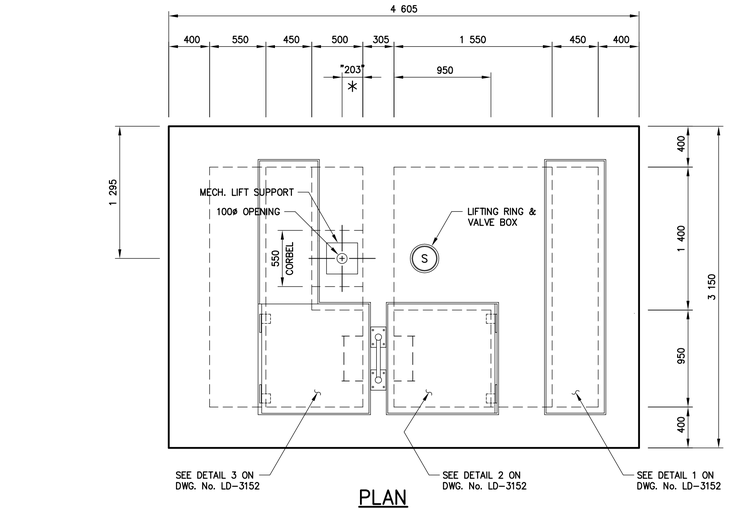
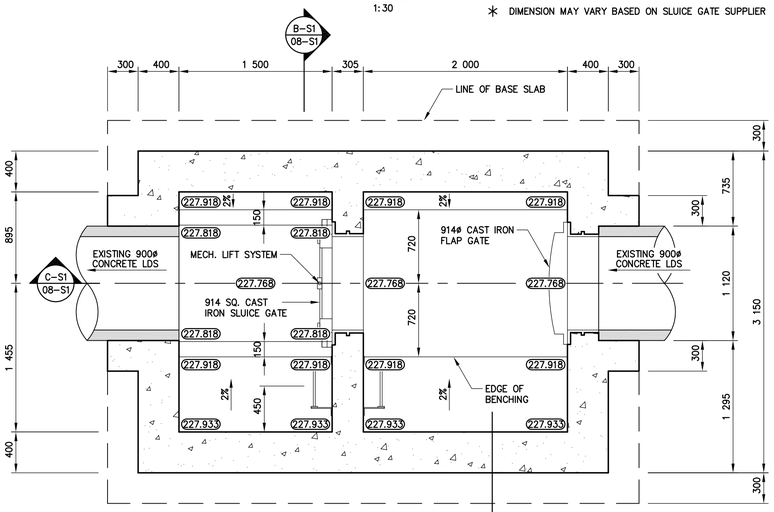
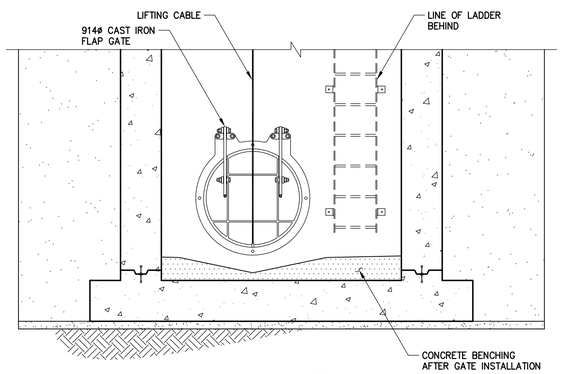


