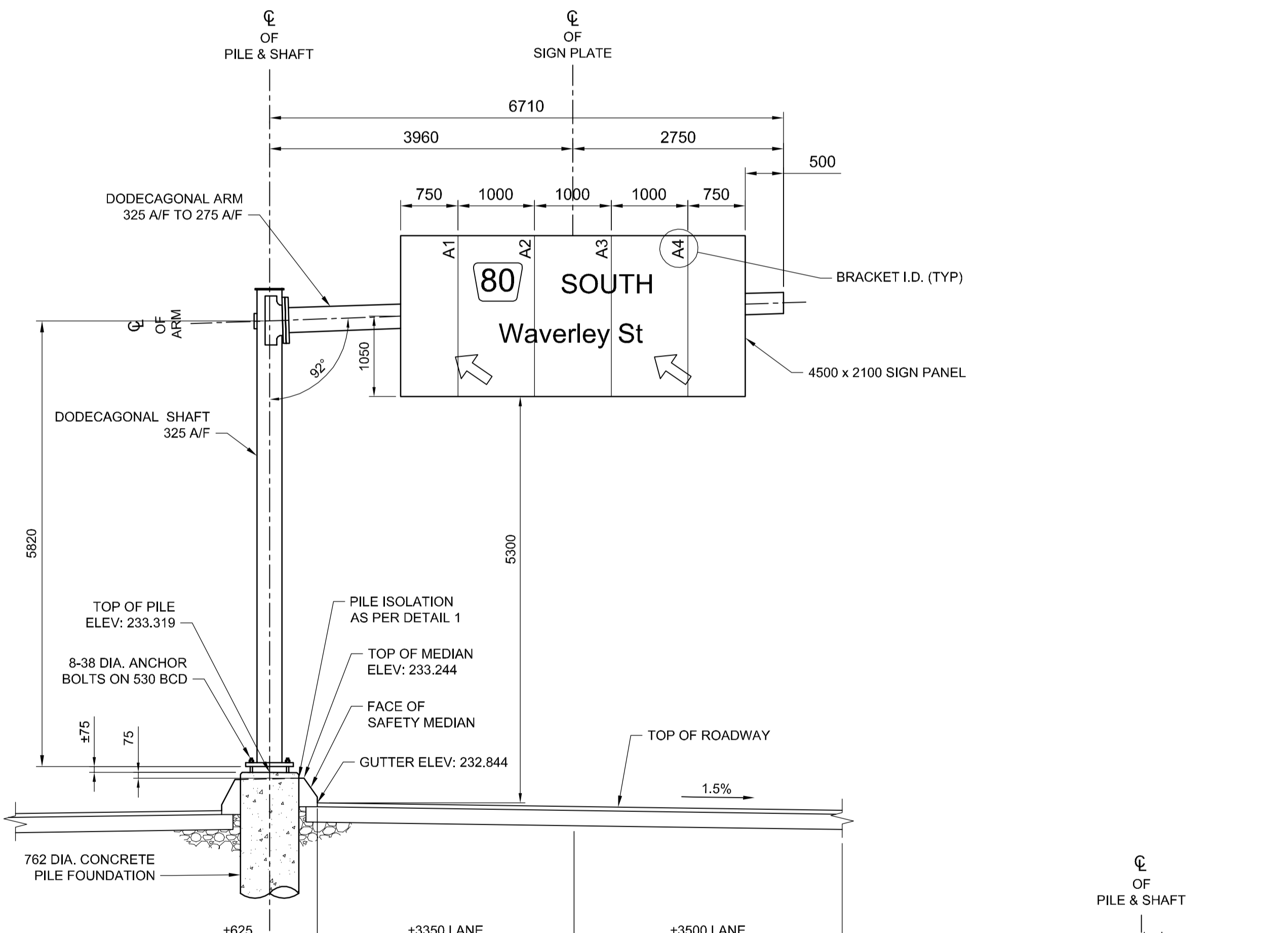


**SITE PLAN**  
SCALE 1:250



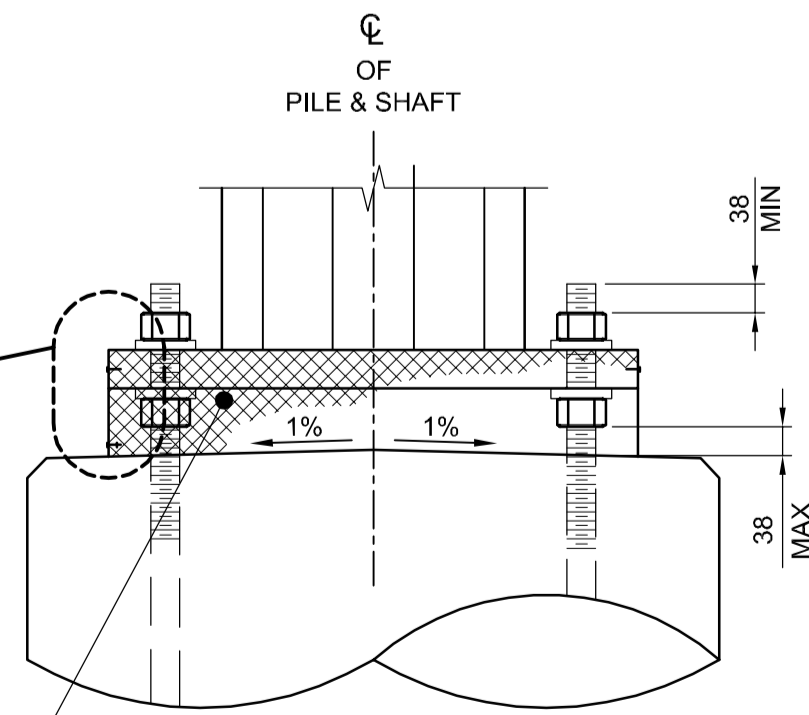
**S780 ELEVATION - LOOKING WEST**  
1:50

NOTE:  
ELEVATIONS SHOWN ARE APPROXIMATE.  
CONTRACTOR SHALL VERIFY ALL  
ELEVATIONS PRIOR TO INSTALLATION OF  
CONCRETE PILE FOUNDATION.

#8 - 1/2" LONG SS SELF-TAPPING SCREW  
