DWG. NO. H349000-4221-10-012-0014

CONTINUED FROM H349000-4221-10-012-0014

| HAUL ROAD HORIZONTAL ALIGNMENT | | | | | |
|---|---|---|---|---|---|
| ELEMENT LINEAR | | | | | |
| PT | | | 5+354.80 | 7915436.94 | 563882.73 |
| PC | | | 5+687.88 | 7915156.85 | 563702.48 |
| TANGENT DIRECTION | 212°45'47.46" | | | | |
| TANGENT LENGTH | 333.08 | | | | |
| | | | | | |
| ELEMENT CIRCULAR | | | | | |
| PC | | | 5+687.88 | 7915156.85 | 563702.48 |
| PI | | | 5+927.08 | 7914955.71 | 563573.03 |
| CC | | | | 7915221.79 | 563601.57 |
| PRC | | | 5+953.27 | 7915179.72 | 563489.18 |
| RADIUS: | 120 | | | | |
| DESIGN SPEED (KMPH) | 50 | | | | |
| DELTA: | | RIGHT | | | |
| DEGREE OF CURVATURE (ARC | 126°42'55.86" | | | | |
| LENGTH: | 47°44'47.34" | | | | |
| TANGENT: | 265.39 | | | | |
| CHORD: | 239.19 | | | | |
| MIDDLE ORDIANTE | 214.52 | | | | |
| EXTERNAL: | 66.19 | | | | |
| TANGENT DIRECTION | 147.61 | | | | |
| RADIAL DIRECTION | 212°45'47.46" | | | | |
| CHORD DIRECTION | 302°45'47.46" | | | | |
| RADIAL DIRECTION | 276°07'15.39" | | | | |
| TANGENT DIRECTION | 69°28'43.32" | | | | |
| | 339°28'43.32" | | | | |
| | | | | | |
| ELEMENT CIRCULAR | | | | | |
| PRC | | | 5+953.27 | 7915179.72 | 563489.18 |
| CC | | | | 7915144.67 | 563395.53 |
| PRC | | | 6+365.07 | 7915047.45 | 563372.12 |
| RADIUS: | 100 | | | | |
| DELTA: | 235°56'35.71" | LEFT | | | |
| DEGREE OF CURVATURE (ARC | 57°17'44.81" | | | | |
| LENGTH: | 411.8 | | | | |
| TANGENT: | -1 | | | | |
| CHORD: | 176.64 | | | | |
| MIDDLE ORDIANTE | -1 | | | | |
| EXTERNAL: | -1 | | | | |
| TANGENT DIRECTION | 339°28'43.32" | | | | |
| RADIAL DIRECTION | 69°28'43.32" | | | | |
| CHORD DIRECTION | 221°30'25.47" | | | | |
| RADIAL DIRECTION | 193°32'07.62" | | | | |
| TANGENT DIRECTION | 103°32'07.62" | | | | |
| | | | | | |
| ELEMENT CIRCULAR | | | | | |
| PRC | | | 6+365.07 | 7915047.45 | 563372.12 |
| PI | | | 6+490.84 | 7915018.01 | 563494.40 |
| CC | | | | 7914950.22 | 563348.72 |
| PT | | | 6+544.88 | 7914905.51 | 563438.17 |
| RADIUS: | 100 | | | | |
| DELTA: | 103°01'26.10" | RIGHT | | | |
| DEGREE OF CURVATURE (ARC | 57°17'44.81" | | | | |
| LENGTH: | 179.81 | | | | |
| TANGENT: | 125.77 | | | | |
| CHORD: | 156.55 | | | | |
| MIDDLE ORDIANTE | 37.76 | | | | |
| EXTERNAL: | 60.68 | | | | |
| TANGENT DIRECTION | 103°32'07.62" | | | | |
| RADIAL DIRECTION | 193°32'07.62" | | | | |
| CHORD DIRECTION | 155°02'50.67" | | | | |
| RADIAL DIRECTION | 296°33'33.71" | | | | |
| TANGENT DIRECTION | 206°33'33.71" | | | | |
| | | | | | |
| ELEMENT LINEAR | | | | | |
| PT | | | 6+544.88 | 7914905.51 | 563438.17 |
| POE | | | 6+657.55 | 7914804.74 | 563387.79 |
| TANGENT DIRECTION | 206°33'33.71" | | | | |
| TANGENT LENGTH | 112.66 | | | | |

