



785-G220	RELOCATION OF ROUTE 20 - PUMPING STATION MECHANICAL LAYOUT
785-G218	RELOCATION OF ROUTE 20 - WET WELL LAYOUT - REINFORCED CONCRETE
785-G217	RELOCATION OF ROUTE 20 - CONTROL ROOM LAYOUT P-957
DRAWING NUMBER	REFERENCE DRAWINGS

ALL STRUCTURAL 304 S.S. SHAPES AND PLATES CONFORM TO AISA 430 AND ASTM A276.

0.25 0 0.25 0.5m
1 : 10

APEGM
Certificate of Authorization
SNC-Lavalin Inc.
No. 4489

SNC-Lavalin Inc. 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080	
DESIGNED BY: K. KOTYK	CHECKED BY: D. SIDHU
DRAWN BY: B. DICKSON	APPROVED BY: B. CLEVEN
SCALE: 1 : 10	ISSUED FOR CONSTRUCTION BY: DATE:
DATE: 2018/04/03	DATE:
ISSUED FOR TENDER, BID OPP. 475-2018	2018-05-09
NO. REVISIONS	DATE DESIGN CHECK

NOTES:

- SEE DRAWING 1-0310U-S0001 FOR GENERAL NOTES.

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL ANGLES AND PLATES TO BE IN ACCORDANCE WITH CSA G40.21 GRADE 300W, ALL OTHERS MEMBERS TO BE GRADE 350W UNLESS OTHERWISE NOTED.
- DETAILING, FABRICATION AND ERECTION TO BE IN ACCORDANCE WITH CSA-S16.
- ALL WELDING TO CONFORM TO CSA W47.1 & W59.
- INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- WELDING SHOPS TO BE CERTIFIED TO DIVISION 1 OR 2 OF CSA W47.1 BY THE CANADIAN WELDING BUREAU. ALL WELDING TO BE PERFORMED BY CWB CERTIFIED WELDERS.

SHOP WELDED CONNECTIONS:

- ALL SHOP WELDING SHALL CONFORM TO CSA W59. CONTRACTOR TO BE CERTIFIED IN ACCORDANCE WITH CSA W47.1, DIVISION 1 OR 2. ALL WELDERS TO BE CWB CERTIFIED FOR THE REQUIRED WELDS.
- ALL WELDS TO BE CONTINUOUS FILLET OR GROOVE SEAL WELDS. GROOVE WELDS TO BE DETAILED AS FULL PENETRATION WELDS WITH BACKER PLATE.

FINISHES:

- ALL LADDER COMPONENTS, SUPPORT CHANNELS AND ANGLES ARE TO BE HOT DIPPED GALVANIZED FINISHES TO MATCH EXISTING (EXCEPT ITEMS NOTED.)
- ALL GUARDRAILS AND RETURNS ARE TO BE SSPC-SP6 BLAST CLEANED THEN COATED WITH 'FORMULA 2' PER SPECIFICATION 099123. COLOUR: SAFETY YELLOW.
- MAIN FLOOR WALLS ARE TO BE PAINTED AND CEILING TO BE CLEANED AND REPAINTED WITH 'FORMULA 1' PER SPECIFICATION 099123. COLOUR: GREY TO MATCH ELECTRICAL CABINETS.
- TOUCH UP ALL FIELD WELDS AND DAMAGED AREAS WITH ZINC RICH PRIMER OR PRIMER AND TOPCOAT FOR HDG OR PAINTED SURFACES, RESPECTIVELY.

DESIGN OF BOLTED CONNECTIONS:

- DESIGN ALL BOLTED CONNECTIONS IN ACCORDANCE WITH CSA-S16 AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
- ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE STEEL FABRICATOR. CONNECTION CONFIGURATIONS SHALL (IN GENERAL) CONFORM WITH THE DETAILS PROVIDED. THE STEEL FABRICATOR SHALL ADVISE THE ENGINEER IN WRITING WHEN DEVIATION FROM THE APPROVED CONNECTION CONFIGURATION DETAILS IS REQUIRED.
- OVERSIZED HEAVY DUTY 60mm DIA. x 5mm THICK HARDENED PLATE WASHERS REQUIRED AT ALL SLOTTED/BOLTED CONNECTION LOCATIONS.

