

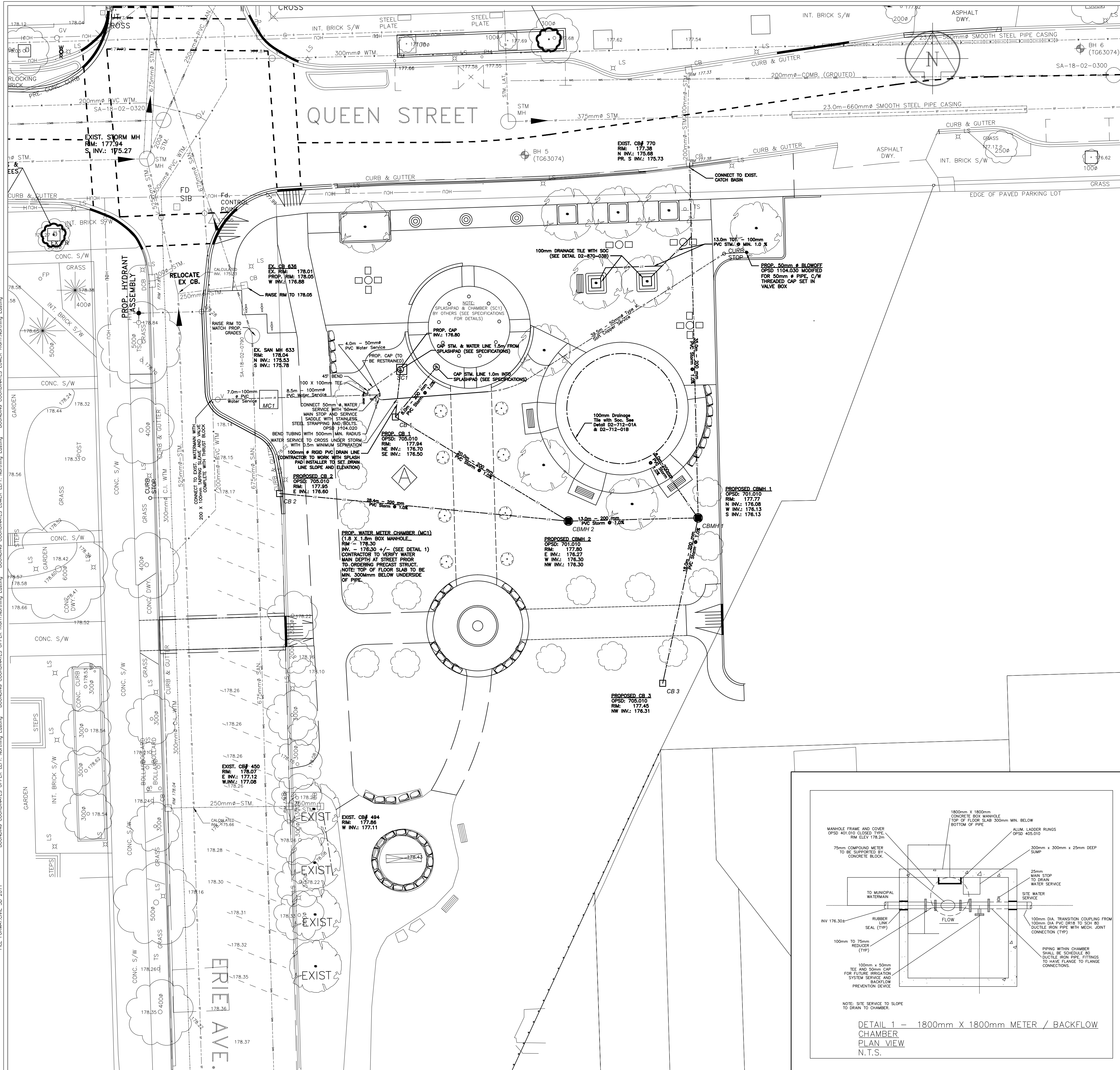
P14-2012

IMAGES: U:\Digital Plans\OBVA\OBVA-2000\A10-02_17_0500_47690.TIF
U:\Digital Plans\OBVA\OBVA-2000\A10-02_17_0500_47691.TIF
U:\Digital Plans\OBVA\OBVA-2000\A10-02_17_0500_47692.TIF

X-REFERENCES: U:\Corps\Drawings\Journals.dwg
U:\Corps\Drawings\Notes.dwg
U:\Corps\Drawings\Forms.dwg

GEOMETRIC PROJECTION: UTM, NAD 83, ZONE 17
UNIT: METERS
DATUM: CANADIAN DATUM 1980
ELEVATION: MEASUREMENT ELEVATION
ELEVATION: MEASUREMENT ELEVATION

PERSONNEL:
DATE: 11/11/11
BY: J.C.
CHECKED BY: J.C.
APPROVED BY: J.C.



