NOTES:

1.0 GENERAL

1. ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995 AND THE NATIONAL FIRE CODE
2. ALL DIMENSIONS ARE MILLIMETRES (MM) UNLESS NOTED OTHERWISE. VERIFY ALL ELEVATIONS AND DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES.
3. DO NOT SCALE THE DRAWINGS.
4. LOCATE AND PROVIDE PROTECTION FOR ALL MECHANICAL AND ELECTRICAL SERVICES BEFORE COMMENCING CONSTRUCTION. COORDINATE THE WORK WITH THE REQUIREMENTS OF OTHER DISCIPLINES. VERIFY THE LOCATIONS OF ALL MECHANICAL AND ELECTRICAL EQUIPMENT AND OPENINGS. REPORT ANY CONFLICTS TO THE CONTRACT ADMINISTRATOR. DO NOT SEPARATE DRAWING SETS.

2.0 LOADING

ALL LOADS AND FORCES SHOWN ARE SERVICE (UNFACTORED) LOADS IN KILOPASCALS (kPa) AND KILO NEWTONS (kN) UNLESS NOTED OTHERWISE.

2.1 DEAD LOADS

SELF WEIGHT, MATERIALS OF CONSTRUCTION, MECHANICAL, ELECTRICAL, PERMANENT EQUIPMENT, PARTITIONS.

A) MECHANICAL ROOM ROOF

SERVICE DL =	0.5 kPa
SERVICE LL =	2.4 kPa

B) MECHANICAL ROOM FLOOR

FLOOR FINISH	0.10
101mm CONC SLAB ON 38mm HB STEEL DECK	2.11
MECHANICAL & ELECTRICAL CEILINGS	0.25 0.10
SERVICE DL =	2.56 kPa (PLUS WT OF HOUSEKEEPING PAD)
SERVICE LL =	3.6 kPa (OR WT OF MECH. UNITS)

C) CATWALK–CHECKERED PLATE

SERVICE DL =	0.5 kPa
SERVICE LL =	3.6 kPa

3.0 SHOP DRAWINGS

1. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. REQUIRED SUBMISSIONS FOR THIS PROJECT INCLUDE:
   – CAST–IN–PLACE CONCRETE, REINFORCING STEEL AND EMBEDMENTS
   – PLACING SEQUENCE, FINISHING, JOINTS, HARDENERS AND SEALANTS
   – STRUCTURAL STEEL, STEEL DECK AND STEEL PAN STAIRS
2. SHOP DRAWINGS TO BE SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA.
3. SKETCHES AND DESIGN CALCULATIONS SHALL BE SUBMITTED AS REQUIRED.

4.0 DETAILS AND CONNECTIONS

1. DESIGN DETAILS AND CONNECTIONS IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA – S16.1 TO RESIST FORCES, MOMENTS, SHEARS AND ALLOW FOR MOVEMENTS INDICATED ON DRAWINGS
2. IF CONNECTION FOR SHEAR ONLY (STANDARD CONNECTION) IS REQUIRED:
   .1 SELECT FRAMED BEAM SHEAR CONNECTIONS FROM AN INDUSTRY ACCEPTED PUBLICATION SUCH AS "HANDBOOK OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION".
   .2 IF SHEARS ARE NOT INDICATED, SELECT OR DESIGN CONNECTIONS TO SUPPORT REACTION FROM MAXIMUM UNIFORMLY DISTRIBUTED LOAD THAT CAN BE SAFELY SUPPORTED BY BEAM IN BENDING. PROVIDED NO POINT LOADS ACT ON BEAM.
   .3 FOR NON–STANDARD CONNECTIONS, SUBMIT SKETCHES AND DESIGN CALCULATIONS STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN PROVINCE OF MANITOBA, CANADA

5.0 CAST–IN–PLACE CONCRETE

1. CONCRETE WORK TO BE PERFORMED IN ACCORDANCE WITH CAN3–A23.1–94 AND A23.2–94 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" INCLUDING COLD WEATHER REQUIREMENTS WHEN THE MEAN TEMPERATURE FALLS BELOW +5 DEGREES CELSIUS.
2. CONCRETE ADMIXTURES TO CONFORM TO CAN3–A266.1–M78, CAN3–A266.2–M78, A266.5 AND A266.6.
3. CONCRETE MIX SHALL BE PROPORTIONED TO PROVIDE THE FOLLOWING PROPERTIES:

NO.	LOCATION	f'c (MPa) 28 DAYS	CEMENT TYPE	MAX AGGR (mm)	SLUMP (mm)	% AIR	EXPOSURE CLASS
1	SLABS ON STEEL DECK, HOUSE KEEPING PADS	25	10	20	75 ±20	3	C–4

