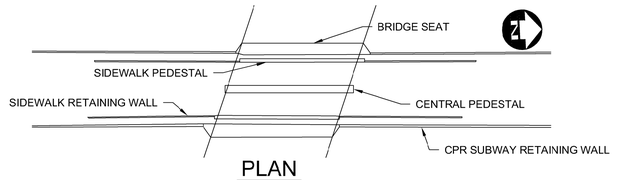
GENERAL NOTES:

1. STRUCTURE NAMING CONVENTION USED IN CONTRACT DOCUMENTS IS AS FOLLOWS:



PLAN

2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS.
3. THE SCALES SHOWN ON THE DRAWINGS ARE CORRECT FOR A1 SIZED DRAWING SHEETS. DO NOT DETERMINE DIMENSIONS BY SCALING OFF DRAWINGS.
4. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATIONS OF ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES AND REPORTING ANY DISCREPANCIES OR CONFLICTS TO THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
5. THE GEOMETRY, LAYOUT, AND ANY DETAILS DEPICTING THE EXISTING STRUCTURE ARE BASED ON LIMITED EXISTING DRAWINGS AND FIELD SURVEY/INVESTIGATION DATA. LIMITED RECORDS OF VARIOUS COMPONENTS EXIST AND AS SUCH, THE GEOMETRY, LAYOUT, AND DETAILS FOR THESE COMPONENTS ARE SCHEMATIC IN NATURE AND ARE IDENTIFIED AS SUCH. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING INFORMATION AND DIMENSIONS SUCH THAT THE WORK CAN BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR IMMEDIATELY UPON DISCOVERY.
6. GENERAL, TRANSPORTATION, AND STRUCTURAL DRAWING PACKAGE REFERENCES ARE DIFFERENTIATED USING 'GE' FOR GENERAL, 'CT' FOR CIVIL TRANSPORTATION AND 'CS' FOR CIVIL STRUCTURAL.

DESIGN PHILOSOPHY

1. THE GEOTECHNICAL STABILITY OF THE SIDEWALK RETAINING WALLS AGAINST SLIDING AND OVERTURNING WAS ASSESSED FOR THE EXISTING CONDITIONS IN WHICH THE WALLS ARE CURRENTLY JUDGED TO BE IN A STABLE STATE.
2. STABILIZATION MEASURES (BACKFILL REPLACEMENT WITH CELLULAR CONCRETE) WERE DESIGNED TO, AT MINIMUM, MAINTAIN THE EXISTING WALL FACTORS OF SAFETY AGAINST SLIDING AND OVERTURNING AFTER THE PROPOSED ROADWAY WORKS ARE COMPLETED.
3. THE ANALYSIS WAS UNDERTAKEN USING THE DATA PROVIDED BELOW.

DESIGN DATA

1. DESIGN CODES
   - CAN/CSA-S6-14 CANADIAN HIGHWAY BRIDGE DESIGN CODE
   - TAC GUIDE TO BRIDGE TRAFFIC AND COMBINATION BARRIERS
2. LIVE LOAD
   - 2.0 kPa ON SIDEWALK
   - LIVE LOAD FACTOR = 1.7
3. GEOTECHNICAL
   - ACTIVE EARTH PRESSURE COEFFICIENT, Ka = 0.3
   - PASSIVE EARTH PRESSURE COEFFICIENT, Kp = 3.0
   - UNIT WEIGHT OF EXISTING BACKFILL = 22 kN/m^3
   - UNIT WEIGHT OF CELLULAR CONCRETE = 4 kN/m^3
   - UNIT WEIGHT OF CONCRETE = 24 kN/m^3
   - EXISTING SOIL/CONCRETE INTERFACE FRICTION FACTOR, μ = 0.45
   - ACTIVE EARTH PRESSURE LOAD FACTOR (MIN/MAX) = 0.80/1.25
   - PASSIVE EARTH PRESSURE LOAD FACTOR (MIN/MAX) = 0.50/1.25
   - VERTICAL EARTH PRESSURE LOAD FACTOR (MIN/MAX) = 0.80/1.25
   - DEAD LOAD FACTOR (MIN/MAX) = 0.90/1.20
   - NOTE: ABOVE EARTH PRESSURE COEFFICIENTS AND UNIT WEIGHT OF EXISTING BACKFILL ARE ASSUMED PARAMETERS.
   - CELLULAR CONCRETE CONSIDERED A DEAD LOAD IN STABILITY ANALYSIS.