C/W SS WASHER AT 200 O/C, FULL  
CIRCUMFERENCE OF BASE PLATE

#8 - 3/8" LONG SS SELF-TAPPING SCREW  
C/W SS NUT, 2 FLAT SS WASHERS,  
AND SS LOCK WASHER AT BOTTOM  
OF RODENT SCREEN SPLICE LAP

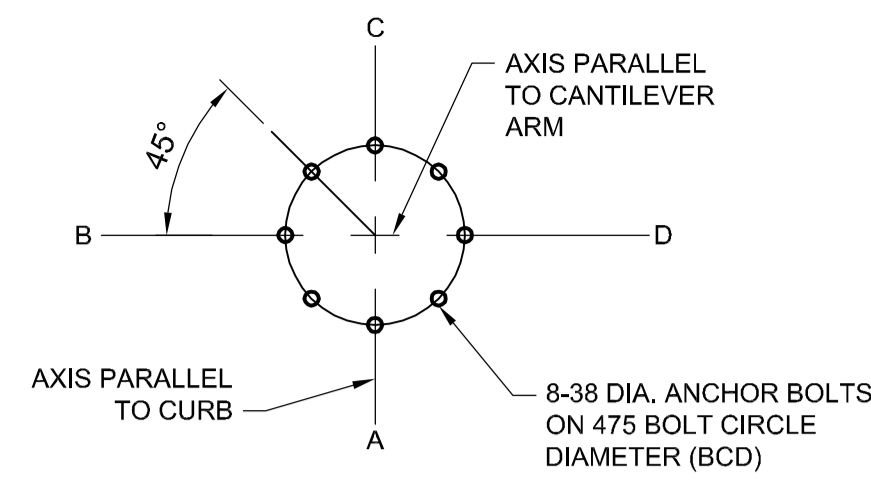
1/2" - 18F STAINLESS STEEL RODENT SCREEN  
FASTENED WITH SELF TAPPING SCREWS.  
SEE SPECIFICATIONS FOR DETAILS.



