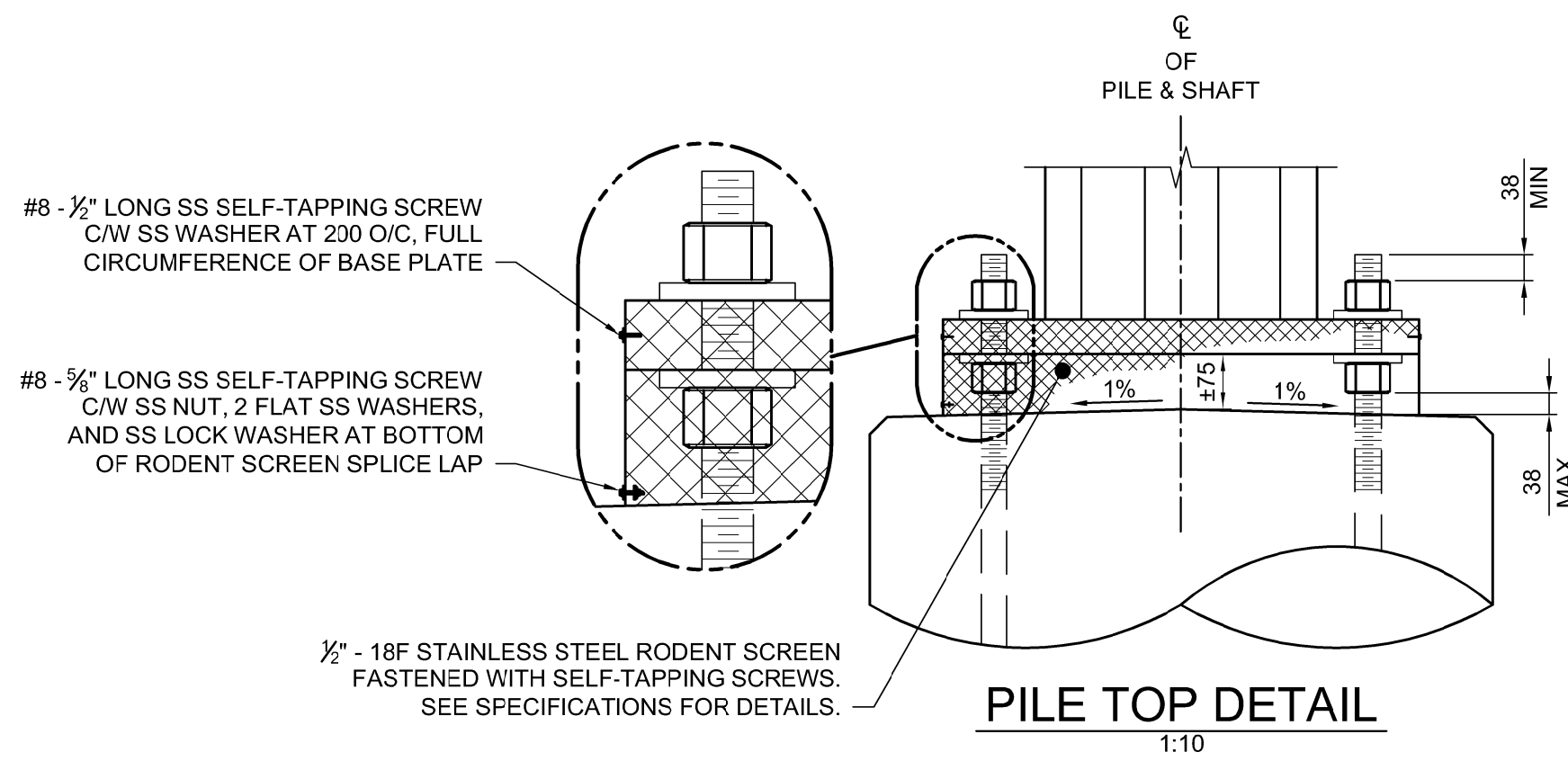
