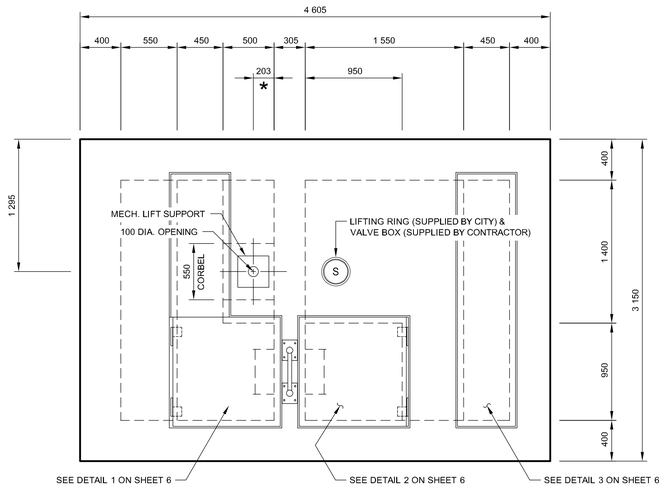
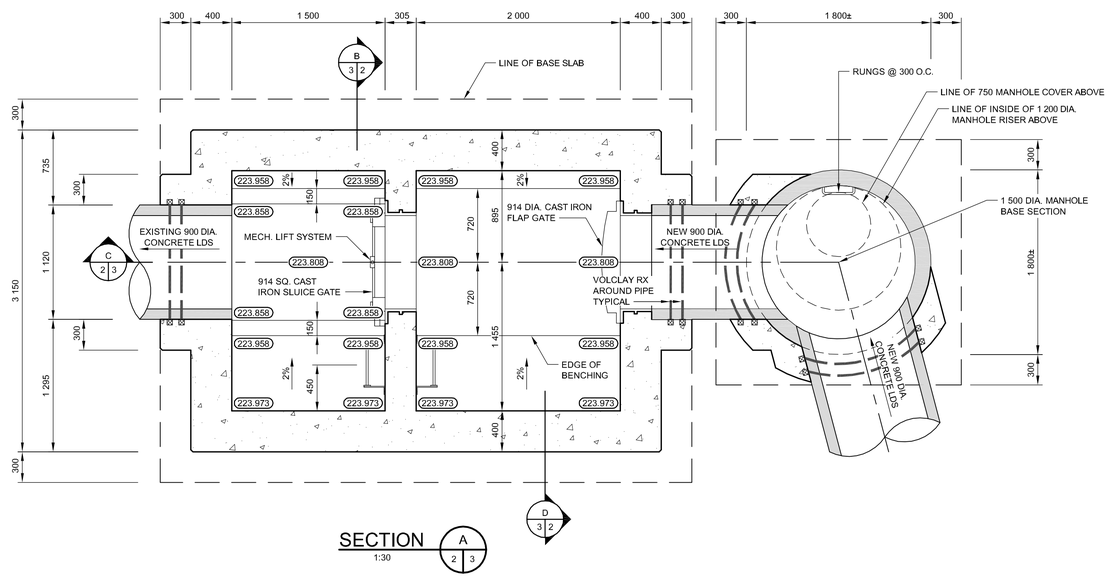



## PLAN
1:30

* DIMENSION MAY VARY BASED ON SLUICE GATE SUPPLIER




## SECTION
1:30
A
2 3

SCALE LEGEND:

1:30 0.0 0.5 1.0 1.5 2.0m

A = DETAIL/SECTION No.
B = DRAWING WHERE SHOWN
C = DRAWING WHERE TAKEN

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NOTE:
These design documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

GENERAL NOTES:

