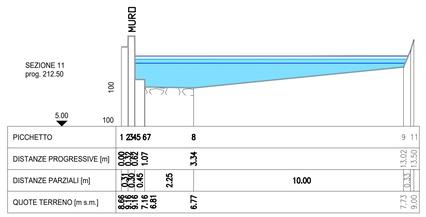
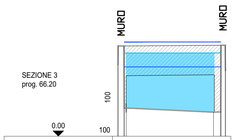


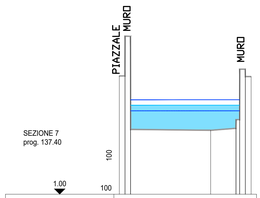

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 7.38 | 8.48 | 10.81 | 15.10 | 16.86 | 20.98 | 25.32 | 27.28 | 28.47 | 32.14 |
| DISTANZE PARZIALI [m] | | 7.38 | 1.10 | 2.32 | 4.29 | 1.76 | 4.12 | 4.34 | 1.96 | 1.19 | 3.67 |
| QUOTE TERRENO [m s.m.] | 0.95 | 1.28 | 1.99 | 2.13 | 1.85 | 0.36 | 0.43 | 0.76 | 2.25 | 2.27 | 2.28 |



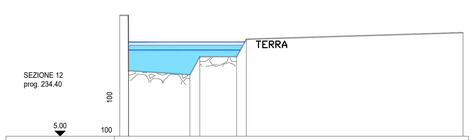

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.31 | 0.52 | 1.07 | 3.34 | 13.02 | 13.50 | | | |
| DISTANZE PARZIALI [m] | | 0.31 | 0.21 | 0.55 | 2.25 | 9.68 | 0.48 | 10.00 | | |
| QUOTE TERRENO [m s.m.] | 8.68 | 9.18 | 7.16 | 6.61 | 6.77 | 7.73 | 9.00 | | | |




| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 10 |
|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.38 | | | | 4.41 | 4.78 | 4.95 |
| DISTANZE PARZIALI [m] | 0.27 | 4.03 | | | | 0.37 | 0.31 | 0.17 |
| QUOTE TERRENO [m s.m.] | 3.29 | 4.17 | 1.30 | | | 1.11 | 3.01 | 3.01 |



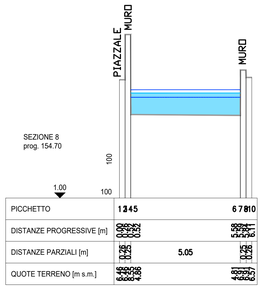

| PICCHETTO | 1 | 2 | 4 | 5 | 6 | 7 | 8 | 11 | 13 |
|---|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.25 | | | 4.22 | 5.38 | 5.55 | 6.08 | |
| DISTANZE PARZIALI [m] | 0.25 | 3.69 | | | 1.16 | 0.17 | 0.53 | | |
| QUOTE TERRENO [m s.m.] | 6.46 | 6.46 | 3.99 | | 3.95 | 4.44 | 4.44 | 6.43 | |



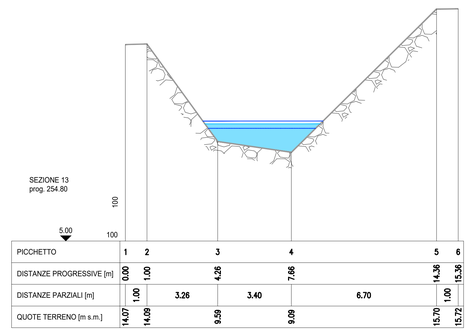

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.49 | 0.41 | 3.24 | 3.70 | 5.39 | 5.54 | 15.84 |
| DISTANZE PARZIALI [m] | 0.40 | 0.01 | 2.83 | 0.46 | 1.70 | 0.45 | 10.00 | |
| QUOTE TERRENO [m s.m.] | 10.56 | 10.39 | 8.03 | 7.84 | 8.67 | 8.67 | 9.48 | 9.78 |



