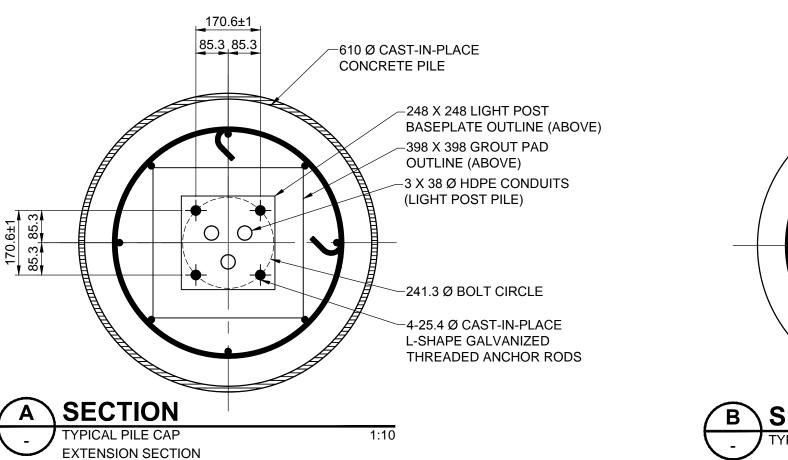


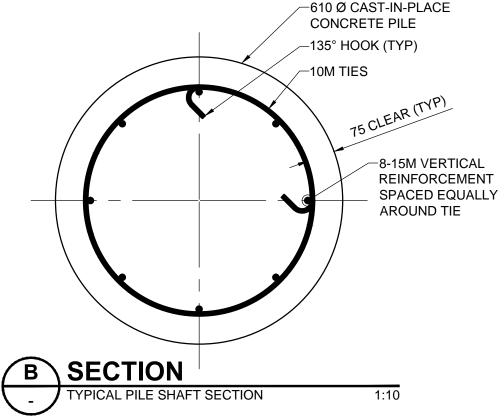
LIGHT POST ANCHORAGE INSTALLATION NOTES: CAST ANCHORS INTO CONCRETE PILE. SET ANCHOR ROD LOCATION AND PROJECTION TO THE TOLERANCES SHOWN ON THE DRAWINGS BY USE OF A PLYWOOD TEMPLATE. PROVIDE TEMPORARY HEAVY HEX NUTS TO HOLD THE ANCHORS TO THE TEMPLATE WITH THE CORRECT THREAD PROJECTION DURING THE CONCRETE POUR. DISCARD THESE NUTS FOLLOWING THE POUR AND PROVIDE THE NUTS SHOWN ON THE DRAWINGS FOR THE PERMANENT INSTALLATION.

2. PROVIDE 4- LEVELLING NUTS C/W FLAT WASHERS TO LEVEL BASEPLATE, AS SHOWN. PROVIDE 4- RESTRAINING NUTS C/W LOCK WASHERS AND FLAT WASHERS TO RESTRAIN BASEPLATE, AS SHOWN.

3. CAST GROUT PAD TO DIMENSIONS SHOWN.







GENERAL NOTES:

- GEOMETRY, REINFORCEMENT AND LAYOUT OF EXISTING STRUCTURES ARE BASED ON INFORMATION OBTAINED FROM EXISTING DESIGN INFORMATION, AND LIMITED FIELD SURVEY DATA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL NECESSARY DIMENSIONS SUCH THAT WORK CAN BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO
- IMPERIAL DIMENSIONS HAVE BEEN CONVERTED TO 1 mm ACCURACY (HARD UNIT CONVERSION WHERE APPLICABLE).
- THE SCALES SHOWN ON THESE DRAWINGS ARE CORRECT FOR A1 (594 mm X 841 mm) SIZED DRAWING SHEETS. DO NOT DETERMINE DIMENSIONS BY SCALING OFF DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATIONS OF ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES AND REPORTING ANY DISCREPANCIES OR CONFLICTS TO THE CONSULTANT PRIOR TO CONSTRUCTION.
- EXCEPT WHERE INDICATED OTHERWISE THESE DRAWINGS SHOW DETAILS FOR THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF WORKERS AND THE DESIGN AND STABILITY OF ANY TEMPORARY WORKS DURING CONSTRUCTION. CONSTRUCTION METHODS REQUIRING THE TEMPORARY INSTALLATION OF SHORING, SCAFFOLDING, BRACING, ETC. SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO PERFORM AND TAKE RESPONSIBILITY FOR ANY SUCH DESIGNS NECESSARY TO COMPLETE THE CONSTRUCTION AND AS REQUIRED BY THE CONTRACT DOCUMENTS.

