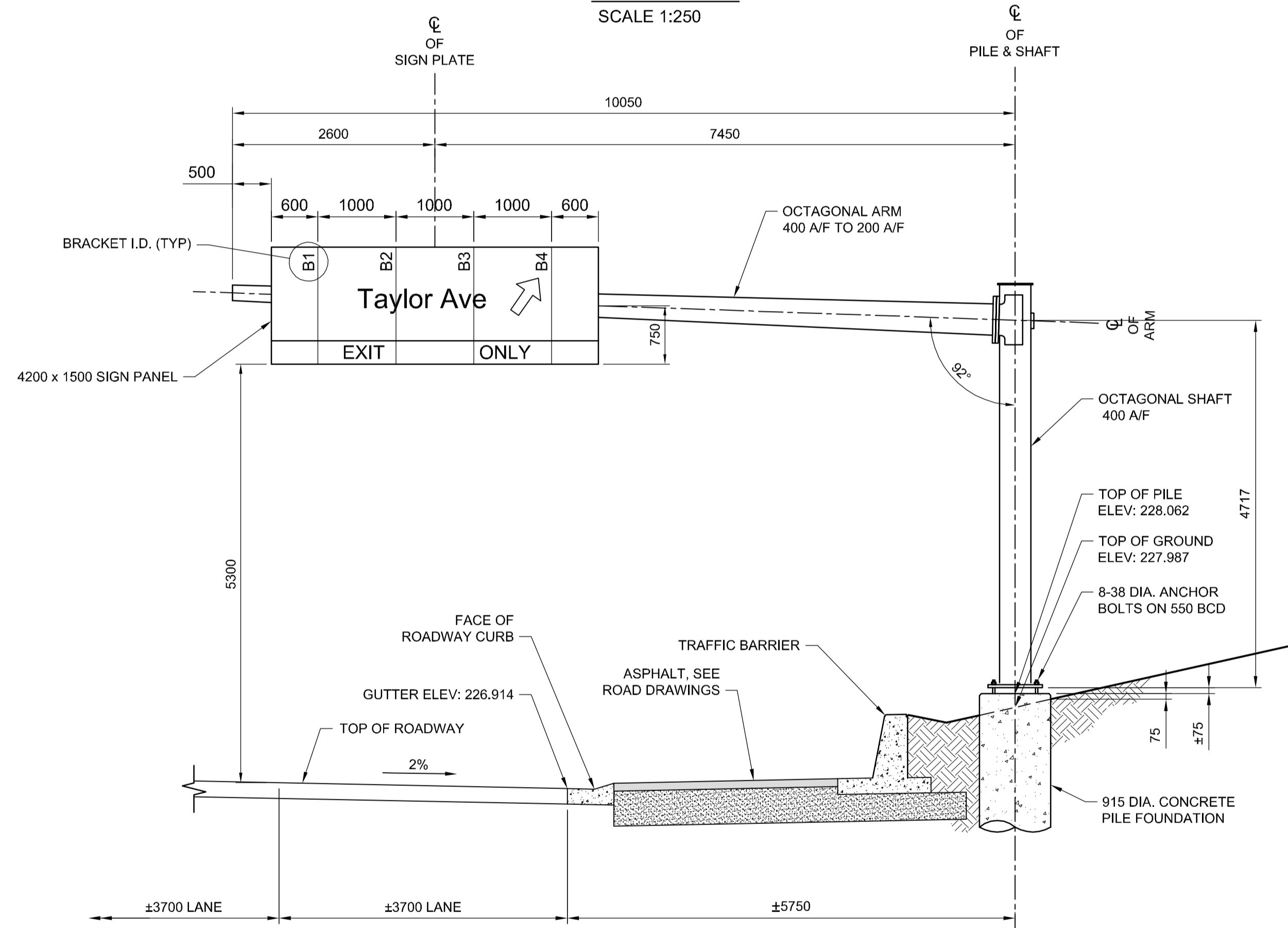


SITE PLAN
SCALE 1:250



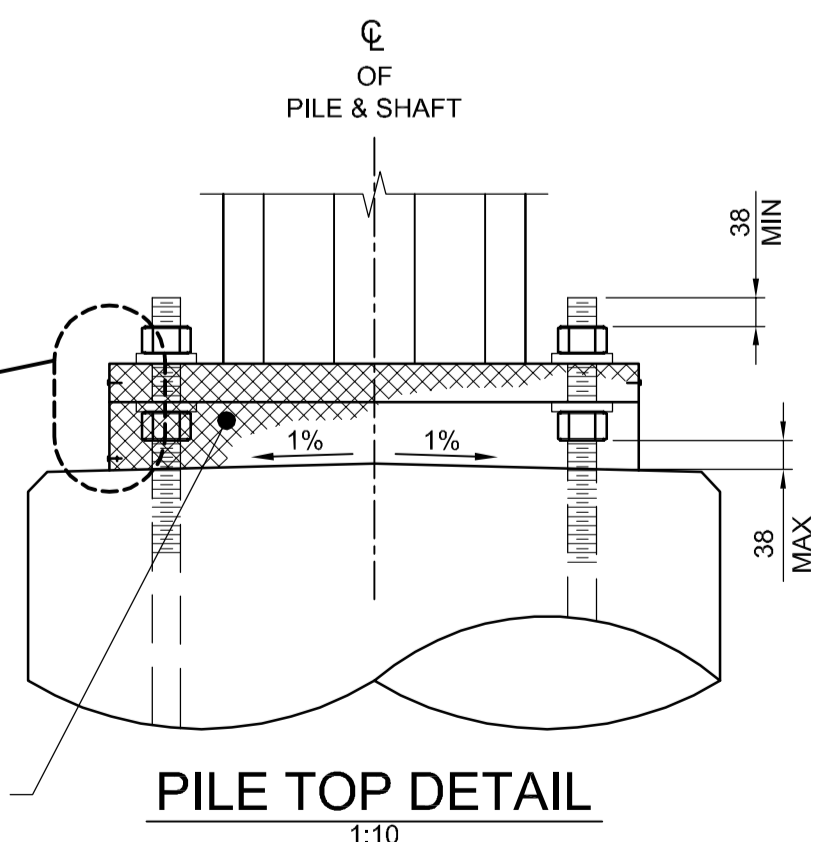
S781 ELEVATION - LOOKING NORTH
SCALE 1:50

