**Appendix A. Water Distribution Network Data Details**

Table.1shows thenetwork details, the rows marked in bold are additional hydraulic parameters which are induced in the proposed network. Rest all the parameters are same in both the networks (real/observed and revised). Entire network is considered in the study area except the distance from Subarnarekha Reservoir (R-2) to Overhead Tank (Tank-4) is not considered.

**Table A1: Water Distribution Network Details**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **From** | **To** | **Diameter(inch)** | **Type** | **Hazen Williams** | **Length (m)** |
| J-12 | J-13 | 4 | Ductile Iron | 140 | 28.975 |
| J-13 | J-14 | 4 | Ductile Iron | 140 | 57.95 |
| J-14 | J-17 | 4 | Ductile Iron | 140 | 274.195 |
| J-19 | J-20 | 4 | Ductile Iron | 140 | 129.015 |
| J-36 | J-37 | 4 | Ductile Iron | 140 | 219.295 |
| J-37 | J-38 | 4 | Ductile Iron | 140 | 41.175 |
| J-40 | J-41 | 4 | Ductile Iron | 140 | 31.11 |
| J-41 | J-42 | 4 | Ductile Iron | 140 | 95.16 |
| J-42 | J-43 | 4 | Ductile Iron | 140 | 25.01 |
| J-33 | J-44 | 4 | Ductile Iron | 140 | 68.93 |
| J-44 | J-45 | 4 | Ductile Iron | 140 | 75.03 |
| J-32 | J-48 | 4 | Ductile Iron | 140 | 78.08 |
| J-48 | J-49 | 4 | Ductile Iron | 140 | 57.95 |
| J-60 | J-61 | 4 | Ductile Iron | 140 | 57.95 |
| J-61 | J-62 | 4 | Ductile Iron | 140 | 163.175 |
| J-64 | J-65 | 4 | Ductile Iron | 140 | 145.18 |
| J-68 | J-69 | 4 | Ductile Iron | 140 | 18.91 |
| J-69 | J-70 | 4 | Ductile Iron | 140 | 28.975 |
| J-70 | J-71 | 4 | Ductile Iron | 140 | 45.14 |
| J-71 | J-72 | 4 | Ductile Iron | 140 | 38.125 |
| J-72 | J-73 | 4 | Ductile Iron | 140 | 29.89 |
| J-73 | J-74 | 4 | Ductile Iron | 140 | 32.025 |
| J-74 | J-75 | 4 | Ductile Iron | 140 | 17.995 |
| J-75 | J-76 | 4 | Ductile Iron | 140 | 21.045 |
| J-76 | J-77 | 4 | Ductile Iron | 140 | 14.945 |
| J-77 | J-78 | 4 | Ductile Iron | 140 | 14.945 |
| J-78 | J-79 | 4 | Ductile Iron | 140 | 200.08 |
| J-19 | J-93 | 4 | Ductile Iron | 140 | 6.1 |
| J-93 | J-94 | 4 | Ductile Iron | 140 | 73.2 |
| J-44 | J-106 | 4 | Ductile Iron | 140 | 92.11 |
| J-62 | J-108 | 4 | Ductile Iron | 140 | 35.075 |
| J-38 | J-40 | 4 | Ductile Iron | 140 | 367.22 |
| J-111 | J-41 | 4 | Ductile Iron | 140 | 71.98 |
| J-62 | J-64 | 4 | Ductile Iron | 140 | 547.475 |
| J-12 | J-19 | 4 | Ductile Iron | 140 | 570.35 |
| J-20 | J-84 | 4 | Ductile Iron | 140 | 391.315 |
| J-60 | J-67 | 4 | Ductile Iron | 140 | 235.155 |
| J-67 | J-68 | 4 | Ductile Iron | 140 | 285.175 |
| J-14 | AV-1 | 4 | Ductile Iron | 140 | 75.03 |
| AV-1 | J-15 | 4 | Ductile Iron | 140 | 159.21 |
| J-79 | AV-2 | 4 | Ductile Iron | 140 | 61 |
| **AV-2** | **PBV-2** | 4 | Ductile Iron | 140 | 13.42 |
| **PBV-2** | **J-113** | 4 | Ductile Iron | 140 | 92.415 |
| J-84 | J-143 | 4 | Ductile Iron | 140 | 78.995 |
| J-143 | J-144 | 4 | Ductile Iron | 140 | 61.915 |
| J-143 | J-145 | 4 | Ductile Iron | 140 | 54.9 |
| J-145 | J-146 | 4 | Ductile Iron | 140 | 82.96 |
| J-145 | J-147 | 4 | Ductile Iron | 140 | 11.895 |
| J-84 | J-148 | 4 | Ductile Iron | 140 | 75.03 |
| J-148 | J-149 | 4 | Ductile Iron | 140 | 70.15 |
| J-149 | J-150 | 4 | Ductile Iron | 140 | 155.245 |
| J-149 | J-151 | 4 | Ductile Iron | 140 | 254.98 |
| J-151 | J-152 | 4 | Ductile Iron | 140 | 214.11 |
| J-152 | J-156 | 4 | Ductile Iron | 140 | 150.975 |
| J-156 | J-157 | 4 | Ductile Iron | 140 | 246.135 |
| J-31 | J-32 | 6 | Ductile Iron | 140 | 191.235 |
| J-32 | J-33 | 6 | Ductile Iron | 140 | 125.05 |
| J-34 | J-35 | 6 | Ductile Iron | 140 | 60.085 |
| J-35 | J-36 | 6 | Ductile Iron | 140 | 75.03 |
| J-36 | J-12 | 6 | Ductile Iron | 140 | 213.195 |
| J-30 | J-31 | 6 | Ductile Iron | 140 | 654.53 |
| J-33 | J-34 | 6 | Ductile Iron | 140 | 455.06 |
| J-121 | J-122 | 8 | Ductile Iron | 140 | 54.9 |
| J-123 | J-124 | 8 | Ductile Iron | 140 | 41.175 |
| J-120 | J-121 | 8 | Ductile Iron | 140 | 117.12 |
| J-122 | J-123 | 8 | Ductile Iron | 140 | 47.885 |
| J-124 | J-30 | 8 | Ductile Iron | 140 | 484.34 |
| J-30 | OR-20 | 8 | Ductile Iron | 140 | 4.575 |
| OR-20 | J-60 | 8 | Ductile Iron | 140 | 9.15 |
| **J-142** | **PMP-59** | 12 | Ductile Iron | 140 | 34.77 |
| J-141 | J-120 | 12 | Ductile Iron | 140 | 155.245 |
| **PMP-59** | **J-141** | 12 | Ductile Iron | 140 | 43.31 |
| T-4 | J-142 | 18 | Ductile Iron | 140 | 78.08 |
| **R-2** | **T-4** | **28** | **Ductile Iron** | **140** | **13709.75** |

