# DRAWING LIST


| CITY OF WINNIPEG DRAWING NUMBER | SHEET NUMBER | DESCRIPTION |
|---|---|---|
| **GENERAL** | | |
| B105-19-1 | 1 | COVER SHEET |
| B105-19-2 | 2 | DRAWING INDEX & DESIGN DATA |
| B105-19-3 | 3 | TESTHOLE LOG AND LOCATION PLAN |
| **BRIDGE REPLACEMENT** | | |
| B105-19-4 | 4 | PROPOSED BRIDGE STRUCTURE - SCOPE OF WORK |
| B105-19-5 | 5 | PROPOSED BRIDGE STRUCTURE - GENERAL ARRANGEMENT |
| B105-19-6 | 6 | PROPOSED BRIDGE STRUCTURE - EXCAVATION |
| B105-19-7 | 7 | PROPOSED BRIDGE STRUCTURE - FOUNDATION & SUBSTRUCTURE PLANS |
| B105-19-8 | 8 | PROPOSED BRIDGE STRUCTURE - SUBSTRUCTURE SECTIONS & DETAILS |
| B105-19-9 | 9 | PROPOSED BRIDGE STRUCTURE - SUBSTRUCTURE REINFORCING DETAILS 1 OF 2 |
| B105-19-10 | 10 | PROPOSED BRIDGE STRUCTURE - SUBSTRUCTURE REINFORCING DETAILS 2 OF 2 |
| B105-19-11 | 11 | PROPOSED BRIDGE STRUCTURE - DECK CONCRETE DETAILS |
| B105-19-12 | 12 | PROPOSED BRIDGE STRUCTURE - DECK REINFORCING DETAILS |
| B105-19-13 | 13 | PROPOSED BRIDGE STRUCTURE - APPROACH SLAB DETAILS |
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| B105-19-15 | 15 | PROPOSED BRIDGE STRUCTURE - BARRIERS DETAILS |
| B105-19-16 | 16 | PROPOSED BRIDGE STRUCTURE - CURBS DETAILS |
| B105-19-17 | 17 | PROPOSED BRIDGE STRUCTURE - ALUMINUM GUARDRAIL |
| B105-19-18 | 18 | PROPOSED BRIDGE STRUCTURE - CREEK WORKS - SECTIONS |
| **ROAD WORKS** | | |
| P-3503-1 | 19 | KEY PLAN - ROAD WORKS |
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| P-3503-3 | 21 | DUBLIN AVENUE - STA 0+990 TO STA 1+125 - ROADWORKS - RECONSTRUCTION |
| P-3503-4 | 22 | DUBLIN AVENUE - STA 1+125 TO STA 1+250 - ROADWORKS - RECONSTRUCTION |
| P-3503-5 | 23 | DUBLIN AVENUE - STA 1+250 TO STA 1+375 - ROADWORKS - RECONSTRUCTION |
| P-3503-6 | 24 | DUBLIN AVENUE - STA 1+375 TO STA 1+500 - ROADWORKS - RECONSTRUCTION |
| P-3503-7 | 25 | DUBLIN AVENUE - STA 1+500 TO STA 1+625 - ROADWORKS - RECONSTRUCTION |
| P-3503-8 | 26 | DUBLIN AVENUE - STA 1+625 TO STA 1+750 - ROADWORKS - RECONSTRUCTION |
| P-3503-9 | 27 | ST. JAMES STREET - STA 1+995.290 TO STA 2+707.856 - HORIZONTAL GEOMETRY |
| P-3503-10 | 28 | ST. JAMES STREET - STA 1+980 TO STA 2+120 - ROADWORKS |
| P-3503-11 | 29 | ST. JAMES STREET - STA 2+120 TO STA 2+245 - ROADWORKS |
| P-3503-12 | 30 | ST. JAMES STREET - STA 2+245 TO STA 2+370 - ROADWORKS |
| P-3503-13 | 31 | ST. JAMES STREET - STA 2+370 TO STA 2+495 - ROADWORKS |
| P-3503-14 | 32 | ST. JAMES STREET - STA 2+495 TO STA 2+620 - ROADWORKS |
| P-3503-15 | 33 | ST. JAMES STREET - STA 2+620 TO STA 2+745 - ROADWORKS |
| P-3503-16 | 34 | ST.JAMES STREET & DUBLIN AVENUE - ST. JAMES STREET & SASKATCHEWAN AVENUE - INTERSECTION DETAILS |
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| P-3503-23 | 41 | DUBLIN AVENUE - STA 1+650 TO NOTRE DAME AVENUE - MUNICIPAL UTILITIES |
| P-3503-24 | 42 | DUBLIN AVENUE - CONSTRUCTION STAGING - STAGE 1 & STAGE 2 |
| P-3503-25 | 43 | DUBLIN AVENUE - STAGING AND TURNING RESTRICTIONS |
| P-3503-26 | 44 | ST. JAMES STREET - STA 2+800 TO STA 2+960 - ROAD MILL AND FILL |
| P-3503-27 | 45 | ST. JAMES STREET - STA 2+960 TO STA 3+130 - ROAD MILL AND FILL |
| P-3503-28 | 46 | DUBLIN AVENUE - CONCRETE PAVEMENT JOINT LAYOUT |
| P-3503-29 | 47 | ST. JAMES STREET- SASKATCHEWAN AVE TO STA 2+550 - SIDEWALK PAVEMENT JOINT LAYOUT |
| P-3503-30 | 48 | ST. JAMES STREET- STA 2+550 TO DUBLIN AVENUE - SIDEWALK PAVEMENT JOINT LAYOUT |