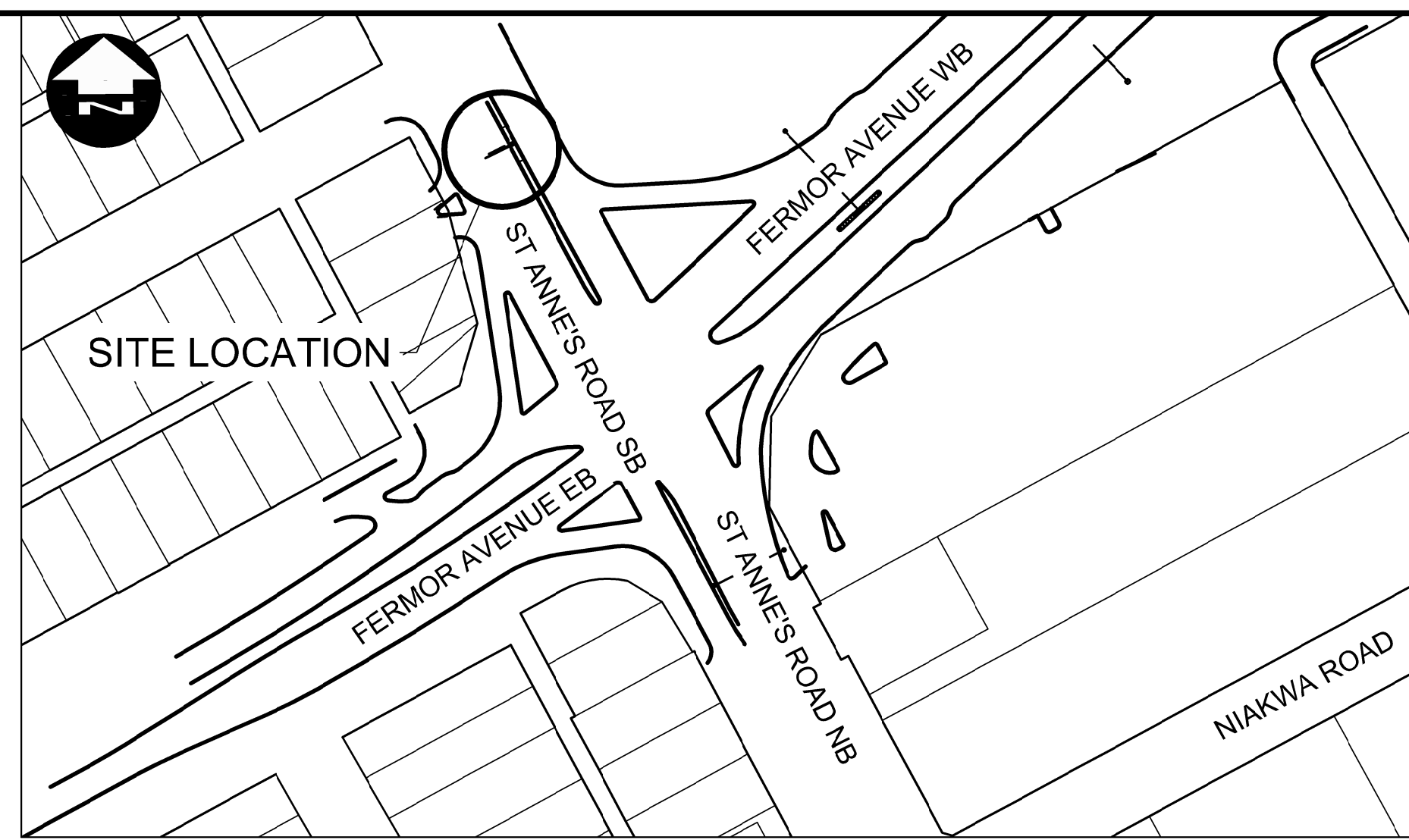


