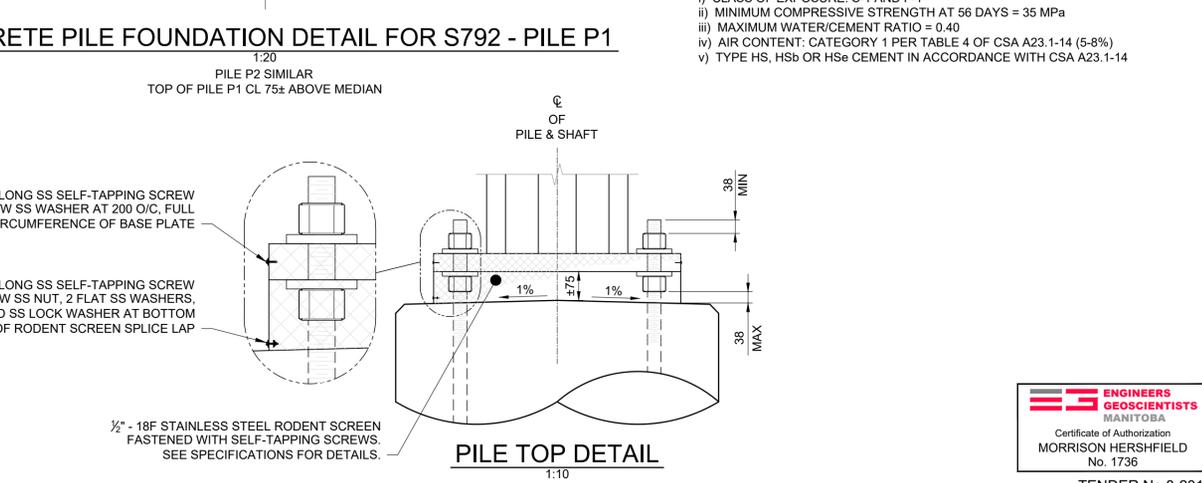
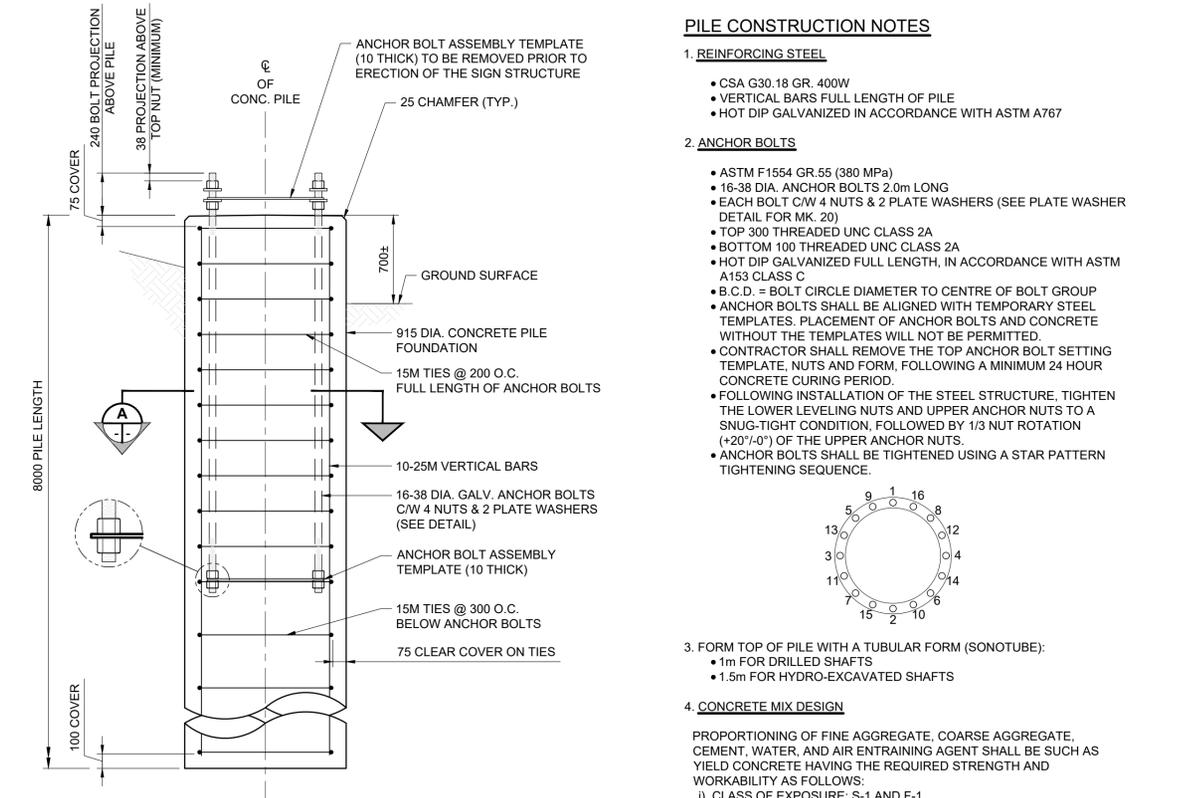
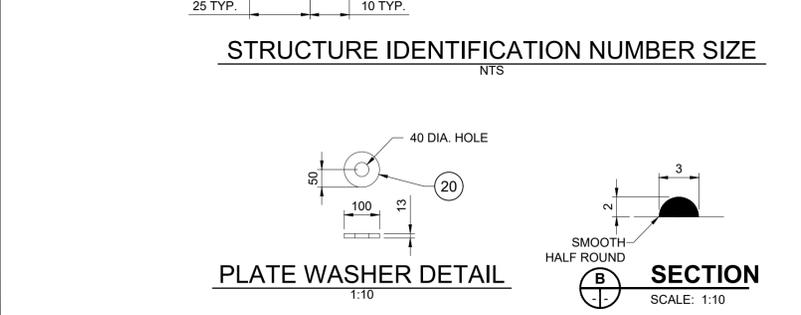