PLAN
1:30

* DIMENSION MAY VARY BASED ON SLUICE GATE SUPPLIER

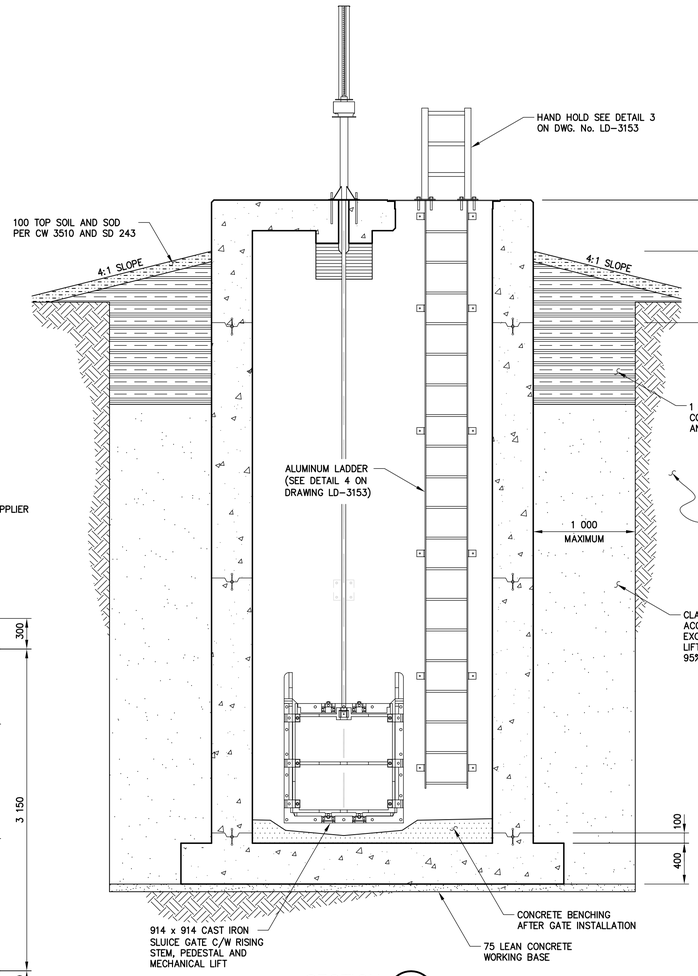


SECTION A-S1 / 08-S1
1:30

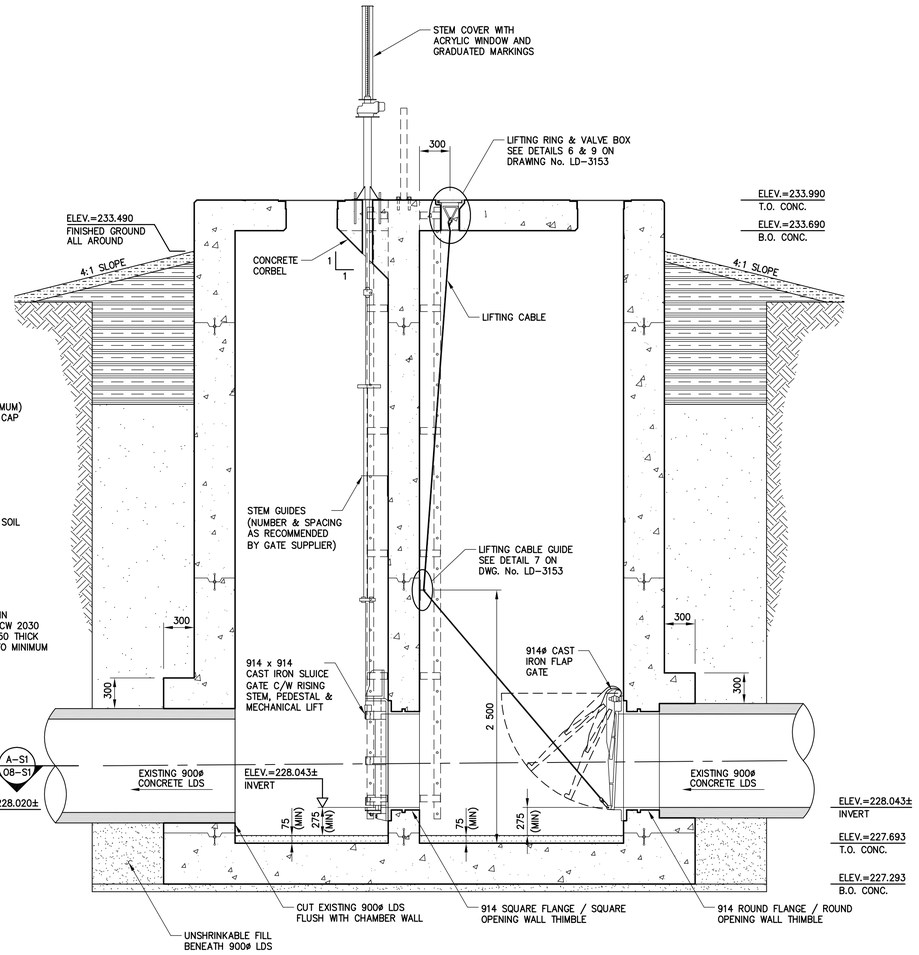


SECTION D-S1 / 08-S1
1:30

1:30 0.0 0.5 1.0 2.0 3.0 4.0



SECTION B-S1 / 08-S1
1:30



SECTION C-S1 / 08-S1
1:30

NOTE: CONTRACTOR SHALL CONFIRM ACTUAL PIPE INVERT AND NOTIFY CONTRACT ADMINISTRATOR OF ANY DISCREPANCY WITH THE INVERTS SHOWN. CONTRACTOR TO CONTACT CITY OF WINNIPEG, WATER AND WASTE DEPARTMENT, FOR CURRENT GROUNDWATER ELEVATION.

GENERAL NOTES:

1. DESIGN IS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995 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	$P = K(\gamma x H + q)$ WHERE $K = 0.7$, $\gamma = 20$ kN/m^3, H = HT. OF FILL (m), q = 6.0 kPa

13. DESIGN FLOOD LEVELS:

300 YEAR FLOOD:	233.990
FLOOD PROTECTION:	232.770

FOUNDATIONS:

1. FOUNDATIONS DESIGNED IN ACCORDANCE WITH RECOMENDATIONS CONTAINED IN THE JULY 20, 2005, GEOTECHNICAL INVESTIGATION BY KGS GROUP.

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. CEMENT TYPE 50
   b. CLASS OF EXPOSURE: S-1
   c. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 35MPa
   d. MAXIMUM COARSE AGGREGATE: 20mm
   e. MAXIMUM SLUMP: 80mm ± 20mm
   f. AIR CONTENT: 5 – 8%
   g. MINIMUM CEMENT CONTENT: 335 kg/m^3
   h. MAXIMUM CEMENT/WATER 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 400.
