

GENERAL NOTES

- THE GENERAL NOTES AND STRUCTURAL STANDARD DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE IN METRES AND ARE TO GEODETIC DATUM. THE CONTRACTOR SHALL VERIFY DIMENSIONS BEFORE BEGINNING CONSTRUCTION AND REPORT DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS.
- THE DESIGN AND CONSTRUCTION IS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995, ITS SUPPLEMENTS AND THE LATEST EDITIONS (UNLESS OTHERWISE NOTED) OF REFERENCED CODES AND STANDARDS THEREIN. WATER RETAINING STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH ACI 350.
- REFER TO THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, SLEEVES AND OTHER BUILDING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS. REPORT DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH CONSTRUCTION
- CONTRACTOR TO CONFIRM ALL OCCURRENCES OF INTERFERENCE BETWEEN NEW AND EXISTING. REPORT ALL DISCREPANCIES BETWEEN THAT SHOWN ON THE DRAWINGS AND THAT WHICH EXISTS TO THE CONTRACT ADMINISTRATOR, IMMEDIATELY UPON DISCOVERY. KEEP ACCURATE AS-BUILT RECORDS OF ALL NEW WORKS AND RELOCATED OR MODIFIED EXISTING FACILITIES.
- CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER, REGISTERED IN THE PROVINCE OF MANITOBA, TO PERFORM AND TAKE RESPONSIBILITY FOR ANY SHORING OR OTHER DESIGNS REQUIRED TO COMPLETE THE CONSTRUCTION.
- VERIFY LOCATION OF ALL UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION AND BE RESPONSIBLE FOR DISRUPTIONS.

FOUNDATION NOTES

- ALL FOUNDATION CONSTRUCTION SHALL BE PERFORMED TO THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT BY DYREGROV CONSULTANTS, DATED FEB. 2006 AND AMENDMENTS.
- AN EXCAVATION PLAN SHALL BE PREPARED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA WITH EXPERIENCE IN GEOTECHNICAL ANALYSIS INCLUDING SLOPE STABILITY. SUBMIT EXCAVATION PLAN FOR REVIEW.
- IF SHORING IS USED IN THE CONSTRUCTION, THE SHORING SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SUBMIT SHORING PLAN AND DETAIL FOR REVIEW. THE PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR TO PROVIDE THE SHORING DESIGN SHALL INSPECT THE SHORING AT CRITICAL STAGES AND CERTIFY IN WRITING TO THE CONTRACT ADMINISTRATOR THAT IT MEETS THE REQUIREMENTS OF HIS DESIGN.
- ALL FOUNDATIONS ARE DESIGNED AS DRIVEN, END BEARING, PRESTRESSED PRECAST CONCRETE PILES WITH THE FOLLOWING DESIGN CAPACITY:
 - .1 300mm HEX - ALLOWABLE LOAD CAPACITY = 445 kN
 - .2 350mm HEX - ALLOWABLE LOAD CAPACITY = 625 kN
 - .3 400mm HEX - ALLOWABLE LOAD CAPACITY = 800 kN
- A MINIMUM OF 450 mm OF PRESTRESSING STRAND LENGTHS SHALL BE EXPOSED FOLLOWING THE PILE CUT-OFF.
- SEE PILE SCHEDULE FOR PREBORING REQUIREMENTS