4. MAXIMUM WATER CEMENT RATIO = 0.45
5. AIR DRY DENSITY FOR ALL CONCRETE = 2355 kg/m3 UNLESS NOTED OTHERWISE.
6. USE OF CALCIUM CHLORIDE AND FLY ASH IS NOT PERMITTED.
7. PROVIDE TROWEL SMOOTH FINISH TO TOP OF ALL CONCRETE SLABS (U.N.O.) SLAB TOLERANCE: 6 mm MEASURED IN ANY DIRECTION WITH A 3000 mm STRAIGHT EDGE.
8. PROVIDE TROWELLED OR FORMED SMOOTH FINISH TO ALL EXPOSED VERTICAL FACES OF FORMED CONCRETE.
9. PLACE AND FINISH CONCRETE SLABS AND CURE SLABS BY KEEPING CONTINUOUSLY WET BY PONDING, SPRINKLING AND AN ABSORPTIVE MAT OR FABRIC FOR A MINIMUM 7 DAYS.
10. FLOOR HARDENER: SIKA DURAG PREMIUM HIGH STRENGTH NON–METALLIC FLOOR HARDENER (OR APPROVED EQUAL) APPLIED AT 6 kg/m2.
11. SLAB SEALER: AISLES – SIKAFLOOR POLYTHANE UV, OTHER AREAS – SIKA FLORSEAL (OR APPROVED EQUAL).

6.0 MASONRY

1. PERFORM MASONRY WORK TO CAN3.A371–94, "MASONRY CONSTRUCTION FOR BUILDINGS"
2. CONCRETE BLOCKS TO CONFORM TO CAN3–A165 .1–94 "CONCRETE MASONRY UNITS" ALL MASONRY CONNECTORS AND HARDWARE TO CONFORM TO CAN3–A371–94 AND CAN3–S304–94.
3. STANDARD HOLLOW MASONRY UNITS TO BE: H/15/A/M.
4. MORTAR TO CONFORM TO CSA–A179, TYPES BASED ON PROPORTION SPECIFICATIONS:
   .1 EXTERIOR BEARING WALLS: TYPE S
   .2 EXTERIOR NON–BEARING WALLS: TYPE N OR TYPE S
   .3 INTERIOR BEARING WALLS: TYPE S
   .4 INTERIOR NON–BEARING WALLS: TYPE N OR TYPE S
   .5 POINTING: TYPE N OR TYPE S
5. USE GALVANIZED LADDER TYPE WIRE REINFORCEMENT CONFORMING TO CAN3–A370 –94 AND CSA G30.3 EVERY SECOND COURSE. EVERY COURSE FOR STACK BOND.
6. TYPICAL MASONRY WALL – 190 BLOCK RUNNING BOND HORIZONTAL REINFORCING (TYPICAL) BOND BEAM AT TOP AND BOTTOM, R/W 2–15M, # 8 LADDER TYPE REINFORCING @ 400 O.C. (EVERY SECOND COURSE) VERTICAL REINFORCING 15M @ 800 O.C. IN GROUTED CORES. DOWELS TO SLAB TO MATCH. USE DOWELS WITH HOOKS OR HILTI HIT ADHESIVE SYSTEM (MIN 200 mm EMBEDMENT, DOWELS MUST BE THREADED AND THRU–BOLTED).
7. ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS COMPLETED.
8. CONNECT BLOCK WALLS TO STEEL COLUMNS WITH STRAP ANCHORS AS SHOWN ON DETAILS.
9. PROTECT MASONRY AND OTHER WORK FROM MARKING AND OTHER DAMAGE. PROTECT COMPLETED WORK FROM MORTAR DROPPINGS. USE NON–STAINING COVERS.
10. BUILD MASONRY PLUMB, LEVEL, AND TRUE TO LINE, WITH VERTICAL JOINTS IN ALIGNMENT.
11. FILL SPACES BETWEEN JAMBS AND MASONRY WITH MORTAR.
12. WITH JOINT ROUNDER, PROVIDE 8 mm SMOOTH, TRUE TO LINE, UNIFORMLY CONCAVE JOINTS.
13. LEAVE 25 mm SPACE BETWEEN TOP OF NON–LOAD BEARING WALLS AND PARTITIONS AND STRUCTURAL ELEMENTS. DO NOT USE WEDGES.
14. LAYOUT COURSING AND BOND TO ACHIEVE CORRECT COURSING HEIGHTS, AND CONTINUITY OF BOND ABOVE AND BELOW OPENINGS, WITH A MINIMUM OF CUTTING.
15. MAKE CUTS FOR ELECTRICAL SWITCHES, OUTLET BOXES, ETC., STRAIGHT, CLEAN AND FREE FROM UNEVEN EDGES.
16. OPENINGS IN LOAD BEARING BLOCK WALLS UP TO 2000 mm
   – PROVIDE 1 GROUTED CORE ON EACH SIDE OF OPENING. REINFORCE WITH 1–15M VERT EACH CORE.
   – PROVIDE 400 mm DEEP (2 COURSE) FULL GROUTED MASONRY BEAM. R/W 1–15M TOP AND 1–15M BOTTOM. 10M SINGLE LEG STIRRUPS @ 200 O.C. EXTEND HORIZONTAL REINFORCING 400 mm BEYOND OPENING.
17. WHERE BEAMS BEAR ON BLOCK WALL, REINFORCE AS FOLLOWS:
   – PROVIDE 400 mm DEEP (2 COURSE) FULL GROUTED MASONRY BEAM. R/W 1–15M TOP AND 2–15M BOTTOM. 10M SINGLE LEG STIRRUPS @ 200 O.C.