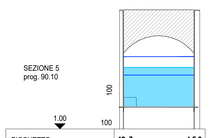

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.28 | 1.95 | 3.62 | 4.94 | 6.96 | | |
| DISTANZE PARZIALI [m] | 0.28 | 1.66 | 1.67 | 1.33 | 2.00 | | | |
| QUOTE TERRENO [m s.m.] | 4.61 | 4.82 | 2.02 | 2.71 | 2.71 | 15.06 | | |



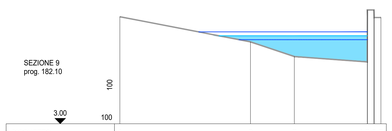

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.25 | | | | 5.58 | 5.77 | 6.11 | |
| DISTANZE PARZIALI [m] | 0.25 | 5.05 | | | | 0.19 | 0.34 | | |
| QUOTE TERRENO [m s.m.] | 6.46 | 6.46 | | | | 4.81 | 4.81 | 6.57 | |



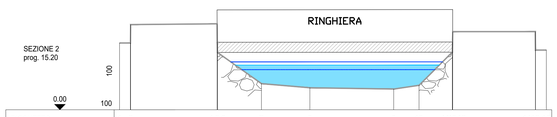

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 1.00 | 4.26 | 7.66 | 14.36 | 15.36 |
| DISTANZE PARZIALI [m] | 1.00 | 3.26 | 3.40 | 6.70 | 1.00 | |
| QUOTE TERRENO [m s.m.] | 14.07 | 14.09 | 9.59 | 9.09 | 15.70 | 15.72 |



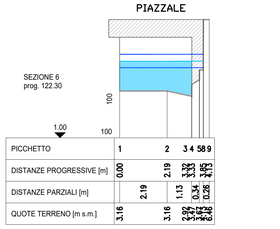

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.18 | | | 3.44 | 3.70 |
| DISTANZE PARZIALI [m] | 0.17 | 3.25 | | | 0.25 | |
| QUOTE TERRENO [m s.m.] | 6.48 | 2.01 | | | 2.00 | 2.00 |



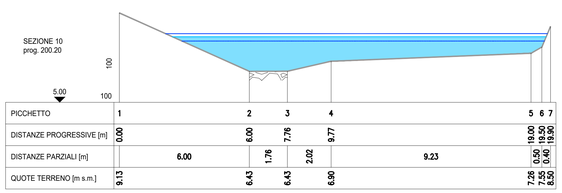

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 6.03 | 8.05 | 11.42 | 11.72 | 12.85 | |
| DISTANZE PARZIALI [m] | 6.03 | 2.02 | 3.36 | 0.30 | 1.13 | | |
| QUOTE TERRENO [m s.m.] | 7.94 | 6.78 | 6.10 | 6.85 | 6.85 | 7.90 | |



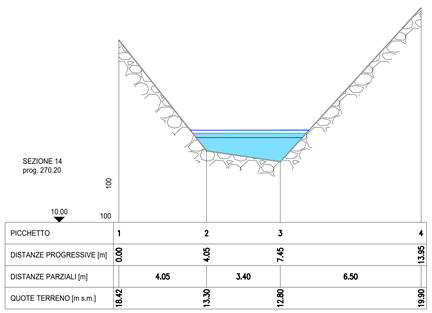

| PICCHETTO | 1 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 0.50 | 4.50 | 4.51 | 6.53 | 8.78 | 12.65 | 13.82 | 15.36 | 15.38 | 19.19 | 19.20 | 19.70 | | |
| DISTANZE PARZIALI [m] | 0.50 | 3.99 | 0.01 | 2.03 | 2.24 | 3.87 | 1.17 | 1.54 | 0.01 | 3.81 | 0.01 | 0.50 | | | |
| QUOTE TERRENO [m s.m.] | 3.08 | 3.08 | 3.08 | 2.74 | 1.21 | 1.01 | 0.95 | 1.13 | 2.66 | 3.61 | 3.61 | 2.75 | | | |



