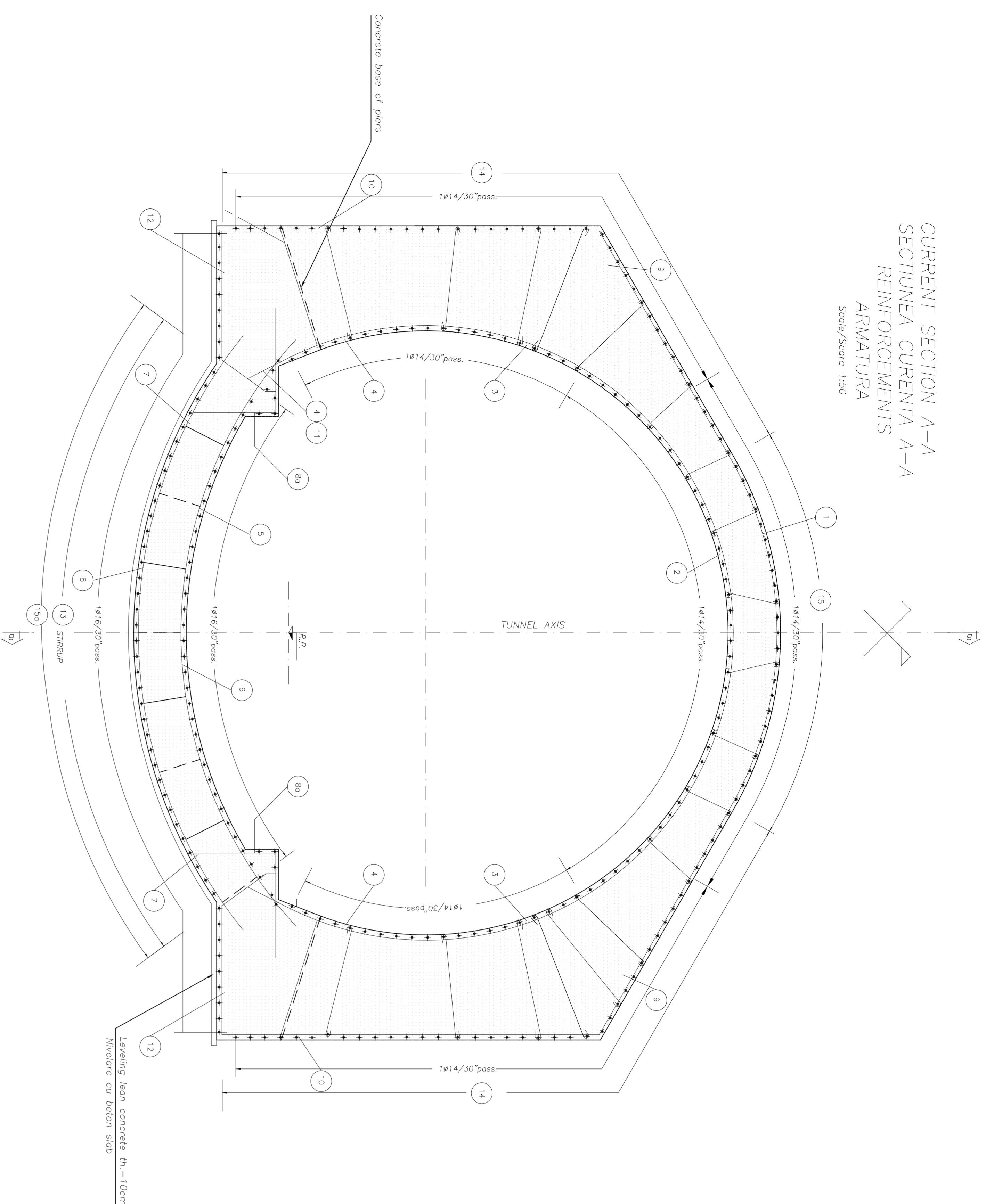
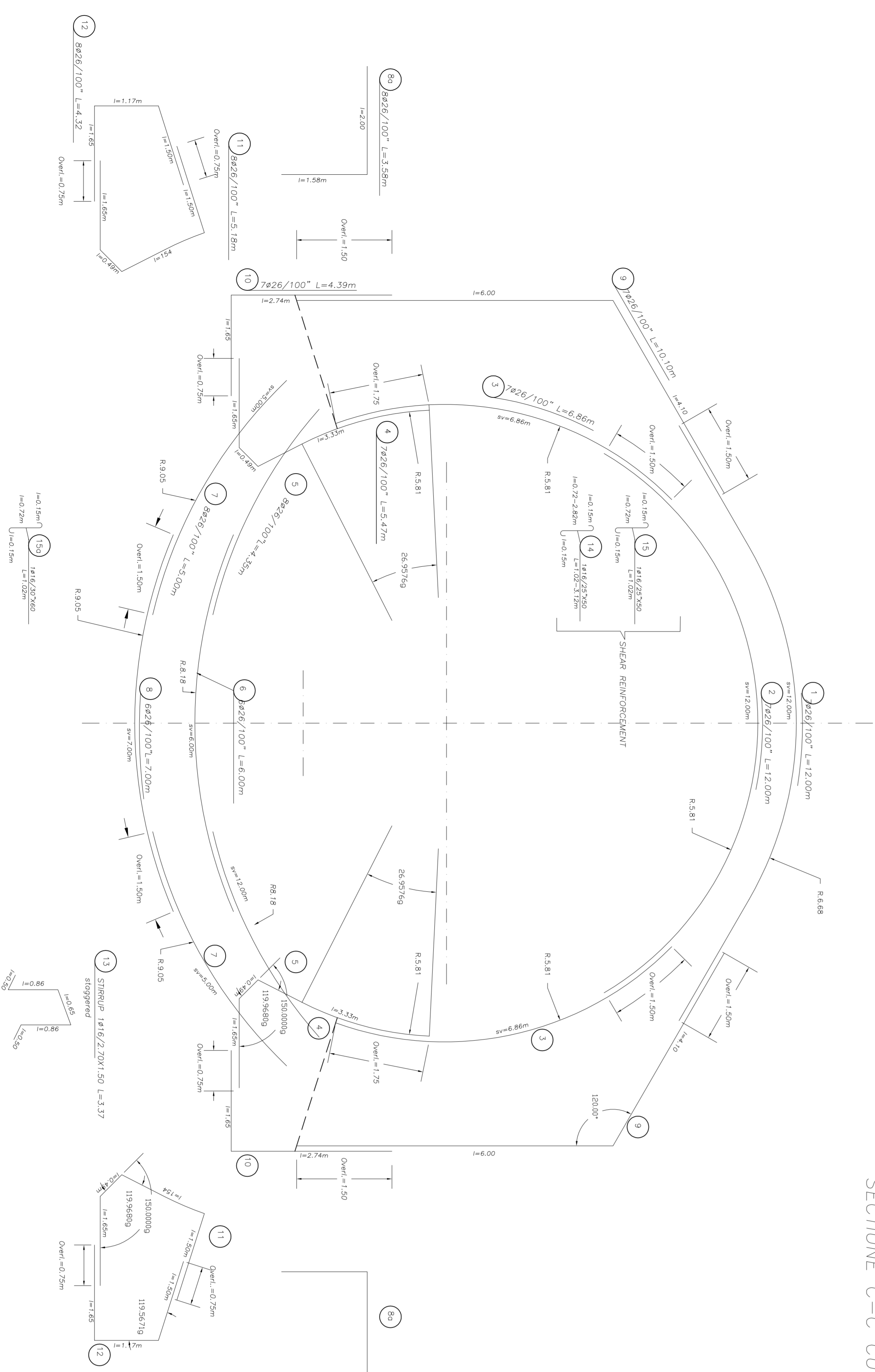