NOTES:

GENERAL

- 1.1 ALL MEASUREMENTS ARE IN METRIC UNITS UNLESS OTHERWISE NOTED.
1.2 ALL WORK SHALL BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE OPSS'S, THE ONTARIO BUILDING CODE AND THE CITY OF NIAGARA FALLS REQUIREMENTS.
1.3 THE COST AND SUBMISSION OF ALL PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
1.4 SELECT NATIVE MATERIAL SHALL BE USED FOR SEWER AND WATER MAIN TRENCH BACKFILL. EXCEPT UNDER PAVEMENT WHERE BACKFILL SHALL BE GRANULAR 'A' MATERIAL.
1.5 ALL GRANULAR MATERIAL SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMD); ALL NATIVE BACKFILL SHALL BE COMPACTED TO 95% SPMD UNLESS OTHERWISE NOTED.
1.6 CONTRACTOR TO MAKE GOOD ALL DISTURBED AREAS.
1.7 URBAN & ENVIRONMENTAL MANAGEMENT INC. (UEM) IS THE DESIGNER OF RECORD FOR SITE SERVICES. UEM MUST BE KEPT INFORMED OF WORK PROGRESS ON AN ONGOING BASIS BY THE CONSTRUCTION MANAGER IN ORDER THAT SITE VISITS AND INSPECTIONS CAN BE MADE. ANY CHANGES FROM THE PROPOSED PLANS AND SPECIFICATIONS BY THE CONTRACTORS MUST BE APPROVED BY UEM PRIOR TO PERFORMING THE WORKS. UEM ASSUMES NO RESPONSIBILITY FOR ANY OCCURRENCES DUE TO CHANGES FROM THE APPROVED DESIGN PLANS AND SPECIFICATIONS WITHOUT ITS PRIOR WRITTEN APPROVAL.
1.8 CONTRACTOR TO RECORD PRECAST RIM ELEVATIONS, PIPE INVERTS, FINAL ELEVATIONS AND ANY CHANGES TO DESIGN AND PROVIDE CONSTRUCTION RECORD DRAWINGS, AS PER CONTRACT SPECIFICATIONS, TO CONTRACT ADMINISTRATOR.

SEWERS

- 2.1 SEWERS SHALL BE PROVIDED WITH FROST PROTECTION WHERE SHOWN ON DRAWINGS AS PER SEWER INSULATION DETAIL.
2.2 ALL SEWERS SHALL HAVE GRANULAR 'A' EMBEDMENT MATERIAL IN ACCORDANCE WITH OPSD 802.010 (FLEXIBLE PIPE). TRENCH BACKFILL SHALL BE AS PER GENERAL NOTE 1.5.
2.3 STORM SEWER PIPE SHALL BE PVC DR35, CSA B182.2 OR PVC PROFILE PIPE, CSA B182.4 UNLESS NOTED OTHERWISE.
2.4 ALL SUBDRAIN SHALL BE 100mm DIA. WITH KNITTED GEOTEXTILE SOCK, INSTALLED IN UNWRAPPED TRENCH WITH GRANULAR 'A' MATERIAL AS PER OPSD 216.021.
2.5 INSTALL MINIMUM 3m OF SUBDRAIN OVER EACH PRECAST CONCRETE STRUCTURE OUTLET PIPE TO DRAIN GRANULAR COVER MATERIAL.
2.6 STORM SERVICES SHALL BE CAPPED AND STAKED 1.0m OUTSIDE WATER FEATURE. REFER TO WATER FEATURE PLANS AND SPECIFICATIONS FOR CONTINUATION.

