

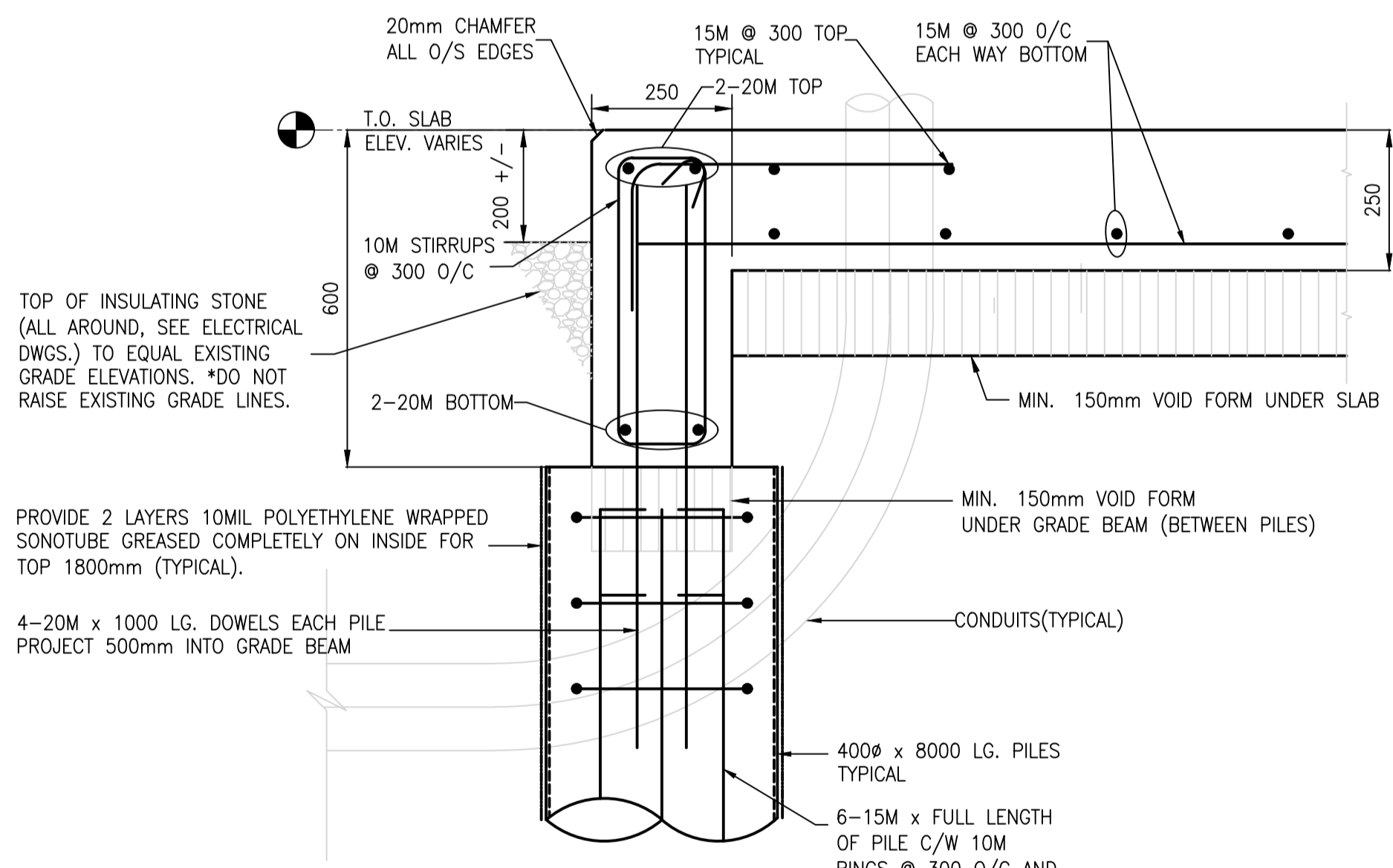
DESIGN LOADS
 DEAD LOAD: SELF WEIGHT
 SNOW LOAD: 2.63 kPa
 EQUIPMENT WEIGHT: MAXIMUM 6000 kg

