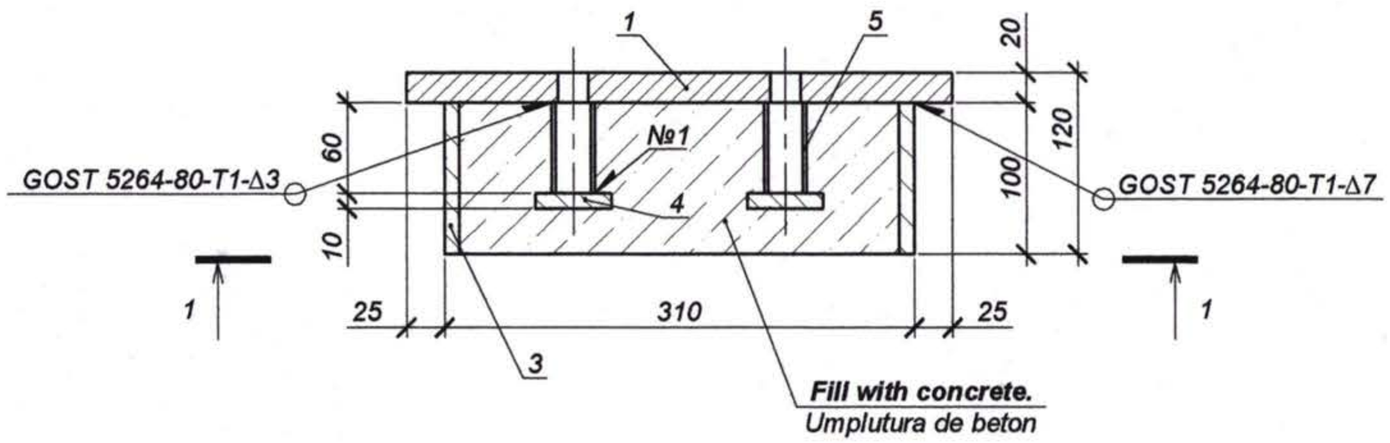
Pod, km 134+987.
Bridge, km 134+987.

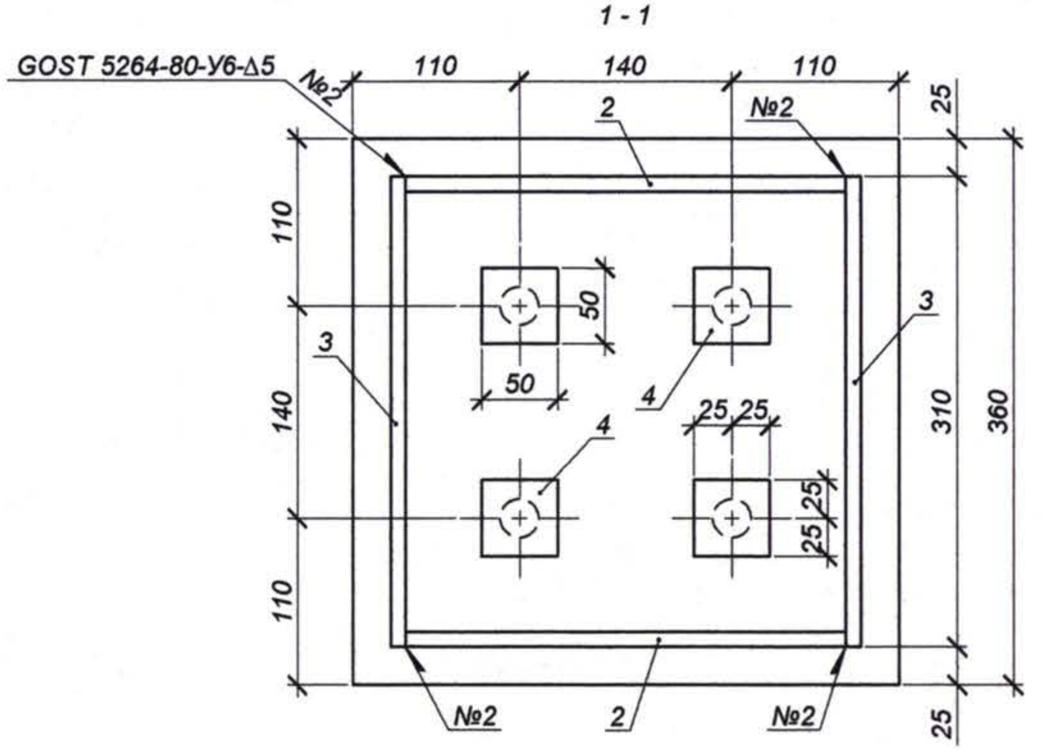
Dala suprastructurii D - 8z.
Superstructure slab D - 8z.

