



ENGINEERS AUTHENTICATION
The responsibility for professional engineering actions on this project is hereby limited to the set of plans authorized by the seal, signature, and date hereon attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes revisions after the date stated hereon.

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NOLES PROPERTIES LLC
BRYAN ROAD COMMERCIAL DEVELOPMENT
TBD BRYAN ROAD
FALLON, MO 63376
NOLES PROPERTIES LLC
11361 OLIVE BLVD
CREVE COEUR, MO 63141

Revision Date: 5/2/2023
Description of Changes: REVISIONS PER CITY OF FALLON AND FALLOON FIRE COMMENTS
1. 6/26/2023
2. 7/17/2023
3. 7/17/2023

Sheet Number: C-603

Project No: 2202920
Drawn By: P. HEITZ
Checked By: M. FOGARTY

ISSUED FOR CONSTRUCTION

15 YR. 20 MIN EVENT

| LineNo. | LineID | InletID | LineLength | LineSize | n-value/Pipe | InvertUp | InvertDn | LineSlope | Grnd/RimElev Up | Grnd/RimElev Dn | DepthUp | HGLUp | HGLDn | Rim-Hw | Defl Angle | VelDn | VelHDn | J-LossCoeff | EnergyLoss | MinorLoss | KnownQ | FlowRate | QCaptured | CapacityFull | QBypass | BypassDepth | BypassSpread | InletEff | |
|---------|------------|---------|------------|----------|--------------|----------|----------|-----------|-----------------|-----------------|---------|--------|--------|--------|------------|--------|--------|-------------|------------|-----------|--------|----------|-----------|--------------|---------|-------------|--------------|----------|------|
| | | | (ft) | (in) | | (ft) | (ft) | (%) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (Deg) | (ft/s) | (ft/s) | | (ft) | (ft) | (cfs) | (cfs) | (cfs) | (cfs) | (cfs) | (ft) | (ft) | (%) | |
| 53 | 302A1-302 | 302A1 | 184.18 | 24 | 0.013 | 585.00 | 583.16 | 1.00 | 598.00 | 597.47 | 1.98 | 586.98 | 586.13 | 10.61 | 17.52 | 5.07 | 0.40 | 1.00 | 0.883 | 0.40 | 15.94 | 15.94 | --- | 22.61 | --- | --- | --- | --- | --- |
| 52 | 302B-302A | 302B | 123.85 | 18 | 0.013 | 588.00 | 586.76 | 1.00 | 597.90 | 597.62 | 0.65** | 588.65 | 587.71 | 9.25 | -13.65 | 2.50 | 0.25 | 1.00 | 1.002 | 0.00 | n/a | 2.94 | 2.94 | 2.94 | 10.51 | 0.00 | n/a | n/a | 100 |
| 51 | 302A-302 | 302A | 68.90 | 24 | 0.013 | 586.56 | 585.87 | 1.00 | 597.62 | 597.47 | 0.86** | 587.42 | 587.02 | 10.20 | -46.20 | 6.07 | 0.33 | 0.00 | 0.000 | 0.00 | n/a | 3.01 | 3.01 | 22.63 | 0.00 | n/a | n/a | 100 | |
| 50 | 306-305 | 306 | 101.32 | 12 | 0.013 | 589.97 | 588.96 | 1.00 | 595.89 | 595.62 | 0.27** | 590.24 | 589.20 | 5.65 | -4.93 | 3.08 | 0.10 | 1.00 | 2.000 | 0.00 | n/a | 0.44 | 0.44 | 0.44 | 3.56 | 0.00 | n/a | n/a | 100 |
| 49 | 305-304 | 305 | 47.71 | 12 | 0.013 | 588.76 | 588.28 | 1.01 | 595.62 | 596.71 | 0.32** | 589.88 | 588.67 | 6.54 | -68.42 | 2.09 | 0.12 | 0.50 | 0.000 | 0.00 | n/a | 0.15 | 0.59 | 0.15 | 3.57 | 0.00 | n/a | n/a | 100 |