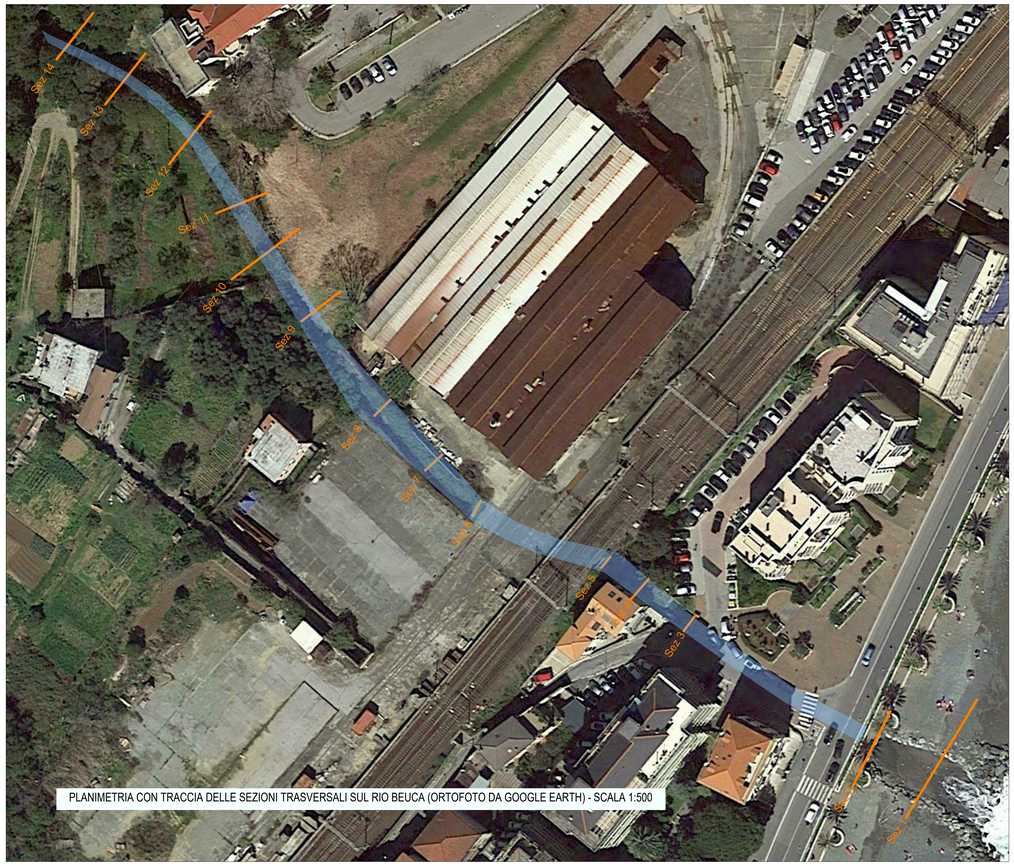

| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 8 | 9 |
|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 2.19 | 3.33 | 3.34 | 4.15 | | |
| DISTANZE PARZIALI [m] | 2.19 | 1.13 | 0.34 | 0.81 | | | |
| QUOTE TERRENO [m s.m.] | 3.16 | 3.16 | 2.92 | 2.92 | 2.48 | | |




| PICCHETTO | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 6.00 | 7.76 | 9.77 | 18.00 | 18.50 | 18.90 |
| DISTANZE PARZIALI [m] | 6.00 | 1.76 | 2.02 | 9.23 | 0.50 | 0.40 | |
| QUOTE TERRENO [m s.m.] | 9.13 | 6.43 | 6.43 | 6.90 | 7.26 | 7.55 | 8.50 |




| PICCHETTO | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| DISTANZE PROGRESSIVE [m] | 0.00 | 4.05 | 7.45 | 13.95 |
| DISTANZE PARZIALI [m] | 4.05 | 3.40 | 6.50 | |
| QUOTE TERRENO [m s.m.] | 16.42 | 13.30 | 12.80 | 19.90 |




PLANIMETRIA CON TRACCIA DELLE SEZIONI TRASVERSALI SUL RIO BEUCA (ORTOFOTO DA GOOGLE EARTH) - SCALA 1:500

LEGENDA: Sezioni idrauliche Rio Beuca

- Profilo Sezione
- Livello idraulico Tr = 50 anni
- Livello idraulico Tr = 200 anni
- Livello idraulico Tr = 500 anni