Drawing 25-21

(1:5)

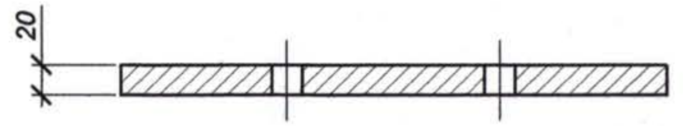


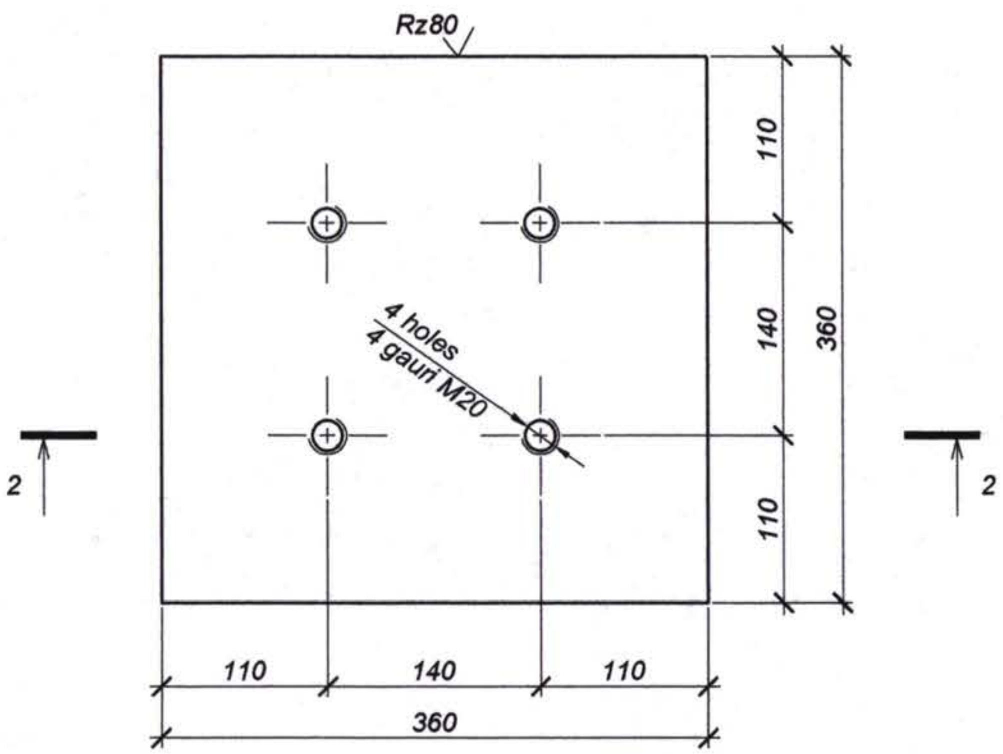
1 - 1



Component.
Piesa P - 1

2 - 2





Schedule of materials per metallic header.
Lista de materiale pentru soclu metalic

Pozition. Pozitia	Reference. Indicativ	Name. Denumirea	Quantity. Cant.	Weight. Masa, kg	Note. Nota
1		**Component.** Piesa P - 1	1	20.4	
2		--10x100 L=290, GOST 103 - 2006	2	2.3	
3		--10x100 L=310, GOST 103 - 2006	2	2.4	
4		--10x50 L=50, GOST 103 - 2006	4	0.2	
5		28x2.5 L=60, GOST 8732 - 78*	4	0.1	
		Materials. Materiale			
		Concrete. Beton B25, F200, W6, GOST 26633-91*			0.009 m³