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

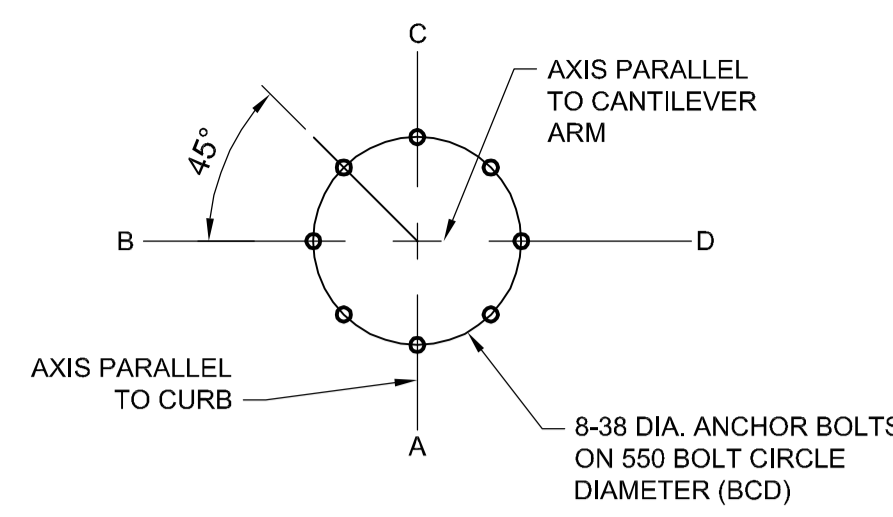
#8 - 1/2" LONG SS SELF-TAPPING SCREW
C/W SS WASHER AT 200 O/C, FULL
CIRCUMFERENCE OF BASE PLATE