FOUNDATION DESIGN NOTES:

- DESIGN SPECIFICATION: MANITOBA BUILDING CODE
- LOADS TRANSFERRED INTO THE FOUNDATIONS FROM THE SUPERSTRUCTURE ARISE FROM SUPERSTRUCTURE SELF-WEIGHT, 25 mm RADIAL ICE, AND WIND.
- FACTORED ULS REACTION AT TOP OF ONE PILE: Mf < 20 kN*m, Pf < 10 kN

GEOTECHNICAL NOTES:

- NO GEOTECHNICAL INVESTIGATION HAS BEEN PERFORMED FOR THIS WORK.
- STABILITY OF THE PILE EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR

PILE NOTES:

INSTALLATION:

- HAVE CASING ON-SITE AT TIME OF DRILLING, AND EMPLOY TEMPORARY STEEL CASING AS REQUIRED TO PREVENT SLOUGHING OF DRILL HOLES.
- PILE EXCAVATION SHALL BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEER PRIOR TO PLACING CONCRETE. ENSURE PILE HOLES ARE FREE OF LOOSE MATERIAL, FOREIGN MATTER, AND WATER PRIOR TO PLACING CONCRETE.
- DISPOSE OF EXCAVATED MATERIALS OFF-SITE.
- CAST PILE CONCRETE IMMEDIATELY FOLLOWING DRILLING. WITHDRAW CASING IMMEDIATELY FOLLOWING CONCRETING. TOP UP CONCRETE DISPLACED BY CASING WITHDRAWAL. ENSURE TROP OF PILE IS FULLY COMPACTED/ VIBRATED AND FINISHED TO DESIGN PILE CUT-OFF ELEVATION.
- PILE TOLERANCES:
 - HORIZONTAL: MAXIMUM VARIATION OF LOCATION ±25 mm
 - CONCRETE CUT-OFF ELEVATION: ±5 mm
 - SHAFT OUT OF PLUMB: MAXIMUM 1.0% OF LENGTH
- HAVE TWO WORKING VIBRATORS ON-SITE DURING CONCRETING OPERATIONS. VIBRATE PILE CONCRETE OVER THE FULL LENGTH OF THE PILE. VIBRATION MAY OCCUR PRIOR TO THE REMOVAL OF PILE CASING.
- FOLLOWING DRILLING, PROVIDE GREASED SONOTUBE FORM, WITH INSIDE DIAMETER TO NOMINALLY MATCH THE PILE SHAFT DIAMETER, OVER TOP 2500 OF PILE DEPTH BELOW FINISHED GRADE.
- PROVIDE SPACERS (BOTTOM AND MIDDLE OF PILE CAGE) TO ENSURE SPECIFIED COVER IS MAINTAINED.
- DO NOT DRILL ADJACENT PILES WITHIN 3 SHAFT DIAMETERS UNTIL 48 HOURS HAS ELAPSED FROM INSTALLING THE FIRST PILE.

DEFECTIVE PILES:

 THE ENGINEER MAY REJECT ANY PILE THAT DOES NOT MEET THE CONTRACT REQUIREMENTS. THE CONTRACTOR SHALL REPLACE THE PILE WITH A SOLUTION TO THE ENGINEER'S SATISFACTION. THE COST OF REMEDY SHALL BE BORN BY THE CONTRACTOR.

MATERIAL & HARDWARE NOTES:

 ALL SUBMITTALS NOTED HEREIN MUST BE MADE AT LEAST 10 DAYS PRIOR TO PERFORMANCE OF THE WORK, AND ENGINEER'S REVIEW AND WRITTEN ACCEPTANCE MUST BE RECEIVED PRIOR TO PERFORMING THE WORK. BASIS OF DESIGN & SUBSTITUTIONS:

• THE DESIGN ASSUMES PARTICULAR MATERIAL AND HARDWARE CHARACTERISTICS. ANY SUBSTITUTION OF MATERIALS OR HARDWARE DESCRIBED IN THE DRAWINGS & SPECIFICATIONS MUST BE REQUESTED IN WRITING A MINIMUM OF 10 DAYS IN ADVANCE OF THE WORK. ACCEPTANCE OR REJECTION OF SUBSTITUTIONS IS AT THE ENGINEER'S SOLE DISCRETION.

CONCRETE:

- REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CSA A23.1-14.
- CONCRETE FORMWORK SHALL CONFORM TO CAN/CSA S269.3-M92 (R2008)
- CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS ARE NOT PERMITTED WITHOUT REVIEW AND ACCEPTANCE BY THE ENGINEER.

ITEM	CLASS OF EXPOSURE	CEMENT	MAX WATER TO CEMENTING MAT'LS RATIO	MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (MPa)	NOMINAL MAX SIZE OF AGGREGATE (mm)	AIR CONTENT (%)	CLEAR COVER REINFORCING STEEL, UNO (mm)
PILES	C-1 & S-1	TYPE HSb	0.45	30	20	4-7	75

- EXPOSED CONCRETE FINISHES TO BE: TOP OF PILE SMOOTH FLOAT FINISH
- IMMEDIATELY FOLLOWING FORM REMOVAL, GRIND OFF ALL FINS, AND REPAIR TIE-HOLES AND AIR VOIDS LARGER THAN 5 mm WITH PATCHING MORTAR OF COLOUR MATCHING THE BASE CONCRETE.
- UNSOUND CONCRETE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

SUBMITTALS:

 SUBMIT SUPPLIER CONCRETE MIX DESIGN DOCUMENTATION DEMONSTRATING COMPLIANCE WITH CONTRACT REQUIREMENTS.