# DESIGN DATA

## GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH CONTRACT SPECIFICATIONS.
2. GEOMETRY, REINFORCEMENT AND LAYOUT OF THE EXISTING STRUCTURE ARE BASED ON EXISTING DESIGN INFORMATION AND LIMITED FIELD SURVEY DATA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL NECESSARY DIMENSIONS SUCH THAT WORK CAN BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
3. WHOLE DIMENSIONS SHOWN ON THESE DRAWINGS ARE IN MILLIMETERS. DECIMAL DIMENSIONS ARE IN METERS. THE ORIGINAL BRIDGE STRUCTURE WAS CONSTRUCTED WITH IMPERIAL UNITS OF MEASURE (HARD UNIT CONVERSION WHERE APPLICABLE).
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. EXCEPT WHERE INDICATED OTHERWISE THESE DRAWINGS SHOW DETAILS FOR THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF WORKERS AND THE DESIGN AND STABILITY OF ANY TEMPORARY WORKS DURING CONSTRUCTION. CONSTRUCTION METHODS REQUIRING THE TEMPORARY INSTALLATION OF SHORING, SCAFFOLDING, BRACING, ETC. SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND ACCEPTANCE PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO PERFORM AND TAKE RESPONSIBILITY FOR ANY SUCH DESIGNS NECESSARY TO COMPLETE THE CONSTRUCTION AND AS REQUIRED BY THE CONTRACT DOCUMENTS.

## STRUCTURAL DESIGN DATA

1. DESIGN SPECIFICATION: CAN/CSA-S6-14 "CANADIAN HIGHWAY BRIDGE DESIGN CODE"
2. LIVE LOAD:
   - CL-625 TRUCK AND CL-625 LANE LOAD
   - OVERLOADS
     - 21,960 kg TANDEM SPACED AT 1.0m
     - 24,000 kg TANDEM SPACED AT 1.0m
     - 27,500 kg TRIDEM TWO SPACES AT 1.5m
   - SIDEWALK PEDESTRIAN LOAD PER CAN/CSA S6-14 Cl. 3.8.9
   - CONCRETE BARRIER COLLISION PERFORMANCE RATING TL-4
3. WIND LOAD: $q_{50}$ = 0.45 KPa

## TRANSPORTATION DESIGN DATA

1. DESIGN SPECIFICATION
   - CITY OF WINNIPEG TRANSPORTATION STANDARDS (2019 UPDATE)
   - TRANSPORTATION ASSOCIATION OF CANADA GEOMETRIC DESIGN GUIDE FOR CANADIAN ROADS (2017)
2. ROADWAY DESIGN CRITERIA:
   - ROADWAY CLASSIFICATION: REGIONAL MINOR ARTERIAL
   - POSTED SPEED: 60 km/h, DESIGN SPEED: 60 km/h

## GEOTECHNICAL DESIGN DATA

1. A GEOTECHNICAL REPORT HAS BEEN PREPARED BY STANTEC CONSULTING LTD. TITLED "REPLACEMENT OF THE DUBLIN AVENUE BRIDGE OVER OMAND'S CREEK - GEOTECHNICAL REPORT" DATED MARCH 29, 2019. REFER TO GEOTHCHNICAL REPORT FOR DETAILED DESIGN DATA AND RECOMMENDATIONS.
2. SELECT GEOTECHNICAL DESIGN DATA:
   - SLOPE STABILITY FACTOR OF SAFETY = 1.5 (LONG TERM STEADY STATE),
     1.3 (SHORT TERM TRANSIENT)
   - AXIAL COMPRESSIVE RESISTANCE AT ULS OF ONE STEEL H-PILE (HP 360x152) DRIVEN TO REFUSAL = 2037 kN

