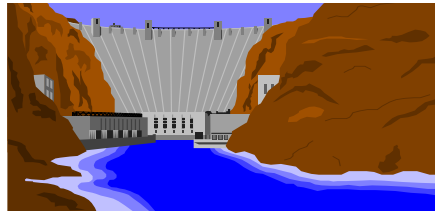


# **FACULTY OF HYDROTECHNICAL ENGINEERING**



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## RESEARCH CENTER FOR MODELING, DESIGNING AND BEHAVIOR MONITORING OF THE HYDROTECHNICAL DEVELOPMENTS

### GENERAL PRESENTATION

The center was set up in 2001 and certified by the Romanian Research Authority in Higher Education (CNCSIS certificate no. 99 / CC-C, 11 May 2001 and after that, again in September 2006).

The main research fields of the center lies generally on water engineering, having as subfields:

- Water constructional works
- Urban and rural sanitation
- Land reclamation an improvement arrangements.

#### Certificate

Based on the long experience of the researchers and the existing research infrastructure, the center is able to manage engineering projects in fields connected to water engineering.

### MAIN ACTIVITIES

- managing research projects in water engineering
- design and technical assistance in Hydrotechnical structures
- water constructional works
- rivers regulation works
- waterways and harbors
- modern technologies in water engineering
- drinking and industrial water supply network and plants
- waste water treatment plants
- sewage network
- water biology and chemistry
- water quality monitoring
- numerical modeling in surface water and groundwater flow
- numerical modeling of the pollutants transport in groundwater
- land reclamation and improvement, irrigations and drainages
- rural sustainable development
- soil science studies and erosion controls
- polluted soils rehabilitation
- surveying, cadastre
- waste disposal sites design and monitoring

### PROJECTS

#### RESEARCH TEAM

Beilicci, R., Beilicci, E., Man, T. E., Constantinescu, L., Carabet, A.

**The arrangement of Gutâiul Doamnei Cavnice (Maramures County) skiing domain (Water intake, Reservoir, Pumping station, Snow producing)**

Contract no.: 90/28/06/2010  
Value: 24.800 RON

Beneficiary: TERMOGAZ COMPANY S.A.

#### RESEARCH TEAM

Florescu, C., Mirel, I., Carabet, A., Doandes, V., Eles, G., Staniloiu, C., Podoleanu, C.

**Study regarding the transport performance of the sewerage network in the areas with floodable risk of Timisoara**

Contract no.: BC 121/ 20/10/201

Value: 60.000 RON

Beneficiary: Municipal Council Timisoara

#### RESEARCH TEAM

Badaluta-Minda, C., Cretu Gh., Man, T.E., Carabet, A.

**Studies regarding emissive pollutants in the environment**

Contract no.: 106/ 2010

Value: 20.000 RON

Beneficiary: SC LINDE GAZ SRL

#### RESEARCH TEAM

Halbac-Cotoara-Z. R., Costescu, I.A., Dragomir, M. G.

**Involving and the role of the local authorities in rising of rate of work**

Contract no.: 0637R2 (FEDR)

Value: 13.350 EURO

Beneficiary: INTERREG IVC

#### RESEARCH TEAM

Lazăr, G. I., Constantin, A.T.

**Turning account the hydropower potential of the reservoir located on Mures River by small hydropower plants**

Contract no.: 55/22/04/2010

Value: 12.817 RON

Beneficiary: S.C. ISPE S.A., Timișoara

#### RESEARCH TEAM

Lazăr, G. I., Constantin, A.T., Stăniloiu, C.

**Expertise on C500 main sewerage collector in Satu Mare**

Contract no.: 106/20/09/201

Value: 24.800 RON

Beneficiary: S.C. APASERV Satu Mare S.A.

#### RESEARCH TEAM

Constantin, A.T., Lazar, Gh., Man, T.E., Beilicci, R.

**Technical project regarding the Beclean intake on Somes River**

Contract no.: 24/25/02/10

Value: 11.900 RON

Beneficiary: SC AQUABIS SA, Bistrița

#### RESEARCH TEAM

Constantin, A.T., Lazar, Gh., Man, T.E., Girbaci, C.A., Ghitescu, M.A.

**Technical project regarding the gas pipe crossing in the Gad Border area (profile 384)**

Contract no.: 120/19/10/2010

Value: 5.022 RON

Beneficiary: S.C. OMV PETROM S.A.

