

GENERAL NOTES

- 1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995, ITS SUPPLEMENTS AND THE LATEST EDITIONS OF REFERENCED CODES AND STANDARDS THEREIN.
4. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL YARD PIPING DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, SLEEVES AND OTHER BUILDING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
5. CONTRACTOR TO CONFIRM DIMENSIONS, WEIGHTS AND ALL OTHER CRITICAL DETAILS WITH EQUIPMENT SUPPLIERS PRIOR TO CONSTRUCTION.
6. DRAWINGS SHOW COMPLETED STRUCTURE ONLY. PROVIDE TEMPORARY BRACING FOR CONSTRUCTION LOADING CONDITIONS AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
7. CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW.
8. VERIFY LOCATION OF ALL UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION.
9. PROTECT AS REQ'D ANY AND ALL EXISTING STRUCTURE, PIPES ETC. ABOVE AND BELOW GRADE FROM DAMAGE.

DESIGN LOADS:

- 1. DEAD LOADS: ROOF STRUCTURE SELF WEIGHT 7.2 kPa, ADDITIONAL MECHANICAL & ELECTRICAL ROOF LOAD = 1.0 kPa, ROOF SUPPORTING MECHANICAL & ELECTRICAL POINT LOADS ANYWHERE = 16.8 kPa.
2. LIVE LOADS: .1) GROUND SNOW LOAD - Ss = 1.7 kPa, Sr = 0.2 kPa, WIND q(1/30) = 0.42 kPa, UNIFORM FLOOR LOADS = 4.8 kPa.

- 3. LATERAL LOAD: 1. SOIL: UNIT WEIGHT = 19.64 kN/m^3, KA = 0.5, 2. WATER SIDE: WATER PRESSURE TO SURGE ELEV. 247.250

- 4. LATERAL LOAD COMBINATIONS: 1. SOILS SIDE: GROUND WATER TABLE TO EL. 236.500 + FULL ACTIVE PRESSURE, SURGE TOWER EMPTY SURCHARGE CONDITIONS: SURGE TOWER .A) EQUIPMENT = 24 kPa, .B) ALL OTHER AREAS = 15.6 kPa, 2. WATER SIDE WATER LEVEL TO SURGE EL. 247.500, NO ACTIVE SOIL PRESSURE.

FOUNDATION NOTES

- 1. PRECAST CONCRETE PILE FOUNDATION NOTES: SURGE TOWER FOUNDATIONS ARE DESIGNED AS DRIVEN, END BEARING, PRESTRESSED PRECAST CONCRETE PILES WITH THE FOLLOWING DESIGN LOADS: 400 DIAMETER = 800kN
2. PILE CUT OFF ELEVATION NOTE: PILE CUT OFF ELEVATIONS SHALL BE AS SHOWN IN THE PILING SECTIONS OF THE DRAWING DOCUMENTS. A MINIMUM OF 450mm OF STRAND SHALL BE EXPOSED FOLLOWING PILE CUT OFF.

MASONRY NOTES

- 1. ALL MASONRY WORK SHALL CONFORM TO CSA S304.1, A371 AND TO DETAILS SHOWN ON DRAWINGS.
2. MASONRY BLOCK UNITS SHALL CONFORM TO CSA A165. CLASSIFICATION H/15/C/M WITH A MINIMUM UNIT STRENGTH OF 15 MPa, UNLESS NOTED OTHERWISE.
3. ALL MORTAR SHALL CONFORM TO CSA A179 AND SHALL BE TYPE 'S', MORTAR WITH MINIMUM STRENGTH OF 12 MPa AT 28 DAYS.
4. ALL LINTELS, BOND BEAMS, AND PILASTERS SHALL BE FILLED WITH CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 20 MPa.
5. PROVIDE DOWELS FROM CONCRETE BEAMS OR WALLS TO MATCH MASONRY REINFORCING.

