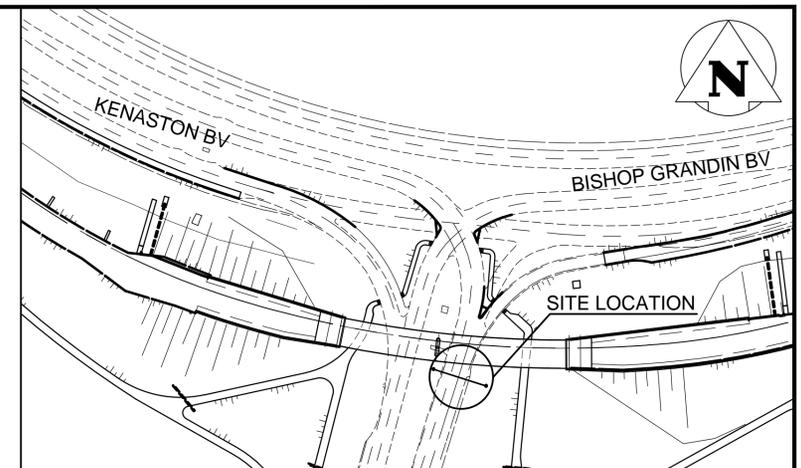


**APEGM**  
 Certificate of Authorization  
 Dillon Consulting Limited (MB)  
 No. 1789 Date: 2013/08/08

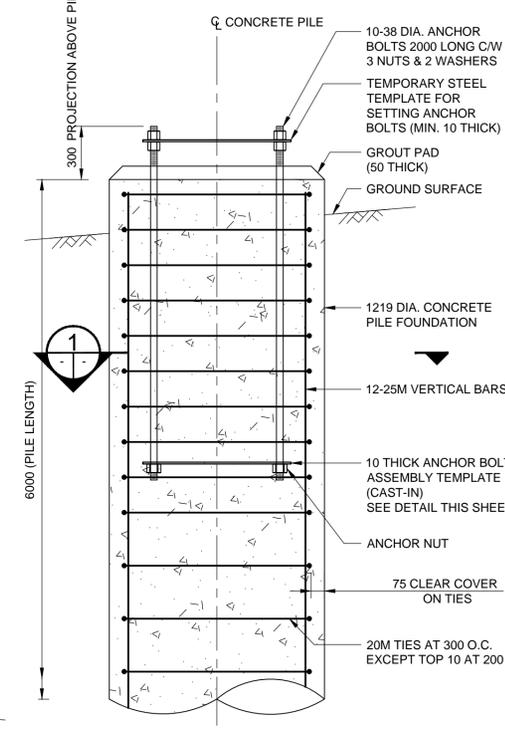
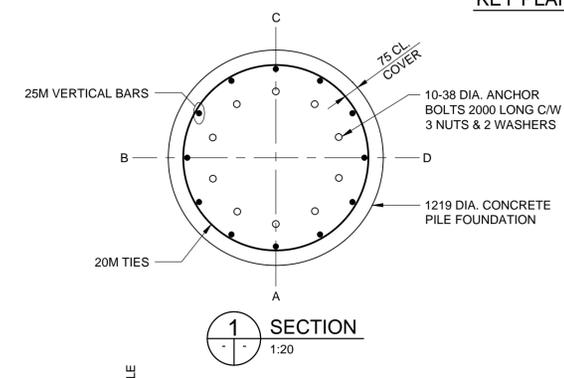


**KEY PLAN PILE CONSTRUCTION NOTES**

- REINFORCING STEEL**
  - CSA G30.18 GR. 400W
  - VERTICAL BARS FULL LENGTH OF PILE
  - HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A767
- ANCHOR BOLTS**
  - ASTM F1554 GR.55 (380 MPa)
  - 10-38 DIA. ANCHOR BOLTS 2000 LONG
  - EACH BOLT C/W 3 NUTS & 2 WASHERS
  - TOP 300 THREADED 6 UNC CLASS 2A
  - BOTTOM 100 THREADED 6 UNC CLASS 2A
  - HOT DIP GALVANIZED FULL LENGTH
  - B.C.D. = BOLT CIRCLE DIAMETER TO CENTRE OF BOLT GROUP
  - ANCHOR BOLTS SHALL BE ALIGNED WITH A TEMPORARY STEEL TEMPLATE. PLACEMENT OF ANCHOR BOLTS AND CONCRETE WITHOUT THE TEMPLATE WILL NOT BE PERMITTED.
  - FOLLOWING INSTALLATION OF THE STEEL STRUCTURE, TIGHTEN THE LOWER LEVELING NUTS AND UPPER ANCHOR NUTS TO A SNUG-TIGHT CONDITION, FOLLOWED BY 1/3 NUT ROTATION (+20°/-0°) OF THE UPPER ANCHOR NUTS.
- FORM TOP OF PILE WITH A TUBULAR FORM (SONOTUBE):**
  - 1m FOR DRILLED SHAFTS
  - 1.5m FOR HYDRO-EXCAVATED SHAFTS
- CONTRACTOR SHALL REMOVE THE ANCHOR BOLT SETTING TEMPLATE, NUTS AND FORM, FOLLOWING A MINIMUM 24 HOUR CONCRETE CURING PERIOD.**
- CONCRETE MIX DESIGN**