**PUBLICATIONS**

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5. Nemeş, I., *Water engineering technologies*, Mirton Publishing House, 238 pages, ISBN 978-973-52-0942-1 (published in Romanian)
6. Costescu I.A., Orlescu M., *Integrated and conformable approach of waste management - design and calculus example*, Politehnica Publishing House, 90 pages, ISBN 978-606-554-052-1, (published in Romanian)
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2. Ghitescu A., David I., *An investigation of preferential flow path in case of urban flooding using 2d mathematical and hydrodynamical modeling*, Proceedings of the 12th WSEAS International Conference on Mathematical and Computational Methods in Science and Engineering (MACMESE '10), pp. 281-287, ISBN 978-960-474-243-1
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  23. Barliba, L., Barliba, C., Eles, G., Chiscop, N., *Forest topographic features use for silvic works by using the actual measuring technologies for data processing*, Formec 2010 Symposium, Meeting The Needs Of The Society And The Environment, Topic 6: Forest Resources Inventory And Mornitoring, July 11-14 2010 Padova, Italy, pp. 8, ISBN 978-88-6129-569-8
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  6. Aldescu, C., *Flood study on Timis River in the concept more space for the river*, Ph.D Supervisor: Prof.Dr.Eng. Cretu Gheorghe
  7. Pantea, E., *Study of the waste waters purification from food units*, Ph.D Supervisor: Prof.Dr.Eng. Mirel Ion
  8. Retezan, R., *Sanitary engineering systems. Optimisation and design*, Ph.D Supervisor: Prof.Dr.Eng. Mirel Ion
  9. Halbac-Cotoara-Zamfir, R., *Efficient drainage solutions for wet lands*, Ph.D Supervisor: Prof. Dr.Eng. Man Teodor Eugen
  10. Zaharia, M., *Flow monitoring on Mures River in Arad*, Ph.D Supervisor: Prof.Dr.Eng. Popa Gheorghe

#### **PhD STUDENTS**

1. Scientific Supervisor: Prof.Dr.Eng. Ioan David, *Hydraulics and Fluid Mechanics*
    - Bakos (Pisleaga), M., *The influence of the inhomogeneity on the flow and transport processes in aquifers*
    - Ieremciuc, M., *Evaluation methods of the sanitary protection zones*
    - Iliuta, C., *Technical solutions and the management of the rainwater*
    - Racelescu, R., *The optimization of the water distribution and sewerage network*
    - Rada, M., *The impact of the transportation system on the integrated hydrologic*
    - Visescu, M., *Renewable energies: The usage of the small deepness geothermal energy*
    - Hetes, D., *Monitoring and statistical analysis of the remedial measures in constructions and elaboration on this base a new methodology for regional inspectorates*
    - Baliga, D.L., (first year PhD Student)
    - Novac, I.A., (first year PhD Student)
    - Vaduva, R., (first year PhD Student)
    - Mihoc, L.V., (first year PhD Student)
  2. Scientific Supervisor: Prof.Dr.Eng. Gheorghe Cretu, *Water Management*
    - Riti, A., *Water developments impact upon the ecosystems in mining areas*
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    - Georgescu, A., *Study of qualitative water management in Barzava river hydrographic basin for a clean water*
    - Damsescu, A., *Researches regarding navigation on Danube River in extremely hydrological conditions on Bazias-Bechet section*
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    - Munteanu, H., *Studies on self purification processes on Bega hydrographic basin*
    - Dumitrascu, M., (first year PhD Student)
- PhD THESIS**
1. Chebutiu, A., *Century of industry in Banat Mountains. Evolution and impact. Case study: UCM Resita- Mociur*, Ph.D Supervisor: Prof. Dr. Eng. David Ioan
  2. Popescu-Busan, I. A., *Analysis of the minimum impact principle of the water structures on environment*, Ph.D Supervisor: Prof. Dr.Eng. David Ioan
  3. Ghitescu, M. A., *Analysis of the possibilities and limits of the concept 1,2 and 3D in the modeling of the quantitativ an qualitativ rivers flow regime*, Ph.D Supervisor: Prof. Dr. Eng. David Ioan
  4. Girbaci, C., *Contributions on the optimisation of the integrated and complex water management systems*, Ph.D Supervisor: Prof. Dr.Eng. Cretu Gheorghe
  5. Husaru, G. V., *Problems regarding the eutrophication of the reservoirs*, Ph.D Supervisor: Prof.Dr.Eng. Cretu Gheorghe

