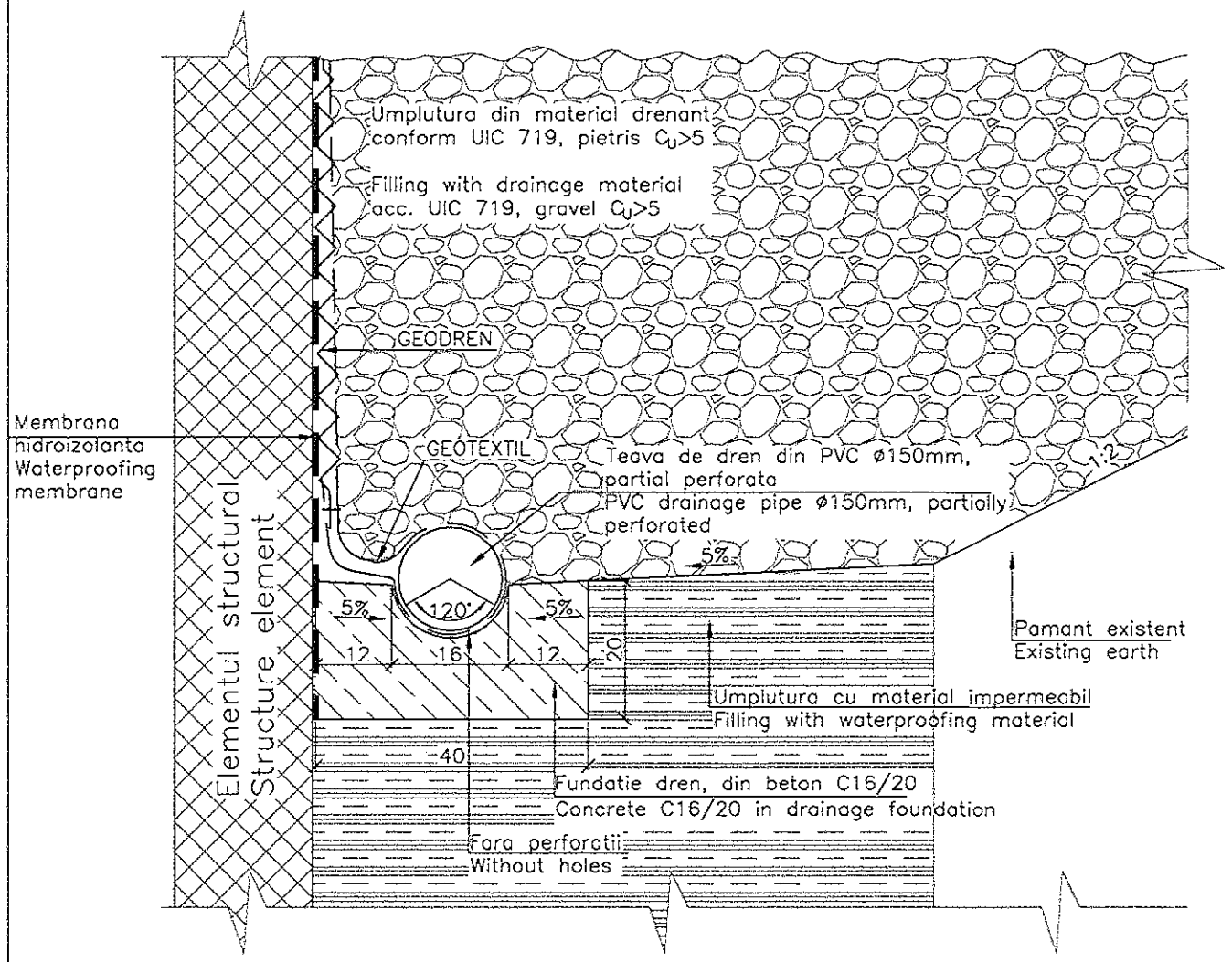
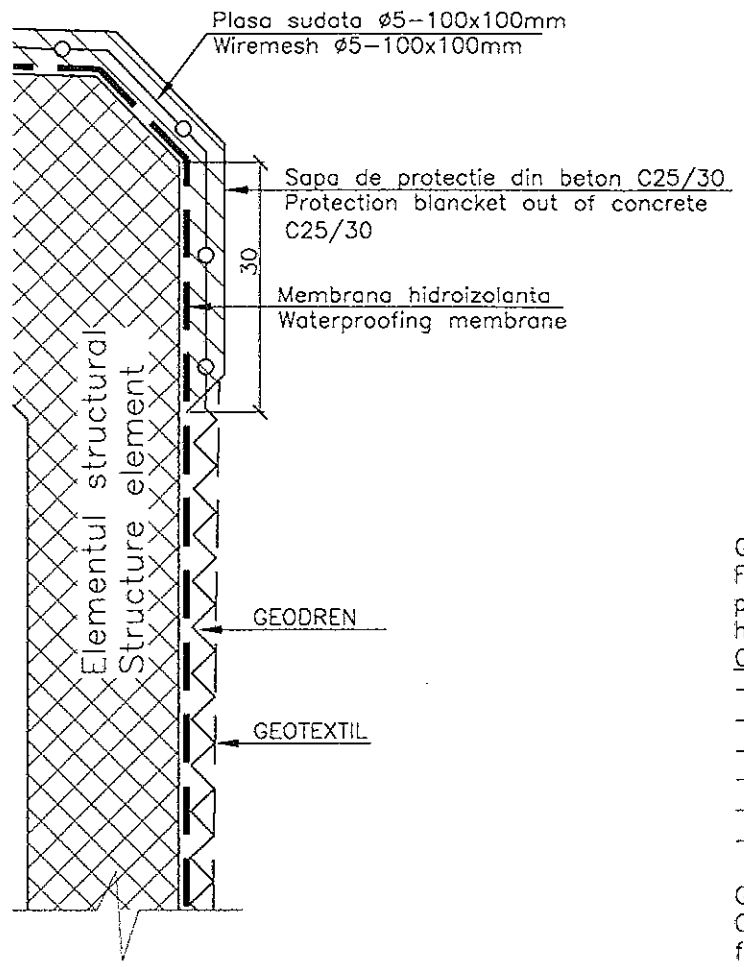
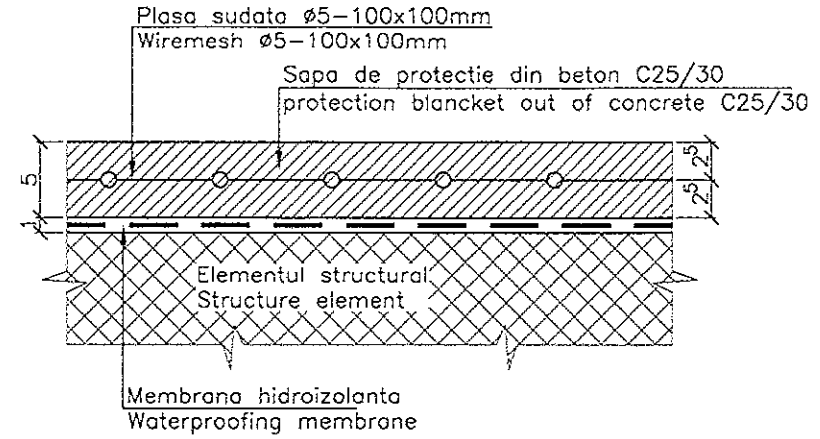
SISTEM DE DRENARE A APELOR DIN SPATELE PODETELOR
SYSTEM FOR DRAINAGE THE WATER BEHIND THE CULVERTS
Sc.1:10



