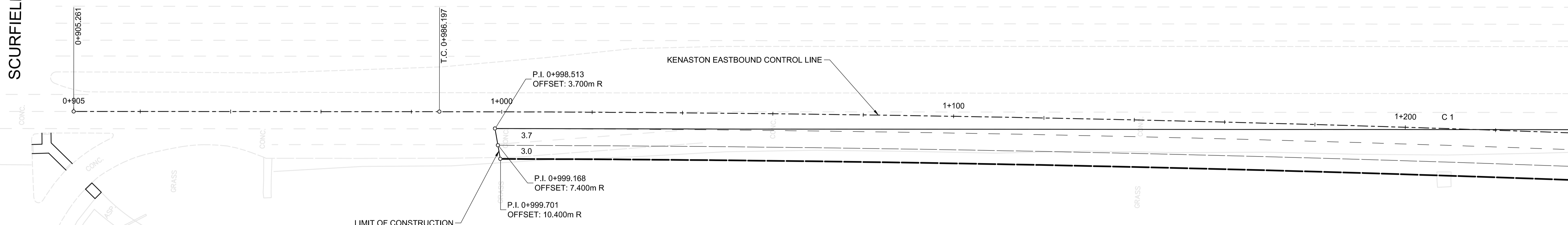
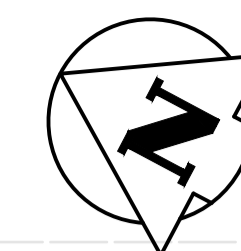


KENASTON BV

SCURFIELD BV



KENASTON EASTBOUND CONTROL LINE

| CONTROL POINT | STATION   | COORDINATES |            | CURVE TABLE ALIGNMENTS |        |           |         |         |         |
|---------------|-----------|-------------|------------|------------------------|--------|-----------|---------|---------|---------|
|               |           | NORTHING    | EASTING    | CURVE #                | RADIUS | DELTA     | Tc      | L       | LC      |
| P.I.          | 0+905.261 | 5519675.318 | 629730.099 | C 1                    | 7000   | 2°51'07"  | 174.246 | 348.420 | 348.384 |
| T.C.          | 0+986.197 | 5519604.446 | 629769.188 | C 2                    | 340    | 37°50'32" | 116.548 | 224.560 | 220.501 |
| C.T.          | 1+334.618 | 5519295.291 | 629929.796 | C 3                    | 510    | 18°35'58" | 83.513  | 165.556 | 164.830 |
| T.S.          | 1+392.402 | 5519243.367 | 629955.151 | C 4                    | 340    | 23°26'27" | 70.537  | 139.101 | 138.133 |
| S.C.          | 1+482.402 | 5519164.375 | 629998.135 | C 5                    | 2000   | 7°49'01"  | 136.643 | 272.862 | 272.651 |
| C.S.          | 1+706.962 | 5519030.236 | 630173.142 |                        |        |           |         |         |         |
| S.C.          | 1+732.962 | 5519022.809 | 630198.054 |                        |        |           |         |         |         |
| C.S.          | 1+898.518 | 5519006.732 | 630362.099 |                        |        |           |         |         |         |
| S.C.          | 1+924.518 | 5519009.181 | 630387.978 |                        |        |           |         |         |         |
| C.S.          | 2+063.619 | 5519054.321 | 630518.527 |                        |        |           |         |         |         |
| S.T.          | 2+153.619 | 5519106.990 | 630591.420 |                        |        |           |         |         |         |
| T.S.          | 2+162.688 | 5519112.620 | 630598.529 |                        |        |           |         |         |         |
| S.C.          | 2+212.688 | 5519143.499 | 630637.855 |                        |        |           |         |         |         |
| C.S.          | 2+485.550 | 5519294.987 | 630864.548 |                        |        |           |         |         |         |
| S.T.          | 2+535.550 | 5519319.507 | 630908.123 |                        |        |           |         |         |         |