1. DESIGN IS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA, 2005 EDITION PLUS 1998 MANITOBA AMENDMENTS. CONCRETE WALLS ARE DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN ACI 350R FOR WATERTIGHT STRUCTURES.
2. EXCAVATE ALL TOP SOIL, ORGANIC MATERIAL AND LOOSE OR UNSUITABLE FILL TO THE APPROVAL OF THE CONTRACT ADMINISTRATOR.
3. WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS. CONSTRUCTION JOINT LOCATIONS ARE TO BE APPROVED BY THE CONTRACT ADMINISTRATOR.
4. DO NOT SCALE THE DRAWINGS.
5. VERIFY ALL DIMENSIONS, ELEVATIONS AND SCOPE OF WORK PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. VERIFY ALL MECHANICAL OPENINGS.
7. VERIFY ANY MAJOR OPENINGS THAT ARE REQUIRED BUT NOT SHOWN ON THE DRAWINGS WITH THE CONTRACT ADMINISTRATOR.
8. STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE. THEY DO NOT SHOW THE COMPONENTS WHICH MAY BE NECESSARY FOR SAFETY DURING CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION.
10. IF ANY UNSOUND STRUCTURAL CONDITIONS ARE OBSERVED OR CREATED DURING CONSTRUCTION, REPORT THEM IMMEDIATELY TO THE CONTRACT ADMINISTRATOR.
11. STRUCTURAL DRAWINGS MAY NOT SHOW ALL MECHANICAL OPENINGS. REFER TO MECHANICAL DRAWINGS FOR ACTUAL LOCATIONS AND ELEVATIONS OF OPENINGS. NOTIFY THE CONTRACT ADMINISTRATOR OF ANY ADDITIONAL OPENING REQUIREMENTS.
12. DESIGN LOADS ARE AS NOTED BELOW:

| | |
|---|---|
| FLOOR LIVE LOADS: | |
| HATCHES | 3.6 kPa |
| ALL OTHER AREAS | 3.6 kPa |
| ROOF LOADS: | |
| SNOW LOAD | 1.6 kPa PLUS APPLICABLE NBC MODIFICATIONS |
| WIND LOAD: | |
| $q_{(\frac{1}{50})}$ | 0.42 kPa |
| FOUNDATION WALL LOADS: | |
| LIVE LOAD | 6.0 kPa ADDITIONAL CONSTRUCTION LOAD |
| LATERAL FORCE | P = K (γ x H + q)<br>WHERE K = 0.7, γ = 20 kN/m$^3$, H = HT. OF FILL (m), q = 6.0 kPa |

13. DESIGN FLOOD LEVELS:
    700 YEAR FLOOD 230.450

FOUNDATIONS:

1. FOUNDATIONS DESIGNED IN ACCORDANCE WITH RECOMMENDATIONS CONTAINED IN THE SEPTEMBER 11, 2009, GEOTECHNICAL INVESTIGATION BY DYREGROV CONSULTANTS.

CAST IN PLACE CONCRETE:

1. TO BE READ IN CONJUNCTION WITH CW 2160 AND AS AMENDED IN ACCORDANCE WITH THESE NOTES.
2. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CSA A23.1.
3. CONCRETE MIX SHALL BE IN ACCORDANCE WITH ALTERNATIVE 1, AND SHALL HAVE THE FOLLOWING PROPERTIES:
   a. CLASS OF EXPOSURE: S-1
   b. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 35MPa
   c. MAXIMUM SLUMP: 80mm ± 20mm
   d. AIR CONTENT: 5 - 8%
   e. MAXIMUM WATER/CEMENT RATIO: 0.40
4. CONCRETE COVER SHALL BE 50mm.
5. CHAMFER ALL EXTERIOR CORNERS 20mm.
6. FORMWORK, SHORING AND BRACING SHALL MEET DESIGN CODE AND CSA A23.1 REQUIREMENTS, AND BE CONSTRUCTED ACCURATELY SO THAT RESULTANT FINISHED CONCRETE CONFORMS TO THE SHAPES, LINES AND DIMENSIONS INDICATED ON THE DRAWINGS.
7. FOR COLD WEATHER CONCRETING, ALL ICE, SNOW AND FROST SHALL BE REMOVED FROM THE FORMWORK AND THE TEMPERATURE OF ALL CONTACT SURFACES INCLUDING REINFORCING STEEL SHALL BE RAISED ABOVE 10°C FOR AT LEAST 24 HOURS PRIOR TO CASTING CONCRETE. CONCRETE SHALL NOT BE LESS THAN 20°C NOR MORE THAN 30°C WHEN DEPOSITED. CONCRETE SHALL BE ENCLOSED, AND THIS AREA SHALL HAVE A TEMPERATURE OF NOT LESS THAT 20°C FOR 3 DAYS AND NOT LESS THAN 5°C FOR AN ADDITIONAL 4 DAYS.
8. THREE CONCRETE TEST CYLINDERS AND ONE SLUMP/AIR TEST SHALL BE TAKEN EACH DAY THAT CONCRETE IS PLACED, AND SHALL BE REPEATED FOR EVERY 20 m $^3$ OF CONCRETE PLACED EACH DAY UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
9. NOTIFY THE CONTRACT ADMINISTRATOR OR TESTING AGENCY 48 HOURS PRIOR TO PLACING CONCRETE.