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Marimea originala a desenului
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Reabilitarea si extinderea drumului M3 Chisinau-Giurgiulesti /Granita cu Romania/ Proiect de execuţie / Sector Comrat - R38

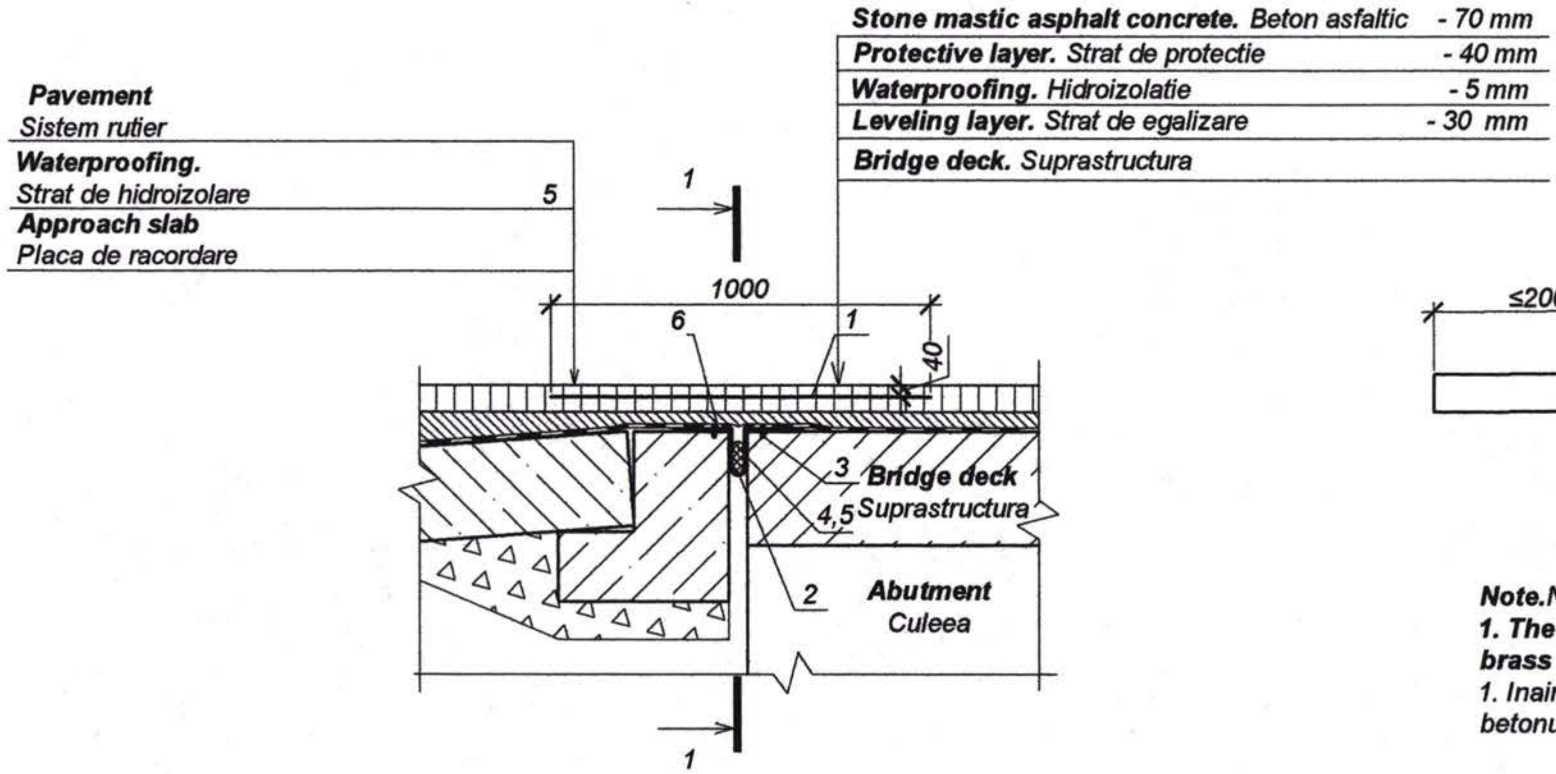
Rehabilitation and Extension of the Road M3 Chisinau - Giurgiulesti /Romanian Border/ Europe Aid/125919/C/SER/MD Engineering Design Section Comrat - R38

Pod, km 134+987.
Bridge, km 134+987.