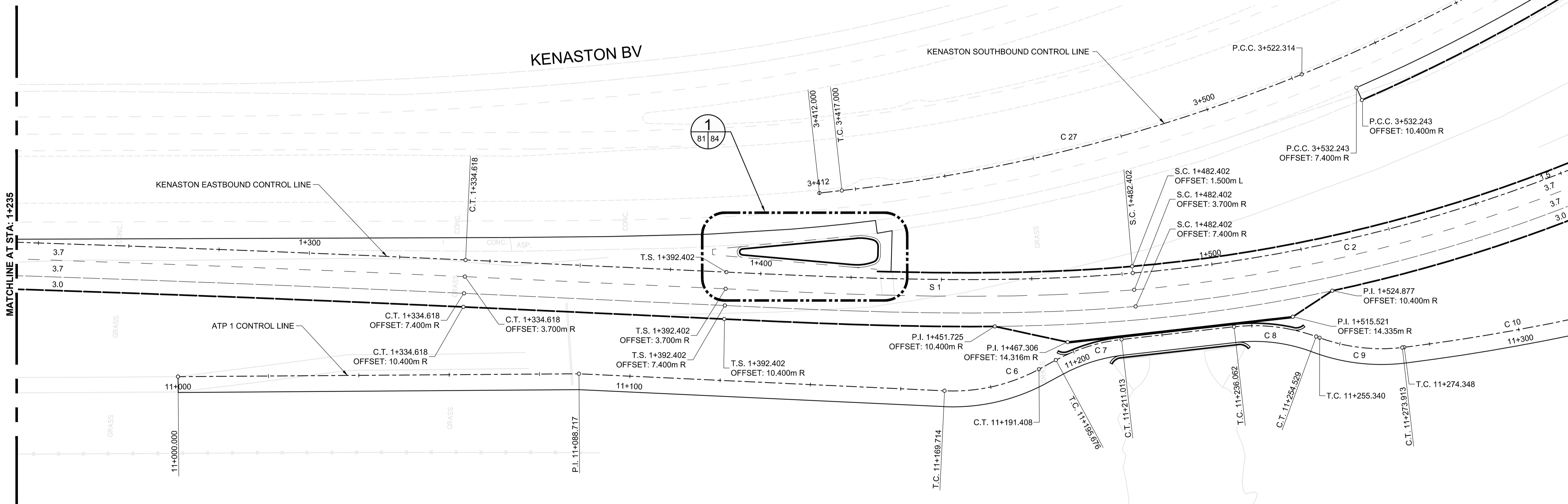
| SPIRAL TABLE ALIGNMENTS |         |          |        |                         |                         |  |
|-------------------------|---------|----------|--------|-------------------------|-------------------------|--|
| SPIRAL #                | A VALUE | RADIUS   | LENGTH | START POINT (N,E)       | END POINT (N,E)         |  |
| S 1                     | 174.9   | INFINITY | 90.000 | 5519243.367, 629955.151 | 5519164.375, 629998.135 |  |
| S 2                     | 162.8   | 340.000  | 26.000 | 5519030.236, 630173.142 | 5519022.809, 630198.054 |  |
| S 3                     | 162.8   | 510.000  | 26.000 | 5519006.732, 630362.099 | 5519009.181, 630387.978 |  |
| S 4                     | 174.9   | 340.000  | 90.000 | 5519054.321, 630518.527 | 5519106.990, 630591.420 |  |
| S 5                     | 316.2   | INFINITY | 50.000 | 5519112.620, 630598.529 | 5519143.499, 630637.855 |  |
| S 6                     | 316.2   | 2000.000 | 50.000 | 5519294.987, 630864.548 | 5519319.507, 630908.123 |  |