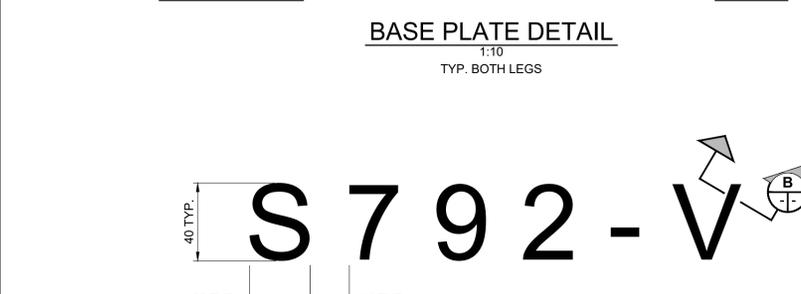
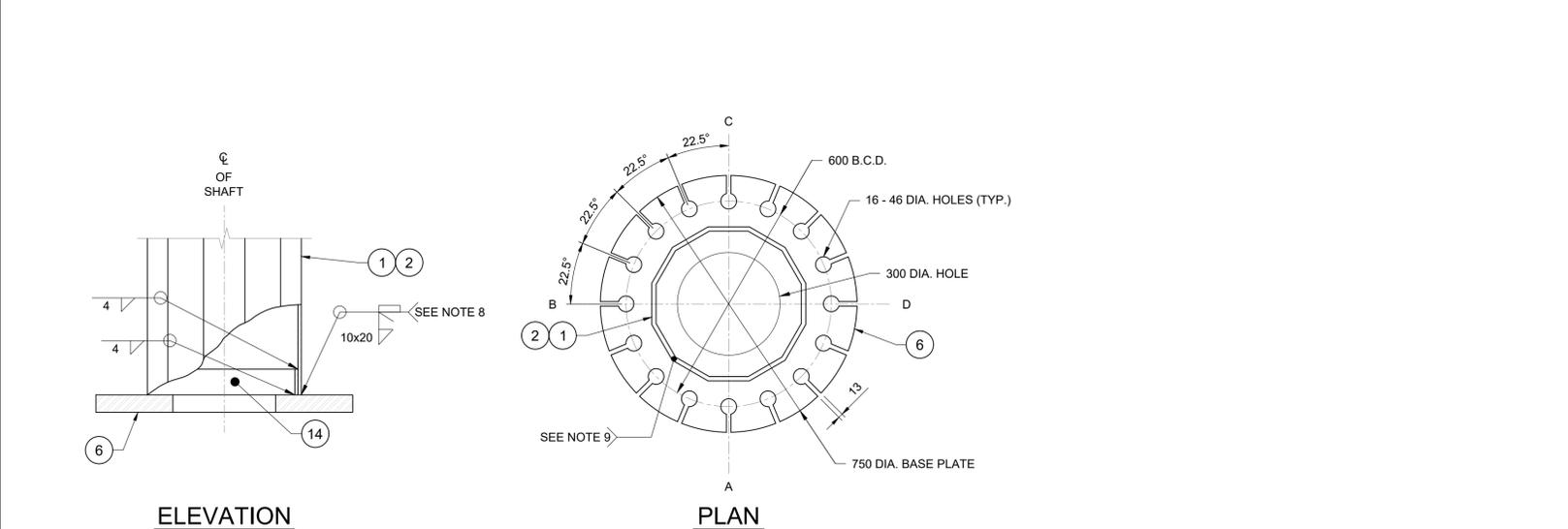