| 48 | 304-303 | 304 | 43.00 | 15 | 0.013 | 588.08 | 587.65 | 1.00 | 598.71 | 598.71 | 0.44** | 588.52 | 588.21 | 10.19 | 71.52 | 2.33 | 0.16 | 1.41 | 0.000 | 0.00 | n/a | 0.64 | 1.23 | 0.64 | 5.46 | 0.00 | 0.00 | 0.00 | 100 |
| 47 | 303-302 | 303 | 60.74 | 15 | 0.013 | 587.45 | 586.85 | 0.99 | 598.71 | 597.47 | 0.56** | 588.01 | 587.33 | 10.70 | 36.42 | 4.60 | 0.21 | 1.44 | 0.000 | 0.00 | n/a | 0.74 | 1.97 | 0.74 | 6.42 | 0.00 | 0.00 | 0.00 | 100 |
| 46 | 302-301 | 302 | 66.55 | 24 | 0.013 | 582.96 | 582.29 | 1.01 | 597.47 | 592.18 | 1.77 | 584.73 | 584.02 | 11.96 | -29.99 | 8.26 | 1.06 | 0.76 | 0.672 | 0.78 | 0.00 | 23.86 | --- | 22.69 | --- | --- | --- | --- | --- |
| 45 | 301-300 | 301 | 53.07 | 24 | 0.013 | 580.53 | 580.00 | 1.00 | 592.18 | 592.04 | 2.00 | 582.59 | 582.00 | 9.09 | -88.94 | 7.60 | 0.56 | 0.591 | 0.50 | 0.00 | 0.00 | 23.86 | --- | 22.60 | --- | --- | --- | --- | --- |
| 44 | 200A-200 | 200A | 19.26 | 24 | 0.013 | 576.73 | 576.53 | 1.04 | 589.00 | 592.04 | 2.00 | 581.20 | 580.97 | 6.85 | -81.66 | 7.82 | 0.95 | 1.00 | 0.277 | 0.95 | 24.55 | 24.55 | --- | 23.04 | --- | --- | --- | --- | --- |
| 43 | 204-203 | 204 | 27.07 | 12 | 0.013 | 584.00 | 583.46 | 2.00 | 591.20 | 591.20 | 1.00 | 585.35 | 585.35 | 4.36 | 75.44 | 0.43 | 0.00 | 0.002 | 0.00 | 0.34 | 0.34 | 0.34 | 0.34 | 0.00 | 0.00 | n/a | n/a | 100 | |
| 42 | 13-12 | 13 | 52.94 | 21 | 0.013 | 587.00 | 584.74 | 4.27 | 591.88 | 591.88 | 1.43** | 588.43 | 586.15 | 5.57 | -24.53 | 7.15 | 0.78 | 1.00 | 2.000 | 0.00 | n/a | 14.88 | 14.88 | --- | 32.73 | --- | --- | --- | --- |
| 41 | 12-203 | 12 | 10.27 | 21 | 0.013 | 584.54 | 584.33 | 2.04 | 591.88 | 591.20 | 1.43** | 585.97 | 585.37 | 5.91 | -0.04 | 10.04 | 0.78 | 0.47 | 0.000 | n/a | 0.00 | 14.88 | --- | 22.65 | --- | --- | --- | --- | --- |
| 40 | 203-202 | 203 | 45.48 | 24 | 0.013 | 583.26 | 583.25 | 2.00 | 591.20 | 591.20 | 1.43** | 584.69 | 583.67 | 6.51 | 45.93 | 7.12 | 0.67 | 1.46 | 0.200 | 0.97 | 0.47 | 15.69 | 0.47 | 0.67 | 31.99 | 0.00 | 0.00 | 0.00 | 100 |
| 39 | 202-201 | 202 | 24.08 | 30 | 0.013 | 582.15 | 581.67 | 1.99 | 591.20 | 591.94 | 2.50 | 585.06 | 583.51 | 7.69 | -49.70 | 5.11 | 0.55 | 1.14 | 0.200 | 0.00 | n/a | 0.53 | 16.22 | 0.53 | 57.90 | 0.00 | 0.00 | 0.00 | 100 |
| 38 | 201-200 | 201 | 33.83 | 30 | 0.013 | 581.47 | 580.79 | 2.01 | 591.94 | 592.04 | 1.36** | 582.83 | 581.75 | 9.11 | 0.00 | 9.30 | 0.55 | 0.80 | 0.000 | n/a | 0.00 | 16.22 | --- | 58.14 | --- | --- | --- | --- | --- |
| 37 | 200-100 | 200 | 158.78 | 30 | 0.013 | 576.36 | 574.77 | 1.00 | 592.04 | 585.55 | 2.50 | 579.79 | 578.22 | 11.19 | 81.60 | 8.31 | 1.07 | 0.99 | 1.569 | 1.06 | 0.00 | 40.77 | --- | --- | --- | --- | --- | --- | --- |