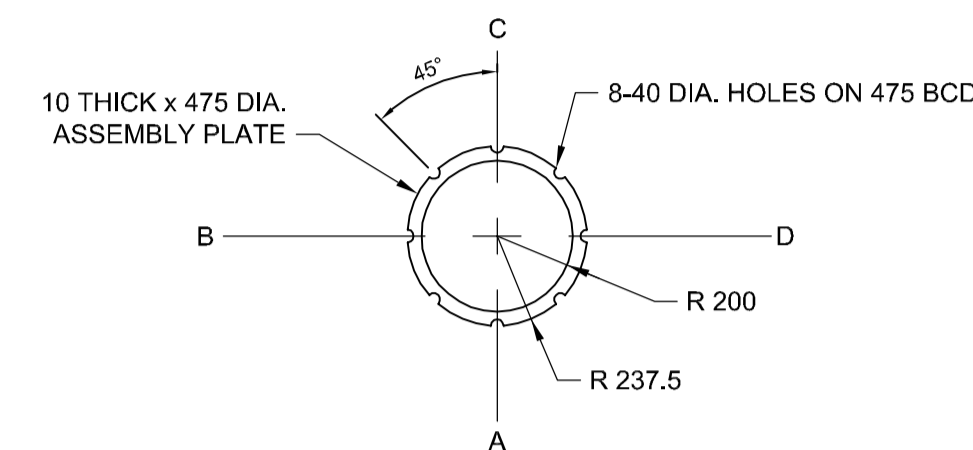
**PILE TOP DETAIL**  
1:10

**APEGM**  
Certificate of Authorization  
Dillon Consulting Limited (MB)  
No. 1789 Date: 2017/01/09

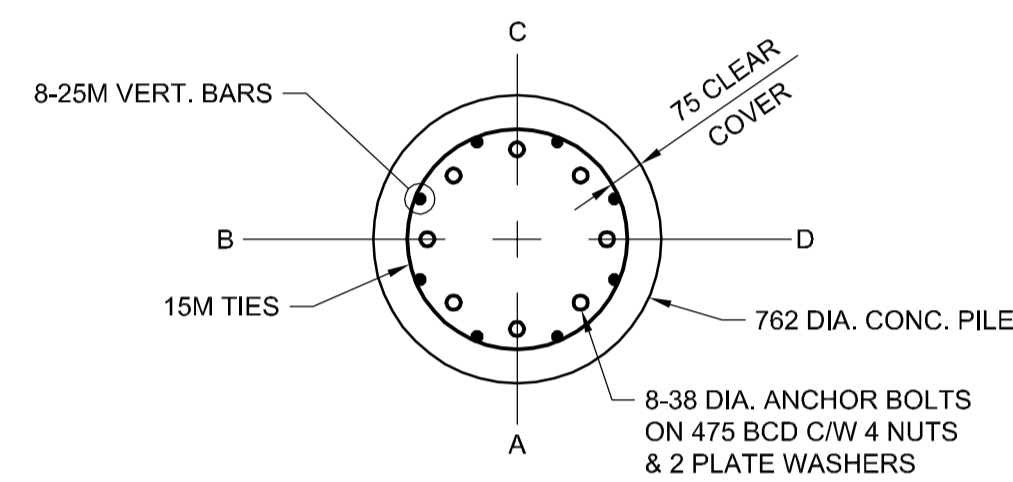
CENTRE OF PILE LAYOUT TABLE				
STRUCTURE	STATION	O/S	NORTHING	EASTING
S780	1+252.527	7.46	5524221.116	631000.555