PLAN

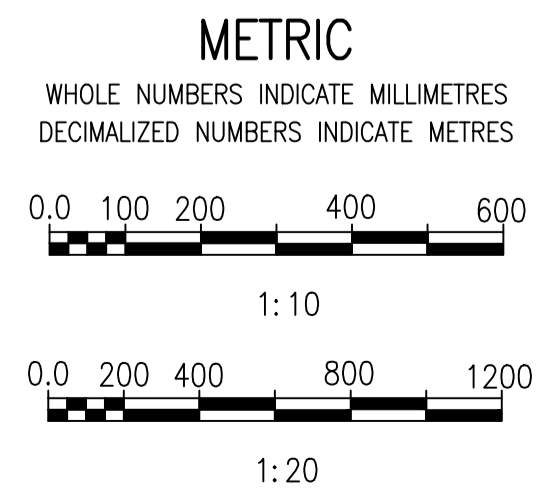
SCALE: 1 : 20

PLAN NOTES

- PROVIDE 2 LAYERS 10 MIL POLYETHYLENE WRAPPED SONOTUBE GREASED COMPLETELY ON INSIDE FOR TOP 1800mm OF ALL PILES.
- T.O. CONCRETE PAD ELEVATION TO BE SITE DETERMINED AND SHALL NOT BE LOWER THAN THE EXISTING TRANSFORMER PAD ELEVATION. USE 2% MINIMUM SLOPE AWAY FROM THE CONCRETE PAD FOR SURROUNDING GRADE.
- SLAB SLEEVES SHALL BE LOCATED BETWEEN TOP AND/OR BOTTOM REINF.



SECTION A-A
SCALE: 1 : 10



GENERAL NOTES:

- STRUCTURAL DESIGN BASED ON THE MANITOBA BUILDING CODE 2023 EDITION, WHICH IS BASED ON THE NATIONAL BUILDING CODE (NBC 2020).
 - IMPORTANCE CATEGORY: POST DISASTER
 - WIND LOAD: $q_1/50 = 0.45$
 - GROUND SNOW LOAD: $S_g = 1.9 \text{ kPa}$
 - ASSOCIATED RAIN LOAD: $S_r = 0.2 \text{ kPa}$
 - SEISMIC SITE CLASSIFICATION: D
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS AND ELEVATIONS ARE TO BE VERIFIED WITH THE EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE MEASUREMENTS IN THE FIELD AS REQUIRED TO SUPPLEMENT DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS.
- ALL EXISTING SERVICE LINES SHALL BE LOCATED, MARKED AND PROTECTED DURING CONSTRUCTION.
- THESE NOTES ARE TO BE READ IN CONJUNCTION WITH ALL PERTINENT CODES AND CONTRACT DOCUMENTS. IN THE EVENT OF A CONFLICT, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
- COORDINATED EMBEDDED ELECTRICAL CONDUITS WITH ELECTRICAL CONTRACTOR PRIOR TO PLACING CONCRETE & BACKFILL.

FOUNDATION:

- FOUNDATION DESIGN BASED ON GEOTECHNICAL REPORT BY TREK GEOTECHNICAL, PROJECT NUMBER 0019 015 00, DATED OCTOBER 17, 2024.
- NOTWITHSTANDING THE INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT, THE FOUNDATION AND GENERAL CONTRACTORS SHALL SATISFY THEMSELVES AS TO THE PREVAILING CONDITIONS AT THE SITE AS NO EXTRAS SHALL BE GRANTED SHOULD CONDITIONS DIFFER FROM THOSE INDICATED.
- ALL GRADE SUPPORTED CONCRETE PADS ARE DESIGNED BASED ON CAPACITIES AS FOLLOWS:
 - FACTORED ULS BEARING CAPACITY OF 125 kPa. THIS BEARING CAPACITY HAS BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.5.
 - FACTORED SLS BEARING CAPACITY OF 85 kPa.
 - CONCRETE SLAB SHALL BE PLACED ON A 150 MM THICK LAYER OF 25 MM GRANULAR A CRUSHED LIMESTONE BASE COURSE COMPACTED TO 100% OF THE SPMD. UPPER 500 MM OF CLAY SHALL BE REMOVED AND REPLACED WITH 50 MM GRANULAR A CRUSHED LIMESTONE COMPACTED TO 100% OF THE SPMD IN LIFTS NO GREATER THAN 150 MM. GRANULAR FILL MATERIALS TO BE CONSISTENT WITH THE CITY OF WINNIPEG SPECIFICATION NO CW 3110-R22.
- ALL FRICTION PILES ARE DESIGNED BASED ON THE FOLLOWING:

a. COMPRESSIVE	DEPTH (M)	ULS (kPa)	SLS (kPa)
	0 - 2.4	0	0
	2.4 - 9	14	14

ULS SKIN FRICTION VALUE HAVE BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.4.