Parametri numerici idraulici del modello HEC-RAS

| Sezione n. | Progressive (m) | Evento Tr anni | Portata (m3/s) | Thalweg (m) | Livello idrico (m) | Livello critico (m) | Energia (m) | Velocità (m/s) | Nr Froude |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 270.20 | Q500 | 17.00 | 12.79 | 14.25 | 14.25 | 14.75 | 3.12 | 1.00 |
| 14 | 270.20 | Q200 | 14.00 | 12.79 | 14.11 | 14.11 | 14.56 | 2.97 | 1.00 |
| 14 | 270.20 | Q50 | 10.00 | 12.79 | 13.91 | 13.91 | 14.29 | 2.71 | 1.00 |
| | | | | | | | | | |
| 13 | 254.80 | Q500 | 17.00 | 9.09 | 10.54 | 10.54 | 11.03 | 3.11 | 1.00 |
| 13 | 254.80 | Q200 | 14.00 | 9.09 | 10.41 | 10.41 | 10.85 | 2.95 | 1.00 |
| 13 | 254.80 | Q50 | 10.00 | 9.09 | 10.20 | 10.20 | 10.58 | 2.71 | 1.00 |
| | | | | | | | | | |
| 12 | 234.40 | Q500 | 17.00 | 7.84 | 9.34 | 9.34 | 9.88 | 3.41 | 0.94 |
| 12 | 234.40 | Q200 | 14.00 | 7.84 | 9.20 | 9.20 | 9.68 | 3.19 | 0.92 |
| 12 | 234.40 | Q50 | 10.00 | 7.84 | 8.99 | 8.99 | 9.38 | 2.86 | 0.91 |
| | | | | | | | | | |
| 11 | 212.50 | Q500 | 17.00 | 6.78 | 8.24 | 7.86 | 8.34 | 1.79 | 0.49 |
| 11 | 212.50 | Q200 | 14.00 | 6.78 | 8.10 | 7.75 | 8.19 | 1.73 | 0.50 |
| 11 | 212.50 | Q50 | 10.00 | 6.78 | 7.91 | 7.61 | 7.99 | 1.63 | 0.51 |
| | | | | | | | | | |
| 10 | 200.20 | Q500 | 17.00 | 6.43 | 8.17 | 7.53 | 8.22 | 1.12 | 0.32 |
| 10 | 200.20 | Q200 | 14.00 | 6.43 | 8.03 | 7.45 | 8.08 | 1.07 | 0.32 |
| 10 | 200.20 | Q50 | 10.00 | 6.43 | 7.83 | 7.34 | 7.86 | 0.97 | 0.31 |
| | | | | | | | | | |
| 9 | 182.10 | Q500 | 17.00 | 5.85 | 7.24 | 7.18 | 7.64 | 2.83 | 0.87 |
| 9 | 182.10 | Q200 | 14.00 | 5.85 | 7.06 | 7.05 | 7.46 | 2.82 | 0.94 |
| 9 | 182.10 | Q50 | 10.00 | 5.85 | 6.88 | 6.86 | 7.21 | 2.53 | 0.94 |
| | | | | | | | | | |
| 8 | 154.70 | Q500 | 17.00 | 4.82 | 6.00 | 5.89 | 6.43 | 2.90 | 0.86 |
| 8 | 154.70 | Q200 | 14.00 | 4.82 | 5.85 | 5.76 | 6.23 | 2.74 | 0.87 |
| 8 | 154.70 | Q50 | 10.00 | 4.82 | 5.65 | 5.58 | 5.96 | 2.43 | 0.86 |
| | | | | | | | | | |
| 7 | 137.40 | Q500 | 17.00 | 3.95 | 5.36 | 5.04 | 5.67 | 2.48 | 0.68 |
| 7 | 137.40 | Q200 | 14.00 | 3.95 | 5.11 | 4.92 | 5.43 | 2.49 | 0.75 |
| 7 | 137.40 | Q50 | 10.00 | 3.95 | 4.85 | 4.73 | 5.12 | 2.32 | 0.80 |
| | | | | | | | | | |
| 6 | 122.30 | Q500 | 17.00 | 2.92 | 4.86 | 4.50 | 5.30 | 2.94 | 0.71 |
| 6 | 122.30 | Q200 | 14.00 | 2.92 | 4.54 | 4.34 | 4.99 | 2.97 | 0.80 |
| 6 | 122.30 | Q50 | 10.00 | 2.92 | 4.24 | 4.09 | 4.61 | 2.67 | 0.81 |
| | | | | | | | | | |
| Beuca | 120.00 | | Bridge | | | | | | |
| | | | | | | | | | |
| 5 | 90.10 | Q500 | 17.00 | 2.00 | 4.34 | 3.41 | 4.59 | 2.23 | 0.47 |
| 5 | 90.10 | Q200 | 14.00 | 2.00 | 3.84 | 3.24 | 4.12 | 2.33 | 0.55 |
| 5 | 90.10 | Q50 | 10.00 | 2.00 | 3.49 | 2.99 | 3.71 | 2.06 | 0.54 |
| | | | | | | | | | |
| 4 | 80.00 | Q500 | 17.00 | 1.92 | 4.29 | 3.43 | 4.46 | 1.86 | 0.42 |
| 4 | 80.00 | Q200 | 14.00 | 1.92 | 3.72 | 3.30 | 3.96 | 2.15 | 0.58 |
| 4 | 80.00 | Q50 | 10.00 | 1.92 | 3.10 | 3.10 | 3.49 | 2.77 | 1.00 |
| | | | | | | | | | |
| Beuca | 70.00 | | Inl Struct | | | | | | |
| | | | | | | | | | |
| 3 | 66.20 | Q500 | 17.00 | 1.11 | 4.35 | 2.41 | 4.44 | 1.31 | 0.24 |
| 3 | 66.20 | Q200 | 14.00 | 1.11 | 3.84 | 2.26 | 3.93 | 1.29 | 0.25 |
| 3 | 66.20 | Q50 | 10.00 | 1.11 | 3.20 | 2.05 | 3.27 | 1.22 | 0.28 |
| | | | | | | | | | |
| Beuca | 60.00 | | Bridge | | | | | | |
| | | | | | | | | | |
| 2 | 15.20 | Q500 | 17.00 | 0.95 | 2.21 | 2.21 | 2.82 | 3.47 | 1.00 |
| 2 | 15.20 | Q200 | 14.00 | 0.95 | 2.06 | 2.06 | 2.60 | 3.25 | 1.00 |
| 2 | 15.20 | Q50 | 10.00 | 0.95 | 1.85 | 1.85 | 2.27 | 2.90 | 1.00 |
| | | | | | | | | | |
| 1 | 0.00 | Q500 | 17.00 | 0.36 | 1.90 | 1.22 | 1.97 | 1.20 | 0.35 |
| 1 | 0.00 | Q200 | 14.00 | 0.36 | 1.70 | 1.13 | 1.77 | 1.19 | 0.37 |
| 1 | 0.00 | Q50 | 10.00 | 0.36 | 1.50 | 1.01 | 1.56 | 1.04 | 0.35 |