RACORDAREA SAPEI DE PROTECTIE SI FIXAREA GEODRENULUI
PROTECTION BLANCKET FILLET AND GEODREN CONECTION
Sc.1:10



DETALIU STRAT DE PROTECTIE A HIDROIZOLATIEI
WATERPROOFING PROTECTION BLANCKET DETAIL
Sc.1:5



MEMBRANA PENTRU HIDROIZOLATII:
Conditii de utilizare:
– grosimea minima a membranei 4mm;
– realizata pe baza de bitum aditivat;
– sa prezinte strat din granule minerale care sa asigure aderenta betonului de protectie;
– sa prezinte insertie de geotextil netesut din polistiren cu greutate min. 200g/mp;
– sa se aplice cu flacara in aderenta totala la suport.
Caracteristici fizico–mecanice:
– rezistenta la tractiune – longitudinal min. 180N/5cm;
– rezistenta la tractiune – transversal min. 120N/5cm;
– alungire la rupere – longitudinal min. 30%;
– alungire la rupere – transversal min. 30%;
– rezistenta la poansonare statica – min. 25kg(L4);
– flexibilitate la temperaturi scazute (dorn cu diametrul 20mm) – fara fisuri la –20°C;
– aderenta la suport – min. 0.53 MPa.

WATERPROOFING MEMBRANE:
Using conditions:
– the minimum membrane thickness 4mm;
– additive bitumen membrane;
– it shall have a layer with mineral granule which should provide the protection concrete adherence;
– it shall have non–woven geo–textile insertion of polyester with minimum weight 200g/mp;
– it shall be applied by flame gluing in total adherence with the support.
Physical–mechanical properties:
– tensile strength – longitudinal min. 180N/5cm;
– tensile strength – transversal min. 120N/5cm;
– elongation ultimate – longitudinal min. 30%;
– elongation ultimate – transversal min. 30%;
– static punching resistence – min. 25kg(L4);
– low temperature flexibility (mandrel with 20mm diameter) – without cracks at –20°C;
– support adherence – min. 0.53 MPa.

LEGENDA BETOANELOR:
CONCRETE LIST:

Beton in elementele structurale
Concrete for structure elements

Beton de panta si protectie a hidroizolatiei C 25/30, expunere XC4+XF1 (RO), Cl 0.2, agregate D_{max} 16, densitate D 2.5, consistenta S3
Slope concrete and protection of waterproofing C 25/30, exposure XC4+XF1 (RO), Cl 0.2, aggregates D/max 16, density D 2.5, consistency S3

Beton simplu in fundatie dren C 16/20, expunere X0 (RO), Cl 0.2, agregate D_{max} 32, densitate D 2.5, consistenta S2
Plain concrete in drain foundations C 16/20, exposure X0 (RO), Cl 0.2, aggregates D/max 32, density D 2.5, consistency S2

GEODREN:
Foaie de polipropilena cu sectiune alveolara, imbracata la fata superioara cu un netesut din polipropilena cu rol de geotextil filtrant, iar fata inferioara se lipeste de membrana hidroizolanta.
Caracteristici fizico–mecanice:
– masa unitara – 0,61kg/mp;
– forta de rupere la tractiune (T/L) – >880x760N/5cm
– alungire la rupere (T/L) – >45x40%
– rezistenta la perforare statica – >15daN
– rezistenta la compresiune – 450kN/mp
– permeabilitate la apa – 0,062m/s

GEODREN:
Cellular polypropylene sheet, protected at the upper side by a polypropylene non–woven for filter purpose and glued at the lower side by waterproofing membrane.
Physical–mechanical properties:
– unitary weight – 0,61kg/mp;
– ultimate tensile strength (T/L) – >880x760N/5cm
– breaking tension (T/L) – >45x40%
– static penetration resistance – >15daN
– compression resistance – 450kN/mp
– water permeability – 0,062m/s

LA GAR B. ION ROMÂNIA M.L.P.A.T. NR.1165 A4. B2. D2 INGINER VERIFICATOR PROIECTE

B			
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	Data / Date	Modificare / Modification / Revision	

BENEFICIAR/ BENEFICIARY : ROMANIAN RAILWAY NATIONAL COMPANY	AUTORITATEA DE IMPLEMENTARE/ IMPLEMENTUNG AUTHORITY Ministerul Transporturilor Ministry of Transports	AUTORITATEA CONTRACTANTA / CONTRACTING AUTHORITY CFCU Ministerul Economiei si Finantelor Oficiul de Plati si Contractare Phare Ministry of Economy and Finances Phare Payments &Contracting Office	Contract / Contract: 1303/2007
prointec CONSIS PROIECT		Proiect finantat de UNIUNEA EUROPEANA Project financed by EUROPEAN UNION POS Transport 2007- 2013	Faza / Phase: PTh+DDE/ TP+DD

Intocmit / Designed	Ing. Vara-Oros Cristina		Scara / Scale : 1:10 1:5	PORTOFOLIU DE PROIECTE PHARE CES 2005 / PHARE CES 2005 PROJECTS PORTFOLIO LOT 1	
Verificat / Checked	Ing. Sandu Bogdan			Asistenta tehnica pentru pregatirea unor lucrari de reabilitare pentru tuneluri si poduri de cale ferata Technical assistance for preparing rehabilitation works required by railway tunnels and bridges	
Sef echipa / Team leader	Ing. Stelian Vara-Oros		Data / Date : 05.2009	Denumire desen / Drawing Title : Sucursala RCF /Railway district IASI. Linia cf /Railway line Tecuci-Iasi Podet / Culvert km 268+678 DETALIU DREN SI HIDROIZOLATIE/WATERPROOFING AND DRANAIGE SYSTEM DETAIL	Cod desen / Drawing Code: PD 58 / Nr. / No: P08