- Rusu, R., (*first year PhD Student*)
  - Codea, D., (*first year PhD Student*)
3. Scientific Supervisor: Prof. Dr.Eng. Teodor Eugen Man, *Land Reclamation*
- Suiugan, M., *Using of GIS in the water management from the hydrographic basin of Bihor county*
  - Pavel, C., *Rehabilitation and modernization solutions of irrigation system Crivina-Vânju Mare*
  - Gabor, A., *The retechnologization of irrigation system Şagu-Fântânele-Arad*
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  - Stoica D. M., *The forecast of water quality evolution in Cibin river for the middle and lower basin*
  - Nuţaş Vancia G., *Land reclamation and improvement evolution and efficiency in Timiş county*
  - Blaj Buran, C., *Mathematic modeling of drainage arrangement efficiency*
  - Coput, F., *Mathematic modeling of irrigation systems*
  - Steolea, P., *Gravitational irrigation for slope lands, as irrigation methods in relation with pressure*
  - Ienci, C.I., (*first year PhD Student*)
  - Gherman, G., (*first year PhD Student*)
  - Balaj, I.C., (*first year PhD Student*)
  - Stana, O., (*first year PhD Student*)
  - Giru, M., (*first year PhD Student*)
  - Tămaş, M.T., (*first year PhD Student*)
  - Receanu, R.G., (*first year PhD Student*)
4. Scientific Supervisor: Prof.Dr.Eng. Gheorghe Rogobete, *Land Reclamation*
- Gheteu, M., *Solutions for the rehabilitation of the terrain polluted with radioactive substances and heavy metals from Banat*
  - Grozav, A., *Water and soil pollution phenomena - Case study of a section from hydrographic basin of the river Bârzava*
  - Tudor, V., *Phenomena of nitrates pollution of soils from the Down Plain of the Bârzava river*
  - Ene, C. *Forest fires management*
  - Bandu, A., *Salts migration phenomena in the Timiş-Bega Down Plain*
  - Crainic, G. *The environmental impact of the closing and ecologic works of the mines in Bihor County*
- Golosie, I. *The sociology of disasters and engineering measures to diminishing the impact in mining zones in Banat region. Case study: Rusca Montana*
5. Scientific Supervisor: Prof.Dr.Eng. Mirel, I. *Sanitary Engineering*
- Barabas, K., *Technologies for sludge treatment*
  - Moldovan, Gh., *Contributions on the laws application in the environment protection*
  - Pistru, I., *Human settlements protection and environment legislation*
  - Mihart, D., *The effects of the natural reservoirs on the environment quality*
  - Sandru, I., *Optimization of the urban sewerage systems management*
  - Olaru, I., *Considerations regarding collecting transportation and neutralizing the domestic wastes*
  - Szigyarto, I., *The impact of the urban sewerage systems on environment*
  - Breb,C., *Optimization of the rural sewerage systems*
  - Grozescu, M., *Considerations on the quantitative and qualitative changes of the water distribution network. Case study: Timisoara*
  - Sabau, E., *Optimization of the combined sewerage systems*
  - Panfil, C., *Optimization of the sewerage systems*
  - Isacu, M.D., *Study of the sewerage systems maintenance and their impact on environment*
  - Boboiescu, I., *Study of the biological processes in the purification technologies*
  - Bone, T., *Biological technologies for waste waters purification*
6. Scientific Supervisor: Prof.Dr.Eng. C. Jura: *Sanitary Engineering*
- Paian, S., *Water purification plant for surface water*
7. Scientific Supervisor: Prof. Dr. Eng. Popa Gheorghe, *Water Structures*
- Matei, F., *Stress and strain state determination in the arch shape dams foundations*
  - Maries, C., *Water flow around a retention structure with low water head*
  - Riiosu, J., *High waters management*
  - Botos, M., *Running behavior study for temporary storage dams in case of turning into permanent ones*
  - Orlescu, C., *Water tightening accomplishment an hydrotechnical retention and protection works*
  - Olaru, G., *Contributions on the drawing up and calculus of the sluices*
  - Zeiler, E., *Optimization of the hydrotechnical schemes in order to evaluate the rivers hydraulic energy through small hydropower plants*
  - Bociort, L., *Studying the flow rate transit on banked rivers with lateral polders*
  - Schipor, F., *Optimization of the waste waters purification plants of small and medium size*