MATERIAL NOTES:

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF CAN/CSA A23.1/A23.2 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION / TEST METHODS AND STANDARD PRACTICES FOR CONCRETE U/N.
2. CONCRETE SHALL MEET THE FOLLOWING:

CONCRETE TYPE	EXPOSURE CLASS	NOMINAL COMPRESSIVE STRENGTH	MAXIMUM AGGREGATE SIZE	AIR CONTENT CATEGORY	SPECIAL REQUIREMENTS
1	C-1	35 MPa @ 28 DAYS	10 mm	1	SCC SLUMP FLOW 500-600 mm LOW SHRINKAGE AS PER CSA A23.1 CL. 8.9.2
2	N/A	0.4 MPa @ 28 DAYS	N/A	N/A	CELLULAR CONCRETE WET CAST DENSITY= 400 kg/m³ (+/-10%)
3	C-1	35 MPa @ 28 DAYS	20 mm	1	N/A

3. TYPE 1: SIDEWALK RETAINING WALL PATCH REPAIRS
4. TYPE 2: SIDEWALK RETAINING WALL BACKFILL
5. TYPE 3: ALL OTHER CONCRETE
6. PERMEABLE FORMWORK LINER SHALL BE USED ON ALL EXPOSED FORMED SURFACES U/N
7. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 20mm U/N

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE LOW-CARBON, CHROMIUM REINFORCEMENT CONFORMING TO THE REQUIREMENTS OF ASTM A1035 CM GRADE 100. MMFX CHROMX 4000 SERIES IS AN APPROVED PRODUCT
2. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF THE REINFORCING STEEL INSTITUTE OF CANADA (RSIC) MANUAL OF STANDARD PRACTICE OR MANUFACTURER'S REQUIREMENTS

BAR SIZE (MMFX)	LAP (mm)
16M	600
19M	800
25M	1200
32M	1500

3. LAP SPLICE SCHEDULE IS PROVIDED BELOW FOR CLASS B SPLICES. ALL SPLICES SHALL BE CLASS B U/N
4. BEFORE PLACING REBAR, ENSURE IT IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER DELETERIOUS SUBSTANCE
5. CONCRETE CLEAR COVER IS 60mm U/N

ALUMINUM PEDESTRIAN HANDRAIL / BICYCLE RAIL / TWO RAIL BICYCLE GUARD:

1. ALL EXTRUDED SHAPES OR DRAWN TUBING FOR RAILS AND POSTS SHALL CONFORM TO THE LATEST EDITION OF CAN/CSA ALUMINUM ALLOY AND TEMPER HA.5 SG 11 R-T6 (ASTM B221 ALLOY 6351-T6) OR HA.7 GA 11 M-T6 (ASTM B221 ALLOY 6061-T6)
2. ALUMINUM SHEET, BARS, SUPPORT PINS, ANGLES, AND PLATES SHALL CONFORM TO LATEST EDITION OF ASTM B221 ALLOY 5083, ASTM B209 ALLOY 6061-T6 OR ALLOY 6351-T6
3. ALUMINUM SHIMS SHALL CONFORM TO THE LATEST EDITION OF ASTM B221 ALLOY 6061-T6
4. BOLTS AND CAP SCREWS, NYLON LOCK NUTS, AND WASHERS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A276, TYPE 316