LOW-SHRINK GROUT:

• LOW SHRINK GROUT SHALL BE SIKAGROUT 212 OR ACCEPTED EQUIVALENT. INSTALL TO MANUFACTURER'S SPECIFICATIONS.

SUBMIT GROUT SUPPLIER TECHNICAL DATA.

REINFORCING STEEL:

- PLAIN REINFORCING STEEL TO CAN/CSA-G30.18 GRADE 400W UNLESS OTHERWISE NOTED
- REINFORCING STEEL SPLICES TO CAN/CSA S6-14 CLASS B.

SUBMITTALS:

• SUBMIT REINFORCING STEEL MILL CERTIFICATES.

THREADED ROD ANCHORS FOR LIGHT POST:

- 25 Ø X 914 X 102 GALVANIZED STEEL L-SHAPE ANCHOR BOLTS, AASHTO M314-90 GRADE 55 WITH YIELD STRENGTH 379 MPa. 250 mm OF THREADED END GALVANIZED PER ASTM A153.
- GALVANIZE ALL HARDWARE.
- CONTRACTOR TO ENSURE THAT ANCHOR BOLT THREADS ARE FREE OF DAMAGE AND FOREIGN MATERIAL.
- REFER TO DETAIL 1 FOR ANCHOR INSTALLATION NOTES. INSTALLATION TOLERANCES TO BE AS SHOWN.

SUBMITTALS:

• SUBMIT SUPPLIER DOCUMENTATION FOR THREADED ROD ANCHORS DEMONSTRATING COMPLIANCE WITH CONTRACT REQUIREMENTS.

ANCHORS FOR GATE POSTS:

 DESIGN OF ANCHORAGE FOR GATE POSTS IS THE DELEGATED DESIGN RESPONSIBILITY OF THE GATE POST SUPPLIER. REFER TO THE AUTOMATED GATE SYSTEM DRAWINGS INCLUDED WITH THE CONTRACT SPECIFICATIONS.

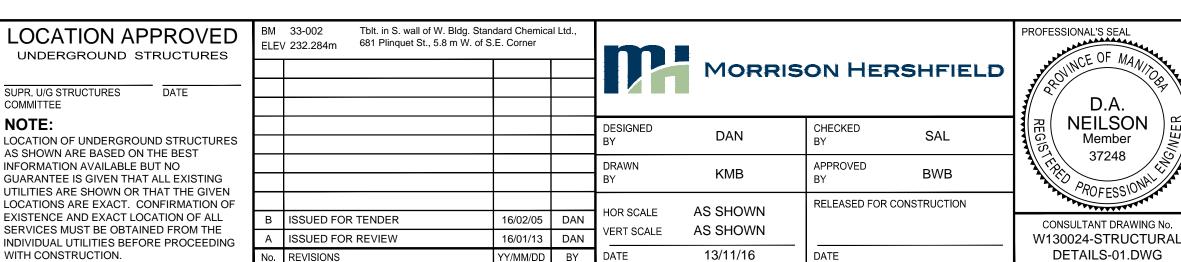
SUBMIT SHOP DRAWINGS FROM GATE SUPPLIER DEMONSTRATING ANCHORAGE

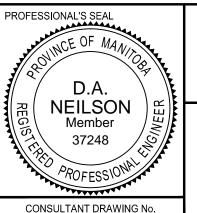
GREASED SONOTUBES & POLYETHYLENE SHEET:

PROTECT SONOTUBES FROM RAIN AND EXCESS MOISTURE.

- STORE ELEVATED A MINIMUM OF 250 mm ABOVE GROUND ON SUPPORTS RUNNING THE LENGTH OF SONOTUBES.
- DO NOT DROP FORMS.
- DO NOT DENT, SCRATCH, OR DAMAGE INTERIOR COATING.
- COAT FULL INTERIOR SURFACE OF SONOTUBES IN UNIFORM, MINIMUM 3 mm THICK PETROLEUM-BASED GREASE LAYER. ENCASE FULL EXTERIOR SURFACE OF SONOTUBES IN 6 mil POLYETHYLENE SHEET.
- PLACE SONOTUBES PRIOR TO POURING CONCRETE.

BID OPPORTUNITY No. 588-2015







THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT **ENGINEERING DIVISION**

AUTOMATED SECURITY GATES & PAVEMENT WORKS - McPHILLIPS PUMPING STATION & PLINGUET YARD

DETAILS & SECTIONS

CAST-IN-PLACE PILE FOUNDATIONS

D-14178

CITY DRAWING NUMBER

OF

13