

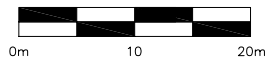
**STORM WATER DISCHARGE CRITERIA**

- RUN-OFF FLOWS DETERMINED BY THE RATIONAL FORMULA METHOD  
 $Q = 0.278CIA$ , WHERE Q = RATE OF RUNOFF (m<sup>3</sup>/s)  
 C = COEFFICIENT OF RUNOFF  
 I = RAINFALL INTENSITY (mm/HR)  
 A = DRAINAGE AREA (km<sup>2</sup>)
- RAINFALL INTENSITY (I) = 5 YEAR CITY OF WINNIPEG DESIGN STORM, I = 89.4mm/HR  
 (I) = 25 YEAR CITY OF WINNIPEG DESIGN STORM, I = 127.2mm/HR
- TIME OF CONCENTRATION = 15 MINUTES, AREA = 2.3 Ha ( or 5.78 ACRES )  
 'C' - ALLOWABLE = 0.25, 'Q' - ALLOWABLE = 145.0 L/s
- 'Q' (25-YEAR) - POST DEVELOPMENT = 410.0 L/s  
 - WITH FLOW RESTRICTORS = 107.4 L/s  
 AN INLET CONTROL DEVICE (ICD) SHALL BE INSTALLED ON THE OUTLET PIPE AT THE FOLLOWING LOCATIONS:  
 i) CB02 - 100mm DIAMETER ORIFICE  
 ii) CB04 - 100mm DIAMETER ORIFICE  
 iii) CB05 - 150mm DIAMETER ORIFICE  
 - REQUIRED ON-SITE STORAGE = 272.3 m<sup>3</sup>  
 - AVAILABLE ON-SITE STORAGE = 371.8 m<sup>3</sup>

NOTE: AVAILABLE ON-SITE STORAGE INCLUDES THE AREAS SHOWN WITHIN THE ASPHALT PAVEMENT PARKING LOT AS WELL AS THE DITCH ALONG WEST SIDE OF THE DEVELOPMENT.

**CONSTRUCTION NOTES:**

- ALL PRODUCTS INCORPORATED IN THE WORK SHALL CONFORM TO THE CITY WINNIPEG "STANDARD CONSTRUCTION SPECIFICATIONS" AND BE REGISTERED IN THE CITY OF WINNIPEG LISTING OF APPROVED PRODUCTS OR AS SPECIFIED ON THIS DRAWING. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF WINNIPEG "STANDARD CONSTRUCTION SPECIFICATIONS", LATEST EDITION.
- CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS TO FRONT ENTRANCE AT ALL TIMES.
- ALL TRENCH, MANHOLE AND CATCH BASIN BACKFILL FOR SEWER AND PVC CONDUIT INSTALLATIONS SHALL BE CLASS 2 BACKFILL WITHIN PAVEMENT AREAS AND CLASS 4 BACKFILL IN LANDSCAPED AREAS.
- CATCH BASINS TO 900mm DIAMETER COMPLETE WITH 600mm SUMP (AS PER SD-025) AND CATCHPIT TO BE 900mm DIAMETER (AS PER SD-023) WITH GRATED FRAME AND COVER. GROUT BOTTOM OF CATCHPIT AND SLOPE FLOOR TOWARDS EFFLUENT PIPE.
- INSTALL AN INLET CONTROL DEVICE (ICD) APPROVED BY CONTRACT ADMINISTRATOR TO RESTRICT FLOW AS PER THE STORM WATER DISCHARGE CRITERIA AND AS SHOWN ON THE DRAWINGS.
- ADD 200.00m TO PROPOSED ELEVATIONS TO OBTAIN GEODETIC.
- CONFIRMATION OR EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.
- LOCATION AND ELEVATION OF EXISTING WORKS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF SUCH UTILITIES, PIPES, SURVEY MARKERS, OR STRUCTURES AND NOTIFY ALL RELEVANT UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY ERROR OR OMISSION PRIOR TO CONSTRUCTION.
- ALL AREAS AFFECTED BY CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION UNLESS OTHERWISE NOTED ON THE DRAWINGS.



**LAND DRAINAGE SEWER PLAN**  
SCALE 1:300

150 mm WM	WATERMAIN	150 mm WM	HYDRO	150 mm WM	WATERMAIN
+	HYDRANT	+	MTS	+	HYDRANT
○	VALVE	○	CONCRETE	○	VALVE
300 mm LDS	LAND DRAINAGE SEWER	300 mm LDS	LIMIT OF ASPHALT	300 mm LDS	SEWER
250 mm CS	COMBINED SEWER	250 mm CS	CURB RENEWAL	300 mm LDS	SEWER
□	MANHOLE	□	ASPHALT		
▣	CATCH BASIN (CB)	▣	ELEVATIONS		
▢	CATCH PIT (CP)	▢	PROPERTY LINE		
○	SIGN	○	SURVEY BAR		
○	LAMP STANDARD	○	CURB STOP		
○	GAS	○	RAMP CURB		
EXISTING	LEGEND - PLAN	EXISTING	LEGEND - PLAN	EXISTING	LEGEND - PROFILE

**LOCATION APPROVED UNDERGROUND STRUCTURES**  
 B.M. (38-037) 235.778m  
 W. SIDE OF WOODLAWN ST. N. OF NESS AVE, TBLT IN E. CONC. FOUNDATION OF ST. JAMES CIVIC CENTRE, 18m N. OF S.E. CORNER OF BLDG & 0.3m BELOW CONC. BLOCK.

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.

**COCHRANE ENGINEERING LTD.**  
 #600 - 5 DONALD STREET  
 WINNIPEG, MANITOBA, R3L 2T4  
 TEL: (204) 477-8850  
 FAX: (204) 474-2884

DESIGNED BY: D.T.B. CHECKED BY: B.D.E.  
 DRAWN BY: D.T.B. APPROVED BY: D.T.B.

HOR. SCALE: AS NOTED

ISSUED FOR TENDER: 06/03/01 D.T.B.  
 NO. REVISIONS DATE BY

DATE: AUGUST 12, 2005



**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT

**LAND DRAINAGE SEWER PLAN**

CITY DRAWING NUMBER: 218-2006-C04-R0  
 SHEET 4 OF 6

REV. 4