REINFORCING STEEL NOTES

- 1. DEFORMED BARS CONFORMING TO CSA-G30.18, GRADE 400. TIES AND STIRRUPS TO CSA-G30.18 MINIMUM GRADE 300.
2. REINFORCING WORK SHALL BE IN ACCORDANCE WITH CSA-23.1-00 AND CSA-23.3.
3. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE RSIC "REINFORCING STEEL MANUAL OF STANDARD PRACTICE".
4. REINFORCING TO BE CONTINUOUS UNLESS NOTED. LAP TOP BARS AT MIDSPAN, BOTTOM BARS AT SUPPORTS. MINIMUM LAP FOR 10M BARS TO BE 450. MINIMUM LAPS FOR OTHER BARS TO BE CLASS B SPLICES BUT NOT LESS THAN LAPS AS NOTED IN DRAWINGS.
5. PLACE NON-METALLIC REBAR CHAIR FOR SLAB REINFORCING NOT FURTHER THAN 1000mm IN EITHER DIRECTION.
6. DOWELS AND ANCHOR BOLTS SHALL BE SECURED IN POSITION BY MEANS OF TEMPLATES BEFORE CONCRETE IS CAST.
7. 90 DEGREE HOOKS AND 180 DEGREE HOOKS WHERE SHOWN SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
8. MINIMUM REINFORCING AROUND OPENINGS LARGER THAN 300mm (IF NOT DETAILED): 1-15M EACH SIDE AND EACH FACE OF OPENING AND 1-15M DIAGONAL AT EACH CORNER, EXTENDED 600mm PAST CORNERS BUT NOT LESS THAN AS NOTED ON DRAWINGS.
9. UNLESS SPECIFIED OTHERWISE HEREIN, TOLERANCES FOR REINFORCING STEEL SHALL BE TO THE "REINFORCING STEEL INSTITUTE OF CANADA" STANDARDS

EXCAVATION, BACKFILLING AND COMPACTION NOTES

- 1. EXCAVATE TO LINES AND LEVELS INDICATED IN THE CONSTRUCTION SEQUENCE AND DRAWINGS NECESSARY TO PROPERLY COMPLETE THE WORK. MINIMUM SIDE SLOPES OF TEMPORARY EXCAVATIONS SHALL NOT EXCEED 2.5 HORIZONTAL TO 1 VERTICAL.
2. THE CONTRACTOR SHALL PROVIDE SHORING DURING EXCAVATION AS REQUIRED OR STATED ON DRAWINGS.
3. EXCAVATION BETWEEN PILES SHALL BE DONE WITH SUITABLE EQUIPMENT AND CARE SO AS NOT TO DAMAGE PILES.
4. DO NOT PLACE BACKFILL ON FROZEN GROUND, NOR USE FROZEN MATERIAL. SUPPLY & INSTALL TEMPORARY BACKFILL AS NOTED ON DRAWINGS.
5. DEWATERING
A.) THE CONTRATOR SHALL BE RESPONSIBLE FOR THE CONTROL OF SURFACE DRAINAGE GOING INTO THE EXCAVATION.
B.) DEWATERING SYSTEMS SHALL BE DESIGNED TO EXPEDITIOUSLY REMOVE WATER FROM THE SURGE TOWER EXCAVATION UNTILL WALL BACKFILING IS COMPLETED.
C.) THE DEWATERING SYSTEMS MUST PROTECT THE SUBGRADE SOILS FROM EXCESSIVE SOFTENING AND SATURATION.
D.) THE CONTRACTOR SHALL SUBMIT THE PROPOSED DEWATERING PLAN TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND ACCEPTANCE.