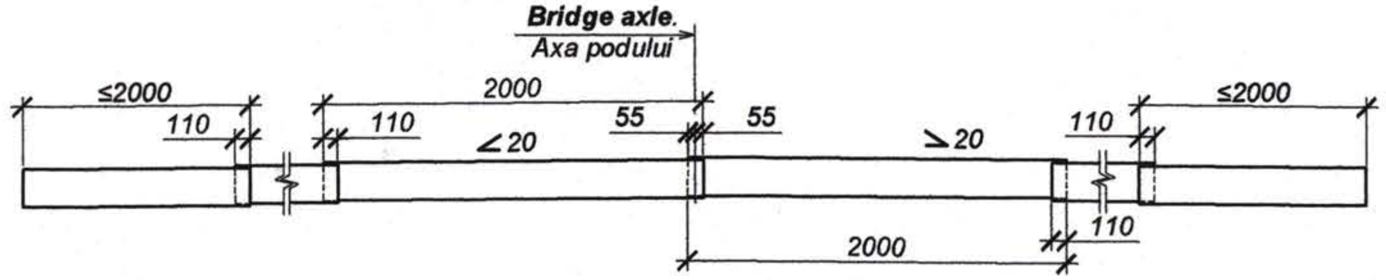
Soclu metalic.
Metallic header.

Drawing 25-22

Expanssion joint at the abutment - Rostul de dilatate la culee (1:20)