#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

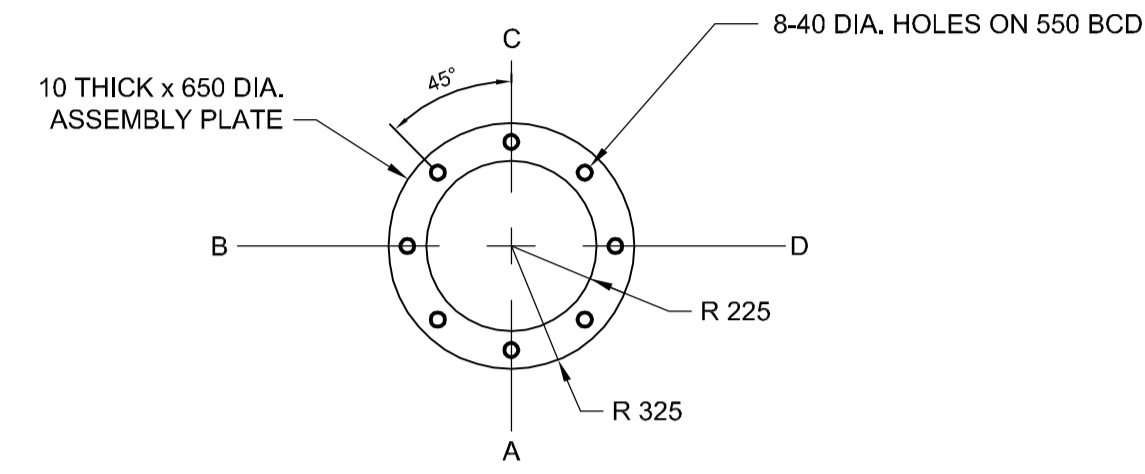
1/2" - 18F STAINLESS STEEL RODENT SCREEN
FASTENED WITH SELF-TAPPING SCREWS.
SEE SPECIFICATIONS FOR DETAILS.