| HAUL ROAD VERTICAL ALIGNMENT | VALUE | STATION | ELEVATION |
|---|---|---|---|
| ELEMENT: LINEAR | | | |
| POB | | 0+000.00 | 199.00 |
| PVC | | 0+000.96 | 199.02 |
| TANGENT GRADE: | 2.42 | | |
| TANGENT LENGTH: | 0.96 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+000.96 | 199.02 |
| PVI | | 0+016.12 | 199.39 |
| PVT | | 0+031.27 | 200.91 |
| LENGTH: | 30.31 | | |
| ENTRANCE GRADE: | 2.42 | | |
| EXIT GRADE: | 10.00 | | |
| R = ( G2 - G1 ) / L: | 25.00 | | |
| K = L / ( G2 - G1 ): | 4.00 | | |
| MIDDLE ORDINATE: | 0.29 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+031.27 | 200.91 |
| PVC | | 0+132.00 | 210.98 |
| TANGENT GRADE: | 10.00 | | |
| TANGENT LENGTH: | 100.72 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+132.00 | 210.98 |
| PVI | | 0+218.51 | 219.63 |
| PVT | | 0+305.02 | 218.93 |
| HIGH | | 0+292.00 | 218.98 |
| LENGTH: | 173.02 | | |
| STOPPING SIGHT DISTANCE: | 145.83 | | |
| ENTRANCE GRADE: | 10.00 | | |
| EXIT GRADE: | -0.81 | | |
| R = ( G2 - G1 ) / L: | -6.25 | | |
| K = L / ( G2 - G1 ): | 16.00 | | |
| MIDDLE ORDINATE: | -2.34 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+305.02 | 218.93 |
| PVC | | 0+614.39 | 216.41 |
| TANGENT GRADE: | -0.81 | | |
| TANGENT LENGTH: | 309.37 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+614.39 | 216.41 |
| PVI | | 0+679.27 | 215.88 |
| PVT | | 0+744.15 | 222.37 |
| LOW | | 0+624.15 | 216.37 |
| LENGTH: | 129.76 | | |
| HEADLIGHT SIGHT DISTANCE: | 64.37 | | |
| ENTRANCE GRADE: | -0.81 | | |
| EXIT GRADE: | 10.00 | | |
| R = ( G2 - G1 ) / L: | 8.33 | | |
| K = L / ( G2 - G1 ): | 12.00 | | |
| MIDDLE ORDINATE: | 1.75 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+744.15 | 222.37 |
| PVC | | 0+769.78 | 224.94 |
| TANGENT GRADE: | 10.00 | | |
| TANGENT LENGTH: | 25.63 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+769.78 | 224.94 |
| PVI | | 0+842.22 | 232.18 |
| PVT | | 0+914.67 | 232.86 |
| LENGTH: | 144.89 | | |
| ENTRANCE GRADE: | 10.00 | | |
| EXIT GRADE: | 0.94 | | |
| R = ( G2 - G1 ) / L: | -6.25 | | |
| K = L / ( G2 - G1 ): | 16.00 | | |
| MIDDLE ORDINATE: | -1.64 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+914.67 | 232.86 |
| PVC | | 1+138.37 | 234.98 |
| TANGENT GRADE: | 0.94 | | |
| TANGENT LENGTH: | 223.70 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 1+138.37 | 234.98 |
| PVI | | 1+199.74 | 235.56 |
| PVT | | 1+261.11 | 241.52 |
| LENGTH: | 122.73 | | |
| ENTRANCE GRADE: | 0.94 | | |
| EXIT GRADE: | 9.71 | | |
| R = ( G2 - G1 ) / L: | 7.14 | | |
| K = L / ( G2 - G1 ): | 14.00 | | |
| MIDDLE ORDINATE: | 1.34 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 1+261.11 | 241.52 |
| PVC | | 1+398.87 | 254.89 |
| TANGENT GRADE: | 9.71 | | |
| TANGENT LENGTH: | 137.76 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 1+398.87 | 254.89 |
| PVI | | 1+458.55 | 260.69 |
| PVT | | 1+518.23 | 262.53 |