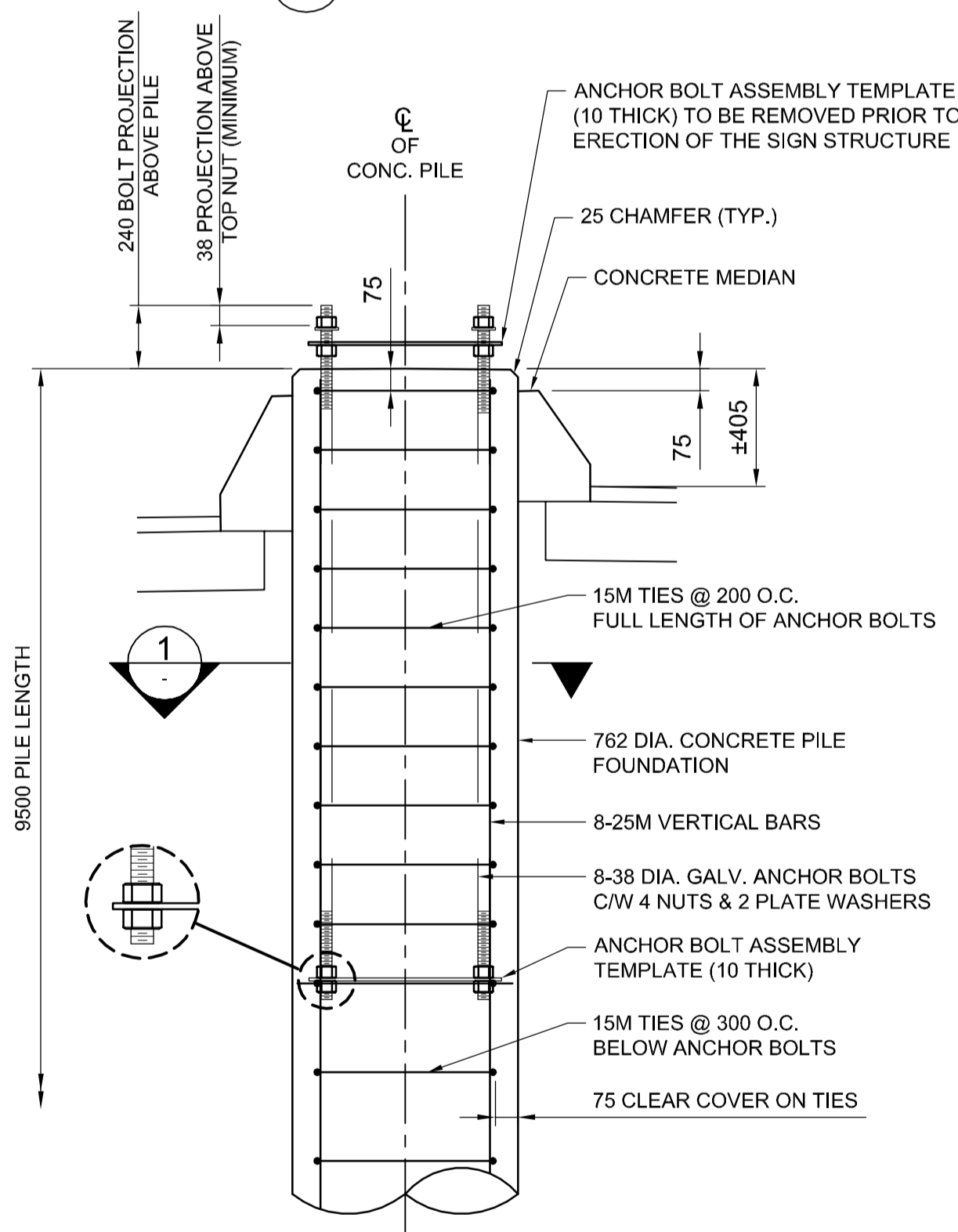
**ANCHOR BOLTS LAYOUT**  
1:20