## HYDRAULIC DESIGN DATA

1. A HYDRAULIC REPORT HAS BEEN PREPARED BY TREK GEOTECHNICAL TITLED "OMAND'S CREEK AT DUBLIN AVENUE CROSSING REPLACEMENT HYDROLOGIC AND HYDRAULIC ASSESSMENT - REV 1" DATED NOVEMBER 28, 2018.
2. SELECT HYDRAULIC DESIGN DATA:
   - DESIGN DISCHARGE - $Q_{2\%}$ = 0.9 $m^3$/s (MEAN DAIRY AVERAGE), 18.6$m^3$/s (INSTANTANEOUS PEAK DISCHARGE)
   - VELOCITY AT DESIGN DISCHARGE - $V_{2\%}$ = 1.15 m/s (MEAN DAIRY AVERAGE)
   - HEADLOSS DURING DESIGN DISCHARGE < 0.05 m
   - FISH PASSAGE VELOCITY - $V_{3DQ10\%}$ = 0.6 m/s
   - WATER ELEVATION AT DESIGN DISCHARGE - EL. 233.64 m

## ENVIRONMENTAL PROTECTION

1. NO IN-STREAM WORK IS PERMITTED BETWEEN APRIL 1 AND JUNE 15.
2. IMPLEMENT ENVIRONMENTAL PROTECTION MEASURES AS DESCRIBED BY THE SPECIFICATIONS.

## MATERIAL NOTES

### CAST-IN-PLACE CONCRETE

| TYPE OF CONCRETE | TYPE 1 | TYPE 2 | TYPE 3 |
|---|---|---|---|
| LOCATION | STRUCTURAL DECK, APPROACH SLAB, SIDEWALK, TRAFFIC BARRIERS | REINFORCED TRANSITION SLAB AND FOOTING, WINGWALLS, ABUTMENTS AND BACKWALLS | STRUCTURAL BACKFILL |
| NOMINAL COMPRESSIVE STRENGTH (MPa) | 45 @ 28 DAYS | 35 @ 28 DAYS | CW 2160-RT FLOWABLE CEMENT - STABILIZED FILL |
| CLASS OF EXPOSURE | C-XL | C-1 | |
| AIR CONTENT CATEGORY | 1 | 1 | |
| MAX AGGREGATE SIZE | 20 mm | 20 mm | |
| SPECIAL REQUIREMENTS | SYNTHETIC FIBERS | - | |
| MIN POST RESIDUAL CRACKING INDEX | 0.15 | - | |

| CLEAR COVER TO REINFORCING STEEL (mm) UNLESS NOTED OTHERWISE | LOCATION |
|---|---|
| 60 | BRIDGE DECK , APPROACH SLAB, TRANSITION SLAB, CONCRETE BARRIERS, SLEEPER SLAB |
| 75 | WINGWALLS, ABUTMENT |

1. CONCRETE FINISHES - REFER TO SPECIFICATION
2. ALL VISUALLY EXPOSED CONCRETE CORNERS SHALL HAVE A 20 mm CHAMFER UNLESS NOTED OTHERWISE.

### REINFORCING STEEL

1. ALL REINFORCING WITH SUFFIX "S" SHALL BE STAINLESS STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A955M, 300 SERIES, MINIMUM GRADE 420, OF ONE OF THE FOLLOWING UNS DESIGNATIONS: S31653. S31803, OR S32304.
2. PLAIN REINFORCING STEEL TO CAN/CSA-G30. 18-M92 GRADE 400W.
3. REINFORCING STEEL SPLICES TO CAN/CSA S6-14 CLASS B.

| BAR SIZE | LAP SPLICE |
|---|---|
| 16SS / 15M | 600 |
| 19SS / 20M | 800 |
| 25SS / 25M | 1200 |

### STEEL H-PILES

1. HP 360x152 CAN/CSA G40.20/G40.21M GRADE 350W
2. WELDING SHALL CONFORM TO CURRENT AWS SPECIFICATION CSA W59 AND ASSHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE

### PRECOMPRESSED FOAM JOINT FILLER

1. PRECOMPRESSED FOAM JOINT FILLER SHALL BE THE FOLLOWING SYSTEM, OR ACCEPTED EQUIVALENT IN ACCORDANCE WITH B7, AT LOCATIONS SPECIFIED. INSTALL PER MANUFACTURER'S INSTRUCTIONS: EMSEAL BEJS SYSTEM.