**PERSPECTIVES**

- updating the European trends in water engineering and applying them to Romanian realities;
  - ensuring technical assistance for the design groups and companies in order to provide water supply projects for small communities
  - a complete inventory of the companies acting in the Romanian west side of the country regarding research demands and in this way to set up new research projects;
  - studies, research and design for rehabilitation of the land reclamation arrangements;
  - enlarging the international cooperation in the field of water engineering researches;
- further co-operation between our research center and other research centers from Iasi, Bucharest and Constanta Universities in the field of the groundwater management and its protection against pollution.

**CONTACT**

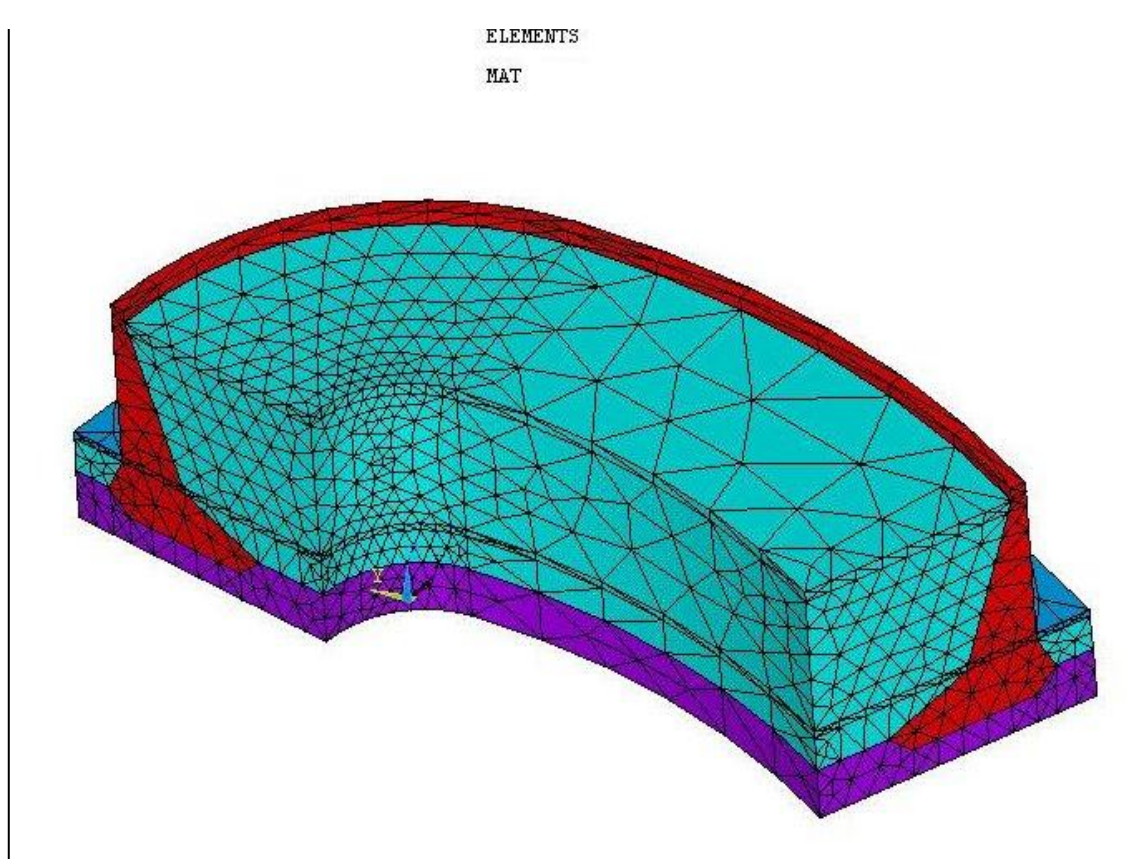
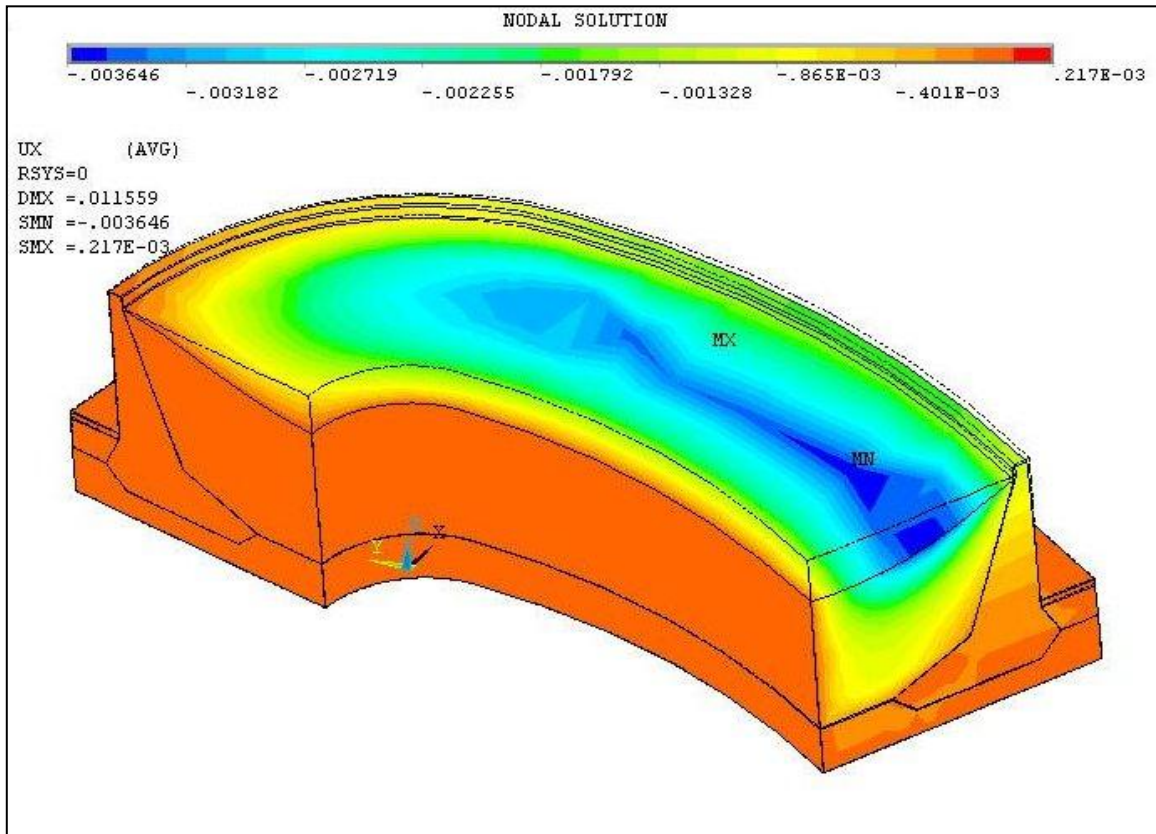
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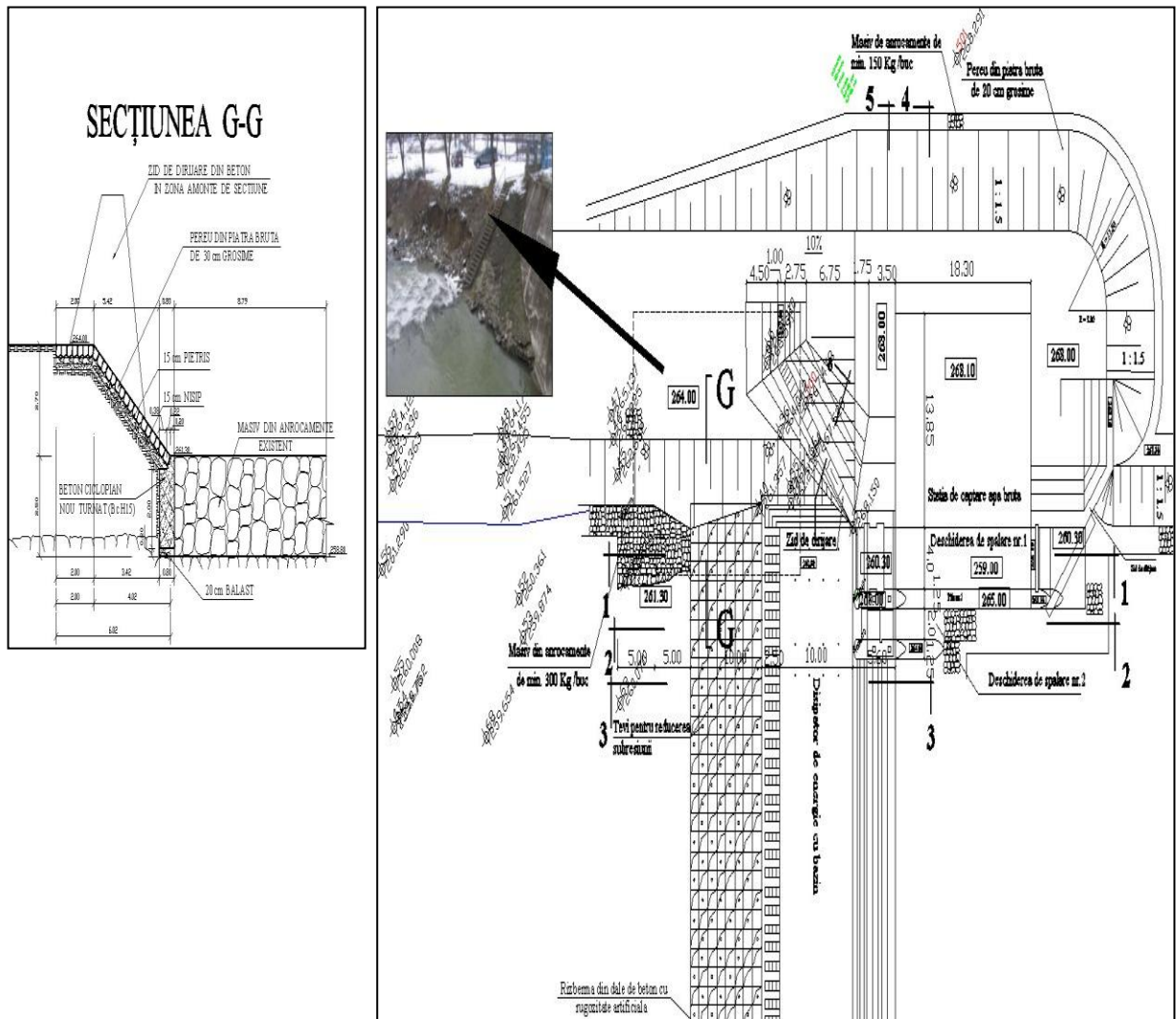
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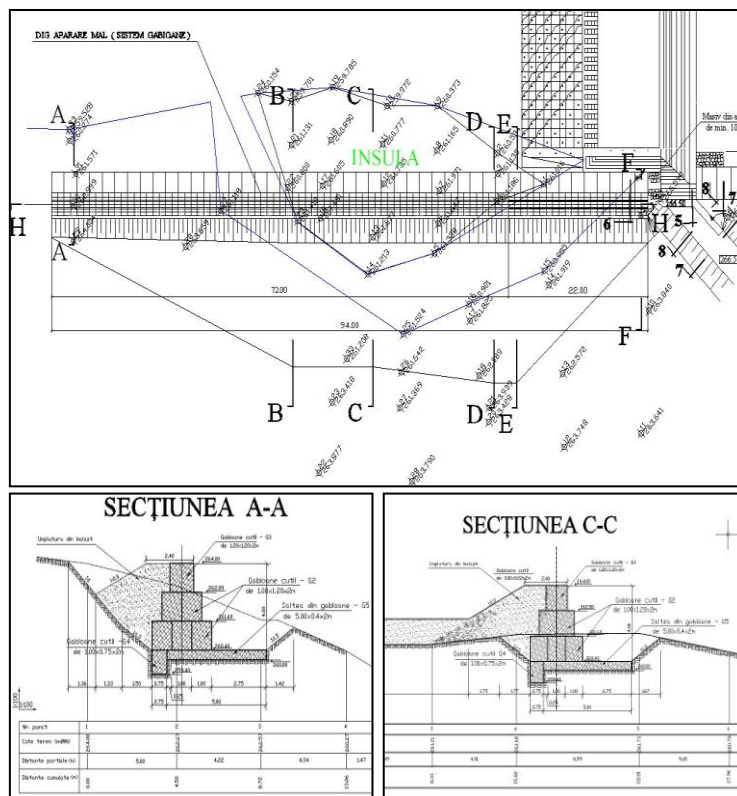
Project 55/2010. Reservoir on Mures River .Numerical model of the diverting dam