**Table A2: Ground Elevation Details of the Entire Network**

|  |  |  |  |
| --- | --- | --- | --- |
| **Label** | **Elevation** | **Label** | **Elevation** |
| J-12 | 158.75 | J-72 | 139.77 |
| J-13 | 159.02 | J-73 | 139.27 |
| J-14 | 159.05 | J-74 | 137.66 |
| J-15 | 156.98 | J-75 | 136.69 |
| J-17 | 157.4 | J-76 | 136.08 |
| J-19 | 153.14 | J-77 | 135.99 |
| J-20 | 149.58 | J-78 | 134.83 |
| J-30 | 144.02 | J-79 | 133.06 |
| J-31 | 138.5 | J-84 | 149.21 |
| J-32 | 144.49 | J-93 | 151.41 |
| J-33 | 147.12 | J-94 | 149.74 |
| J-34 | 145.51 | J-106 | 145.38 |
| J-35 | 151.32 | J-108 | 140.67 |
| J-36 | 156.51 | J-111 | 148.05 |
| J-37 | 156.34 | J-113 | 100 |
| J-38 | 156.18 | J-120 | 157.97 |
| J-40 | 148.1 | J-121 | 155.4 |
| J-41 | 147.82 | J-122 | 154.5 |
| J-42 | 146.13 | J-123 | 152.67 |
| J-43 | 145.86 | J-124 | 152.27 |
| J-44 | 147.55 | J-142 | 153.66 |
| J-45 | 148.17 | J-143 | 149.71 |
| J-48 | 143.51 | J-144 | 145.5 |
| J-49 | 143.19 | J-145 | 148.54 |
| J-60 | 143.67 | J-146 | 146.07 |
| J-61 | 142.8 | J-147 | 148.5 |
| J-62 | 140.86 | J-148 | 148.36 |
| J-64 | 130.87 | J-149 | 146.84 |
| J-65 | 135.39 | J-150 | 145.23 |
| J-67 | 143.04 | J-151 | 143.9 |
| J-68 | 142.47 | J-152 | 140.87 |
| J-69 | 141.82 | J-156 | 138.78 |
| J-70 | 141.11 | J-157 | 135.53 |
| PMP-59 | 154.94 | J-141 | 156.27 |
| AV-1 | 158.39 | PBV-2 | 118.31 |
| AV-2 | 120.99 | J-71 | 140.69 |
| OR-20 | 143.89 |  |  |