ABBREVIATIONS

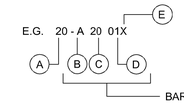
ABUT.	- ABUTMENT	MK.	- MARK
A.D.	- ALGEBRAIC DIFFERENCE	MAX.	- MAXIMUM
ALT.	- ALTERNATING	MIN.	- MINIMUM
APPROX.	- APPROXIMATE	M.P.	- MONITORING PILE
ATP	- ACTIVE TRANSPORTATION PATH	N.F.	- NEAR FACE
BVCS	- BEGIN VERTICAL CURVE STATION	N/B	- NORTHBOUND
BVCE	- BEGIN VERTICAL CURVE ELEVATION	NO.	- NUMBER
B.C.	- BEGINNING OF CURVE	N.S.W.L.	- NORMAL SUMMER WATER LEVEL
BRG.	- BEARING	N.T.S.	- NOT TO SCALE
B.S.	- BOTH SIDES	O.C.	- ON CENTRE
BOT.	- BOTTOM	OPP.	- OPPOSITE
B.O.	- BOTTOM OF	O.A.	- OUTSIDE DIAMETER
℄	- CENTRE LINE	O.F.	- OUTSIDE FACE
C/C	- CENTRE TO CENTRE	O/O	- OUT TO OUT
CL	- CLEAR	PCS.	- PIECES
CONT.	- CONTINUOUS	PL.	- PLATE
C/A	- CONTRACT ADMINISTRATOR	PT.	- POINT
C/W	- COMPLETE WITH	P.I.	- POINT OF INTERSECTION
CSC	- CORRUGATED STEEL CULVERT	PVI	- POINT OF VERTICAL INTERSECTION
CT	- CURVE TO TANGENT	REINF.	- REINFORCING
DIA.	- DIAMETER	R.C.	- REINFORCED CONCRETE
D.L.	- DEAD LOAD	R.P.	- REFERENCE POINT
DWL.	- DOWEL	REQ'D	- REQUIRED
E/B	- EASTBOUND	R.O.W.	- RIGHT OF WAY
E.C.	- END OF CURB	SHLD.	- SHOULDER
E.F.	- EACH FACE	SK.	- SKEWED
ELEV.	- ELEVATION	S/B	- SOUTHBOUND
EVCS	- END VERTICAL CURVE STATION	SP.	- SPACES
EVCE	- END VERTICAL CURVE ELEVATION	SQ.	- SQUARE
EXIST.	- EXISTING	S.S.	- STAINLESS STEEL
EXP. JT.	- EXPANSION JOINT	STA	- STATION
EXT.	- EXTERIOR	SU.	- SUBSTRUCTURE UNIT
E.S.	- EQUALLY SPACED	TC	- TANGENT TO CURVE
F.F.	- FAR FACE	T.H.	- TEST HOLE
FBOC/FOC	- FIBRE OPTIC CABLE	THK.	- THICK
FCM	- FRACTURE CRITICAL MEMBER	T.O.	- TOP OF
F.R.E.	- FIBER REINFORCED EPOXY	TYP.	- TYPICAL
FTG.	- FOOTING	U/N	- UNLESS NOTED OTHERWISE
GALV.	- GALVANIZED	U/S	- UNDERSIDE
G.B.M.	- GEODETIC BENCH MARK	VERT.	- VERTICAL
HORIZ.	- HORIZONTAL	W/B	- WESTBOUND
I.F.	- INSIDE FACE	W.A.	- WORKING POINT
INV.	- INVERT		
K	- K VALUE		
LDS	- LAND DRAINAGE SEWER		
LVC	- LENGTH OF VERTICAL CURVE		
L.L.	- LIVE LOAD		

SECTION AND DETAILS

A SECTION NUMBER OR DETAIL LETTER

B DRAWING WHERE SECTION OR DETAIL IS TAKEN OR DRAWN.

CODE FOR REINFORCING STEEL



(A) NO. OF BARS
(B) LOCATION OF CODE
(C) SIZE OF BAR
(D) IDENTIFICATION NO.
(E) SUFFIX : X = CHROMX 4000 NONE= BLACK STEEL

APEGM
Certificate of Authorization
Dillon Consulting Limited (MB)
No. 1789 **Date:** 18/03/16

UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES _____ DATE _____

LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE, BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	18/03/16	TJP

B.M. ELEV.

DESIGNED BY DRA
DRAWN BY KNL
CHECKED BY DRA
APPROVED BY TJP
HOR. SCALE -
VERTICAL -
DATE

DILLON CONSULTING

RELEASED FOR CONSTRUCTION
DATE

ENGINEER'S SEAL
PROVINCE OF MANITOBA
ORIGINAL STAMPED BY
D.R.C. AMORIM
18/03/16
Member 33215
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT PROJECT NUMBER
17-6152

Winnipeg

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

2018 REGIONAL STREET RENEWAL PROJECT
McPHILLIPS STREET RECONSTRUCTION AND UNDERPASS
STRUCTURAL IMPROVEMENTS
LOGAN AVENUE TO JARVIS AVENUE

CITY DRAWING NUMBER
U212-18CS-001 -R0

SHEET 001 OF 026

UNDERPASS STRUCTURAL WORKS
GENERAL NOTES

CONSULTANT DRAWING NUMBER
CS-001

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