FIELD ANCHORING:

- LOCATE EXISTING REINFORCING IN THE CONCRETE ELEMENTS TO RECEIVE POST-FACTO ANCHORAGE AND POSITION HOLES FOR THE NEW ANCHORS CLEAR OF THE EXISTING REINFORCING.
- DRILL HOLES INTO THE EXISTING CONCRETE ADVANCING THE DRILL BIT TO FULL DEPTH OF REQUIRED ANCHORAGE. IF REINFORCEMENT IS ENCOUNTERED, TERMINATE DRILLING THE HOLE AND RELOCATE THE ANCHORAGE CLEAR OF THE REINFORCING. USE A STANDARD HARDENED CARBIDE TIPPED CONCRETE BIT, DO NOT USE A CORE DRILL THAT CAN INTERCEPT AND CUT THE EXISTING REINFORCING - EXCEPT WHERE NOTED.
- ADVISE THE CONTRACT ADMINISTRATOR IMMEDIATELY IF THE REQUIRED ANCHORAGE HOLE LOCATIONS CANNOT BE FIELD ADJUSTED TO CLEAR THE EXISTING REINFORCING AND AWAIT FURTHER INSTRUCTIONS. THE SITE ENGINEER WILL REVIEW THE SITUATION AND MAKE A DETERMINATION REGARDING HOW BEST TO INSTALL THE ANCHORS, GIVEN THE ACTUAL POSITIONS OF THE REINFORCING ENCOUNTERED.
- ALL ANCHORS MUST BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

LOADING: PER MBC/NBOC

GUARDS: 51 PLF HORIZONTAL TOP RAIL OR
225 LB ANY DIRECTION ALL RAIL VERTICAL

LADDER: 200 LB EACH RUNG VERTICAL
1000 LB MAIN RAIL VERTICAL

DESIGN LOAD BASED UPON DAVIT ARM FALL ARREST LOAD OF 5000lbs VERTICAL LOAD AT ON 18" OFFSET FROM CENTRELINE OF DAVIT MAST.
I.E. A 9000in-lbs (10000N.m) MOMENT AND A 5000lbs (2268kg) VERTICAL LOAD AT ULTIMATE STRENGTH.

CAST-IN-PLACE CONCRETE:

- ALL CONCRETE TO BE MIXED, PLACED, AND TESTED ACCORDING TO CSA A23.1 AND CSA A23.2.
- CONCRETE: COMPRESSIVE STRENGTH = 35 MPA AT 28 DAYS, SLUMP = 80 +/- 20 MM, MAXIMUM AGGREGATE SIZE = 20 MM, ENTRAINED AIR = 4-7%, CEMENT = HS OR HSB SULPHATE RESISTANT.
- ADVISE THE CONTRACT ADMINISTRATOR AT LEAST 48 HOURS IN ADVANCE OF CONCRETE POUR.
- FORMS SHALL NOT BE STRIPPED UNTIL 75% OF THE SPECIFIED CONCRETE STRENGTH HAS BEEN REACHED.

ACCESSORIES EMBEDDED IN CONCRETE:

- THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING, LOCATING AND PLACING ALL PLATES, ANCHOR BOLTS, INSERTS, DOWELS, SLEEVES AND OPENINGS. COORDINATE ACCESSORY PLACEMENT REQUIREMENTS WITH THE SHOP DRAWINGS.
- ANCHOR BOLTS, INSERTS, SLEEVES DOWELS, ETC. SHALL BE SECURED IN POSITION BY MEANS OF TEMPLATES BEFORE CONCRETE IS PLACED.

ENGINEER'S SEAL

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PRELIMINARY
NOT TO BE
USED FOR
CONSTRUCTION

METRO ROUTE 20 UNDERPASS PUMPING STATION
2018 UPGRADES
PLANS, DETAILS AND STRUCTURAL NOTES
HATCH COVER

CITY DRAWING NUMBER
1-0309U-S0002

SHEET 001 REV. 00 SIZE A1

1-0309U-S0002.dwg