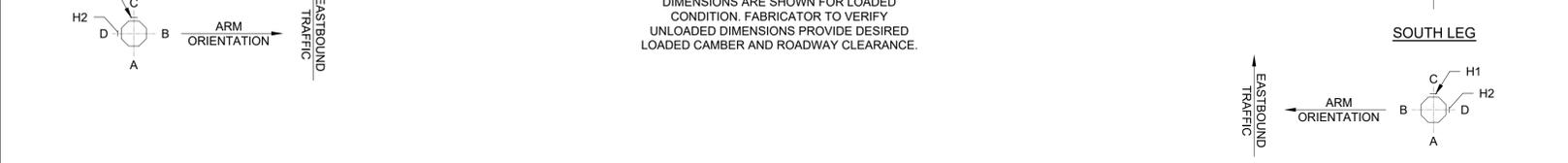
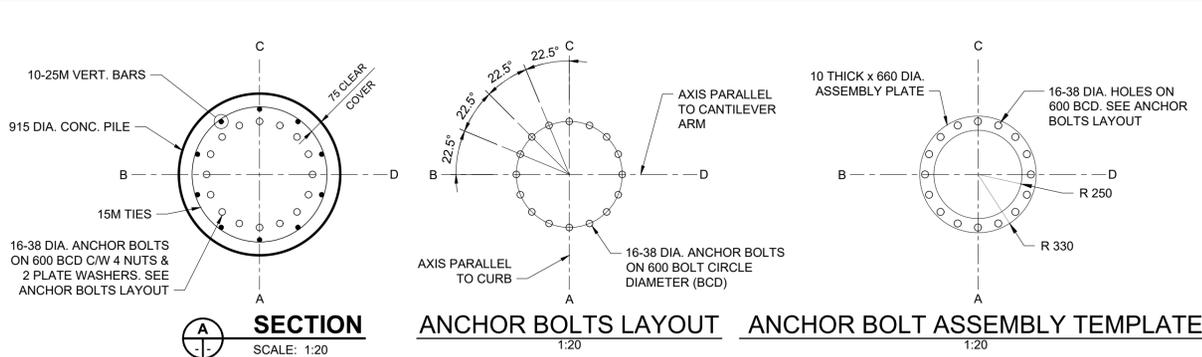
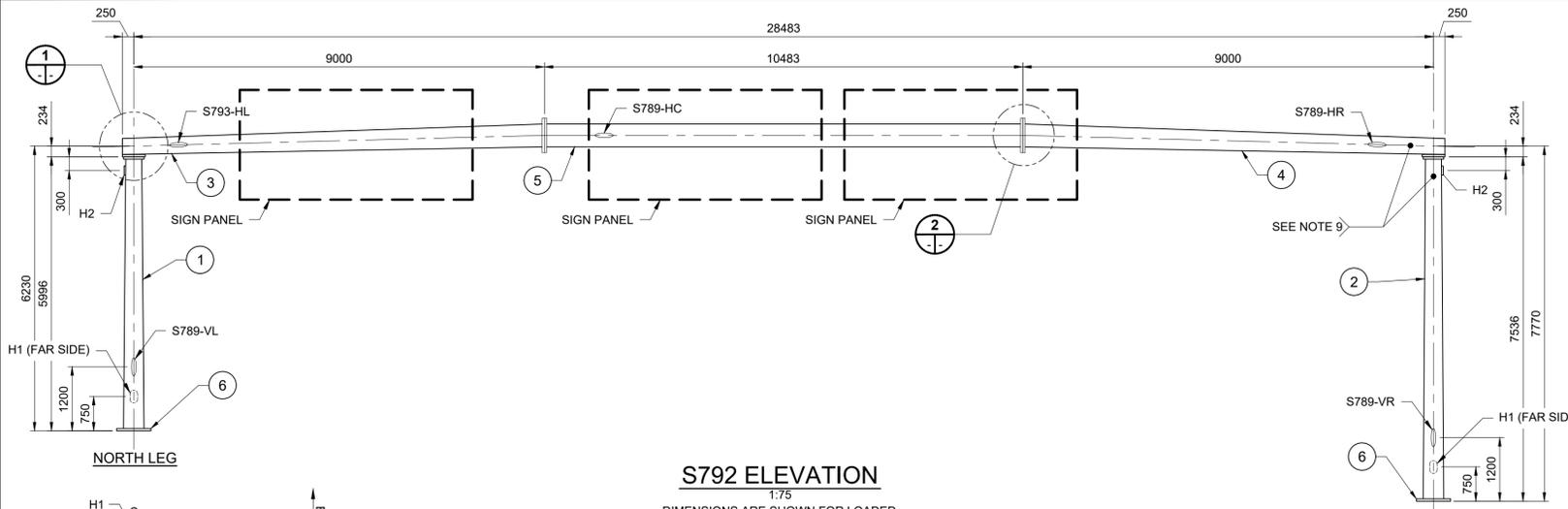