b. UPLIFT	DEPTH (M)	ULS (kPa)	SLS (kPa)
	0 - 2.4	0	0
	2.4 - 9	11	11

ULS SKIN FRICTION VALUES HAVE BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.3.
- ULS BEARING CAPACITY OF 55 kPa. THIS BEARING CAPACITY HAS BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.4.
- SLS BEARING CAPACITY OF (0) kPa
- EFFECTIVE LENGTH OF FRICTION PILES IS TOTAL LENGTH AS SHOWN ON PLAN MINUS 2400 mm.
- FRICTION PILE REINFORCING TO BE FULL LENGTH UNLESS NOTED IN PLANS; 10M RINGS AT 300 mm ON-CENTRE AND 3-10M RINGS AT 150 mm ON-CENTRE AT TOP. EXTEND VERTICAL PILE REINFORCING 500 mm INTO BEAMS. PILE REINFORCING TO BE 6-15M FOR 400 mm DIAMETER PILES, 7-15M FOR 450 mm, 9-15M FOR 500 mm.
- ALL FOUNDATION INSTALLATIONS SHALL BE MONITORED AND REVIEWED BY QUALIFIED GEOTECHNICAL PERSONNEL REPORTING TO THE GEOTECHNICAL ENGINEER THAT ISSUED THE SITE-SPECIFIC GEOTECHNICAL REPORT IN ACCORDANCE WITH THE REQUIREMENTS OF PART 4 OF THE NATIONAL BUILDING CODE OF CANADA.
- REMOVAL OF UNSUITABLE MATERIALS, SUBGRADE PREPARATIONS & COMPACTED GRANULAR FILL FOR ALL SLABS SUPPORTED ON GRADE AS PER SITE-SPECIFIC GEOTECHNICAL REPORT.
- PROVIDE 2 LAYERS 10 MIL POLYETHYLENE WRAPPED SONOTUBE, GREASED COMPLETELY ON INSIDE FOR TOP 1800 mm OF PILES INDICATED ON PLAN.

CAST-IN-PLACE CONCRETE:

- THE CONTRACTOR SHALL PROVIDE HISTORY OF USE AND CERTIFICATION UNDER SEAL THAT THE MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY AND STRENGTH AS SPECIFIED AND WILL COMPLY WITH CSA A23.1 AND THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL PROVIDE CERTIFICATION UNDER SEAL THAT THE PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN PRODUCING THE CONCRETE FOR THE WORK ARE IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1.
- ALL MATERIALS, TESTING, AND WORKMANSHIP (INCLUDING REQUIREMENTS FOR HEATING, COOLING, HOARDING, COLD WEATHER AND WARM WEATHER CONCRETING) SHALL CONFORM TO THE LATEST REVISION OF THE PROJECT SPECIFICATIONS AND CSA A23.1 & CSA A23.2.
- UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL SPECIFY CONCRETE SLUMP APPROPRIATE FOR PLACEMENT METHODS AND SITE CONDITIONS. THE SLUMP SPECIFIED BY THE CONTRACTOR MUST BE INDICATED ON THE CERTIFICATION LETTER AND THE DELIVERY TICKET.
- CONCRETE PROPERTIES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - PILES, BEAMS & CONCRETE PADS: 35MPa MIN. AT 56 DAYS
 - CLASS EXPOSURE: S-1
 - CEMENT TYPE: HS
 - ENTRAINED AIR/CATEGORY: 1 (5% TO 8%)
 - AGGREGATE: 20mm MAX.
 - CURING TYPE: TYPE 2-ADDITIONAL
- UNLESS NOTED OTHERWISE CONCRETE CURING TO CONFORM TO CSA-A23.1 AS FOLLOWS:
 - TYPE 1 - BASIC: 3 DAYS $\geq 10^\circ\text{C}$ AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH.
 - TYPE 2 - ADDITIONAL: 7 DAYS $\geq 10^\circ\text{C}$ AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
 - TYPE 3 - EXTENDED: 7 DAYS WET CURING $\geq 10^\circ\text{C}$.
- CONCRETE SHALL BE TESTED IN ACCORDANCE WITH CSA A23.1 & CSA A23.2.
- PROVIDE BROOM FINISH TO CSA A23.1 FOR THE TOP OF ALL CONCRETE PADS.
- PROVIDE A 20 x20 CHAMFER ON ALL EXPOSED CONCRETE EDGES.
- SLOPE TOP SURFACES OF CONCRETE USING 2% SLOPE.