WATERMANS

- 3.1 ALL WATERMANS SHALL BE INSTALLED WITH A MINIMUM 1.5m COVER. WHERE IN CONFLICT WITH EXISTING UNDERGROUND SEWERS THE WATER MAIN SHALL CROSS UNDER WITH 0.5m VERTICAL SEPARATION.
3.2 ALL WATERMANS SHALL HAVE GRANULAR 'A' EMBEDMENT MATERIAL IN ACCORDANCE WITH OPSD 802.010 (FLEXIBLE PIPE). TRENCH BACKFILL SHALL BE AS PER NOTE 1.5.
3.3 ALL WATERMAIN PIPE SHALL BE PVC DR18 CERTIFIED TO CSA B137.3.
3.4 ALL WATERMAIN FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT.
3.5 ALL SERVICES SHALL BE TYPE 'K' COPPER WITH SELECT NATIVE BEDDING INSTALLED AS PER OPSD 1104.01.
3.6 ALL SERVICES SHALL BE INSTALLED WITH 1.5m COVER AND SHALL BE CAPPED AND STAKED 1M OUTSIDE WATER FEATURE. REFER TO WATER FEATURE PLANS AND SPECIFICATIONS FOR CONTINUATION.
3.7 MAIN STOPS AND CURB STOPS SHALL BE EITHER MUELLER, FORD OR CAMBRIDGE BRASS WITH COMPRESSION TYPE FITTINGS.
3.8 GATE VALVES SHALL BE RESILIENT SEAT GATE VALVES (MUELLER, CLOW, AWK) WITH MECHANICAL JOINT FITTINGS AND STAINLESS STEEL BOLTS. VALVES ARE TO OPEN COUNTER CLOCKWISE WITH 50mm OPERATING NUT.
3.9 VALVE BOXES SHALL BE 130mm CAST IRON SLIDE TYPE.
3.10 THRUST BLOCKS FOR WATERMANS AS PER OPSD 1103.010 AND OPSD 1103.020. JOINT RESTRAINTS SHALL BE MEGALUG PVC SERIES 2000PV WITH STAINLESS STEEL BOLTS OR APPROVED EQUAL.
3.11 TRACER WIRE SHALL BE 8 GAUGE, 7 STRAND INSULATED WIRE AND SHALL BE INSTALLED ON ALL PVC PIPE. TRACER WIRE SHALL TERMINATE AT ALL VALVE BOXES.
3.12 CATHODIC PROTECTION SHALL BE PROVIDED ON ALL VALVES, BENDS, FITTINGS AND COPPER SERVICES WITH 5.5 kg ZINC ANODES AS PER OPSD 702.
3.13 ALL WATERMANS TO BE PRESSURE TESTED, SWABBED, DISINFECTED, FLUSHED AND BACTERIOLOGICAL TESTED TO THE SATISFACTION OF THE CITY, AS PER THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENTS AND OPSD 701.
3.14 CITY TO BE NOTIFIED 48 HOURS PRIOR TO START OF WORK AND PRIOR TO CONNECTION TO THE PRIVATE WATERMAIN. CONNECTION SHALL BE MADE WITH A TAPPING SLEEVE AND VALVE AND SHALL BE DONE BY A LICENSED OPERATOR.
3.15 WATER METER SHALL BE A 75mm METER. METER INSTALLATION AND SUPPLY SHALL BE COORDINATED WITH THE CITY.
3.16 METER PIT, PIPING CONFIGURATION AND APPURTENANCES SHALL BE AS PER CITY DRAWING NO. NF-1107.1. METER CHAMBER WATERMAIN PIPE OPENINGS TO BE SEALED WITH LINK SEAL.

PRECAST CONCRETE AND DRAINS

- 4.1 MANHOLES AND CATCHBASINS, SIZES AND TYPES AS NOTED ON THE DRAWINGS
4.2 ALL CATCHBASINS SHALL HAVE 600mm SUMPS.
4.3 ALL CATCH BASIN MANHOLES SHALL HAVE 300mm SUMPS.
4.4 ALL CATCH BASIN FRAME AND GRATES SHALL BE FLAT TYPE AS PER OPSD 400.020.
4.5 CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR METER PIT FOR REVIEW.