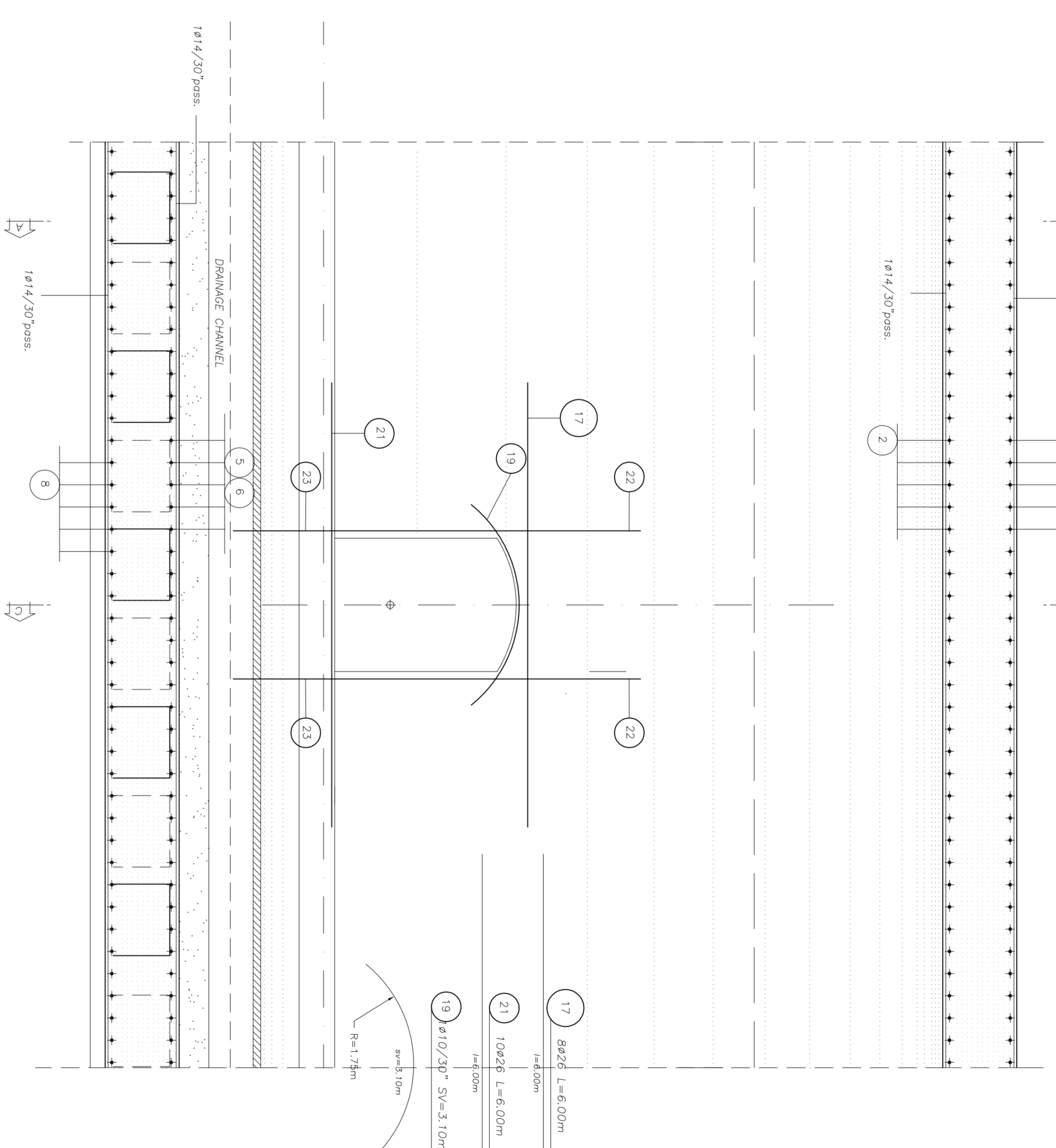
CURRENT SECTION A-A
SECTIUNEA CURENTA A-A
ARMATURA
Scara/Scara 1:50