| HAUL ROAD VERTICAL ALIGNMENT | VALUE | STATION | ELEVATION |
|---|---|---|---|
| LENGTH: | 119.36 | | |
| ENTRANCE GRADE: | 9.71 | | |
| EXIT GRADE: | 3.08 | | |
| R = ( G2 - G1 ) / L: | -5.56 | | |
| K = L / ( G2 - G1 ): | 18.00 | | |
| MIDDLE ORDINATE: | -0.99 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | | 262.53 |
| PVC | | | 265.7 |
| TANGENT GRADE: | 3.08 | | |
| TANGENT LENGTH: | 103.12 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | | 265.7 |
| PVI | | | 267.61 |
| PVT | | | 273.76 |
| LENGTH: | 123.65 | | |
| ENTRANCE GRADE: | 3.08 | | |
| EXIT GRADE: | 9.95 | | |
| R = ( G2 - G1 ) / L: | 5.56 | | |
| K = L / ( G2 - G1 ): | 18.00 | | |
| MIDDLE ORDINATE: | 1.06 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | | 273.76 |
| PVC | | | 422.24 |
| TANGENT GRADE: | 9.95 | | |
| TANGENT LENGTH: | 1492.36 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | | 422.24 |
| PVI | | | 428.62 |
| PVT | | | 432.59 |
| LENGTH: | 128.38 | | |
| ENTRANCE GRADE: | 9.95 | | |
| EXIT GRADE: | 6.17 | | |
| R = ( G2 - G1 ) / L: | -2.94 | | |
| K = L / ( G2 - G1 ): | 34.00 | | |
| MIDDLE ORDINATE: | -0.61 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | | 432.59 |
| PVC | | | 443.17 |
| TANGENT GRADE: | 6.17 | | |
| TANGENT LENGTH: | 171.48 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | | 443.17 |
| PVI | | | 447.12 |
| PVT | | | 453.29 |
| LENGTH: | 128.05 | | |
| ENTRANCE GRADE: | 6.17 | | |
| EXIT GRADE: | 9.63 | | |
| R = ( G2 - G1 ) / L: | 2.70 | | |
| K = L / ( G2 - G1 ): | 37.00 | | |
| MIDDLE ORDINATE: | 0.55 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | | 453.29 |
| PVC | | | 531.13 |
| TANGENT GRADE: | 9.63 | | |
| TANGENT LENGTH: | 807.89 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | | 531.13 |
| PVI | | | 537.37 |
| PVT | | | 541.28 |
| LENGTH: | 129.52 | | |
| ENTRANCE GRADE: | 9.63 | | |
| EXIT GRADE: | 6.04 | | |
| R = ( G2 - G1 ) / L: | -2.78 | | |
| K = L / ( G2 - G1 ): | 36.00 | | |
| MIDDLE ORDINATE: | -0.58 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | | 541.28 |
| PVC | | | 556.39 |
| TANGENT GRADE: | 6.04 | | |
| TANGENT LENGTH: | 250.39 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | | 556.39 |
| PVI | | | 560.27 |
| PVT | | | 566.45 |
| LENGTH: | 128.64 | | |
| ENTRANCE GRADE: | 6.04 | | |
| EXIT GRADE: | 9.61 | | |
| R = ( G2 - G1 ) / L: | 2.78 | | |
| K = L / ( G2 - G1 ): | 36.00 | | |
| MIDDLE ORDINATE: | 0.57 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 4+981.70 | 566.45 |
| PVC | | 5+040.79 | 572.13 |
| TANGENT GRADE: | 9.61 | | |
| TANGENT LENGTH: | 59.09 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 5+040.79 | 572.13 |