1-1
Method of lyre-shaped sheet installation - Modul de instalare a buclelor

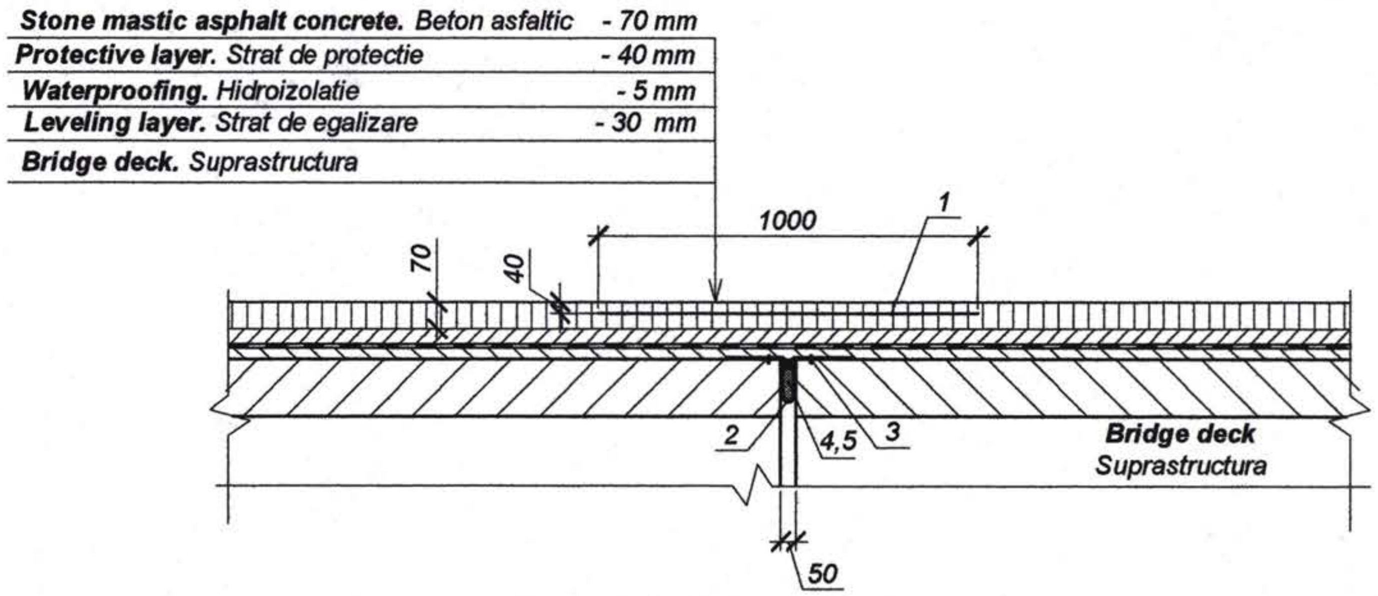


Note. Notă:

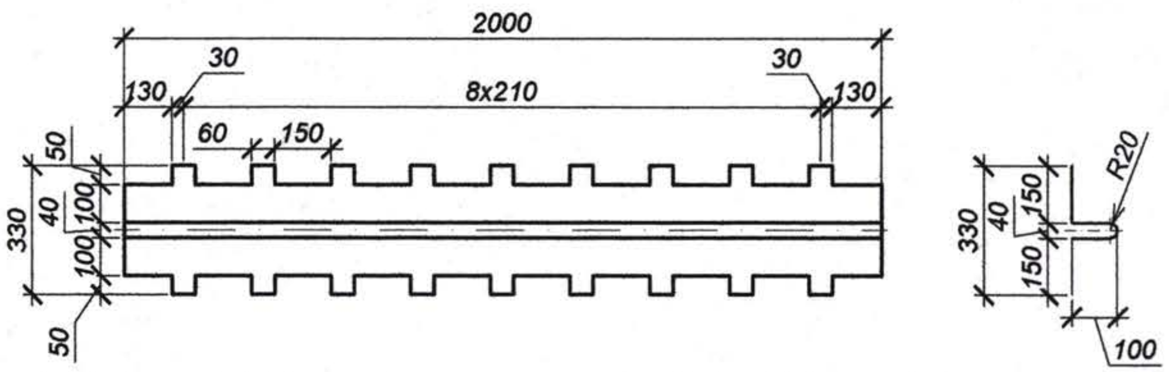
1. The Layer-Shaped(brass) element shall be glued to the top surface of brass sheet the deck and approach slabs with epoxy glue .

1. Inainte de fixare, pe suprafata de rezemare a buclei din tabla de alama si suprafata betonului de suport se aplica un strat de rasina epoxidica cu grosimea de 2mm.

Expanssion joint between the spans - Rostul intre deschideri (1:20)



Lyre-shaped brass sheet - Bucla din tabla de alama (poz.3) (1:20)



Schedule of materials for 1 lin.m of expanssion joints
Lista de materiale pentru 1 m.liniar al rosturilor de dilatatie

Pozition. Pozitia	**Reference.** Indicativ	**Name.** Denumirea	**No.** Nr.	**Weight.** Masa, kg	**Note.** Nota
		Expanssion joint at the abutment Rost de dilatatie la culee			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Hemp rope saturated with bitumen** Fringhie din cinepa imbibata cu bitum	-	0,7	
6		**Expoy Glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	
		Span joints Rost intre deschideri			
1	ТУ6-11-217-71	**Glass fibre mesh** Plasa СПАП cu fibre de sticla, L=1,0 m	-		1,0 m²
2		**Lyre-shaped brass sheet** Bucla din tabla de alama, GOST 19904-90	-		0,5 m²
3		**Steel expanssion bolts** Dibluri de otel, L=5cm, GOST 19904-90	12	0,008	
4	ВСН 32-81	**Bitumunous mastic** Mastic bituminos	-	1,5	
5	ТУ480-1-119-71	**Hemp rope saturated with bitumen** Fringhie din cinepa imbibata cu bitum	-	0,7	
6		**Expoxy glue.** Rasina epoxidica, SNiP 3.06.04-91	-	0,6	

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Rev. Amendamente | Aprobat | Data
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Pod, km 134+987
Bridge, km 134+987

Rost de dilatatie.
Expanssion joint.

Drawing 25-23