REINFORCING STEEL:

1. TO BE READ IN CONJUNCTION WITH CW 2160 AND AS AMENDED IN ACCORDANCE WITH THESE NOTES.
2. ALL REINFORCING STEEL SHALL CONFORM TO CSA G30.18M, GRADE 400W.
3. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH CSA A23.1.
4. LAPS SHALL BE AT LEAST 40 BAR DIAMETERS, LOCATE REINFORCING SPLICES NOT INDICATED IN THE DRAWINGS AT POINTS OF MINIMUM STRESS.
5. BEFORE PLACING CONCRETE, ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT OR OTHER FOREIGN MATTER THAT WOULD REDUCE OR PREVENT BOND TO THE CONCRETE.
6. SHOP DRAWINGS SHALL BE SUBMITTED WHICH CLEARLY INDICATE BAR SIZES, SPACINGS, LOCATIONS AND QUANTITIES OF REINFORCING STEEL. COPIES OF STRUCTURAL DRAWINGS WILL NOT BE ACCEPTED FOR USE AS SHOP DRAWINGS.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHAPES AND PLATES SHALL BE IN ACCORDANCE WITH CSA G40.21-M, GRADE 300W, EXCEPT W, HP AND HSS SECTIONS WHICH SHALL BE GRADE 350W CLASS C.
2. ALL GALVANIZING SHALL COMPLY WITH THE LATEST EDITION OF CSA G164, WITH MINIMUM ZINC COATING OF 600g/m$^2$. TOUCH UPS TO BE MADE WITH GALVALLOY OR GAL-VIZ.
3. ALL BOLTS TO BE ASTM A316 STAINLESS STEEL, UNLESS OTHERWISE INDICATED.

OTHER NOTES:

1. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH BITUMINOUS ISOLATION COATING AT THE ALUMINUM / CONCRETE INTERFACE.

APEGM
Certificate of Authorization
MMM Group Limited
No. 4531 Date: 09.09.18

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 0 | ISSUED FOR TENDER | 09.09.18 | GK |

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| | | | |
|---|---|---|---|
| DESIGNED BY | GK | CHECKED BY | GK |
| DRAWN BY | CDP | APPROVED BY | JPL |
| HOR. SCALE | AS NOTED | RELEASED FOR CONSTRUCTION | ORIGINAL SIGNED BY K. ZUREK, P. ENG. |
| VERT. SCALE | AS NOTED | | |
| DATE | 09.09.18 | DATE | 09.09.18 |

ENGINEER'S SEAL
PROVINCE OF MANITOBA
G. M. KING
Member
24806
REGISTERED PROFESSIONAL ENGINEER

BID OPPORTUNITY: 632-2009
PLOT DATE: 09.20.18

Winnipeg
THE CITY OF WINNIPEG
WASTE AND WATER DEPARTMENT

OUTFALL GATE CHAMBER CONSTRUCTION
LOMBARD AVE. & WATERFRONT DR.
LDS OUTFALL GATE CHAMBER
CONCRETE DETAILS (SHEET 1 OF 2)

CONSULTANT DRAWING No.: 5509090-S2
SHEET 2 OF 6
CITY DRAWING No.: LD-5439

Last saved September 18, 2009 - 3:59 PM by PATERSONC
P:\5509001-5509090\5509090-000 Lombard Avenue & Waterfront Drive Outfall Gate Chamber Construction & Upgrade\MMM Drawings\5509090 lombard gate chamber S2 to S5 chamber details 090918.dwg