CONCRETE REINFORCEMENT:

- ALL REINFORCING STEEL SHALL CONFORM TO CSA G30.18M, GRADE 400R.
- ALL REINFORCING STEEL TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL INSTITUTE OF CANADA - MANUAL OF STANDARD PRACTICE, EXCEPT OTHERWISE NOTED. ALL LAP SPLICES TO BE CLASS B SPLICES UNLESS NOTED.
- REINFORCING STEEL COVER IS TO CONFORM TO CAN/CSA A23.3-14 "DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS" AND AS FOLLOWS:
 - PILES:
EXPOSURE CLASS: S-1 76 mm TO TIES
 - GRADE BEAMS:
EXPOSURE CLASS: S-1 60 mm TO TIES TOP/BOTTOM/SIDE
 - STRUCTURAL SLABS:
EXPOSURE CLASS: S-1 60 mm TO TIES TOP/BOTTOM
- SUBMIT TO THE ENGINEER SHOP DRAWINGS UNDER SEAL WHICH CLEARLY INDICATE BAR SIZES, GRADE, SPACING, HOOKS, BENDS, AND SUPPORTING / SPACING DEVICES, ETC., FOR REVIEW PRIOR TO THE FABRICATION OF REINFORCING STEEL.
- DO NOT PLACE REINFORCEMENT WITHOUT FIRST OBTAINING A COPY OF THE REVIEWED SHOP DRAWINGS FROM THE ENGINEER.
- ALL REINFORCING SHALL BE HELD IN PLACE AND TIED BY THE USE OF PROPER ACCESSORIES SUPPLIED BY THE REINFORCING STEEL FABRICATOR.
- ALL REINFORCING STEEL SHALL BE CLEANED OF ALL DIRT, GREASE AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING.

EXCAVATION AND BACK FILL

- EXCAVATIONS MUST BE CARRIED OUT IN COMPLIANCE WITH THE MANITOBA WORKPLACE SAFETY AND HEALTH ACT.
- EXCAVATION STABILITY IS THE RESPONSIBILITY OF THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- GRANULAR FILL AND COMPACTION METHODS TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER.

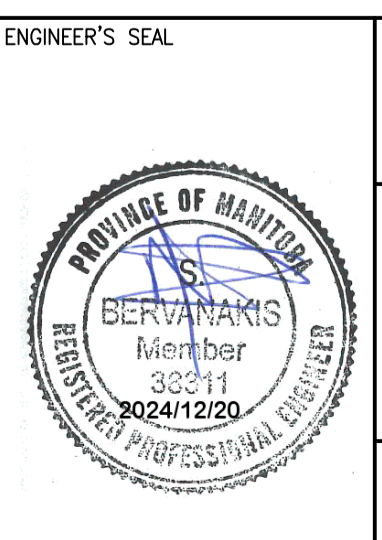
1-0132F-E0002-001	SITE PLAN - ELECTRICAL
DRAWING NUMBER	REFERENCE DRAWINGS

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR TENDER AND CONSTRUCTION	2024/12/20	S.B.	K.K.

AtkinsRéalis
 148 Nature Park Way, Winnipeg, Manitoba
 Canada R3P 0X7 204-786-8080

DESIGNED BY: S. BERVANAKIS
 DRAWN BY: FM. MANZANO
 SCALE: AS SHOWN
 DATE: 2024/11/20
 CONSULTANT NO.: 701408

CHECKED BY: K. KOTYK
 APPROVED BY: D. BECKER
 ISSUED FOR CONSTRUCTION BY: B. SOLOWAY
 DATE: 2024/12/20



THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

CORNISH FLOOD PUMPING STATION
 2025 TRANSFORMER REMEDIATION UPGRADES
 STRUCTURAL FOUNDATION

CITY DRAWING NUMBER: 1-0132F-S0001
 SHEET: 001
 REV: 00
 SIZE: A1