| HAUL ROAD VERTICAL ALIGNMENT | VALUE | STATION | ELEVATION |
|---|---|---|---|
| PVI | | 5+104.97 | 578.30 |
| PVT | | 5+169.14 | 579.62 |
| LENGTH: | 128.35 | | |
| ENTRANCE GRADE: | 9.61 | | |
| EXIT GRADE: | 2.06 | | |
| R = ( G2 - G1 ) / L: | -5.88 | | |
| K = L / ( G2 - G1 ): | 17.00 | | |
| MIDDLE ORDINATE: | -1.21 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 5+169.14 | 579.62 |
| PVC | | 5+214.99 | 580.57 |
| TANGENT GRADE: | 2.06 | | |
| TANGENT LENGTH: | 45.85 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 5+214.99 | 580.57 |
| PVI | | 5+282.48 | 581.96 |
| PVT | | 5+349.97 | 588.71 |
| LENGTH: | 134.98 | | |
| ENTRANCE GRADE: | 2.06 | | |
| EXIT GRADE: | 10.00 | | |
| R = ( G2 - G1 ) / L: | 5.88 | | |
| K = L / ( G2 - G1 ): | 17.00 | | |
| MIDDLE ORDINATE: | 1.34 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 5+349.97 | 588.71 |
| PVC | | 5+478.43 | 601.55 |
| TANGENT GRADE: | 10.00 | | |
| TANGENT LENGTH: | 128.45 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 5+478.43 | 601.55 |
| PVI | | 5+543.45 | 608.05 |
| PVT | | 5+608.47 | 609.58 |
| LENGTH: | 130.05 | | |
| ENTRANCE GRADE: | 10.00 | | |
| EXIT GRADE: | 2.35 | | |
| R = ( G2 - G1 ) / L: | -5.88 | | |
| K = L / ( G2 - G1 ): | 17.00 | | |
| MIDDLE ORDINATE: | -1.24 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 5+608.47 | 609.58 |
| PVC | | 5+625.83 | 609.99 |
| TANGENT GRADE: | 2.35 | | |
| TANGENT LENGTH: | 17.36 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 5+625.83 | 609.99 |
| PVI | | 5+687.03 | 611.43 |
| PVT | | 5+748.23 | 617.55 |
| LENGTH: | 122.40 | | |
| ENTRANCE GRADE: | 2.35 | | |
| EXIT GRADE: | 10.00 | | |
| R = ( G2 - G1 ) / L: | 6.25 | | |
| K = L / ( G2 - G1 ): | 16.00 | | |
| MIDDLE ORDINATE: | 1.17 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 5+748.23 | 617.55 |
| POE | | 5+857.82 | 628.51 |
| TANGENT GRADE: | 10.00 | | |
| TANGENT LENGTH: | 109.59 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 5+857.82 | 628.51 |
| PVI | | 5+902.30 | 632.96 |
| PVT | | 5+946.78 | 634.93 |
| LENGTH: | 88.96 | | |
| ENTRANCE GRADE: | 10.00 | | |
| EXIT GRADE: | 4.44 | | |
| R = ( G2 - G1 ) / L: | -6.25 | | |
| K = L / ( G2 - G1 ): | 16.00 | | |
| MIDDLE ORDINATE: | -0.62 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 5+946.78 | 634.93 |
| PVC | | 6+413.12 | 655.64 |
| TANGENT GRADE: | 4.44 | | |
| TANGENT LENGTH: | 466.34 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 6+413.12 | 655.64 |
| PVI | | 6+534.99 | 661.05 |
| PVT | | 6+656.85 | 667.89 |
| HIGH | | 6+484.16 | 657.21 |
| LENGTH: | 243.73 | | |
| STOPPING SIGN | 145.83 | | |
| ENTRANCE GRADE: | 4.44 | | |
| EXIT GRADE: | -10.79 | | |
| R = ( G2 - G1 ) / L: | -6.25 | | |
| K = L / ( G2 - G1 ): | 16.00 | | |
| MIDDLE ORDINATE: | -4.64 | | |

| ESCAPE RAMP #1 HORIZONTAL ALIGNMENT | | | STATION | NORTHING | EASTING |
|---|---|---|---|---|---|
| ELEMENT: LINEAR | | | | | |
| POB | | | 0+000.00 | 7913353.22 | 563350.60 |
| PC | | | 0+010.00 | 7913346.25 | 563343.43 |
| TANGENT DIRECTION: | 225°47'31.82" | | | | |
| TANGENT LENGTH: | 10.00 | | | | |
| | | | | | |
| ELEMENT: CIRCULAR | | | | | |
| PC | | | 0+010.00 | 7913346.25 | 563343.43 |
| PI | | | 0+045.18 | 7913321.72 | 563318.21 |
| CC | | | | 7913546.96 | 563148.20 |
| PT | | | 0+080.00 | 7913304.19 | 563287.71 |
| RADIUS: | 280.00 | | | | |
| DELTA: | 14°19'26.20" | RIGHT | | | |
| DEGREE OF CURVATURE(ARC): | 20°27'46.00" | | | | |
| LENGTH: | 70.00 | | | | |
| TANGENT: | 35.18 | | | | |
| CHORD: | 69.82 | | | | |
| MIDDLE ORDINATE: | 2.18 | | | | |
| EXTERNAL: | 2.20 | | | | |
| TANGENT DIRECTION: | 225°47'31.82" | | | | |
| RADIAL DIRECTION: | 315°47'31.82" | | | | |
| CHORD DIRECTION: | 232°57'14.92" | | | | |
| RADIAL DIRECTION: | 330°06'58.02" | | | | |
| TANGENT DIRECTION: | 240°06'58.02" | | | | |
| | | | | | |
| ELEMENT: LINEAR | | | | | |
| PT | | | 0+080.00 | 7913304.19 | 563287.71 |
| POE | | | 0+185.00 | 7913251.87 | 563196.67 |
| TANGENT DIRECTION: | 240°06'58.02" | | | | |
| TANGENT LENGTH: | 105.00 | | | | |