SECTION C-C WITH SHELTER STAFF NICHE
SECTIUNEA C-C CU NISE PENTRU ADAPOSTUL PERSONALULUI
Scara/Scara 1:50



CURRENT SECTION B-B
SECTIUNEA CURENTA B-B
Scara/Scara 1:50



CURRENT SECTION D-D
SECTIUNEA CURENTA D-D
Scara/Scara 1:50



STEELS TABLE

REFERENCE STEEL:
- B40C (standard)
Bending diameter R_b :
Bar < 400 -> $R_b = 6d$
Bar # 400 -> $R_b = 8d$

Legend measures:
 R = Radius
 R_{ext} = External radius
 R_{int} = Internal radius
 d = Bar diameter

MATERIAL TABLE

TUNNEL INNER CONCRETE:
- Type C20
- $f_{ck} = 20$ MPa
- Max. aggregate size: 16mm
- Max. aggregate content: 51%
- Exposure class related to environmental conditions: XE2
- Class of concrete: C20
- f_{max} aggregate = 20 mm

TUNNEL EXTERNAL CONCRETE:
- Type C15
- $f_{ck} = 15$ MPa
- Max. aggregate size: 16mm
- Max. aggregate content: 47%
- Exposure class related to environmental conditions: XE2
- Class of concrete: C15
- f_{max} aggregate = 20 mm

REFERENCE STEEL
- B40C, controlled by establishment
- B40C, controlled by establishment
- Type I
- $f_{yk} = 475$ MPa
- $f_{tk} = 17$ MPa
- Cement type: CEM I/V

LEGEND
RP = REFERENCE PLANE
EX = EXCAVATION PLANE
PC = CENTER PLANE

Index	Date	Modifications	Project Manager	Author/Designer	Approved/Checked
A	2024.01.15	Initial design	R. LUTZA	R. LUTZA	R. LUTZA
B	2024.02.01	Revised design	R. LUTZA	R. LUTZA	R. LUTZA
C	2024.02.15	Final design	R. LUTZA	R. LUTZA	R. LUTZA

CLIENT / CLIENT
GOVERNUL ROMÂNIEI
ROMANIAN GOVERNMENT
PROIECT FINANȚAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT
CN.C.F. "C.F.R." - S.A.

CONSULTANT / CONSULTANT
OBERMEYER
JOHN - BERNDT SMITH
TECNIC
Consulting Engineers

CONSULTANT / SUBCONSULTANT
R. LUTZA
C. GEMELLI
C. GEMELLI

Subcontractor
MUREN TUNNEL
MUREN TUNNEL SIE
Tunel artificiali anverni

Project/Project
2044/RO/16/974/002
Faza: Proiect
P.N. / I.D.

Scale / Scale
1:50

Code / Code
E.A.5.1 0.1 C 1.6 B.B G.A 1.1 0 0 0.6 0