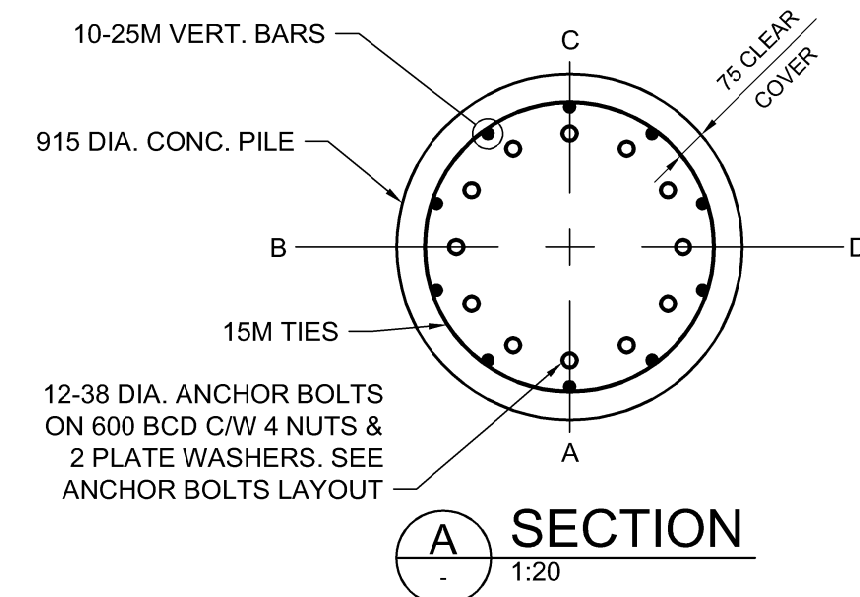
**SITE PLAN**  
SCALE 1:250



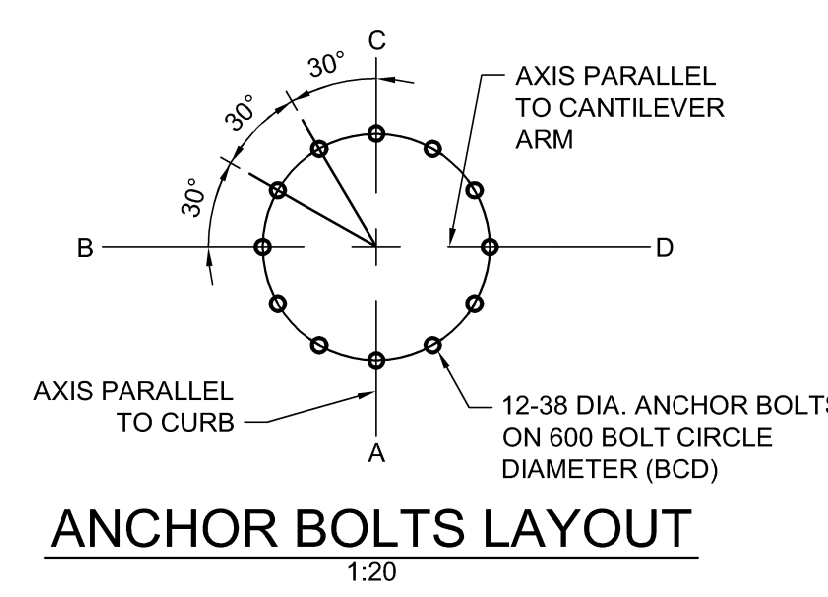
**PILE TOP DETAIL**  
1:10



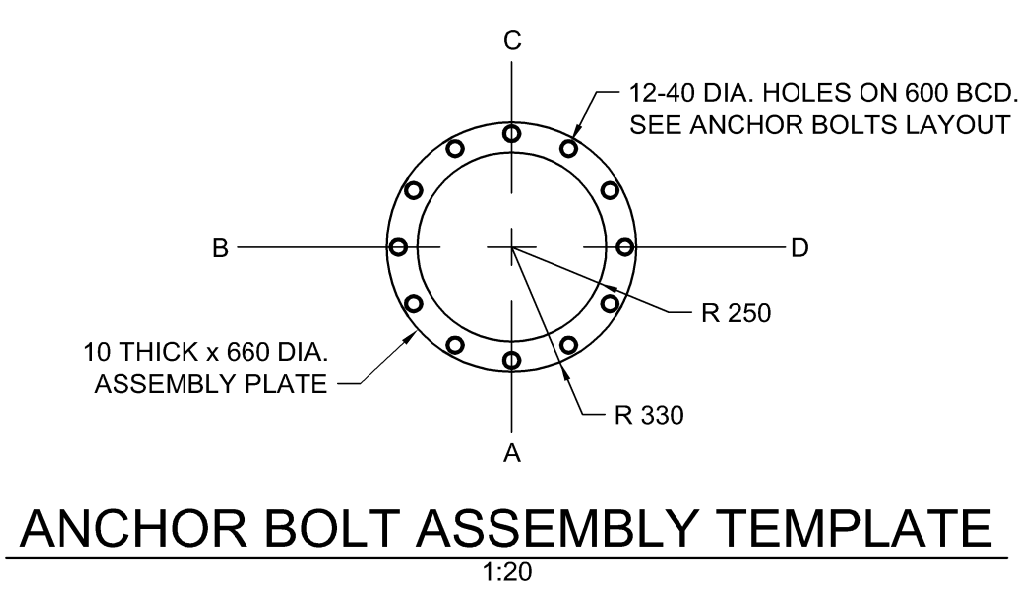
**KEY PLAN**  
SCALE 1:1500



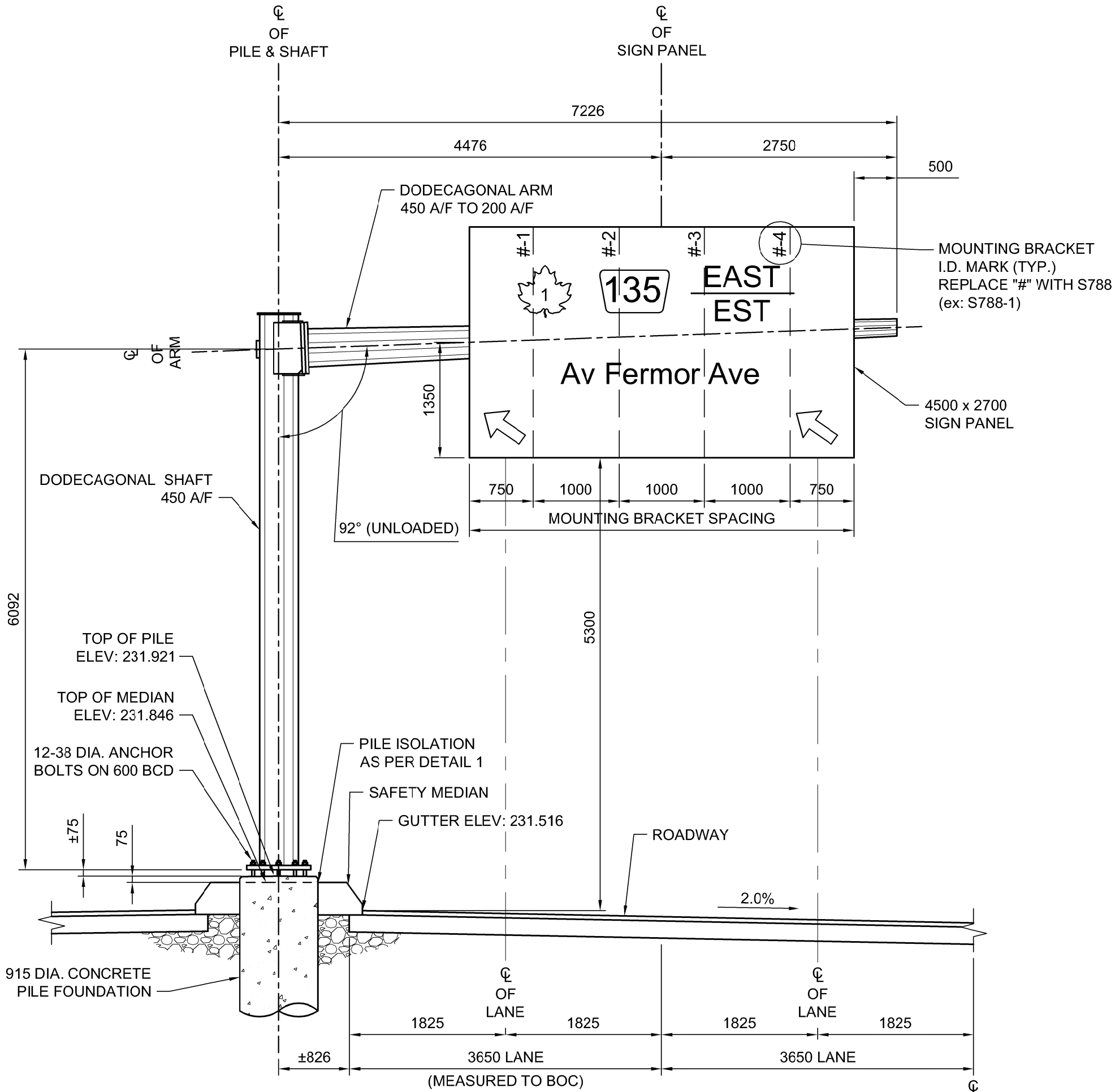
**SECTION A**  
1:20



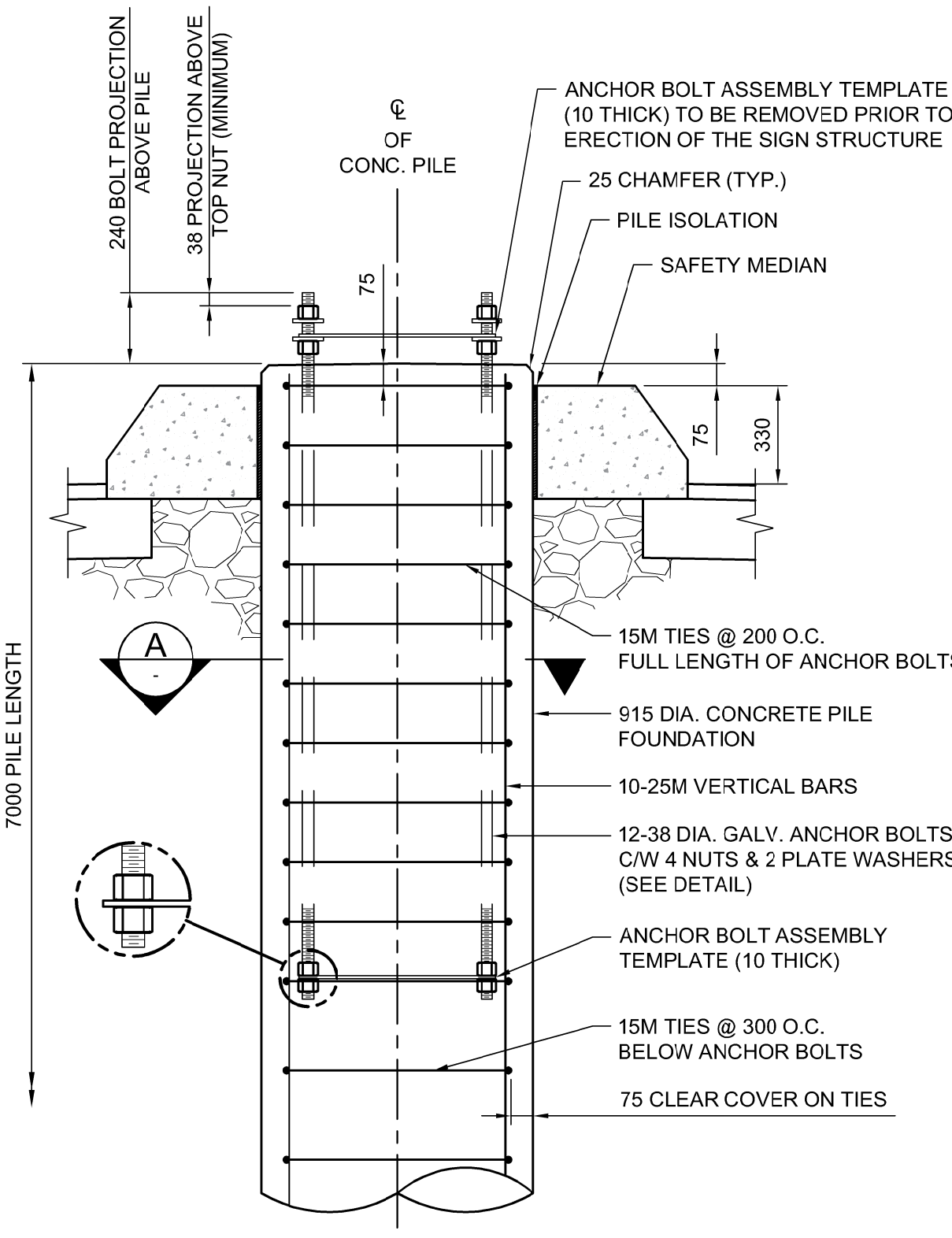
**ANCHOR BOLT LAYOUT**  
1:20



**ANCHOR BOLT ASSEMBLY TEMPLATE**  
1:20



**S788 ELEVATION - LOOKING SOUTH**  
1:50



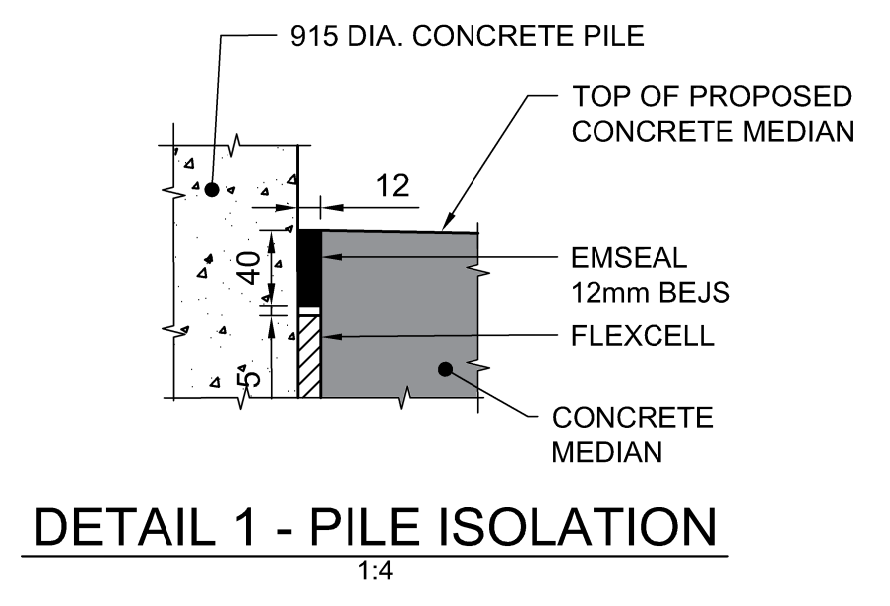
**CONCRETE PILE FOUNDATION DETAIL FOR S788**  
1:20