PROPORTIONING OF FINE AGGREGATE, COARSE AGGREGATE, CEMENT, WATER, AND AIR ENTRAINING AGENT SHALL BE SUCH AS YIELD CONCRETE HAVING THE REQUIRED STRENGTH AND WORKABILITY AS FOLLOWS:

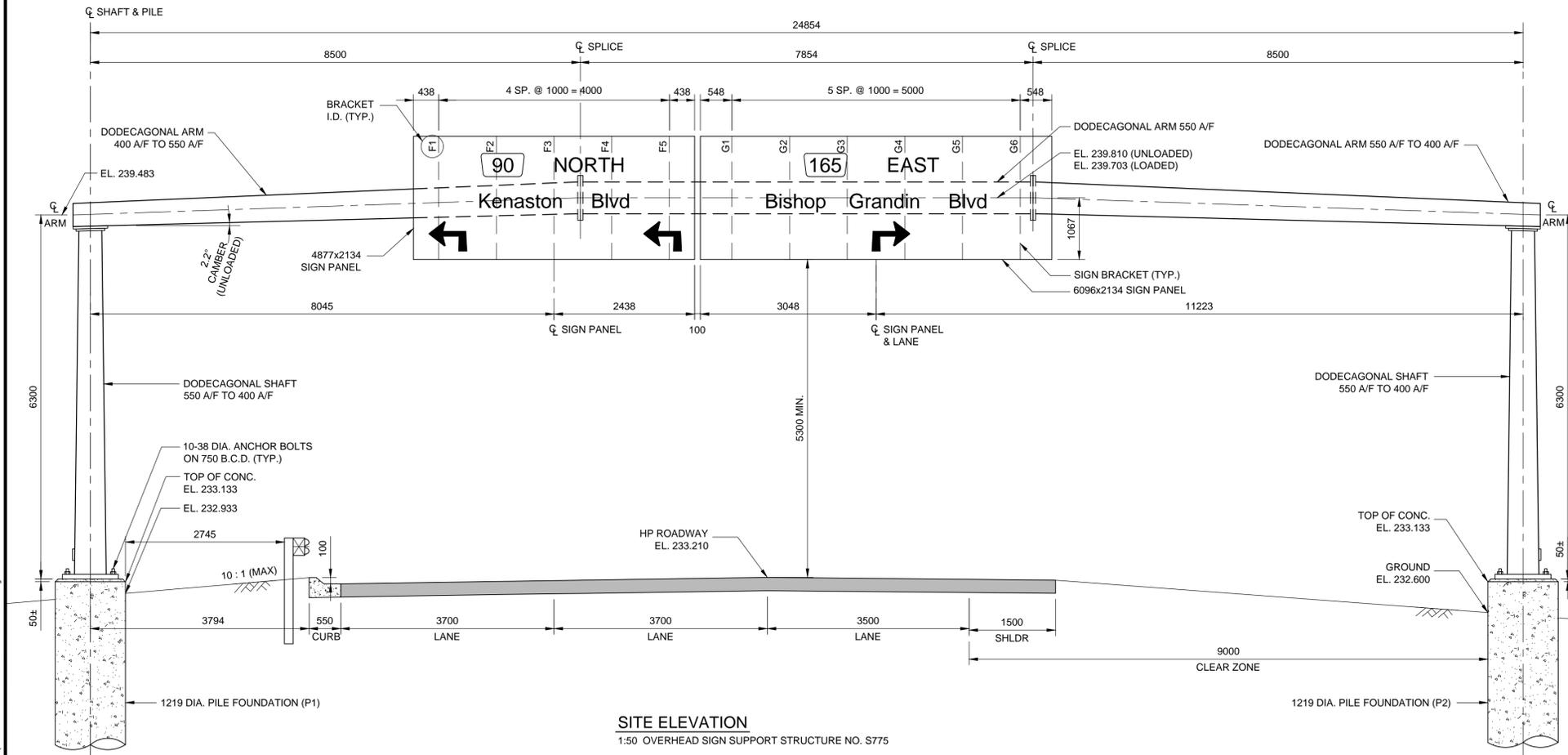
  - CLASS OF EXPOSURE: S-1
  - MINIMUM COMPRESSIVE STRENGTH AT 56 DAYS = 35 MPa
  - MAXIMUM WATER/CEMENT RATIO = 0.40
  - AIR CONTENT: CATEGORY 2 PER TABLE 4 OF CSA A23.1-09 (4-7%)
  - CEMENT IN ACCORDANCE WITH CSA A23.1-09