7.0 STEEL DECK

1. DESIGN, FABRICATE, TRANSPORT, STORE AND ERECT STEEL DECK IN ACCORDANCE WITH CSA S136–M94 AND THE CANADIAN SHEET STEEL BUILDING INSTITUTE (CSSBI) STANDARDS FOR STEEL ROOF DECK.
2. SHOP DRAWINGS: PROVIDE ENGINEERING DRAWINGS BEARING SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA FOR REVIEW PRIOR TO CONSTRUCTION.
3. ALL METAL DECK SHALL BE FORMED FROM ZINC COATED STEEL CONFORMING TO CSSBI 101–78 GRADE A STEEL. PROVIDE CLOSURE ANGLES AT EDGES AND SUPPORTS AS REQUIRED.
4. FLOOR DECK: REFER TO FLOOR PLANS.
5. MAXIMUM LIVE LOAD DEFLECTION: FLOOR DECK L/360.
6. FLOOR DECK IS DESIGNED AS A DIAPHRAGM. PLACE DECK AND WELD THROUGH THE LOW RIB TO ALL SUPPORTING MEMBERS AS SHOWN ON PLANS. PROVIDE CONTINUOUS (BUTT WELDED) ANGLE AT FLOOR PERIMETER (SEE FLOOR PLANS). LAYOUT STEEL DECK SO THAT A VALLEY FALLS ON THE EDGE ANGLES AND SUPPORTING MEMBERS PARALLEL TO THE SPAN OF THE DECK TO ALLOW FOR LONGITUDINAL WELDS.
7. ALL OPENINGS LARGER THAN 450 mm x 450 mm THROUGH DECK TO BE FRAMED WITH L76 x 76 x 6.4 mm ALL AROUND, SPANNING TO ADJACENT MEMBERS.

8.0 STEEL STAIRS

1. DESIGN TO THE REQUIREMENTS OF NATIONAL BUILDING CODE OF CANADA 1995, FOR VERTICAL AND HORIZONTAL LIVE AND DEAD LOADS ON TREADS, LANDINGS AND HANDRAILS.
2. SHOP DRAWINGS: PROVIDE ENGINEERING DRAWINGS BEARING SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA FOR REVIEW PRIOR TO CONSTRUCTION.
3. TREADS AND RISERS; STEEL
4. STRINGERS: STEEL CHANNELS.
5. LANDINGS: STEEL CHECKERED PLATE
6. HANDRAILS: AS DETAILED ON ARCHITECTURAL DRAWINGS.

9.0 STRUCTURAL WOOD FRAMING

1. ALL WOOD TO BE KILN DRIED, SPF#2 OR BETTER.
2. NAILING PATTERNS AND LENGTHS TO CONFORM TO REQUIREMENTS OF NBC 1995, PART 9, UNLESS OTHERWISE NOTED.
3. FRAMING SHALL BE CONNECTED WITH PROPER METAL FRAMING ACCESSORIES OR EQUAL APPROVED BY ENGINEER.
4. BRIDGING TO CONFORM TO REQUIREMENTS OF NBC 1995, CLAUSE 9.23.9.4

10.0 LOAD BEARINGS STEEL STUDS

1. LOAD BEARING STEEL STUDS TO CONFORM TO CSA S136, FABRICATED FROM A653/A653M, GRADE A TO D STEEL, FABRICATED FROM ZINC COATED STEEL.
2. STUD TRACKS TO BE FABRICATED FROM SAME MATERIAL, SINGLE PIECE AT TOP AND BOTTOM.

ISSUED FOR
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NOT TO BE USED FOR CONSTRUCTION

APEGM
Certificate of Authorization
Wardrop Engineering Inc.
No. 195 Expiry: April 30, 2004

B.M. ELEV. F.B.

NO.	REVISIONS	DATE	BY
1	GENERAL REVISIONS	03.08.11	RHW
0	ISSUED FOR PCN 25	03.07.17	JDB

WARDROP | Engineering Inc.

DESIGNED BY V.B./ JDB	CHECKED BY RHW
DRAWN BY V.B. / WRA	APPROVED BY
HOR. SCALE: VERTICAL:	ACCEPTED BY DATE
DATE 03.07.17	B. EBENSPANGER, P.ENG. BRIDGE DESIGN AND PROJECTS ENGINEER

CONSULTANT DRAWING NO.
010007–13–02

Winnipeg
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

PROVENCHER PAIRED BRIDGES PROJECT
PEDESTRIAN BRIDGE

CITY DRAWING NUMBER
SHEET OF

CENTRE PLAZA ENCLOSURE – STRUCTURAL GENERAL NOTES

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