ALL COORDINATES BASED ON A LOCAL SYSTEM

ATP 1 CONTROL LINE

| CONTROL POINT | STATION    | COORDINATES |            | CURVE TABLE ALIGNMENTS |        |           |        |         |         |
|---------------|------------|-------------|------------|------------------------|--------|-----------|--------|---------|---------|
|               |            | NORTHING    | EASTING    | CURVE #                | RADIUS | DELTA     | Tc     | L       | LC      |
| P.I.          | 11+000     | 5519338.714 | 629876.580 | C 6                    | 40     | 31°04'26" | 11.121 | 21.694  | 21.429  |
| P.I.          | 11+088.717 | 5519261.200 | 629919.734 | C 7                    | 40     | 21°58'07" | 7.764  | 15.337  | 15.243  |
| T.C.          | 11+169.714 | 5519188.416 | 629955.274 | C 8                    | 40     | 26°27'09" | 9.401  | 18.467  | 18.304  |
| C.T.          | 11+191.408 | 5519172.383 | 629969.491 | C 9                    | 40     | 26°36'15" | 9.457  | 18.573  | 18.407  |
| T.C.          | 11+195.676 | 5519170.064 | 629973.075 | C 10                   | 460    | 22°35'18" | 91.813 | 181.242 | 180.070 |
| C.T.          | 11+211.013 | 5519159.498 | 629984.062 | C 11                   | 50     | 46°14'25" | 21.348 | 40.352  | 39.266  |
| T.C.          | 11+236.062 | 5519139.012 | 629988.476 | C 12                   | 35     | 35°51'02" | 11.322 | 21.900  | 21.544  |
| C.T.          | 11+254.529 | 5519122.030 | 630005.305 | C 13                   | 35     | 23°28'30" | 7.272  | 14.340  | 14.240  |
| T.C.          | 11+255.340 | 5519121.229 | 630005.427 | C 14                   | 35     | 8°16'15"  | 2.531  | 5.052   | 5.048   |
| C.T.          | 11+273.913 | 5519104.160 | 630012.317 | C 15                   | 5      | 62°48'51" | 3.053  | 5.482   | 5.211   |
| P.O.C.        | 11+435.954 | 5518992.061 | 630128.162 |                        |        |           |        |         |         |
| C.T.          | 11+476.307 | 5518984.677 | 630166.728 |                        |        |           |        |         |         |
| T.C.          | 11+523.373 | 5518994.689 | 630212.718 |                        |        |           |        |         |         |
| P.O.C.        | 11+545.273 | 5519005.528 | 630231.337 |                        |        |           |        |         |         |
| P.O.C.        | 11+559.613 | 5519017.844 | 630238.485 |                        |        |           |        |         |         |
| R.C.          | 11+564.666 | 5519022.737 | 630239.728 |                        |        |           |        |         |         |
| C.T.          | 11+570.147 | 5519026.638 | 630243.183 |                        |        |           |        |         |         |
| P.I.          | 11+572.660 | 5519027.375 | 630245.585 |                        |        |           |        |         |         |

ALL COORDINATES BASED ON A LOCAL SYSTEM



KENASTON BV

**APEGM**  
 Certificate of Authorization  
 Dillon Consulting Limited (MB)  
 No. 1789 Date: 2013/08/08

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES  
 DECIMALIZED NUMBERS INDICATE METRES

WARNING

- IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
- NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
  - TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.
  - OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.
  - A MINIMUM VERTICAL SEPARATION OF 300 mm FROM GAS MAINS AND 100 mm FROM GAS SERVICE MUST BE MAINTAINED BETWEEN ANY MANITOBA HYDRO FACILITY AND ANY NEW INSTALLATIONS.
  - A MINIMUM 900 mm OF COVER SHALL BE MAINTAINED IN ALL AREAS WHERE EQUIPMENT WILL BE CROSSING, TRAVELING OR COMPACTING OVER THE HIGH PRESSURE GAS MAINS.
  - IF EQUIPMENT MUST CROSS, TRAVEL, OR COMPACT OVER THE GAS MAIN WITH LESS THAN THE MINIMUM DEPTH COVER, EARTH BRIDGING OR STEEL PLATES SHALL BE PLACED OVER THE MAIN AND EXTEND A MINIMUM OF 1.0 METRE ON EITHER SIDE AT EACH CROSSING LOCATION.