**CENTER OF PILE LAYOUT TABLE**

STRUCTURE	STATION	O/S	NORTH	EAST
S775 (P1)	6+173.913	11.736	5518996.207	630269.956
S775 (P2)	6+173.895	13.118	5518988.682	630293.644

- METRIC**  
 WHOLE NUMBERS INDICATE MILLIMETRES  
 DECIMALIZED NUMBERS INDICATE METRES
- WARNING**
- IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
- NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
  - TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.
  - OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.
  - A MINIMUM VERTICAL SEPARATION OF 300 mm FROM GAS MAINS AND 100 mm FROM GAS SERVICE MUST BE MAINTAINED BETWEEN ANY MANITOBA HYDRO FACILITY AND ANY NEW INSTALLATIONS.
  - A MINIMUM 900 mm OF COVER SHALL BE MAINTAINED IN ALL AREAS WHERE EQUIPMENT WILL BE CROSSING, TRAVELING OR COMPACTING OVER THE HIGH PRESSURE GAS MAINS.
  - IF EQUIPMENT MUST CROSS, TRAVEL, OR COMPACT OVER THE GAS MAIN WITH LESS THAN THE MINIMUM DEPTH COVER, EARTH BRIDGING OR STEEL PLATES SHALL BE PLACED OVER THE MAIN AND EXTEND A MINIMUM OF 1.0 METRE ON EITHER SIDE AT EACH CROSSING LOCATION.



150 WM	WATERMAIN	150 WM	M.T.S.	M.T.S.	150 mm W.M.	WATERMAIN	150 mm W.M.
+	HYDRANT VALVE	+			+	HYDRANT VALVE	+
300 LDS	LAND DRAINAGE SEWER	300 LDS			300 mm L.D.S.	LAND DRAINAGE SEWER	300 mm L.D.S.
250 WWS	WASTE WATER SEWER	250 WWS			250 mm W.W.S.	WASTE WATER SEWER	250 mm W.W.S.
○	MANHOLE	●			○	MANHOLE	●
○	CATCH BASIN	■			○	CATCH BASIN	■
○	TEST HOLES	○			○	TEST HOLES	○
+	JUNCTIONS	+			+	JUNCTIONS	+
+	CULVERT	+			+	CULVERT	+
100 GAS	GAS	100 GAS			100 GAS	GAS	100 GAS
EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE

**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 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.	654008	N: 5515764.610	654210	N: 5514436.957
ELEV.	232.463	m	ELEV.	630550.534

DESIGNED BY	CDW
DRAWN BY	LFY
CHECKED BY	SSR
APPROVED BY	DPK
HOR. SCALE	AS NOTED
VERTICAL SCALE	AS NOTED
ISSUED FOR TENDER	13/08/08
NO. REVISIONS	DATE BY

**DILLON CONSULTING**

RELEASED FOR CONSTRUCTION

ENGINEER'S SEAL

PROVINCE OF MANITOBA  
 C.D. WARD  
 Member  
 24456  
 REGISTERED PROFESSIONAL ENGINEER

CONSULTANT PROJECT NUMBER  
 12-6606

**THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT**

Waverley West Arterial Roads Project (WWARP) PART 3 - CONTRACT 2  
 ROUTE 90 TO ROUTE 165 OVERPASS (KENASTON BLVD.) AND ASSOCIATED WORKS

CITY DRAWING NUMBER  
 B242-13-124

SHEET 124 OF 128

CONSULTANT DRAWING NUMBER  
 S775 - KENASTON BV NB AT STA: 6+173  
 775-2013-01

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