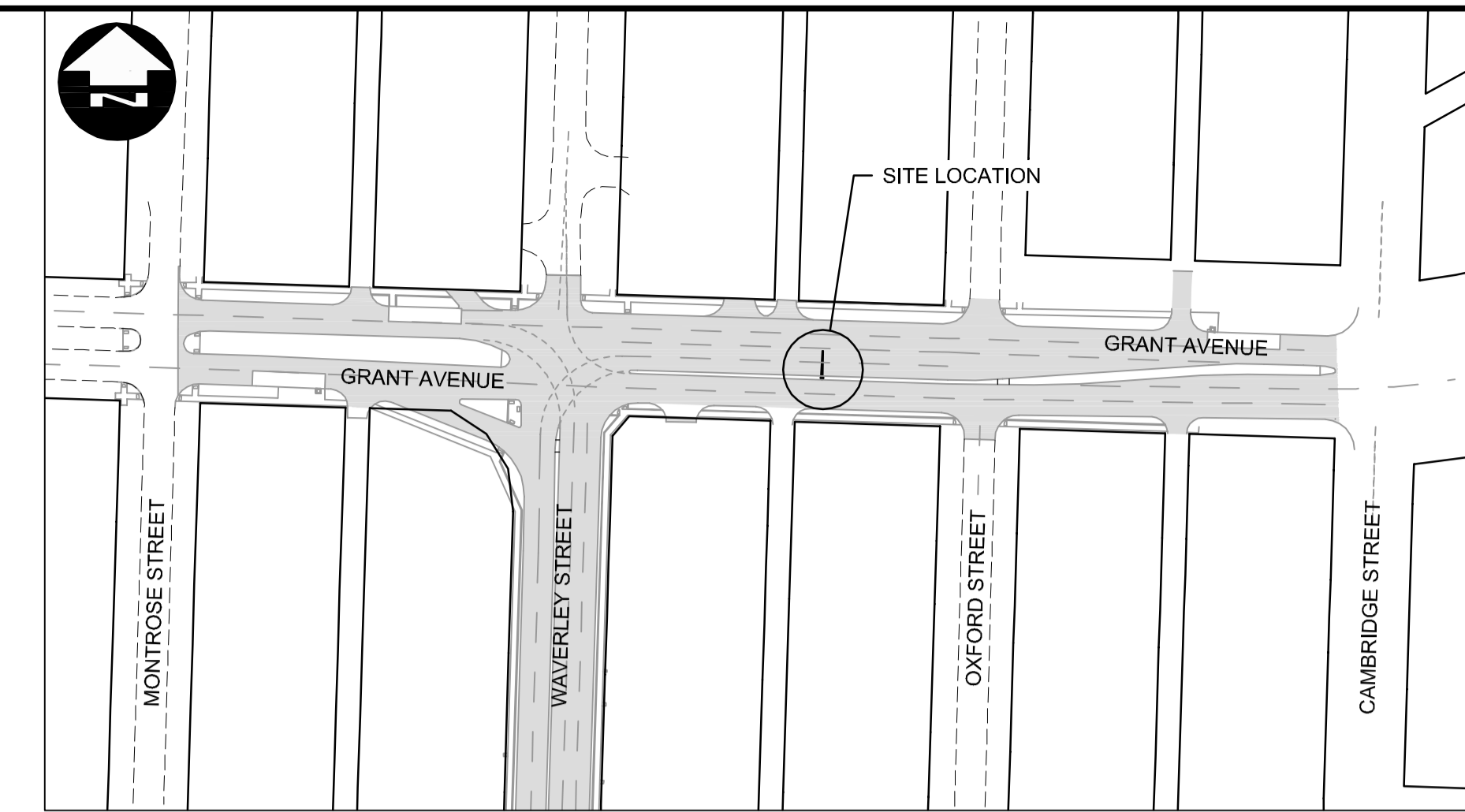
**ANCHOR BOLT ASSEMBLY TEMPLATE**  
1:20