| ESCAPE RAMP #1 VERTICAL ALIGNMENT | VALUE | STATION | ELEVATION |
|---|---|---|---|
| ELEMENT: LINEAR | | | |
| POB | | 0+000.00 | 307.21 |
| PVC | | 0+077.00 | 299.44 |
| TANGENT GRADE: | -10.10 | | |
| TANGENT LENGTH: | 77.00 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+077.00 | 299.44 |
| PVI | | 0+112.00 | 295.91 |
| PVT | | 0+147.00 | 300.54 |
| LOW | | 0+107.29 | 297.91 |
| LENGTH: | 70.00 | | |
| HEADLIGHT SIGHT DISTANCE: | 24.94 | | |
| ENTRANCE GRADE: | -10.10 | | |
| EXIT GRADE: | 13.24 | | |
| R = ( G2 - G1 ) / L: | 33.33 | | |
| K = L / ( G2 - G1 ): | 3.00 | | |
| MIDDLE ORDINATE: | 2.04 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+147.00 | 300.54 |
| PVC | | 0+185.00 | 305.57 |
| TANGENT GRADE: | 13.24 | | |
| TANGENT LENGTH: | 38.00 | | |

| ESCAPE RAMP #2 HORIZONTAL ALIGNMENT | | | STATION | NORTHING | EASTING |
|---|---|---|---|---|---|
| ELEMENT: CIRCULAR | | | | | |
| PC | | | 0+010.00 | 7914284.47 | 564265.54 |
| PI | | | 0+162.96 | 7914137.30 | 564223.84 |
| CC | | | | 7914360.81 | 563996.15 |
| PT | | | 0+290.00 | 7914092.88 | 564077.47 |
| RADIUS: | 280 | | | | |
| DELTA: | 67°17'44.81" | RIGHT | | | |
| DEGREE OF CURVATURE(ARC): | 20°27'46.00" | | | | |
| LENGTH: | 280 | | | | |
| TANGENT: | 152.96 | | | | |
| CHORD: | 268.48 | | | | |
| MIDDLE ORDINATE: | 34.28 | | | | |
| EXTERNAL: | 39.06 | | | | |
| TANGENT DIRECTION: | 195°49'15.10" | | | | |
| RADIAL DIRECTION: | 285°49'15.10" | | | | |
| CHORD DIRECTION: | 224°28'07.50" | | | | |
| RADIAL DIRECTION: | 343°06'59.91" | | | | |
| TANGENT DIRECTION: | 253°06'59.91" | | | | |

| ESCAPE RAMP #2 VERTICAL ALIGNMENT | VALUE | STATION | ELEVATION |
|---|---|---|---|
| ELEMENT: LINEAR | | | |
| POB | | 0+080.33 | 434.73 |
| PVC | | 0+094.35 | 433.79 |
| TANGENT GRADE: | -6.71 | | |
| TANGENT LENGTH: | 14.02 | | |
| | | | |
| ELEMENT: PARABOLA | | | |
| PVC | | 0+094.35 | 433.79 |
| PVI | | 0+124.75 | 431.75 |
| PVT | | 0+155.15 | 434.34 |
| LOW | | 0+121.18 | 432.89 |
| LENGTH: | 60.80 | | |
| HEADLIGHT SIGHT DISTANCE: | 30.00 | | |
| ENTRANCE GRADE: | -6.71 | | |
| EXIT GRADE: | 8.49 | | |
| R = ( G2 - G1 ) / L: | 25.00 | | |
| K = L / ( G2 - G1 ): | 4.00 | | |
| MIDDLE ORDINATE: | 1.16 | | |
| | | | |
| ELEMENT: LINEAR | | | |
| PVT | | 0+155.15 | 434.34 |
| PVC | | 0+290.00 | 445.79 |
| TANGENT GRADE: | 8.49 | | |
| TANGENT LENGTH: | 134.85 | | |

FOR CONSTRUCTION

NOTE:

1. THE ALIGNMENT DATA SHOWN ON THIS DRAWING IS A DIRECT EXTRACTION FROM BENTLEY'S INROADS GEOMETRY FILES.

| DRAWING NO. | DRAWING TITLE |
|---|---|

REFERENCE DRAWINGS

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Baffinland

MARY RIVER PROJECT

MINE HAUL ROAD VERTICAL ALIGNMENT AND ESCAPE RAMP HORIZONTAL & VERTICAL ALIGNMENT

SCALE NTS OR AS NOTED | DWG. NO. H349000-4221-10-012-0014 | REV. 0

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