**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)
  - 12-38 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:

  - i) CLASS OF EXPOSURE: S-1
  - ii) MINIMUM COMPRESSIVE STRENGTH AT 56 DAYS = 35 MPa
  - iii) MAXIMUM WATER/CEMENT RATIO = 0.40
  - iv) AIR CONTENT: CATEGORY 2 PER TABLE 4 OF CSA A23.1-14 (4-7%)
  - v) CEMENT IN ACCORDANCE WITH CSA A23.1-14



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

**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.

G:\CAD\175932\Drawings\Structural\OHSS\175932-OHSS-CON-CS-S788.dwg

CENTRE OF PILE LAYOUT TABLE				
STRUCTURE	STATION	O/S	NORTHING	EASTING
S788	1+130.986	8.126m EAST	5524329.748	636259.267
(SOUTHBOUND ST. ANNE'S ROAD CONTROL LINE)			(UTM COORDINATES)	

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

**APEGM**  
Certificate of Authorization  
**Dillon Consulting Limited (MB)**  
No. 1789 Date: 2018/02/09

DESIGNED BY	DRA	CHECKED BY	SSR
DRAWN BY	MDG	APPROVED BY	MBL
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL	AS SHOWN		
NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	18/02/09	DRA
		DATE	2018/02/09

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
**D.R.C. AMORIM**  
Member 33215  
REGISTERED PROFESSIONAL ENGINEER

**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT  
**Winnipeg**  
**FERMOR AVENUE BRIDGE OVER SEINE RIVER**  
BRIDGE RE-HABILITATION, PEDESTRIAN-CYCLIST UNDERPASS STRUCTURE AND ROADWORKS FROM ST. ANNE'S ROAD TO ARCHIBALD STREET  
CITY DRAWING NUMBER P-3489-2017-CS-092  
SHEET 092 OF 100  
CONSULTANT DRAWING NUMBER CS-092