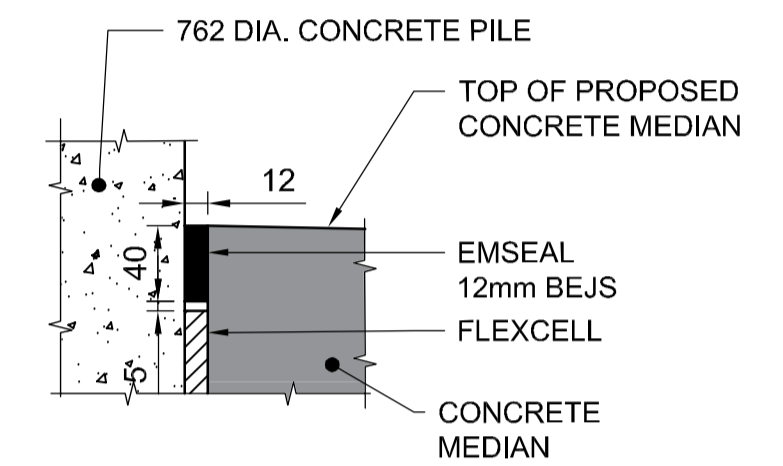
**SECTION 1**  
1:20



**CONCRETE PILE FOUNDATION DETAIL FOR S780**  
1:20



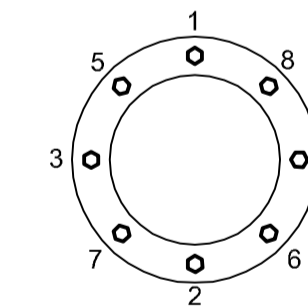
**KEY PLAN**  
SCALE 1:1500



**DETAIL 1 - PILE ISOLATION**  
1:4

**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)
  - 8-38 DIA. ANCHOR BOLTS 2.0m LONG
  - EACH BOLT C/W 4 NUTS & 2 PLATE WASHERS (SEE PLATE WASHER DETAIL FOR MK. 14)
  - TOP 300 THREADED UNC CLASS 2A
  - BOTTOM 100 THREADED UNC CLASS 2A
  - HOT DIP GALVANIZED FULL LENGTH, IN ACCORDANCE WITH ASTM F2329
  - B.C.D. = BOLT CIRCLE DIAMETER TO CENTRE OF BOLT GROUP
  - ANCHOR BOLTS SHALL BE ALIGNED WITH TEMPORARY STEEL TEMPLATES. PLACEMENT OF ANCHOR BOLTS AND CONCRETE WITHOUT THE TEMPLATES WILL NOT BE PERMITTED.
  - CONTRACTOR SHALL REMOVE THE TOP ANCHOR BOLT SETTING TEMPLATE, NUTS AND FORM, FOLLOWING A MINIMUM 24 HOUR CONCRETE CURING PERIOD.
  - 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.
  - ANCHOR BOLTS SHALL BE TIGHTENED USING A STAR PATTERN TIGHTENING SEQUENCE.



- FORM TOP OF PILE WITH A TUBULAR FORM (SONOTUBE):
  - 1m FOR DRILLED SHAFTS
  - 1.5m FOR HYDRO-EXCAVATED SHAFTS
- 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 A23.1-14 (4-7%)
- CEMENT IN ACCORDANCE WITH CSA A23.1-14

**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.

DESIGNED BY: DRA DRAWN BY: MDG HOR. SCALE: AS SHOWN VERTICAL: AS SHOWN	CHECKED BY: SSR APPROVED BY: DBW RELEASED FOR CONSTRUCTION	ENGINEER'S SEAL 	<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT WINNIPEG
		CONSULTANT PROJECT NUMBER <b>16-3353</b>	
DILLON CONSULTING		<b>WAVERLEY STREET UNDERPASS AT CN MILE 3.89 RIVERS SUB</b> CONTRACT 2: UNDERPASS STRUCTURE, RAILWORKS, ROADWORKS, LAND DRAINAGE SEWER, PUMPING STATION AND LANDSCAPING WORKS	
No. 1789 Date: 2017/01/09		<b>S780 - WB GRANT AVE AT WAYERLEY ST</b>	

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