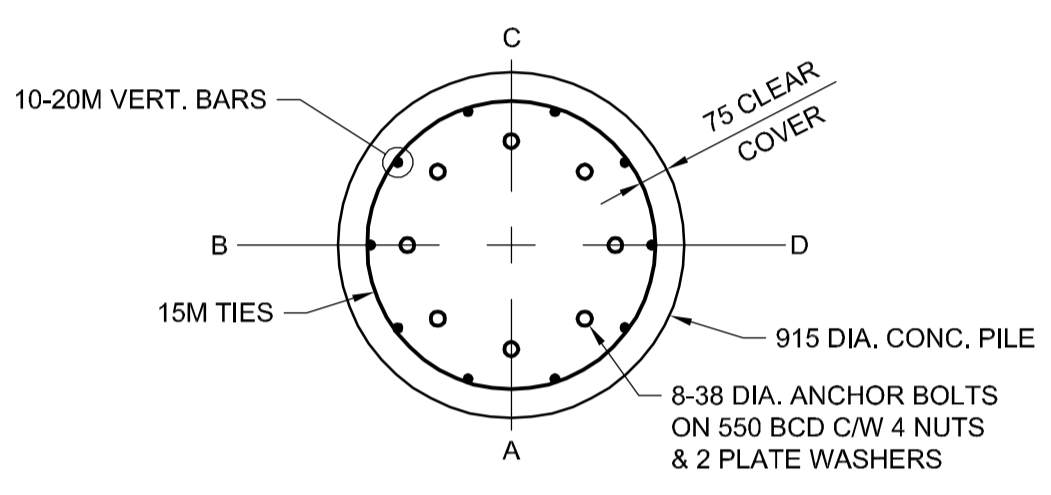
PILE TOP DETAIL
SCALE 1:10



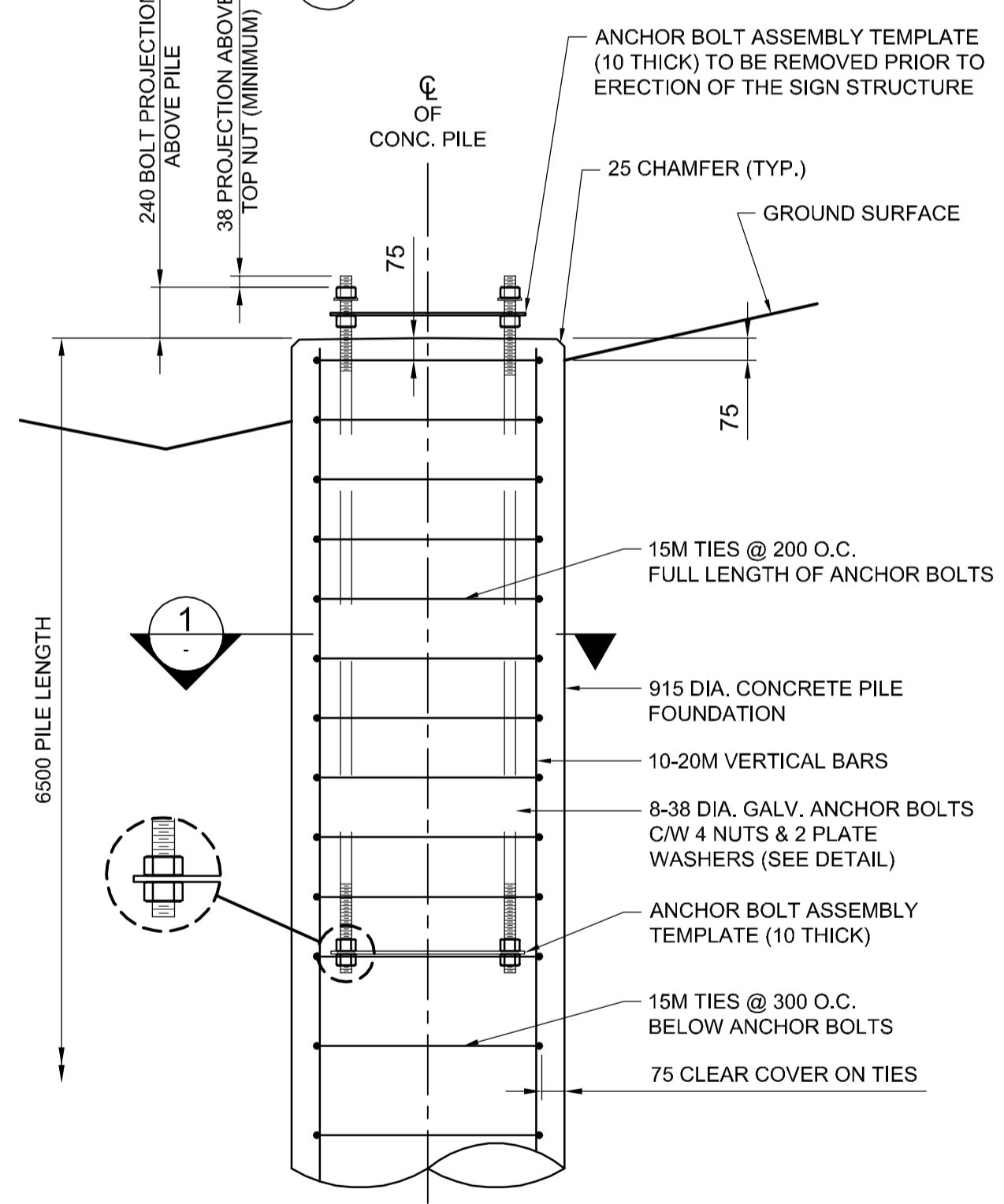
ANCHOR BOLTS LAYOUT
SCALE 1:20



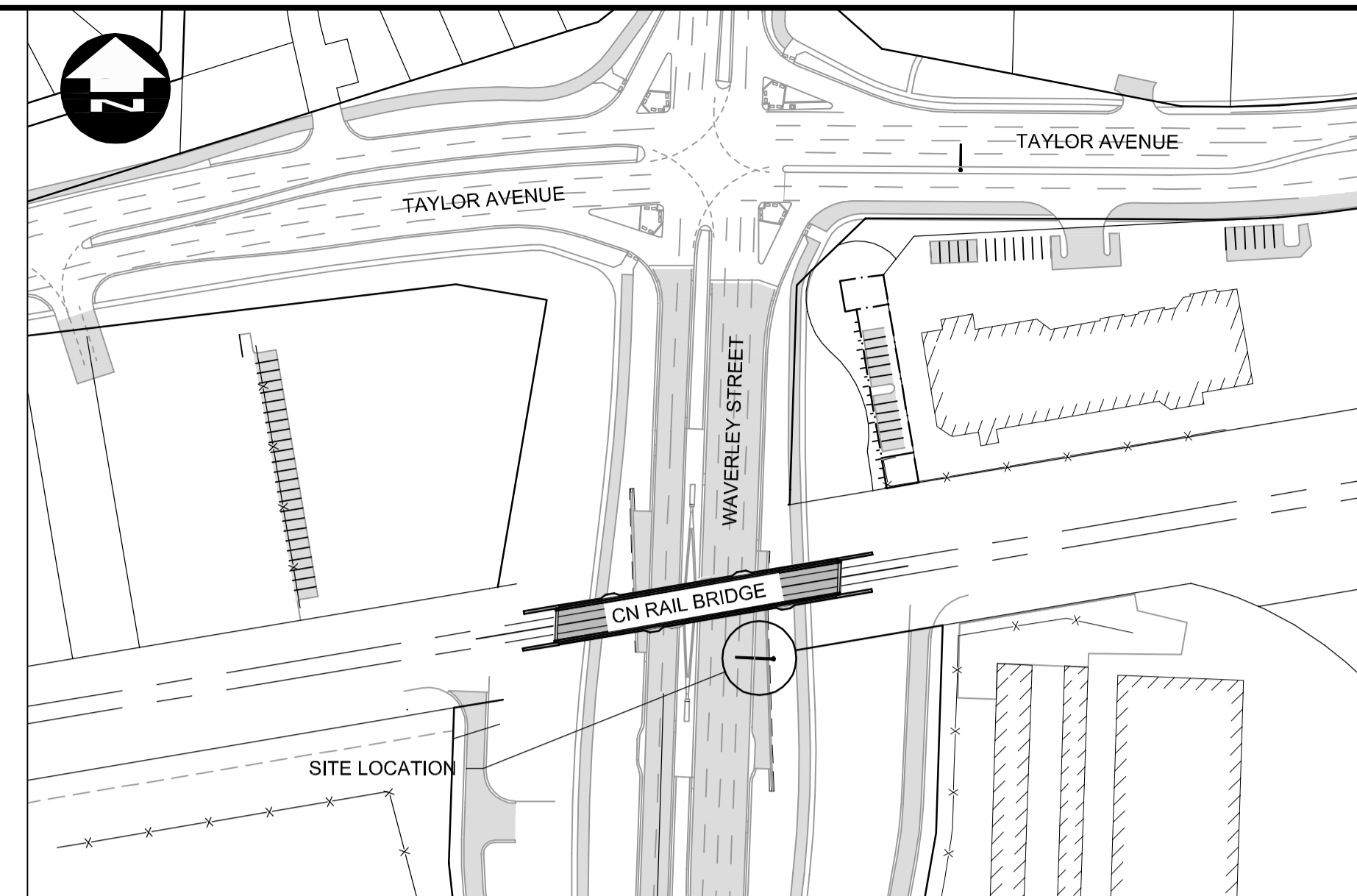
ANCHOR BOLT ASSEMBLY TEMPLATE
SCALE 1:20



SECTION 1
SCALE 1:20



CONCRETE PILE FOUNDATION DETAIL FOR S781
SCALE 1:20



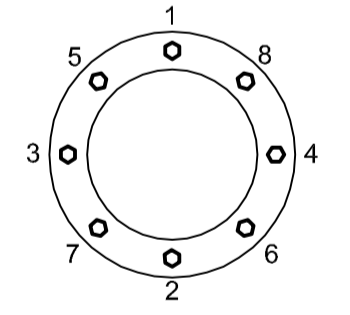
KEY PLAN
SCALE 1:1500

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 A153 CLASS C
 - 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.

CENTRE OF PILE LAYOUT TABLE				
STRUCTURE	STATION	O/S	NORTHING	EASTING
S781	1+856.532	16.85	5523561.446	630932.833

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

DESIGNED BY	DRA	CHECKED BY	SSR
DRAWN BY	MDG	APPROVED BY	DBW
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL	AS SHOWN		
NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	17/01/09	DA

ENGINEER'S SEAL
PROVINCE OF MANITOBA
D.R.C. AMORIM
Member 33215
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT PROJECT NUMBER
16-3353

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
Winnipeg
WAVERLEY STREET UNDERPASS AT CN MILE 3.89 RIVERS SUB
CONTRACT 2: UNDERPASS STRUCTURE, RAILWORKS,
ROADWORKS, LAND DRAINAGE SEWER, PUMPING STATION
AND LANDSCAPING WORKS
CITY DRAWING NUMBER
U-239-2016-C2-CS-070
SHEET 070 OF 085
CONSULTANT DRAWING NUMBER
C2-CS-070

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