CONCRETE NOTES

- PROVIDE CONCRETE AND PERFORM WORK TO CSA A23.1-00, TEST CONCRETE TO CSA A23.2-00. THE CONTRACTOR SHALL HAVE A COPY OF THESE STANDARDS ON SITE AT ALL TIMES.
- ALL STRUCTURAL CONCRETE STRENGTH REFER TO SPECIFICATIONS.
- PROVIDE CONCRETE AND PERFORM WORK TO CSA-A23.1-00 UNLESS SPECIFIED HEREIN. THE CONTRACTOR SHALL HAVE A COPY OF THIS STANDARD ON SITE AT ALL TIMES. IN THE EVENT OF CONFLICT, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
- FORMWORK AND FALSEWORK DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SUBMIT TO CONTRACT ADMINISTRATOR FOR REVIEW.
- SPECIFIED SLUMPS ARE PRIOR TO THE ADDITION OF ANY ACCEPTED PLASTICIZING ADMIXTURE. WHEN CONCRETE IS PLACED BY PUMPING, THE LISTED SLUMPS SHALL BE AT DISCHARGE. ALL CONCRETE SHALL BE NORMAL WEIGHT 2400 kg/CUBIC METER UNLESS NOTED OTHERWISE.
- PROVIDE 20mm CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
- CONSTRUCTION JOINTS : SURFACE PREPARATION SHALL BE BY SAND BLASTING TO EXPOSE FINE AGGREGATE. REINFORCING STEEL SHALL BE CLEANED BY SAND BLASTING METHOD AS WELL.
- VOID FORM UNDER THE SBR BUILDING STRUCTURE SHALL BE GEOSPAN (SOLID FOAM MATERIAL). ALL OTHER VOIDFORM SHALL BE WAX COATED CARDBOARD TYPICAL.
- THE CONTRACTOR SHALL NOTIFY THE INSPECTION AND TESTING FIRM, IN AMPLE TIME TO PERMIT SCHEDULING, PRIOR TO ANY CONCRETE POUR. IF AMPLE TIME IS NOT ALLOWED, ALTERNATE CONCRETE TESTS WILL BE PERFORMED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND PAID FOR BY THE CONTRACTOR.
- AT LEAST THREE CONCRETE CYLINDERS WILL BE TAKEN FOR EVERY 75 CUBIC METERS OR LESS OF EACH CLASS OF CONCRETE PLACED. ADDITIONAL FIELD CYLINDERS MAY BE TAKEN AS DIRECTED BY THE CONTRACT ADMINISTRATOR TO EXPEDITE CONSTRUCTION. AIR AND SLUMP TESTS MAY BE TAKEN ON EVERY CONCRETE LOAD. SLUMP TESTS WILL BE TAKEN PRIOR TO ADDITION OF SUPERPLASTI-SIZER.

MASONRY NOTES

- ALL MASONRY WORK SHALL CONFORM TO CSA S304.1, A371 AND TO DETAILS SHOWN ON DRAWINGS.
- MASONRY BLOCK UNITS SHALL CONFORM TO CSA A165. CLASSIFICATION H/15/A/M WITH A MIN. UNIT STRENGTH OF 15MPa, UNLESS NOTED OTHERWISE.
- ALL MORTAR SHALL CONFORM TO CSA A179 AND SHALL BE TYPE 'S'.
- ALL LINTELS, BOND BEAMS, AND PILASTERS SHALL BE FILLED WITH CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 20 MPa.
- PROVIDE DOWELS FROM CONCRETE BEAMS OR WALLS TO MATCH MASONRY WALL REINFORCING.

REINFORCING STEEL NOTES:

- DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400 PLAIN FINISH.
- REINFORCING WORK SHALL BE IN ACCORDANCE WITH CSA-A23.1 AND CSA-A23.3.
- REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST REINFORCING STEEL INSTITUTE OF CANADA DETAILING MANUAL OF STANDARD PRACTICE.
- PROVIDE CLEAR CONCRETE COVER OVER REBAR AS FOLLOWS:
 - a.) BEAM STIRRUPS: 40mm
 - b.) SLABS TOP: 65mm
 - c.) SLAB BOTTOM SUPPORT ON PILES: 100mm
 - d.) SLAB BOTTOM OTHER: 65mm
 - e.) SLAB SIDE: 65mm
 - f.) COLUMN TIES : 40mm
 - g.) WALLS : 50mm UNLESS NOTED OTHERWISE