### STRUCTURAL BACKFILL

1. BACKFILL EXCAVATION BEHIND ABUTMENTS TO BE TYPE 3 CONCRETE (IF PLACED BETWEEN NOVEMBER AND MARCH) OR GRANULAR BACKFILL

### WORKING BASE

1. LEAN MIX CONCRETE W/ MINIMUM COMPRESSIVE STRENGTH 20 MPa @ 28 DAYS EXPOSE CLASS S-1

## LIST OF ABBREVIATIONS

| | | | |
|---|---|---|---|
| @ | AT | HORIZ | HORIZONTAL |
| ALT | ALTERNATING | IB | IRON BAR |
| ALUM | ALUMINUM | IF | INSIDE FACE |
| APPROX | APPROXIMATE | LG | LONG |
| AVE | AVE. | MK | MARK |
| B | BOLTS | MAX | MAXIMUM |
| BC | BEGIN CURVE | m | METRE |
| BM | BENCHMARK | MIN | MINIMUM |
| BC | BY OTHERS | mm | MILLIMETRE |
| B/O | BOTTOM OF | NF | NEAR FACE |
| BOT | BOTTOM | NTS | NOT TO SCALE |
| B/W | BOTH WAYS | No | NUMBER |
| BRG | BEARING | OF | OUTSIDE FACE |
| CIP | CAST-IN-PLACE | O/C | ON CENTRE |
| CJ | CONSTRUCTION JOINT | O/O | OUTSIDE TO OUTSIDE |
| CP | CONTROL POINT | OPH | OPPOSITE HAND |
| CWB | CANADIAN WELDING BUREAU | PL | PLATE |
| ℄ | CENTRE LINE | PM | PRIMARY MEMBER |
| C/W | COMPLETE WITH | QTY | QUANTITY |
| CONC | CONCRETE | R | RADIUS |
| CONT | CONTINUOUS | R.O.W. | RIGHT OF WAY |
| CL | CLEAR | REINF | REINFORCEMENT |
| DBL | DOUBLE | S | STAINLESS STEEL |
| Ø | DIAMETER | SHT | SHEET |
| DTL | DETAIL | SP | SPACING |
| DWG | DRAWING | SS | STAINLESS STEEL |
| EA | EACH | STD | ST&ARD |
| EC | END CURVE | STR | STRAIGHT |
| EE | EACH END | SU. | SUBSTRUCTURE UNIT |
| EF | EACH FACE | SYM | SYMMETICAL |
| EC | EACH WAY | T&B | TOP & BOTTOM |
| EQ | EQUAL | THK | THICK |
| EQ SP | EQUAL SPACE | TPG | THROUGH PLATE GIRDER |
| EL | ELEVATION | TYP | TYPICAL |
| EXST | EXISTING | T/O | TOP OF |
| FCM | FRACTURE CRITICAL MEMBER | UNO | UNLESS NOTED OTHERWISE |
| FF | FAR FACE | U/S | UNDERSIDE |
| FG | FINISHED GRADE | VERT | VERTICAL |
| GALV | GALVANIZING | WM | WATERMAIN |
| G | GIRDER | WP | WORKING POINT |
| GRAN | GRANULAR | W/ | WITH |

## SECTION & DETAILS

A — SECTION NUMBER OR DETAIL LETTER

B — DRAWING WHERE SECTION OR DETAIL IS TAKEN

C — DRAWING WHERE SECTION OR DETAIL IS DRAWN

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE — DATE

NOTE:
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.

B.M.
ELEV.

| NO. | REVISIONS | DATE | BY |
|---|---|---|---|
| 0 | ISSUED FOR TENDER | 19.09.18 | J.M.B. |

Stantec
500 - 311 Portage Avenue, Winnipeg MB Canada
www.stantec.com

| | | | |
|---|---|---|---|
| DESIGNED BY | H.M.V. | CHECKED BY | C.D. |
| DRAWN BY | J.M.B. | APPROVED BY | K.S.A. |
| HOR. SCALE: | AS NOTED | RELEASED FOR CONSTRUCTION: | |
| VERTICAL: | AS NOTED | | |
| DATE | 2019.09.23 | DATE | |

ENGINEER'S SEAL

TENDER DRAWING
NOT TO BE USED FOR CONSTRUCTION

CONSULTANT DRAWING NO.
G-002

Winnipeg

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

DUBLIN AVENUE BRIDGE REPLACEMENT
DRAWING LIST & DESIGN DATA

SHEET 2 OF 48

CAD FILE DRAWING NUMBER
33340g-001-926.dwg

CITY DRAWING NUMBER
B105-19-2

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2019/09/23 5:06 PM By: Beernaerts, James