| 36 | 24-23 | 24 | 30.93 | 42 | 0.013 | 595.34 | 592.27 | 9.93 | 599.30 | 601.14 | 1.11** | 596.45 | 593.75 | 2.85 | 35.22 | 3.43 | 0.40 | 1.00 | 2.000 | n/a | 13.25 | 13.25 | 13.25 | 316.99 | 0.00 | --- | --- | --- | --- |
| 35 | 23-104 | 23 | 119.21 | 42 | 0.013 | 592.27 | 589.74 | 2.12 | 601.14 | 592.27 | 1.11** | 593.38 | 590.45 | 7.76 | -19.16 | 9.45 | 0.40 | 0.63 | 0.000 | n/a | 0.00 | 146.57 | --- | --- | --- | --- | --- | --- | --- |
| 34 | 35-34 | 35 | 57.93 | 12 | 0.013 | 613.43 | 608.61 | 8.32 | 622.20 | 611.84 | 0.69** | 614.12 | 608.95 | 8.08 | 5.03 | 10.93 | 0.32 | 1.00 | 2.000 | 0.32 | 2.62 | 2.62 | --- | 10.27 | --- | --- | --- | --- | --- |
| 33 | 34-33 | 34 | 8.51 | 12 | 0.013 | 607.56 | 606.86 | 8.23 | 611.84 | 611.31 | 0.69** | 608.25 | 607.66 | 3.59 | 77.19 | 3.87 | 0.32 | 1.00 | 2.000 | n/a | 0.00 | 2.62 | --- | 10.22 | --- | --- | --- | --- | --- |
| 32 | 33-32 | 33 | 140.50 | 15 | 0.013 | 606.93 | 600.95 | 4.26 | 611.31 | 608.20 | 0.65** | 607.83 | 600.79 | 3.73 | 21.07 | 3.00 | 0.36 | 0.98 | 0.000 | n/a | 0.00 | 13.32 | --- | --- | --- | --- | --- | --- | --- |
| 31 | 32-106 | 32 | 39.79 | 15 | 0.013 | 600.95 | 598.71 | 5.63 | 608.20 | 602.40 | 0.65** | 601.60 | 601.54 | 6.60 | 79.01 | 2.14 | 0.07 | 0.41 | 0.200 | 0.11 | 0.00 | 2.62 | --- | 15.32 | --- | --- | --- | --- | --- |
| 30 | 107-106 | 107 | 10.77 | 15 | 0.013 | 598.00 | 597.78 | 2.04 | 602.40 | 602.89 | 1.24 | 599.24 | 598.98 | 1.98 | -83.54 | 8.87 | 1.22 | 0.99 | 0.270 | 1.18 | 0.00 | 8.11 | 10.73 | --- | 9.23 | --- | --- | --- | --- |
| 29 | 106-105 | 106 | 209.27 | 18 | 0.013 | 597.58 | 590.78 | 3.25 | 602.89 | 597.29 | 1.26** | 598.84 | 592.26 | 4.05 | 2.24 | 6.09 | 0.72 | 0.000 | n/a | 0.00 | 18.93 | 0.00 | 10.73 | 0.00 | 18.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 105-104 | 105 | 82.07 | 18 | 0.013 | 590.58 | 588.94 | 2.00 | 597.29 | 596.15 | 1.34** | 591.92 | 590.01 | 5.37 | 36.25 | 9.45 | 0.91 | 0.50 | 0.000 | 0.46 | 2.05 | 12.78 | 1.41 | 14.84 | 0.64 | 0.17 | 1.24 | 69 | |
| 27 | 104-103 | 104 | 64.90 | 48 | 0.013 | 587.75 | 586.78 | 1.49 | 596.15 | 597.18 | 1.51** | 589.26 | 586.78 | 6.89 | -20.44 | 4.74 | 0.56 | 0.60 | 0.000 | n/a | 0.00 | 26.03 | --- | 175.61 | --- | --- | --- | --- | --- |
| 26 | 103-102 | 103 | 389.52 | 48 | 0.013 | 586.58 | 580.74 | 1.50 | 597.18 | 598.35 | 1.51** | 588.09 | 582.54 | 9.01 | -1.53 | 4.74 | 0.56 | 0.40 | 0.200 | 0.00 | n/a | 0.00 | 26.03 | --- | --- | --- | --- | --- | --- |
| 25 | 102-101 | 102 | 194.35 | 48 | 0.013 | 580.54 | 576.65 | 2.00 | 598.35 | 586.97 | 1.51** | 582.05 | 578.45 | 16.30 | 83.12 | 4.74 | 0.56 | 0.15 | 0.200 | 0.00 | n/a | 0.00 | 26.03 | --- | --- | --- | --- | --- | --- |