STRUCTURAL & MISC. STEEL NOTES

- FABRICATE AND ERECT STRUCTURAL STEEL TO CSA-S16.1.
- PROVIDE STRUCTURAL STEEL SHAPES AND PLATES TO CSA-G40.21, GRADE 350W.
- STEEL PLATES AND SECTIONS: CONFORMING TO CSA G40.21; TYPE W WITH A MINIMUM YIELD STRENGTH OF 300 MPa.
- HOLLOW STRUCTURAL SECTIONS: CONFORMING TO CSA G40.21; TYPE W WITH A MINIMUM YIELD STRENGTH OF 350 MPa.
- ANCHOR BOLTS: CONFORMING TO ASTM A307.
- WELDING MATERIALS: CONFORMING TO CSA W59.
- WELDING OF ALL LOAD CARRYING ASSEMBLIES IS TO BE PERFORMED BY A FIRM CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1 IN DIVISION 2.
- GROUT: NON-SHRINK, NON-METALLIC, 35 MPa AT 28 DAYS.
- SUPPLY ALL COMPONENTS REQUIRED FOR PROPER ANCHORAGE OF MISCELLANEOUS METALS. FABRICATE ANCHORAGE AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS METAL FABRICATIONS, UNLESS OTHERWISE SPECIFIED OR SHOWN.
- GALVANIZING CONFORMING TO CSA G164.
- CLEAN ALL STEEL PRIOR TO PRIMING TO SSPC SURFACE PREPARATION SPECIFICATION No. 7 "BRUSH-OFF BLAST CLEANING".
- PRIME STEEL SURFACES WITH ONE COAT OF PRIMER TO CISC/CPMA 2-75.

MISCELLANEOUS METALS - ALUMINUM

- ALUMINUM: CONFORMING TO ALUMINUM ASSOCIATION ALLOY AND TEMPER DESIGNATION 6061-T6.
- PERFORM WELDING OF ALUMINUM IN ACCORDANCE WITH REQUIREMENTS OF CSA W59.2; COMPANY CERTIFICATION TO DIVISION 2.
- BOLTS AND ANCHOR BOLTS: CONFORMING TO STAINLESS STEEL ASTM 316 C/W ISOLATION WASHERS.
- BITUMINOUS PAINT: ALKALI RESISTANT.
- ISOLATE ALUMINUM FROM FOLLOWING COMPONENTS, BY MEANS OF BITUMINOUS PAINT: 2 COATS
 - DISSIMILAR METALS EXCEPT STAINLESS STEEL, ZINC, GALVANIZED, OR WHITE BRONZE OF SMALL AREA.
 - CONCRETE AND GROUT.

STANDARD ABBREVIATIONS:

| | | | |
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| ADDITIONAL | ADD'L | SECTION | SECT. |
| AT | @ | SHEET | SHT. |
| ANCHOR BOLT | A. BOLT | SIMILAR | SIM. |
| ALTERNATE | ALTER. | SCHEDULE | SCH. |
| ALUMINUM | ALUM. | SPECIFICATION | SPEC. |
| APPROXIMATE | APPROX. | STAINLESS STEEL | S.S. |
| ARCHITECTURAL | ARCH. | STANDARD | STD. |
| AVERAGE | AVG. | STIFFENER | STIFF. |
| BOTTOM | BOT. | STIRRUP | STIRR. |
| BETWEEN | BET. | STRUCTURAL | STRUCT. |
| BUILDING | BLDG. | SYMMETRICAL | SYM. |
| BENCH MARK | B.M. | TOP OF | T.O. |
| BEARING | BRG. | TYPICAL | TYP. |
| BY (Between dims) | x (lower case) | UNLESS NOTED | U/N |
| CENTERLINE | C | VERTICAL | VERT. |
| CAST IN PLACE | C.I.P. | WIND LOAD | W.L. |
| CONCRETE MASONRY UNIT | C.M.U. | | |
| CONSTRUCTION | CONST. | | |
| CONSTRUCTION JOINT | C.J. | | |
| COMPLETE WITH | C/W | | |
| COLUMN | COL. | | |
| CONCRETE | CONC. | | |
| CONTINUOUS | CONT. | | |
| DEAD LOAD | D.L. | | |
| DIAMETER | DIA. | | |
| DIMENSION | DIM. | | |
| DOWN | DN. | | |
| DOUBLE | DBL. | | |
| DRAWING | DWG. | | |
| DOWEL | DWL. | | |
| EACH FACE | E.F. | | |
| EACH | EA. | | |
| EACH WAY | E.W. | | |
| ELEVATION | EL. | | |
| ELECTRICAL | ELEC. | | |
| EQUAL | EQ. | | |
| EXISTING | EXIST. | | |
| EXPANSION JOINT | EXP. J. | | |
| EXPANSION | EXP. | | |
| EXTERIOR | EXT. | | |
| FACE TO FACE | F. to F. | | |
| FLOOR | FLR. | | |
| FACE OF CONCRETE | F.O.C. | | |
| FIBERGLASS REINFORCED PLASTIC | FRP. | | |
| FOUNDATION | FDN. | | |
| FOOTING | FTG. | | |
| GALVANIZE | GALV. | | |
| HANGER | HGR. | | |
| HIGH WATER LEVEL | H.W.L. | | |
| HORIZONTAL | HORIZ. | | |
| HOLLOW STRUCTURAL STEEL | HSS | | |
| HEIGHT | HT. | | |
| HOLLOWCORE | H.C. | | |
| INSIDE FACE | I.F. | | |
| INSIDE DIAMETER | I.D. | | |
| INTERIOR | INT. | | |
| INVERT | INVT. | | |
| KILONEWTON | kN | | |
| K.O. MASONRY BLOCK | K.O. | | |
| KILOPASCAL | kPa | | |
| LIVE LOAD | LL. | | |
| LONG | LG. | | |
| LOCATION | LOC. | | |
| MATERIAL | MATL. | | |
| MAXIMUM | MAX. | | |
| MEGA PASCAL | MPa | | |
| MECHANICAL | MECH. | | |
| MILLIMETER | mm | | |
| MINIMUM | MIN. | | |
| MISCELLANEOUS | MISC. | | |
| NUMBER | No. | | |
| NOT TO SCALE | N.T.S. | | |
| ON CENTER | o/c (lower case) | | |
| OUTSIDE FACE | O.F. | | |
| OUT TO OUT | o/o | | |
| OUTSIDE DIAMETER | O.D. | | |
| OPENING | OPNG. | | |
| OPEN WEB STEEL JOIST | OWSJ. | | |
| OPPOSITE | OPP. | | |
| ORIGINAL | ORIG. | | |
| PLATE | PL. | | |
| POLY VINYL COMPOSITE | PVC. | | |
| PRELIMINARY | PRELIM. | | |
| PROJECTION | PROJ. | | |
| REINFORCE WITH | R/W | | |
| REINFORCING | REINF. | | |
| REQUIRED | REQ'D | | |
| REVISION | REV. | | |



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| <p>A Tyco International Ltd. Company</p> | | ENGINEER'S SEAL ORIGINAL SIGNED BY L.L. RIDING 2006/05/15 | <p>THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION</p> |
| DESIGNED BY: LLR CHECKED BY: GGP DRAWN BY: WDB APPROVED BY: JEH | | CONSULTANT DRAWING NO. S0.01 | NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY CITY FILE NUMBER SHEET OF CITY DRAWING NUMBER |
| 00 ISSUED FOR TENDER NO. REVISIONS | 06/05/15 WDB DATE BY | 2006/04/03 DATE | RELEASED FOR CONSTRUCTION BY: K. MARTENS DATE 2006/05/15 |