CONCRETE NOTES

- 1. 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.
2. FORMWORK AND FALSEWORK DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
3. TEST CONCRETE IN ACCORDANCE WITH CSA-A23.2-00 TEST RESULTS WILL BE ISSUED TO CONTRACTOR, CONTRACT ADMINISTRATOR AND CITY.
4. SPECIFIED SLUMPS ARE PRIOR TO THE ADDITION OF ANY ACCEPTED PLASTICIZING ADMIXTURE.
5. PROVIDE 20mm CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
6. VERIFY SIZE AND LOCATION OF ALL OPENINGS, CURBS AND EQUIPMENT PADS WITH PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS AND PROCESS, MECHANICAL AND ELECTRICAL CONTRACTORS.
7. CONSTRUCTION JOINTS: SURFACE PREPARATION SHALL BE BY SAND BLASTING TO EXPOSE FINE AGGREGATE.
8. PRIOR TO PLACING CONCRETE ON HORIZONTAL CONSTRUCTION, THE SURFACE SHALL BE THOROUGHLY WETTED WITH WATER AND PRE-BAGGED GROUT SLURRY COAT SHALL BE PLACED IMMIDIATLY PRIOR TO PLACING OF CONCRETE.
9. GROUT: NON-SHRINK, NON-METALLIC GROUT WITH MINIMUM STRENGTH AT THREE DAYS OF 20 MPa AND MINIMUM STRENGTH AT 28 DAYS OF 50 MPa.

Table with columns: TYPE LOCATION, 28-DAY STRENGTH, CEMENT TYPE, AGGREG. MAX. (mm), SLUMP (mm), TOTAL AIR %, MAX. W/C RATIO, EXPOSURE CLASS. Includes rows for BASE SLAB, WATER RETAINING SILICA FUME CONCRETE, SOIL-THRUST BLK, NONWATER RETAINING WALLS, OTHER STRUCTURAL CONCRETE, LEAN MIX FILL.

- 13. PROVIDE CLEAR CONCRETE COVER OVER REBAR AS NOTED ON DRAWINGS AND FOLLOWS: A) BASE SLAB TOP & BOTTOM SIDES - 75 mm / 100 mm, B) SURGE TOWER WALLS INSIDE FACE - 70 mm, OUTSIDE FACE - 50 mm, C) ALL OTHER SECTIONS - 65 mm.
14. CONCRETE CONSTRUCTION TOLERANCES: 1.) CROSS SECTIONAL DIMENSIONS 300mm OR LESS +/- 6 mm, 300mm TO 1000mm +/- 10 mm, 1000mm OR GREATER +/- 20 mm. 2.) PLUMBNESS OF WALLS SHALL BE 1:500, BUT TOTAL SUM OF THE DEVIATION (+/-) FROM A PLUMB LINE SHALL NOT EXCEED 14mm FOR THE HEIGHT OF THE STRUCTURE. 3.) VARIATION FROM HORIZONTAL AND VERTICAL REFERENCE SYSTEM AND GENERAL DIMENSIONS: A) HORIZONTAL PILING +/- 100 mm, FOOTINGS +/- 20 mm, COLUMNS AND WALLS +/- 6 mm. B) VERTICAL PILE CUT OFF +/- 25 mm, FOOTINGS +/- 12 mm, COLUMNS AND WALLS +/- 8 mm, WALL AND BEAM +/- 4 mm. C) FLATNESS GENERAL SURFACES - MODERATELY FLAT (8mm GAP ALONG 3000mm STRAIGHT EDGE)

- CONCRETE CURING, PROTECTION, AND FINISHING UNLESS SPECIFIED HEREIN: .1) CURING - TO CSA-A23.1-00 CLAUSE 21 AS FOLLOWS: A) VERTICAL SURFACES - SPECIFIED CURING SEALER, B) HORIZONTAL SURFACES - MAY BE SPECIFIED CURING SEALER OR WET BURLAP. .2) WALL SURFACES THAT WILL RETAIN WATER SHALL USE FORM LINER AS PER SPECIFICATION SECTION 03100. .3) SURFACE FINISHES TO CSA-A23.1-00 CLAUSE 22 AND SPECIFIED HEREIN: BASE SLAB STEEL TROWEL FINISH, SURFACES EXPOSED TO VIEW SMOOTH-FORM FINISH, SURFACES NOT EXPOSED TO VIEW ROUGH-FORM FINISH.
15. ANY DISCREPANCIES BETWEEN CSA STANDARDS AND CONSTRUCTION DOCUMENTS, THE MOST STRINGENT SHALL APPLY, AND AS DIRECTED BY THE CONTRACT ADMINISTRATOR.