COMMITTENTE: RFI RETE FERROVIARIA ITALIANA — GRUPPO FERROVIE DELLO STATO ITALIANE

PROGETTAZIONE: ITALFERR — GRUPPO FERROVIE DELLO STATO ITALIANE

**CUP: J94H17000420001**

**U.O. INFRASTRUTTURE NORD**

**PROGETTO DEFINITIVO**

**UPGRADING PRESTAZIONALE CORRIDOIO RENO ALPI - TORINO**

**Adeguamento a modulo 750 metri della linea Savona - Genova**

STAZIONE DI COGOLETO
Rio Beuca - Sezioni

SCALA: 1:100

| COMMESSA | LOTTO | FASE | ENTE | TIPO DOC. | OPERA/DISCIPLINA | PROGR. | REV. |
|---|---|---|---|---|---|---|---|
| NT1N | 00 | D | 26 | WA | ID0002 | 001 | A |

| Rev. | Descrizione | Redatto | Data | Verificato | Data | Approvato | Data | Autorizzato Data |
|---|---|---|---|---|---|---|---|---|
| A | Emissione esecutiva | C. Soave | Dicembre 2020 | S. Santopietro | Dicembre 2020 | F. Perrone | Dicembre 2020 | A. Perego Dicembre 2020 |

File: NT1N00D26WAID0002001A.dwg — n. Elab.: -