| 24 | 101-100 | 101 | 134.01 | 48 | 0.013 | 576.45 | 575.11 | 1.00 | 586.97 | 585.55 | 1.51** | 577.96 | 578.25 | 9.01 | -91.27 | 2.46 | 0.56 | 0.99 | 0.000 | n/a | 0.00 | 26.03 | --- | --- | --- | --- | --- | --- | --- |
| 23 | 100-01A | 100 | 82.78 | 54(2b) | 0.013 | 574.44 | 573.62 | 0.99 | 585.55 | 584.00 | 3.68 | 578.12 | 578.12 | 7.33 | -80.62 | 2.14 | 0.07 | 1.00 | 0.025 | 0.09 | 1.38 | 68.18 | --- | 391.46 | --- | --- | --- | --- | --- |
| 22 | 401A1-401A | 401A1 | 108.73 | 18 | 0.013 | 592.43 | 591.34 | 1.00 | 598.92 | 598.92 | 1.10 | 593.53 | 593.53 | 5.38 | 32.23 | 0.52 | 0.00 | 1.00 | 0.009 | 0.01 | 0.92 | 0.92 | 0.92 | 10.51 | 0.00 | n/a | n/a | 100 | |
| 21 | 401C-401B | 401C | 134.00 | 18 | 0.013 | 593.24 | 592.57 | 0.50 | 598.92 | 598.92 | 0.30** | 593.63 | 593.67 | 5.29 | 90.97 | 0.79 | 0.14 | 1.00 | 2.000 | 0.14 | 1.10 | 1.10 | 1.10 | 7.43 | 0.00 | 0.00 | n/a | 100 | |
| 20 | 401B-401A | 401B | 238.12 | 18 | 0.013 | 592.37 | 591.18 | 0.50 | 598.92 | 598.92 | 1.23 | 593.60 | 593.51 | 5.27 | -59.76 | 1.22 | 0.02 | 1.50 | 1.001 | 0.05 | 1.06 | 2.16 | 1.06 | 7.42 | 0.00 | n/a | n/a | 100 | |
| 19 | 401A-401 | 401A | 59.96 | 18 | 0.013 | 590.98 | 590.68 | 0.50 | 598.92 | 601.66 | 1.50 | 593.30 | 593.21 | 5.47 | -97.59 | 3.02 | 0.14 | 1.98 | 0.086 | 0.16 | 0.89 | 3.97 | 0.89 | 7.43 | 0.00 | n/a | n/a | 100 | |
| 18 | 407-406 | 407 | 152.30 | 12 | 0.013 | 596.93 | 594.65 | 1.50 | 604.92 | 602.17 | 0.34** | 597.27 | 595.13 | 7.65 | 10.99 | 1.82 | 0.12 | 0.00 | 0.000 | n/a | 0.00 | 0.67 | 0.67 | 0.67 | 4.36 | 0.00 | n/a | n/a | 100 |
| 17 | 406-405 | 406 | 162.16 | 15 | 0.013 | 594.45 | 592.83 | 1.00 | 602.17 | 597.38 | 0.50** | 594.95 | 594.52 | 7.22 | 5.57 | 1.30 | 0.03 | 0.50 | 0.200 | 0.484 | 0.92 | 1.59 | 0.92 | 6.45 | 0.00 | n/a | n/a | 100 | |
| 16 | 405-404 | 405 | 53.80 | 15 | 0.013 | 592.63 | 592.36 | 0.50 | 597.38 | 597.67 | 1.25 | 594.27 | 592.63 | 9.74 | 19.74 | 2.07 | 0.25 | 0.56 | 0.000 | 0.00 | 1.55 | 4.57 | 1.55 | 4.57 | 0.00 | n/a | n/a | 100 | |
| 15 | 404-403 | 404 | 22.80 | 18 | 0.013 | 592.16 | 592.05 | 0.48 | 597.67 | 597.03 | 1.50 | 594.26 | 594.24 | 3.40 | -3.69 | 1.78 | 0.05 | 0.20 | 0.000 | 0.01 | 0.00 | 3.14 | --- | 7.29 | --- | --- | --- | --- | --- |
| 14 | 403-402 | 403 | 48.00 | 18 | 0.013 | 591.85 | 591.61 | 0.50 | 597.03 | 597.03 | 1.50 | 594.11 | 594.00 | 2.86 | 90.00 | 2.78 | 0.12 | 0.50 | 0.105 | 0.06 | 1.77 | 4.91 | 1.52 | 7.43 | 0.25 | 0.14 | 1.03 | 86 | |
| 13 | 402-401 | 402 | 194.64 | 18 | 0.013 | 591.41 | 590.68 | 0.38 | 597.03 | 601.66 | 1.50 | 593.71 | 593.12 | 3.07 | -61.21 | 3.26 | 0.17 | 1.50 | 0.586 | 0.25 | 0.85 | 5.76 | 0.84 | 6.43 | 0.01 | 0.05 | 0.33 | 99 | |
| 12 | 504-503 | 504 | 75.25 | 12 | 0.013 | 600.00 | | | | | | | | | | | | | | | | | | | | | | | |