G:\CAD\126606\Contract\_2\Current\Civil\_Control\_Line\_Geometry.dwg

| 150 WM            | 150 WM            | M.T.S.        | M.T.S.        | 150 mm W.M.         | 150 mm W.M.         |
|-------------------|-------------------|---------------|---------------|---------------------|---------------------|
| WATERMAIN         | HYDRANT           | CONCRETE      | CONCRETE      | WATERMAIN           | HYDRANT             |
| VALVE             | VALVE             | ASPHALT       | ASPHALT       | VALVE               | VALVE               |
| 300 LDS           | 300 LDS           | PLANING       | PLANING       | 300 mm L.D.S.       | 300 mm L.D.S.       |
| 250 WWS           | 250 WWS           | PAVING STONES | PAVING STONES | 250 mm W.W.S.       | 250 mm W.W.S.       |
| WASTE WATER SEWER | WASTE WATER SEWER | SIDEWALK      | SIDEWALK      | LAND DRAINAGE SEWER | LAND DRAINAGE SEWER |
| MANHOLE           | MANHOLE           | PROPERTY LINE | PROPERTY LINE | WASTE WATER SEWER   | WASTE WATER SEWER   |
| CATCH BASIN       | CATCH BASIN       | SURVEY BAR    | SURVEY BAR    | Q PROFILE           | Q PROFILE           |
| TEST HOLES        | TEST HOLES        | CURB RAMP     | CURB RAMP     | NORTH/WEST GUTTER   | NORTH/WEST GUTTER   |
| JUNCTIONS         | JUNCTIONS         | DITCH         | DITCH         | SOUTH/EAST GUTTER   | SOUTH/EAST GUTTER   |
| CULVERT           | CULVERT           | SWALE         | SWALE         | NORTH/WEST T/LANE   | NORTH/WEST T/LANE   |
| 100 GAS           | 100 GAS           |               |               | SOUTH/EAST T/LANE   | SOUTH/EAST T/LANE   |
| EXISTING          | LEGEND-PLAN       | PROPOSED      | EXISTING      | LEGEND-PROFILE      | PROPOSED            |

UNDERGROUND STRUCTURES  
 SUPV. U/G STRUCTURES COMMITTEE DATE  
 NOTE:  
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

| B.M.  | 654008    | N: | 5515764.610 | 654210 | N:         | 5514436.957 |            |
|-------|-----------|----|-------------|--------|------------|-------------|------------|
| ELEV. | 232.463 m | E: | 633359.697  | ELEV.  | 630550.534 | E:          | 630550.534 |

| DESIGNED BY | MRD   |
|-------------|-------|
| DRAWN BY    | PMW   |
| CHECKED BY  | DBW   |
| APPROVED BY | DPK   |
| HOR. SCALE  | 1:500 |
| VERTICAL    |       |

**DILLON CONSULTING**

PROVINCE OF MANITOBA  
**M.R. DOUCET**  
 MEMBER  
 22306  
 REGISTERED PROFESSIONAL ENGINEER

**THE CITY OF WINNIPEG**  
 PUBLIC WORKS DEPARTMENT

WAVERLEY WEST ARTERIAL ROADS PROJECT  
 (WWARP) PART 3 - CONTRACT 2  
 ROUTE 90 TO ROUTE 165 OVERPASS (KENASTON BLVD.)  
 AND ASSOCIATED WORKS

CITY DRAWING NUMBER  
**B242-13-81**

SHEET **81** OF **128**

CONSULTANT DRAWING NUMBER  
**P-3349-81**

CONSULTANT PROJECT NUMBER  
**12-6606**

HORIZONTAL GEOMETRY  
 STA: 0+905 TO 1+580