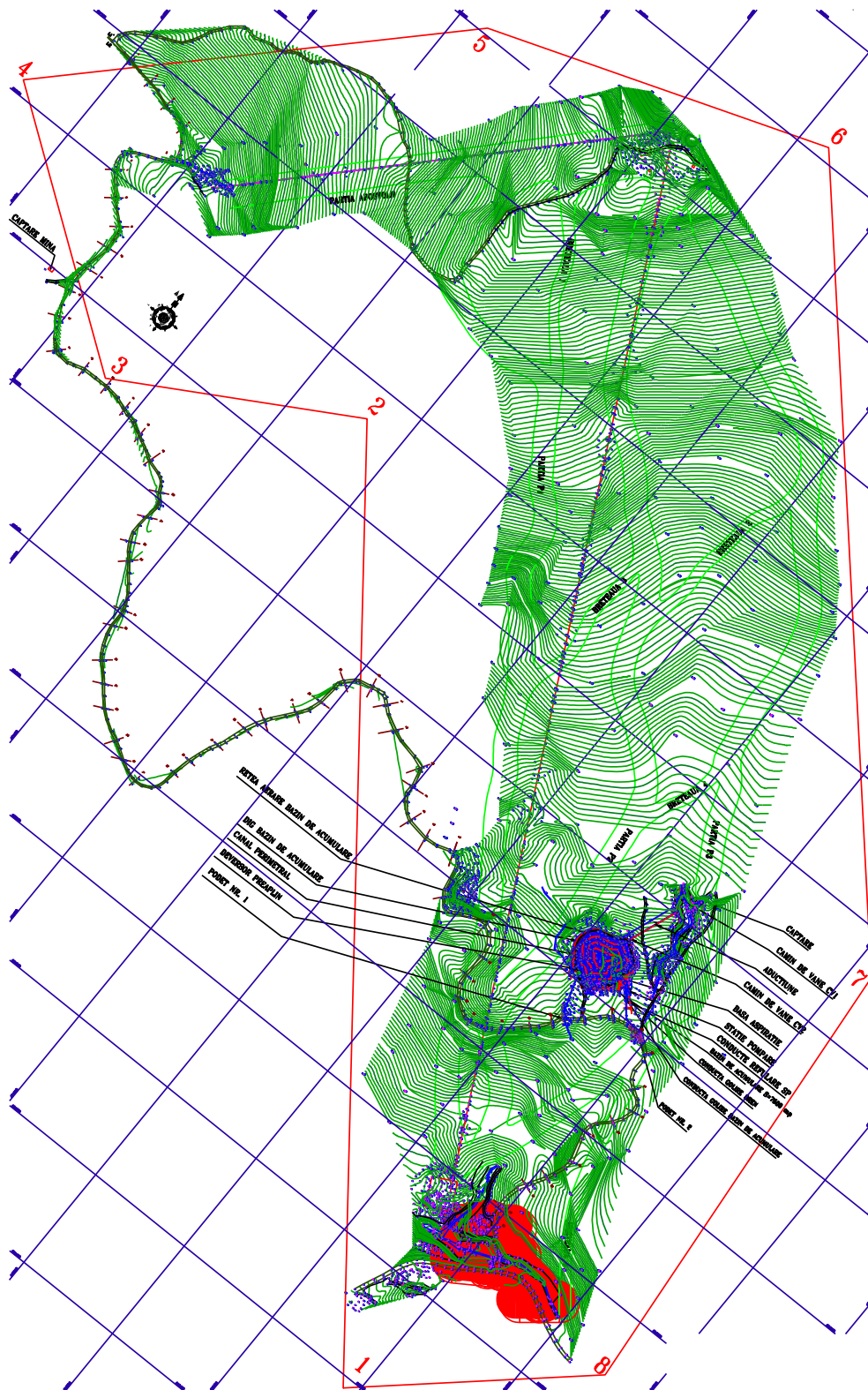
Project 55/2010. Reservoir on Mures River .Numerical model. Strain state in the dam



Project 24/2010. Beclean intake on Somes River. Site plan and cross sections. Proposal technical measures



Project 24/2010. Beclean intake on Somes River. Cross sections



Project 90/2010. The arrangement of Gutâiul Doamnei Cavnice (Maramures County) skiing domain (Water intake, Reservoir, Pumping station, Snow producing)