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. LOCATION AND SEWER DETAILS ARE SHOWN ON DWG. No. LD-3138.
2. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH BITUMINOUS ISOLATION COATING AT THE ALUMINUM / CONCRETE INTERFACE.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

APEGM
Certificate of Authorization
ND LEA Engineers & Planners Inc.
No. 2728 Expiry: April 30, 2006

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.

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

NO.	REVISIONS	DATE	BY
1	–	–	

ND LEA Engineers & Planners Inc.
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1
Phone (204) 943-3178 Facsimile (204) 943-4948

DESIGNED BY	MH	CHECKED BY	JPL
DRAWN BY	CDP	APPROVED BY	–
HOR. SCALE / VERTICAL	AS SHOWN	RELEASED FOR CONSTRUCTION	
DATE	05 06 02	DATE	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M. A. HATCH
050633
REGISTERED PROFESSIONAL ENGINEER

BID OPPORTUNITY 490-2005
PLOT DATE: 05 08 11

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

2005 OUTFALL GATE CHAMBER UPGRADES
RUE LE MAIRE
LDS OUTFALL GATE CHAMBER
CONCRETE DETAILS

CONSULTANT DRAWING NUMBER 41479-08-S1
SHEET 2 OF 16
CITY DRAWING NUMBER LD-3139

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Aug 11, 2005 - 4:57pm
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