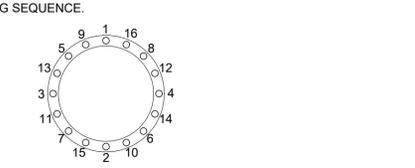
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 Last Saved: 3/12/2019 1:30 PM by jheppner  
 Plotted: 3/22/2019 8:28 AM by Alex Heppner  
 ISO A1 - 594mm x 841mm



- 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)
    - 16-38 DIA. ANCHOR BOLTS 2.0m LONG
    - EACH BOLT C/W 4 NUTS & 2 PLATE WASHERS (SEE PLATE WASHER DETAIL FOR MK. 20)
    - 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 AND F-1
    - MINIMUM COMPRESSIVE STRENGTH AT 56 DAYS = 35 MPa
    - MAXIMUM WATER/CEMENT RATIO = 0.40
    - AIR CONTENT: CATEGORY 1 PER TABLE 4 OF CSA A23.1-14 (5-8%)
    - TYPE HS, HSb OR HSs CEMENT IN ACCORDANCE WITH CSA A23.1-14



**LOCATION APPROVED UNDERGROUND STRUCTURES**

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.

GBM ELEV	55-015	233.170
C	ISSUED FOR TENDER	19/03/22 BAP
B	ISSUED FOR CLIENT REVIEW	19/02/15 BAP
A	N/A	-
No.	REVISIONS	YY/MM/DD BY

**MORRISON HERSHFIELD**

DESIGNED BY	TN	CHECKED BY	GQW
DRAWN BY	AH	APPROVED BY	BAP
DATE	19/02/15	RELEASED FOR CONSTRUCTION	N/A
HOR SCALE	AS SHOWN	VERT SCALE	AS SHOWN



**THE CITY OF WINNIPEG**  
**PUBLIC WORKS DEPARTMENT**  
 ENGINEERING DIVISION

2019/2020 REGIONAL STREET RENEWAL PROGRAM  
**FERMOR AVENUE**  
 FROM LAGIMODIERE BOULEVARD  
 TO PLESSIS ROAD (CITY BOUNDARY)  
**OVERHEAD SIGN STRUCTURE**  
 S792 FERMOR AVE. EB, WEST OF LAGIMODIERE BLVD.  
**FABRICATION DETAILS 1**

CITY DRAWING NUMBER: P-3501-51  
 SHEET 51 OF 63  
 DRAWING No. 51

**METRIC**  
 WHOLE NUMBERS INDICATE MILLIMETRES  
 DECIMALIZED NUMBERS INDICATE METRES



TENDER No.8-2019