RELEVANT SPECIFICATIONS

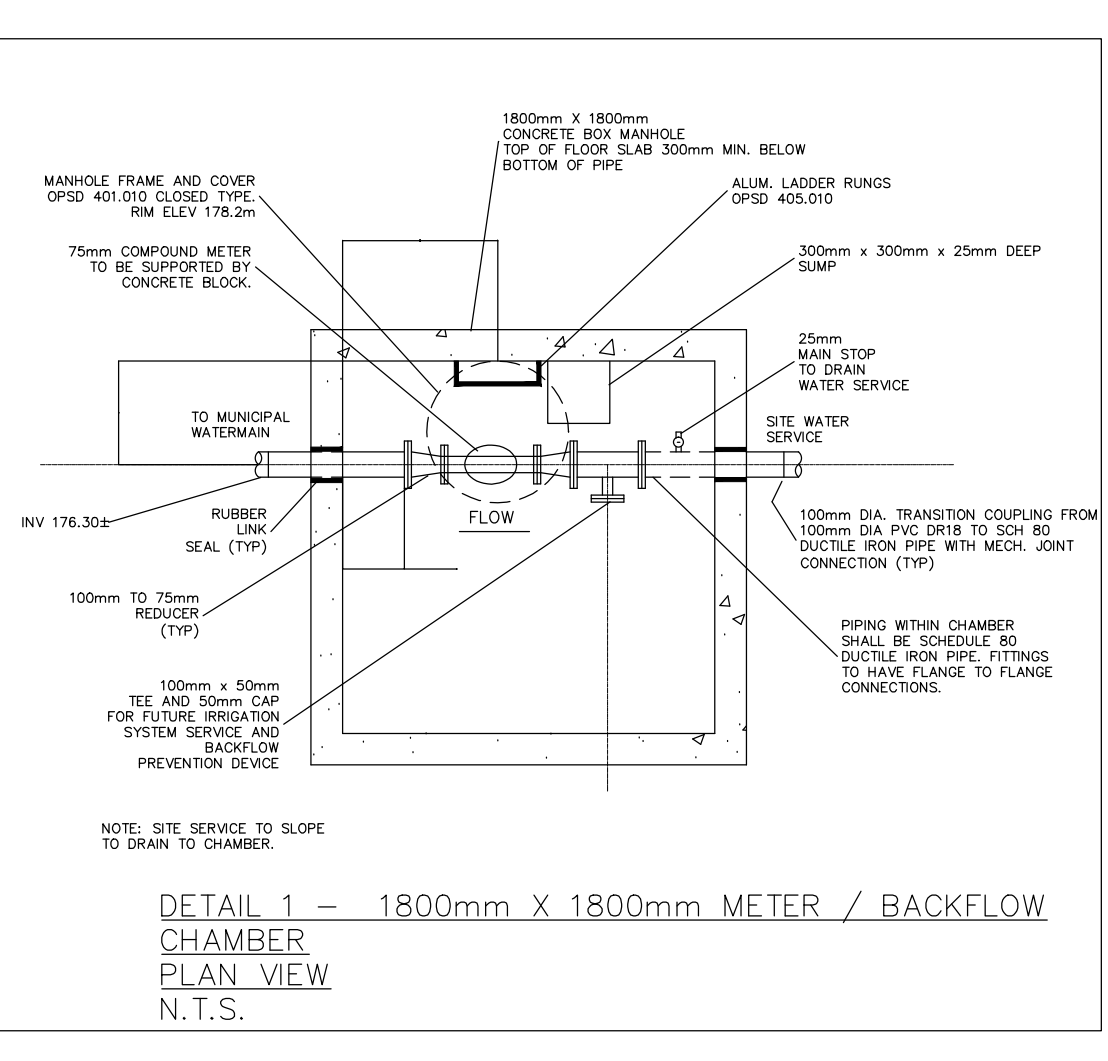
Table with 2 columns: Specification Code (e.g., OPSS 180, OPSS 206) and Description (e.g., Management and Disposal of Excess Material, Grading).

RELEVANT STANDARD DRAWINGS

Table with 2 columns: Drawing Code (e.g., OPSD 400.020, OPSD 401.010) and Description (e.g., Catchbasin Frame and Flat Grate, Manhole Frame and Cover).

LEGEND

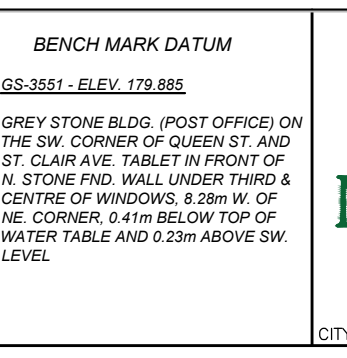
Legend table showing symbols for existing and proposed catch basins, manholes, hydrants, valves, and water mains.



NOTES/LEGEND table with columns for NO., REVISION, DATE, and INIT.

Table with columns for DRAFTING (RG), DESIGN (JC), CHECKED BY (MM), and APPROVED BY (JC).

BENCH MARK DATUM table with columns for BENCH MARK DATUM and coordinates.



Project title block: P14-2012 DOWNTOWN PARK (PHASE 1) QUEEN STREET NIAGARA FALLS PHASE 1 SERVICES PLAN. Includes consultant file no., date, scale, ref. no., and revision table.