MISCELLANEOUS METALS - ALUMINUM

- 1. ALUMINUM: CONFORMING TO ALUMINUM ASSOCIATION ALLOY AND TEMPER DESIGNATION 6061-T6 OR 6351-T6.
2. PERFORM WELDING OF ALUMINUM IN ACCORDANCE WITH REQUIREMENTS OF CSA W59.2; COMPANY CERTIFICATION TO CSA W47.2.
3. BOLTS AND ANCHOR BOLTS: CONFORMING TO STAINLESS STEEL C/W ISOLATION WASHERS.
4. BITUMINOUS PAINT: TO CAN/CGSB-1.108.
5. ISOLATE ALUM FROM FOLLOWING COMPONENTS, BY MEANS OF BITUMINOUS PAINT: 2 COATS .1 DISSIMILAR METALS EXCEPT STAINLESS STEEL, ZINC, OR WHITE BRONZE OF SMALL AREA. .2 CONCRETE, MORTAR AND MASONRY.

MISCELLANEOUS METALS - STEEL

- 1. STEEL PLATES AND SECTIONS: CONFORMING TO CSA G40.21-94; TYPE W WITH A MINIMUM YIELD STRENGTH OF 300 MPa.
2. HOLLOW STRUCTURAL SECTIONS: CONFORMING TO CSA G40.21-94; TYPE W WITH A MINIMUM YIELD STRENGTH OF 350 MPa.
3. ANCHOR BOLTS: CONFORMING TO ASTM A307.
4. WELDING MATERIALS: CONFORMING TO CSA W59-03.
5. PRIMER: TO CISC/CPMA 2-75.
6. WELDING OF ALL LOAD CARRYING ASSEMBLIES IS TO BE PERFORMED BY A FIRM CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1-03 IN DIVISION 1 OR DIVISION 2.1.
7. GROUT: NON-SHRINK, NON-METALLIC, 50 MPa AT 28 DAYS.
8. VERIFY ALL DIMENSIONS ON SITE PRIOR TO FABRICATION.
9. FABRICATE ITEMS OF SIZES AND PROFILES DETAILED ON DRAWINGS, WITH JOINTS NEATLY FITTED AND PROPERLY SECURED.
10. 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.
11. WELD CONNECTIONS WHERE POSSIBLE, OTHERWISE BOLT CONNECTIONS. COUNTERSINK ALL EXPOSED FASTENINGS. CUT OFF BOLTS FLUSH WITH NUTS.
12. ACCURATELY FORM ALL CONNECTIONS AND JOINTS WITH EXPOSED FACES FLUSH, MITRES AND JOINTS TIGHT.
13. GRIND OR FILE EXPOSED ROUGH WELDS AND METALS SECTIONS SMOOTH AND FLUSH.
14. GALVANIZING CONFORMING TO CSA G164-M92.
15. CLEAN ALL STEEL PRIOR TO PRIMING TO SSPC SURFACE PREPARATION SPECIFICATION No. 7 "BRUSH-OFF BLAST CLEANING".
16. PRIME STEEL SURFACES WITH ONE COAT OF PRIMER TO CISC/CPMA 2-75. FINISH COAT(S) TO OWNER REQUIREMENTS.

STANDARD ABBREVIATIONS:

Table mapping abbreviations to full names for materials and construction terms, including ADDL, INSULATION, INTERIOR, ALUMINUM, APPROXIMATELY, ARCHITECTURAL, AVERAGE, BALANCE, BOTTOM, BOTTOM LOWER LAYER, etc.

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